



**HIDDEN IN PLAIN SIGHT:  
A STUDY OF  
THE APPELLATE TRIBUNAL FOR ELECTRICITY  
IN INDIA'S ENERGY TRANSITION  
AND LEGAL IMAGINATION**

Thesis submitted for the degree of Doctor of Philosophy in Law

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Trinity Term, 2022**

## **ABSTRACT**

The Appellate Tribunal for Electricity (‘APTEL’) is a statutory adjudicative institution tasked with responding to appeals against orders taken by the central and state electricity regulatory commissions in India. As such, it is uniquely positioned in the legal landscape of India’s ongoing transition to renewable energy to both stabilize legal, administrative and regulatory disruption caused by this process, and substantively develop the law. Despite its central and indispensable role in this energy transition, the APTEL remains hidden in plain sight.

The invisibility of this tribunal in legal scholarship is surprising, but also revealing of the need to expand our legal imagination as lawyers and law scholars in thinking about the role and contributions of law and tribunalised adjudication during transformative change. This includes the need for scholarly recognition of the simple fact that the law can develop in unexpected places and in unexpected ways.

The legal present is complex, and how this present is being reasoned and understood by the APTEL is not only developing an understanding of it, but also crafting an understanding of the energy future desired of transition. To foster the legal imagination of tribunals like the APTEL, we need to develop a robust mental picture of the legal present, with all of its rich legal complexity. This means focusing away from lofty narratives and focusing onto the routine and everyday legal matters brought before legal institutions tasked with resolving them.

To that end, this thesis navigates a body of case law that has never been mapped before and tells the story of a tribunal that has been largely overlooked in legal scholarship. By bringing APTEL’s role, contributions, adjudicative competence, and complexity front and centre, this thesis offers a thicker legal picture of the tribunalised adjudication of energy transition in India and highlights the importance of taking APTEL’s legal work seriously.

## ACKNOWLEDGEMENTS

I would first and foremost like to thank my supervisor, Professor Liz Fisher, who has been a deeply inspiring and encouraging guide in writing this thesis. Liz taught me to follow my ‘intellectual pole star’, to be patient with my thoughts, and to write with an honest commitment to my material. Our conversations over the past five years and two research degrees, have enriched me as a scholar, and more importantly, as a person. Liz, thank you for walking this journey beside me, for pointing me in new directions, and growing my mind in ways I would not know without you.

A very special thanks to my MPhil examiners Dr Sanja Bogojević and Professor Chris Hilson for providing such insightful feedback on my MPhil thesis, parts of which, have evolved into the ideas explored through my doctoral research. I am especially grateful to my Confirmation of Status examiners Dr Sanja Bogojević and Dr Joanna Bell for their thoughtful suggestions on pushing the analysis that has shaped this thesis. Dr Bogojević, in particular, has in the capacity of being my examiner at different research milestones, helped shaped my writing and develop the nuances of this thesis. I am grateful for her intellectual rigor and generosity.

A warm thank you to Somerville College and the Oxford India Centre for Sustainable Development, including the former Principal Alice Prochaska, former Advisor Dr Alfred Gathorne-Hardy, Ms Sara Kalim, Dr Radhika Khosla, Dr Siddharth Arora, and the current Principal Baroness Jan Royall. They are my Oxford family, and have left no stone unturned in supporting and embracing my vision for writing this thesis. Jan, Sara and Radhika have been my anchors, and I consider myself truly blessed, to have been nurtured as their mentee. I was awarded the Indira Gandhi Scholarship to pursue this journey, and received timely funding from the College and University of Oxford in its final stages, for which I remain grateful.

I’m especially grateful for the generosity of my mentor Mr Hemant Sahai, an accomplished Indian infrastructure lawyer. Mr Sahai supported my early years at Oxford and my MPhil research through the Hemant Sahai Advocates Award at Somerville College. Mr Sahai’s intellectual brilliance and expert insights from our conversations over the years are in my own humble way memorialized in parts of this thesis.

Somerville has been a wonderful home, living on its grounds for both my master's degrees and the final years of my doctorate has been magical, and made more special by its kind support staff and diverse student community. I am especially grateful to the Somerville College librarians, Matthew, Sue and Anne, for never making me wait longer than a few days to procure the specialist materials needed for my research.

My heartfelt thanks are to my friends Tash, Gabriella, Tulika, Mohini, Oana, Sofija and Gayathree, for all the joy they have brought to my life at Oxford. A very special thanks to Tash for carefully proofreading the chapters of this thesis, and to my friends back home, Prateek, Chirag, Paras and Sanat, for their love and encouragement over the years.

Most of all, I would like to thank my family- my dear parents, Anita and Laxmi Narayana, and my loving brother, Nishant. Thank you for reminding me every day how proud you are of me, for the daily positive 'energy transfers,' for your academic spirit, and inspiring me to be a better and stronger version of myself. Writing this thesis would not have been possible without you! I am especially grateful to my wonderful parents-in-law, Sunita and Manpal, for their kindness, warmth and unwavering support, and to my brother-in-law and sister-in-law, Aditya and Priyanka, for cheering me on.

Finally, my husband Anurag, I do not have the words to thank you. You are in every way my true partner, true friend, and true love. Thank you for holding my hand in this journey, helping me focus, and finish writing this this thesis. Thank you for everything.

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## ACRONYMS AND ABBREVIATIONS

AIR	All India Reporter
APTEL	Appellate Tribunal for Electricity
CAT	Central Administrative Tribunal
CERC	Central Electricity Regulatory Commission
CGO	Central Government Offices
CUP	Cambridge University Press
Dev	Development
DISCOM	Distribution Company
Envt	Environmental
GBI	Generation Based Incentive
GPS	Global Positioning System
GUVNL	Gujarat Urja Vikas Nigam Limited
IELTR	International Energy Law and Taxation Review
IJIL	Indian Journal of International Law
INDC	Intended Nationally Determined Contribution
J	Journal
JEL	Journal of Environmental Law
L	Law
LS	Legal Studies
Ltd	Limited
MLR	Modern Law Review
MNRE	Ministry for New and Renewable Energy
NAPCC	National Action Plan for Climate Change
NGT	National Green Tribunal
NTPC	National Thermal Power Corporation
OJLS	Oxford Journal of Legal Studies
OUP	Oxford University Press
PPA	Power Purchase Agreement
PSA	Power Supply Agreement
PSU	Public Sector Undertaking
Pvt	Private
REC	Renewable Energy Certificate
Rev	Review
RPO	Renewable Purchase Obligation
SC	Supreme Court
SCC	Supreme Court Cases
SEB	State Electricity Board
SECI	Solar Energy Corporation of India
Tex	Texas
U	University
UNFCCC	United Nations Framework Convention on Climate Change

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# CHAPTER 1:

## INTRODUCTION

### A INTRODUCTION

India is transitioning towards a renewable energy future with an emphasis on solar power and building associated generation capacity.<sup>1</sup> This transition is occurring alongside multiple other transitions in the country.<sup>2</sup> Law and adjudication are central to this process, however, their contributions to energy transition and vice versa are little understood. This thesis explores the substantive role of law and specialist adjudication in India's transition to renewable energy through a study of case law concerning solar power projects appealed before the Appellate Tribunal for Electricity ('APTEL') between 2015-19. The APTEL is an expert, quasi-judicial appellate body empowered to review decisions taken by electricity regulators at the central and state levels.<sup>3</sup> In conducting this adjudicative role, the APTEL issues reasons for its decisions. These reasons provide fruitful context to view the different ways in which energy transition as a transformative process interacts with existing legal, regulatory and policy frameworks during the process of adjudication. I argue that the reasoning in these judgments produces substantive legal understandings about energy transmission, and that these understandings are embedded in Indian legal culture. This weaves the process of energy transition and how decision-making

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<sup>1</sup> Ministry of New and Renewable Energy Government of India, *Jawaharlal Nehru National Solar Mission Phase II Policy Document* (2012) ('National Solar Mission').

<sup>2</sup> E.g., urbanization, coal dependence, built environment, energy use etc.; See Navroz Dubash, *Handbook of Climate Change and India: Development, Politics, and Governance* (OUP 2012); Madhura Joshi and Radhika Khosla, 'India: Meeting Energy Needs for Development While Addressing Climate Change' in *Sustainable Energy in the G20: Prospects for a Global Energy Transition* (Institute for Advanced Sustainability Studies, 2016); Navroz Dubash (ed), *India in a Warming World: Integrating Climate Change and Development* (OUP India 2020); Navroz Dubash and others (eds), *Mapping Power: The Political Economy of Electricity in India's States* (OUP India 2018).

<sup>3</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal), s 111 (Appeal to Appellate Tribunal).

should be done with regard to it into the Indian legal order. Specialist tribunals like the APTEL are thus sites for the ‘co-production’<sup>4</sup> of energy transition in India and, to that end, merit careful scholarly engagement. This thesis raises important questions about the interfaces between law, infrastructure and socio-technical change, and draws attention to the role of legal reasoning in rendering that engagement. It makes a case for developing a ‘thicker’<sup>5</sup> understanding of tribunalised adjudication during energy transition and expanding the coasts of our legal imagination in engaging with that legal work.<sup>6</sup>

My aim is threefold- first, to illustrate the substantive role and contributions of law and adjudication in India’s transition to renewable energy. I show that specialist tribunals like the APTEL, as opposed to generalist courts,<sup>7</sup> are excellent sites for thinking through the complexities of adjudicating disputes raised by transition and associated infrastructural change because of the types of legal problems they deal with and capacity to bring legal and non-legal knowledge together in their reasoning.<sup>8</sup> These problems are on one level questions about how to structure and organize the behavior and activities of the regulator and the regulated, and on

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<sup>4</sup> Sheila Jasanoff, ‘The Idiom of Co-production’ in Sheila Jasanoff (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004) 2-3; see Elizabeth Fisher, ‘Expert Executive Power, Administrative Constitutionalism and Co-production: Why They Matter’ in Maria Weimer and Anneik de Ruijter (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017); see Sheila Jasanoff and Sang-Hyun Kim (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015) 3.

<sup>5</sup> Elizabeth Fisher, ‘Through ‘Thick’ and ‘Thin’’ in Peter Cane and others (eds), *Oxford Handbook of Comparative Administrative Law* (OUP 2020) 625-26.

<sup>6</sup> See Harry Arthurs, ‘Paradigms of Law’ in *Without the Law’: Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) 10.

<sup>7</sup> This is not to say that they can never be a site for such inquiry.

<sup>8</sup> Elizabeth Fisher and others, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80 MLR 173.

another level, about the interaction of legal and technical knowledge with the ‘collective aspirations’<sup>9</sup> underlying transition.

APTEL’s unique position in the legal landscape of this energy transition makes it an ideal case study to view how law and specialist tribunals provide important adjudicative mechanisms for responding to and stabilizing these legal problems. APTEL’s reasoning of these disputes not only holds practical implications for the processes and participants of transition but also substantively contributes to the development of law. India’s energy transition is deemed to be one of the most significant and ambitious of our time.<sup>10</sup> Understanding the work of adjudicative institutions in responding to disputes arising from this process, and thinking about how to foster their proficiency in doing that legal work, is needed to create the energy future we desire.

Second, I want to bring into view the legal significance of everyday adjudication in developing legal understandings of complex processes like energy transition. The challenges for legal reasoning shored up by these disputes often push against the boundaries of how we as lawyers and law scholars are conventionally trained to think about tribunalised adjudication and their role in legal development. Subscribing to Ursula Le Guin’s ‘Carrier Bag Theory of

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<sup>9</sup> See Jairam Ramesh, ‘Energy Dilemmas’ in *Green Signals: Ecology, Growth, and Democracy in India* (OUP India 2015); see also Jairam Ramesh, ‘Gross to Green’ in *Green Signals: Ecology, Growth, and Democracy in India* (OUP India 2015) 357; Jens Beckert, *Imagined Futures: Fictional Expectations and Capitalist Dynamics* (Harvard University Press 2016); see also Sunil Khilnani, ‘Temples of the Future’ in *The Idea of India* (Penguin 2012); Sunil Khilnani, *The Idea of India* (Penguin 2012) 107.

<sup>10</sup> Fatih Birol and Amitabh Kant, ‘India’s Clean Energy Transition is Rapidly Underway, Benefiting the Entire World’ (*International Energy Agency*, 10 Jan 2022) <<https://www.iea.org/commentaries/india-s-clean-energy-transition-is-rapidly-underway-benefiting-the-entire-world>> accessed 06 May 2022; Mohua Mukherjee, *India’s Progress on its Climate Action Plan: An Update in Early 2022* (Oxford Institute for Energy Studies, Mar 2022) <<https://ora.ox.ac.uk/objects/uuid:d205f63c-4d18-4db4-9a5c-b82c7dc3513b/files/r5q47rp31j>> accessed 19 May 2022; Ministry of New and Renewable Energy Government of India, *A Path Breaking Journey in Renewable Energy Through the Last 4 Years* (Press India Bureau 2018).

Fiction'<sup>11</sup>, this thesis shows that legal development need not occur at the throw of a spear but by 'assembling' in small, case-specific ways, an understanding of energy transition and associated solar infrastructure.<sup>12</sup> This image can look quite different to the linear narrative of a 'hunter waiting for the big kill'.<sup>13</sup> My focus on the 'routine'<sup>14</sup> and everyday is to show that developing a legal understanding occurs over time and is often based on the questions asked, the arguments framed, and on the court or tribunal's competence in responding to the legal and factual aspects of the dispute. These responses build an understanding of energy transition from a legal perspective that is alert to local context and is accordingly woven into the Indian legal order. The law can develop by picking up these diverse and often disparate seeming judgments and gathering them. It is the work of legal scholarship to 'forage'<sup>15</sup> these judgements and show that there is more to be discovered. To view legal development as the work of a forager is to see that legal understandings of transition do not occur in vacuum, that energy transition is taking place in a materialized world with material legal frameworks. The interactions of the two can result in friction, the stabilization of which, through adjudication, results in ad-hoc assemblages that link infrastructure, energy markets and society, and the ways in which energy

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<sup>11</sup> Ursula Le Guin, 'The Carrier Bag Theory of Fiction' in *Dreams Must Explain Themselves: The Selected Non-fiction of Ursula K. Le Guin* (Gollancz 2018) 167.

<sup>12</sup> Bruno Latour, *The Making of Law: An Ethnography of the Conseil D'Etat* (Polity 2010) 199.

<sup>13</sup> Elizabeth Fisher, 'Strangers in Their Own Land: Anger and Mourning on the American Right' by Arlie Russel Hochschild and 'The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins' by Anna Lowenhaupt Tsing' (2017) 29 (2) JEL 383, 386; Arthurs (n 6) 3.

<sup>14</sup> Joanna Bell and Elizabeth Fisher, 'Exploring a Year of Administrative Law Adjudication in the Administrative Court' (2021) Public Law 505, 510.

<sup>15</sup> Le Guin (n 11); Fisher (n 13) 386.

transition is a product of a set of infrastructural conditions, legal relationships and collective aspirations rooted in the Indian legal order.

Third, I want to make the experience of adjudicating energy transition in India accessible to global legal debates on climate change- first, from the vantage of APTEL adjudication, I show that energy transition as a ‘legally disruptive’<sup>16</sup> process can raise legal problems that can look quite different to what one might be trained to view and engage with as a lawyer or law scholar. Disruption here refers to the way in which the legal issues arising from energy transition cannot be addressed through the conventional application of doctrine.<sup>17</sup> In other words, they do not always ‘fit easily’<sup>18</sup> into legal frameworks designed to manage different kinds of structures and circumstances, which in the present case pertains to conventional electricity infrastructure. To be disruptive therefore, is inherent in energy transition as a process of change.

APTEL’s legal work in responding to disputes arising from energy transition in India is about creating legal stability and legal certainty during infrastructural change in the Indian electricity sector. This is different from the experience of achieving these values in higher courts that have a wider constitutional mandate.<sup>19</sup> Second, I show that the Indian experience has implications for global legal scholarship in that it catalyzes and brings into view the kinds of material legal problems, that is, questions about electricity tariffs, bidding processes, grid

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<sup>16</sup> Fisher and others (n 8) 177.

<sup>17</sup> Fisher and others (n 8) 177.

<sup>18</sup> Fisher and others (n 8) 189.

<sup>19</sup> E.g., *Hindustan Zinc Ltd v Rajasthan Electricity Regulatory Commission* (2015) 12 SCC 611 (Supreme Court of India).

infrastructure, novel legal constructs and associated regulatory challenges, raised in developing countries grappling with the experience of decarbonizing their energy sources.

This picture can look different from what one might glean from the types of legal problems experienced in other jurisdictions.<sup>20</sup> This shows that legal culture matters and that the lived legal experience of socio-technical change can be culture-specific. By focusing on tribunalised adjudication, I encourage the reader to re-think the implications of the reasoning in seemingly ‘ordinary’ disputes in shaping legal understandings of a transformative process that is actively crafting India’s energy future. To that end, this thesis makes an important first step towards developing legal scholarship on APTEL’s legal work and makes a strong case for taking adjudication in specialist tribunals seriously.

The present chapter offers a general introduction to my thesis. I begin with a brief overview of the legal roots of energy transition in India- setting out its aims, scope and challenges, and then shift focus onto the transition taking place in the Indian electricity sector. The purpose of this description is to set the scene by briefly outlining the relevant contours of a vast and complex process and providing the necessary context for engaging with the chapters that follow. After this introduction, I explain my research question, offer reflections on my research method, and define key non-legal terminology used. The chapter concludes with an outline of each of the later chapters of my thesis.

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<sup>20</sup> E.g., Elizabeth Fisher, ‘Law and Energy Transitions: Wind Turbines and Planning Law in the UK’ (2018) 38 OJLS 528; Maria Lee, ‘Knowledge and Landscape in Wind Energy Planning’ (2017) 37 LS 3 disputes in the United Kingdom for example have raised challenges against planning permits, raised questions about the aesthetics of wind turbines etc.; see also Robert Lee and Elen Stokes, ‘Environmental Governance: Reconnecting the Global and Local’ (2009) 36 (1) Journal of Law and Society 1- 10 on the significance and tensions between global and local context.

## 1 Marking Boundaries

Before I proceed, and because this study touches upon a range of different areas,<sup>21</sup> a few caveats are needed to mark the boundaries of my research: first, this thesis does not offer a comprehensive review of energy transition in India which includes wind, hydro-electric and nuclear energy, nor does it provide a conceptual analysis of specialist courts and tribunals more broadly,<sup>22</sup> and/or their relationship with regulatory structures in India.<sup>23</sup> This thesis studies disputes concerning solar power projects appealed before the APTEL as an analytical case study for thinking through the complexities of adjudicating disputes resulting from energy transition. In doing so, it offers thicker legal account of energy transition in India and APTEL's contributions in responding to disputes raised and exacerbated by it.

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<sup>21</sup> E.g., International Institute for Sustainable Development and others, *India's Energy Transition: Mapping Subsidies to Fossil Fuels and Clean Energy in India* (GSI Summary Report, Nov 2017) (economics of transition); Jairam Ramesh, *Green Signals: Ecology, Growth, and Democracy in India* (OUP India 2015) (environmental politics, planning); Donald Zillman and others (eds), *Innovation in Energy Law and Technology: Dynamic Solutions for Energy Transitions* (OUP 2018) (international law); Niti Ayog Government of India and others, *The Indian Power Sector: Low Carbon Transition Strategy for Renewable Energy Integration* (2018) (development); Dubash (n 2) (development); Centre for Policy Research, *Understanding India's Energy Transition in Global Context: Panel Discussion* (2019) (policy); Beckert (n 9) (capitalism, economic decision-making); Anique Hommels, *Unbuilding Cities: Obduracy in Urban Socio-technical Change* (MIT Press 2005) 173-197 (technology, urban studies); Vaclav Smil, *Energy Transitions: History, Requirements, Prospects* (Praeger 2010) (energy studies); Vaclav Smil, *How the World Really Works: A Scientist's Guide to Our Past, Present and Future* (Viking 2022) (science, history); Devesh Kapur and Madhav Khosla (eds), *Regulation in India: Design, Capacity, Performance* (Hart 2019) (regulation of Indian institutions); Jasanoff and Kim (n 4) (science and technology studies); Sheila Jasanoff, *Science at the Bar: Law, Science, and Technology in America* (Harvard University Press 1997) (science and technology studies); Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton University Press 2015) (anthropology); Penny Harvey and Hannah Knox, *Roads: An Anthropology of Infrastructure and Expertise* (Cornell University Press 2015) (infrastructure, anthropology); Anna Lowenhaupt Tsing, *Friction: An Ethnography of Global Connection* (Princeton University Press 2005) (anthropology).

<sup>22</sup> See Ceri Warnock, *Environmental Courts and Tribunals: Powers, Integrity and the Search for Legitimacy* (Hart 2020) for a rich scholarly account of the novel and dynamic nature of specialist tribunals and challenges inherent in the nature of adjudication undertaken by these institutions; see Peter Cane, *Administrative Tribunals and Adjudication* (Hart 2009) for a comprehensive account of tribunals as legal institutions more generally; see also Ceri Warnock, 'Reconceptualising Specialist Environment Courts and Tribunals' (2017) 37 LS 391.

<sup>23</sup> See Kapur and Khosla (n 21).

These responses need legal imagination in construing disputes vis-à-vis existing legal frameworks, weaving them into the legal order, and developing the corpus of law.<sup>24</sup> This inevitably raises questions about how to foster the Appellate Tribunal's adjudicative competence and proficiency in assembling these connections. The thesis does not offer definitive answers to these questions, rather, by bringing this legal work and complexity into view, it shows how to think about the adjudication of these disputes and opens up possible lines for future scholarly inquiry.

Second, this thesis is addressed to the legal community in an effort to encourage lawyers and adjudicators to recognize and intellectually engage with APTEL's substantive contributions to energy transition in India. By focusing on the reasoning in APTEL case law, I show how the Appellate Tribunal's decisions are developing law and stabilizing legal disruption caused by transition. I draw on the concepts of co-production and socio-technical imaginaries from science and technology studies to aid me in this process. While I am inspired by this scholarship, my study does not directly address science and technology studies. That said, my thesis also invites a broader readership, including environmental and energy law scholars in India and elsewhere but also public, administrative and climate scholars.

My objectives are simple- first, to fill a gap in the higher court centric nature of legal scholarship in India by bringing the work and contributions of tribunals into view, and second, to make a substantial analytical contribution to ongoing scholarly conversations about energy transition in India by showing the importance of engaging with law and adjudication dealing with the complexity of change in the legal present and its impact in crafting the legal future. The questions explored in this study need a distinction to be drawn between the 'is' and the 'ought' but these elements, as the reader will note in later chapters, must often be considered

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<sup>24</sup> Eloise Scotford, 'Legislation and the Stress of Environmental Problems' (2021) 74 *Current Legal Problems* 299, 315.

together.<sup>25</sup> To think about the ‘ought’ needs legal imagination which must be grounded in legal reality, that is, the ‘is’.<sup>26</sup> To foster the legal imagination of tribunals and their legal work therefore, we need to develop a robust mental picture of the legal present with all of its rich legal complexity.

It is also important that I acknowledge the limitations of current scholarship on energy transition and tribunalised adjudication in the Indian legal context. The scholarship I draw on largely centers upon tribunals tasked with responding to administrative and environmental problems in other jurisdictions. The nature of disputes raised for adjudication by the Appellate Tribunal does not neatly fit into these adjudicative paradigms; while there is conceptual alignment, there are also points of distinction. These are flagged at appropriate junctures in the study. The thesis also contains a number of different narratives, including links between energy security and access with solar generation capacity, encouraging private participation and constructing a competitive energy market, and also more discretely, a narrative about what these considerations mean for thinking about decarbonization and climate change. These narratives are traditionally seen as conflicting, but are being stabilized and actively woven into the legal order through APTEL’s reasoning. I point to these narratives but do not engage with them in detail, that is not the purpose of my thesis.

With these caveats in mind, the next section provides a brief overview of energy transition in India, offering the reader a mental picture of the historical legal developments that paved way for the ongoing transition. That picture is needed to appreciate and provide necessary context for the analysis and discussions in the chapters that follow.

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<sup>25</sup> Jasanoff (n 4).

<sup>26</sup> Elizabeth Fisher, ‘Legal Imagination and Teaching’ in Lavanya Rajamani and Jacqueline Peel (eds), *Oxford Handbook of International Environmental Law* (2nd edn, OUP 2021) 146-47.

## B PICTURING INDIA'S ENERGY TRANSITION

The importance of renewable energy in India far pre-dates the enactment of the Electricity Act 2003- the primary statute concerned with disputes pertaining to the electricity sector and energy transition in India.<sup>27</sup> Its significance can be traced back to the global energy crises during the 1970-80s resulting from petroleum shortages.<sup>28</sup> It was during this period that domestic energy analysts started to recognize the abundance of renewable energy sources in the country and began to encourage a 'gradual'<sup>29</sup> shift away from conventional fossil fuels. To that end, the central government constituted a Working Group on Energy Policy in 1977 that highlighted the need for 'adopting alternatives, less energy intensive technologies and also substituting or supplementing conventional sources of energy with renewable sources'.<sup>30</sup> Subsequently the sixth Five Year Plan (1980-85) highlighted the need to develop renewable sources of energy with a sense of 'urgency'.<sup>31</sup> This resulted in practical tensions between the gradualness of change associated with the infrastructure in question and the imminent urgency of shifting towards renewable energy sources. These narratives shaped the legal and policy imagination that lead to the development of a more 'focused approach'<sup>32</sup> towards generating electricity from

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<sup>27</sup> There are no dedicated and comprehensive laws to guide energy transition in India, see Lavanya Rajamani, 'The Indian Way: Exploring Synergies between Development, Energy and Climate Goals' in Donald Zillman and others (eds), *Beyond the Carbon Economy: Energy Law in Transition* (OUP 2008) 421; See generally Nandakumar Janardhan, *Transition to Energy Secure Future: Policies Enabling Energy Transition in India* (Institute for Global Environmental Strategies, 2012) 14-15.

<sup>28</sup> See Akshay Jaitley, 'Renewable Energy' in Devesh Kapur and Navroz Dubash (eds), *Regulation in India: Design, Capacity, Performance* (Hart Studies in Comparative Public Law 2019).

<sup>29</sup> Jaitley (n 28) 184.

<sup>30</sup> Jaitley (n 28) citing Planning Commission, 'Report of the Working Group on Energy Policy' (1979).

<sup>31</sup> Planning Commission, 'Sixth Five Year Plan' (1980).

<sup>32</sup> Jaitley (n 28) 184.

renewable energy sources in the form of the Electricity Act 2003. The focus in legislation was on creating energy access, energy security and cost-effectiveness.<sup>33</sup>

The parliamentary discussions surrounding the Electricity Bill 2001, which led to enactment of the Electricity Act in 2003, remained limited to meeting energy access needs of rural areas without grid connectivity.<sup>34</sup> The Bill was referred to the Standing Committee constituted by the Ministry of Power which recognized the need to meet the country's growing energy demand in a 'self-reliant and sustainable manner through renewable energy', and the need for states to meet a minimum quantum of their energy needs through renewable sources.<sup>35</sup> The Committee introduced the rhetoric of self-reliance and sustainability in thinking about and moving towards renewable energy sources but did not define or provide details as to what it meant by this. The Report contextualized the goal of promoting renewable energy against domestic concerns about grid infrastructure, limited resources and financial costs, and cautioned that these considerations could hinder their potential to be embraced and traded in a commercial market designed for conventional energy.<sup>36</sup> These tensions, as chapter 3 will show, continue to make themselves visible in disputes before the Appellate Tribunal.

The Ministry of Power in a note submitted to the Standing Committee at the time unequivocally stated that 'the cost of electricity is a very important factor for Indian

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<sup>33</sup> Electricity Act 2003, preamble.

<sup>34</sup> Jaitley (n 28) 185 citing Thirteenth Lok Sabha Debates, 'Further Discussion on the Electricity Bill, 2001' moved by Shri Anant Gangaram Geete (9 April 2003).

<sup>35</sup> Standing Committee on Energy (2002) Thirteenth Lok Sabha, *Ministry of Power Thirty First Report on The Electricity Bill 2001* (Lok Sabha Secretariat, 2002) [3.20] – [3.21] ('Standing Committee Report'). see also Joshua Busby and Sarang Shidore, 'Solar Federalism: What Explains the Variation in Solar Capacity Additions in India's States?' (2021) 71 *Energy Research and Social Science* 101815.

<sup>36</sup> Standing Committee Report (n 35) [3.21].

consumers.’<sup>37</sup> It also flagged concerns over the ‘capacity to absorb costly power among states because of their different financial positions’ and endowment of renewable energy sources.<sup>38</sup> This, it noted, created a dynamic circumstance that would make fixing specifics in the law difficult and impracticable.<sup>39</sup> As a result, the Bill, and later the Electricity Act 2003, entrusted State Electricity Commissions with the responsibility of promoting the generation and co-generation of electricity from renewable energy sources by providing suitable measures for connectivity with the grid and sale of electricity between generators and/or power procurement agencies and distribution licensees. The Act also places a duty on the State Commission to specify when it considers appropriate, for the purchase of a percentage of the total consumption of electricity in the area of a distribution licensee from renewable energy sources.<sup>40</sup>

These discussions provide a necessary backdrop to understanding why disputes over tariffs, costs and compensation cluster before the Appellate Tribunal. I will return to these disputes in more detail in chapter 3. Thus, in its final form, the Electricity Act 2003, as I show in the next chapter, set out a ‘relatively clear’<sup>41</sup> trajectory for India’s renewable energy future and put in place the contemporary legal foundations for energy transition in India. Addressing energy issues in India therefore has a long-standing history; and the ongoing transition appears to be the latest iteration of that commitment being mobilized through a combination of statutory, regulatory and market-based mechanisms.

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<sup>37</sup> Standing Committee Report (n 35) [3.19] (my emphasis).

<sup>38</sup> Standing Committee Report (n 35) [3.19].

<sup>39</sup> Standing Committee Report (n 35) [3.19].

<sup>40</sup> Standing Committee Report (n 35) [3.19].

<sup>41</sup> Jaitley (n 34).

Thus, guided by the mandate of ‘promoting the generation and co-generation of electricity from renewable sources of energy’,<sup>42</sup> the Electricity Act 2003 constituted and empowered independent regulators at the central and state level to award preferential tariffs as a step towards incentivizing the generation of electricity from renewable energy sources and creating a competitive market for trade in renewable energy between states. These regulators were therefore required to stipulate and notify Renewable Purchase Obligation (‘RPO’) targets for obligated entities, mainly, power distribution companies (‘DISCOMs’) and large-scale consumers of electricity to ensure that a minimum percentage of the state’s total power consumption was met through renewable energy sources.<sup>43</sup> The RPO mechanism, as chapters 2 and 3 will show, constitutes an integral driver of energy transition in India but is also a major site for dispute.

The RPO is complemented by the Renewable Energy Certificate (‘REC’) mechanism, which provides for the purchase of energy certificates in lieu of purchasing renewable energy by obligated entities.<sup>44</sup> Under this mechanism, renewable-energy-generating companies sell electricity to local distribution licensees at rates stipulated for conventional power and recover the balance cost by selling certificates to other distribution companies and obligated entities, enabling the latter to meet their renewable purchase obligations.<sup>45</sup> This, in effect, creates a legal fiction whereby the purchase of a REC is deemed as the purchase of renewable energy for RPO

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<sup>42</sup> Electricity Act 2003, s 61 (h) (Tariff Regulations).

<sup>43</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commission).

<sup>44</sup> Forum of Regulators, *Policies on Renewables: Report* (2008) <[https://www.recregistryindia.nic.in/pdf/ROR/1\\_FOR\\_Report\\_on\\_Policies\\_on\\_Renewables-08.04\\_2009\\_.pdf](https://www.recregistryindia.nic.in/pdf/ROR/1_FOR_Report_on_Policies_on_Renewables-08.04_2009_.pdf)> accessed 01 May 2022.

<sup>45</sup> ‘Solar RPO and REC Framework’ (*Ministry for New and Renewable Energy Government of India*) <<https://mnre.gov.in/solar/rpo/>> accessed 19 May 2022.

compliance.<sup>46</sup> The experienced reality of energy transition therefore shows that there is more to the simplistic picture of transition rendered by thin descriptions of the process. Energy transition is constituted by a network of legal obligations, agreements, rights and responsibilities, in the enforcement and understanding of which, law and adjudication have an important role. The wider constitutional, legislative and policy frameworks from where this picture derives color and meaning are mapped in chapter 2.

The Electricity Act 2003 does not define renewable sources of energy or the RPO, despite their central role in transition. There have been multiple unsuccessful attempts at amending the statute to fill these gaps.<sup>47</sup> The meaning of these terms however has been set out in various policy documents notified by the central government and fleshed out through adjudication in courts and tribunals. While the social, economic and legal implications of energy transition demand appropriate legislative responses in shaping behavior and guiding associated policies- knowing how to craft these responses and evaluating the resulting legislation is often a complex, contentious and uncharted legal territory.<sup>48</sup> Statutes therefore often offer little legal detail. While legislation is widely acknowledged as the backbone of our legal field, the role of expertise and legal imagination in bringing it to life during adjudication tends to be relegated to the footnotes of legal scholarship.<sup>49</sup> I will return to this point in chapters 4 and 5.

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<sup>46</sup> E.g., *Green Energy Association v Maharashtra Electricity Regulatory Commission* (APTEL, 22 Apr 2015).

<sup>47</sup> E.g., Draft Electricity Bill 2018 proposed to define ‘renewable energy’, ‘RPO’ and the Renewable Generation Obligation (‘RGO’), the Draft Electricity Bill 2020 proposed empowering the central government to notify a National Renewable Energy Policy in consultation with state governments, and the Draft Electricity Bill 2014, sought to define ‘renewable generation’.

<sup>48</sup> See Scotford (n 24) 299.

<sup>49</sup> Contra Elizabeth Fisher, *Environmental Law: A Very Short Introduction* (OUP 2017) 23; Scotford (n 24) 306, 315; Fisher (n 20); see Fisher (n 26) on why legal imagination *matters*.

Legislation is often also compromised by politics and time pressures, which can lead to concerns over quality.<sup>50</sup> This is frequently made more complex by the dynamic nature of the circumstances to which it applies, but, as Scotford observes, ‘legislation is nonetheless, socially vital law, that requires interpretation, evaluation and re-evaluation’.<sup>51</sup> It is important that I flag this point as something for the reader to bear in mind when engaging with the reasoning of the case law mapped in chapter 3. A more comprehensive discussion of the legal significance and implications of legislation in energy transition and scholarly engagement with this source of law, however, is beyond the scope of the present study.

This brief history shows that the transition to renewable energy in India is largely motivated by domestic concerns about energy access, energy security, and the need for cost-effective sources of electricity. However, relatively recent environmental developments both internationally and within the country have cast these concerns in new light, for example, by coalescing the significance of energy transition in mitigating air pollution in India and as a step towards addressing the impact of anthropogenic climate change.<sup>52</sup> This shows that law plays an important catalytic role in shaping a legal imagination of energy transition at multiple levels—by providing a constitutional mandate for transition,<sup>53</sup> in developing a market for trade in renewable energy,<sup>54</sup> in constituting a supportive regulatory environment,<sup>55</sup> in securing

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<sup>50</sup> Scotford (n 24) 300.

<sup>51</sup> Scotford (n 24) 300.

<sup>52</sup> National Electricity Policy 2005; Ramesh (n 21) 415-16.

<sup>53</sup> *Hindustan Zinc* (n 19); Constitution of India, A 51 (g) (Fundamental Duties).

<sup>54</sup> Ministry of New and Renewable Energy Government of India, ‘RPO’ (*National Portal for RPO*) <<https://rpo.gov.in/Home/Objective>> accessed 19 May 2022; see Sanja Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Hart 2013).

<sup>55</sup> Kapur and Khosla (n 23).

developmental agendas,<sup>56</sup> and in operationalizing India's international climate change commitments.<sup>57</sup> There is therefore a need for legal scholarship to bring these contributions into view and foster the legal expertise of adjudicative institutions tasked with operationalizing these frameworks in their reasoning of legal problems raised by transition.

## 1 Thick Descriptions and Legal Imagination

Indian legal scholarship has focused on its international climate change commitments for too long despite their 'thin'<sup>58</sup> role in shaping the way transition has materially unfolded over the past decade. The commitments, often owing to their nature and purpose, are oriented outward, that is, directed towards the wider international community rather than inward and concerned with domestic detail. The National Action Plan for Climate Change for example, is a framework document that establishes the National Solar Mission under which the generation of electricity from solar energy is being promoted<sup>59</sup> and sets out the principles that ought to drive India's efforts towards mitigating the impact of climate change.<sup>60</sup> To that end, it frames energy transition as a step towards mitigating climate change, but my point is that this global

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<sup>56</sup> Electricity Act 2003, preamble, s 3 (National Electricity Policy and Plan).; National Electricity Policy 2005 [1.2].

<sup>57</sup> Rajamani (n 27); 'Solar Overview' (*Ministry for New and Renewable Energy Government of India*, 31 Mar 2020) <<https://mnre.gov.in/solar/current-status/>> accessed 05 May 2022; Government of India, *India's Intended Nationally Determined Contribution: Working Towards Climate Justice* (2015); Lavanya Rajamani, 'India's Approach to International Law in the Climate Change Regime' (2018) 57 *Indian Journal of International Law* 1-23.

<sup>58</sup> Theodore Porter, 'Thin Description: Surface and Depth in Science and Science Studies' (2012) 27 *Osiris* 209.

<sup>59</sup> Prime Minister's Council on Climate Change Government of India, *National Action Plan on Climate Change* (2008) ('NAPCC') 2.

<sup>60</sup> NAPCC (n 59) 2.

framing does not acquire the same practical traction in the kind of arguments presented before the Appellate Tribunal or in its reasoning of the disputes appealed before it. This is not to say that these commitments have not been significant in accelerating transition through the extension of clean development and international green financing benefits,<sup>61</sup> establishing a series of national level missions addressing climate change,<sup>62</sup> or that such academic accounts are not important, rather my point is that they offer little insight into domestic legal detail and everyday challenges hidden under that dominant global narrative.<sup>63</sup> Bringing this hidden detail into view not offers a thicker picture of what the experienced legal and infrastructural reality of energy transition involves but also encourages a deeper and more reflective approach towards thinking about the role and contributions of law and adjudication in responding to legal problems raised by the ongoing transition.

The conceptual distinction between thin and thick descriptions, is ‘well known in social sciences, but lesser so in law’.<sup>64</sup> Thin and thick accounts are not just of law but also of the contexts in which it operates.<sup>65</sup> The distinction between the two however is not clear cut. In other words, there are variations in thickness and thinness but the scholarly distinction between

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<sup>61</sup> See Rajamani (n 57).

<sup>62</sup> NAPCC (n 59) 2.

<sup>63</sup> This narrative engenders a struggle between global interests and concerns of local people and was pushed to the fore by scholarship around the construction of dams, embracing hydro power and concerns about social and ecological displacement in India. The role of law in this narrative is distinctly an instrumental one. See Arundhati Roy, *The Cost of Living* (Flamingo 1999); Arundhati Roy, *The Algebra of Infinite Justice* (Flamingo 2002); Tsing (n 21); Ramchandra Guha, *Environmentalism: A Global History* (Penguin 2014); Mukul Govind Rajan, *Global Environmental Politics: India and the North-South Politics of Global Environmental Issues* (OUP 1997) 92-101; Amita Baviskar, ‘National Development, Poverty and the Environment’ in *In the Belly of the River: Tribal Conflicts of Development in the Narmada Valley* (2nd edn, OUP India 2004).

<sup>64</sup> Fisher (n 5) 624.

<sup>65</sup> Fisher (n 5) 624.

them is observable nonetheless.<sup>66</sup> Thin accounts of the law tend to focus on ‘text without wider context’, that is, they focus on what appears on the ‘surface’<sup>67</sup> or what is ‘simply observable and collatable’.<sup>68</sup> These accounts of the law have their merits and indeed also a set of uses. To simply describe something as ‘command and control’ regulation, for example, tells us little about the legal detail of any framework, but it does tell us about the structure of the framework and how it is expected to work, and that is useful.<sup>69</sup>

Thick accounts on the other hand move beyond the surface to tell a ‘deep story’.<sup>70</sup> In other words, while thin accounts focus on the built environment, thick accounts are about what dwells in it.<sup>71</sup> They tell deep stories, the goals of which can range from offering the reader a ‘feel’<sup>72</sup> of something to exploring a set of ‘assemblages’<sup>73</sup> and their inner dynamics, that is, understanding how elements relate to one another and to their surrounding environment.<sup>74</sup>

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<sup>66</sup> Fisher (n 5) 624.

<sup>67</sup> Porter (n 58) 212.

<sup>68</sup> Fisher (n 5) 626.

<sup>69</sup> Fisher (n 5) 624.

<sup>70</sup> See generally Arlie Russell Hochschild, ‘The Deep Story’ in *Strangers in their Own Land: Anger and Mourning on the American Right* (New Press 2016) 135; Richard Sennett, ‘Introduction: Crooked, Open, Modest’ in *Building and Dwelling: Ethics for the City* (Penguin 2018) 3 in which Sennett talks about the semantic difference between the French words ‘cité’ and ‘ville’ used to describe a city as an example to show the ‘jaggedness’ of lived and constructed environments. Sennett points to all the detail missed by focusing on the cité and the cost of seeing the ville. The two experiences do not fit seamlessly into each other which brings into view the importance of telling deeper stories about the contradictions and jaggedness of lived and built narratives.

<sup>71</sup> Sennett (n 70) 1.

<sup>72</sup> Hochschild (n 70) 135.

<sup>73</sup> Tsing (n 21) 23-24; see also Fisher (n 13) 386-87.

<sup>74</sup> See Hochschild (n 70); Sennett (n 70).

Those undertaking thick descriptions of law therefore and somewhat unsurprisingly find themselves facing ‘complex conceptual structures and vast bodies of associated legal and non-legal materials’<sup>75</sup> that can be difficult to untangle and complex to understand. Carrying out thick descriptions is therefore inevitably a more challenging intellectual exercise. Thick descriptions can also involve ‘thinking, and writing about a place,’<sup>76</sup> and so in that sense examining disputes about solar infrastructure through APTEL adjudication highlights the necessity of local context in thinking about what the infrastructural change sought through the ongoing transition means for adjudication in the Indian legal context. By zooming in on that interaction, this thesis shows how law and specialist adjudication provide important mechanisms for creating legal, regulatory and administrative stability during this process.

The distinction between thin and thick accounts however is not simply about the nature or tendency of scholarly inquiry, but more importantly, is about context.<sup>77</sup> Thick descriptions of law pay close attention to the legally pluralistic contexts within which doctrines operate.<sup>78</sup> This includes paying attention not only to its precedents and/or antecedents but also a commitment to understanding the legal culture in which it manifests, takes shape and acquires legal meaning.<sup>79</sup> Understood in this way, the present study shows how legal culture has a role

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<sup>75</sup> Fisher (n 5) 625.

<sup>76</sup> Fisher (n 13) 387; see Elizabeth Fisher, ‘Back to Basics: Thinking About the Craft of Environmental Law Scholarship’ in Ole Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018); see Elizabeth Fisher and others, ‘Maturity and Methodology: Starting a Debate about Environmental Law Scholarship’ (2009) 21 (2) JEL 213; see also David Feldman, ‘The Nature of Legal Scholarship’ (1989) 52 MLR 503.

<sup>77</sup> Fisher (n 5) 624-26.

<sup>78</sup> Fisher (n 5) 623.

<sup>79</sup> Fisher (n 5) 626.

to play in fostering legal continuity during transition and how – that is, the manner in which – disputes arising from transition are reasoned and reconciled into the legal order.<sup>80</sup> APTEL adjudication is so embedded in this legal terrain that its work makes the novelty of legal disruption caused by transition both recognizable and instantly locatable in the interstices of existing frameworks that constitute this landscape.<sup>81</sup> There is a degree of legal familiarity.<sup>82</sup> Disputes before the APTEL to that end tend to cluster around appeals against tariff orders,<sup>83</sup> delays in commissioning solar projects and/ or connecting them to existing grid infrastructure,<sup>84</sup> and interpreting policy and legislative provisions.<sup>85</sup> None of this is new nor alien to the legal machinery that steers transition forward.

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<sup>80</sup> See Arthurs (n 6) 9.

<sup>81</sup> *Amplus Infrastructure Developers v Uttarakhand Electricity Regulation Commission* (APTEL, 10 Apr 2015).

<sup>82</sup> In the context of climate change litigation, see cf Chris Hilson, ‘Framing Time in Climate Change Litigation’ (2019) 9 (3) *Onāti Socio-Legal Series* 361-379; Brian Preston, ‘The Contribution of Courts in Tackling Climate Change’ (2016) 28 *JEL* 11-17; Lord Carnwarth, ‘Climate Change Adjudication After Paris: A Reflection’ (2016) 28 *JEL* 5-9; Jacqueline Peel and Hari Osofsky, *Climate Change Litigation: Regulatory Pathways to Cleaner Energy* (CUP 2017); David Markell and JB Ruhl, ‘An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?’ (2012) 64 *Florida L Rev* 15-86.

<sup>83</sup> E.g., *Siwana Solar Power Project v Haryana Electricity Regulation Commission* (APTEL, 27 Apr 2019); *Earth Solar v Punjab State Electricity Regulation Commission* (APTEL, 11 Jan 2019); *Welspun Renewables v Tamil Nadu Electricity Regulation Commission* (APTEL, 11 Nov 2019); *Surat Municipal Corporation v Gujarat Electricity Regulation Commission* (APTEL, 03 May 2018).

<sup>84</sup> E.g., *Ramnad Solar Power v Tamil Nadu Electricity Regulation Commission* (APTEL, 30 May 2019); *Omega Infraengineers v Punjab Electricity Regulation Commission* (APTEL, 21 Feb 2019).

<sup>85</sup> E.g., *Ramnad Renewable* (n 84); *JBM Solar v Haryana Electricity Regulation Commission* (APTEL, 09 Mar 2018); *Amplus Infrastructure* (n 81); *Green Energy Association v Chhattisgarh State Electricity Regulation Commission* (APTEL, 21 Aug 2019); *JSW Steel Ltd v Tamil Nadu State Electricity Regulation Commission* (APTEL, 21 Jan 2019).

Thin and thick accounts of the law do not automatically interrelate but can inform each other.<sup>86</sup> In other words, it is important to consider thick meanings of thin descriptions.<sup>87</sup> This can provide robust legal insight into what goes on in particular processes such as in an energy transition. This brings me to another point about thin and thick accounts. They play an important role in grounding legal imagination,<sup>88</sup> albeit in different capacities. While thin descriptions allow legal, administrative and regulatory processes to be made immediate sense of, thick accounts foster legal imagination by offering a scholarly account of not only what the law substantively is and what its limits are, but also of its creative possibilities.<sup>89</sup> How scholarship views, describes and engages with the legal landscape of transition and the work of adjudicative institutions embedded in it inevitably creates mental images that have implications for how the frameworks constituting this landscape are understood and operationalized in legal arguments presented before courts and tribunals. The process of adjudication weaves those images into the legal order, which in turn, impacts how the legal reality of energy transition is construed by its participants and wider society.

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<sup>86</sup> Fisher and others (n 8) 627.

<sup>87</sup> Fisher and others (n 8) 627-28; E.g., Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton University Press 2020).

<sup>88</sup> Elizabeth Fisher, 'Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars' in James Goudkamp and others (eds), *Taking Law Seriously: Essays in Honour of Peter Cane* (Bloomsbury 2022) 268.

<sup>89</sup> Fisher (n 26) 136.

That tribunals do not loom large in collective legal imagination often means that their legal significance as ‘objects’ constituted by the law and as ‘participants’ contributing to the development of law is overlooked.<sup>90</sup> This results in an inaccurate picture of their legal work. The questions scrutinized by legal scholarship therefore have implications for how lawyers and adjudicators view and engage with the nature of disputes arising from transition, and how they picture the role of tribunals in responding to them. My aim in emphasizing upon scholarship and the legal imagination of tribunals is to start a conversation about APTEL’s legal and adjudicative expertise and how that can be made more proficient. I begin by focusing on the infrastructures it deals with in the section that follows.

## 2 Towards a Thicker Legal Account of Infrastructure

Infrastructure, and energy infrastructure in particular are often viewed through promotional lenses that offer a thin account of the contexts in which they are embedded. Developmental dimensions are highlighted at the cost of seeing infrastructure as material forms that enable, structure and constitute social and economic relationships<sup>91</sup> that offer insight into its interactions with the legal and regulatory frameworks that structure and organize society. Infrastructure, as Bogojević and Zou explain, is ‘heavily dependent’ on and constitutive of local spaces where disputes emerge’.<sup>92</sup> They impart and acquire meaning in local contexts.<sup>93</sup>

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<sup>90</sup> Fisher (n 88) 259.

<sup>91</sup> See ‘Anthropology, Infrastructure, and Expertise’ in Harvey and Knox (n 21) 7-8.

<sup>92</sup> Sanja Bogojević and Mimi Zou, ‘Making Infrastructure ‘Visible’ in Environmental Law: The Belt and Road Initiative and Climate Change Friction’ (2021) 10 (1) TEL 35.

<sup>93</sup> See Harvey and Knox (n 91).

Disputes arising from the construction of solar infrastructure are part of the ongoing transition and therefore when approached from the vantage of APTEL adjudication show that there is more to thinking about infrastructures than simply viewing them as mere ‘solid, immovable objects’.<sup>94</sup>

The construction of solar infrastructure, ‘generation and co-generation’<sup>95</sup> of solar power has a substantial impact on the electricity sector. This, as chapter 3 will show, is evidenced by disputes over preferential tariff orders, delays in commissioning power projects, delays in connecting solar plants to grid infrastructure, questions about how to understand and implement the RPO, and the legitimate exercise of regulatory power by State Commissions, in addition to the liabilities, responsibilities and contractual rights it gives rise to. Solar infrastructure in particular holds a central place in the renewable energy market sought to be created through transition. This energy infrastructure is needed to support India’s domestic goals of addressing energy access and high cost of generating solar power.<sup>96</sup> The construction of solar infrastructure is, to that end, viewed as step towards creating a self-reliant and sustainable energy sector that meets India’s wider socio-economic targets.<sup>97</sup> In responding to disputes about this infrastructure, the Tribunal is not only awarding material outcomes but also in that process crafting legal understandings of solar infrastructure and how decision-making ought to be done in its regard, which in turn shapes an understanding about how regulatory bodies should act during transition.<sup>98</sup> This substantive work is especially visible in the

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<sup>94</sup> Bogojević and Zou (n 92) 36.

<sup>95</sup> Electricity Act 2003, s 86 (Functions of State Commission), s 61 (Tariff Regulations).

<sup>96</sup> See National Electricity Policy 2005; National Solar Mission.

<sup>97</sup> Standing Committee Report (n 35) [3.19]; National Electricity Policy; Electricity Act 2003, preamble.

<sup>98</sup> E.g., *Ramnad Renewable* (n 84); *Amplus Infrastructure* (n 85); *Welspun Renewable* (n 85).

Appellate Tribunal’s reasoning of appeals against tariff orders<sup>99</sup> and questions about RPOs and RECs,<sup>100</sup> which will be mapped in more detail in chapter 3.

This brings me to another point about infrastructure: it is an integral part of the collective imagination of energy transition in India.<sup>101</sup> This is perhaps made most strikingly visible by the state emphasis on building generation capacity.<sup>102</sup> It is ‘unsurprising’ therefore that energy transition and associated infrastructure are framed by promotional narratives<sup>103</sup> that harbor thin understandings of law and adjudication in them. A closer look at the process however shows that infrastructure and transition are both heavily dependent on law and adjudication in constituting them and resolving friction caused by their interaction with the legal landscape in which they are embedded. I will return to this point in chapters 4 and 5.

My simple point in making a case for a thicker legal understanding of infrastructure in picturing APTEL’s legal work is to highlight that law is involved at every step- from conception through contractual agreements, statutory tariff bidding processes, in their enforcement and implementation, in creating stable understandings of operative mechanisms, shaping and controlling regulatory discretion, to name a few examples from the case law mapped. Law and adjudication provide actors a platform to voice their concerns and to that end

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<sup>99</sup> E.g., *Tata Power Delhi Distribution Ltd v Delhi Electricity Regulatory Commission* (APTEL, 16 Apr 2019); *Siwana Power* (n 83).

<sup>100</sup> E.g., *Green Energy Association* (n 85).

<sup>101</sup> See Khilnani (n 9) on energy infrastructure and collective imagination; More broadly, see Shiv Visvanathan, *A Carnival for Science: Essays on Science, Technology and Development* (OUP India 1997); see also Shiv Visvanathan, *Theatres of Democracy: Between the Epic and the Everyday* (Chandan Gowda ed, Harper Collins 2016).

<sup>102</sup> National Solar Mission (n 1).

<sup>103</sup> Inspired by the use of this description in Bogojević and Zou (n 92) 36.

constitute crucial mechanisms for resolving disputes and stabilizing disruption.<sup>104</sup> Thin accounts of the relationship between law and infrastructure miss this legal depth and detail.

That infrastructure is viewed as concerning the built as opposed to the living environment has been the focus of legal scholarship.<sup>105</sup> It tends to ‘disappear from consciousness’ and is narrowly pictured as inert ‘solid, immovable objects’.<sup>106</sup> Bogojević and Zou suggest that this to some extent shows why there has been limited attention given to infrastructure as a site for scholarly inquiry, and also points to the limits of legal imagination in thinking about its relationship with law and adjudicative institutions.<sup>107</sup> Infrastructure however holds a central role in the ordering, functioning and possibilities for modern life.<sup>108</sup> This is evidenced by the markets it creates, the activities it facilitates, and indeed also by the friction it instigates.<sup>109</sup> To that end, a thicker picture of infrastructure and especially the construction of new infrastructure during energy transition offers inroads into thinking about the role and contributions of law and adjudication in stabilizing the disruption caused by this process and imparting it distinct legal significance and meaning.<sup>110</sup> This thesis charts some of those inroads from an analysis of APTEL case law on solar energy projects in India. With these

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<sup>104</sup> Bogojević and Zou (n 92) 36; Fisher and others (n 8) 199.

<sup>105</sup> Bogojević and Zou (n 92) 36.

<sup>106</sup> See Bogojević and Zou (n 92) 35-36.

<sup>107</sup> Bogojević and Zou (n 92) 36.

<sup>108</sup> See Bogojević and Zou (n 92) 36.

<sup>109</sup> E.g., Sanja Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Hart 2013); Tsing (n 21); see also The World Bank, *World Development Report 1994: Infrastructure for Development* (OUP, 1994) cited in Bogojević and Zou (n 92) 36.

<sup>110</sup> See Harvey and Knox (n 91).

reflections in mind, the paragraphs that follow offer a short descriptive account of the infrastructural aspects of the ongoing energy transition in India. This is needed to engage with my analysis in chapters 2 and 3.

### 3 Picturing Solar Infrastructure in India

India's ongoing energy transition is undoubtedly one of the largest and most ambitious in the world today and, solar energy – as India's National Action Plan on Climate Change<sup>111</sup> and National Solar Mission<sup>112</sup> evidence – occupies a central place in this process. India has set ambitious targets of installing 100 GW of grid-connected solar power plants by 2022, achieving 40% cumulative electric power installed capacity from non-fossil fuel-based energy sources, and reducing the emissions intensity of its GDP by 33-35% from 2005 levels by 2030.<sup>113</sup> At the time of writing this thesis, India is already far ahead on achieving these targets and meeting its commitments to the Paris Agreement.<sup>114</sup> India currently produces some of the 'cheapest

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<sup>111</sup> NAPCC (n 59).

<sup>112</sup> National Solar Mission (n 1); Solar Overview (n 57).

<sup>113</sup> National Solar Mission (n 1); Ministry of New and Renewable Energy Government of India, *India's INDC Targets* (Press Information Bureau 2016).

<sup>114</sup> Ministry for New and Renewable Energy Government of India, *Deployment of Renewable Energy* (Press Information Bureau 2019); Ministry of New and Renewable Energy Government of India, *A Path Breaking Journey in Renewable Energy Through the Last 4 Years* (Press Information Bureau 2018); Ministry of New and Renewable Energy Government of India, *Year End Review* (Press Information Bureau 2017); Ministry of New and Renewable Energy Government of India, *Year End Review* (Press Information Bureau 2016).

solar energy in the world'<sup>115</sup> and has increased its solar power capacity by 'more than eleven times over past five years'.<sup>116</sup>

In order to achieve these targets, the central government has launched various supporting schemes to encourage the generation of solar power in the country, such as the 'Solar Park' and 'Grid Connected Solar Rooftop' schemes.<sup>117</sup> It has also undertaken various policy measures, most notably through the RPO mechanism, which casts an obligation on states to purchase a certain percentage of electricity from renewable energy sources as a percentage of their total consumption of electricity.<sup>118</sup> These RPOs are further categorized as solar and non-solar RPOs. The central government has also notified an RPO trajectory and created associated monitoring and compliance mechanisms.<sup>119</sup> There are a number of other schemes, initiatives, policies and incentives being provided by the central government, a complete review of which is beyond the scope of this thesis. As mentioned earlier, this thesis only discusses that which emerges from the case law studied. My study of the APTEL in India's energy transition is set in this landscape.

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<sup>115</sup> Manu Karan, 'How India in a Short Period of Time Has Become the Cheapest Producer of Solar power' *Economic Times, India Times* (22 July 2019) <<https://economictimes.indiatimes.com/small-biz/productline/power-generation/how-india-in-a-short-period-of-time-has-become-the-cheapest-producer-of-solar-power/articleshow/70325301.cms?from=mdr>> accessed 19 May 2022.

<sup>116</sup> Solar Overview (n 57); Bharat Jairaj, 'India's Solar Capacity: Milestones and Challenges' *The Hindu* (16 Mar 2022) accessed 30 Apr 2022.

<sup>117</sup> Ministry for New and Renewable Energy Government of India, 'Grid Connected Solar Rooftop Programme' <<https://mnre.gov.in/solar/schemes>> accessed 19 May 2022; Ministry for New and Renewable Energy Government of India, 'Development of Solar Parks and Ultra Mega Solar Power Projects' <<https://mnre.gov.in/solar/schemes>> accessed 19 May 2022.

<sup>118</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commission); National Tariff Policy 2006; RPO (n 54).

<sup>119</sup> RPO (n 54).

## C RESEARCH QUESTION AND METHODOLOGY

The previous section charted historical aspects and current motivations driving India's ongoing energy transition from a legal perspective. It highlighted the need for a thicker scholarly account of the role of law during transition to inspire a more robust legal imagination of what is involved in responding to disputes associated with this process. In this section, I explain how I plan to show this in my thesis. I begin by framing my research question and setting out the scope of my thesis. I then offer reflections on my research methodology, define key non-legal terminology used, and provide an overview of the later chapters.

### 1 Framing the Research Question and Scope of Argument

Analytical legal scholarship on infrastructure in India has typically focused on the higher judiciary, that is, on high courts and the Supreme Court of India and their doctrine.<sup>120</sup> This is supplemented by anthropological, political, and policy-oriented writing with contemporary scholarship on energy infrastructure focusing either on the developmental impact of these projects on local populations<sup>121</sup> or on examining infrastructures as a subject of India's

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<sup>120</sup> Madhav Khosla, 'Supreme Court' in Devesh Kapur and others (eds), *Rethinking Public Institutions in India* (2017); Geetanjoy Sahu, *Environmental Jurisprudence and the Supreme Court: Litigation, Interpretation, Implementation* (Orient Black Swan 2014); BN Kirpal and Subramaniam Gopal (eds), *Supreme But Not Infallible: Essays in Honour of the Supreme Court of India* (OUP India 2004); Ananth Padmanabhan, 'Foundations for Sustainable Growth: India's Constitution and its Supreme Court' in Knut Jacobsen (ed), *Routledge Handbook of Contemporary India* (Routledge 2018) 48 on the Supreme Court's role in contributing to, and shaping the rights based discourse of citizen-state interaction.

<sup>121</sup> Ramesh (n 21); Ramchandra Guha, *Environmentalism: A Global History* (Penguin 2014); Mrudula Ramesh, *The Climate Solution: India's Climate-Change Crisis and What We Can Do About It* (Hachette India 2019); Arundhati Roy, 'The Greater Common Good' in Arundhati Roy, *The Algebra of Infinite Justice* (Flamingo 2002); Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Penguin 2016); see also Jean Drèze and Amartya Sen, 'A New India?' in *An Uncertain Glory: India and its Contradictions* (Penguin 2013) 9-11.

burgeoning regulatory space.<sup>122</sup> Empirical and statistical reports by think tanks, independent researchers, and international organizations add to this literature.<sup>123</sup> These materials focus on the managerial, strategic, financial, technological, developmental and policy dimensions of energy transition, which, owing to the nature of scholarly inquiry tend to be written in ‘silos’.<sup>124</sup> Then there are academic journals and magazines that regularly publish legal developments<sup>125</sup> and popular literature on renewable energy infrastructure that simplistically frame it as a panacea to energy struggles during these precarious times. Together, this scholarship offers a fairly comprehensive picture of the ongoing energy transition, however, in considering the role of law, three areas have not received adequate attention. First, is the role of legislation and the potential it holds in guiding executive and judicial understandings about energy transition;<sup>126</sup> second, is the role of tribunalised adjudication in the process; and third, is the role of legal reasoning in operationalizing energy transition.

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<sup>122</sup> Kapur and Khosla (n 23); Navroz Dubash and Bronwen Morgan, *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies* (OUP 2013); Dubash (n 21).

<sup>123</sup> E.g., Arjun Dutt and Manu Aggarwal, *State of Renewable Energy Sector: Drivers, Risks and Opportunities* (Council on Energy, Environment and Water 2018); Standing Committee on Energy (2016-17), *National Electricity Policy- A Review Thirtieth Report* (10 August 2017); Megha Kaladharan, ‘Renewable Energy in India: An Analysis of the Regulatory Environment and Evolving Policy Trends’ (*Initiative on Climate Energy and Environment, Centre for Policy Research, New Delhi*, 2016) <<http://www.cprindia.org/research/papers/renewable-energy-india-analysis-regulatory-environment-and-evolving-policy-trends>> accessed 19 May 2022; GSI Summary Report (n 21); Niti Ayog Report (n 21).

<sup>124</sup> See Gillian Tett, *The Silo Effect: Why Putting Everything in its Place isn’t Such a Bright Idea* (Little Brown 2015).

<sup>125</sup> E.g., *Renewable Energy; Energy Policy; Law, Environment and Development Journal; Journal of Energy and Natural Resources Law*.

<sup>126</sup> E.g., Dhvani Mehta, ‘The Environmental Rule of Law in India’ (DPhil thesis, University of Oxford 2017).

Tribunals such as the APTEL despite their novel and ‘highly dynamic’<sup>127</sup> nature remain surprisingly understudied. Scholarship on tribunalised adjudication in India tends to be ‘promotional’<sup>128</sup> as a result of which there is little in-depth engagement with the substantive contributions of adjudicative institutions like the APTEL in developing law. It is however only by engaging with the reasoning in its judgments that we as lawyers and law scholars can begin to view and understand its legal work and how that can be made more proficient. To that end, this thesis casts light on the day-to-day contributions of APTEL adjudication and the significance of that continuous legal engagement in the way energy transition is unfolding and being embedded into the Indian legal order, and vice versa. In doing so, it shows that the APTEL is an important site for the co-production of energy transition in India. Three inter-related questions guide this aim forward: What is the role of law and tribunalised adjudication in India’s transition to renewable energy? How are decisions rendered by specialist tribunals shaping a legal understanding of energy transition in India? What is needed to foster the proficiency of this legal work?

The scope of these questions is limited to case law concerning solar energy projects appealed before the APTEL between 2015-19. This thesis does not engage in conceptual discussions about tribunalised adjudication more broadly but instead maps a body of case law that has never been mapped before. It tells the story of energy transition in India emerging from APTEL case law.

To that end, this thesis draws inspiration from a growing body of legal scholarship that has not only emphasized upon the importance of thinking in terms of legal culture but has also

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<sup>127</sup> Warnock (n 22).

<sup>128</sup> Inspired by the use of the term in Bogojević and Zou (n 92) 36; see Sanja Bogojević, ‘Ending the Honeymoon: Deconstructing Emissions Trading Discourses’ (21) JEL 443; see Fisher (n 20).

offered a thicker picture of tribunals with rigorous attention to their legal reasoning and adjudicative processes.<sup>129</sup> A contribution of this thesis is to show how this important work helps make sense of the actual realities of adjudicating complex processes such as energy transition. I evidence that law and legal reasoning within APTEL adjudication construct understandings of acceptable solar power projects and how legitimate decisions are to be made in relation to them.<sup>130</sup> In doing so, this reasoning is embedding these projects and transition into the legal order by relating them to existing legal frameworks and settled understandings of good decision-making practices.<sup>131</sup> An energy transition such as is involved in the shift to solar energy does not take place in a dematerialized world, it is embedded in complex legal arrangements which need to be adjusted in light of this infrastructural change.<sup>132</sup> Those adjustments require careful legal reasoning and legal imagination. This process of accommodation and incorporation however occurs over a period of time which can often result in a reconfiguring or an evolution of the legal order.

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<sup>129</sup> Cane (n 22); Warnock (n 22); Fisher and others (n 8); Fisher (n 20); Elizabeth Fisher and others, 'Rethinking Judicial Review of Expert Agencies' (2015) 93 Tex L Rev 1681; Maria Lee, 'Knowledge and Landscape in Wind Energy Planning' (2017) 37 LS 3; Shibani Ghosh (ed), *Indian Environmental Law: Key Concepts and Principles* (Orient Black Swan 2019); Shibani Ghosh and others, 'Appellate Authorities under Pollution Control Laws in India: Powers, Problems and Potential' 14 Law, Environment and Development Journal 49; Bell and Fisher (n 14); Sanja Bogojević, 'EU Climate Change Litigation, the Role of European Courts, and the Importance of Legal Culture' (2013) 13 (3) Law and Policy 184; Elizabeth Fisher, 'Climate Change Litigation, Obsession, and Expertise: Reflecting on the Scholarly Response to Massachusetts v EPA' (2013) 13 (3) Law and Policy 236; Voraphol Malsukhum, 'Legal Culture, Legality and the Determination of the Grounds of Judicial Review of Administrative Action in England and Australia' (DPhil thesis, University of Oxford 2018).

<sup>130</sup> Fisher (n 129) 553; E.g., *Green Energy Association v Central Electricity Regulation Commission* (APTEL, 12 Apr 2018); *Ramnad Renewable*(n 84); *Amplus Infrastructure* (n 81); *Balarch Renewable Energy Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2018); *Welspun Renewable* (n 85).

<sup>131</sup> Fisher (n 129) 553.

<sup>132</sup> Fisher (n 129) 553.

Whilst this is in part done through legislation, it is in another part, made possible through authoritative judgments issued by courts and tribunals. Thinking about how and what the implications of incorporating socio-technical change into existing legal systems are needs legal imagination. To build this argument, I draw inspiration from STS scholarship on co-production and socio-technical imaginaries, as well as recent legal scholarship addressing the failures of legal imagination.<sup>133</sup>

## 2 Reflections on Structure and Method

Before defining some of the key non-legal terminology used in this thesis and concluding this introductory chapter, it seems pertinent that I offer reflections on my research method. At the outset, I should note that a more detailed discussion of the methodology used in this thesis will take place in chapter 2 and 3. This is to offer the reader a mental compass to navigate the legal landscape of energy transition, and the ‘hot’ and ‘cold’ circumstances<sup>134</sup> accruing in it as I chart them through these chapters. Chapters 2 and 3 draw a picture of what exists; my discussion of method therefore is appropriately placed just before commencing to show it.

The methodology of this thesis, in bringing the role and contributions of the APTEL into view involves two elements: a doctrinal map of case law and application of the science

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<sup>133</sup> Jasanoff and Kim (n 4); Sheila Jasanoff and Sang-Hyun Kim, ‘Sociotechnical Imaginaries and National Energy Policies’ (2013) 22 *Science as Culture* 189; Brian Larkin, ‘The Politics and Poetics of Infrastructure’ (2013) 42 *Annual Review of Anthropology* 327; Trevor Pinch, ‘On Making Infrastructure Visible: Putting the Non-Humans to Rights’ (2010) 40 *Camb J Econ* 77; David Robinson, ‘Energy as Critical Infrastructure’ in *The Energy Economy: Practical Insight to Public Policy and Current Affairs* (Palgrave Macmillan 2015); Harvey and Knox (n 21); ‘Environmental Infrastructures’ in Penelope Harvey and others (eds), *Infrastructures and Social Complexity: A Companion* (Routledge 2017); Ghosh (n 121) on imaginative failure; Fisher (n 9) on fostering legal imagination; see also Maksymilian Del Mar, *Artefacts of Legal Inquiry: The Value of Imagination in Adjudication* (Hart 2020).

<sup>134</sup> Michel Callon, ‘An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology’ in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998) 260-261; Elizabeth Fisher, *Environmental Law as ‘Hot’ Law* (2013) 25(3) *JEL* 347-358.

and technology studies idiom of co-production.<sup>135</sup> This section briefly sets out what is meant by these methodological elements. This may seem simplistic, but my intension here is to lay a methodological foundation that does not assume or impose legal models for an interpretive analysis of the case law studied. Methodological clarity is needed to bring the role and contributions of the APTEL in developing law during energy transition into view, and also to highlight the thickness of what that legal work entails. The doctrinal map of the legal landscape of India's energy transition and case law appealed before the APTEL is anything but simple; the complexity and overlapping nature of the frameworks and legal questions raised in the disputes before the Appellate Tribunal requires careful articulation of the analytical methods used to navigate and illuminate them, and also to consider how the legal significance and proficiency of APTEL's adjudication of these disputes can be fostered.

a. Doctrinal Analysis of APTEL Case Law

In bringing the legal present into view, I adopt a doctrinal approach to mapping case law concerning solar power projects appealed before the APTEL from 2015-19. I have selected this case law and this time period to capture the breadth of legal disputes brought before the Appellate Tribunal and to keep my analysis as current as possible given the ongoing nature of transition. These disputes reflect the ground-level challenges facing energy transition in India and the complexities of regulating and adjudicating this dynamic space. I take this approach because it allows us to view the process of energy transition bottom-up and appreciate from a worm's eye view how the adjudication of everyday legal disputes results in the construction of particular legal understandings of energy transition in India. By bringing together not just statute and precedent, but also technical knowledge, regulation and policy, the Appellate

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<sup>135</sup>

See Fisher (n 76) 28-29.

Tribunal is producing important jurisprudence about energy transition and solar infrastructure in India that is binding on itself and primary regulators. APTEL judgments are treated as final unless overturned in second appeal on a substantial question of law by the Supreme Court of India.<sup>136</sup> Given the nature of common law precedent, however, this body of case law cannot be dis-embedded from the larger set of case law on renewable energy projects from the Supreme Court of India and wider constitutional, environmental law jurisprudence in the country, by which the Tribunal is bound.<sup>137</sup> I therefore refer to higher court jurisprudence and APTEL's judgments concerning non-solar renewable energy projects where necessary.

There are 165 relevant cases pertaining to solar infrastructure in India from 2015-19 appealed before the APTEL. These cases, as chapter 3 will show, broadly cluster around three key areas of dispute- tariff orders (102), delays in grid connectivity (26) and the interpretation of specific statute, contract and policy provisions (37). I do not refer to all these cases in my discussion and analysis, but to a select few that are best able to communicate APTEL's contributions in stabilizing disruptions caused by transition. There are number of cases with similar factual circumstances marked in the footnotes to this thesis for further reading.

#### b. Co-productionist Analysis

Doctrinal methods on their own however tend to be removed from the wider contexts in which law, adjudication and legal reasoning are embedded.<sup>138</sup> This context is needed to develop a

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<sup>136</sup> Electricity Act 2003, s 120 (5) (Procedures and powers of the Appellate Tribunal), s 125 (Appeal to Supreme Court).

<sup>137</sup> Constitution of India, Art 141 (Law declared by Supreme Court binding on all courts within territory of India).

<sup>138</sup> William Twining, 'Academic Law and Legal Development' [1975] Taylor Lectures: University of Lagos Law Faculty 20.

thicker account of APTEL's contributions and legal significance in this legal landscape. I thus complement my doctrinal study with the insights provided by analytical lens of co-production.<sup>139</sup> Jasanoff defines co-production as:

'shorthand for the proposition that the ways in which we know and represent the world are inseparable from the ways we choose to live in it. Knowledge and its material embodiments are at once products of social work and constitutive of forms of social life; society cannot function without knowledge any more than knowledge can exist without appropriate social supports. Scientific knowledge, in particular...both embeds and is embedded in...all the building blocks of what we term the social. The same can be said...of technology'<sup>140</sup>

The insight provided by this framework is hardly new to lawyers and law scholars who, as Fisher observes, 'learn early on that law creates frameworks for identifying problems and what should be done about them'.<sup>141</sup> The co-production framework however, in the present context, makes three points that are not necessarily obvious without it: first, that frames of understanding are not fixed and that their application is shaped by the legal culture in which they are embedded and operate.<sup>142</sup> Co-production makes clear that responding to disputes, both novel and routine, involves making choices about the application of frameworks, and that those choices are a product of legal culture. This includes how and what kind of knowledge is brought together. It captures the essence of legal reasoning.<sup>143</sup>

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<sup>139</sup> Jasanoff and Kim (n 4) 26-27.

<sup>140</sup> Jasanoff (n 4) 2-3.

<sup>141</sup> Fisher (n 4) 37.

<sup>142</sup> Fisher (n 4) 37; see Sheila Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton University Press 2005); see also Liz Fisher, 'Environmental Law, Scholarship, and Epistemic Responsibility' (2022) 33 JEL 521.

<sup>143</sup> Fisher (n 4) 37.

Following from this is a second point co-production makes clear. APTEL's legal reasoning is not only crafting an understanding of the legal present but also of the future. Its adjudicative competence in reasoning and responding to disputes appealed before it therefore needs robust scholarly engagement. Co-production shows that the way the legal present is understood, in all of its rich complexity, is part of the legal and energy future we are transitioning toward. This future is 'not something existing out there but is actually being produced through legal techniques, interventions'<sup>144</sup> and legal reasoning. In other words, craft the statute or legal doctrine differently and we craft responses to the problems we deal with differently as well.<sup>145</sup>

By viewing APTEL's legal work through the lens of co-production, I show its significance to debates about law, infrastructure and energy futures. Before reflecting on this further, I briefly digress into personal history to share the deeper intellectual interest that draws me to the co-production framework to bring into view the entangled interfaces between law, infrastructure and society. Prior to my graduate and doctoral studies at Oxford, I had written a paper that examined India's energy and environmental policies. In particular, as I analyzed the circumstances around the Kudankulam atomic power project in India from different vantages, I was inspired to examine from the legal perspective both the ideas and institutions that underpin the potential impact of renewable energy projects on society and how legal systems could provide a mitigating factor. That experience taught me that the energy-environment binary in India depicts a collision between aspirations of an ambitious government and environmental concerns flagged by social agents, and that law played a formative role in

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<sup>144</sup> Elen Stokes, 'Wanted: Professors of Foresight in Environmental Law!' (2019) 31 JEL 175, 178; see Elizabeth Fisher, 'Making Sense of the WTO Sanitary and Phytosanitary Agreement: An Essay about Scholarly Expertise' in Maria Weimer and Anniek de Ruijter (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Bloomsbury 2017) 137.

<sup>145</sup> Fisher (n 4) 38.

stabilizing the frictions and relationship between energy and society in this chaotic paradigm. In many ways, it is this intellectual interest in understanding how law and legal institutions make sense of infrastructural projects that inspired my doctoral journey and drew me to the insights offered by the co-production framework. While I refer to co-production at different points in this thesis, its application is seen in chapter 4 in my discussion about APTEL's capacity to 'root' energy transition into the legal order, and the element of futurity involved in this legal work. The idea of rooting shows the activeness in APTEL's legal work and makes co-production visible. This highlights the need for legal imagination in thinking about APTEL's reasoning and adjudicative processes can be made more proficient.

This brings me to my third point. The limits of legal imagination, Arthurs observes, are often fixed by the basic assumptions we make when approaching a subject.<sup>146</sup> How we mentally conceive a subject will tend to be replicated across situations, in our ideas of law, legal institutions and the relationship of laymen to them.<sup>147</sup> The role and contributions of tribunals in that sense is typically pictured in pragmatic terms. Their role in developing the law, stabilizing legal disruption, and harmonizing different kinds of knowledge in their reasoning is rarely considered because that is not what we conceive the legal work of tribunals to be about. This results in an inaccurate picture of the role of tribunalised adjudication during transformative change and the kinds of disputes resulting from energy transition. Discussions about tribunalised adjudication nearly always frame it as a tool, an instrument for efficient, expert dispute resolution. By thinking in terms of co-production therefore, I show that APTEL's decisions are not isolated from the broader social and political universe in which it is embedded, and therefore I offer a thicker account of what pragmatism in this context entails.

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<sup>146</sup> Arthurs (n 6) 10.

<sup>147</sup> Arthurs (n 6) 10.

APTEL's embeddedness in Indian legal culture and in the landscape of the ongoing energy transition as the later chapters will show in more detail, shows that it is in responding to disputes arising from and in relation to transition, not only producing important jurisprudence about solar power projects and how regulatory decision-making ought to be done in that regard, and therefore developing the corpus of law, but is owing to that embeddedness, co-producing an understanding of energy transition in India that is rooted in Indian legal culture. It is in this sense, a site for the co-production of energy transition in India. A related motivation in applying this scholarly discourse in my thesis is to recognise its existence and significance in expanding our legal imagination of tribunalised adjudication during transformative change. To put differently; thinking about energy transition ought to be connected more closely to the legal frameworks and institutions that embed it into the legal order.

### 3 Key Definitions

Before proceeding to offer an overview of the thesis, I should at this point, define two key non-legal terms used in this thesis. There is a rich scholarship available on each of these topics, some of which is flagged in the footnotes of this section. My discussion of these terms here is brief, and only to the extent necessary to understand and engage with the analysis in later chapters.

#### a. Renewable Energy Transition

The transition to renewable energy refers to the gradual shift in a country's economic activities based on fossil-fuels to an economy that is based partly on or supplemented by renewable

energy sources.<sup>148</sup> This typically involves long-term structural changes to the primary energy system of a country.<sup>149</sup> Recently, this transition has become necessary from an international perspective to limit global warming and reduce the risks of extreme weather events and irreversible damage to the environment resulting from climate change.<sup>150</sup>

In India, as the previous sections have shown, this transition has been framed in terms of its implications for the country's socio-economic future, with an emphasis on domestic concerns for energy security and equitable access.<sup>151</sup> Solar energy and building associated generation capacity occupy a central place in this process.<sup>152</sup> While fossil fuels continue to be the major energy carrier in the country, there has been a remarkable increase in solar capacity over the recent years.<sup>153</sup> New solar infrastructure has significantly contributed to this growth, but what this has also done is place a series of pressures on existing institutions and electricity infrastructure, resulting in a range of disputes before courts and tribunals.

This is a reminder that energy transitions are complex socio-technical processes taking place in a materialized world with a significant legal framework.<sup>154</sup> In thinking about the role

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<sup>148</sup> Frank Urban, *Low Carbon Transitions for Developing Countries* (Routledge 2014) 33.

<sup>149</sup> Smil (n 21); See generally, Nick Jenkins, *Energy Systems: A Very Short Introduction* (OUP 2019); Nick Jelley, *Renewable Energy: A Very Short Introduction* (OUP 2020) 119-132.

<sup>150</sup> Jelley (n 149); Paris Agreement (n 114); see also Daniel Yergin, 'Climate Map' in *The New Map: Energy, Climate, and the Clash of Nations* (Penguin 2021) 377-431.

<sup>151</sup> National Solar Mission (n 1).

<sup>152</sup> National Solar Mission (n 1).

<sup>153</sup> Ministry for New and Renewable Energy Government of India, *Generation of Solar Power* (Press Information Bureau 2019); Ministry for New and Renewable Energy Government of India, *Renewable Energy Sector Makes Rapid Strides in 2019* (Press Information Bureau 2020).

<sup>154</sup> Jasanoff and Kim (n 4) 19.

of law and tribunalised adjudication during energy transition, therefore, it is important to be mindful of how we as lawyers and law scholars imagine energy transition and the role of law and adjudication in it.<sup>155</sup> Law is typically viewed as an instrument for change- as a tool to secure particular ends.<sup>156</sup> This view tends to blinds us to the substantive contributions of law and adjudication during energy transition. Disputes resulting from transition reveal the complex social arrangements that constitute the legal landscape in which transition is taking place and draw attention to the fundamental role of tribunals in stabilizing this disruption. Engaging with these challenges and institutions is necessary to achieve desired energy futures.

b. Socio-technical Imaginaries

‘New energy futures’ sought through transition, ‘will need to reconfigure the physical deep structures of civilization’, and part of that reconfiguration concerns science, technology and state as embodied in socio-technical imaginaries.<sup>157</sup> Jasanoff and Kim define such imaginaries as ‘institutionally stabilized and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’.<sup>158</sup> The role of law in these imaginaries, Fisher observes, is a ‘substantive and constitutive’ one.<sup>159</sup>

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<sup>155</sup> Fisher (n 20).

<sup>156</sup> Elizabeth Fisher, ‘Unpacking the Toolbox: Or Why the Public/ Private Divide is Important in EC Environmental Law’ in Mark Freedland and Jean-Bernard Auby (eds), *The Public Law/Private Law Divide: Une Entente Assez Cordiale?* (Hart 2006).

<sup>157</sup> Fisher (n 156); Fisher (n 20) 531.

<sup>158</sup> Jasanoff and Kim (n 4) 4.

<sup>159</sup> Fisher (n 20) 553.

This is not just because of the way law frames understandings of energy transition, solar infrastructure, and what constitutes acceptable decision-making in relation to such technology, but also because the legal order is a major source of stability during transformative change.<sup>160</sup> That energy transition causes legal disruption is clear from the types of dispute brought before the APTEL, but the process of adjudicating those disputes in the APTEL is a means for restoring stability and legal certainty, and incorporating that disruption into the legal order- which can also result in the reconfiguration of that legal order.<sup>161</sup> Thoughtful legal reasoning is therefore crucial- the way a problem is framed and reasoned impacts how it is incorporated into the legal order. The analysis in chapters 4 and 5 to that end, not only highlights the need for taking law and tribunalised adjudication in relation to the imaginaries discourse seriously, but also in considering the kind of legal reasoning and imagination needed to render that intellectual engagement. Thinking about the adjudication of energy transition in terms of socio-technical imaginaries therefore highlights the different ways in which law and infrastructure intertwine, are culturally embedded, and are framed by a collective legal imagination.<sup>162</sup> It not only offers insight into the national imaginary of energy transition in India but also shows what it means for a society to be in transition from the perspective of law and adjudication.

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<sup>160</sup> Fisher (n 20) 528-29, 553.

<sup>161</sup> Fisher (n 20) 553.

<sup>162</sup> Elizabeth Fisher, *Imagining Technology and Environmental Law* in Roger Brownsword and others (eds), *Oxford Handbook of Law, Regulation and Technology* (OUP 2016).

#### 4 Significant and Substantial Contribution to Knowledge

My thesis will make a significant and substantial contribution to the literature and field in three main ways. First, this thesis maps a body of case law that has never been mapped before and makes an important first step towards building analytical legal scholarship on the role of law and tribunalised adjudication in India's energy transition that focuses on the APTEL.

Second, Indian legal scholarship has tended to focus on the practice and doctrine of state level high courts and the Supreme Court of India. Literature on contemporary tribunals in the country remains thin and promotional in nature. Tribunals are typically contemplated in instrumental terms, that is, as institutions established to alleviate the burden of litigation in higher courts tasked with resolving technical questions and awarding material remedies. A thin understanding of its adjudicative expertise persists. The contributions of tribunals in developing the law, stabilizing legal disruption, and harmonizing different knowledge practices in their reasoning are rarely considered. To that end, this thesis makes a significant contribution by offering thicker legal account of what this legal work entails. By showing that the energy transition in India is being co-produced through APTEL judgments, this thesis tells a deeper story of how adjudicating everyday disputes constructs formative legal understandings not only about the infrastructure and processes in question but also of how they relate to the Indian legal order.

Third, this thesis makes an argument about furthering the legal imagination of tribunalised adjudication. By thinking in terms of co-production, this thesis argues that APTEL's contributions in making sense of the legal present is also crafting the legal future. Taking this legal present and how it is being understood and embedded into the legal order ought to be part of conversations about securing energy futures. This thesis shows that

APTEL's legal work is active, important and formative; by bringing these contributions into view, it illuminates what has been hiding in plain sight.

## D OVERVIEW OF LATER CHAPTERS

This section offers a broad overview of the later chapters of this thesis, outlining in particular the arguments developed in them. The later chapters are broadly grouped into two parts- first, shows what constitutes the legal present, that is the existing reality. This is charted in chapters 2 and 3. The second part comprising chapters 4 and 5 focuses on the ought, that is, it considers what this thick picture of the legal present means for thinking about the legal work of adjudicative institutions in crafting legal futures. The thesis concludes in chapter 5 with a return to the legal present and reflections on the implications of my analysis for re-thinking and re-positioning how we as lawyers and law scholars view pragmatic legal institutions in our collective legal imagination. What follows is a more detailed account of the content of these chapters.

Chapter 2 is about the APTEL. It illustrates APTEL's role and significance to energy transition in India. I begin by sketching the 'legal' landscape in which the APTEL is positioned. Here, I outline the constitutional, legislative, policy, and regulatory frameworks involved, and show the legal significance of the Appellate Tribunal as both an 'object' of Indian legal culture and active 'participant' in it.<sup>163</sup> By studying the APTEL as an 'object' and 'subject' of Indian legal culture, I encourage the reader to 'rethink and reimagine'<sup>164</sup> how we as lawyers and law scholars tend to think about tribunals as legal institutions and understand their role in making sense of transformative change. After introducing the APTEL, I introduce the concept of 'co-production' as an analytical lens to view the tribunal's substantive contributions to the law. By mapping these frameworks, I draw attention to the legal detail and thickness of the legal culture

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<sup>163</sup> Fisher (n 88).

<sup>164</sup> Fisher (n 163).

in which the APTEL operates, and by thinking in terms of co-production, I show that its decisions are not isolated from the broader social and political universe in which it is embedded.

Chapter 3 maps case law concerning solar power projects appealed before the APTEL between 2015-19. It draws on the reasoning in 165 relevant reported cases to show the Appellate Tribunal's contributions in framing substantive legal understandings about solar infrastructure, energy transition, and the regulation thereof. In this chapter, I argue that energy transition as a 'legally disruptive process'<sup>165</sup> is especially disruptive of APTEL adjudication. Using Michel Callon's terminology, I draw a mental picture of these disputes as 'hot' and 'cold' circumstances generated by the process of transition.<sup>166</sup> The chapter studies the different ways in which the Appellate Tribunal responds to or 'cools down'<sup>167</sup> the 'heat' of these disputes. It maps the types of regulatory decisions appealed and APTEL's responses to them, to show the different ways in which its decisions create legal, administrative and regulatory stability during energy transition, and contribute to developing the law. While chapter 2 focused on the APTEL, this chapter focuses on its 'legal work'<sup>168</sup> and on bringing into view its

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<sup>165</sup> Fisher and others (n 8) 175.

<sup>166</sup> Callon (n 134) 260-261; Fisher (n 134).

<sup>167</sup> Callon (n 166) 262.

<sup>168</sup> Karl Llewellyn, 'The Normative, the Legal, and the Law-Jobs: The Problem of Juristic Method' (1940) 49 Yale L J 1355, 1356-57.

‘everyday’<sup>169</sup> contributions to the process of energy transition with an aim to offer the reader a feeling of the legal ‘thickness’<sup>170</sup> of this legal work.

Chapters 2 and 3 focus on mapping and bringing into view what exists. That is, the ‘is’. Chapter 4 transitions into a discussion of the ‘ought’ by considering the nature of APTEL’s expertise in responding to legal disruption and making its ‘adjudicative competence’ visible. The conceptual architecture of this chapter is inspired by Fisher and Shapiro’s study of expert public administration<sup>171</sup> and Warnock’s ‘interactional theory’ for specialist adjudication.<sup>172</sup> This chapter makes APTEL’s adjudicative competence visible by unpacking its expert adjudicative capacity in responding to the hot and cold circumstances mapped in chapter 3. The first part of this chapter constitutes 2 sections: a discussion of APTEL’s ‘expert adjudicative capacity’ and a closer look at the accountability measures embedded in that capacity. My discussion of these measures is tied to the frameworks mapped in Chapter 2.

The second part of the chapter draws on this thick explanation in thinking about the nature and coordination of the Appellate Tribunal’s contributory and interactional expertise. It argues that the legal significance of the APTEL’s adjudicative expertise must be viewed in light of the intellectual challenges raised by the disputes mapped in chapter 3, including the need to engage with diverse and overlapping frameworks, legal, technical, financial and

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<sup>169</sup> Bell and Fisher (n 14).

<sup>170</sup> Elizabeth Fisher, ‘Through ‘Thick’ and ‘Thin’: Comparison in Administrative Law and Regulatory Studies Scholarship’ in Peter Cane and others (eds), *Oxford Handbook of Comparative Administrative Law* (OUP 2020).

<sup>171</sup> Elizabeth Fisher and Sidney Shapiro, *Administrative Competence: Re-imagining Administrative Law* (CUP 2021).

<sup>172</sup> Warnock (n 22).

economic knowledge during adjudication.<sup>173</sup> This chapter shows that APTEL's legal work is so much more substantive, context-oriented, and thicker than that conventionally pictured by lawyers and law scholars. Recognising these contributions acknowledges the powerful role of law and adjudication during energy transition. This makes sure that changes associated with energy transition are reflected in the law, and vice versa. APTEL's capacity to do so proficiently therefore matters.<sup>174</sup> Its competence matters.

With this picture in mind, chapter 5 makes a step towards a thicker legal imagination of tribunalised adjudication during energy transition and the problems it addresses when reasoning about the law. The chapter explores the mental images that shape and limit our legal imagination of APTEL's legal work. Sidelining tribunalised adjudication in analytical legal scholarship has resulted in limited engagement with their legal reasoning and therefore also, a limited understanding of how their decisions are fed into the legal order, and vice versa. This has resulted in their importance and everyday legal significance in responding to legal disruption becoming largely invisible to the legal community. This invisibility has created particular intellectual challenges in thinking about how to foster the adjudicative competence of institutions like the APTEL, that are, as the previous chapters have shown, substantively shaping the legal, administrative and regulatory realities of energy transition and associated infrastructural change. These challenges include how to make legal sense and mentally picture these institutions and their contributions in developing the law.

I argue that pushing the legal imagination of APTEL adjudication is fundamental to fostering its adjudicative expertise in dealing with the legal disruption caused by energy transition. APTEL's capacity to root disruption into the legal order depends on its capacity for

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<sup>173</sup> See Harry Arthurs, *'Without the Law': Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) x.

<sup>174</sup> Fisher and Shapiro (n 171) 25.

thoughtfulness in legal reasoning. This thoughtfulness is at the heart of its expert capacity to stabilize legal disruption. The chapter considers the role of legal scholarship in shaping the legal imagination of tribunalised adjudication and its contributions to legal development. It argues that what APTEL's legal work is viewed as, and imagined to be, will directly relate to the ways in which its adjudicative competence is fostered. This impacts how energy transition is legally understood and rooted into the Indian legal order. After descriptively charting what ought to exist and how a more robust legal imagination of APTEL's legal work can be fostered, the chapter concludes this thesis with a return to the legal present, that is, the real world. It considers the implications of the analysis in this thesis in framing a thicker understanding of pragmatic legal institutions.

My aim in this thesis therefore is to illuminate and make visible APTEL's role and contributions in India's transition to renewable energy. To see what is in front of one's nose however needs a constant struggle.<sup>175</sup> Chapter 2 makes an important first step towards this by mapping the legal landscape of this energy transition, and positioning the Appellate Tribunal in it as an object and active participant in it.

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<sup>175</sup> George Orwell, 'In Front of Your Nose' in *Narrative Essays 1903-1950* (Harvill Secker 2009).

## CHAPTER 2:

# APTEL, INDIAN LEGAL CULTURE AND THE CO-PRODUCTION OF ENERGY TRANSITION IN INDIA

### A INTRODUCTION



1. *The Appellate Tribunal for Electricity in New Delhi, India*

The Appellate Tribunal for Electricity (‘APTEL’ or ‘Tribunal’) is a statutory body established to hear appeals against orders of the adjudicating officer or central/state electricity regulatory commissions (‘Appropriate Commissions’).<sup>1</sup> Appeals against the Tribunal’s decisions can only be made before the Supreme Court of India on substantial questions of law.<sup>2</sup> This uniquely positions the APTEL as a key appellate authority empowered to adjudicate upon disputes resulting from energy transition in India.

Located in the prestigious Central Government Offices (‘CGO’) complex in the heart of New Delhi, the APTEL, unlike other tribunals,<sup>3</sup> has a surprisingly unassuming presence.

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<sup>1</sup> Electricity Act 2003, s 121 (Power of the Appellate Tribunal).

<sup>2</sup> Electricity Act 2003, s 125 (Appeal to Supreme Court); Code of Civil Procedure 1908, s 100 (Second Appeal).

<sup>3</sup> In comparison to the towering physical presence of the National Green Tribunal (‘NGT’), Central Administrative Tribunal (‘CAT’) and National Company Law Tribunal (‘NCLT’) in the national capital.

Tucked between offices of two of India's largest electricity distribution companies, the Rural Electrification Corporation ('REC') and the National Thermal Power Corporation ('NTPC'), APTEL's entrance is marked by a small, easy-to-miss name board. Inside, however, its presence cannot be ignored. The Appellate Tribunal occupies offices on three of the seven-storied building. The APTEL's geographic location is strikingly similar to its conceptual location in the Indian legal landscape- at the center of action but hidden in plain sight.

This chapter is about the APTEL. My aim is to illustrate its role and significance to energy transition in India. I begin by mapping the 'legal' landscape in which it is positioned. Here, I outline the constitutional, legislative, and policy frameworks involved, and show the legal significance of the Appellate Tribunal as both an 'object' of Indian legal culture and active 'participant' in it.<sup>4</sup> This often overlooked, but conceptually significant distinction, illustrates the institutional nature of the APTEL's contributions to the ongoing transition. By studying the APTEL as an 'object' and 'participant' in Indian legal culture, I encourage the reader to 'rethink and re-imagine'<sup>5</sup> how we as lawyers and law scholars tend to think about tribunals as legal institutions and understand their role and contributions during transformative change.<sup>6</sup>

After introducing the APTEL, I then introduce the concept of 'co-production'<sup>7</sup> as an analytical lens to view the Tribunal's substantive contributions to law. While in the previous

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<sup>4</sup> See Elizabeth Fisher, 'Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars' in James Goudkamp and others (eds), *Taking Law Seriously: Essays in Honor of Peter Cane* (Bloomsbury 2022) 271-76.

<sup>5</sup> Fisher (n 163) 276-79.

<sup>6</sup> See Joanna Bell and Elizabeth Fisher, 'Exploring a Year of Administrative Law Adjudication in the Administrative Court' (2021) *Public Law* 505.

<sup>7</sup> Sheila Jasanoff (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004) 2-3.

section, I draw attention to the ‘legal detail’ and ‘thickness’ of the legal culture in which the APTEL operates, here, by thinking in terms of co-production, I show that its decisions are not isolated from the broader social and political universe in which it is embedded.

Co-production can be understood as the process of ‘framing’ or providing ‘interpretive context’.<sup>8</sup> Legal knowledge in that sense is significant because it frames an understanding of how the world around us is to be understood and lawfully acted upon. I argue that in deciding the disputes appealed before it, the Appellate Tribunal is generating legal knowledge. It is not only developing the law but also co-producing an understanding of energy transition that is embedded in Indian legal culture. It is a site for the co-production of energy transition in India.

Three points to be made before starting. First, although I introduce the concepts of legal culture and co-production in the previous chapter, this chapter provides a more detailed account of the concepts in the context of the Indian legal order. My aim is not to be exhaustive,<sup>9</sup> rather, I want to show the story of energy transition emerging from the legal reasoning embedded in APTEL’s judgments concerning solar energy infrastructure vis-à-vis existing legal frameworks, i.e., the ‘everyday connections’<sup>10</sup> made between continuity and change through legal reasoning. These connections are an important intellectual resource in helping lawyers and law scholars understand what energy transition means for the law, and vice versa. They also bring into view the range of intellectual challenges associated with adjudicating upon these

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<sup>8</sup> Elizabeth Fisher, ‘The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers’ (2012) 1 TEL 43, 51-52.

<sup>9</sup> For focused accounts of these concepts see David Nelken, ‘Thinking About Legal Culture’ (2014) 1 Asian J Law & Society 1-20; Jeremy Webber, ‘Culture, Legal Culture, and Legal Reasoning: A Comment on Nelken’ (2004) 29 Aus J Legal Phil 27; Roger Cotterrell, *Oxford Handbook of Comparative Law and Legal Culture* (OUP 2006).

<sup>10</sup> See Susan Silbey, ‘After Legal Consciousness’ (2005) 1 Annual Review of Anthropology 323, 346-48; Nelken (n 9) 261.

disputes, help recognize the boundaries of our legal imagination, and encourage a conversation about how the APTEL's proficiency in doing this work can be fostered.

These connections appear disparate at first, and understandably so. The word 'transition' suggests something linear- the process of moving from one point to another in a smooth and straightforward manner. The nature of these connections however does not fit with that mental picture, instead, they challenge it by telling a different story. These connections show that energy transition, especially in the legal landscape, is fraught with conflict; legal development in this space is responsive and uneven. Transition is not a 'linear process', but looks more like a 'bag'<sup>11</sup> where different legal objects, words, and processes come together to tell a story about how change materially unfolds in particular societies.<sup>12</sup> In other words, these connections illustrate how energy transition acquires legal form, is stabilized, and makes itself visible in particular legal cultures.

Second, there is a lot more that can be said about the Appellate Tribunal that this chapter does not touch upon, for example, its structural challenges, levels of funding, case load etc. There is rich general legal scholarship on these 'practical issues' facing tribunals from a number of jurisdictions.<sup>13</sup> The tendency of focusing on the 'pragmatic nature'<sup>14</sup> of tribunals however, has resulted in them being treated as only functional legal objects. This isolates them

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<sup>11</sup> Ursula Le Guin, *The Carrier Bag Theory of Fiction* (Ignota Books 2019) 153.

<sup>12</sup> Le Guin (n 11) 150.

<sup>13</sup> See Arijeet Ghosh and others, *Reforming the Tribunals Framework in India: An Interim Report* (Vidhi Centre for Law and Policy 2018); Brian Preston, 'Characteristics of Successful Environmental Courts and Tribunals' (2014) 26 JEL 365; See also Gitanjali Gill, 'A Green Tribunal for India' (2010) 22 JEL 461.

<sup>14</sup> Fisher (n 163) 259.

from the wider contexts in which they operate and renders a ‘thin account’<sup>15</sup> of their substantive contributions to the law.

Recent legal scholarship has shown that there is more to this picture- by engaging with the ‘substance’ of tribunalised adjudication and accounting for the broader cultural and institutional contexts in which tribunals are embedded,<sup>16</sup> this scholarship offers a thicker account of the day-to-day contributions of tribunalised adjudication in developing law and shaping our understanding and engagement with the changing world around us. My analysis is inspired by that scholarship.<sup>17</sup> There is indeed also a great deal of literature on the APTEL’s relationship with regulatory authorities.<sup>18</sup> However, my focus here is not on that broader ‘regulatory space’.<sup>19</sup> Instead, I examine how the APTEL as an expert, inter-disciplinary tribunal, reasons and resolves disputes resulting from energy transition in India.

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<sup>15</sup> Elizabeth Fisher, ‘Through ‘Thick’ and ‘Thin’: Comparison in Administrative Law and Regulatory Studies Scholarship’ in Peter Cane and others (eds) *Oxford Handbook of Comparative Administrative Law* (OUP 2020) 14; See also Theodore Porter, ‘Thin Description: Surface and Depth in Science and Science Studies’ (2012) 27 *Osiris* 209.

<sup>16</sup> See Elizabeth Fisher, ‘Back to Basics: Thinking About the Craft of Environmental Law Scholarship’ in Ole Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018) 29.

<sup>17</sup> Bell and Fisher (n 6); Sanja Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Hart 2013); Peter Cane, *Administrative Tribunals and Adjudication* (Hart 2009); Ceri Warnock, ‘Reconceptualising Specialist Environment Courts and Tribunals’ (2017) 37 *LS* 391; Elizabeth Fisher and others, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80 *MLR* 173; Elizabeth Fisher, ‘Law and Energy Transitions: Wind Turbines and Planning Law in the UK’ (2018) 38 *OJLS* 528; Elizabeth Fisher and others, ‘Rethinking Judicial Review of Expert Agencies’ (2015) 93 *Tex L Rev* 1681; Chris Hilson, ‘Framing Time in Climate Change Litigation’ (2019) 9 *Oñati Socio Legal Series* 361-379; Maria Lee, ‘Knowledge and Landscape in Wind Energy Planning’ (2017) 37 *LS* 3; see Shibani Ghosh (ed), *Indian Environmental Law: Key Concepts and Principles* (Orient Black Swan 2019); see also Shibani Ghosh and others, ‘Appellate Authorities under Pollution Control Laws in India: Powers, Problems, and Potential’ (2014) 14 *Law, Environment and Development Journal* 49.

<sup>18</sup> See Devesh Kapur and Madhav Khosla (eds), *Regulation in India: Design, Capacity, Performance* (Hart 2019); Ankit Bhardwaj and Radhika Khosla, ‘Superimposition: How Indian City Bureaucracies are Responding to Climate Change’ (2021) 4 (3) *Environment and Planning E: Nature and Space* 11.

<sup>19</sup> Leigh Hancher and Michael Moran, ‘Organizing Regulatory Space’ in Leigh Hancher and Michael Moran (eds), *Capitalism, Culture and Economic Regulation* (OUP, 1989) on the use of the regulatory space metaphor; see also Bronwen Morgan and Karen Yeung, *An Introduction to Law and Regulation* (CUP 2007) 59-68; For an insightful account of Indian regulatory institutions and their relationship with

Third, although this chapter draws on co-production literature from Science and Technology Studies it is not a study of that scholarship. My analysis is interpretive, and is addressed to members of the legal community.<sup>20</sup> By showing the co-produced nature of energy transition in India, I want to draw attention to the ‘two-way feedback’<sup>21</sup> between transition and society that occurs during adjudication in the APTEL.<sup>22</sup> This feedback grounds the ‘legal disruption’<sup>23</sup> caused by energy transition by embedding it into existing legal frameworks, and as such, results in the incorporation of energy transition into the legal order as a whole. Understanding the nature of this feedback is also important in viewing and fostering the APTEL’s adjudication competence- a point I will return to in more detail in chapter 4. Before I begin mapping the legal landscape of energy transition in India, however, and as mentioned in the previous chapter, I offer a detailed account of my method of mapping, and why I adopt this approach to charting this landscape.

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new infrastructure see Navroz Dubash, ‘New Regulatory Institutions in Infrastructure: From Depoliticization to Creative Politics’ in Devesh Kapur and others (eds), *Rethinking Public Institutions in India* (OUP India 2017); Navroz Dubash and others (n 19); see also Navroz Dubash and Bronwen Morgan, *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies* (OUP 2013).

<sup>20</sup> See Fisher (n 16); see also Elizabeth Fisher and others, ‘Maturity and Methodology: Starting a Debate about Environmental Law Scholarship’ (2009) 21 (2) JEL 213; David Feldman, ‘The Nature of Legal Scholarship’ (1989) 52 MLR 503.

<sup>21</sup> Inspired by a fascinating talk by Professor Ceri Warnock about her book ‘Environmental Courts and Tribunals’ in Feb 2021 in which she describes environmental courts as ‘laboratories of legal magic’.

<sup>22</sup> See generally Sheila Jasanoff ‘Future Imperfect’ in Sheila Jasanoff and Sang-Hyun Kim (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015).

<sup>23</sup> Fisher (n 17) 177.

## B SOME REFLECTIONS ON MAPPING AS A METHOD

### 1 Orientation

‘Where would we be without a map? The obvious answer is that we would be lost and ‘disoriented’. What most of us require from a map is orientation, the position or direction of a place...’<sup>24</sup>

In this thesis, I navigate a body of case law that has never been mapped before and tell the story of a tribunal that has been largely overlooked in legal scholarship. To that end, it felt necessary that I adopt a methodological approach that would allow me, before anything else, to position and orient the reader in the landscape in which the APTEL is embedded. To provide orientation is the primary function of a map.<sup>25</sup> Yet that orientation, I must acknowledge, is not neutral. In this chapter, for example, I position the reader in the ‘legal landscape’ of India’s ongoing energy transition. This choice is motivated by the story I want to tell and is influenced by the structures, instruments and contextual considerations brought up in the case law mapped.

The use of ‘legal landscape’ to that end, inevitably conjures up a mental image of this space based on a set of assumptions about the law arising out of legal education and training.<sup>26</sup> These mental pictures exert a powerful hold over the legal imagination of lawyers, law scholars and concerned adjudicators. The term ‘map’ in that sense also conjures up a set of figurative connotations about the world, ranging from perspectives brought to mind by road-maps or the

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<sup>24</sup> Jerry Brotton and Nick Millea, *Talking Maps* (Bodleian Library University of Oxford 2019) 17.

<sup>25</sup> Brotton and Millea (n 24) 17; see also James Akerman, ‘Finding Our Way’ in James Akerman and Robert Karrow Jr (eds), *Maps: Finding Our Place in the World* (University of Chicago Press 2007) 19; See also Claire Dobbin, *London Underground Maps: Art, Design and Cartography* (Ashgate 2012).

<sup>26</sup> See Liz Fisher, ‘Environmental Law, Scholarship, and Epistemic Responsibility’ (2022) 33 JEL 521; Elizabeth Fisher, ‘Sciences, Environmental Laws, and Legal Cultures: Fostering Collective Epistemic Responsibility’ in Emma Lees and Jorge Viñuales (eds), *Oxford Handbook of Comparative Environmental Law* (OUP 2019).

use of maps as ‘strategies’,<sup>27</sup> my use of the term however is not that broad but is simply used to construct a mental image of the frameworks that constitute the repertoire of the APTEL’s intellectual toolbox, that is, to show the processes, actors, and sites of dispute, and assemble a sense of its ‘position’ and ‘place’ in viewing, imagining, navigating and engaging with the ‘legal connectors and catalysts’<sup>28</sup> of this space in a map-like way. Mapping this legal terrain therefore, serves a second key purpose- it allows us to view a landscape that can otherwise be too large and too complex to be seen directly.<sup>29</sup> By representing the world in this way, both cognitively and in material form, maps both depict and create knowledge of the world by putting it in context. To use mapping as a legal research method therefore serves my aim well, that is, to show and bring into view the role and substantive contributions of the APTEL in India’s ongoing transition to renewable energy.

During my research about maps and using mapping as a responsible method for legal research, I stumbled upon a wealth of scholarship on the shelves of the Bodleian libraries- ranging from richly illustrated histories to the art and craft of cartography<sup>30</sup> to its applications and function in navigating reality.<sup>31</sup> This chapter does not offer a comprehensive review of that literature; that is not its purpose. I do however draw on that material in weaving together an

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<sup>27</sup> See Ackerman (n 25).

<sup>28</sup> Inspired by the use of these terms in Eloise Scotford, ‘Environmental Principles Across Jurisdictions: Legal Connectors and Catalysts’ in Emma Lees and Jorge Viñuales (eds), *Oxford Handbook of Comparative Environmental Law* (OUP 2019).

<sup>29</sup> Alan MacEachren, *How Maps Work: Representation, Visualization and Design* (Guilford Press 1995).

<sup>30</sup> E.g., Naomi Miller, *Mapping the City: The Language and Culture of Cartography in the Renaissance* (Continuum 2003); Rebecca Solnit, *Infinite Cities: A Trilogy of Atlases: San Francisco, New Orleans, New York* (University of California Press 2019).

<sup>31</sup> Peter Barber and Christopher Board, *Tales from the Map Room: Fact and Fiction about Maps and their Makers* (BBC Books 1993); Juha Nurminen and others, *The Mapmakers' World: A Cultural History of the European World Map* (Juha Nurminen ed, The Pool of London Press 2015).

explanation about how I derive meaning from the map drawn here and how I use it to navigate the doctrinal and normative dimensions of my thesis.

To that end, mapping as a research method provokes and encourages new ways of understanding and experiencing the world. Mentally this operates at two levels. First, by providing a new way of seeing and interacting with a particular landscape. Second, by providing spatial context in understanding and engaging with the ongoing energy transition. My approach to mapping this landscape is to outline the key frameworks involved and provide necessary legal detail to the extent that has been brought up in the case law mapped in chapter 3. My emphasis is on bringing into view the intellectual structures that shape how legal knowledge about energy transition and associated infrastructure is created during transition. My goal is not to be as detailed as possible or offer the kind of precision rendered by Global Positioning System ('GPS') coordinates, rather it is to bring into view knowledge of everyday interactions between energy transition and infrastructural change with these frameworks by 'simply walking around'<sup>32</sup> this legal landscape.

My logic is simple- in order to understand the role and contributions of tribunalised adjudication in responding to disputes generated by energy transition and picturing how they stabilize these disruptions and contribute to legal development, it is first important that the reader (and mapper) gain a sense of place. That is, an understanding of one's surroundings, what constitutes those surroundings, and positioning oneself in a way that its boundaries and creative possibilities can be identified. Mapping this landscape therefore gives 'real world traction'<sup>33</sup> to the complex and somewhat abstract phenomenon of energy transition.

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<sup>32</sup> See William Rankin, *After the Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century* (University of Chicago Press 2016) 3.

<sup>33</sup> Rankin (n 32) 3.

Maps primarily operate through representation. They create a miniature picture of the world and can offer both a bird's eye and worm's eye view of existing reality. A map's power therefore lies in its ability to act as a 'stand-in for the original landscape' so that the reader can both lean in and step back from that landscape and project their understanding of it back into that world.<sup>34</sup> In doing so, maps help foster an imagination of what is going on in a landscape, which is, in the present case, a distinctly 'legal' landscape.<sup>35</sup> The map in this chapter shows what constitutes the legal present, and in doing so also highlights how the legal work of the Appellate Tribunal in making sense of this legal present is crafting our legal and energy futures. Mapping this landscape therefore constitutes important groundwork on which my normative arguments about fostering a more robust legal imagination of energy transition and the adjudicative competence of the APTEL as a key adjudicative institution are based.

## 2 Methodological Challenges

Producing this map was not easy, simply because there is so much going on and it is hard to distil what is of relevance and what is not by wearing only the hat of a law scholar.<sup>36</sup> The relationships between these frameworks are, as the case law shows, conditioned by a variety of non-legal considerations such as the technological, economic and political imperatives involved in structuring and giving content to this complex legal present. No map, of course,

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<sup>34</sup> See Rankin (n 32) 2.

<sup>35</sup> See Elizabeth Fisher, 'Legal Imagination and Teaching' in Lavanya Rajamani and Jacqueline Peel (eds), *Oxford Handbook of International Environmental Law* (2nd edn, OUP 2021) 136; see also Elizabeth Fisher, 'Climate Change, Legal Change, and Legal Imagination' (*UCL The Climate Change and Rule of Law Blog*, 13 Dec 2021) <<https://www.ucl.ac.uk/law-environment/blog-climate-change-and-rule-law/climate-change-legal-change-and-legal-imagination>> accessed 16 Apr 2022.

<sup>36</sup> See Harry Arthurs, 'Paradigms of Law' in *'Without the Law': Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) 8.

can offer a literal transcription of reality.<sup>37</sup> Selections must be made. My approach therefore was to map this landscape from the single vantage of APTEL's legal reasoning- to show what is needed to constitute and understand its legal reasoning based solely on what came up in the case law mapped. This map therefore is at once about surveying and creating a spatial legal framework, that is, a way of thinking, acting, reasoning and adjudicating upon legal friction arising out of interactions between energy transition, solar infrastructure and this legal landscape, as much as it is the product of a story being told as it unfolds.<sup>38</sup>

That said, I should also mention some semantic and heuristic challenges in mapping this landscape. The Indian electricity sector, as I will discuss in the later chapters, is a highly specialized space which operates and engages with this legal landscape in general and particular ways. What I mean by this is that some of the frameworks mapped here although not explicitly turned to or articulated in its judgments, are so embedded and absorbed into the 'tacit consciousness'<sup>39</sup> of the Appellate Tribunal's legal reasoning and engagement with the legal and factual aspects of the disputes appealed before it that their presence as general structures in this landscape cannot be ignored; for example, the implicit knowledge of climate change and significance of decarbonizing energy sources, the nature of its engagement with regulatory authorities, and the need to promote and create an enabling environment for a competitive market for trades in renewable energy.

Then there is the use of particular vocabularies that arise out of a sustained interaction between the legal and technical knowledge brought together by the experts that constitute this

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<sup>37</sup> Barber and Board (n 31) 6.

<sup>38</sup> Brotton and Millea (n 24).

<sup>39</sup> For a comprehensive account see Harry Collins, *Tacit and Explicit Knowledge* (University of Chicago Press 2013); see also Michael Polanyi, *The Tacit Dimension* (University of Chicago Press 2009).

Tribunal in reasoning and adjudicating upon disputes.<sup>40</sup> Take the use of terms like ‘evacuation’<sup>41</sup> which hold meanings entirely different to that used in common parlance. Evacuation in the electricity space is strictly used to refer to the electricity removed from a power project to be connected to the main transportation grid. Identifying and understanding these frameworks and their interactions with each other also necessarily involves understanding the institutional relationships between actors such as how the electricity regulatory commissions empowered with a substantial set of statutory functions and powers under the Electricity Act 2003 interacts with the distribution licensees, transmission licensees and solar generating companies that inhabit this landscape. While these relationships are not explicitly discussed or mapped in this chapter, a mental picture of those relationships, to the extent necessary, is provided at appropriate points in chapter 3.

The frameworks mapped, their interactions with each other, with broader social, economic and political systems, and with the actors and processes to which they apply, are not linear. But that is the beauty of mapping this space by walking through it, it allows the reader to see that while this map is of the legal landscape of energy transition, the law is not necessarily always at the center of it;<sup>42</sup> it is the lead protagonist in this story of energy transition being told from an interpretive analysis of the reasoning in APTEL’s judgments, but it must interact with other forms of knowledge in contributing to developing the law and stabilizing legal disruption.<sup>43</sup> It is only by recognizing this point, that we as lawyers and law scholars can begin

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<sup>40</sup> Electricity Act 2003, s 112 (Composition of Appellate Tribunal).

<sup>41</sup> *Siwana Power Project Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 May 2019) (tariff determination) discussed in chapter 3 of this thesis.

<sup>42</sup> Arthurs (n 36) 2.

<sup>43</sup> Electricity Act 2003, s 112 (Composition of Appellate Tribunal).

to picture the legal work of tribunalised adjudication as a site for co-production of knowledge about energy transition and recognize the need for a legal imagination that accounts for the rich complexity of this legal work in the landscape in which it is embedded. This can be achieved by shifting away from the lofty narratives of energy transition as something ‘out there’ and turning towards a more grounded, or rooted understanding of the legal present and the lived adjudicative experience of navigating it in crafting the future. With these reflections in mind, I begin to map the legal landscape of energy transition in the section that follows.

### **C LEGAL LANDSCAPE OF ENERGY TRANSITION IN INDIA**

To understand the APTEL, the wider legal landscape of energy transition in India needs to be understood. This section provides an overview of this landscape, outlining in particular; key legislative and policy frameworks, the constitutional background, and international climate change commitments involved. I limit my map of these frameworks to what has been brought up in and needed to understand the case law analyzed in the next chapter.

I start from the relevant constitutional background and in light of that architecture, outline key aspects of the primary legislation, that is, the Electricity Act of 2003 (‘Electricity Act’). I then look at the policies that support this legislative framework, namely, the National Electricity Policy<sup>44</sup> and the National Tariff Policy.<sup>45</sup> A number of other national-level policies,<sup>46</sup> state-level policies on solar energy,<sup>47</sup> and India’s international climate change

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<sup>44</sup> National Electricity Policy 2005.

<sup>45</sup> National Tariff Policy 2006.

<sup>46</sup> E.g., Rural Electrification Policy 2006; National Wind-Solar Hybrid Policy 2018; National Environment Policy 2006.

<sup>47</sup> E.g., Rajasthan Solar Energy Policy 2019; Karnataka Solar Energy Policy 2014 - 2021 <<https://kredlinfo.in/solargrid/Solar%20Policy%202014-2021.pdf>> accessed 24 May 2022; Telangana

commitments<sup>48</sup> also come up from time to time, these are outlined at appropriate points in the next chapter. Although India’s climate change commitments are not brought up in a significant way in the legal reasoning of APTEL’s judgments, their presence cannot be ignored given their role in the expansion of renewable energy capacity in the country.<sup>49</sup> I therefore conclude my discussion of this landscape with a brief overview of India’s climate change commitments, mapping in particular the National Action Plan on Climate Change (‘NAPCC’)<sup>50</sup> and India’s Intended Nationally Determined Commitments (‘India’s INDC’)<sup>51</sup> submitted to the United Nations Framework Convention on Climate Change (‘UNFCCC’).

By providing this overview, three points emerge: first, that adjudication in the APTEL is embedded in Indian legal culture. In other words, the frameworks that constitute this landscape shape the form, content and nature of adjudication performed by the APTEL and the reasoning in its judgments. The Electricity Act 2003, for example, sets out how adjudication

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Solar Power Policy 2015  
 <[https://www.tssouthernpower.com/ShowProperty/CP\\_CM\\_REPO/Pages/Hotlinks/TelanganaSolarPowerPolicy/TelanganaSolarPowerPolicy](https://www.tssouthernpower.com/ShowProperty/CP_CM_REPO/Pages/Hotlinks/TelanganaSolarPowerPolicy/TelanganaSolarPowerPolicy)> accessed 24 May 2022.

<sup>48</sup> Prime Minister’s Council on Climate Change Government of India, *National Action Plan on Climate Change* (2008) <[https://archivepmo.nic.in/drmanmohansingh/climate\\_change\\_english.pdf](https://archivepmo.nic.in/drmanmohansingh/climate_change_english.pdf)> accessed 08 May 2022; Government of India, *India’s Intended Nationally Determined Contribution: Working Towards Climate Justice* (2015) <<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf>> accessed 08 May 2022; see Ministry of New and Renewable Energy Government of India, *India’s INDC Targets* (Press India Bureau 2016); see also Shyam Saran, ‘India’s Climate Change Policy: Towards a Better Future’ (*Ministry of External Affairs Government of India* 2019) <[https://mea.gov.in/articles-in-indian-media.htm?dtl/32018/Indias\\_Climate\\_Change\\_Policy\\_Towards\\_a\\_Better\\_Future](https://mea.gov.in/articles-in-indian-media.htm?dtl/32018/Indias_Climate_Change_Policy_Towards_a_Better_Future)> accessed 08 May 2022.

<sup>49</sup> See Madhura Joshi and Radhika Khosla, ‘India: Meeting Energy Needs for Development While Addressing Climate Change’ in *Sustainable Energy in the G20: Prospects for a Global Energy Transition* (Institute for Advanced Sustainability Studies, 2016).

<sup>50</sup> NAPCC (n 48).

<sup>51</sup> India’s INDC (n 48).

in the APTEL should be done (expeditiously),<sup>52</sup> what it can examine (legality, propriety, and correctness of orders made by primary decision makers),<sup>53</sup> prescribes acceptable outcomes (confirm, modify, and set aside the disputed order),<sup>54</sup> and stipulates that this be done in an inter-disciplinary manner.<sup>55</sup>

Second, this landscape is constituted by multiple overlapping frameworks. Adjudication in the APTEL involves making sense of these diverse frameworks and understanding how they relate to each other and to other dimensions of society, for example, to existing social, infrastructural, and economic realities.<sup>56</sup> This is no easy task. While the interpretation of these frameworks and applicable legal principles is settled in some circumstances,<sup>57</sup> it is not readily obvious on other occasions. These ‘not-so-obvious’ circumstances are typically cases that involve interpreting particular contractual, statutory, and policy provisions or circumstances where there is no pre-existing guidance.<sup>58</sup> This is often

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<sup>52</sup> Electricity Act 2003, s 111 (5) (Appeal to Appellate Tribunal).

<sup>53</sup> Electricity Act 2003, s 111 (6) (Appeal to Appellate Tribunal).

<sup>54</sup> Electricity Act 2003, s 111 (3) (Appeal to Appellate Tribunal).

<sup>55</sup> Electricity Act 2003, s 112 (Composition of Appellate Tribunal), s 113 (1) (b) (iii) (Qualification for Appointment of Chairperson and Members of Appellate Tribunal).

<sup>56</sup> E.g., *Balarch Renewable Energy Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2018) (validity of PPA, tariff determination).

<sup>57</sup> E.g., *Ramnad Solar Power Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 30 Apr 2019) (Functions of regulatory commission, ‘must run’ status of solar plant); *SunE Solar BV v Delhi Electricity Regulatory Commission* (APTEL, 18 Jul 2018) (Arbitrariness); *Earth Solar Pvt Ltd v Punjab State Electricity Regulatory Commission* (APTEL, 11 Jan 2019) (Bidding process); *Welspun Renewable Energy Pvt Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 11 Nov 2019) (Assessment year of tariff orders).

<sup>58</sup> These disputes are mapped in chapter 3 as ‘hot’ circumstances for adjudication. E.g., *Siwana Solar Power Project Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2019) (Interpretation of statute); *Taxus Infrastructure Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2019) (Interpretation of PPA provisions); *Ramnad* (n 57) (Interpretation of policy provision); *Reliance Infrastructure Ltd v Maharashtra Electricity Regulatory Commission* (APTEL, 08 Apr 2015)

made more complex by the range of legal values and variety of interests at stake, e.g., balancing commercial development vis-à-vis consumer interest, promoting competition in the solar sector, and considering benefits to the environment.<sup>59</sup> Mapping this landscape not only makes ‘visible’<sup>60</sup> the complexity of this space but also highlights the diverse set of actors, institutions, and challenges involved.

Third, it brings forward the set of values and aspirations that constitute this space, and illustrates how in light of these normative considerations, law and adjudication relate to each other, and to other dimensions of society, that is, to the infrastructural challenges, energy aspirations, climate change commitments, and developmental priorities that constitute the collective imaginary of energy transition in the country.<sup>61</sup> These values not only shape how energy transition is legally framed but also structure how its problems are reasoned and resolved by courts and tribunals in the country. They are more than mere descriptors and constitute an important intellectual tool in making legal sense of energy transition as a socio-technical phenomenon.

That said, there can be no better place from which to embark upon the story of mapping this legal landscape of transition than by starting at its foundational layer and bedrock of formative values, that is, the constitutional framework. The section that follows begins with a

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(Interpretation of regulations); *Techno Electric and Engineering Company Ltd v Andhra Pradesh Electricity Regulatory Commission* (APTEL, 20 Aug 2020) (Interpretation of regulations).

<sup>59</sup> See *Century Rayon v Maharashtra Electricity Regulatory Commission* (APTEL, 26 Apr 2010) (Interpretation of ‘co-generation’); *Surat Municipal Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 03 May 2018) (Prohibitive cost of solar energy); *Rajasthan Renewable Energy Corporation Ltd v Shree Cement Ltd* (APTEL, 16 Apr 2019).

<sup>60</sup> Trevor Pinch, ‘On Making Infrastructure Visible: Putting the Non-Humans to Rights’ (2010) 40 *Camb J Econ* 77.

<sup>61</sup> Ministry of New and Renewable Energy Government of India, *Jawaharlal Nehru National Solar Mission Phase II Policy Document* (2012) (‘National Solar Mission’).

brief overview of Indian legal culture vis-à-vis tribunals and then goes on to sketch the constitutional roots of the ongoing transition.

## 1 Constitutional Framework

### a. Indian Legal Culture and the APTEL

The Indian legal system is rooted in the common law tradition.<sup>62</sup> It is inextricably linked with the English language, and is historically of colonial import. Originally an English legal transplant with Anglo-Saxon roots, the legal system in India has grown over the years, nourished in Indian soil.<sup>63</sup> In the words of Fali Nariman, one of India's pioneering constitutional lawyers:

‘What was intended to be an English oak has turned into a large, sprawling Indian banyan tree, whose serial roots have descended to the ground to become new trunks.’<sup>64</sup>

The legal system in India today has indeed taken a life and form of its own. There is rich legal scholarship on the history and evolution of the Indian legal system,<sup>65</sup> a bare reading

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<sup>62</sup> Fali Nariman, *India's Legal System: Can It Be Saved?* (Penguin Books India 2006) 1; see Granville Austin, *The India Constitution: Cornerstone of a Nation* (OUP India 1999); see Madhav Khosla, *Oxford Short Introductions: The Indian Constitution* (OUP 2012).

<sup>63</sup> Nariman (n 62).

<sup>64</sup> Nariman (n 62).

<sup>65</sup> See BN Srikrishna, ‘The Indian Legal System’ (2008) 36 (2) *International Journal of Legal Information* 242; Madhav Khosla, ‘Supreme Court’ in Devesh Kapur and others (eds), *Rethinking Public Institutions in India* (2017).

of which, makes clear the ‘extraordinary’<sup>66</sup> place occupied by the Constitution of India and the Supreme Court of India in this legal landscape.<sup>67</sup> It also makes clear the deep commitment to the rule of law in India’s governing structures.<sup>68</sup> The Constitution of India, in particular, played a fundamental role in the reconstruction of society and state post-independence.<sup>69</sup> Over the past century however, India has witnessed multiple transformations- ranging from a growing economy to a booming population, from rapid urbanisation to deteriorating environmental conditions, that have fundamentally reshaped its economy, politics and society.<sup>70</sup> The impact of these transformations on everyday lives however has increased the potential for dispute between individuals and the state.<sup>71</sup> That public institutions struggled to keep pace with the scale and complexity of these transformations added to this friction.<sup>72</sup> Inevitably, and in light of the place courts had come to occupy in the collective imagination,<sup>73</sup> this period also

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<sup>66</sup> Kapur and others (n 66)104.

<sup>67</sup> See Mahendra Pal Singh and Niraj Kumar, *The Indian Legal System: An Enquiry* (OUP India 2019); see also Sujit Choudhry and others (eds), *Oxford Handbook on the Indian Constitution* (OUP India 2016) for an insightful historical account of the normative and institutional imagination of the Indian Constitution.

<sup>68</sup> Nariman (n 63); see Gautam Bhatia, *The Transformative Constitution: A Radical Biography in Nine Acts* (Harper Collins 2019); see Shiv Visvanathan, *Theatres of Democracy: Between the Epic and the Everyday* (Harper Collins 2016).

<sup>69</sup> See Rohit De, *A People's Constitution: The Everyday Life of Law in the Indian Republic* (Princeton University Press 2018); Bhatia (n 68); See also Arun Thiruvengadam, *The Constitution of India: A Contextual Analysis* (Bloomsbury 2017); Austin (n 62).

<sup>70</sup> Bhatia (n 68); See Gurcharan Das, *India Grows at Night: A Liberal Case for a Strong State* (Allen Lane 2012); See also Sunil Khilnani, *The Idea of India* (Penguin 2012).

<sup>71</sup> Law Commission of India, *Assessment of Statutory Frameworks of Tribunals in India* (Report No 272, 2017) 2 (‘Law Commission Report’).

<sup>72</sup> See Kapur and others (n 66).

<sup>73</sup> See BN Kirpal and others (eds), *Supreme But Not Infallible: Essays in Honour of the Supreme Court of India* (OUP India 2001); Sudhir Krishnaswamy, *Democracy and Constitutionalism in India: A Study of the Basic Structure Doctrine* (OUP India 2011) on the judicial role in Indian constitutional law; Madhav

witnessed the proliferation of litigation about everyday matters before higher courts that were already ‘overburdened and understaffed’<sup>74</sup> causing ‘enormous delays’<sup>75</sup> and eventually paved the way for the tribunal system in India.

The 272<sup>nd</sup> Report of the Law Commission of India traces the growth of tribunals in India back to the 42<sup>nd</sup> amendment of the Constitution of India which inserted Articles 323 A and 323 B. These insertions made it possible for the Parliament and State Legislatures to establish administrative tribunals to adjudicate on matters listed in their sub-clauses.<sup>76</sup> The aim was to reduce the burden of litigation in higher courts.<sup>77</sup> This, together with the growth of commercial and social activity by the state generated the ‘need’ for specialized knowledge, more effective, and speedier adjudication of disputes in comparison to traditional courts, which were felt to be ‘unequipped’ to deal with the ‘complex issues’ arising from India’s multiple transformations.<sup>78</sup> The responses to these disputes were important for they would fundamentally determine India’s future in those areas. In this way, tribunals came to occupy a special place within the Indian legal landscape as sites of specialized, speedy, and cost-effective dispute resolution.<sup>79</sup>

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Khosla, *India's Founding Moment: The Constitution of a Most Surprising Democracy* (Harvard University Press 2020).

<sup>74</sup> Bhatia (n 68) 22.

<sup>75</sup> Nariman (n 63) 130.

<sup>76</sup> Law Commission Report (n 71) 21.

<sup>77</sup> Law Commission Report (n 71) 4.

<sup>78</sup> Nariman (n 63) 130.

<sup>79</sup> Nariman (n 63) 130.

Although the word ‘tribunal’ remains undefined till date; its legal contours have been shaped over the years by Supreme Court jurisprudence.<sup>80</sup> The Apex Court has made clear that tribunals are ‘supplemental’ to High Courts and not substitutes for them.<sup>81</sup> APTEL’s judgments therefore do not set common law done by conventional High Courts; they are however binding on itself and primary electricity regulators in the country, and treated as final unless overturned on a substantial point of law in an appeal against its judgment by the Supreme Court of India.<sup>82</sup> The Supreme Court however has deferred to the expertise of the Appellate Tribunal on a number of occasions and been cautious in interfering or overturning its decisions.<sup>83</sup> APTEL judgments are to that end legally significant in shaping the nature and trajectory of electricity regulation in the country.<sup>84</sup>

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<sup>80</sup> *Chandra Kumar v Union of India*, AIR 1997 SC 125 (Supreme Court of India).

<sup>81</sup> *Chandra Kumar* (n 80).

<sup>82</sup> Electricity Act 2003, s 125 (Appeal to Supreme Court), s 120 (5) (Procedure and Powers of the Appellate Tribunal).

<sup>83</sup> See e.g., Press Trust of India, ‘DISCOMs are Instrumentalities of the State within Article 12: Supreme Court’ *Outlook* <<https://www.outlookindia.com/business/DISCOMs-are-instrumentalities-of-the-state-within-article-12-supreme-court-news-56897>> accessed 10 May 2022 the Supreme Court refused to interfere with the orders of the APTEL in an appeal against an order passed by the Appellate Tribunal; Rakesh Ranjan, ‘Unilateral Termination of PPAs by DISCOMs is Against Public Interest – Supreme Court’ (*Mercom Clean Energy Insights*) <<https://mercomindia.com/unilateral-termination-ppas-against-public-interest-supreme-court/>> accessed 10 May 2022; Press Trust of India, ‘APTEL to Hear Delhi DISCOMs Plea to Let Them Stop Buying Costlier Power from NTPC’s Dadri I Plant’ *The Print* <<https://theprint.in/india/aptel-to-hear-delhi-DISCOMs-plea-to-let-them-stop-buying-costlier-power-from-ntpcs-dadri-i-plant/811080/>> accessed 10 May 2022 the Supreme Court in this instance directed appellants to move the APTEL for appropriate relief; Op-Ed, ‘View: APTEL’s Judgement on TN DISCOM Welcome, But Disputes Over Compensation Amount Might Persist’ *Economic Times* (07 Aug 2021) <[https://economictimes.indiatimes.com/industry/renewables/view-aptels-judgement-on-tn-DISCOM-welcome-but-disputes-over-compensation-amount-might-persist/articleshow/85126192.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/industry/renewables/view-aptels-judgement-on-tn-DISCOM-welcome-but-disputes-over-compensation-amount-might-persist/articleshow/85126192.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)> accessed 10 May 2022; see contra Utkarsh Anand, ‘Better to Wind Up Tribunals If Members Can’t Follow Propriety: SC’ *Hindustan Times* (26 Jan 2022) <<https://www.hindustantimes.com/india-news/better-to-wind-up-tribunals-if-members-can-t-follow-propriety-sc-101643133929300.html>> accessed 10 May 2022 on propriety of decision-making.

<sup>84</sup> See e.g., Rajarshi Sengupta, ‘Landmark Verdict on RE Power Curtailment by APTEL’ (*Solar Quarter*, 10 Aug 2021) <<https://solarquarter.com/2021/08/10/landmark-verdict-on-re-power-curtailment-by-aptel/>> accessed 10 May 2022.

These developments carved an institutional and conceptual space for contemporary tribunals such as the APTEL and National Green Tribunal (NGT) in India.<sup>85</sup> The APTEL's place within the Indian legal landscape, however, unlike its counterpart, has invited surprisingly little scholarly attention. Scholarship on tribunals and the electricity sector in India appear to show little interest in the Appellate Tribunal and its relationship to the ongoing energy transition in India. While such disinterest may have been justified in its early years, it appears impossible to justify today. As I show in the next chapter, it is indeed hard to imagine any dispute in relation to the ongoing transition and concerned regulatory authorities which has not been brought before the Tribunal. The APTEL is a crucial legal actor in this space involved in the day-to-day adjudication of disputes resulting from the continuing transition to solar energy in India, and plays an important role in creating legal, regulatory and administrative stability.<sup>86</sup> It is creating substantial jurisprudence binding on itself and on primary electricity regulators and also contributing to the development of law concerning this process.

The next section maps the constitutional roots of the ongoing energy transition. I broadly touch upon this in the previous chapter but offer a more detailed account here and of infrastructure associated in relation to the constitutional framework. The section will conclude by sketching the relationship between the Appellate Tribunal and energy transition in this framework.

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<sup>85</sup> E.g., *Jaswant Sugar Mills v Lakshmidhand*, AIR 1963 SC 677 (Supreme Court of India) (Attributes of a tribunal), *Associated Cement v PN Sharma*, AIR 1965 SC 1595 (Supreme Court of India) (On procedure); *Virinder Kumar Satyavadi v State of Punjab*, AIR 1956 SC 153 (Supreme Court of India) (Difference between court and tribunal).

<sup>86</sup> See Arthurs (n 36) 6.

## b. Constitutional Roots of Energy Transition in India

Building ‘critical’<sup>87</sup> infrastructure such as electricity, roads and dams occupies an important place in India’s state building apparatus.<sup>88</sup> It embodies meanings that go well beyond their physical functionality and are typically viewed as ‘technologies of social integration, economic development and modernisation’.<sup>89</sup> In the context of energy transition in India, addressing energy inequality, mitigating climate change and building a competitive market for renewable energy, in particular, shape the collective imagination of socio-economic development and progress in this space.<sup>90</sup> Access to affordable electricity and creating energy security are viewed as steps towards the socio-economic development of the country and constitute important themes in these conversations.<sup>91</sup>

Energy transition in India therefore is not simple. It is an act of state building with a long-standing constitutional history.<sup>92</sup> It is a kind of statecraft in which law and adjudication play formative roles. It is perhaps helpful to remind ourselves at this point that the inadequacy of infrastructural capacity has characterized the functioning of the electricity sector in India for

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<sup>87</sup> National Electricity Policy [1.2].

<sup>88</sup> Ramchandra Guha (ed), *Makers of Modern India* (Belknap Press 2013); Ramachandra Guha, *India After Gandhi: The History of the World’s Largest Democracy* (London Macmillan 2017); Kapur and others (n 66); Visvanathan (n 68); Jairam Ramesh, *Green Signals: Ecology, Growth, and Democracy in India* (OUP India 2015).

<sup>89</sup> See Penny Harvey and Hannah Knox, *Roads: An Anthropology of Infrastructure and Expertise* (Cornell University Press 2015) 7.

<sup>90</sup> National Electricity Policy 2005 [1.2]; Electricity Act 2003, preamble.

<sup>91</sup> Strategic Plan for New and Renewable Energy Sector for the Period 2011-2017, 7-8.

<sup>92</sup> Debi Prasad Khaitan, ‘Constituent Assembly Debates’ in, vol 5 5.39.80; Sir Ramaswamy Mudaliar, ‘Constituent Assembly Debates’ in, vol 5, 5.39.50.

several decades now.<sup>93</sup> This is important not only because it frames an understanding about where the construction of renewable energy infrastructure and the ongoing transition fits into the larger picture but also explains why the focus in India so far has been on building generation capacity for renewable energy, and the implications this focus has had on the way courts and tribunals have reasoned and resolved disputes concerning that infrastructure.

Infrastructures have in the recent years emerged as compelling sites for social science scholarship.<sup>94</sup> There is a wealth of literature on infrastructure, generally and on India, about the evolution of the Indian electricity sector and on expanding renewable energy capacity in the country.<sup>95</sup> This literature describes and explains the historical, policy, technical and developmental dimensions of the ongoing transition.<sup>96</sup> There is also insightful anthropological

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<sup>93</sup> National Electricity Policy 2005, s 5.2; Sheoli Pargal and Sudeshna Ghosh Banerjee, *More Power to India: The Challenge of Electricity Distribution* (The World Bank, 2014) 1-2.

<sup>94</sup> E.g., Simone Abram and others (eds), *Electrifying Anthropology: Exploring Electrical Practices and Infrastructures* (Routledge 2020); 'Energy Infrastructures' in Penelope Harvey and others (eds), *Infrastructures and Social Complexity: A Companion* (Routledge 2017) 157; see Stephen Graham (ed), *Disrupted Cities: When Infrastructure Fails* (Routledge 2010); Sanja Bogojević and Mimi Zou, 'Making Infrastructure 'Visible' in Environmental Law: The Belt and Road Initiative and Climate Change Friction' (2021) 10 (1) TEL 35; Yuwan Malakar and others, 'The Temporalities of Energy Justice: Examining India's Energy Policy Paradox Using Non-Western Philosophy' (2019) 49 *Energy Research & Social Science* 16-25.

<sup>95</sup> See Navroz Dubash and others (eds), *Mapping Power: The Political Economy of Electricity in India's States* (OUP 2018); Navroz Dubash and others, 'India & Climate Change: Evolving Ideas & Increasing Policy Engagement' (2018) 43 *Annual Reviews* 395.

<sup>96</sup> Niti Ayog Government of India, *Report on India's Renewable Electricity Roadmap 2030*; Alok Kumar and Sushanta Chatterjee, *Electricity Sector in India: Policy and Regulation* (OUP 2012); Barbara Harriss-White and others, 'Political Architecture of India's Technology System for Solar Energy' (2009) 44 *Economic and Political Weekly* 49; The World Bank, 'Solar Powers India's Clean Energy Revolution' <<https://www.worldbank.org/en/news/immersive-story/2017/06/29/solar-powers-india-s-clean-energy-revolution>> accessed 12 May 2022; Manu Aggarwal and Arjun Dutt, *State of Renewable Energy Sector: Drivers, Risks and Opportunities* (Council on Energy, Environment and Water, 2018); Aparna Viswanathan, 'Future Shock: Does India's Electricity Act 2003 Have the Power to Reverse A Decade of Failed Reforms?' (2003) IELTR 313; See generally William Ascher and Corinne Krupp (eds), *Physical Infrastructure Development: Balancing the Growth, Equity, and Environmental Imperatives* (Palgrave Macmillan 2010); José Goldemberg and Oswaldo Lucon, *Energy, Environment and Development* (2nd edn, Earthscan 2010); Frauke Urban, *Low Carbon Development: Key Issues* (Routledge 2013).

scholarship exploring the social complexity of infrastructures.<sup>97</sup> But as explained in the previous section, my aim here is to make visible the substantive contributions of the APTEL to energy transition in India, not to provide an exhaustive account of the evolution and history of energy transition and associated infrastructure in India. My engagement with this social science scholarship is therefore limited. In the sections that follow, I map and explain those aspects of the constitutional framework that were brought forward in the case law studied.

Four themes emerge from mapping this space: first, a connection between expanding renewable capacity and mitigating environmental concerns, second, the use of novel legal constructs such as the Renewable Purchase Obligation ('RPO') and Renewable Energy Certificate ('REC') mechanisms as key market-based drivers, third, the concurrent jurisdiction of center and state on electricity matters, and fourth, 'balancing' commercial development vis-à-vis social welfare. I consider each of these points in the sections that follow.

A good place to start considering these links is a recent Supreme Court judgment that made clear that promoting renewable energy is a step towards reducing pollution.<sup>98</sup> It emphasized that larger public interest must prevail over the interest of industry particularly in the implementation of the RPO and REC frameworks.<sup>99</sup> In reaching this conclusion the Apex Court drew a connection between Article 21 of the Constitution of India which guarantees the fundamental right to life, Article 48A which provides for the protection and improvement of the environment, and Article 51A(g) which stipulates the fundamental duty of every citizen to protect and improve the natural environment. Together, they constitute the constitutional roots

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<sup>97</sup> See Penny Harvey and others (eds), *Infrastructures and Social Complexity: A Companion* (Routledge 2016).

<sup>98</sup> *Hindustan Zinc Ltd v Raj Electricity Regulatory Commission* (2015) 12 SCC 611 (Supreme Court of India) [49].

<sup>99</sup> *Hindustan Zinc* (n 98).

of energy transition in India.<sup>100</sup> This triangulation, in light of India's international climate change commitments which I discuss towards the end of this section, has resulted in the transition to renewable energy in the country being viewed as an 'environmentally friendly'<sup>101</sup> and 'necessary'<sup>102</sup> step towards mitigating the impact of anthropogenic climate change and deteriorating domestic environmental conditions.<sup>103</sup> These efforts are today being realized by market-based novel legal constructs such as the RPO and REC frameworks, which I explain in more detail in my discussion of the policy landscape.

The makers of the Constitution of India recognized the importance of infrastructure and the participation of state governments in constituting India into modern democracy.<sup>104</sup> Historically, this can be traced back to the Nehruvian era and the civics of development championed at the time.<sup>105</sup> A quasi-federal constitutional arrangement was adopted and a number of subjects were reserved for the concurrent jurisdiction of the central and state governments.<sup>106</sup> This was necessary in order to 'correctly appreciate the requirements of people

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<sup>100</sup> *Hindustan Zinc* (n 98).

<sup>101</sup> *Cauvery Hydro Energy Ltd v Karnataka Power Transmission Corporation* (APTEL, 27 November 2017); National Electricity Policy 2005, s 5.12.

<sup>102</sup> National Electricity Policy 2005.

<sup>103</sup> See generally *Social Action for Forest and Environment v Union of India* (NGT, 02 Mar 2017) (River water pollution).

<sup>104</sup> *Guha* (n 88).

<sup>105</sup> Shiv Visvanathan, *A Carnival for Science: Essays on Science, Technology and Development* (OUP 1997) 4; Visvanathan (n 88) 254.

<sup>106</sup> Visvanathan (n 105) 44-87.

in the remotest parts of the country'<sup>107</sup> and tailor infrastructural developments to local needs. Indeed, this allocation of power reflects a certain vision of the state and the economy, and the institutional idea that while some tasks are better done centrally, others require regional authorities.<sup>108</sup>

Electricity is one such concurrent subject.<sup>109</sup> This means that the central and state governments can both legislate on this matter. The central government therefore cannot realize its vision of increasing renewable energy capacity without the support of state governments.<sup>110</sup> While it can facilitate and incentivize state governments towards achieving their renewable energy targets, it can neither overstep the boundaries of concurrent jurisdiction nor penalize non-compliance by state governments.<sup>111</sup> To this end, courts and tribunals have emphasized that state governments are not only fully empowered to determine whether to promote the production of renewable energy in their respective regions but also to consider the means best suited to the conditions and resources prevailing in their state.<sup>112</sup>

While the central government has issued a number of guidelines to assist states with the process of generating electricity from non-conventional sources,<sup>113</sup> the Supreme Court has

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<sup>107</sup> *Draft Constitution Article 60 (Contd.)*, vol VII (Constitutional Assembly Debates) speech by Pocker Sahib Bahadur on 30 December 1949 <[http://loksabhaph.nic.in/Debates/Result\\_Nw\\_15.aspx?dbsl=575](http://loksabhaph.nic.in/Debates/Result_Nw_15.aspx?dbsl=575)> accessed 12 May 2022.

<sup>108</sup> Khosla (n 62) 48-49.

<sup>109</sup> Constitution of India 1950, Schedule VII List III Entry 38.

<sup>110</sup> Megha Kaladharan, 'Renewable Energy in India: An Analysis of the Regulatory Environment and Evolving Policy Trends' (*Initiative on Climate Energy and Environment, Centre for Policy Research, New Delhi*, 2016) <<http://www.cprindia.org/research/papers/renewable-energy-india-analysis-regulatory-environment-and-evolving-policy-trends>> accessed 08 May 2022.

<sup>111</sup> Kaladharan (n 110).

<sup>112</sup> *Howrah Ganatantrik Nagarik Samaiti v Union of India* (High Court of Calcutta, 11 June 2013).

<sup>113</sup> Ministry of New and Renewable Energy Government of India, *Guidelines for the Creation of Solar Parks* (2016); Ministry of Power Government of India, *Guidelines for National Electricity Fund* (2012).

clarified that these guidelines are only ‘general and advisory in nature’<sup>114</sup> and that ‘every state was required to act per its own needs and (sic) convenience’<sup>115</sup> in its decision of ‘which are the most practical and affordable projects and how they should be carried out in the state’.<sup>116</sup> In other words, the guidelines issued by the central government are ‘required to be molded by the state to meet its requirements depending on the various factors prevailing in the state.’<sup>117</sup> Thus, while pre-existing legal structures such as the Constitution of India reflect an attempt to deal with India’s colonial past, infrastructural design, and socio-economic challenges, contemporary legislation such as the Electricity Act 2003 focuses on catalyzing India’s energy future. This I show in the following section.

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<sup>114</sup> *Howrah* (n 112).

<sup>115</sup> *Howrah* (n 112).

<sup>116</sup> *Transmission Corporation of Andhra Pradesh v Sai Renewable Power Pvt Ltd*, (2011) 11 SCC 34 (Supreme Court of India) [53].

<sup>117</sup> *Transmission Corporation* (n 116).

## 2 Legislative Framework

In 2003, the central government rolled out the Electricity Act 2003, which provides the primary legislative framework governing the transition to renewable energy<sup>118</sup> and electricity disputes in India. There is a wealth of scholarship on the history of Electricity Act 2003,<sup>119</sup> but for the present purpose, this statute is important for a few fundamental reasons- it promotes 'efficient and environmentally benign policies' and encourages the generation and consumption of renewable energy to sub serve the mandate of Article 21 of the Constitution,<sup>120</sup> it establishes regulatory authorities at the central and state levels, and sets up the Appellate Tribunal for Electricity to hear appeals against orders rendered by concerned electricity commissions.<sup>121</sup> The Act further provides for national level policies on electricity, energy, and tariffs.<sup>122</sup> These provisions guide the APTEL and regulatory authorities, i.e., the central, joint and state electricity regulatory commissions, in their assessment of disputes resulting from energy

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<sup>118</sup> There is no dedicated statute governing the transition to renewable energy or climate laws, see Lavanya Rajamani, 'The Indian Way: Exploring Synergies between Development, Energy and Climate Goals' in Donald Zillman and others (eds), *Beyond The Carbon Economy: Energy Law in Transition* (OUP 2008) 420-421.

<sup>119</sup> Alok Kumar and Sushanta Chatterjee, *Electricity Sector in India: Policy and Regulation* (OUP 2012); Pargal (n 93); *Law Relating to Electricity In India: An Exhaustive Section-Wise Commentary on the Electricity Act, 2003 along with Central and State Acts, Rules, Regulations, Notifications, and Model Forms* (Universal Law 2008); Viswanathan (n 96); RM Shereef and SA Khaparde, 'Current Status of REC Mechanism in India and Possible Policy Modifications to Way Forward' (2013) 61 *Energy Policy* 1443; Anoop Singh, 'Towards a Competitive Market for Electricity and Consumer Choice in the Indian Power Sector' (2010) 38 *Energy Policy* 4196.

<sup>120</sup> Electricity Act 2003, preamble; *Hindustan Zinc* (n 100).

<sup>121</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal).

<sup>122</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal).

transition in India and provides for particular ways of engaging with them. The statute is an important component of this legal landscape.

Prior to the enactment of the Electricity Act 2003, electricity was subject to strict regulation in the country. It was the monopoly of State Electricity Boards ('SEBs') and Public Sector Undertakings ('PSU'). The Electricity Act 2003 in accordance with the constitutional framework sought to encourage the participation of the private sector in the transmission, generation, and distribution of electricity in the country. To that end, section 66 of the Act confers substantial powers on regulatory commissions at the central and state level, to develop markets in accordance with the principles of competition and fair participation as well as the protection of consumer interest. While its impact on tasks such as tariff rationalization, and on attracting private investment continues to be debated, what is settled is that these commissions have stimulated robust public engagement and transparency in the regulatory process.<sup>123</sup>

Striking a balance between commercial development and social welfare is a long-standing constitutional tradition in India which aligns with the environment-development binary familiar across jurisdictions.<sup>124</sup> In the context of energy transition and the expansion of renewable energy capacity in the country, the Supreme Court has emphasized that 'balance'<sup>125</sup> is to be 'maintained with regard to competitiveness and efficiency on the one part, and the social objective of ensuring a fair deal to the consumer on the other'.<sup>126</sup> The APTEL however

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<sup>123</sup> Kapur and others (n 88) 226.

<sup>124</sup> *State of Karnataka v State of Tamil Nadu*, (2018) 4 SCC 1 (Supreme Court of India).

<sup>125</sup> *Transmission Corporation* (n 116) [57].

<sup>126</sup> *Transmission Corporation* (n 116) [57].

has made clear that although protecting consumer interest is of prime importance, it will not always override the interest and stake of other stakeholders.<sup>127</sup>

In a case about whether a State Commission could amend the tariff in a valid PPA after it was agreed between parties, the Appellate Tribunal observed that ‘while it is true that consumer interest should be protected’ it was unable to agree with the respondent’s argument that consumer’s interest would ‘always override all the consideration or interest of other stakeholders’.<sup>128</sup> It observed that:

‘The power sector functions on the joint efforts of all stakeholders and health of all stakeholders should be the concern of the regulator though as far as possible primacy must be given to consumer interest. The policies of the State lay great emphasis on renewable energy sources. The State has recognized that those who generate renewable energy must be encouraged to enable them to remain in the power sector and flourish. Such encouragement undoubtedly cannot be at the cost of consumers...It is for the regulator to find ways to strike a balance’<sup>129</sup>

In reaching this conclusion, the Appellate Tribunal reasoned back to the functions of the State Commission stipulated in the Electricity Act. It drew attention to section 61 of the Act which stipulates the factors that are to be considered by the Appropriate Commission when specifying the terms and conditions for the determination of tariff, and that the promotion of co-generation and generation of electricity from renewable sources of energy was one of those factors as set out in sub-clause (h). Under sub-clause (d), the Appropriate Commission has a duty to safeguard consumer interest but at the same time also account for the recovery of cost of electricity in a reasonable manner.

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<sup>127</sup> *Gujarat Urja Vikas Nigam Ltd v Green Infra Corporate Wind Power Ltd* (APTEL, 28 Sep 2015).

<sup>128</sup> *Gujarat Urja* (n 127) [48].

<sup>129</sup> *Gujarat Urja* (n 127) [48] (my emphasis).

The Tribunal then referred to section 86 which prescribes the functions of the State Commission. Section 86 (1) (e) of the Act states that the State Commission:

‘shall promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and specify for purchase of electricity from such sources a percentage of the total consumption of electricity in the area of a distribution licensee’.

The Tribunal observed that by fixing a percentage of electricity to be purchased from renewable sources of energy, this provision gave an assurance to the concerned licensee, and characterized these provisions as ‘indicative’ of ‘the legislature's anxiety to protect and encourage renewable sources of energy.’<sup>130</sup> It therefore held that it was not possible to prioritize consumer interest in every circumstance. The Appellate Tribunal’s interpretation and application of statutory provisions here resulted in not only shaping the exercise of the regulatory commission’s powers and functions but also in framing an understanding of the relationship between actors involved and statutory artefacts like power purchase agreements (‘PPA’) and statutory provisions.<sup>131</sup>

The Electricity Act 2003 envisages that its framework will be complemented by National Electricity Policy, National Tariff Policy and National Electricity Plan,<sup>132</sup> each stipulated by the central government in consultation with state governments and concerned authorities. Section 3 of the Act is excerpted below:

‘(1) The Central Government shall, from time to time, prepare the National Electricity Policy and tariff policy, in consultation with the State

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<sup>130</sup> *Gujarat Urja* (n 127) [48].

<sup>131</sup> See *Sai Renewable v Andhra Pradesh Electricity Regulatory Commission* (APTEL, 29 May 2014) cited with approval in *Gujarat Urja* (n 127) [59].

<sup>132</sup> Electricity Act 2003, s 3 (National Electricity Policy and Plan).

Governments and the Authority for development of the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy.

(2) The Central Government shall publish National Electricity Policy and tariff policy from time to time....<sup>133</sup>

The provision uses the language of ‘shall’ which conveys the message that these policies are mandatory part and extension of the statutory scheme.<sup>134</sup> It is an imperative that imposes a duty on the government to craft these policies and as such in the context of the statutory scheme, acquires integral legal significance. These policies and their relationship to the statutory framework is mapped in the next section.<sup>135</sup>

### 3 Policy Framework

In this section, I outline two key policies brought up in the case law studied, namely, the National Electricity Policy<sup>136</sup> and National Tariff Policy,<sup>137</sup> briefly discussed in chapter 1. These policies are important for three reasons: first, they lay the groundwork for renewable energy expansion in the country, second, they guide the Appellate Tribunal in making sense of various legislative and regulatory provisions. Third, they reflect an attempt by the state to create

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<sup>133</sup> Electricity Act 2003, s 3 (National Electricity Policy and Plan).

<sup>134</sup> Ian Mcleod, *Principles of Legislative and Regulatory Drafting* (Hart 2009) 103-114; see also Andrew Burrows, *Thinking about Statutes: Interpretation, Interaction, Improvement* (CUP 2018) 1-44.

<sup>135</sup> Electricity Act 2003, s 5 stipulates that the central government will formulate a national policy on electrification and local distribution in rural areas. As this was not brought up in the case law mapped, it is not discussed in this section.

<sup>136</sup> National Electricity Policy 2005.

<sup>137</sup> National Tariff Policy 2006.

public knowledge about electricity, renewable energy and how transition ought to be achieved. These policies therefore are not only about the state, rather, as I show in the next chapter, they are about creating public understanding about energy infrastructure, demystifying technical knowledge, and creating a robust imagination about our energy future of which renewable energy is and will be a vital part. The policies also have an instrumental purpose in that they guide the exercise of certain functions of regulatory authorities,<sup>138</sup> such as determining tariff regulations,<sup>139</sup> developing a competitive market for trade in non-conventional energy between states,<sup>140</sup> and promoting the generation of electricity from renewable energy sources.<sup>141</sup>

The National Electricity Policy 2005 was introduced in furtherance of the Electricity Act 2003. It recognizes electricity as an essential requirement for everyday living, characterizing it as ‘critical infrastructure’ necessary for socio-economic development in the country.<sup>142</sup> The policy sets out key goals which includes creating ‘access to electricity for all households, supply of reliable and quality power of specific standards, financial turnaround and encouraging the commercial viability of the electricity sector’.<sup>143</sup> It promotes the ‘generation, co-generation of electricity from renewable sources of energy’, seeks to increase

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<sup>138</sup> Electricity Act 2003, s 73, s 79 (2) (Functions and duties of the Central Electricity Regulatory Commission); Electricity Act 2003, s 86 (4) (Functions and duties of the State Commission).

<sup>139</sup> Electricity Act 2003, s 61 (Tariff regulations).

<sup>140</sup> Electricity Act 2003, s 66 (Development of market).

<sup>141</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commission).

<sup>142</sup> National Electricity Policy 2005 [1.2].

<sup>143</sup> National Electricity Policy 2005, preamble.

efficiencies of existing generators through the implementation of new technologies, boost private sector participation, and reduces transmission and dismission losses.<sup>144</sup>

The National Tariff Policy aligns with the National Electricity Policy and the National Solar Mission.<sup>145</sup> It is significant for two reasons- first, it prescribes the framework for implementing the RPO which is a market-based mechanism by which obligated entities, i.e., power distribution companies ('DISCOMs'), open access consumers, and captive power producers are obliged to purchase certain percentage of electricity from renewable energy sources as a percentage of the total consumption of electricity.<sup>146</sup>

This is complemented by the REC framework. The RPO and REC frameworks are not just market-based mechanisms but are also in this sense novel legal constructs, the understanding and operation of which frequently resulted in disputes before the APTEL. Second, the National Tariff Policy stipulates applicable cost structures for the purchase of renewable energy allocated via competitive bidding. The aim behind this is to encourage non-conventional energy technologies such as solar energy to eventually compete with conventional resources in the country. These preferential tariffs or feed-in tariffs are price-support mechanisms and to that end constitute a significant financial incentive in promoting solar generation. These typically apply to small-scale power generators; large-scale solar procurement however is done through the auction-tendering since the inception of the National Solar Mission.<sup>147</sup>

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<sup>144</sup> National Electricity Policy 2005 [5.12].

<sup>145</sup> National Solar Mission (n 61).

<sup>146</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commissions); National Tariff Policy 2006.

<sup>147</sup> See Ranjit Deshmukh and others, 'India's Solar Mission: Procurement and Auctions' (2011) 46 (28) *Economic and Political Weekly* 22.

Third, these policies, along with other national and state level policies on electricity, renewables and the environment, reflect an attempt by the state to create ‘public knowledge’ about these areas.<sup>148</sup> This knowledge shapes the way we think, speak and engage with solar infrastructure.<sup>149</sup> The relationship between each of these elements is socially-complex, and beyond the scope of the present chapter, though one might note that in principle, such policies are a powerful intellectual resource, especially in their capacity to shape and re-shape commonly held knowledge about the world around us.<sup>150</sup> The everydayness<sup>151</sup> of their subject matter and the significance of constructing a legal understanding of energy transition ought to encourage lawyers to find more creative ways of engaging with them in arguments before courts and tribunals.

My map of this legal landscape would be incomplete without offering the reader a picture of India’s climate change commitments. While they have not been brought up in arguments placed before the Appellate Tribunal, their legal presence and significance cannot be ignored. I briefly chart relevant aspects in the section that follows.

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<sup>148</sup> Visvanathan (n 88) 212; Harry Collins and Robert Evans (eds), *Rethinking Expertise* (University of Chicago Press 2007); see National Environment Policy 2006, 37; International Energy Agency, *India 2020: Energy Policy Review* (2020)107-113; National Solar Mission (n 61); National Wind-Solar Hybrid Policy 2018.

<sup>149</sup> See Collins and Evans (n 148) 2, 5.

<sup>150</sup> Kapur and others (n 88) 105; Collins and Evans (n 148).

<sup>151</sup> Inspired by the use of the term in Alain De Botton, *The Architecture of Happiness* (Penguin 2006).

#### 4 Climate Change Commitments

The transition to renewable energy especially in India's electricity sector, is in part motivated by India's international commitments towards mitigating the impact of climate change. Two documents are especially relevant- the National Action Plan on Climate Change ('NAPCC'), and India's Intended Nationally Determined Commitments ('India's INDC') submitted to the United Nations Framework Convention on Climate Change ('UNFCCC').<sup>152</sup> They are key legal drivers of energy transition in India aimed at mitigating the impact climate change and motivating the decarbonisation of energy sources in the country.<sup>153</sup>

The NAPCC frames climate change and energy security as 'two sides of the same coin'.<sup>154</sup> In other words, it suggests that a 'strategic shift' away from fossil fuels and towards renewable sources such as solar energy would enhance energy security and contribute towards mitigating climate change.<sup>155</sup> While the NAPCC is more inward looking, i.e., focusing on domestic circumstances, India's INDC depends on international cooperation for financial support and technology transfer to accelerate the process of transition along. The document sets out an ambitious target of securing 175 GW of installed solar capacity by 2030 with support from the National Solar Mission established by it.<sup>156</sup>

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<sup>152</sup> Saran (n 48).

<sup>153</sup> *Techno-Electric and Engineering Co v Tamil Nadu Electricity and Distribution Corporation Ltd* (APTEL, 31 May 2019); *Gujarat Urja Nigam Ltd v Renew Wind Energy Rakon Ltd* (APTEL, 06 Dec 2018); *Tata Power Delhi Distribution Co v Delhi Electricity Regulatory Commission* (APTEL, 16 Apr 2019).

<sup>154</sup> Saran (n 48).

<sup>155</sup> India's INDC (n 48).

<sup>156</sup> National Solar Mission (n 61).

There is a wealth of scholarship on this topic, exploring in particular the many connections and synergies between India's energy needs and climate goals,<sup>157</sup> an engagement with which is beyond the scope of the present thesis. India's international commitments and their significance towards mitigating the impact of climate change, as I mention before, do not appear prominently in APTEL's reasoning processes. However, their tacit force cannot be ignored given their significance in the national renewable policy architecture,<sup>158</sup> institutional offtake and wider national project of decarbonizing energy sources.<sup>159</sup>

The above outlines one of the many ways the legal landscape of energy transition in India can be mapped. It offers the reader a glimpse of the legal complexity of this space and the overlapping nature of frameworks involved. APTEL's interpretation and application of these frameworks is important; by reconciling disputes vis-à-vis these frameworks, the Appellate Tribunal is actively framing an understanding of energy transition that is embedded in this legal landscape, and, as will be seen in later chapters, holds substantive implications for the participants involved in this process.

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<sup>157</sup> Rajamani (n 118); Lavanya Rajamani, 'India's Approach to International Law in the Climate Change Regime' (2018) 57 *IJIL* 1-23; Lavanya Rajamani, 'India and Climate Change: What India Wants, Needs, and Needs to Do' (2008) 8(3) *IJIL* 340-74 .

<sup>158</sup> India's INDC (n 48) 7-13, 19.

<sup>159</sup> National Solar Mission (n 61) 1.

## D POSITIONING THE APTEL IN THE INDIAN LEGAL LANDSCAPE

The previous sections mapped the frameworks constituting the legal landscape of India's energy transition. It offered the reader a lay of the land. With that picture in mind, the upcoming section 'positions' the APTEL and its legal work in this mapped landscape. I show that adjudication in the Appellate Tribunal is embedded in Indian legal culture and illustrate the nature of its contributions to energy transition in India within this context. I highlight the legal significance of the APTEL as both an 'object' of legal culture, that is, as an institution constituted by law to achieve a specific purpose,<sup>160</sup> and as an active 'participant' in it.<sup>161</sup> I argue that in deciding the disputes appealed before it, the APTEL is not only developing the law but also entrenching energy transition into the legal order, and vice versa. Viewing the APTEL and its work in this way encourages the reader to develop a thicker picture of what the Appellate Tribunal is, what it does, and what it holds the potential to do.

In India's transition to renewable energy, the APTEL plays a more significant role than any other legal institution in the country: first, in terms of subject matter- the Appellate Tribunal hears appeals against decisions made by primary regulators.<sup>162</sup> It is empowered to examine the 'legality', 'propriety', and 'correctness' of their decisions/ orders.<sup>163</sup> By subjecting regulatory decisions to judicial scrutiny, the Appellate Tribunal also contributes towards the

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<sup>160</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal); Diksha Sanyal and others, *Reforming the Tribunals Framework in India: An Interim Report* (Vidhi Centre for Law and Policy, 2018).

<sup>161</sup> See Fisher (n 163) 274.

<sup>162</sup> Electricity Act 2003, 110 (Establishment of Appellate Tribunal).

<sup>163</sup> Electricity Act 2003, s 111 (Appeal to Appellate Tribunal).

accountability of regulatory decision-making in this sector.<sup>164</sup> Besides regular appellate power, the APTEL holds superintendence over the central and state electricity regulatory commissions.<sup>165</sup> The Appellate Tribunal is vested with procedural autonomy and the same powers of enforcement as that of a civil court under India's Civil Procedure Code 1908.<sup>166</sup>

Second, the APTEL has generated and continues to generate a significant body of reported case law.<sup>167</sup> In the time period mapped, the APTEL reported 165 relevant judgments on solar power projects. Of the 165 cases, 64 were appeals against tariff orders and consequences of delays in commissioning power projects, 52 concerned RPOs and RECs, and 49 involved the interpretation of statutory and regulatory provisions raised in the context of specific contract clauses. Responding to these appeals involved a variety of legal tasks including merits review, statutory appeals, and clarifying the interpretation and application of statutory, policy and contractual provisions.<sup>168</sup> The APTEL also plays an important role in determining the legitimate exercise of regulatory discretion and in shaping and/ or orienting the exercise of regulatory power during transition, which, in turn, contributes to legal, administrative and regulatory stability. I will return to this point in more detail in chapters 3 and 4.

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<sup>164</sup> National Electricity Policy 2005 s 5.4.3; *North Bihar Distribution Company Ltd v Bihar Electricity Regulatory Commission* (APTEL, 25 Oct 2018) (Accountability of officials for failure to achieve targets); *Tata Power Company Ltd v Maharashtra Electricity Regulatory Commission* (APTEL, 14 Nov 2013) citing with approval *Lucknow Development Authority v MK Gupta*, AIR 1994 SC 787 (Supreme Court of India) (Administrative law of accountability of public authorities against arbitrariness).

<sup>165</sup> Electricity Act 2003, s 121 (Power of Appellate Tribunal); see also Cane (n 17) 142.

<sup>166</sup> Electricity Act 2003, s 120 (Powers and procedure of Appellate Tribunal).

<sup>167</sup> 'Judgement Data (2010-21)' (*Appellate Tribunal for Electricity*) <<https://aptel.gov.in/old-judgement-data>> accessed 22 May 2022.

<sup>168</sup> Electricity Act 2003, s 111 (Appeal to Appellate Tribunal).

Third, the APTEL is constituted by an inter-disciplinary panel of experts comprising the chairperson and three other members which ought to consist of at least one judicial and one technical member.<sup>169</sup> As a result of this, the APTEL not only occupies a distinctive place in Indian legal culture as an example of ‘state sponsored’<sup>170</sup> legal pluralism, but also through its reasoning provides an opportunity to view and study how different knowledge claims and practices – for example, technical versus legal knowledge – interact with each other and are reconciled during the adjudication of disputes.<sup>171</sup> As a central tribunal sat in a national capital,<sup>172</sup> the range of disputes appealed before the APTEL also brings into view the range of challenges facing energy transition across the country. It offers a glimpse of the scale and often shared nature of legal disputes arising out of transition in different states.

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<sup>169</sup> Electricity Act 2003, s 112 (Composition of Appellate Tribunal).

<sup>170</sup> Fisher (n 15); Visvanathan (n 88) 253.

<sup>171</sup> See Harry Arthurs, *‘Without the Law’: Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) x.

<sup>172</sup> Electricity Act 2003, s 112 (c) (Composition of Appellate Tribunal).

## 1 APTEL as an Object of Legal Culture

The APTEL was established by statute to ‘hear appeals against orders of the adjudicating officer or Appropriate Commission.’<sup>173</sup> The intent was to create a ‘multi-disciplinary, expert, appellate body’<sup>174</sup> that could ‘expeditiously’<sup>175</sup> dispose appeals against orders made by primary decision makers, that is, the concerned electricity regulatory commissions. To this end, it was granted procedural autonomy and the freedom to adopt whichever principles of the Civil Procedure Code 1908 it deemed appropriate, subject only to the constraint that it must observe principles of natural justice.<sup>176</sup> This grant of jurisdiction was motivated by the ‘practical aspiration’ of reducing the burden of litigation in higher courts,<sup>177</sup> and in recognition for expertise in responding to the nature of legal problems raised in the disputes it was tasked with adjudicating upon.<sup>178</sup>

Typically, the APTEL, as explained above, carries out merits review, hears statutory appeals, and clarifies the interpretation of provisions from applicable statutory, policy and regulatory frameworks.<sup>179</sup> Despite being characterized as an inter-disciplinary tribunal, it must

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<sup>173</sup> Electricity Act 2003, s 111 (Appeal to Appellate Tribunal).

<sup>174</sup> Appellate Tribunal For Electricity, ‘About Us’ < <http://www.aptel.gov.in/about-us> > accessed 22 May 2022.

<sup>175</sup> Electricity Act 2003, s 111 (5) (Appeal to Appellate Tribunal).

<sup>176</sup> National Green Tribunal Act 2010, s 19 (Procedure and powers of Appellate Tribunal); Electricity Act 2003, s 120 (Procedure and powers of Appellate Tribunal).

<sup>177</sup> Law Commission Report, 272.

<sup>178</sup> Law Commission Report, 4-5 [1.13].

<sup>179</sup> Electricity Act 2003, s 111 (Appeal to Appellate Tribunal).

in its legal analysis conform to the legal culture in which it is embedded.<sup>180</sup> This, Fisher explains, is because it is a ‘legal object’.<sup>181</sup> In other words, the APTEL has a duty to adjudicate disputes according to its ‘proper role’ in the Indian legal order.<sup>182</sup> This role is a product of its scope under the Electricity Act 2003, grant of jurisdiction, composition of the bench, and the types of legal questions that are appealed before it. During adjudication, the APTEL can apply, adapt, evolve and distinguish pre-existing case law and reasoning. By reconciling disputes with existing frameworks, the APTEL incorporates energy transition into the Indian legal order and positions itself an institution contributing not only to the development of law but also ensuring the legal, administrative and regulatory stability of this process in this legal landscape. As I will show in later chapters, the legal problems arising out of energy transition are not alien to these frameworks and APTEL’s reasoning processes- all that the adjudication of these disputes involves is thinking through, interpreting, applying, and accommodating them with existing legal frameworks.<sup>183</sup> While this is straightforward in some instances, it can be equally complex and challenging on other occasions. This point is unpacked in more detail in the next chapter, but for the present purpose, all I want to the reader to bear in mind is that the APTEL is a legal object that is both a product of and embedded in the legal landscape mapped in the previous section.

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<sup>180</sup> Arthurs (n 36) 8.

<sup>181</sup> Fisher (n 8).

<sup>182</sup> Fisher (n 8); Electricity Act 2003, s 110 (Establishment of Appellate Tribunal).

<sup>183</sup> Fisher (n 15) 4.

## 2 APTEL as a Participant in Legal Culture

While the complexity of APTEL adjudication merits close study in and of itself, it should also attract scholarly attention in the capacity of it being an active ‘participant’ in contributing to the development of law during energy transition.<sup>184</sup> Through its interaction with different frameworks, institutions and actors during adjudication, APTEL judgments frame how law should evolve in response to transition at an everyday level. In addition to discharging its statutory functions,<sup>185</sup> the Appellate Tribunal through its reasoning produces a set of legal norms that actively shapes and structures how participants, regulators, and processes orient their actions during transition.<sup>186</sup>

Law is integral to constructing much of the infrastructural apparatus constituting energy transition,<sup>187</sup> for example, in establishing contractual arrangements,<sup>188</sup> constituting regulatory authorities,<sup>189</sup> and prescribing their functions;<sup>190</sup> and the APTEL plays an important role in defining and adjusting the relations between key actors, consumers and regulatory authorities.<sup>191</sup> The Appellate Tribunal’s specialization therefore is not just subject matter

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<sup>184</sup> Fisher (n 15) 35-36.

<sup>185</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal).

<sup>186</sup> Fisher (n 15) 44; E.g., *Ramnad Renewable* (n 57); *Welspun Renewable* (n 57).

<sup>187</sup> See Benedict Kingsbury and Megan Donaldson, ‘Roles of Law in the Regulatory States of the South’ in Navroz Dubash (ed), *The Rise of the Regulatory State of the South* (OUP 2013).

<sup>188</sup> Electricity Act 2003, s 76 (3) (CERC power to contract), s 82(2) (SERC power to contract).

<sup>189</sup> Electricity Act 2003, preamble, part IX (CERC), s 82 (Constitution of SERC).

<sup>190</sup> Electricity Act 2003, s 79 (Functions of CERC), s 86 (Functions of SERC).

<sup>191</sup> Kingsbury and Donaldson (n 187) 256-57.

specialization but also legal specialization.<sup>192</sup> That is, it is an expert in responding to certain kinds of legal problems, and to that end, has developed an influential body of jurisprudence pertaining to the RPOs and RECs- both of which are fundamental in facilitating trades in renewable energy between states.<sup>193</sup> Its judgments have for example, clarified the ambit and scope of who can be registered under the REC mechanism,<sup>194</sup> how the forbearance and floor price for the REC framework ought to be determined,<sup>195</sup> and whether there can be retrospective effect of REC guidelines,<sup>196</sup> among other things. While these decisions may appear pointed and specific, that degree of nuance is what is needed to develop the law and respond to the kinds of legal problems raised in appeals before the Appellate Tribunal.

The APTEL is clearly not a ‘passive legal object’,<sup>197</sup> rather, it is an active participant in developing and evolving the law concerned with energy transition in India. However, as Fisher explains, the heuristics used by lawyers often makes it difficult to view the substantive contributions of tribunal rulings in developing the law.<sup>198</sup> By interpreting and applying statute,

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<sup>192</sup> Fisher (n 15) 36 citing Ceri Warnock, ‘Reconceptualising Specialist Environment Courts and Tribunals’ (2017) 37 LS 391.

<sup>193</sup> *Rajasthan Renewable Energy Corporation v Shree Cement Ltd* (APTEL, 09 Apr 2019); *JSW Steel v Tamil Nadu Electricity Regulatory Commission* (APTEL, 02 Jan 2019); *Ultratech Cement Ltd v Karnataka Electricity Regulatory Commission* (APTEL, 09 Apr 2019); *Green Energy Association v Himachal Pradesh Electricity Regulatory Commission* (APTEL, 10 Dec 2015); *Viyyat Power Pvt Ltd v Kerala State Electricity Board Ltd* (APTEL, 09 Jul 2018).

<sup>194</sup> *Timarpur-Okhla Waste Management Co Ltd v Delhi Electricity Regulation Commission* (APTEL, 19 May 2015) (Whether producers of non-conventional energy from waste fell within the ambit of the REC mechanism).

<sup>195</sup> *Green Energy Association v Central Electricity Regulation Commission* (APTEL, 12 Apr 2018).

<sup>196</sup> *Timarpur-Okhla* (n 194); *India Glycols Ltd v Uttarakhand Electricity Regulatory Commission* (APTEL, 01 Oct 2014).

<sup>197</sup> Fisher (n 15) 274.

<sup>198</sup> Fisher (n 15) 259.

regulatory and policy frameworks to the facts raised in disputes appealed before it, the APTEL is uniquely positioned to ‘influence and respond to the world in which it operates, including the legislation that fashions and refashions it’ through its capacity to reason with interdisciplinary expertise.<sup>199</sup> APTEL’s decisions, for example, have been especially influential in clarifying state-specific solar regulations,<sup>200</sup> delays in connecting to the grid,<sup>201</sup> and determining preferential tariff structures.<sup>202</sup> Mapping APTEL’s participation in responding to these disputes in this landscape, therefore not only offers an opportunity to view how energy transition is legally delivered, but also shows how different frameworks interact with each other and with other dimensions of society, and the kind of friction that arises from those interactions. It also shows how the Appellate Tribunal responds and stabilizes those points of conflict.

The APTEL is tasked with responding to appeals against orders taken by concerned regulatory commissions. To that end, it is well positioned to guide, shape, and limit the exercise of regulatory powers as well as the functions exercised by these authorities on a day-to-day basis. This is subject, of course, to the set of questions and arguments placed before the APTEL, and the frameworks that comprise its intellectual toolkit. The Appellate Tribunal’s decisions while developing law also shapes the nature of regulation in this landscape.<sup>203</sup> Given the limited experience of regulatory bodies in dealing with this kind of infrastructure when first introduced in the mid 1990s, it is perhaps unsurprising that regulation in this space has evolved over time

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<sup>199</sup> Fisher (n 15) 263 citing Matthew Groves and Greg Weeks, ‘Editorial: Tribunals – Their Continued Evolution and Reform’ (2020) 26 A J Admin L 189.

<sup>200</sup> *Ramnad Renewable* (n 57); *Siwana Power* (n 57).

<sup>201</sup> *Tamil Nadu Generation and Distribution Corporation Ltd v B&G Solar Pvt Ltd* (APTEL, 12 September 2020).

<sup>202</sup> *Gujarat Urja Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 11 April 2018); *Welspun Renewable* (n 57).

<sup>203</sup> *Ramnad Renewable* (n 57).

with the careful ‘layering of practices and norms’ done through judicial intervention, and more recently in forums such as the APTEL.<sup>204</sup> The interactions between the Appellate Tribunal and regulators during adjudication impacts regulatory functioning and their outcomes.<sup>205</sup> Dubash however, points out that these interactions are not always instinctive and that it can also shape practice in ‘counter-intuitive ways’.<sup>206</sup> He takes the example of a case involving suo motu action taken by the APTEL involving the determination of tariff, wherein the ‘tribunal turned the regulator and the regulated on their heads’.<sup>207</sup>

In this section, I sketched the APTEL as an object and subject of Indian legal culture embedded in the legal landscape of energy transition. The legal detail is mapped in the next chapter. My aim in constructing this mental image of the Appellate Tribunal was to do two simple things- first, to show that the APTEL as a legal institution, despite is legal novelty,<sup>208</sup> is not removed from this landscape. Rather, it is firmly rooted in it as an object of this legal culture. Second, I wanted to bring to the reader’s mind that this embeddedness (or ‘rootedness’ as I will show in chapters 4 and 5) enables the APTEL as a legal institution to participate in developing law and shaping regulatory action through its reasoning of the frameworks constituting this landscape in responding to the legal and factual circumstances appealed before it. Thus, by positioning the APTEL as both an object and subject of this legal landscape, I chart

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<sup>204</sup> Kapur and others (n 88) 239.

<sup>205</sup> Kapur and others (n 88) 239; E.g., *Ramnad Renewable* (n 57); *Welspun Renewable* (n 57) these disputes are mapped in detail in the next chapter.

<sup>206</sup> Kapur and others (n 88) 239.

<sup>207</sup> Kapur and others (n 88) 239.

<sup>208</sup> Warnock (n 192).

and describe how this positioning situates it as a site for the co-production of energy transition in India in the next section.

## E CO-PRODUCTION OF ENERGY TRANSITION IN INDIA

The previous sections outlined the legal landscape in which the APTEL operates. In this section, I consider the relationship between that landscape and APTEL adjudication through the lens of co-production. The purpose of this analysis is to contextualize APTEL's adjudication of disputes concerning solar infrastructure by focusing on how it responds to the dynamics of transition and creates legal knowledge about it. To view APTEL's legal work through the lens of co-production renders a thicker picture of the intellectual challenges posed by the adjudication of these disputes for the formation of legal knowledge. This legal knowledge is, as I explain in the previous chapter, also constitutive of social knowledge vis-à-vis transition and associated solar infrastructure. My aim in bringing these challenges into view is on one hand, to highlight its legal and social significance, and on the other hand, to encourage a scholarly conversation about how APTEL's adjudicative competence and expertise in responding to these disputes can be fostered. This inevitably raises questions about the content and limits of our legal imagination about tribunals. I reflect on these points in more detail in chapters 5 and 6.

The relationship between the legal landscape charted in this chapter and APTEL's position in it as an object and subject of the legal culture in which they are embedded shows two things: first, that the APTEL, by interpreting and applying the frameworks that constitute this landscape in adjudicating disputes appealed before it, weaves them together. This not only creates legal knowledge about solar infrastructure and associated processes but also shapes an understanding about how regulatory powers of concerned commissions ought to be exercised in their regard. In other words, it co-produces an understanding about this infrastructure, energy transition and how it ought to be regulated.

Second, the co-produced nature of energy transition highlights the formative role of law and adjudication and the need to take the work of adjudicative institutions in this space

seriously. Such an examination, as Bogojević and Zou have shown,<sup>209</sup> does not follow a ‘market versus environment’ or ‘development versus environment’ dichotomy, rather it permits viewing the manner in which energy transition and its economic, infrastructural and environmental objectives, compete, evolve and communicate with the law, and are ultimately embedded into the legal order through legal reasoning.<sup>210</sup> Simply put, how energy transition is legally understood will impact how it is operationalized, and how it is operationalized will impact how we engage with the legal present and resulting future.

## 1 Co-production as an Analytical Lens

Co-production, as discussed above, is ‘shorthand’<sup>211</sup> for the proposition that the ways in which we know the world are inseparable from the ways we choose to live in it.<sup>212</sup> Knowledge and its material embodiments are at once products of social work and constitutive of forms of social life; society cannot function without knowledge any more than knowledge can exist without appropriate social supports.<sup>213</sup> In other words, what we know about the world depends on what we can do about it, and the legitimacy we associate to specific actions, actors, and institutions.<sup>214</sup>

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<sup>209</sup> Bogojević and Zou (n 94).

<sup>210</sup> See chapters 3 and 4 of this thesis.

<sup>211</sup> Jasanoff and Kim (n 22) 2-3.

<sup>212</sup> Jasanoff (n 7) 14.

<sup>213</sup> Jasanoff (n 7) 14.

<sup>214</sup> Jasanoff (n 7) 14.

The insight provided by the co-production framework to lawyers and law scholars, Fisher notes, ‘is nothing new- it is what we already know about the law, i.e., that law creates frameworks for identifying problems and how to solve them’,<sup>215</sup> and by doing so, it frames an understanding of how to order our lives and make sense of the world around us.<sup>216</sup> Typically, in ‘legally disruptive’<sup>217</sup> circumstances such as climate change, or as in the present case, in an ongoing energy transition- law acts as a bridge- creating continuity in moments of rupture by connecting the legal past with the present, and aligning it with collective imaginaries for the future.<sup>218</sup>

This exercise involves reconciling disputes with existing legal frameworks and rethinking our mental images about the role of law and legal institutions during energy transition.<sup>219</sup> The disputes generated by energy transition are distinctive in that, in addition to raising new questions about how to understand particular statutory, policy, regulatory and contractual provisions and make sense of novel legal constructs such as the REC and RPO frameworks, they show that energy transition has exacerbated pre-existing challenges in the electricity sector, that is, with regard to grid connectivity, in determining the date of commissioning projects and associated electricity tariffs.<sup>220</sup> This shows that the process of

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<sup>215</sup> Elizabeth Fisher, ‘Expert Executive Power, Administrative Constitutionalism and Co-production: Why They Matter’ in Maria Weimer and Anneik de Ruijter (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017) 37; see also Eloise Scotford, *Environmental Principles and the Evolution of Environmental Law* (Hart 2017).

<sup>216</sup> Liz Fisher, ‘Challenges for the EU Climate Change Regime’ (2020) 21 *German LJ* 5; Fisher (n 215).

<sup>217</sup> Fisher and others (n 17) 174.

<sup>218</sup> See Navya Jannu, ‘Constructing the Present, Forming the Future: The Role of Courts in India’s Transition to Renewable Energy’ (MPhil thesis, University of Oxford 2019).

<sup>219</sup> Fisher (n 17) 174.

<sup>220</sup> Jannu (n 218).

energy transition is taking place in a materialized world with material legal works.<sup>221</sup> The legal present is complex, and how those complexities are understood and dealt with by adjudicative institutions will shape the energy future sought through this transition.

Infrastructure holds a central place in the ongoing transition, yet how that infrastructure is framed and understood by law and adjudicative institutions is seldom considered in scholarship about it.<sup>222</sup> One reason perhaps, is that physical infrastructure disappears from consciousness as do the intellectual structures that give it meaning,<sup>223</sup> until there is cause for dispute or friction between them, and these intellectual structures are appropriately operationalized.<sup>224</sup> That is perhaps why co-production is best observed during periods of change and through the reasoning processes that attempt to make sense of what these changes mean for the law and society.<sup>225</sup>

The legal problems facing adjudicators in such circumstances are often a reflection of the ‘fundamental upheaval of social and economic orders’ threatened by the dynamic and polycentric nature of transition.<sup>226</sup> During transition, law achieves coherence and continuity

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<sup>221</sup> See Donald MacKenzie, *Material Markets: How Economic Agents are Constructed* (OUP 2009); see also Elizabeth Fisher, ‘Making Sense of the WTO Sanitary and Phytosanitary Agreement: An Essay about Scholarly Expertise’ in Bettina Lange and others (eds), *Regulatory Transformations: Rethinking Economy-Society Interactions* (Bloomsbury 2015).

<sup>222</sup> Bogojević and Zou (n 94).

<sup>223</sup> Bogojević and Zou (n 94) 35.

<sup>224</sup> Inspired by the use of the term in Bogojević and Zou (n 94) 35; Anna Lowenhaupt Tsing, *Friction: An Ethnography of Global Connection* (Princeton University Press 2005).

<sup>225</sup> See Sheila Jasanoff, ‘Constitutions of Modernity: Science, Risk and Governable Subjects’ in Maria Weimer and Anniek de Ruijter (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017).

<sup>226</sup> Fisher and others (n 17) 174.

through its capacity to encourage/ discourage certain behaviors, and to attach specific meanings and consequences to those behaviors.<sup>227</sup> It facilitates social ordering by engaging the power of the state, through legislation, and adjudication in courts and tribunals.<sup>228</sup> The relationship between the Appellate Tribunal and solar infrastructure associated with transition is therefore an integral and formative one.

In recent years, social sciences have enriched that understanding of law by proposing a shift away from formalistic traditions and suggesting that the law be primarily conceptualized as a ‘body of rules’ by which we order our conduct in society, and secondarily in practice of law as a ‘set of norms for decision-making developed by courts’.<sup>229</sup> Understood in this way, law and adjudication appear closely intertwined with the collective ‘imaginaries’ of state building.<sup>230</sup> Although Arthurs makes these points in the context of specialized courts and tribunals in nineteenth century England, some of his observations about law and tribunalised adjudication are very much applicable to the Indian legal order today and are helpful in thinking about how adjudication in the APTEL constructs an understanding about energy transition in India. Arthurs emphasizes that the ‘economic function, political content and social effects of the law’ cannot be ignored, and that the ‘processes by which different manifestations of law come into existence, shape and are given shape’ demand thoughtful deliberation.<sup>231</sup> Law after

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<sup>227</sup> See Harry Arthurs, *‘Without the Law’: Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985).

<sup>228</sup> Arthurs (n 227) 1.

<sup>229</sup> Arthurs (n 227) 2.

<sup>230</sup> Arthurs (n 227) 2.

<sup>231</sup> Arthurs (n 227) 2-3.

all is knowledge, he says, and a kind of knowledge that constructs and is constructed by the changing world around us,<sup>232</sup> and this is precisely the essence of co-production.

Thinking in terms of co-production therefore helps contextualize and embed legal frameworks into particular cultural contexts.<sup>233</sup> It shows that legal frameworks are not rigid structures, rather, they are ‘modes of understanding’ that are rooted in a wider social and political universe.<sup>234</sup> It shows how the interaction between existing frameworks with new circumstances during adjudication constructs or ‘co-produces’ energy transition as a legal phenomenon.<sup>235</sup> This ties back to the previous section in which I frame the Appellate Tribunal as an ‘active participant’ in this legal landscape, i.e., by connecting what existed, what exists, and what ought to exist, adjudication in the APTEL creates legal continuity and coherence during transition. To that end, Jasanoff observes:

‘when we tune into the rhythms of everyday life, even at times of exceptionally rapid techno-scientific change, we experience more often the steady hum of continuity than the sense of disequilibrium. In short, the ways in which we take note of new phenomena in the world are tied at all points – like the muscles on a skeleton or the springs on a cot frame – to the ways in which we have already chosen to live in it.’<sup>236</sup>

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<sup>232</sup> Arthurs (n 227) 2-3.

<sup>233</sup> Nelken (n 9).

<sup>234</sup> See Jasanoff (n 224).

<sup>235</sup> Co-production has applied and embraced in this way by recent environmental law scholarship see e.g., Fisher (n 221); Fisher (n 215); see also Elizabeth Fisher, ‘Administrative Law, Pluralism and the Legal Construction of Merits Review in Australian Environmental Courts and Tribunals’ in Carol Harlow and Michael Taggart Linda Pearson (ed), *Administrative Law in a Changing State: Essays in Honour of Mark Aronson* (Hart Publishing 2008).

<sup>236</sup> Jasanoff (n 224) (my emphasis).

Socio-technical change of the sought envisaged by energy transition results in the creation of a ‘new normal’ much like the altered ordering of our lives during the Covid-19 pandemic. In the context of energy transition, however, this ‘new normal’ feels more normal than new because of the connections made between new circumstances to the pre-existing legal and social machinery that holds it in place, that is, to the frameworks constituting the legal landscape in which transition is taking place and acquiring meaning. The APTEL plays an important role in crafting those connections. By highlighting the co-produced nature of energy transition, I show the APTEL’s substantive role in India’s transition to renewable energy and the importance of thinking about its competence and proficiency in responding to the legal disputes arising from this complex socio-technical phenomenon. This challenges the thin understanding of tribunals as mere practical institutions that have nothing to do with the development of law and society.

## 2 Operationalizing Socio-Technical Imaginaries and the Significance of Legal Culture

The previous sections have highlighted that the APTEL is not a passive legal object, rather it is an active participant in rich and complex legal landscape. The legal detail of that participation is mapped in the next chapter. In reasoning and responding to the disputes appealed before it, the Appellate Tribunal emerges as an important site for the co-production of energy transition in India. Now how that plays out is to be seen. From the discussion so far, one thing is clear- adjudication leads, just as much as it is led by, society’s choices and ideas about how it wishes to order and organize itself- socially and technologically. Jasanoff and Kim conceptualize this relationship as a ‘socio-technical imaginary’. They define this concept as:

‘collectively imagined forms of social life and social order reflected in the design and fulfilment of nation specific scientific/ technological projects.

Imaginarities, in this sense, at once describe attainable futures and prescribe futures that states believe ought to be attained.<sup>237</sup>

The legal landscape of energy transition shows that, it as a process, both arises from and gives rise to distinct socio-technical imaginaries, and that these imaginaries are specific to the particular cultures in which they arise and acquire meaning. In India for example, as the constitutional, legislative, and policy frameworks have shown, the transition to renewable energy is motivated towards securing certain socio-economic goals- energy security, mitigating the impact of climate change, and creating access to affordable electricity.<sup>238</sup> Together they construct a collective ‘imaginary’ about what our energy future ought to look like.

Disputes before the APTEL in this sense, when viewed through the lens of co-production, show that these disputes are more than mere functional pleas for particular outcomes, rather, the legal problems they bring before the Tribunal illustrate deeper friction arising from differences in how that future ought to be operationalized and attained. APTEL adjudication offers a unique vantage to view those imaginaries in action. Legal disputes resulting from energy transition are, by their very nature, moments of contestation between disparate understandings of how to make ‘legal’ sense of transition and new energy infrastructure. These understandings shape the way we frame, understand, and relate to transformative change in the society. These disputes, as I show in the next chapter, require the Appellate Tribunal to iterate and re-iterate the distinct imaginaries of transition embedded in Indian legal culture. These iterations are often deeply transformative in the long run. By layering the norms produced through the adjudication of everyday disputes, the APTEL not

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<sup>237</sup> Jasanoff and Kim (n 22) 120.

<sup>238</sup> See chapter 2 of this thesis; Electricity Act 2003; National Electricity Policy 2005; India’s INDC (n 48).

only embeds and incorporates energy transition into the Indian legal order but also orients the way actors, institutions and processes order themselves during this process.<sup>239</sup>

Legal culture, as a scholarly lens, plays an important role here in helping us understand that process of incorporation by drawing attention to not only the text of law but also to the distinct order of priority among these frameworks that exist in particular legal traditions.<sup>240</sup> It brings together the broader range of considerations routinely relied upon by the Appellate Tribunal, implicitly and explicitly, in its interpretation and application of the law to the case at hand. For example, it draws attention to the presumptions as to underlying principles of justice, expectations as to institutional roles (general courts vis-à-vis specialist tribunals, role of state governments versus central governments etc.), general norms of social interaction, and a sense of the historical evolution of the applicable law and its creative possibilities.<sup>241</sup> APTEL adjudication is, in that sense, rooted in an understanding of the legal landscape and its position in it, considerations for India's energy choices, developmental and welfare priorities, and a set of mentalities that determine how they ought to be secured.

Although as a concept, imaginaries, like legal culture, neither cause nor impact the nature of collective life in the conventional sense. But as analytical tools, they show how societies and its institutions adapt and assimilate the changing world around us. They show how understandings about the legal present and future interrelate. The concept of imaginaries urges us as lawyers and law scholars to not only take note of the components of legal culture but also to recognize how these components relate to other dimensions of Indian society such

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<sup>239</sup> E.g., *Ramnad Renewable* (n 57); *Welspun Renewable* (n 57).

<sup>240</sup> Webber (n 9) 34.

<sup>241</sup> Webber (n 9) 34.

as its energy aspirations, climate change commitments, and infrastructural inadequacies. These relationships further our understanding of energy transition as a complex socio-technical phenomenon by showing how diverse and seemingly unconnected components of legal culture and energy transition interact with each other and fit together as an integrated whole. The APTEL is at the heart of that process of integration; it is at the center of it all, yet it remains hidden in plain sight.

## **F CONCLUSION**

This chapter mapped the legal landscape of energy transition in India and positioned the Appellate Tribunal as a legal object and active participant in it. It then contextualized the relationship between the APTEL and that landscape from the analytical lens of co-production to show the significance of its work in constituting legal understandings about energy transition and associated infrastructure and weaving them into the legal order. With this thick picture about what the APTEL is, what it does and the complexity of the landscape in which it is embedded, the next chapter charts the disputes that arise in it and how the APTEL responds to those disputes by operationalizing the frameworks mapped in this chapter.

# **CHAPTER 3:**

## **MAPPING LEGAL WORK: APTEL CASE LAW ON SOLAR POWER PROJECTS 2015-19**

### **A INTRODUCTION**

The previous chapter mapped the legal landscape of energy transition in India and positioned the Appellate Tribunal for Electricity ('APTEL' or 'Appellate Tribunal') in it as an object of, and active participant<sup>1</sup> in Indian legal culture. It set the scene. This chapter provides the legal detail, by mapping case law concerning solar power projects appealed before the APTEL between 2015-19. It draws on the reasoning in 165 relevant reported cases to show APTEL's role in framing substantive legal understandings about solar infrastructure, energy transition, and the regulation thereof. I argue that energy transition as a 'legally disruptive process'<sup>2</sup> is especially disruptive of APTEL adjudication. Using Michel Callon's terminology, these disruptions illustrate 'hot' and 'cold' circumstances generated by the process of energy transition.<sup>3</sup> This chapter studies the different ways in which the Appellate Tribunal responds to or 'cools down'<sup>4</sup> the 'heat' of these disputes. It maps the types of regulatory decisions appealed and the Tribunal's responses to them, to show the different ways in which APTEL decisions create legal, administrative, and regulatory stability during transition.

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<sup>1</sup> Elizabeth Fisher, 'Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars' in James Goudkamp and others (ed), *Taking Law Seriously: Essays in Honour of Peter Cane* (Bloomsbury 2022) 261.

<sup>2</sup> Elizabeth Fisher and others, 'The Legally Disruptive Nature of Climate Change' (2017) 80 MLR 173, 175.

<sup>3</sup> Michel Callon, 'An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology' in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998) 260-261; Elizabeth Fisher, *Environmental Law as 'Hot' Law* (2013) 25 (3) JEL 347-358.

<sup>4</sup> Callon (n 3) 262.

The time period mapped is an important part of the deeper story of energy transition in India; it is marked by a consistent national commitment towards building solar capacity,<sup>5</sup> a growing renewable energy market,<sup>6</sup> solar power achieving grid parity,<sup>7</sup> and the recognition of climate change as the ‘strongest negative externality’ affecting the country.<sup>8</sup> This, as chapter 2 showed, is reflected in India’s relevant legal and policy frameworks, political aspirations, and wider institutional environment. Courts and tribunals in particular have been active in shaping a legal understanding of these commitments and creating legal and administrative stability through the adjudication of disputes.

This chapter focuses on the day-to-day adjudicatory practice or the ‘legal work’<sup>9</sup> of the APTEL. It brings into view the everyday contributions of appellate adjudication to the process of transition.<sup>10</sup> My aim is to offer the reader a feeling of the ‘thickness’<sup>11</sup> of APTEL

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<sup>5</sup> Ministry of New and Renewable Energy Government of India, *A Path Breaking Journey in Renewable Energy Through the Last 4 Years* (Press India Bureau 2018).

<sup>6</sup> Ministry for New and Renewable Energy Government of India, *Annual Report 2019–2020* <[https://mnre.gov.in/img/documents/uploads/file\\_f-1608040317211.pdf](https://mnre.gov.in/img/documents/uploads/file_f-1608040317211.pdf)> accessed 26 May 2022.

<sup>7</sup> Ministry for New and Renewable Energy Government of India, ‘Solar Energy: Grid Connected Overview’ <<https://mnre.gov.in/solar/solar-ongrid>> accessed 7 Feb 2022.

<sup>8</sup> Simrin Sirur, ‘Green Bonds, Push for Indigenous Solar Panels, EVs: Spotlight on Climate Change in Budget 2022’ *The Print* (1 Feb 2022) <<https://theprint.in/economy/green-bonds-push-for-indigenous-solar-panels-evs-spotlight-on-climate-change-in-budget-2022/818251/>> accessed 26 May 2022; Prime Minister’s Council on Climate Change Government of India, *National Action Plan on Climate Change* (2008) accessed 1 Feb 2022 (‘NAPCC’).

<sup>9</sup> Karl Llewellyn, ‘The Normative, the Legal, and the Law-Jobs: The Problem of Juristic Method’ (1940) 49 *Yale L J* 1355, 1356-57.

<sup>10</sup> See Joanna Bell and Elizabeth Fisher, ‘Exploring a Year of Administrative Law Adjudication in the Administrative Court’ (2021) *Public Law* 505.

<sup>11</sup> Elizabeth Fisher, ‘Through ‘Thick’ and ‘Thin’: Comparison in Administrative Law and Regulatory Studies Scholarship’ in Peter Cane and others (eds), *Oxford Handbook of Comparative Administrative Law* (OUP 2020) 616, 625-27.

adjudication. By ‘thick’ I refer not only to the variety of legal and non-legal materials involved in APTEL adjudication but also to the multi-layered and interconnected nature of conceptual structures, actors, and processes with which the Appellate Tribunal must engage.<sup>12</sup> The chapter also raises questions about adjudicative integrity, competence, and the ‘legal imagination’<sup>13</sup> of tribunals in shaping an understanding of energy transition. I will return to these points in more detail in the next chapter.

This chapter is structured as follows. Section 2 maps case law in three areas, namely, tariff orders and delays in commissioning power projects, novel legal constructs, i.e., Renewable Purchase Obligation (‘RPO’) and Renewable Energy Certificates (‘RECs’), and the interpretation of contract, statute, and regulatory provisions. These areas, consistent with my inductive approach, represent key sites of dispute in the case law mapped. Of the 165 cases, 64 appeals raised questions about tariff orders and consequences of delays in commissioning power projects, 52 concerned RPOs and RECs, and 49 involved the interpretation of statutory and regulatory provisions raised in the context of specific contract clauses.

Three points to be made before starting. First, while the analysis in this chapter is based on all the case law mapped, the examples provided are illustrative and not exhaustive. I draw on few key case studies in the body of this chapter and point to where necessary, cases with a similar factual matrix. The map herein also has certain inherent limitations in that it does not discuss what happens prior to an appeal arriving before the Tribunal, i.e., the decision-making

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<sup>12</sup> Harry Arthurs, *‘Without the Law’: Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) x; *Welspun Renewable Energy Pvt Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 11 Nov 2019).

<sup>13</sup> See Elizabeth Fisher, ‘Legal Imagination and Teaching International Environmental Law’ in Lavanya Rajamani and Jaqueline Peel (eds), *Oxford Handbook of International Environmental Law* (2 edn, OUP 2021) 135-136; Elizabeth Fisher, *Environmental Law: A Very Short Introduction* (OUP 2017) 51-65; Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Penguin India 2016) 9; Maksymillian Del Mar, *Artefacts of Legal Inquiry: The Value of Imagination in Adjudication* (Bloomsbury 2021) 125.

processes that happen at the level of the concerned regulatory commissions, nor does it discuss what happens after a judgment is delivered by the Appellate Tribunal. Not all APTEL case law is reported. Only those cases which deal with substantial points of law and can set precedent are made reportable by the Tribunal.<sup>14</sup> My analysis is based on this reported case law accessed through online legal databases.

Second, my analysis focuses on the legal reasoning in these cases. This reasoning demonstrates the range of considerations involved and complexities of tribunalised adjudication. It showcases legal thickness.<sup>15</sup> Given the embedded nature of energy transition, such accounts of law in this process have many merits. For example, they show us that complex ideas such as energy transition can be operationalised through everyday or ‘routine’<sup>16</sup> questions about tariff orders, grid infrastructure, and accountability in regulatory action.

Third, my analysis is based on Indian legal culture and specialist tribunals in India. APTEL’s experience of adjudicating disputes concerning solar power projects however is similar to other jurisdictions.<sup>17</sup> Fisher for example, examines legal challenges to wind turbine

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<sup>14</sup> APTEL decisions are binding on itself and primary electricity regulators in the country. Unless its judgment is proven manifestly wrong on a substantial question of law before the Supreme Court, the Tribunal’s decisions are conclusive on the legal and factual issues adjudicated upon. It cannot however examine the constitutional validity of the statute under which it is created, see Law Commission of India, *Assessment of Statutory Frameworks of Tribunals in India* (Report No 272, 2017) (‘Law Commission Report’) [7.13], [7.18].

<sup>15</sup> See Fisher (n 170).

<sup>16</sup> Bell and Fisher (n 10).

<sup>17</sup> Donald Zilman and others (eds), *Innovation in Energy Law and Technology: Dynamic Solutions for Energy Transitions* (OUP 2018); Sheila Jasanoff, *Science at the Bar: Law, Science, and Technology in America* (Harvard University Press 1997); Maria Lee and others, ‘Techniques of Knowing in Administration: Co-production, Models and Conservation Law’ (2018) 45 (3) *Journal of Law and Society* 427-56.

planning decisions in the UK,<sup>18</sup> and elsewhere in New South Wales.<sup>19</sup> Other examples of such scholarship include Lee's survey of planning law approval processes for off-shore wind farms and development consents for large scale wind farms under UK's Planning Act 2008,<sup>20</sup> Stacey's analysis of the Ontario Environmental Review Tribunal's (now 'Ontario Land Tribunal')<sup>21</sup> reasoning processes,<sup>22</sup> and Pederson's study of administrative environmental cases before higher courts in England and Wales.<sup>23</sup>

These studies show that the implementation of new energy sources promoted by national governments has inevitably led to conflict, and in particular legal conflict.<sup>24</sup> Energy transition is a 'legally disruptive' process and is especially disruptive of adjudication in courts and tribunals.<sup>25</sup> While there are exceptions,<sup>26</sup> the role of tribunals in responding to these

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<sup>18</sup> Elizabeth Fisher, 'Law and Energy Transitions: Wind Turbines and Planning Law in the UK' (2018) 38 OJLS 528.

<sup>19</sup> Elizabeth Fisher, Administrative Law Expertise of New South Wales Land and Environment Court (manuscript on file with author).

<sup>20</sup> Maria Lee, 'Knowledge and Landscape in Wind Energy Planning' (2017) 37 LS 3-24.

<sup>21</sup> As of June 1, 2021, the Local Planning Appeal Tribunal, Environmental Review Tribunal, Board of Negotiation, Conservation Review Board and the Mining and Lands Tribunal were merged into a new single tribunal called the 'Ontario Land Tribunal' *see* Ontario Land Tribunal, 'Environmental Matters' (*Government of Ontario*) <<https://olt.gov.on.ca/Tribunals/ert/about-the-ert/>> accessed 16 Feb 2022.

<sup>22</sup> See Jocelyn Stacey, *The Constitution of Environmental Emergency* (Hart 2018).

<sup>23</sup> Ole Pedersen, 'A Study of Administrative Environmental Decision-making before the Courts' (2019) 31 JEL 59-82.

<sup>24</sup> Fisher (n 18) citing Nina Hall and others, 'Societal Acceptance of Wind Farms: Analysis of Four Common Themes Across Australian Case Studies' (2013) 58 Energy Policy 200.

<sup>25</sup> Fisher (n 165) 174, 199.

<sup>26</sup> See Ceri Warnock, 'Reconceptualising Specialist Environment Courts and Tribunals' (2017) 37 LS 391; Ceri Warnock, *Environmental Courts and Tribunals: Powers, Integrity and the Search for Legitimacy* (Hart 2020); Bell and Fisher (n 10); *see generally* Peter Cane, *Administrative Tribunals and Adjudication* (Hart 2009); Chris Hilson, 'Framing Time in Climate Change Litigation' (2019) 9 (3) *Oñati Socio Legal*

conflicts has received little scholarly attention. By bringing the substantive contributions of the APTEL front and centre, this chapter illustrates its central role in creating stability during transition and highlights the importance of taking its legal work seriously<sup>27</sup> and thinking about how its proficiency in doing that work can be fostered.

## **B MAPPING APTEL CASE LAW**

Energy transition is a ‘legally disruptive’ process in that it requires lawyers and adjudicators to reconcile the legal disputes it raises with existing legal orders.<sup>28</sup> The legal disruption catalyzed by transition has not only led to the creation of new legal and policy frameworks seen in chapter 2, but also raised a number of disputes for adjudication in courts and tribunals. The process of adjudication, especially at the appellate level, can be viewed as an effort towards stabilizing these disruptions and managing uncertainty in the marketplace. APTEL’s adjudication of disputes involving solar power projects are a case in point.

Using Michel Callon’s terminology, these disputes illustrate ‘hot’ and ‘cold’ circumstances generated by the process of energy transition.<sup>29</sup> This chapter studies the different ways in which the Appellate Tribunal responds to or ‘cools down’<sup>30</sup> the ‘heat’ of these disputes.

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Series 361-79; Shibani Ghosh and others, ‘Appellate Authorities under Pollution Control Laws in India: Powers, Problems and Potential’ 14L Envt Dev J 49; Armin Rosencranz and Geetanjoy Sahu, ‘Assessing the National Green Tribunal after Four Years’ (2014) 5 J Indian LS 191; Dhvani Mehta, ‘The Judicial Implementation of Environmental Law in India’ in Shibani Ghosh (ed), *Indian Environmental Law: Key Concepts and Principles* (Orient Black Swan 2019) 271-322.

<sup>27</sup> Llewellyn (n 168) 1356-57; See also William Twining, ‘The Idea of Juristic Method: A Tribute to Karl Llewellyn’ (1993) 48 (1) U Miami L Rev 119, 126-136.

<sup>28</sup> Fisher (n 25) 173.

<sup>29</sup> Callon (n 3) 260-261; Fisher (n 3).

<sup>30</sup> Callon (n 3) 262.

In other words, it maps the different ways in which the Appellate Tribunal identifies actors, interests, rights and responsibilities, understands and applies frameworks, legal and otherwise, and creates authoritative jurisprudence on permissible courses of action and how law is to be understood through adjudication of disputes. I argue that these responses and the legal reasoning embedded in them create legal, regulatory and administrative stability in the solar marketplace during transition. My study of these cases therefore draws attention to the substantive contributions of the APTEL to the ongoing transition and highlights the need for active scholarly reflection about the role and contributions of tribunalised adjudication when confronted with the legally disruptive process of energy transition.

## 1 Adjudicating ‘Hot’ and ‘Cold’ Circumstances

Narratives about energy transition and energy markets<sup>31</sup> rarely talk about the role of law and adjudication in this process. The assumption is that adjudication is a straightforward task that addresses market failures by forcing the internalization of certain costs that have been externalized.<sup>32</sup> Implicit in this is often also the assumption that it is easy to identify a frame for reasoning when adjudicating these disputes.<sup>33</sup> While this is true in situations where actors and processes operate within settled legal frameworks, it is not always the case.<sup>34</sup> In an essay about economic externalities and markets, Michel Callon has noted:

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<sup>31</sup> See contra Sanja Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Hart 2013).

<sup>32</sup> Fisher (n 29) 348.

<sup>33</sup> Fisher (n 29) 349.

<sup>34</sup> Arthurs (n 12) (‘intrinsic difficulty of adjudication’).

‘For calculative agents to be able to calculate the decisions they take, they must at the very least be able to a) draw up a list of possible world states b) hierarchize and rank these world states; c) identify and describe the actions required to produce each of the possible world states. Once these actions have become calculable, transactions and negotiations can take place between different agents.’<sup>35</sup>

Law plays a clear role in creating those frameworks and thus ‘possible world states,’ whether it is through creating frames for agreement, consequences of actions, or networks of responsibility.<sup>36</sup> But these frames, Fisher observes, are ‘imperfect’ and create what Callon calls ‘overflows’, that is, no frame controls and contains everything.<sup>37</sup> Disputes raised by energy transition are examples of such overflows but the assumption is that these overflows can be readily identified and adequately managed through the application of existing frameworks. This raises questions about the APTEL’s adjudicative ‘competence’<sup>38</sup> in not only understanding and applying those frameworks, but also in doing that job well.<sup>39</sup> I will explain this in more detail in Chapter 4.

Callon describes these circumstances as ‘cold situations’ i.e., disputes in a context where ‘actors are identified, interests are stabilized, preferences can be expressed, and responsibilities are acknowledged and accepted’.<sup>40</sup> As such, adjudicating these circumstances

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<sup>35</sup> Callon (n 29) 260.

<sup>36</sup> Fisher (n 29) 350.

<sup>37</sup> Fisher (n 29) 350 citing Callon (n 29) 248-50.

<sup>38</sup> Elizabeth Fisher and Sidney Shapiro, *Administrative Competence: Reimagining Administrative Law* (CUP 2020) 32-3.

<sup>39</sup> Karl Llewellyn, ‘Appellate Judging as a Craft’ in *The Common Law Tradition: Deciding Appeals* (Little, Brown & Co. 1960); Elizabeth Fisher, ‘Back to Basics: Thinking About the Craft of Environmental Law Scholarship’ in Ole Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018); Richard Sennett, *The Craftsman* (Allen Lane 2008).

<sup>40</sup> Callon (n 29) 26.

involves identifying and applying workable frames of legal action. They are situations where the applicable legal tests, principles, and jurisprudence are well-established. The ‘foreseeability’ of these situations is often also shaped by the fact that they have been experienced before.<sup>41</sup> There is legal familiarity and continuity in the Appellate Tribunal’s response. Disputes involving breach of contract, arbitrary decision-making, appeals against tariff orders, and delays in commissioning power projects are some examples from the case law mapped.

In contrast, ‘hot circumstances’ refer to those situations where agreed frames for how to understand and act in the world are in ‘constant state of flux and contestation.’<sup>42</sup> These situations are characterized by the ‘absence of a stabilized knowledge base’<sup>43</sup>, for example, situations where different frames of understanding put forward mutually incompatible or fragmented descriptions of how actors, objects, and actions should be legally characterized and operate.<sup>44</sup> Disputes raising questions about the legal obligations created by novel legal constructs such as RPOs and RECs, broader questions involving contract and statutory interpretation are clear examples. These disputes are mapped in detail in later parts of this chapter.

Such ‘hot’ and ‘cold’ circumstances co-exist and will continue to be generated by transition in the legal landscape.<sup>45</sup> The heat of these disputes however is relative, that is, they

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<sup>41</sup> Callon (n 29) 261.

<sup>42</sup> Fisher (n 29) 347-48.

<sup>43</sup> Fisher (n 29) 347-48.

<sup>44</sup> E.g., *Star Wire (India) Vidyut Pvt Ltd v Haryana State Electricity Regulatory Commission* (APTEL, 15 Mar 2016); *Damodar Valley Corporation v Central Electricity Regulatory Commission* (APTEL, 23 Nov 2007).

<sup>45</sup> Callon (n 29) 261.

can be ‘hot’ and ‘cold’ to varying degrees.<sup>46</sup> This means that resolving disputes through the straightforward application of ‘cold’ forms of law can bear little resemblance to the tensions brought out by the reasoning in ‘hot’ circumstances. In the former for example, the Appellate Tribunal applies clearly identified provisions of statute or policy to clearly identified facts. How the matter should be resolved is typically well established by precedent and/ or tribunal practice- there is little to no dispute about identified frames and how they should fit together.

Whereas the ‘hot’ nature of disputes can make that process of identification and application more complex and in varying degrees.<sup>47</sup> For example, resolving a dispute about the implementation of an RPO is complex but the parties, rights, obligations and interests can be clearly identified.<sup>48</sup> Hot circumstances can also be created by the interaction of different frameworks. Take the reasoning in *Amplus Infrastructure*<sup>49</sup>, for example, which brought together the enabling legislation, a bespoke operative mechanism such as the RPO framework, and a state-specific tariff scheme. Typically, in such circumstances, there is no pre-existing guidance or precedent on how provisions must be reconciled. As a result of this, provisions might sometimes not fit together at all,<sup>50</sup> which further complicates the processes of identifying, interpreting, and reconciling facts with the law.’<sup>51</sup>

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<sup>46</sup> Fisher (n 29) 351.

<sup>47</sup> Fisher (n 29) 349.

<sup>48</sup> E.g., *Tata Power Delhi Distribution Ltd v Delhi Electricity Regulatory Commission* (APTEL, 16 Apr 2019).

<sup>49</sup> *Amplus Infrastructure Developers Pvt Ltd v Uttarakhand Electricity Regulatory Commission* (APTEL, 10 Apr 2015).

<sup>50</sup> E.g., *Star Wire* (n 44) discussed later in this chapter.

<sup>51</sup> *Amplus Infrastructure* (n 49).

Together however, the adjudication of these disputes draws attention to the fact that the solar marketplace thrives on the legal certainty, stability, unambiguity, and finality<sup>52</sup> of information, actions, and consequences of actions.<sup>53</sup> This need for calculatedness by market actors is embedded in the broader need for accountability in regulatory action and proper implementation of the policies and mechanisms underlying the ongoing transition.<sup>54</sup> As a result, by adjudicating upon the disputes appealed before it, the APTEL sits in a unique position to not only create legal, administrative, and regulatory stability but also shape the nature of connections made between the actors, objects and processes, and their regulation during transition. This is important, formative legal work that not only shapes and organizes the legal present of transition in a particular way but also crafts the future that results from it.

In light of this discussion, the next section maps disputes concerning solar power projects appealed before the Appellate Tribunal, focusing in particular on how it responds to cold and hot circumstances by bringing legal and technical knowledge together in its reasoning.<sup>55</sup>

The Appellate Tribunal, as I explain in chapter 2, is statutorily constituted by the Chairperson, who has been a judge of the Supreme Court or state High Court, and at least one judicial and one technical member.<sup>56</sup> Thus in addition to judicial expertise, the Act seeks

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<sup>52</sup> Timothy Endicott, *Administrative Law* (5th edn, OUP 2021) 29 finality refers to the legal treatment of an administrative or judicial decision as final unless there is appropriate ground for overturning it.

<sup>53</sup> Michel Callon, 'Introduction: The Embeddedness of Economic Markets in Economics' in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998) 6-16.

<sup>54</sup> Law Commission Report (n 14).

<sup>55</sup> Electricity Act 2003, s 112 (b), s 112 (c) (Composition of Appellate Tribunal), s 113 (Qualification for appointment as Chairperson and Members of Appellate Tribunal).

<sup>56</sup> Electricity Act 2003, s 112 (b), s 112 (c) (Composition of Appellate Tribunal).

technical expertise such as ministerial experience in ‘economic affairs or matters or infrastructure,’<sup>57</sup> ‘knowledge or experience in dealing with the matters relating to electricity generation, transmission and distribution and regulation or economics, commerce, law or management,’<sup>58</sup> and as such is an example of state-sponsored legal and adjudicative pluralism.<sup>59</sup> I begin by mapping disputes involving the application of ‘cold law’ and then map the Appellate Tribunal’s reasoning in hot circumstances. I provide context and necessary detail at appropriate points to the extent needed to engage with the case analysis.

## 2 APTEL Case Law on Solar Power Projects

The APTEL, as chapter 2 showed, is a statutory adjudicative institution empowered to hear appeals against orders of primary electricity regulators, which include the central, state, and joint electricity regulatory commissions.<sup>60</sup> The powers and functions of these commissions are stipulated under Part X of the Electricity Act 2003. These functions include among other things, regulating tariffs of power generating companies,<sup>61</sup> issuing transmission licenses,<sup>62</sup>

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<sup>57</sup> Electricity Act 2003, s 113 (b) (ii).

<sup>58</sup> Electricity Act 2003, s 113 (b) (iii).

<sup>59</sup> See chapter 2 of thesis for a more detailed discussion of this point, Elizabeth Fisher, ‘The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers’ (2012) 1 TEL 43.

<sup>60</sup> Electricity Act 2003, s 110 (Establishment of Appellate Tribunal); SP Sathe, *Administrative Law* (7<sup>th</sup> edn, LexisNexis India 2013) 312.

<sup>61</sup> Electricity Act 2003, s 79 (a) and (d) (Functions of Central Commission), s 86 (a) (Functions of State Commission).

<sup>62</sup> Electricity Act 2003, s 79 (b) (Functions of Central Commission), s 86 (b) (Functions of State Commission).

transporting electricity,<sup>63</sup> promoting the generation of electricity from renewable energy sources,<sup>64</sup> and adjudicating any resulting disputes.<sup>65</sup> The Appellate Tribunal was set up to hear appeals against these decisions.<sup>66</sup> APTEL adjudication therefore directly impacts primary electricity regulators and the renewable energy market at the central and state levels.

The right of appeal before the APTEL extends to ‘any person aggrieved’ by an order made by the concerned commission.<sup>67</sup> In the case law mapped, appeals were preferred by private solar power developers, electricity distribution licensees, transmission licensees and consumer protection groups who approached the Appellate Tribunal via specific statutory routes.<sup>68</sup> Disputes largely clustered around three areas, namely, appeals against tariff orders issued by State Commissions and the consequences of delays in commissioning solar power projects, appeals over RPOs and RECs, and the interpretation of contract, statute and regulatory provisions. As explained earlier, these disputes are framed as ‘cold’ and ‘hot’ circumstances for adjudication.

In mapping this case law, I followed an inductive approach. This involved reading 165 individual cases and broadly categorising them as ‘cold’ or ‘hot’ circumstances. The indicators used include: the subject matter of the regulatory decision being appealed, grounds of

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<sup>63</sup> Electricity Act 2003, s 79 (c) (Functions of Central Commission), s 86 (c) (Functions of State Commission).

<sup>64</sup> Electricity Act 2003, s 86 (e) (Functions of State Commission).

<sup>65</sup> Electricity Act 2003, s 79 (f) (Functions of Central Commission), s 86 (f) (Functions of State Commission).

<sup>66</sup> Electricity Act 2003, s 111 (Appeal to the Tribunal).

<sup>67</sup> Electricity Act 2003, s 111 (Appeal to the Tribunal).

<sup>68</sup> E.g., Electricity Act 2003, s 111 (Appeal to the Tribunal), s 127 (Appeal to Appellate Authority).

challenge, types of material relied upon, and the nature of the Tribunal's reasoning, i.e., whether strictly doctrinal or inter-disciplinary, in the sense described above. This was inevitably an interpretive inquiry which illustrated the APTEL's 'routine'<sup>69</sup> and 'active'<sup>70</sup> legal work in responding to these disputes. The Appellate Tribunal's 'routine' legal work involved following and applying well-established legal tests and principles to specific facts.<sup>71</sup> This was seen in the cold circumstances mapped in the next section. This legal work is central to stabilising legal disruption caused by regulatory action. It creates stability and accountability in regulatory action.

'Active'<sup>72</sup> legal work, on the other hand, involved considering multiple applicable frames, actors and dimensions to determine what the law or permissible course of action should be. This legal work involved considering technical knowledge, engaging in inter-disciplinary reasoning, and an appreciation of the institutional, social, and political aspirations underlying the ongoing transition.<sup>73</sup> On one hand, the Tribunal's active legal work focused on resolving legal questions of practical importance such as how the law should be understood and operate, and on the other hand, it drew attention to some fundamental and often irreconcilable tensions in the interaction of different frameworks and their impact on the Tribunal's jurisdiction and reasoning.<sup>74</sup> These were seen in hot circumstances. This legal work plays an important role in

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<sup>69</sup> Bell and Fisher (n 169) 510, 515.

<sup>70</sup> Fisher (n 1) 261.

<sup>71</sup> Bell and Fisher (n 169) 510.

<sup>72</sup> Fisher (n 1) 261.

<sup>73</sup> E.g., *Welspun Renewable* (n 12); *Amplus Infrastructure* (n 49).

<sup>74</sup> E.g., *Star Wire* (n 44).

stabilising law in light of corresponding policy and regulatory developments during the ongoing transition, and in doing so, accrues normative traction.<sup>75</sup>

### 3 Cold Circumstances and Routine Legal Work

Adjudicating cold circumstances involves following and applying well established legal tests and principles to a specific set of facts.<sup>76</sup> Actors, interests, rights and responsibilities can be easily identified, and reasoned decisions can be made based on existing statutory provisions and precedent.<sup>77</sup> This is the Tribunal's 'routine,'<sup>78</sup> familiar, everyday legal work. On one hand, this involves remedying consequences of arbitrary decision-making and enforcement of contract, and on the other hand, it shapes the role and competence of primary electricity regulators to adequately respond to disputes through an emphasis on well-reasoned orders.<sup>79</sup>

These techniques were seen in the Tribunal's response to appeals against tariff orders and disputes resulting from delays in commissioning power projects. As is clear from the subject matter, these disputes typically relate to circumstances where an order of the concerned commission seriously affects the certainty of pricing and/ or payment for power produced by

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<sup>75</sup> See Ceri Warnock, 'Environment and the Law: Normative Force of Context and Constitutional Challenges' (2020) 32 JEL 365. See also 'The Struggle to Make Legal Sense of Specialist Environmental Courts' in Warnock (n 75) 61-90, 198 Warnock explains that normative legitimacy means that the acquisition and exercise of authority is well grounded in the shared beliefs of the relevant community.

<sup>76</sup> Bell and Fisher (n 169) 510.

<sup>77</sup> Fisher (n 29) 348.

<sup>78</sup> Bell and Fisher (n 169) 510.

<sup>79</sup> Fisher and Shapiro (n 38) 274.

the solar generator,<sup>80</sup> viability of the power project,<sup>81</sup> and rights and responsibilities of contracting parties,<sup>82</sup> which are conditions necessary for a stable marketplace both generally and during transition.<sup>83</sup>

The adjudicative focus is on building legal certainty and continuity in order to allow parties to take decisions and rely on them taking agreed effect. The principle of legal certainty, Endicott explains, allows parties to know where they stand; it calls for clarity and finality of rules, that is, for treating an administrative decision as final unless there is appropriate legal ground for overturning it.<sup>84</sup> It generates a presumption of non-interference, that is, a rule that a decision made by a body to which power has been allocated is not to be interfered with merely because a different decision ought to have been made.<sup>85</sup> There has to be some justification for undoing what has been done; this justification must be grounded in applicable statutory and legal principles, and made clear in the Tribunal's reasoning.

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<sup>80</sup> *Siwana Power Project Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 May 2019) (tariff determination).

<sup>81</sup> *Welspun Renewable* (n 12).

<sup>82</sup> *Gujarat Energy Transmission Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 09 Jan 2015).

<sup>83</sup> See Callon (n 3) 4.

<sup>84</sup> Endicott (n 52) 29.

<sup>85</sup> Endicott (n 52) 29.

Disputes concerning the determination,<sup>86</sup> adoption,<sup>87</sup> reduction,<sup>88</sup> and extension<sup>89</sup> of tariff orders constituted the largest number of appeals before the Appellate Tribunal. The question in these appeals was usually whether the tariff order had complied with the terms of the Power Purchase or Power Supply Agreements ('PPA/PSA'),<sup>90</sup> and the substantive, normative and procedural aspects of the statutory mandate.<sup>91</sup> The resolution of these disputes not only enforced principles of accountability, regulating the exercise of statutory functions and the powers of the concerned electricity commissions, e.g., following fair procedure and reason-giving in decision-making,<sup>92</sup> but also addressed 'practical' and 'functional' necessities<sup>93</sup> of the marketplace, such as enforcing contract and actions based on the legitimate expectation of state guarantees. This typically involved applying 'cold' areas of law such as contract law, limitations, precedent, legal and statutory principles to the facts at hand.

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<sup>86</sup> E.g., *Minopharm Laboratories Pvt Ltd v Telangana State Electricity Regulatory Commission* (APTEL, 11 Nov 2019) (adoption of tariff); *Solar Energy Corporation of India ('SECI') v Karnataka Electricity Regulatory Commission* (APTEL, 25 Sep 2019) (adoption of tariff); *JBM Solar Power Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 09 Mar 2018) (validity of tariff order).

<sup>87</sup> E.g., *SECI* (n 86); *MP Biomass Energy Developers Association v Madhya Pradesh Electricity Regulatory Commission* (APTEL, 20 Mar 2017).

<sup>88</sup> E.g., *ES Solar Pvt Ltd v Managing Director, Bangalore Electricity Supply Company Ltd* (APTEL, 08 May 2019) (arbitrary reduction of tariff).

<sup>89</sup> *Earth Solar Pvt Ltd v Punjab State Electricity Regulatory Commission* (APTEL, 11 Jan 2019).

<sup>90</sup> E.g., *Siwana Power* (n 80); *Taxus Infrastructure and Power Projects Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2018).

<sup>91</sup> Peter Cane, *Administrative Law* (5th edn, OUP 2011) 12-14.

<sup>92</sup> Cane (n 91) 13, 69-90.

<sup>93</sup> Fisher and Shapiro (n 38) 122.

a. Tariff Disputes

Tariff orders refer to the price fixed by the concerned electricity commission for the purchase of energy from a power generator – here the concerned solar power generator – to a distribution licensee. These preferential tariffs are in place to encourage non-conventional energy technologies to eventually compete with conventional ones.<sup>94</sup> The National Tariff Policy stipulates that such procurement is to be done through competitive bidding, and in the event where procurement is not done through the bidding process, the Central Commission is to lay down guidelines for pricing electric power procured from non-conventional sources.<sup>95</sup>

These methods of procurement however often suffer procedural issues that impact the legality of tariff orders and the viability of contractual agreements that rely on the propriety of bidding processes or timely issuance of central guidelines.<sup>96</sup> In the case law mapped, 36 appeals were brought by power generators aggrieved by bidding processes being invalidated by the State Commission on account of the bidding process not being in line with applicable guidelines,<sup>97</sup> relying on extraneous considerations,<sup>98</sup> or not being approved by the State Commission.<sup>99</sup>

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<sup>94</sup> National Tariff Policy 2006; See also International Energy Agency, 'Tariff Policy 2006' (*IEA/IRENA Renewables Policies Database*) <<https://www.iea.org/policies/4731-tariff-policy-2006>> accessed 13 May 2022.

<sup>95</sup> National Tariff Policy 2006 [6.4].

<sup>96</sup> *Balarch Renewable Energy Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2018) (validity of PPA, tariff determination).

<sup>97</sup> *Balarch Renewable* (n 96); *Subhash Infraengineers Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 13 Dec 2016).

<sup>98</sup> *SunE Solar BV v Delhi Electricity Regulation Commission* (APTEL, 18 Jul 2018).

<sup>99</sup> E.g., *Balarch Renewable* (n 96), *Siwana Power* (n 80)

The primary concern of appellants in these cases was that the impugned order would vitiate the entire project and financially impact the generators and investors.<sup>100</sup> Respondents, on the other hand, typically State Commissions or power distribution licensees, argued about the legality and sanctity of process. They emphasized that following proper legal and administrative procedure mattered. These disputes involved cross-cutting legal and factual considerations e.g., following administrative procedure, arbitrary decision-making, and the legality of resulting orders, vis-à-vis the quantum of financial investments, fragility of idling solar infrastructure, and the statutory duty to promote solar power generation placed on the concerned State Commissions. They also raised questions about the lack of or inadequacy of reasoning in orders issued by the State Commission,<sup>101</sup> and challenged the methodology used to determine tariffs<sup>102</sup> and preferential rates.<sup>103</sup> The Appellate Tribunal's responses to these disputes highlighted the importance of reason-giving in creating legal, administrative and regulatory stability.

These disputes typically involved more than one question of law and inevitably touched upon the exercise of the State Commission's regulatory powers but were distinctive in that they permitted a clear identification of parties and their interests, clear statutory and/ or contract and regulatory provisions, and were reasoned and resolved by the straightforward application of law and/ or precedent to the facts appealed before the Tribunal. This is why I characterize them

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<sup>100</sup> *Balarch Renewable* (n 96).

<sup>101</sup> E.g., *Welspun Renewable* (n 12).

<sup>102</sup> E.g., *GMR Gujarat Solar Power Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Apr 2015) (billing period); *Gujarat Urja Vikas Nigam Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 11 Apr 2018) (operation and management expenses); *Welspun Renewable* (n 12) (capital cost, exchange rate, evacuation cost, depreciation, maintenance of spares, degradation of spares, returns on equity, auxiliary consumption); *Tata Power Delhi* (n 48).

<sup>103</sup> *Welspun Renewable* (n 12).

as cold circumstances and describe their resolution as routine legal work. I illustrate with examples in the paragraphs that follow.

In *Tata Power Delhi*,<sup>104</sup> the question before the Appellate Tribunal was threefold. First, to determine whether the appellant was entitled to the tariff specified under the CERC Regulations.<sup>105</sup> Second, whether the State Commission could impose the REC mechanism on the appellant's power project. Third, to determine whether the impugned order violated provisions of the enabling Act and RPO regulations. Adjudicating these questions involved the application of clearly identified statute and regulatory provisions to the factual context.<sup>106</sup> The first question involved assessing whether, under the relevant guidelines, the project had procured the stipulated percentage of power and registered itself with the concerned authority to benefit from the preferential tariff scheme. Based on a review of facts and evidence, the Tribunal held that because the appellants had failed to register under the Solar Generation Based Incentive ('GBI') scheme sanctioned by the Ministry for New and Renewable Energy ('MNRE'), they could not benefit from tariffs provided under the central regulations.<sup>107</sup> The Tribunal's reasoning was based on a simple application of stipulated criteria to the facts of the case.

With regard to the second question, the appellant argued that the State Commission could not insist that the appellant opt into the REC mechanism given that it was optional and

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<sup>104</sup> *Tata Power Delhi* (n 48).

<sup>105</sup> CERC Regulations 2009.

<sup>106</sup> Electricity Act 2003, s 111 (Appeal to Appellate Tribunal), s 178 (Powers of Central Commission to make regulations), s 61 (a) (Tariff regulations), s 79 (1) (Functions of Central Commission), s 79 (1) (g) (Functions of Central Commission), s 86 (1) (e) (Functions of State Commission); CERC Regulations 2009, reg 10(1), reg 6 (3).

<sup>107</sup> *Tata Power Delhi* (n 48) [12.1].

not a mandatory framework. The State Commission however argued that it had directed the appellant to register itself to benefit from the scheme as the appellant was not receiving any incentive/ subsidy at the time. It submitted that although the REC mechanism was not mandatory, by exercising this option, the appellant ‘would have been able to extract the market value of REC, without burdening consumers.’<sup>108</sup> The Tribunal’s reasoning was clear, it assessed mechanism to identify two options available to the power generator, that is, either to opt in or out. This choice rested with the appellant and could not be compelled by the Commission to change its choice as that would go against settled principles of law including the ‘doctrine of selection’.<sup>109</sup> Resolving the dispute here again involved the application of a well-settled principle of Indian contract law and clearly identified policy provisions to the facts of the case, and guided by the broader normative considerations underlying the ongoing transition.<sup>110</sup>

Finally, with regard to the third issue, the appellant argued that the State Commission’s order violated the statutory mandate under specific provisions of the Electricity Act and National Tariff Policy which encouraged solar generation. The relevant portion of the order is excerpted below:

‘The Commission is of the view that to encourage use of clean fuel and to mitigate pollution, the Petitioner should try to achieve 1% of the total power purchase from renewable sources. The Commission is inclined to allow higher quantum of renewable power to address the menace of pollution and global warming and promote use of clean fuel subject to its availability and convenience taking into account the overall power purchase cost allowed...’<sup>111</sup>

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<sup>108</sup> *Tata Power Delhi* (n 48) [9.2].

<sup>109</sup> *Tata Power Delhi* (n 48) [9.3].

<sup>110</sup> See chapter 2 of this thesis.

<sup>111</sup> *Tata Power Delhi* (n 48) [10.1] (my emphasis).

The appellant argued that the condition imposed by the order was contrary to the Commission's previous orders which focused on developing renewable energy in Delhi. It further argued that this:

'created regulatory uncertainty, which is against the rule of law and in teeth of the objectives sought to be achieved by the Act and Policies of the Government of India to promote clean energy...the impugned decision...is arbitrary and violative of Article 14 of the Constitution of India.'<sup>112</sup>

The respondent however argued that it was well within its regulatory powers to regulate and evolve a mechanism in the absence of specific guidelines.<sup>113</sup> Keeping this in mind, it was entitled to adopt a 'balanced approach'<sup>114</sup> to ensure that some opportunity was offered to the appellant to extract returns on its investment without burdening consumers. Resolving this issue involved reconciling the Commission's regulatory powers with the concerned RPO and REC policies, on the basis of which the Tribunal held that no interference was warranted.

My intention in detailing these arguments and the Tribunal's reasoning is to offer the reader an insight into the kind of questions asked of the Tribunal- often commonplace- but of practical importance to the parties and to the functional stability of the marketplace during transition. This functional stability rests on upholding the principle of legal certainty and not interfering with the State Commission's orders simply because an alternative decision could be made.<sup>115</sup> To that end, *Tata Power Delhi* showed that certainty of payments at agreed tariffs and a clear understanding of rights created and obligations imposed by the REC mechanism is

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<sup>112</sup> *Tata Power Delhi* (n 48) [10.1].

<sup>113</sup> *Tata Power Delhi* (n 48) [10.3] - [10.4].

<sup>114</sup> *Tata Power Delhi* (n 48) [10.4].

<sup>115</sup> Endicott (n 52) 29.

not only of practical importance to power generators but also central to creating a calculable legal environment conducive to the stable functioning of the marketplace during transition.

*Siwana Power*<sup>116</sup> offers another illustration. In this case, the Appellate Tribunal had to decide the tariff applicable to the appellant, a solar power producer in the northern state of Haryana. The question before the Appellate Tribunal was whether the State Commission had approved a tariff for the power sourced by the appellant contrary to the PPA executed with the appellant. This involved assessing whether there was a conflict between the impugned tariff order, PPA provisions, Electricity Act 2003, and Supreme Court precedent.

The provision in the PPA stipulated that the appellant was entitled to the lowest of three tariff alternatives, that is, the tariff determined by the State Commission or the tariff determined through two independent bidding processes conducted by the two other respondents, whichever was lower.<sup>117</sup> The appellant argued that the bidding process that led to executing the PPA could not be implemented because the bidding process was conducted in the absence of mandatory guidelines and therefore illegal, as a result of which, it was entitled to receive the lowest alternative, i.e., the levelized tariff determined by the State Commission. It argued that the distribution licensee however was paying an arbitrary tariff that was lower than that set by the State Commission, and sought appropriate remedy.

In a separate decision, however, the Supreme Court held that such faulty bidding processes could be validated by the State Commission by granting them ‘regulatory approval’ as a matter of discretion.<sup>118</sup> The Commission rejected that option in this instance. This case

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<sup>116</sup> *Siwana Power* (n 80).

<sup>117</sup> *Siwana Power* (n 80) [4].

<sup>118</sup> See *Siwana Power* (n 80) [37] – [38].

therefore turned on the statutory framework. As per the Electricity Act 2003, the tariff in a PPA is a statutory component and cannot be voluntary.<sup>119</sup> The Tribunal observed that:

‘...the appellant has a right to be awarded tariff, which is statutory, and as per provisions of the Electricity Act 2003. There has to be a legally valid tariff applicable to the generator (appellant) when supplying to a distribution licensee (respondent 2), otherwise the provisions of the Electricity Act read with...Energy Watchdog, India Thermal Power Ltd and Gujarat Urja Vikas Nigam Ltd will be rendered otiose.’<sup>120</sup>

The Tribunal held that the respondent ought to pay the tariff strictly in accordance with the PPA, i.e., the levelized tariff stipulated by the State Commission and not one arbitrarily determined by it. This analysis shows the clear identification of a right and applicable statutory provision.<sup>121</sup> By anchoring its reasoning in statutory considerations, the Tribunal creates legal stability by eliminating uncertainty generated through faulty bidding processes and regulatory discretion.<sup>122</sup>

In *Solar Energy Corporation of India* (‘SECI’),<sup>123</sup> which involved a similar set of facts, the Appellate Tribunal emphasized the importance of reasoning in tariff orders. It observed that the procurement of solar power by the respondent developers was being done to ‘promote solar power in the country...per the National Solar Mission’.<sup>124</sup> Like in *Siwana Power*, the

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<sup>119</sup> *Siwana Power* (n 80) [40].

<sup>120</sup> *Siwana Power* (n 80) [42].

<sup>121</sup> *Siwana Power* (n 80) [40], [42]; Electricity Act 2003, s 45 (Power to recover charges); s 49 (Agreement with respect to the supply or purchase of electricity).

<sup>122</sup> See generally, Stacey (n 22) 186-206.

<sup>123</sup> *SECI* (n 86).

<sup>124</sup> *SECI* (n 86) [19 (i)].

Commission in this case opted not to approve the bidding process conducted in absence of mandatory guidelines to be issued by the central government. The Tribunal accordingly looked into the reasons provided by the Commission in arriving at its decision to disapprove the tariff in the PSA. It observed that ‘no hearing was carried out while deciding the matter’<sup>125</sup> and that ‘there was no discussion, no reasoning, no explanation’<sup>126</sup> as to why the State Commission had arrived at a decision to disapprove the PSA and arrived at a provisional tariff not based on the bidding process. The Tribunal stayed the impugned order and directed respondents to make payments per the arrangement prior to the impugned order and not at the arbitrary provisional tariff rate. The Tribunal also noted that because the distribution licensees were procuring solar power under a promotional scheme of the central government there should be ‘no reason for making payments at a reduced rate.’<sup>127</sup>

Few points emerge from this discussion. Firstly, reason-giving is central to stabilizing disruption and creating legal and administrative stability.<sup>128</sup> The content of reasons however will depend on the questions asked purpose, e.g., in interest of legality.<sup>129</sup> The grounds of appeal, as the above analysis showed, will then determine the kind and extent of reasoning to be provided by the decision maker. The justification or explanation for its actions should enable the Appellate Tribunal to decide whether there has been a process failure, e.g., bidding processes conducted in absence of mandatory guidelines, or an error of law, or an unlawful

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<sup>125</sup> *SECI* (n 86) [19 (ii)].

<sup>126</sup> *SECI* (n 86) [19 (iii)].

<sup>127</sup> *SECI* (n 86) [19 (v)].

<sup>128</sup> See Jerry Mashaw, *Reasoned Administration and Democratic Legitimacy: How Administrative Law Supports Democratic Government* (CUP 2018).

<sup>129</sup> Endicott (n 52) 226.

exercise of discretion, seen in SECI for example.<sup>130</sup> The Tribunal too must provide reasons that are not only intelligible, but also address the substantial points that have been raised in the appeal. These reasons are essential to justify any interference or non-interference with the State Commission's orders, and are in that sense needed to create the calculable and stable legal, administrative and regulatory conditions needed for transition.

Secondly, appellate adjudication plays an important role in remedying arbitrary decision-making and shaping actions of participants, regulators, and implications of processes constituting the solar marketplace. To that end, the Supreme Court has observed that:

‘...every action of the State is required to be guided by the touchstone of non-arbitrariness, reasonableness and rationality and is equally required to be guided by public interest. It said that power distribution companies (DISCOMS) are instrumentalities of the State within the meaning of Article 12 of the Constitution of India and every holder of a public office is a trustee, whose highest duty is to the people of the country’<sup>131</sup>

The Apex Court here makes two points. Firstly, that state action must be tested against the principles of arbitrariness, reasonableness, rationality and public interest, and secondly, that instrumentalities of the state which include State Commissions, DISCOMs, and the Appellate Tribunal have a duty to the people of the country. They are active and integral participants in the process of transition and should prioritize that role by acting in public interest. There must be thoughtfulness and reflection in the law on their part.<sup>132</sup> This thoughtfulness, Waldron

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<sup>130</sup> Endicott (n 52) 223; e.g., *SECI* (n 86).

<sup>131</sup> *Southern Power Distribution Power Company Ltd of Andhra Pradesh v Hinduja National Power Corporation Ltd* (APTEL, 02 Feb 2022); See also ‘Every Action of State is Required to be Guided by the Touchstone of Non-Arbitrariness’ *The Economic Times* (02 Feb 2022) <<https://economictimes.indiatimes.com/industry/energy/power/every-action-of-state-is-required-to-be-guided-by-touchstone-of-non-arbitrariness-sc/articleshow/89304620.cms>> accessed 13 May 2022.

<sup>132</sup> Jeremy Waldron, ‘Clarity, Thoughtfulness, and the Rule of Law’ in Geert Keil and Ralf Poscher (eds), *Vagueness and Law: Philosophical and Legal Perspectives* (OUP 2016).

argues, aligns with institutional and political commitments to the rule of law<sup>133</sup> and is central to creating legal and administrative stability:

‘...the Rule of Law looks for certainty and predictability in the actions of the state, so that expectations can be nurtured and respected and so that people can know with some degree of assurance what rights they can count on and what their obligations are.’<sup>134</sup>

Remedying arbitrariness therefore is especially important for creating legal certainty in the solar marketplace, which in turn is needed to achieve the objectives of energy transition. Actors depend on the predictability, clarity, and finality of rules, rights and obligations in conducting their affairs. Certainty of tariffs and the implementation of those tariffs, as *Tata Power*,<sup>135</sup> *Siwana*<sup>136</sup> and *SECI*<sup>137</sup> showed is an important part of creating a stable marketplace. These tariffs however are often disrupted for reasons other than those mapped above, such as delays in commissioning power projects, which in the case law mapped emerged as another site for dispute.

Delays and tariffs are closely connected- tariff orders are typically in force for a stipulated period of time known as the ‘control period’ which is inevitably disrupted when projects are not ready to commission by the date stipulated in the contract and/ or on the date the agreed tariff takes effect, which often results in disputes for adjudication by the Appellate Tribunal. These delays can be viewed as examples of the ‘overflows’ Callon refers to. They

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<sup>133</sup> Jeremy Waldron, ‘Thoughtfulness and the Rule of Law’ Public Law & Legal Theory Research Paper Series Working Paper No 11-13.

<sup>134</sup> Waldron (n 132) 328.

<sup>135</sup> *Tata Power Delhi* (n 48).

<sup>136</sup> *Siwana Power* (n 80).

<sup>137</sup> *SECI* (n 86).

are however manageable in that they can be recognized and addressed by pre-existing legal principles and statutory frameworks. Some examples are mapped in the section that follows.

b. Delays and Force Majeure Circumstances

Delays in commissioning power projects occur for a variety of reasons such as delays in executing PPAs, delays in acquiring title over land, and/ or delays in connecting to or construction of transmission lines. These delays, as I explain above, impact tariff agreements and contractual conditions,<sup>138</sup> but in some instances also raise the risk of ‘technical degradation’ or the project being rendered a ‘stranded asset if left un-commissioned’.<sup>139</sup>

To mitigate against the latter, the central government has granted renewable energy projects with a ‘must run’ status and the privilege of ‘deemed generation’ to recover costs.<sup>140</sup> This means that the ‘evacuation of power from solar projects should not be curtailed for factors other than grid safety, or the safety of the personnel involved’.<sup>141</sup> The word ‘evacuation’ might read oddly here, but what it means is that the supply of power from solar projects to the grid should not be restricted except for the reasons mentioned.

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<sup>138</sup> E.g., *Uttar Gujarat Vij Company Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Nov 2015) (refund of transmission charges).

<sup>139</sup> E.g., *Balarch Renewable* (n 96).

<sup>140</sup> Government of India Ministry of New and Renewable Energy, ‘*MUST RUN*’ for Renewable Energy Generating Stations (Grid Solar Power Division, 2020) <[https://mnre.gov.in/img/documents/uploads/file\\_f-1586142405322.pdf](https://mnre.gov.in/img/documents/uploads/file_f-1586142405322.pdf)> accessed 19 Feb 2022; *Ramnad Renewable Energy Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 24 Sep 2019).

<sup>141</sup> E.g., *Siwana Power* (n 80).

That delays occur and disputes arise shows that energy transitions do not take place in ‘weightless, dematerialized’ worlds.<sup>142</sup> They are embedded in complex legal arrangements that must be adjusted in light of infrastructural change.<sup>143</sup> They are equally embedded in a set of regulatory and administrative arrangements that bring with them a set of contingencies that impact the nature and pace of transition. For example, delays in registering title over land<sup>144</sup> or securing timely executive clearances/approvals.<sup>145</sup> Law and legal reasoning play a fundamental role in those adjustments by framing understandings about the legal significance of solar projects and the ongoing transition, and how legitimate decision-making and action in relation to them must be done.<sup>146</sup> To that end, the focus in APTEL’s adjudication of disputes concerning delays in commissioning solar projects and the consequences of such delays, is on building stability by reconciling these disputes with existing frameworks.

In these appeals, the Tribunal’s task was to assess whether there was a bona-fide delay in terms of the PPA executed between parties. This involved interpreting contract, statute and regulatory provisions. Disputes before the Appellate Tribunal raised questions of law and fact, e.g., determining the actual date of commissioning the power project which would in turn affect the applicable tariff and the period for which it remained in effect,<sup>147</sup> or assessing whether there

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<sup>142</sup> Fisher (n 18) citing David Edgerton, *The Shock of the Old: Technology and Global History Since 1900* (Profile Books 2006) 212.

<sup>143</sup> Fisher (n 18) 553.

<sup>144</sup> *Taxus Infrastructure and Power Projects Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2018) [5].

<sup>145</sup> See *Earth Solar* (n 89).

<sup>146</sup> Fisher (n 18) 553.

<sup>147</sup> *ES Solar* (n 88).

was a ‘delay’ in terms of the contract,<sup>148</sup> or whether a circumstance would qualify as force majeure event and attract mitigating remedies.<sup>149</sup>

In *ES Solar*,<sup>150</sup> the Tribunal considered two appeals that disputed the date of commissioning two solar power projects in the southern state of Karnataka. The appellants argued that despite commissioning the projects as per the PPA executed between parties, the State Commission had ‘arbitrarily and unilaterally’ ‘without giving opportunity to be heard’ reduced the applicable tariff and imposed liquidated damages for an alleged delay of one day.<sup>151</sup> The State Commission however, argued that the PPA executed between them stipulated that the projects should be commissioned by a particular date and because the appellants had failed to comply, they were only entitled to a lower tariff and to pay damages as per terms of the PPA. On reviewing facts on record in light of the definitions and conditions set out in the PPA, the Tribunal held that the projects had in fact been commissioned as per contract and therefore the appellants were not liable to pay damages or receive reduced payments. This case, like *Tata Power Delhi* discussed above, illustrates a circumstance that permitted clear identification and reconciliation of facts and contractual provisions in reaching an outcome and as such shows how the Appellate Tribunal responds to cold circumstances as part of its routine legal work.

Disputes also involved assessing whether alleged delays were caused by force majeure circumstances. Cases involving delays in acquiring title over land and/ or change of land use documents (e.g., from agricultural to industrial use), delays in signing PPAs with state power

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<sup>148</sup> *ES Solar* (n 88).

<sup>149</sup> *Taxus Infrastructure* (n 144).

<sup>150</sup> *ES Solar* (n 88).

<sup>151</sup> *ES Solar* (n 88) [10].

distribution/ power procuring agencies, and delays caused by environmental events such as cyclones were clear examples.<sup>152</sup> Force majeure or hardship clauses are a standard component of contractual agreements including PPAs. As per general contract law, they are an ‘excuse’ against frustration of contract and are put in place to protect contracting parties.<sup>153</sup> The Appellate Tribunal’s task in resolving these disputes was to interpret the relevant contractual provisions and definitions and apply them to the facts in order to determine whether the circumstances in question fell within the ambit of the doctrine. While the legal treatment of force majeure clauses in contract law is well established, the judicial treatment of these exceptions in light of new infrastructure and the ongoing transition is however evolving. The reasoning in these disputes can be viewed as an effort towards ‘leveling’ disruptions caused by delays aligning them with transition and incorporating them into the legal order.<sup>154</sup>

In *Taxus Infrastructure*,<sup>155</sup> the Tribunal considered cross appeals between Taxus- a solar power developer and Gujarat Urja Vikas Nigam Limited (‘GUVNL’)- a power distribution licensee in the western state of Gujarat. The other respondents were the same in both appeals viz. the State Commission, state nodal agency for promotion of renewable energy-based generation, transmission licensee and Inspecting Officer. Taxus and GUVNL approached the Appellate Tribunal challenging the same order by the State Commission. The core issues concerned the date of commissioning the solar plant, applicable tariff, force majeure events affecting the commissioning of the solar plant, and determining whether the project was

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<sup>152</sup> *Siwana Power* (n 80).

<sup>153</sup> Marel Katsivela, ‘Contracts: Force Majeure Concept or Force Majeure Clauses ?’ 12 Uniform L Rev 101.

<sup>154</sup> Fisher (n 18) 553.

<sup>155</sup> *Taxus Infrastructure* (n 149).

correctly granted the status of deemed generation.<sup>156</sup> These are questions of practical importance and determinative of operative aspects of the concerned solar power plant. Legal and regulatory certainty as to the treatment of these questions is needed to create conditions for calculable agents like the appellants to make calculable decisions.<sup>157</sup>

Taxus, the power developer, argued that the delay in commissioning its power project was a result of delays in securing statutory and non-statutory approvals. It claimed that the project was ready to commission but the authorities had taken time to approve the commissioning, and that this approval was necessary to declare the solar project commissioned. It argued that these delays were beyond its control and therefore force majeure events and had impacted the tariff applicable to it. GUVNL however challenged the State Commission's order on the grounds that the State Commission had incorrectly granted the project the status of deemed generation by ignoring specific provisions of the PPA. This impacted the tariff at which it was liable to make payments to Taxus. GUVNL argued that the State Commission as an adjudicator was bound by the terms and conditions of the PPA and could not decide contrary to the specific provisions of the PPA.<sup>158</sup> To that end, it drew attention to the scope of the Commission's regulatory powers under the Act vis-à-vis provisions of the PPA between the parties.

To determine the commissioning date, the Tribunal considered provisions of the PPA, regulations of the State Commission, findings of the State Commission, and certificates issued by the state nodal agency for promoting renewable energy sources. In order to determine whether the delays were in the nature of force majeure events and the duration of these events,

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<sup>156</sup> *Taxus Infrastructure* (n 149) [12].

<sup>157</sup> See *Callon* (n 3) 260.

<sup>158</sup> *Taxus Infrastructure* (n 149) [10].

the Tribunal relied on definitions and exclusions set out in the PPA, findings of the State Commission in the impugned order. Reconciling these legal and factual provisions made clear that the State Commission had erred in deciding the force majeure and consequently also the date of deemed generation. The Tribunal set the order aside.

The Tribunal's reasoning in this case was anchored in the applicable contractual and statutory framework. These frames have their legal foundations in the legal landscape mapped in chapter 2 and are, to that end, a source of stability and legal certainty. The disputes mapped in this section are not only examples of how cold circumstances are resolved by the Appellate Tribunal, but also illustrative of how this type of routine, often mechanical legal work develops and 'evens out' the disruptions created by energy transition into the legal order. The Tribunal is developing an understanding of how decision-making in relation to tariff disputes and delays in commissioning solar projects should be done. The emphasis is on making law and the legal treatment of these disruptions calculable, shaping how solar projects are put into operation and how they relate to broader commitments in the legal order such as promoting the generation of solar power and creating a competitive renewable energy market that attracts private sector participation.<sup>159</sup> The following section further illustrates these points.

### c. Shaping the Exercise of Regulatory Functions and Promoting Solar Generation

APTEL adjudication, as I explain earlier, directly impacts primary electricity regulators and the renewable energy market at the central and state levels. By emphasizing on reason-giving in orders issued by regulators, appellate adjudication provides a crucial mechanism for shaping their accountability.<sup>160</sup> Mashaw explains that this is 'broader than simple accountability to

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<sup>159</sup> Fisher (n 18) 530.

<sup>160</sup> Mashaw (n 128) 40-41.

law'.<sup>161</sup> As seen in chapter 2, these electricity regulators operate within an elaborate and overlapping landscape of legal and policy frameworks. These frameworks place different demands on regulators that can be characterised by a series of straightforward questions: 'who is accountable to whom, about what, through what processes, judged by what standards and to what effect';<sup>162</sup> this can often result in competing understandings about how the different powers and functions of commissions should be exercised and uncertainty about the legality of their actions.

*Ramnad Renewable* offers a case in point.<sup>163</sup> Here, the question before the Appellate Tribunal was about the exercise of regulatory powers by the respondent commission. The appellant challenged a solar tariff order issued by the Tamil Nadu State Electricity Commission on the grounds that it violated provisions of the Electricity Act, National Electricity Policy, National Tariff Policy, doctrine of legitimate expectations, and the UNFCCC which incentivized the generation of electricity from renewable sources. It argued that under the existing regulatory framework under the aegis of the State Commission, project developers were entitled to the extension of 'control period', that is, the period for which the tariff remains in force, when the project commissioning was delayed for reasons beyond its control.

The facts of this case in brief were that the appellant had installed a solar power project relying on promises made by the State Commission in terms of the State Solar Policy, Power Purchase Agreements, and the impugned tariff order. The construction of the project was delayed by a cyclone in the region. Thereafter the commissioning and commercial operation of the project was delayed by the distribution licensee's delay in connecting the project to the

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<sup>161</sup> Mashaw (n 128) 41.

<sup>162</sup> Mashaw (n 128) 41.

<sup>163</sup> *Ramnad Renewable* (n 140).

grid and in recognizing the ‘deemed commissioning’ status of the project. Upon eventually connecting to the grid, however, the appellant was paid a lower tariff in terms of the State Solar Policy. The appellant argued that it had fulfilled its obligations with respect to commissioning the power plant within the control period, and that it was the distribution licensee that had failed to connect the project to the grid within the stipulated time.<sup>164</sup>

The State Commission however rejected the appellant’s petition on the ground that the issue raised was not regulatory in nature and directed it to file a petition for dispute resolution as it involved monetary claims between the generator and licensee.<sup>165</sup> The appellant argued that this was based on an incorrect interpretation of the Electricity Act 2003 and that its petition should in fact be decided by the exercise of the Commission’s regulatory powers.<sup>166</sup> The question before the Appellate Tribunal was therefore twofold, first, to determine whether the delays in this instance fell within the ambit of force majeure circumstances, and second, to clarify the exercise of the State Commission’s regulatory powers.

To that end, the Tribunal observed that the State Commission had framed the question arising from the appellant’s prayers ‘narrowly’ and had not discussed the other grounds and facts placed before it.<sup>167</sup> The State Commission’s analysis was bent towards justifying that it was a dispute resolution petition. The Tribunal further noted that:

‘The Electricity Act, 2003 has assigned multiple functions to the State Commission. The State Commission determines the tariff, regulates the purchase and procurement of electricity, plays the role of facilitator, issue licenses, promote the co-generation and new and renewable energy sources,

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<sup>164</sup> *Ramnad Renewable* (n 163) [4.1] - [4.3].

<sup>165</sup> *Ramnad Renewable* (n 163) [4.3].

<sup>166</sup> *Ramnad Renewable* (n 163) [4.5].

<sup>167</sup> *Ramnad Renewable* (n 163) [8 (xvii) – (xviii)].

levy fees, specify grid code, enforce standards, fix trading margin and discharge other functions assigned under the Electricity Act, 2003 besides adjudicating function’<sup>168</sup>

The appellant had asked the State Commission to exercise these regulatory powers in its petition. To that end, the Tribunal observed that:

‘the state commission, as defined under the Act, is a regulator and performance monitor, a statutory body to oversee the development of power sector in the state so as to evolve sustainable business model to supply electricity to consumers in the state in the most efficient manner. With this objective in mind, the endeavor of the state commission while dealing with such matters should be lenient one, especially in matters relating to promotion of electricity generation from solar power plant under the promotional schemes notified by the state government...’<sup>169</sup>

The Tribunal noted that the appellant had invested ‘huge sums of money for generation of electricity through solar plant’ on the belief that it would be paid the agreed tariff when the plant was ready to commission and that this was the ‘very basis of setting up’<sup>170</sup> the power project. It emphasized that State Commission should provide proper reasoning in its orders, discussing not only the facts of the case and the prayer of the appellant but setting out the nature of the prayer and the functions it attracted in the ‘interest of natural justice and equity’.<sup>171</sup> By directing the State Commission in this instance to adopt a ‘lenient’ approach in ‘matters relating to promotion of electricity generation from solar power plants under promotional schemes’ notified by the government, the Appellate Tribunal is not only shaping how regulatory

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<sup>168</sup> *Ramnad Renewable* (n 163) [8 (xix)].

<sup>169</sup> *Ramnad Renewable* (n 163) [8 (xxi)] (my emphasis).

<sup>170</sup> *Ramnad Renewable* (n 163) [8 (xxi)].

<sup>171</sup> *Ramnad Renewable* (n 163) [8 (xx)].

decision-making about force majeure circumstances should be done substantively and procedurally vis-à-vis solar power projects, but also setting out normative aspects of that decision-making process such as the attitude with which this should be done, and placing an emphasis on reasoning that is grounded in statutory provisions. The APTEL leans towards such an approach in other cases, e.g, *Amplus Infrastructure*<sup>172</sup> and *Welspun Renewable*.<sup>173</sup>

This invites a deeper reflection about the judicial and regulatory treatment of delays as force majeure circumstances in furtherance of decarbonization goals and the process of transition. In a recent article, Boute talks about the legal treatment of force majeure clauses in fossil energy contracts.<sup>174</sup> He argues that such energy contracts lock buyers into carbon intensive pathways that do not align with decarbonization goals. Although Boute discusses force majeure in the context of fossil fuel contracts, the present case is an example of a circumstance where the APTEL has framed the judicial and regulatory treatment of force majeure circumstance in a manner that aligns with the operational reality of decarbonization vis-à-vis actions of distribution licensees and regulatory agents, and in this way stabilizes a disruptive circumstance traditionally seen to be at odds with each other.

*Balarch Renewable* offers another example.<sup>175</sup> In this case, the appellant was aggrieved by an order of the State Commission which invalidated the competitive bidding process that resulted in the Power Purchase Agreement with the respondent DISCOM. The appellant argued that the State Commission's decision would render its 'entire project a stranded asset' despite

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<sup>172</sup> *Amplus Infrastructure* (n 249).

<sup>173</sup> *Welspun Renewable* (n 81).

<sup>174</sup> Anatole Boute, 'Environmental Force Majeure: Relief from Fossil Energy Contracts in the Decarbonization Era' (2021) 33 JEL 339-364.

<sup>175</sup> *Balarch Renewable* (n 96).

being ‘fully complete and ready to generate’ and drew attention to the impact of the order on its financial position, both in terms of project investment and monthly losses on account of being left un-commissioned.<sup>176</sup>

The Tribunal relied on its previous decisions dealing with similar circumstances and principles laid out therein, to hold that the PPA signed between the appellant and respondent DISCOM should be allowed by the State Commission.<sup>177</sup> The precedent and principles relied upon take into consideration the risk of ‘technical degradation of idling solar panels’, ‘irreparable loss to the generators who have invested huge sums in these projects’, and prioritizes the ‘objective behind of setting up solar projects’ in granting relief to such circumstances.<sup>178</sup>

These principles were laid out in *JBM Solar*.<sup>179</sup> In that case, appeals were filed by three solar generating stations against an order passed by the State Commission which invalidated the competitive bidding process and PPAs between parties on account of the bidding process being ‘not in line’ with the competitive bidding guidelines for renewable energy under the Electricity Act 2003, and because the resultant tariff did not align with market prices. The question before the Appellate Tribunal was whether the State Commission was justified in rejecting the PPAs, and if not, what tariff should be applicable to the appellants. This involved a careful review of statutory and regulatory provisions, the reasoning in the impugned order, the decision-making process, and corresponding bidding documents.

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<sup>176</sup> *Balarch Renewable* (n 96) [1] - [5].

<sup>177</sup> *JBM Solar* (n 86).

<sup>178</sup> *JBM Solar* (n 86).

<sup>179</sup> *JBM Solar* (n 86).

The Tribunal's decision turned on the statutory framework.<sup>180</sup> It held that the State Commission and procurement agency had made a mistake. That the agency had carried out the bidding process based on nonexistent guidelines and that the State Commission had passed an order on the basis of the Act as if the guidelines had existed was an issue between them. The appellants suffered because of this, having installed their respective power plants by relying upon assurances, and executed PPAs with them for no fault of their own. The Appellate Tribunal drew attention to the fact that irrespective of whether the bidding process was undertaken as per the Act or based on government guidelines or not, the fact of the matter was that the bidding process had taken place, generators had been invited, and PPAs had been executed- all of which was in the knowledge of the State Commission, which did not take steps to stop it at the relevant time through the exercise of its regulatory powers.

The Tribunal drew attention to the risk of technical degradation of idling power plants which would result in irreparable loss to the investors.<sup>181</sup> It held that because 'power generation from renewable sources of energy needed (sic) to be promoted' and the impugned PPAs ought to be approved by the State Commission.<sup>182</sup> The APTEL here, by anchoring its reasoning in the statutory framework and holding the State Commission accountable to the consequences of its actions, is framing an understanding about how regulatory powers ought to be exercised.

To summarize, this section showed the types of routine disputes appealed before the APTEL. In responding to these cold circumstances, the Appellate Tribunal is seen developing detailed jurisprudence on tariff disputes, delays, and decision-making in relation to solar power projects. Questions before the Tribunal involved the application of contract, statute, and

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<sup>180</sup> *JBM Solar* (n 86) [viii].

<sup>181</sup> *JBM Solar v Haryana Electricity Regulation Commission* (APTEL, 29 Mar 2017).

<sup>182</sup> *JBM Solar* (n 86).

precedent and focused on creating legal, regulatory and administrative stability by assuring certainty of pricing and consequences of regulatory action in the solar marketplace. The Tribunal at different junctures also defined and reiterated the role and responsibilities of State Commissions as primary regulators, often shaping/orienting their regulatory discretion based on the objectives of the ongoing transition.

Mapping these disputes shows how day-to-day adjudication addresses disruptions created by regulatory decision-making and how the Appellate Tribunal, in the process of stabilizing those disruptions, shapes the interactions between actors and their understanding of the processes that constitute the ongoing transition. The relative ease of resolving these disputes however is made much more complex when multiple actors, multiple dimensions, and overlapping frameworks are involved. The adjudication of these ‘hot circumstances’ is mapped in the next section.

#### 4 Hot Circumstances and Active Legal Work

Unlike the adjudication of disputes involving cold circumstances mapped in the previous section, that is, situations where parties, interests, rights and responsibilities could be easily identified, and thus applicable frameworks and precedent readily applied to the facts of the case, the adjudication of ‘hot circumstances’ is made relatively more complex by the non-existent, insufficient, or contradicting nature of required information and/ or the presence of multiple parties, interests, and overlapping frameworks.<sup>183</sup> These circumstances become highly disruptive of adjudicative processes by raising issues that either do not fit into pre-existing schemes and frameworks, or asking questions about the nature and operation of novel legal

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<sup>183</sup> Fisher (n 29); Callon (n 29).

constructs where there is no pre-existing legal guidance.<sup>184</sup> In such cases, the Tribunal must in its reasoning reconcile these disruptions with existing frameworks to maintain the stability of the legal order during transition. This reconciliation not only frames an understanding about how decision-making in relation to these disputes should be done but also results in their incorporation into the legal order.<sup>185</sup> This raises questions about legal imagination, including the legitimacy and limits of tribunalised adjudication, and the intellectual challenges ‘inherent’ in adjudicating hot circumstances.<sup>186</sup>

In the disputes mapped, the APTEL’s legal work in stabilising or ‘cooling down the heat’ of these disputes involved, among other things, articulating and setting out with clarity the legal implications of the obligations created by novel legal constructs in the solar marketplace, untangling rights and responsibilities of disputing parties, and shaping their interaction with each other and with existing legal and policy frameworks.

The heat of these disputes is made visible by the fact that it can be difficult to settle upon a single frame for understanding a problem, the relationship between parties, and any permissible courses of action. Identifying and applying frames to facts is not always easy. Facts can be often impossible to disentangle from other social, economic, and political processes, legal choices can be plentiful, and articulating an outcome can be difficult.<sup>187</sup> Adjudicating hot circumstances, as my analysis will show, illustrates a distinct contrast between the simplicity of the question asked vis-à-vis the complexity of considerations and frameworks at stake.

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<sup>184</sup> Fisher (n 165) 174.

<sup>185</sup> Fisher (n 18) 529-530.

<sup>186</sup> Fisher (n 29) 348.

<sup>187</sup> Fisher (n 29) 349.

The adjudicative focus is on building stability, legal coherence, and calculability in light of hot circumstances created by transition.<sup>188</sup> Disputes about the operation and implications of the RPO and REC mechanisms, and over the interpretation of statute, contract, and regulatory provisions, are some examples from the case law mapped. Responding to these disputes demonstrates what I describe in chapter 2 as the APTEL’s active legal work.<sup>189</sup> This involves saying what the law is or what the permissible course of action should be through an appreciation of a number of often non-legal aspects of the dispute at hand.<sup>190</sup> These aspects include technical considerations such as the ‘risk of degradation’<sup>191</sup> of ready-to-commission infrastructure and/or wider aspirations underlying the ongoing transition as stipulated in the Electricity Act 2003 and supporting national regulations and policy.<sup>192</sup> For example, the urgent need to decarbonize, build solar power capacity and a competitive market for trade in renewable energy between states that remains attractive to private sector participants.<sup>193</sup>

Through the reasoning in these judgments, the Appellate Tribunal is not only developing law,<sup>194</sup> operationalizing novel legal constructs and determining material outcomes,

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<sup>188</sup> Warnock (n 26) 1.

<sup>189</sup> Fisher (n 1) 278.

<sup>190</sup> See Fisher (n 18).

<sup>191</sup> *Balarch Renewable* (n 96).

<sup>192</sup> National Electricity Policy 2005; Ministry of New and Renewable Energy Government of India, *Jawaharlal Nehru National Solar Mission Phase II Policy Document* (2012); Government of India, *India’s Intended Nationally Determined Contribution: Working Towards Climate Justice* (2015) 8-9.

<sup>193</sup> National Electricity Policy 2005 [4], [5.2.20].

<sup>194</sup> Harry Arthurs, ‘Paradigms of Law’ in *Without the Law’: Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) 1.

but also managing the impact of friction caused by their interaction with overlapping frameworks. To incorporate these judgments into the legal order also needs a sense of ‘normative legitimacy’ and ‘adjudicative integrity’.<sup>195</sup> Warnock explains that this normative legitimacy is ‘created by the shared beliefs of the relevant community, and the shared belief of the near universal belief that integrity in adjudication matters’.<sup>196</sup> This is especially important in adjudicating hot circumstances, as the Tribunal frequently finds itself framing operative processes, rights, and responsibilities, making sense of statutory schemes and policies, and enforcing contract and regulatory strategies.<sup>197</sup> This impacts how actors and processes in the Indian electricity sectors organize themselves and in doing so constructs a legal understanding about the internal mechanics and structure of the solar marketplace. For APTEL’s decisions to acquire normative legitimacy, it is important that this community, that is, the Electricity sector, shares and accepts the legitimacy of the Tribunal’s contributions, and vice versa. This rests on the adjudicative integrity of its legal work.

Warnock argues that to have adjudicative integrity ‘adjudicators must be able to respond to the legal and factual context that they are working within’.<sup>198</sup> To that end, APTEL’s active legal work is embedded in Indian legal culture and is well positioned in this landscape to respond to disputes about solar projects arising in the electricity sector with integrity and acquire normative legitimacy. I will return to this point in more detail in the next chapter. With these reflections in mind, the next section begins by mapping disputes connected to the RPO

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<sup>195</sup> Warnock (n 188) 5.

<sup>196</sup> Warnock (n 188) 5.

<sup>197</sup> Fisher (n 29) 353.

<sup>198</sup> Warnock (n 188) 5.

and REC frameworks, ‘hot natured’ tariff orders, and involving the interpretation of contract, policy and statute, to show the varying heat of these disputes and how the Appellate Tribunal ‘cools’ the heat of these disruptions to create legal coherence and stability.

a. Adjudicating Novel Legal Constructs

Novel legal constructs such as the RPO and REC mechanisms have resulted in a number of disputes before the Appellate Tribunal. These disputes have raised legal questions about the applicability,<sup>199</sup> eligibility,<sup>200</sup> issuance,<sup>201</sup> liability,<sup>202</sup> and operation<sup>203</sup> of these operative mechanisms, their interaction with each other,<sup>204</sup> about the obligations imposed on ‘obligated entities’,<sup>205</sup> and the implications of non-compliance with these mechanisms.<sup>206</sup> Resolving these disputes primarily involved reconciling the ‘novelty’ of these legal constructs with existing

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<sup>199</sup> *JSW Steel Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 02 Jan 2019).

<sup>200</sup> *Viyat Power Ltd v Kerala Electricity Regulatory Commission* (APTEL, 09 Jul 2018); *Green Energy Association v Central Electricity Regulatory Commission* (APTEL, 12 Apr 2018).

<sup>201</sup> *Green Energy Association v Maharashtra Electricity Regulatory Commission* (APTEL, 22 Apr 2015).

<sup>202</sup> *Rajasthan Renewable Energy Corporation Ltd v Shree Cement Ltd* (APTEL, 16 Apr 2019) (RPO liability); *Green Energy Association v Madhya Pradesh Electricity Regulatory Commission* (APTEL, 28 Apr 2016) (shortfall in RPO).

<sup>203</sup> E.g., *Green Energy Association* (n 200).

<sup>204</sup> E.g., *Green Energy Association v Chhattisgarh Electricity Regulation Commission* (APTEL, 21 Aug 2019); *Tamil Nadu Generation and Distribution Corporation Ltd v B&G Solar Private Ltd* (APTEL, 12 Sep 2016) (conflict between regulations and statute).

<sup>205</sup> *JSW Steel* (n 199).

<sup>206</sup> *Green Energy Association* (n 200).

legal and regulatory frameworks and embedding them into the legal order. This was made complex by the ‘hot’ nature of these problems.<sup>207</sup> Responding to these disputes requires adjudicative integrity and a careful attention to legal and factual detail. In order to explain what these constructs are, how they should operate, and the ways in which they incorporated into the legal order, the Appellate Tribunal must first have a clear understanding about them and the frameworks that give them meaning. This is needed to adequately frame and respond to the disputes at stake and accrue normative legitimacy in this landscape.

First, some background. The RPO derives statutory force from the Electricity Act 2003.<sup>208</sup> Through the RPO, the central government has made it mandatory for obligated entities such as power distribution companies, captive power producers and large electricity consumers to purchase a certain percentage of electricity from renewable energy sources.<sup>209</sup> These percentages are specified by the concerned electricity regulatory commission after taking into consideration the availability of resources, impact on retail tariffs, and long term RPO targets prescribed by the central government.<sup>210</sup> The relevant provision is excerpted below:

‘Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE’<sup>211</sup>

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<sup>207</sup> Fisher (n 29) 350.

<sup>208</sup> Electricity Act 2003, s 86 (6) (e) (Functions of State Commission); *JSW Steel* (n 199).

<sup>209</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commission); National Tariff Policy 2006 [6.4 (1)]; GP Girish and others, ‘Renewable Energy Certificate Trading Through Power Exchanges in India’ (2015) 5 (3) *International J of Energy Economics & Policy* 805-808.

<sup>210</sup> National Tariff Policy 2016 [6.4 (1)].

<sup>211</sup> National Tariff Policy 2016 [6.4 (1)].

The uneven availability of renewable energy sources across the country, high generation costs, and ‘desire to encourage purchase of renewable energy proportionately across states’<sup>212</sup> paved way for the REC mechanism, which provides for the purchase of certificates in lieu of purchasing renewable energy by obligated entities.<sup>213</sup> Under this mechanism, renewable energy generating companies sell electricity to local distribution licensees at rates stipulated for conventional power and recover the balance cost by selling certificates to other distribution companies and obligated entities enabling the latter to meet their renewable purchase obligations.<sup>214</sup> This, in effect, creates a legal fiction whereby the purchase of a REC is deemed as the purchase of renewable energy for RPO compliance.<sup>215</sup>

The enabling statute and policies however provide little operative detail. To that end, courts and tribunals have played an important role in framing legal understandings- normatively and substantively- about these mechanisms and how they should be operationalized at different levels.<sup>216</sup> This has created a detailed and specific yet disjointed jurisprudence about these legal constructs, and is shaped by the nature of legal questions and arguments raised in the appeals before the Tribunal. This is further bracketed by APTEL’s specific statutory jurisdiction of responding to appeals against decisions made by concerned commissions vis-à-vis the Electricity Act 2003.

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<sup>212</sup> ‘Solar RPO and REC Framework’ (*Ministry for New and Renewable Energy, Government of India*) <<https://mnre.gov.in/solar/rpo/>> accessed 03 October 2021.

<sup>213</sup> Forum of Regulators, *Policies on Renewables: Report* (2008).

<sup>214</sup> Solar RPO and REC Framework (n 212).

<sup>215</sup> *Green Energy Association* (n 204).

<sup>216</sup> Fisher (n 29) 352-353.

The Supreme Court of India to that end has framed an understanding about the RPO as an effort towards furthering the constitutional mandate enshrined in Articles 21 and 51A (g) of the Constitution of India, provisions of the Electricity Act 2003, National Electricity Policy 2005 and National Tariff Policy 2006.<sup>217</sup> The Apex Court in *Hindustan Zinc*<sup>218</sup> emphasized that the objective behind imposing RPOs was to protect the environment and prevent pollution by ‘utilizing renewable energy sources in public interest’,<sup>219</sup> and that these obligations ‘cannot in any manner be regarded as a restriction on fundamental rights’.<sup>220</sup>

The APTEL has furthered that understanding in relation to RECs in the Indian electricity sector.<sup>221</sup> Unlike the Supreme Court’s emphasis on the environmental dimension of these mechanisms based on broad constitutional provisions, the APTEL’s legal work is more particular in that it is guided by a specific statutory mandate in promoting the generation of electricity from renewable energy sources in addition to environmentally benign policies.<sup>222</sup> In *Green Energy Association*,<sup>223</sup> for example, the Appellate Tribunal made clear that RECs:

‘cannot be compared to other commodities in the market such as shares or goods, because they are based on the fiction of breaking up the cost of power

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<sup>217</sup> *Hindustan Zinc Ltd v Rajasthan Electricity Regulatory Commission*, (2015) 12 SCC 611 (Supreme Court of India, 13 May 2015) [50].

<sup>218</sup> *Hindustan Zinc* (n 217).

<sup>219</sup> *Hindustan Zinc* (n 217).

<sup>220</sup> *Hindustan Zinc* (n 217) [44].

<sup>221</sup> E.g., *MP Biomass* (n 87); *Green Energy Association* (n 201).

<sup>222</sup> Electricity Act 2003, preamble.

<sup>223</sup> *Green Energy Association* (n 200).

between conventional and non-conventional sources/ components of electricity'.<sup>224</sup>

The Tribunal further explained that:

'...the concept of REC sought to address the mismatch between availability of renewable energy resources and the requirement of obligated entities to meet their RPO...the REC mechanism was basically aimed at promoting development of renewable energy sources and to provide an alternative mode to renewable energy generators for recovery of project costs through brown and green components'<sup>225</sup>

The distinction in the content and nature of reasoning between the Apex Court and the APTEL is clear, but what is also evident is that different frames, even when they relate to the same issue, may develop differently in different fora.<sup>226</sup> The implication of this in the present instance is that RPOs and RECs are at once products of a specific constitutional mandate towards protecting the environment, and a statutory construct aimed at incentivizing and stabilizing the cost of generating solar power as an attempt to attract private sector participation and create a competitive energy market. Disputes about them therefore inevitably result in hot circumstances for adjudication.

The heat of the questions raised in these disputes however varies. On one end of that spectrum are questions that involve the Tribunal framing an understanding about structural and foundational aspects of the operation of these constructs. This typically occurs when there is limited detail in the enabling statute and/ or policies on the issue in question. Appellants in

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<sup>224</sup> *Green Energy Association* (n 200) [12.4]; *Indian Wind Power Association v Gujarat Electricity Regulatory Commission* (APTEL, 16 Feb 2015) (my emphasis).

<sup>225</sup> *Green Energy Association* (n 200) (my emphasis).

<sup>226</sup> Fisher (n 29) 353.

*JSW Steel*<sup>227</sup> and *Rajasthan Renewable Energy Corporation*,<sup>228</sup> for example, asked whether co-generating entities were liable to fulfil solar RPO requirements.<sup>229</sup> While the liability of generating units was well-established, it was unclear whether this liability also extended to co-generating entities.<sup>230</sup> The Tribunal's reasoning here would not only delineate obligations of a significant share of market actors but also frame the manner in which the generation and co-generation of electricity from renewable sources would be promoted by the State Commission.<sup>231</sup> To that end, the Tribunal relied on its previous decisions and the rationale in *Hindustan Zinc* read with section 86(1) of the Electricity Act to hold that while both the generation and co-generation of energy were to be promoted, there was no obligation to purchase RECs in excess of that met by the stipulated RPO.

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<sup>227</sup> *JSW Steel* (n 199).

<sup>228</sup> *Rajasthan Renewable Energy Corporation* (n 202).

<sup>229</sup> *JSW Steel* (n 205).

<sup>230</sup> *JSW Steel* (n 205).

<sup>231</sup> Electricity Act 2003, s 86 (1)(e) (Functions of State Commission).

b. Unpacking ‘Hot’ Tariff Disputes

On the other end of the heat spectrum are disputes that involve multiple frames of understanding, actors, and knowledge systems<sup>232</sup>- everything is in ‘flux.’<sup>233</sup> This is clearly seen in what I describe as hot-natured tariff disputes. Unlike the relative ease with which facts and provisions could be identified and reconciled in the tariff disputes mapped as cold circumstances, the heat of these disputes is made visible by the complexity of unpacking different components in the impugned tariff order and the difficulties of untangling the relationship of these components to state-specific financial and operational parameters, and economic and regulatory considerations.<sup>234</sup> This involves active legal work.

*Welspun Renewable* offers a case in point.<sup>235</sup> The appellants in this case challenged diverse components of a *suo motu* tariff order issued by the State Commission on the grounds that it had been arbitrarily fixed without hearing stakeholders and without recording any reasons for determining tariff components.<sup>236</sup> They argued that the State Commission had acted in derogation of well-established legal and economic principles *viz.*, that a regulatory body is bound by its own regulations, that a judicial order must provide reasons, and that it is a legal right of aggrieved parties to be effectively heard.<sup>237</sup> The appellants relied on provisions of the

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<sup>232</sup> Arthurs (n 12) x.

<sup>233</sup> Callon (n 29) 260-1.

<sup>234</sup> *Welspun Renewable* (n 12).

<sup>235</sup> *Welspun Renewable* (n 12).

<sup>236</sup> *Welspun Renewable* (n 12).

<sup>237</sup> *Welspun Renewable* (n 12) [6.1].

Electricity Act, National Tariff Policy, and state-level tariff regulations to argue that the State Commission was essentially an economic regulator and, as such, was legally bound to offer a tariff that provided necessary economic and financial incentives, was rational and not arbitrary.<sup>238</sup>

The question before the Appellate Tribunal was broadly twofold- first, to ascertain whether the State Commission had acted contrary to its own regulations and statutory principles, and second, to determine whether the diverse tariff components were correctly assessed and applied in the absence of any reasoning being provided by the State Commission in the impugned order. The Tribunal relied on statutory provisions, the National Tariff Policy and applicable regulations to individually evaluate each of the eight sub-components of the impugned tariff order. The Tribunal's 'component-wise granular analysis'<sup>239</sup> in this case illustrates the variety of legal and non-legal parameters involved in making sense of tariff schemes and offers an example of how the Tribunal understands, manages and reasons through diverse frames, parameters, and considerations in arriving at its decision, such as, statutory, legal, economic, and financial principles,<sup>240</sup> different methodologies for determining tariffs

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<sup>238</sup> *Welspun Renewable* (n 12) [6.1], [7.4].

<sup>239</sup> *Welspun Renewable* (n 12) [8.6].

<sup>240</sup> *Welspun Renewable* (n 12) [7.6], [8.6], [10.2], [10.11].

stipulated by the CERC,<sup>241</sup> Supreme Court precedent,<sup>242</sup> data trends on pricing,<sup>243</sup> and standard market practices.<sup>244</sup>

c. Interpretation of Contract, Regulation and Statute

In the case law mapped, disputes before the Tribunal frequently raised questions that involved the interpretation of statutory, policy and/ or regulatory provisions in the context of specific contractual clauses. These disputes sat in the middle of the heat spectrum. Resolving these disputes involved reconciling contractual provisions with existing frameworks, but were made more complex by the interconnectedness of the issues raised. *Nabha Power*,<sup>245</sup> for example raised two questions- first, whether in a PPA entered by way of competitive bidding under the Electricity Act, a claim could be made contrary to the terms of the bidding guidelines, bidding documents, and PPA. Second, whether the State Commission could exercise its regulatory powers to fashion a relief not stipulated in the PPA. The two questions concerned the interpretation of contract vis-à-vis regulatory powers of the State Commission as stipulated in the enabling statute.

Responding to the first question, the Tribunal noted that terms of the PPA had not been violated and that the appellant in this instance sought compensation that was outside the terms

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<sup>241</sup> *Welspun Renewable* (n 12) [7.10].

<sup>242</sup> *Welspun Renewable* (n 12) [7.10].

<sup>243</sup> *Welspun Renewable* (n 12) [8.1] - [8.2].

<sup>244</sup> *Welspun Renewable* (n 12) [8].

<sup>245</sup> *Nabha Power Ltd v Punjab State Power Corporation Ltd* (APTEL, 17 May 2018).

of the PPA on account of developments after concluding the agreement. The terms of the agreement were binding and could not be refashioned. Although applicable bidding guidelines had been amended to consider developments of the sort pleaded by the appellant, they could only apply to future agreements and would not have retroactive effect.

The second question was about the legitimate exercise of regulatory powers. The Tribunal held that the:

‘PPA entered into by parties was a statutory and binding instrument which crystallized rights and obligations of involved parties. Accordingly, the same would need to be interpreted in spirit of agreed terms...’<sup>246</sup>

The Tribunal relied on Supreme Court precedent that PPAs were binding and could not be varied by regulatory commissions, and accordingly held that the State Commission could not exercise its regulatory powers to fashion a relief for which was not stipulated in concluded PPA between parties. The Tribunal here creates legal certainty and stability by anchoring its reasoning in the terms of the PPA and established principles of contract law. Contract law and contractual agreements provide a frame for identifying the rights, responsibilities, and intention of parties, and how disputes that may ensue should be resolved. How this contractual frame relates to exercise of regulatory powers by the State Commission, however, would be determined by general legal principles. As this case shows, identifying and articulating those is not always easy.

*Gujarat Energy Transmission Corporation*,<sup>247</sup> offers another example. In this case, the Appellate Tribunal had to decide whether the responsibility for constructing a dedicated

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<sup>246</sup> *Nabha Power* (n 245) [9.9].

<sup>247</sup> *Gujarat Energy Transmission Corporation* (n 82).

transmission line from the place of generation to the sub-station rested with the distribution licensee or power generator based on the Electricity Act, national and state electricity policies, and impugned tariff order. This involved reconciling applicable provisions with the PPA in order to delineate contractual responsibilities.<sup>248</sup> This type of seemingly banal decision-making plays a fundamental role in shaping relationships and ensuring certainty of contractual agreements executed in furtherance of the ongoing transition. This is not limited to framing contractual relationships but extends to structuring the interaction of different schemes and regulatory instruments established to promote the generation of electricity from renewable energy sources. Making sense of how different instruments interact, and the implications of those interactions for parties, involves active legal work aimed at stabilizing disruptions caused by the operation of multiple frameworks.

In *Amplus Infrastructure*,<sup>249</sup> for example, appellants challenged an order by the Uttarakhand State Commission that held that the ‘Third Party Model’ for grid-connected rooftop and small solar plants in the state was outside the ambit of the Renewable Energy Regulations 2013, and that the such projects could not benefit from preferential tariffs under the Regulations.<sup>250</sup> The order held that the tariffs at which distribution licensees would procure electricity under the Third-Party Model would be regulated and determined by the State Commission.<sup>251</sup> Appellants challenged this order on the grounds that the Regulations did not make any distinction between the two working frameworks under which small solar plants are

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<sup>248</sup> *Gujarat Energy Transmission Corporation* (n 82) [9] - [14].

<sup>249</sup> *Amplus Infrastructure* (n 51).

<sup>250</sup> *Amplus Infrastructure* (n 51) [3 (h)].

<sup>251</sup> *Amplus Infrastructure* (n 51) [3 (h)].

typically established, that is, the Ownership Model and the Third-Party Model, and that from an operational stand-point there was no distinction between the two models.<sup>252</sup>

The State Commission therefore had a legal duty to ensure equal treatment between similarly placed generators. They further argued that provisions of the Regulation were in the nature of a ‘beneficial legislation’ and should be interpreted in view of the object and purpose, i.e., to promote the generation of electricity from renewable sources by incentivizing the same.<sup>253</sup> The State Commission argued, among other things, that its order was strictly on the basis of the Indian Contract Act and concerned Renewable Energy Regulations, and that these Regulations did not cover the Third-Party Model.<sup>254</sup>

This raised two questions for the Appellate Tribunal. First, whether the Third-Party Model was covered under the Regulations, and second, whether the generic tariff under the Regulations would be applicable to the appellants.<sup>255</sup> The two issues were interconnected, the resolving of which involved multiple considerations not limited to Scheme, Regulations, and findings of the State Commission in question, but extending to an understanding of the organization of each ownership model under the Scheme, as well as operational parameters such as metering, billing, and settlement of dues, and their interaction with provisions in the National Electricity Policy and National Tariff Policy which mandated the promotion of solar energy and precedent,<sup>256</sup> while also taking into account how the Scheme and Regulation fit in

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<sup>252</sup> *Amplus Infrastructure* (n 51) [5].

<sup>253</sup> *Amplus Infrastructure* (n 51) [6].

<sup>254</sup> *Amplus Infrastructure* (n 51) [8 (f)].

<sup>255</sup> *Amplus Infrastructure* (n 51) [9].

<sup>256</sup> *Simran Wind Project Pvt Ltd v CERC* (APTEL, 28 Nov 2014); *Union of India v Prabhakaran Vijay Kumar*, (2008) 9 SCC 527 (Supreme Court of India) (interpretation of beneficial legislation).

with the overarching National Solar Mission. This is a hot situation characterized by the operation of multiple frameworks, legal and non-legal considerations, and competing interests between parties.

In its reasoning, the Appellate Tribunal examines and makes connections between these considerations to frame a coherent understanding about how provisions of the Regulation were to be interpreted in relation to the different ownership arrangements and associated tariff parameters envisaged under the Scheme. This resulted in the Appellate Tribunal identifying a potential commercial relationship between the parties that would permit rooftop and small solar PV projects to be legitimately developed under the Third-Party Model and extend preferential tariff benefits to it. The Tribunal stabilized the heat of this dispute by interpreting the Regulations in a manner that would best further the goal of promoting the generation of electricity from renewable energy sources, and accordingly directed the State Commission to frame necessary procedures in furtherance of the same.<sup>257</sup>

#### d. 'Cooling the Heat' and Legal Stability

The disputes mapped above make clear the importance of appellate adjudication in stabilizing disruptions caused by energy transition. On one level, adjudication creates stability of outcome, that is, by enforcing contractual agreements, delineating rights and responsibilities of parties, and setting out how corresponding law, regulation and policy are to be understood and operationalized. On another level, it draws attention to the fact that it is not only the outcome that matters. The adjudicative integrity reflected in its reasoning of these disputes and resulting in those outcomes also matter. This needs legal imagination and depends on APTEL's adjudicative competence in responding to the legal and factual components of the appeal. Well-

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<sup>257</sup> *Amplus Infrastructure* (n 51) [37].

reasoned decision-making matters in creating legal coherence and stability, and the APTEL plays an important role in that being achieved in relation to solar power projects. I will return to these points in more detail in chapters 4 and 5.

Existing narratives and scholarship on energy transition have focused on the ‘big picture’ for too long, they have spoken about missing the forest for trees and dwelled on telling that story with an intellectual creativity that seems to miss an important point. The trees are as important as the forest. The trees make the forest. They constitute detail. Transition cannot be achieved without understanding the role of law and adjudication in this process, especially in responding to everyday disputes. Energy transition is undoubtedly legally disruptive and will continue to generate disputes. Appreciating and intellectually engaging with the legal and adjudicative institutions that make sense of and stabilize these disruptions is important.

My analysis of the hot and cold circumstances generated by transition attempted to bring this into view by illustrating the types of legal work done by the Tribunal, the complexities and types of questions asked, and how the Tribunal responded to them, by applying the frameworks that constitute this legal landscape. Indeed, these cases may seem disparate and particular, but that goes on to make another important point- developing a legal understanding occurs over time, through the day-to-day adjudication of disputes as they arise, and is based on the questions asked, the arguments framed, and on the competence of the courts and tribunals tasked with responding to the legal and factual aspects of the case before them.<sup>258</sup> These responses build energy transition from a legal perspective and entrench it into the Indian legal order.

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<sup>258</sup> See chapter 1 of this thesis.

## C CONCLUSION

I must now head towards a conclusion and in doing so look back at what the disputes charted in this chapter have shown. In this chapter, I drew attention to the active and routine legal work of the Appellate Tribunal. By illustrating how the Tribunal responds to different hot and cold circumstances generated by transition, I showed that this legal work not only creates legal, regulatory, and administrative stability in the energy marketplace during transition but also builds a sense of legal rootedness for the operation of new infrastructure and technologies in society by embedding them into the legal order. The map showed that a large part of the APTEL's legal work is about shaping the regulation of India's electricity sector- arranging, adjusting, guiding, and correcting actions of regulators and the regulated, while also moulding the relations and processes that connect them to each other and wider process of transition and its aspirations. Equally, adjudicating these disputes was about managing disruption and dealing with the 'centrifugal tendencies'<sup>259</sup> of new phenomena and associated regulatory action by tying them back to the wider web of pre-existing frameworks. It is about rooting<sup>260</sup> which can be meaningfully achieved through an adjudicative integrity that shows intellectual fidelity to the both facts and applicable frameworks.<sup>261</sup>

APTEL's legal work also involved saying what the law is and how regulations and policies should be interpreted and implemented to further the objective of promoting solar power generation, and reassuring participants of transition of the certainty of law, actions, and

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<sup>259</sup> E.g., *Nabha Power* (n 245).

<sup>260</sup> Merlin Sheldrake, *Entangled Life: How Fungi Make Our World, Change Our Minds, and Shape Our Futures* (Vintage 2020) 166-67 in the context of life-giving fungal connections underground.

<sup>261</sup> Llewellyn (n 168) 1373; Warnock (n 188) 1.

consequences of actions- thus enabling them to make decisions in a ‘calculable world’. This results in developing the law- not at a stroke but by assembling<sup>262</sup> in small, case-specific ways an understanding of energy transition and associated solar infrastructure. This enables participating actors to understand how to behave and interact with each other and with the processes part of this landscape, and also to be assured of the consequences of their actions during transition. The picture of energy transition emerging from these judgments highlights the legal significance of APTEL’s contributions as a ‘stabilizing force’<sup>263</sup> in a legal landscape disrupted by the energy transition.

To that end, the map also showed that the legal work of the APTEL is thicker and more expansive than traditionally understood by lawyers and adjudicators. The role of the Appellate Tribunal is not limited to pronouncing material outcomes and alleviating burdens of higher courts<sup>264</sup> but extends to shaping interactions of different actors in the marketplace and determining what counts as acceptable and accountable decision-making by emphasizing upon well-reasoned orders from concerned commissions.<sup>265</sup> This chapter made a case for active scholarly reflection about the nature of appellate adjudication and the legal reasoning embedded in it by raising questions about the role and competence of the APTEL in shaping the legal imagination of India’s ongoing transition, and how we as lawyers think and engage with its legal work. I explore this further in the next chapter.

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<sup>262</sup> Ursula Le Guin, ‘The Carrier Bag Theory of Fiction’ in *Dreams Must Explain Themselves: The Selected Non-fiction of Ursula K. Le Guin* (Gollancz 2018) 167.

<sup>263</sup> Fisher (n 18) 529.

<sup>264</sup> Paul Craig, *Administrative Law* (9 edn, Sweet & Maxwell 2021) 239.

<sup>265</sup> E.g., *Omega Infraengineers v Punjab State Electricity Regulatory Commission* (APTEL, 21 Feb 2019).

## CHAPTER 4: MAKING APTEL'S ADJUDICATIVE COMPETENCE VISIBLE

### A INTRODUCTION

Chapters 2 and 3 positioned the Appellate Tribunal for Electricity ('APTEL' or 'Appellate Tribunal') in the legal landscape of India's ongoing energy transition and mapped the types of disputes it deals with. These chapters showed us that the APTEL as a site of dispute resolution and ensuring the accountability of primary regulators is also a stabilising force that manages and responds to the dynamic and particular nature of legal disruption caused by energy transition. My aim in these chapters was to paint a picture of what exists, that is, of how the legal world of energy transition is organised, what constitutes it, the types of disputes arising in this landscape, and how they are being reasoned and resolved by the Appellate Tribunal. That was my method. Our vision of what 'is' inevitably guides our approach to what 'ought' to be.<sup>1</sup> That is, it gives us a mental image of what to look for and what we see, while also influencing what we demand and/or affirm of specialist adjudicative institutions.<sup>2</sup> Thus, while the analysis in this chapter is based on an examination of case law and legal frameworks, it inevitably touches upon normative questions about how to foster the APTEL's expertise and adjudicative competence.

With this in mind, I now focus on bringing the complexity of that 'legal work'<sup>3</sup> into view. This chapter explores the nature of APTEL's expertise in responding to legal disruption,

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<sup>1</sup> Jerry Mashaw, *Greed, Chaos and Governance: Using Public Choice to Improve Public Law* (Yale University Press 1997) 1.

<sup>2</sup> Mashaw (n 1) 1.

<sup>3</sup> Inspired by the use of the word in Bruno Latour, *The Making of Law: An Ethnography of the Conseil D'Etat* (Polity Press 2002).

with an aim to make its adjudicative competence visible. To those trained to focus on the work of higher courts, the substantive contributions of APTEL’s legal work can be hard to see.<sup>4</sup> My use of ‘hard to see’ here is deliberate. This is to emphasize that it is not the case that lawyers and law scholars immersed in this area do not see the contributions of the Appellate Tribunal, rather that they do not see it enough.<sup>5</sup> Their intellectual reflexes narrowly fixate on APTEL’s ‘appellate’ function vis-à-vis regulatory orders, at the cost of overlooking its distinct status as that of a ‘tribunal’ and ‘expert legal institution’,<sup>6</sup> and its capacity to co-produce energy transition in the country.<sup>7</sup> The ‘legally disruptive’<sup>8</sup> nature of energy transition however is shaking up these ‘thin’<sup>9</sup> conceptions of tribunalised adjudication and demanding that this legal work be taken more seriously.

Understanding APTEL’s adjudicative competence involves first understanding the nature of disputes before it,<sup>10</sup> and the complexity of the Appellate Tribunal’s institutional and

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<sup>4</sup> Elizabeth Fisher, ‘Afterword: Law in Unexpected Places’ in Elizabeth Fisher and Brian Preston (eds), *An Environmental Court in Action: Function, Doctrine and Process* (Bloomsbury 2022) 313.

<sup>5</sup> See Elizabeth Fisher, ‘Through ‘Thick’ and ‘Thin’: Comparison in Administrative Law and Regulatory Studies Scholarship’ in Peter Cane and others (eds), *Oxford Handbook of Comparative Administrative Law* (OUP 2020).

<sup>6</sup> See Peter Cane, *Administrative Tribunals and Adjudication* (Hart 2009); Ceri Warnock, ‘Reconceptualising Specialist Environment Courts and Tribunals’ (2017) 37 LS 391.

<sup>7</sup> See chapter 2 of this thesis; Sheila Jasanoff (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004) 2-3.

<sup>8</sup> Elizabeth Fisher and others, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80 MLR 173, 177.

<sup>9</sup> See Theodore Porter, ‘Thin Description: Surface and Depth in Science and Science Studies’ (2012) 27 *Osiris* 209; Fisher (n 5) 624.

<sup>10</sup> Ceri Warnock, *Environmental Courts and Tribunals: Powers, Integrity and the Search for Legitimacy* (Hart 2020) 4-7, 126-195.

knowledge practices.<sup>11</sup> This includes recognising how the APTEL, in adjudicating and resolving a myriad of ‘hot’ and ‘cold’<sup>12</sup> disputes seen in the previous chapter, has: created substantive jurisprudence on the interpretation of specific statutory provisions;<sup>13</sup> enabled the application of novel legal constructs, such as the Renewable Purchase Obligation (‘RPO’) and the Renewable Energy Certificate (‘REC’) mechanism;<sup>14</sup> and set out the application of general legal concepts such as the doctrine of force majeure<sup>15</sup> as they relate to the process of energy transition and disputes resulting from the construction of new solar power projects.

APTEL adjudication is not only creating stable ways to reason that bring together legal and technical knowledge and is binding on itself and primary regulators but is also actively ‘rooting’<sup>16</sup> the process of energy transition into the Indian legal order. This shows that the legal work of the Appellate Tribunal is not just that of an appellate legal institution responding to disputes arising in relation to the administration and/ or regulation of the Indian electricity sector, but that of a specialist in responding to certain types of legal problems.<sup>17</sup>

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<sup>11</sup> See Warnock (n 10); Cane (n 6); Elizabeth Fisher, ‘Law and Energy Transitions: Wind Turbines and Planning Law in the UK’ (2018) 38 OJLS 528.

<sup>12</sup> See chapter 3 of this thesis.

<sup>13</sup> E.g., *Ramnad Renewable Energy Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 24 Sep 2019).

<sup>14</sup> E.g., *Green Energy Association v Maharashtra Electricity Regulatory Commission* (APTEL, 22 Apr 2015).

<sup>15</sup> E.g., *Taxus Infrastructure and Power Projects Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2018).

<sup>16</sup> Merlin Sheldrake, *Entangled Life: How Fungi Make Our Worlds, Change Our Minds, and Shape Our Futures* (Vintage 2021).

<sup>17</sup> Fisher (n 4) 315.

This legal work goes to the heart of the APTEL’s function as that of a stabilising force and its capacity to ‘interact’<sup>18</sup> with the legal problems it is adjudicating on. Understanding the nature of APTEL’s expertise in doing that legal work illuminates its adjudicative competence and vice versa. It brings into view not only the significance of APTEL’s legal reasoning in operationalising statutory and policy mandates vis-à-vis solar power projects and shaping associated regulatory action, but in doing so also highlights the role and contributions of law and specialist adjudication in the ongoing energy transition. This raises questions about how the Appellate Tribunal could, and should, adjudicate these disputes, and emphasizes the need to think about the substance of its reasoning, the kind of expertise involved in its legal work, and how that, together, fosters the rule of law in a period of legal and infrastructural change.<sup>19</sup> In other words, there is need to reflect upon the processes by which different manifestations of law, energy transition and associated infrastructure come into existence and are given shape by their interaction with each other.<sup>20</sup>

This inquiry inevitably pushes against the boundaries of the conventional legal imagination of tribunals among lawyers and law scholars,<sup>21</sup> that is, it ‘evolves the mental constructs’<sup>22</sup> that define and confine their engagement with APTEL’s legal reasoning. But in

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<sup>18</sup> Warnock (n 10) 5 Warnock describes this interaction as a dynamic process that requires an awareness of context, communication that facilitates reciprocal feedback and adaptation. This kind of interaction she argues is integral for the responsive adjudication of disputes.

<sup>19</sup> Fisher (n 4) 316; See Harry Arthurs, ‘Without the Law’: *Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) 3.

<sup>20</sup> Arthurs (n 19) 2-3.

<sup>21</sup> See Elizabeth Fisher, ‘Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars’ in James Goudkamp and others (eds), *Taking Law Seriously: Essays in Honour of Peter Cane* (Bloomsbury 2022).

<sup>22</sup> Fisher (n 21) 267.

many ways, APTEL's legal work, especially in responding to cold circumstances, is not distinct; it is 'routine'<sup>23</sup> and focuses on adjudicating disputes in accordance with what is pre-existing and well-established.<sup>24</sup> This aligns with what we already know about its instrumental and pragmatic purpose in this space.<sup>25</sup> As chapter 3 showed, the Appellate Tribunal's emphasis in these judgments is on consistency, predictability and calculability.<sup>26</sup> But such an understanding of tribunalised adjudication causes us to overlook that this legal work involves dealing with certain types of legal disputes that depend on a commitment to robust doctrinal reasoning through a relatively straight-forward application of statutory and regulatory frameworks.<sup>27</sup> In other words, this legal work depends on a rigorous understanding of these frameworks and constitutes an integral part of the APTEL's adjudicative capacity.

The conceptual architecture of this chapter is inspired by Fisher and Shapiro's recent study of expert public administration<sup>28</sup> and Warnock's 'interactional theory' for specialist adjudication.<sup>29</sup> Pithily put, Fisher and Shapiro argue that competence denotes both capacity

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<sup>23</sup> See Joanna Bell and Elizabeth Fisher, 'Exploring a Year of Administrative Law Adjudication in the Administrative Court' (2021) *Public Law* 505, 510.

<sup>24</sup> See Elizabeth Fisher, 'Environmental Law as 'Hot' Law' (2013) 25 *JEL* 347, 350 for a description of cold situations.

<sup>25</sup> Law Commission of India, *Assessment of Statutory Frameworks of Tribunals in India* (Report No 272, 2017) 4 [1.13] ('Law Commission Report').

<sup>26</sup> Fisher (n 4) 316.

<sup>27</sup> See chapter 3 of this thesis; Fisher (n 4) 317.

<sup>28</sup> Elizabeth Fisher and Sidney Shapiro, *Administrative Competence: Re-imagining Administrative Law* (CUP 2021).

<sup>29</sup> Warnock (n 10).

and validity.<sup>30</sup> This capacity includes a range of different forms of expertise,<sup>31</sup> where validity is ensured through internal and external accountability processes embedded in that capacity.<sup>32</sup> Competence is made visible by the adjudicator's capacity to adequately respond to the legal and factual context in which they are working.<sup>33</sup>

To that end, Warnock's interactional theory argues that adjudicative capacity depends on the nature of the problems that specialist adjudicative institutions are charged with resolving.<sup>34</sup> Responsive adjudication necessitates contextual interaction.<sup>35</sup> How 'legal infrastructure' responds to the contextual force of the ongoing transition not only ensures the adequacy of reasoning but also that novel adjudicative institutions like the APTEL operate with adjudicative integrity,<sup>36</sup> so that the rule of law is fostered in this changing legal and infrastructural landscape.<sup>37</sup> This interaction can be viewed as a dynamic process that facilitates

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<sup>30</sup> Fisher and Shapiro (n 171) 32.

<sup>31</sup> There is rich legal scholarship on expertise as used in this thesis, see Elizabeth Fisher, 'The Enigma of Expertise' (2016) 28 (3) JEL 551; Elizabeth Fisher, 'Expert Executive Power, Administrative Constitutionalism and Co-production: Why They Matter' in Maria Weimer and Anneik de Ruijter (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017); Pasky Pascual and Wendy Wagner Elizabeth Fisher, 'Rethinking Judicial Review of Expert Agencies' (2015) 93 Tex L Rev 1681.

<sup>32</sup> Fisher and Shapiro (n 171) 33.

<sup>33</sup> Warnock (n 10) 5.

<sup>34</sup> Warnock (n 10) 5.

<sup>35</sup> Warnock (n 10) 5; Fisher (n 21).

<sup>36</sup> See Warnock (n 10).

<sup>37</sup> See Ceri Warnock, 'Environment and the Law: Normative Force of Context and Constitutional Challenges' (2020) 32 JEL 365; Jeremy Waldron, 'Thoughtfulness and the Rule of Law' Public Law & Legal Theory Research Paper Series Working Paper No 11-13 (New York University School of Law 2011).

a ‘reciprocal feedback’,<sup>38</sup> which, in the present context, explains how APTEL adjudication responds to legal disruption and incorporates energy transition into the legal order. This draws attention to its expert adjudicative capacity as a stabilising and constitutive force responding to disputes raised in and exacerbated by the ongoing transition. This capacity lies in co-producing an understanding of the subject matter of these disputes and shaping legal imagination, that is, what can and cannot be done in their regard.

The skills, knowledge and experience that constitute this capacity largely fall into two categories, namely, contributory and interactional expertise.<sup>39</sup> These forms of expertise are brought together by the APTEL’s ‘coordinated expertise’.<sup>40</sup> Drawing on Collins and Evans’ scholarship,<sup>41</sup> Fisher explains that contributory expertise refers to the ‘sets of skills, knowledge, and experience needed to contribute to the development of law’.<sup>42</sup> This involves practical competence and legal expertise.<sup>43</sup> Interactional expertise, on the other hand, arises through interaction with other disciplines, or as Warnock suggests, through interaction with the nature of the legal disputes it is tasked with adjudicating.<sup>44</sup> Interactional expertise is what turns different types of expertise into the expert capacity of an adjudicative institution.<sup>45</sup>

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<sup>38</sup> Warnock (n 10) 5.

<sup>39</sup> See Elizabeth Fisher, ‘The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers’ (2012) 1 TEL 43.

<sup>40</sup> Fisher and Shapiro (n 171) 55-60.

<sup>41</sup> Harry Collins and Robert Evans (eds), *Rethinking Expertise* (University of Chicago Press 2007).

<sup>42</sup> Fisher (n 39) 48.

<sup>43</sup> Fisher and Shapiro (n 171) 55-60.

<sup>44</sup> Warnock (n 10) 5.

<sup>45</sup> Fisher and Shapiro (n 171) 57.

This chapter argues that APTEL adjudication demonstrates both contributory and interactional expertise. These forms of expertise are inter-related and at the heart of APTEL's adjudicative competence. Making the Appellate Tribunal's adjudicative competence visible therefore inevitably also makes its expertise visible. This expertise involves reconciling legal disruption with pre-existing frameworks, enabling disciplinary perspectives, and operationalising the wider statutory mandate of promoting solar generation.<sup>46</sup> I expand on these points in the sections that follow.

While I draw on these studies, not all of their considerations and arguments resonate with APTEL's experience of adjudicating disputes concerning solar power projects. Fisher and Shapiro focus on the United States Environmental Protection Agency, and Warnock's discussion centres on the Environmental Court of New Zealand and New South Wales Land and Environment Court. There are therefore obvious and stark differences across legal cultures regarding jurisdiction, types of dispute, and how disputes are resolved and articulated. There are also differences in the composition of these institutions, as well as the nature and content of statute and policy used in their reasoning and of the actors and processes that constitute their respective landscapes. However, the analysis in these studies inspires a thicker understanding of APTEL's legal work, opens up several ways of thinking about APTEL's contributions to the process of transition, and highlights the simple takeaway that its adjudicative competence in responding to these disputes matters in not only stabilising a legal present disrupted by transition but also in crafting a legal future, the roots of which is this complex legal present. I point to some of these ideas in my discussion.

This chapter is structured as follows. Part I makes APTEL's adjudicative competence visible by unpacking its expert adjudicative capacity concerning the hot and cold disputes mapped in chapter 3. Part I constitutes 2 sections: first, a discussion of its 'expert adjudicative

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<sup>46</sup> See Fisher and Shapiro (n 171) 55.

capacity’ and second, a close look at the accountability measures embedded in that capacity. My discussion of these measures is tied to the frameworks mapped in Chapter 2. Part II draws on this ‘thick’<sup>47</sup> explanation in thinking about the nature and coordination of the Appellate Tribunal’s contributory and interactional expertise. It argues that the significance of the APTEL’s adjudicative expertise must be viewed in light of the intellectual challenges raised by the disputes mapped in chapter 3, including the need to engage with diverse and overlapping frameworks, as well as legal, technical, financial and economic knowledge during adjudication.<sup>48</sup>

This chapter shows that APTEL’s legal work is so much more substantive, context-oriented,<sup>49</sup> and thick than that conventionally understood by lawyers and law scholars. But given they have largely overlooked the Appellate Tribunal, there appears to be little to no effort in engaging with its legal work. Recognising APTEL’s contributions, therefore, acknowledges the powerful role of law and adjudication during energy transition. This ensures that changes associated with energy transition are reflected in the law, and vice versa. In other words, it illuminates the relationship between law and adjudication in crafting the legal present and future. The ways of knowing the (changing) legal world of energy transition is inseparably linked to the ways in which it is understood and reasoned by courts and tribunals.<sup>50</sup> APTEL’s capacity to do so proficiently therefore matters.<sup>51</sup> Its competence matters.

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<sup>47</sup> Fisher (n 9) 625-27.

<sup>48</sup> Arthurs (n 19); Latour (n 3) 246.

<sup>49</sup> See Warnock (n 10) 161-62.

<sup>50</sup> Jasanoff (n 7) 2-3; See generally Sheila Jasanoff, ‘The Intersections of Science and Law’ in *Science at the Bar: Law, Science, and Technology in America* (Harvard University Press 1997).

<sup>51</sup> Fisher and Shapiro (n 171) 25.

## B PART ONE: MAKING ADJUDICATIVE COMPETENCE VISIBLE

This section explores the adjudicative competence of the Appellate Tribunal in relation to the ‘hot’ and ‘cold’ disputes mapped in chapter 3. Making this competence visible is needed to develop a thicker legal picture of the nature of APTEL’s legal work.<sup>52</sup> From here, a more nuanced understanding of the law and the adjudicative complexity of energy transition inevitably follows. This requires a robust understanding of APTEL’s capacity as a specialist adjudicative institution, and the accountability measures inherent in that capacity.<sup>53</sup> Demands for reasonableness in decision-making, and the Appellate Tribunal’s emphasis on reason-giving in decisions rendered by primary regulators and in its judgments,<sup>54</sup> form crucial in-built mechanisms for ensuring accountability.<sup>55</sup> This, however, includes a different kind of accountability that is broader than simple accountability to the law- it includes accountability to the wider legal landscape of transition mapped in chapter 2.

While that chapter mapped the frameworks constituting the legal landscape of energy transition in India, this section discusses the considerations for accountability embedded in them. Each of these frameworks places and constructs different understandings about what constitutes substantive reasonableness and appropriate reason-giving.<sup>56</sup> It is, however, the

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<sup>52</sup> See Fisher and Shapiro (n 171) 17.

<sup>53</sup> See Fisher and Shapiro (n 171) 17.

<sup>54</sup> *Welspun Renewable Energy Pvt Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 11 Nov 2019).

<sup>55</sup> Jerry Mashaw, *Reasoned Administration and Democratic Legitimacy: How Administrative Law Supports Democratic Government* (CUP 2018) 40.

<sup>56</sup> Mashaw (n 55) 40.

nature of the dispute before the Appellate Tribunal that dictates which of, and to what extent, these considerations are accounted for in the legal reasoning of a particular dispute. The APTEL's capacity to interact with a legal problem and manoeuvre associated frameworks through well-reasoned decisions brings its adjudicative competence into view.

## 1 Expert Adjudicative Capacity

I begin by unpacking APTEL's expert adjudicative capacity. Fisher and Shapiro define capacity in the context of public administration as 'a set of embedded institutional and knowledge practices.'<sup>57</sup> Adjudicative capacity, in that sense, can be viewed as a product of the skills, experience and knowledge particular to an adjudicative institution. Adjudication in specialist tribunals like the APTEL is a 'species of adjudication'<sup>58</sup> statutorily created to manage and respond to particular kinds of legal problems.<sup>59</sup> This, in the present case, as chapter 3 showed, includes addressing normative conflicts,<sup>60</sup> allocating responsibilities,<sup>61</sup> delineating

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<sup>57</sup> Fisher and Shapiro (n 171) 60.

<sup>58</sup> Warnock (n 6) 391.

<sup>59</sup> E.g., Electricity Act 2003, s 111 (6) (Appeal to Appellate Tribunal); See also Law Commission Report (n 25).

<sup>60</sup> *Green Energy Association v Central Electricity Regulatory Commission* (APTEL, 12 Apr 2018).

<sup>61</sup> *Gujarat Energy Transmission Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 09 Jan 2015).

rights,<sup>62</sup> and undertaking polycentric decision-making<sup>63</sup> in an expeditious manner.<sup>64</sup> It also involves dealing with multiple actors and interests, ensuring the accountability of orders made by primary regulators, and giving legal effect and meaning to novel legal constructs such as the RPO and REC mechanisms by embedding them into the legal order.<sup>65</sup>

That such legal problems are to be resolved by specialist adjudication shows that the nature of disputes that tribunals are tasked with resolving demands a ‘dynamic and responsive form of adjudication’<sup>66</sup> that cannot be found in general courts.<sup>67</sup> In other words, adjudicating upon these disputes requires specific adjudicative capacity and expertise. *Ramnad Renewable*<sup>68</sup> and *Green Energy Association*,<sup>69</sup> for example, emphasize the importance of APTEL’s adjudicative capacity in determining public benefit through promoting solar generation vis-à-vis the impact on individual rights of private entities.<sup>70</sup> This requires paying particular attention

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<sup>62</sup> *Nabha Power Ltd v Punjab State Power Corporation Ltd* (APTEL, 17 May 2018).

<sup>63</sup> *Welspun Renewable* (n 54).

<sup>64</sup> Electricity Act 2003, s 111 (5) (Appeal to Appellate Tribunal).

<sup>65</sup> Warnock (n 6) 392.

<sup>66</sup> Warnock (n 6) 392.

<sup>67</sup> Law Commission Report (n 25) 2.

<sup>68</sup> *Ramnad Renewable* (n 13).

<sup>69</sup> *Green Energy Association* (n 60).

<sup>70</sup> See also *SunE Solar BV v Delhi Electricity Regulatory Commission* (18 Jul 2018, APTEL); *Solar Energy Corporation of India v Karnataka Electricity Regulatory Commission* (APTEL, 25 Jul 2019); *Punjab Energy Development Agency v Punjab State Electricity Regulatory Commission* (APTEL, 13 Nov 2019); *Jaiprakash Power Ventures Ltd v Madhya Pradesh Electricity Regulatory Commission* (APTEL, 22 Aug 2016); *Energy Watchdog v Tamil Nadu Electricity Regulatory Commission* (APTEL, 09 Sep 2019); *Green Energy Association v Himachal Pradesh Electricity Regulatory Commission* (APTEL, 10 Dec 2015); *Punjab State Power Corporation Ltd v Enterprise Business Solutions Pvt Ltd* (APTEL, 28 Sep 2015).

to provisions of the enabling statutory framework, precedent, and the specific contexts in which the dispute arises.<sup>71</sup> To consider APTEL's legal work in this way is to on one hand acknowledge that energy transition is disruptive of adjudicative processes in particular ways, and on the other that the nature of that disruption requires the Appellate Tribunal to respond to the distinct characteristics of these disputes through the exercise of particular institutional functions and forms of knowledge which it is equipped with and empowered to perform.<sup>72</sup>

The 'expert adjudicative capacity' of the APTEL is crafted on the basis that it will deliver on its statutory mandate as an appellate legal institution in an 'expeditious'<sup>73</sup> manner through the application of stipulated forms of skill, knowledge and expertise.<sup>74</sup> The enabling statute, as chapter 2 discussed in more detail, empowers the Appellate Tribunal with procedural autonomy to examine the legality, propriety or correctness of orders made by the appropriate electricity commission under the Act.<sup>75</sup> This is different from general courts that have a wider mandate and review executive actions by employing generic doctrine, and that operate within the ordinary bounds of common law systems of procedure and evidence.<sup>76</sup> The Electricity Act 2003 clearly states that during adjudication the Appellate Tribunal is not bound by the Code of Civil Procedure 1908 and is vested with the 'powers to regulate its own procedure,' subject

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<sup>71</sup> See Warnock (n 10) 161-62.

<sup>72</sup> Electricity Act 2003, s 112 (Composition of Appellate Tribunal); Electricity Act 2003, s 111 (6) (Appeal to Appellate Tribunal); Electricity Act 2003, s 111 (3) (Appeal to Appellate Tribunal); See chapter 2 of this thesis for a more detailed discussion of this point.

<sup>73</sup> Electricity Act 2003, s 111 (5) (Appeal to the Appellate Tribunal).

<sup>74</sup> Electricity Act 2003, s 113 (1) (b) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

<sup>75</sup> Electricity Act 2003, s 111 (6) (Appeal to the Appellate Tribunal).

<sup>76</sup> Warnock (n 6) 395.

only to the principles of natural justice,<sup>77</sup> and that in discharging its duties under the Act, the powers of the Appellate Tribunal are at par with that of a traditional civil court in summoning evidence and executing its orders.<sup>78</sup> APTEL's adjudicative capacity must be understood within this statutory and institutional setting in order to see its boundaries and possibilities in this landscape.

The Act further stipulates that the APTEL must be headed by a 'former judge of the Supreme Court of India or Chief Justice of a High Court'<sup>79</sup> and comprise 'at least one judicial and one technical member'.<sup>80</sup> To qualify as an APTEL member one must have prior experience in public administration dealing in particular with 'economic affairs or matters or infrastructure' or have 'adequate knowledge or experience in dealing with the matters relating to electricity generation, transmission and distribution and regulation or economics, commerce, law or management.'<sup>81</sup> The statute qualifies the APTEL's institutional capacity with certain types of expert knowledge it deems necessary for the responsive and expeditious adjudication of appeals before it. The statute also provides crucial internal and external accountability mechanisms that foster the integrity and legitimacy in its adjudication of disputes.<sup>82</sup> I will return to this point in more detail in the next section.

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<sup>77</sup> Electricity Act 2003, s 120 (Procedure and Powers of the Appellate Tribunal).

<sup>78</sup> Electricity Act 2003, s 120 (2) (Procedure and Powers of the Appellate Tribunal); Electricity Act 2003, s 120 (3) (Procedure and Powers of the Appellate Tribunal).

<sup>79</sup> Electricity Act 2003, s 113 (1) (a) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

<sup>80</sup> Electricity Act 2003, s 112 (2) (b) (Composition of the Appellate Tribunal).

<sup>81</sup> Electricity Act 2003, s 113 (1) (b) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

<sup>82</sup> *Earth Solar Pvt Ltd v Punjab State Electricity Regulatory Commission* (APTEL, 11 Jan 2019) (jurisdiction); *Rajasthan Renewable Energy Corporation v Shree Cement* (APTEL, 16 Apr 2019) (jurisdiction); *Chamundeshwari Electricity Supply Corporation v Saisudhir Energy (Chitradurga) Pvt*

The expert capacity of the Tribunal, therefore, is not only framed by a certain institutional setting but is also shaped by a specific set of statutorily defined knowledge practices. There is however more to this picture. The Appellate Tribunal's expert capacity is created by coordinating these different types of institutional and knowledge practices in discharging its statutory mandate. This involves coordinated expertise. The Tribunal's reasoning in disputes about technical feasibility<sup>83</sup> or technical improvements<sup>84</sup> are clear examples. The exercise of coordinated expertise, however, can take different forms. This is determined by the nature of legal problems raised in a particular appeal.

In *Omega Infraengineers*,<sup>85</sup> for example, the question before the Appellate Tribunal was whether the State Commission was right in holding the appellant responsible for delays in commissioning the solar power project. To do this, the Appellate Tribunal had to first determine the date of commissioning the project, which rested on a review and assessment of the 'technical grid feasibility clearance' documents. This required the coordinated expertise of the judicial and technical members in addressing the dispute at hand.<sup>86</sup>

This kind of expertise is also needed to respond to disputes that involve considering economic and financial principles in their legal reasoning. *Welspun Renewable*<sup>87</sup> and *Green*

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*Ltd* (APTEL, 21 Mar 2018) (jurisdiction); *Siwana Power Project Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 May 2019) (statutory principles).

<sup>83</sup> *Tamil Nadu Generation and Distribution Corporation v B&G Solar Pvt Ltd* (APTEL, 12 Sep 2016); *Omega Infraengineers v Punjab State Electricity Regulatory Commission* (APTEL, 21 Feb 2019).

<sup>84</sup> *Green Energy Association* (n 60).

<sup>85</sup> *Omega Infraengineers* (n 83).

<sup>86</sup> *Omega Infraengineers* (n 83).

<sup>87</sup> *Welspun Renewable* (n 54). See chapter 3 of this thesis for a detailed analysis.

*Energy Association*<sup>88</sup> offer a case in point. In *Green Energy Association*, for example, the question before the Appellate Tribunal was whether the State Commission had erred in allocating the entire compensation for the shortfall in RPO towards the development of sub-transmission infrastructure and not allocating any amount towards the purchase of RECs.<sup>89</sup> The Tribunal's interpretation of the impugned order and applicable Regulation required taking economic principles into account in setting out the obligations of distribution licensees vis-à-vis the RPO and REC mechanisms.

The Tribunal's coordinated expertise is also required, as seen in other instances, to assess and enforce technical and fiscal benefits promised to solar developers through policy assurances;<sup>90</sup> assess technical standards in order to determine costs;<sup>91</sup> review tariff parameters;<sup>92</sup> and characterise the nature of energy infrastructure in question.<sup>93</sup> These examples might appear quite specific but that then is the nature and kind of particularity in the questions asked and responses demanded of the Tribunal.

In light of the foregoing discussion and case law mapped in chapter 3, it is evident that adjudicating disputes – in the context of the ongoing transition and construction of new solar infrastructure – is an expert legal task that brings the APTEL's adjudicative capacity into view.

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<sup>88</sup> *Green Energy Association* (n 70).

<sup>89</sup> *Green Energy Association* (n 70) [5].

<sup>90</sup> See *Earth Solar* (n 82).

<sup>91</sup> *Welspun Renewable* (n 54).

<sup>92</sup> *Gujarat Urja Vikas Nigam Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 11 Apr 2018) [6.6], [13.5].

<sup>93</sup> E.g., *Balarch Renewable Energy Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2018).

Expertise in adjudication however is not a new concept for tribunal lawyers. One of the major justifications for tribunals like the APTEL is the expertise they bring to the adjudication of certain types of legal problems deemed beyond the adjudicative capacity of general courts. The Law Commission of India, in its Report on the Tribunal Framework in India, specifically notes that:

‘Tribunals emerged not with the sole promise of speedy, effective, decentralized dispensation of justice but also the expertise and knowledge in specialized areas that was felt to be lacking in the judges of traditional courts’<sup>94</sup>

The adjudicative capacity of tribunals, therefore, is distinguished from generalist courts by the need to execute expertise in the discharge of its statutory responsibilities. Part of that expertise, in the present context, is developed through the Tribunal’s interaction with the legally disruptive nature of the ongoing energy transition.<sup>95</sup> In other words, the APTEL has developed a specific expertise in relation to the novelty and complexity of the legal problems raised in the appeals before it by accounting for the statutory and policy mandates of promoting solar generation, encouraging private sector participation, and creating a competitive renewable energy market conducive for transition in its consideration of the quantum of investments, fragility of infrastructure, and decisive guidance on how regulatory decisions ought to be made in that regard.<sup>96</sup> The Tribunal’s understanding and judicial treatment of

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<sup>94</sup> Law Commission Report (n 25).

<sup>95</sup> E.g., *Pinnacle Renewable Energy Pvt Ltd v Uttar Pradesh Electricity Regulatory Commission* (APTEL, 20 Aug 2019) (undertaking regarding deemed generation); *Kamuthi Renewable Energy Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 20 May 2019) (assessing regulatory and adjudicatory powers of State Commission in the context of the ongoing transition); *Maharashtra State Electricity Distribution Company Ltd v Maharashtra Electricity Regulatory Commission* (APTEL, 28 Nov 2018) (billing of renewable energy units for open access and captive consumers).

<sup>96</sup> See chapter 3 of this thesis; E.g., *Ramnad Renewable* (n 13); *Green Energy Association* (n 60); *Balarch Renewable* (n 93); *Welspun Renewable* (n 54); *Amplus Infrastructure Developers Pvt Ltd v Uttarakhand Electricity Regulatory Commission* (APTEL, 10 Apr 2015).

disputes involving RPOs and RECs and addressing regulatory challenges arising from the novelty of these legal constructs was not pre-existing expertise or knowledge but constructed by the careful application of existing frameworks in responding to disputes raised by the ongoing transition.

The APTEL's expertise in responding to these disputes thus is both embedded in and contributes to an understanding of energy transition. This point also demonstrates its capacity to co-produce energy transition in the Indian legal landscape. What I mean is that by applying these frameworks in resolving legal disputes and therefore generating legal knowledge about the solar infrastructure, process or regulatory function in question, that legal knowledge is also creating social knowledge about how participants in this process and society ought to relate and organise their lives in light of it during transition.

The Appellate Tribunal is equally well-versed in how to respond to the more familiar disputes, e.g., appeals against tariff orders and/ or disputes involving breach of contract, that have been cast in new light owing to the ongoing transition; for example, in its consideration of disputes concerning preferential tariffs and the methods of procuring the same.<sup>97</sup> The Appellate Tribunal's responses to these disputes, as chapter 3 showed, involve the application of well-settled legal principles and established positions of law.<sup>98</sup> This creates legal continuity and stability: this kind of expertise is foundational and at the heart of its adjudicative capacity.

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<sup>97</sup> E.g., *Tata Power Delhi Distribution Ltd v Delhi Electricity Regulatory Commission* (APTEL, 16 Apr 2019) (tariff determination); *Gujarat Energy Transmission Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 09 Jan 2015) (establishment of energy evacuation facilities); *GMR Gujarat Solar Power Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Apr 2015) (billing period).

<sup>98</sup> E.g., *Amplus Infrastructure* (n 96) (on interpretation of welfare statutes); *Gujarat Urja Vikas Nigam Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 14 May 2018) (inherent powers of the court cannot affect the substantive rights of litigants); *Chhattisgarh State Power Distribution Co Ltd v Chhattisgarh State Electricity Regulatory Commission* (APTEL, 23 Sep 2015) (guidelines cannot go beyond the parent act).

While some legal problems, as chapter 3 showed, are relatively straightforward, such as the resolution of cold-natured tariff disputes and disputes concerning delays in commissioning power projects,<sup>99</sup> resolving other legal problems is not. This was demonstrated by hot-natured disputes characterised by the ‘non-existent, insufficient, or contradicting’ nature of required information and/ or presence of multiple parties, interests, and overlapping frameworks.<sup>100</sup> Adjudicating disputes about how to operationalise novel legal constructs such as RPOs and RECs,<sup>101</sup> ‘hot-natured’ tariff disputes,<sup>102</sup> and the interpretation of statute, policy, and contractual provisions,<sup>103</sup> were clear examples mapped in the previous chapter.

APTEL’s expertise, therefore, is not only concerned with electricity problems, which is a specialised and ‘technical’ area in and of itself,<sup>104</sup> but extends to understanding and applying complex and evolving legal, policy and technical knowledge in responding to electricity disputes. This involves coordinating expertise and integrating different types of knowledge: legal, technical, economic and interactional in its reasoning. This is characteristic of specialist adjudication and is needed to not only manage what Warnock calls the ‘contextual

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<sup>99</sup> E.g., *Tata Power Delhi* (n 97).

<sup>100</sup> Michel Callon, ‘An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology’ in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998) 260-261.

<sup>101</sup> E.g., *JSW Steel Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 02 Jan 2019) (applicability); *Viyyat Power Ltd v Kerala Electricity Regulatory Commission* (APTEL, 09 Jul 2018) (eligibility); *Rajasthan Renewable Energy Corporation Ltd v Shree Cement Ltd* (APTEL, 16 Apr 2019) (RPO liability); *Green Energy Association v Madhya Pradesh Electricity Regulatory Commission* (APTEL, 28 Apr 2016) (shortfall in RPO).

<sup>102</sup> *Welspun Renewable* (n 54).

<sup>103</sup> *Gujarat Energy Transmission Corporation* (n 97) (billing period); *Balarch Renewable* (n 93); *TNGENCO* (n 83) (conflict between regulations and statute).

<sup>104</sup> See Theodore Porter, ‘How Science Became Technical’ (2009) 100 *Isis* 292.

messiness’ of these disputes,<sup>105</sup> but also to promote the objectives, policies and principles under the Electricity Act 2003. Understanding and focusing on the specific in responding to disputes is inevitable;<sup>106</sup> without careful attention, this would indicate a messy and inchoate legal landscape that would create problems for the integrity of the Tribunal’s legal work.<sup>107</sup>

To that end, APTEL’s expert capacity provides legal stability by setting the parameters for building coherent legal understandings of how to deal with disruption through consistent jurisprudence that aligns with existing legal and policy frameworks. Its legal work in fleshing out the application and understanding of statutory provisions and legal doctrine is formative and counters any assumption that these tools for reasoning are fully fungible and immured from the wider social, economic and institutional environment in which they acquire meaning and operate.<sup>108</sup> This adjudicative capacity is needed to embrace disruptions caused by energy transition, and to stabilise and embed them into the Indian legal order. The implications of APTEL’s capacity and coordinated expertise are considered in Part II of the chapter. They are fundamental to its adjudicative competence.

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<sup>105</sup> Warnock (n 6) 394.

<sup>106</sup> Warnock (n 6) 394.

<sup>107</sup> See Warnock (n 6) 393-94.

<sup>108</sup> Warnock (n 10) 163.

## 2 Accountability Measures

Accountability, as defined above, is inherent in the APTEL's adjudicative capacity in two main ways; first, and fundamentally, this accountability is to the law. The Appellate Tribunal's adjudicative capacity is predicated on its ability to promote the objectives, policies and mandates prescribed by the enabling legislation, that is, the Electricity Act and its capacity to adequately respond to the legal and factual contexts raised in a particular dispute it is tasked with resolving.<sup>109</sup> This promotes legal integrity and responsive adjudication.<sup>110</sup> Given its institutional nature as a 'separation of powers misfit'<sup>111</sup> and its capacity framed by particular institutional and knowledge practices, the enabling statute provides a crucial in-built mechanism for ensuring that the Appellate Tribunal's judgements stay within its authority and remains internally accountable to the law through reason-giving. This ensures the legitimacy of APTEL's judgments, which in turn strengthens the rule of law in a legal and regulatory environment disrupted by the process of energy transition.

This internal accountability is also externally ensured by permitting a second appeal to aggrieved parties against APTEL's judgments before the Supreme Court of India on substantial questions of law alone.<sup>112</sup> Specialist tribunals such as the APTEL can also be viewed as part of another kind of institutional accountability, that is, towards the growth of an 'accountability

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<sup>109</sup> Warnock (n 10) 5.

<sup>110</sup> Warnock (n 10) 5.

<sup>111</sup> Fisher (n 21) 263-67; Warnock (n 6) 409.

<sup>112</sup> Electricity Act 2003, s 125 (Appeal to Supreme Court); Code of Civil Procedure 1908, s 100 (Second Appeal).

sector’ vis-à-vis primary administrators/ regulators.<sup>113</sup> The legal work of tribunals is, after all, typically triggered when a particular act or order of a public body is ‘appealed’ before it.<sup>114</sup>

The APTEL is also bound by a different kind of accountability, which Mashaw explains is ‘broader than accountability to the law’.<sup>115</sup> This is created by legal demands for reasoned decision-making at both the primary and appellate levels.<sup>116</sup> These accountability regimes are embedded in and stretch across the different frameworks mapped in chapter 2. They place and construct, through different considerations, differing understandings of what would constitute an adequate response to the legal and factual context of a dispute before the Appellate Tribunal. The Constitution of India, for example, places public interest considerations in thinking about energy transition.<sup>117</sup> The National Electricity Policy and National Solar Mission characterise electricity as ‘critical infrastructure’ necessary for socio-economic development which places an additional layer of substantive and normative accountability upon the Tribunal in its reasoning of disputes involving electricity infrastructure.<sup>118</sup> Then, the National Tariff Policy places an emphasis on cost-efficiency and constructing a competitive energy market.<sup>119</sup> Recent

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<sup>113</sup> Fisher (n 111) 260.

<sup>114</sup> Cane (n 6) ch 7.

<sup>115</sup> Mashaw (n 55) 41.

<sup>116</sup> Mashaw (n 55) 40-41; Fisher and Shapiro (n 171) 67; *Welspun Renewable* (n 54); *Solar Energy Corporation of India* (n 70) [19 (iii)].

<sup>117</sup> *Hindustan Zinc Ltd v Rajasthan Electricity Regulatory Commission* (2015) 12 SCC 611 (Supreme Court of India) [49].

<sup>118</sup> National Electricity Policy 2005 [1.2].

<sup>119</sup> National Tariff Policy 2006.

amendments to the National Tariff Policy, however, have primarily focused on renewable energy and in particular solar energy, energy security, and ensuring affordable tariffs.<sup>120</sup>

A robust understanding of these frameworks, their objectives, mandates and relationships with each other and with the legal landscape of energy transition, therefore is an important facet of the Tribunal's expert capacity and casts a wider net of accountability on its legal reasoning and decision-making, which is evidently more than simple accountability to law. In *Ramnad Renewable*, for example, that accountability was made visible by drawing on the statutory and policy mandates of promoting solar power placed on the State Commission;<sup>121</sup> this was also seen in the Tribunal's reasoning in *Amplus Infrastructure* which involved assessing whether the Third-Party Model for Ownership came under the ambit of the State Regulations in question, and in the interpretation of these Regulations as a form of beneficial legislation.<sup>122</sup>

This kind of accountability is a normative acknowledgement of the Appellate Tribunal's capacity to shape and determine how energy transition and associated solar infrastructure is understood in law, but also the considerations with which it is structured, organised, regulated and rooted in society.<sup>123</sup> In other words, this wider accountability is of thinking about transition vis-à-vis the broader legal and social order. The legal significance of the APTEL's adjudicative capacity therefore can only be fully appreciated if this co-production is considered. This kind of accountability calls attention to the wider social dimensions of

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<sup>120</sup> Ministry for Power Government of India, *Tariff Policy* (The Gazette of India: Extraordinary Part I Sec I, 2016).

<sup>121</sup> *Ramnad Renewable* (n 13).

<sup>122</sup> *Amplus Infrastructure* (n 51) [6].

<sup>123</sup> *Jasanoff* (n 7) 2.

APTEL's legal work in constructing a particular legal present that is inevitably also shaping a particular legal future. The Appellate Tribunal's capacity to understand and engage with the objectives of these frameworks in its reasoning of appeals against orders of regulatory bodies, therefore, underscores both the epistemic and material considerations needed to craft this relationship.<sup>124</sup>

As chapter 2 showed, the statutes, policy and regulations in this landscape are interconnected and overlap; considerations for accountability therefore often apply concurrently.<sup>125</sup> APTEL's adjudicative capacity is embedded in these discrete regimes and brought together in its reasoning of appeals. The Tribunal's 'granular analysis' of the different tariff components in *Welspun Renewable*,<sup>126</sup> discussed in the previous chapter for example, offers an illustration of how it understands, manages and brings together components entrenched in different and diverse disciplines in a coherent singular legal analysis.<sup>127</sup> I will return to this point in more detail in my discussion of coordinated expertise. The interplay of its expert adjudicative capacity and the accountability measures engendered by the regimes, e.g., state-level tariff regimes, Electricity Act 2003, and National Tariff Policy, mitigate against potential centrifugal tendencies that may arise in consideration of non-legal parameters vis-à-vis statutory components such as economic and financial principles;<sup>128</sup> methodologies for determining

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<sup>124</sup> See Jasanoff (n 7) 3.

<sup>125</sup> E.g., *Balarch Renewable* (n 103) (statute, regulations); *SunE BV* (n 82) (constitution, statute); *Ultratech Cement Pvt Ltd v Karnataka Electricity Regulatory Commission* (APTEL, 09 Apr 2019) (constitution, statute, precedent).

<sup>126</sup> *Welspun Renewable* (n 54).

<sup>127</sup> Arthurs (n 19) 8.

<sup>128</sup> *Welspun Renewable* (n 54) [7.6], [8.6], [10.2], [10.11].

tariffs stipulated by the CERC;<sup>129</sup> data trends on pricing,<sup>130</sup> and standard market practices in its reasoning.<sup>131</sup> APTEL judgments therefore play an important role in stabilizing legal and regulatory thinking.<sup>132</sup>

It is therefore not enough that the Appellate Tribunal pronounces material outcomes, it must apply its adjudicative capacity within the bounds of its statutory and constitutional boundaries.<sup>133</sup> The crucial question in these accountability mechanisms, therefore, is about the extent to which these frameworks shape or constrain APTEL's reasoning, which in turn impacts the decision-making of concerned electricity regulatory commissions. This goes to the heart of striking a difficult balance between securing effective outcomes; responsive reasoning; and the kind of institutional 'efficiency' expected of tribunalised adjudication, while also ensuring the 'integrity' and 'normative legitimacy'<sup>134</sup> of its decision-making process towards social formation. The legal integrity and normative legitimacy of APTEL's legal work come from the rigour and robustness of its dispute resolution and its ability to 'adjudicate well' on the complexity of disputes before it.<sup>135</sup> This, Fisher notes, depends on the quality of the legal

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<sup>129</sup> *Welspun Renewable* (n 54) [7.10].

<sup>130</sup> *Welspun Renewable* (n 54) [8.1] - [8.2].

<sup>131</sup> *Welspun Renewable* (n 54) [8].

<sup>132</sup> See Fisher (n 11) 552-55.

<sup>133</sup> Fisher and Shapiro (n 171) 68.

<sup>134</sup> Warnock (n 10) 8.

<sup>135</sup> Fisher (n 4) 317.

reasoning embedded in its judgments.<sup>136</sup> I will return to these points in more detail in the next chapter.

The foregoing description of accountability in relation to APTEL's adjudicative capacity offers a simple outline of the extent to which the concept of accountability relates to this thesis. This description may not fit in with how lawyers and adjudicators are conventionally trained to think about tribunalised adjudication and the accountability of adjudicative institutions more generally, which either tend to be understood in thin terms or not engaged with at all. Thin descriptions of accountability mechanisms view them as a standard to be enforced or achieved as an external 'outside-in' process vis-à-vis administrative/regulatory institutions.<sup>137</sup> Such accounts reinforce and reiterate instrumental understandings about specialist adjudicative institutions as sites delivering 'pragmatic' administrative justice rather than illuminating their substantive contributions as 'active legal subjects',<sup>138</sup> that is, as legal entities that are both constructed by and are contributing to the development of law in a complex social and legal environment.<sup>139</sup> While at this point, I want the reader to make a mental note of the implications of this analysis for thinking about pragmatic adjudication, I reflect on this in more detail in the next chapter.

APTEL's legal work, as chapters 2 and 3 have shown, is complex. The landscape it is embedded and works in is layered and evolving. The vision of APTEL's adjudicative competence in this landscape is not just a scholarly picture that encourages moving beyond

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<sup>136</sup> Fisher (n 4) 317.

<sup>137</sup> Fisher and Shapiro (n 171) 70-1.

<sup>138</sup> Fisher (n 21) 278-80.

<sup>139</sup> Fisher (n 21) 278-80.

thin narratives that view its adjudicative capacity as limited to dictating how electricity regulators ought to respond to legal disruption, but one that opens up new intellectual avenues into thinking about the nature of specific adjudication undertaken by the Appellate Tribunal.<sup>140</sup> This thick description inspires a re-imagination of the nature, role and contributions of tribunalised adjudication, and showcases its work in reasoning and responding to the disputes appealed before it as integral to constructing the legal and infrastructural world desired of the ongoing energy transition.

Much has been written about the internal accountability of specialist adjudication, the application of co-production to the work of courts and tribunals, and indeed also about the expertise of tribunals like the APTEL working in specialised areas.<sup>141</sup> I have pointed to some of this scholarship in my footnotes, but the purpose of this chapter (as I make clear in the introduction) is not to embark on a comprehensive theoretical engagement with this scholarship; rather, to use it as a conceptual lens to develop a thicker mental picture of what constitutes APTEL's expert capacity, and illuminate the significance of thinking about its adjudicative competence.

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<sup>140</sup> Warnock (n 6) 393 applying 'pre-theory building'.

<sup>141</sup> See Mashaw (n 55); Fisher and Shapiro (n 171); Cane (n 6); Warnock (n 10); see also Athanasios Psygkas, 'Accountability' in Peter Cane and others (eds), *Oxford Handbook of Comparative Administrative Law* (OUP 2020); see Sheila Jasanoff, 'Future Imperfect: Science, Technology and Imaginations of Modernity' in Sheila Jasanoff and Sang-Hyun Kim (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015); Jasanoff (n 7) 3.

### 3 Relationship between Expert Capacity and Accountability

The relationship between APTEL's expert capacity and accountability mechanisms emphasizes the importance of Warnock's adjudicative theory of tribunals<sup>142</sup> in showing how these two components, by constituting and constraining APTEL's legal nature, foster the integrity and normative legitimacy of adjudication done by it.<sup>143</sup> In the present context, this legal nature encompasses what the APTEL is, why it was constituted, and what its limitations are.<sup>144</sup> Legal integrity and normative legitimacy are distinct legal concepts constitutive of the APTEL's legal and institutional nature. The significance of accountability from a legitimacy perspective is due to its input legitimacy,<sup>145</sup> that is, its relationship to APTEL's adjudicative capacity. This is because, as seen in the first section, an integral part of the internal accountability measures that constitute the Appellate Tribunal's adjudicative capacity is to hold its legal reasoning accountable to the law and ensure that its decision-making is within its stipulated statutory and constitutional boundaries. That this capacity includes a range of different forms of expertise, legal and otherwise, means that this now entails a far more substantive and analytical process of reasoning. In other words, it is linked to the Tribunal's adjudicative integrity and adjudicative capacity to respond to the legal and factual contexts raised in the disputes appealed before it, and therefore also to the legitimacy of its output.

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<sup>142</sup> See Warnock (n 6); Warnock (n 10).

<sup>143</sup> This theory suggests that the relationship between the nature of adjudication and the form, function and powers of adjudicators must be acknowledged in order to make legal sense of specialist adjudicative institutions, see Warnock (n 6) 393.

<sup>144</sup> Warnock (n 6) 395.

<sup>145</sup> Warnock (n 6) 409 citing Elizabeth Fisher, 'The European Union in the Age of Accountability' (2004) 24 OJLS 495, 508.

This point might seem somewhat obvious, but my point in making it explicitly known is to emphasize that accountability, in addition to having material implications for the content and nature of APTEL’s reasoning, also has a ‘profound normative aspect’<sup>146</sup> which contributes to legal stability by not only making the Tribunal’s adjudication and the reasoning embedded in its judgments accountable to the enabling statute and wider legal landscape but also inspiring trust in its decisions from the relevant community.<sup>147</sup> In thinking about the Appellate Tribunal’s expert capacity therefore, accountability can be viewed as a ‘set of tools which can fix and stabilize a system’ used to craft an understanding of the legal, regulatory and adjudicative systems disrupted by an ongoing transition to renewable energy and the construction of associated solar infrastructure.<sup>148</sup> By viewing the relationship between expert capacity and accountability in this way, a thicker account of APTEL’s adjudicative competence emerges and brings into view its co-production of energy transition as a process of transformative change.

Expert adjudicative capacity requires critical engagement with the legal and factual contexts involved in a particular dispute, and accountability, as this discussion has shown, plays an integral role in that engagement. APTEL’s competence involves bringing together a diverse mixture of different knowledge and accountability practices.<sup>149</sup> However, what is less recognised is that APTEL’s adjudicative competence impacts how energy transition is understood and reasoned during adjudication, which in turn impacts how it is incorporated into the legal order and thus how broader society relates to it. Thinking about the Tribunal’s

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<sup>146</sup> Fisher (n 145) 509.

<sup>147</sup> Fisher (n 145) 510; Warnock (n 10) 198 for a discussion of normative legitimacy.

<sup>148</sup> Fisher (n 145) 510.

<sup>149</sup> Fisher and Shapiro (n 171) 97.

adjudicative competence, therefore, offers a starting point for understanding the kind of expertise it offers and the complexity of its tasks, and shifts attention onto the intellectual rather than pragmatic challenges of adjudicating disputes involving solar infrastructure. This is explored in the next part of the chapter.

## C PART TWO: TOWARDS A THICKER UNDERSTANDING OF APTEL'S EXPERTISE

The previous section drew a thick picture of APTEL's adjudicative competence by bringing into view its capacity as a specialist adjudicative institution, and the accountability measures inherent in that capacity. This was inspired by Fisher and Shapiro's approach to staging the competence of administrative agencies.<sup>150</sup> Making APTEL's adjudicative competence visible in this way inevitably brings its expertise into view, that is, the skills, knowledge and experience involved in responding to legal disputes. Expertise however is not a monolith concept.<sup>151</sup> APTEL's expertise is constituted by judicial and technical members who bring with them knowledge of certain disciplines, skills, and institutional practices.<sup>152</sup>

To think about how to foster the Tribunal's adjudicative competence, we must first build a thicker understanding of its expertise.<sup>153</sup> The nature of disputes appealed before the Tribunal as seen in the previous chapters operationalise different frameworks and demand different kinds of legal work from the Appellate Tribunal. Doing this work requires different kinds of expertise which can take specific forms.<sup>154</sup> The case law mapped in chapter 3 brings three types of expertise into view- namely, interactional, contributory and coordinated expertise. This section focuses on each of these bodies of expertise and considers how they can be fostered in the present context.

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<sup>150</sup> See Fisher and Shapiro (n 171).

<sup>151</sup> Liz Fisher, 'Climate Change Litigation, Obsession and Expertise: Reflecting on the Scholarly Response to Massachusetts v EPA' (2013) 35 Law and Policy 231, 253-54.

<sup>152</sup> See chapter 2 of this thesis; Electricity Act 2003, s 113 (1) (b) (Qualifications for Appointment of Chairperson and Members of Appellate Tribunal).

<sup>153</sup> See Fisher and Shapiro (n 171) 49-65.

<sup>154</sup> Collins and Evans (n 41) 3; Fisher (n 151) 252-55.

Interactional expertise arises through interaction with other disciplines.<sup>155</sup> This expertise entails knowing about another area of knowledge but does not necessarily involve participating in its creation.<sup>156</sup> Interactional expertise may link non-law disciplines to legal knowledge, and even different forms of legal knowledge.<sup>157</sup> It is the kind of expertise needed to recognise that technical<sup>158</sup> or economic knowledge<sup>159</sup> might be needed to respond to a particular dispute. This includes an awareness of the normative force of the contexts in which disputes arise, such as of international climate change commitments<sup>160</sup> and considerations for decarbonising energy sources,<sup>161</sup> or developing a competitive renewable energy market<sup>162</sup> and encouraging private sector participation.<sup>163</sup>

Contributory expertise refers to the ‘sets of skills, knowledge, and experience needed to contribute to the development of law’.<sup>164</sup> This is legal expertise. It develops the law by

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<sup>155</sup> Warnock (n 10) 5.

<sup>156</sup> Collins and Evans (n 41) 3.

<sup>157</sup> Fisher (n 151).

<sup>158</sup> *Balarch Renewable* (n 103); *JBM Solar Power Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 09 Mar 2018).

<sup>159</sup> *Welspun Renewable* (n 54).

<sup>160</sup> *Tata Power Delhi* (n 97).

<sup>161</sup> *Green Energy Association* (n 60); *Tata Power Delhi* (n 97).

<sup>162</sup> *SunE BV* (n 82).

<sup>163</sup> *Taxus Infrastructure and Power Projects Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2018); *JBM Solar* (n 158); *SunE BV* (n 82).

<sup>164</sup> See Fisher and Shapiro (n 171) 55-60; Fisher (n 39) 48.

incorporating mainstream legal doctrine in responding to disputes relating to solar projects and the process of energy transition. This kind of expertise directly advances knowledge of the law, e.g., of how a statutory provision, regulation, contract or policy ought to be interpreted<sup>165</sup> and/or how legal rights and obligations of parties ought to be delineated.<sup>166</sup> In the context of APTEL adjudication, contributory expertise can take specific forms such as rooting disruption into existing legal frameworks. I discuss the concept of rooting in more detail in the next chapter, but will in this section discuss the role of this kind of expertise in creating legal stability, certainty, and predictability in the solar marketplace.

Coordinated expertise is the expertise needed to bring different types of expertise together.<sup>167</sup> A person with coordinated expertise, Fisher and Shapiro explain, ‘has the ability to do things within an area of expertise; that is, the person can contribute to the practice of the discipline.’<sup>168</sup> This requires specific skills in moving across different frameworks and knowledge bases.<sup>169</sup> The APTEL, as I explained earlier, is constituted by judicial members and technical members who possess certain kinds of knowledge, that is, knowledge of judicial practice<sup>170</sup> and ‘matters relating to electricity generation, transmission and distribution and

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<sup>165</sup> *Jaiprakash Power* (n 70) (technical minimum); *ES Solar Pvt Ltd v Managing Director, Bangalore Electricity Supply Company Ltd* (APTEL, 08 May 2019) (calendar month); *Amplus Infrastructure* (n 98) (beneficial legislation).

<sup>166</sup> *Uttar Gujarat Vij Company Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Nov 2015) (solar policy, construction of evacuation line); *Balarch Renewable* (n 103) (construction of evacuation line); *JBM Solar* (n 158) (construction of transmission line).

<sup>167</sup> Fisher and Shapiro (n 171) 55-60.

<sup>168</sup> Fisher and Shapiro (n 171) 56.

<sup>169</sup> Fisher (n 39) 48.

<sup>170</sup> Electricity Act 2003, s 113 (1)(a) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

regulation or economics, commerce, law or management'.<sup>171</sup> Adjudicating disputes therefore inevitably requires coordinating and integrating these forms of institutionally conditioned knowledge in reaching an enforceable outcome.<sup>172</sup>

APTEL's adjudicative competence thus rests on the coordination of these 'real and substantive'<sup>173</sup> forms of expertise. To treat something as real and substantive is to treat it as more than something relational, that is, more than expertise as a matter of relation to generalist courts or other tribunals.<sup>174</sup> That treatment is only possible with a thicker understanding of what the Appellate Tribunal does (functions), how it does it (powers and procedure), and to what extent (jurisdiction) vis-à-vis the nature of disputes appealed before it (charted in chapters 2 and 3). My discussion of APTEL's adjudicative expertise in this section therefore inevitably moves between descriptive and normative considerations, that is, between the 'is' and the 'ought'.

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<sup>171</sup> Electricity Act 2003, s 113 (1)(b) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

<sup>172</sup> *Balarch Renewable* (n 103); *Welspun Renewable* (n 54); *Green Energy Association* (n 60).

<sup>173</sup> Collins and Evans (n 41) 2-4.

<sup>174</sup> Collins and Evans (n 41) 2.

## 1 Interactional Expertise

APTEL's interactional expertise comes from and needs to be seen in light of a number of intellectual challenges inherent in the legal problems before it. This includes the necessity to engage with different frameworks, legal and otherwise, and the need to respond to particular disputes in particular ways.<sup>175</sup> The previous chapter mapped 'hot' and 'cold' circumstances for adjudication. These circumstances were characterised by the relative ease of identifying and applying workable frames of legal action in responding to questions raised in the appeal before the Tribunal. In cold circumstances, disagreements were raised in a context where 'actors are identified, interests are stabilised, preferences can be expressed, responsibilities are acknowledged and accepted.'<sup>176</sup> This means that actors could calculate the costs and benefits of various actions and negotiate and/or act on that basis.<sup>177</sup> Whereas hot circumstances threw all of that for a toss! Hot circumstances were characterised by structural and foundational questions, difficulties in identifying sources, the lack of a stabilised knowledge base, multiple actors, interests, and often mutually incompatible understandings of the world.<sup>178</sup> These characteristics inevitably have implications for the nature and form of reasoning during adjudication, and the exercise of the Tribunal's powers and functions.<sup>179</sup>

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<sup>175</sup> E.g., *Welspun Renewable* (n 54); *Amplus Infrastructure* (n 98); *Star Wire (India) Vidyut Pvt Ltd v Haryana State Electricity Regulatory Commission* (APTEL, 15 Mar 2016).

<sup>176</sup> Callon (n 100) 15; Elizabeth Fisher, 'Environmental Law as 'Hot' Law' (2013) 25 JEL 347, 350.

<sup>177</sup> Fisher (n 176) 350.

<sup>178</sup> Fisher (n 176) 351.

<sup>179</sup> Warnock (n 6) 393.

Disputes about the interpretation of novel legal constructs, for example, required considering various legal and policy frameworks. There was typically no prior guidance on how to respond to these disputes; the subject matter was novel, as were the questions that arose about it. Adjudicating these legal questions, therefore, manifests law in particular ways and shapes subsequent action<sup>180</sup> whereas disputes over the invalidation of tariff agreements owing to faulty bidding processes, for example, involve the application of clearly identifiable provisions, to a specific set of facts. But this too was not mechanical, rather, it required engaging with the legal and factual contexts in which they arose.<sup>181</sup>

What was striking in that map was that despite the APTEL's engagement with different frameworks in its reasoning and reaching an outcome, there is little of an intellectual framework or discourse about that engagement and the kind of expertise needed in responding to disputes caused and exacerbated by transition.<sup>182</sup> This legal work appears largely invisible to a vast majority of law scholars, and those who do see it, do not see it enough.<sup>183</sup> This is not ideal, especially given that the Appellate Tribunal's application and reasoning of these frameworks is actively constructing legal understandings about energy transition, solar infrastructure, and associated energy markets, and embedding these understandings into the legal order. This is formative legal work with significant implications for the stability of the

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<sup>180</sup> Arthurs (n 173) 3.

<sup>181</sup> E.g., *JBM Solar* (n 158).

<sup>182</sup> Fisher (n 39) 45.

<sup>183</sup> Contra Fisher (n 11); Maria Lee, 'Knowledge and Landscape in Wind Energy Planning' (2017) 37 LS 3; Maria Lee and others, 'Public Engagement in Decision-Making on Major Wind Energy Projects' (2016) 27 JEL 139; Lavanya Rajamani, 'The Indian Way: Exploring Synergies between Development, Energy and Climate Goals' in Donald Zillman and others (eds), *Beyond The Carbon Economy: Energy Law in Transition* (OUP 2008).

markets that are shaping India's energy future and for how participants engage with and relate to that process

There is therefore a need to understand what exactly is involved in moving between these frameworks.<sup>184</sup> Fisher explores these questions in illuminating the kind of legal expertise needed in transnational environmental law scholarship.<sup>185</sup> She argues that contemporary environment law inevitably involves 'shuffling back and forth across legal cultures'; 'we cannot remain with our head down in one jurisdiction, even if we stay put in it'.<sup>186</sup> That is the nature of this legal work, yet scholarly movement across borders often occurs on the basis of 'hunches, guesswork, and blind faith,' which raises questions about the legitimacy of such scholarship. It also points to the limits of our legal imagination. There is therefore a need for a firmer foundation in these endeavours, which can be established by fostering scholarly expertise in moving between different knowledge practices. This on the one hand involves understanding what exactly is involved in moving between these practices – or, a 'tactile appreciation of the different types of material involved'<sup>187</sup>– and on the other hand involves understanding the intellectual challenges involved in studying that movement.<sup>188</sup> Fisher's analysis is helpful in thinking about how the APTEL's interactional expertise can be fostered.

Adjudicating disputes concerning solar power projects frequently involves moving across the different frameworks mapped in chapter 2- statutory, policy and regulatory. It also

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<sup>184</sup> Fisher (n 39) 45, 47.

<sup>185</sup> Fisher (n 39).

<sup>186</sup> Fisher (n 39) 45.

<sup>187</sup> Elizabeth Fisher, 'Legal Imagination and Teaching' in Lavanya Rajamani and Jacqueline Peel (eds), *Oxford Handbook of International Environmental Law* (2nd edn, OUP 2021) 142.

<sup>188</sup> Fisher (n 39) 45-46.

involves moving across legal, technical,<sup>189</sup> and economic knowledge.<sup>190</sup> This movement constitutes a number of different processes and interactions that point to the challenges of not only mastering discipline-specific vocabulary and navigating the objectives and mandates of different applicable frameworks, but also of remaining within the Tribunal's statutory and constitutional boundaries.<sup>191</sup> I illustrate this through an analysis of the circumstances and reasoning in *Star Wire India*.<sup>192</sup>

The appellant, in this case, I should flag, is a biomass-based renewable power plant. I refer to the Tribunal's reasoning here as an example to best illustrate the nature and manner in which its interactional expertise is used in responding to disputes before it. The embedded nature and institutional treatment of APTEL's judgments concerning renewable energy projects, as I explain in my methodology, means that my discussion of solar power projects cannot be dis-embedded from the Tribunal's broader jurisprudence on renewable energy projects.

In *Star Wire India*, the appeal before the Tribunal was a prayer for the refund of wheeling charges payable by the appellant to the State Commission. The appellant, in this case, had set up a biomass-based renewable energy plant and the respondent was a state agency tasked with procuring power on behalf of the distribution licensees. Wheeling charges here refers to the charges payable towards the connectivity and construction of a transmission line

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<sup>189</sup> *JBM Solar* (n 158); *Balarch Renewable* (n 103).

<sup>190</sup> E.g., *Welspun Renewable* (n 54).

<sup>191</sup> *Star Wire* (n 175); *Damodar Valley Corporation v Central Electricity Regulatory Commission* (APTEL, 23 Nov 2007).

<sup>192</sup> *Star Wire* (n 175).

from the place of generation to the existing distribution/ transportation system.<sup>193</sup> The circumstances under which the liability for these charges exist are important; they are determined by the applicable Regulations and are different for conventional or renewable energy generators.

The respondent argued that to challenge the levy of these charges, the appellant ought to have challenged the applicable Regulations which it had not done in this case. It therefore could not contend that even though these Regulations were not set aside, the Tribunal should ignore them. By setting the charges aside, the Tribunal would in effect be setting the Regulations aside, which it was not empowered to do.<sup>194</sup> The appellant however argued that its case was similar to that of a prior decision of the Appellate Tribunal wherein the wheeling charges were set aside, and as such, the same relief should be extended to it in this instance. On examining the facts, the Tribunal confirmed that the appellant's case was indeed similar to that case. However, on examining the treatment of wheeling charges as defined in the Electricity Act, the Tribunal observed a conflict with its description in the Regulations in question.<sup>195</sup> That is, as per the Act and the appellant's circumstances, wheeling charges could not be levied upon it, but the Regulations stated otherwise.

The question then was what was to be done in the event of the Tribunal noticing an apparent conflict between applicable Regulations prescribed by the State Commission and a clear provision of the enabling Act. The Tribunal then referred to its decision in *Damodar*

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<sup>193</sup> *Star Wire* (n 175) [8] definition stipulated in the State Renewable Energy Regulations.

<sup>194</sup> *Star Wire* (n 175) [8 (i)].

<sup>195</sup> *Star Wire* (n 175) [14].

*Valley*<sup>196</sup> which adopted an approach affirmed by other Supreme Court decisions in holding that:

‘If the regulation is in conflict with the provisions of the said Act and is contrary to the same, this Tribunal will have to overlook it so as to give primacy to the clear provisions of the said Act. In doing so, this Tribunal is not holding that a regulation, which is contrary to the provisions of the said Act is ultra vires’<sup>197</sup>

While the Tribunal’s decision to ‘overlook’ the conflict between the regulation and statutory provision, in this case, may appear to be a stopgap measure, it is also an example of a solution crafted through the exercise of the Tribunal’s interactional expertise in dealing with the legal and factual circumstances of this case, based on not only an understanding of the technical expression of wheeling as stipulated in the statutory and regulatory frameworks but also an appreciation of the statutory boundaries of what it is empowered to do. The Tribunal, in this case, further referred to the State Commission’s regulatory ‘power to relax’ under the regulatory scheme which gives it the ‘flexibility/ freedom’ to deal with ‘peculiar circumstances’, as seen in the present instance, for as long as it provides reasons to exercise this power in writing.<sup>198</sup> The Tribunal thus observed that relaxing the conflicting regulation would be an ‘absolutely just step to solve the inconsistency’,<sup>199</sup> and accordingly directed the

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<sup>196</sup> *Star Wire* (n 175) [15].

<sup>197</sup> *Star Wire* (n 175) [18] (my emphasis).

<sup>198</sup> *Star Wire* (n 175) [20] referring to the reasoning in the case of *India Glycols Ltd* about the State Commission’s power to relax in order for it to give effect to the Tribunal’s decision in the case of *Century Rayon*.

<sup>199</sup> *Star Wire* (n 175) [24].

State Commission to grant the relief sought through the exercise of its power to relax rather than ignoring the precedent it had set.<sup>200</sup>

This case illustrates an important facet of interactional expertise by showing how interactions between statutory and regulatory frameworks can result in conflict, and that this conflict ought to be reconciled with an awareness of the statutory limits of what the Tribunal is empowered to do. It also shows that expertise involves the ‘mastery of language of a specialised domain’<sup>201</sup> which is an integral part of the APTEL’s capacity to respond to disputes and reconcile conflicting provisions. To that end, case law mapped in chapter 3 showed that in moving between disciplines, the connotation and denotation of legal terms and principles can change. They serve different functions in different disciplines. This was most frequently seen in disputes concerning delays in commissioning power projects, e.g., the Tribunal’s use of ‘evacuation’ in *Siwana Power*<sup>202</sup> to refer to the solar power leaving the power plant to be injected into the grid, or the legal treatment of ‘calendar month’ in determining the ‘date of commissioning’ of the power project in *ES Solar*.<sup>203</sup> The different tariff components examined in *Welspun Renewables*, which required an understanding of economic and financial principles vis-à-vis provisions of the Electricity Act, offer other examples.<sup>204</sup>

Warnock’s interactional theory for specialist adjudication puts these challenges into a different perspective.<sup>205</sup> Interaction, Warnock explains, ‘connotes a dynamic process, requiring

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<sup>200</sup> *Star Wire* (n 175) [24] - [25].

<sup>201</sup> Fisher and Shapiro (n 171) 56.

<sup>202</sup> *Siwana Power* (n 82).

<sup>203</sup> *ES Solar* (n 165). See chapter 3 of this thesis.

<sup>204</sup> *Welspun Renewable* (n 54).

<sup>205</sup> See Warnock (n 10).

awareness of context, communication that facilitates reciprocal feedback (or a two-way flow of information), and adaptation’.<sup>206</sup> Interactional expertise constitutes and is constituted by this feedback. It is at the heart of APTEL’s capacity to respond as opposed to merely resolve a legal problem. According to Warnock, responsive adjudication, in the context of environmental problems, brings together four key factors:

‘First, identifying the distinct characteristics of the... problem. Second, acknowledging the impact those characteristics have on law and dispute resolution, and the challenges they create for adjudication. Third, developing...doctrine, procedure and remedies to respond to the problem. Fourth, accepting that particular adjudicative forms and functions facilitate this process-i.e., courts with particular constitutions, powers and expertise will be able to better respond to the nature of problems. Taken together, these factors explain the interactional experience...’<sup>207</sup>

This offers a theoretical rubric to bring APTEL’s interactive expertise into view and to think about the ways in which that expertise can be fostered. In *Amplus Infrastructure*,<sup>208</sup> for example, the question before the Tribunal was whether the ‘Third Party Model’ for a grid-connected roof-top and small solar plants in the state was outside the ambit of the Renewable Energy Regulations 2013. Responding to this issue involved multiple considerations not limited to the governmental Scheme, Regulations, and findings of the State Commission in question, but extended to understanding the organization of different ownership models under the Scheme, operational parameters such as metering, billing, and settlement of dues, and their interaction with provisions in the National Electricity Policy and National Tariff Policy

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<sup>206</sup> Warnock (n 10) 5.

<sup>207</sup> Warnock (n 10) 5.

<sup>208</sup> *Amplus Infrastructure* (n 98).

mandating the promotion of renewable energy, particularly solar energy, precedent.<sup>209</sup> It also involved taking into account how the Scheme and Regulation fit in with the overarching National Solar Mission. The legal problem here had certain distinct characteristics, e.g., it was structural, and enmeshed in different frameworks and disciplinary knowledge. Responding to this problem involved untangling these considerations in deciding whether the Third-Party ownership arrangement was covered under the Regulations.

On reviewing the different ownership models covered under the scheme, the Appellate Tribunal observed that the model in question was not expressly included in the scheme of the Regulations but ought to be incorporated into it. The Regulations, it noted, were rolled out to promote solar generation and therefore had to be interpreted in a manner that would further that goal. By bringing together the distinct nature of the problem, regulatory goal, and applicable frameworks,<sup>210</sup> the Tribunal reasoned and designed a remedy that was able to respond to the dispute by aligning its reasoning with the wider goal of transition. This is illustrative of the ‘two-way feedback’<sup>211</sup> Warnock mentions. The Tribunal’s decision resulted in formatting (and indeed incorporating) the Third-Party Model as a legitimate form of structuring and organizing ownership, and resulted in including a wider set of developers under the purview of the benefits made available under the Regulations in question.

Disputes about tariff orders, although of a different nature, offer another example. These disputes (as I mention in chapter 3), on the one hand, involve remedying consequences of arbitrary decision-making and enforcement of contract, and on the other hand, shape

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<sup>209</sup> *Simran Wind Project Pvt Ltd v CERC* (APTEL, 28 Nov 2014); *Union of India v Prabhakaran Vijay Kumar*, (2008) 9 SCC 527 (Supreme Court of India) (interpretation of beneficial legislation).

<sup>210</sup> *Amplus Infrastructure* (n 98) [37].

<sup>211</sup> Warnock (n 10) 5.

normative aspects of regulatory decision-making – that is, how regulators should respond to these disputes – by placing an emphasis on well-reasoned orders, sometimes explicitly and other times as a ‘by-product’ of the application of statute during adjudication.<sup>212</sup> The legal problems in tariff disputes point to the need for calculability and certainty in pricing agreements for a stable energy market.<sup>213</sup> The adjudicative focus is on building legal certainty and continuity in order to allow parties to make decisions and rely on them taking agreed effect.

To that end, the Tribunal’s reasoning rests on well-established legal principles, precedent, agreed contracts, and the statutory framework- static legal material in formatting relationships that orient actors and their actions towards creating a calculable environment.<sup>214</sup> Equally, it creates a normative understanding of how regulatory decision-making should be done. APTEL’s decisions as seen in *Tata Power Delhi*,<sup>215</sup> *Siwana Power*<sup>216</sup> and *Solar Energy Corporation of India*,<sup>217</sup> and mapped in detail in chapter 3, offer good illustrations.<sup>218</sup>

Untangling frameworks, however, is not easy. Responsive adjudication is often at odds with the reality of the legal landscape in which the Appellate Tribunal operates. Its legal work is a product of what it is empowered to do by way of legislation in responding to disputes arising in connection to a complex regulatory framework. The statute, regulation and policy

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<sup>212</sup> Fisher and Shapiro (n 171) 274; Warnock (n 10) 164.

<sup>213</sup> See Callon (n 100) 4, 6.

<sup>214</sup> Callon (n 100) 15.

<sup>215</sup> *Tata Power Delhi* (n 99).

<sup>216</sup> *Siwana Power* (n 82).

<sup>217</sup> *Solar Energy Corporation of India* (n 70).

<sup>218</sup> These cases are analyzed in detail in chapter 3 of this thesis.

constituting this landscape, as chapter 2 showed, are interconnected and overlapping. The relationship between these frameworks is also ‘particularly interstitial because of the very nature’ of the matters they deal with.<sup>219</sup> The language used in these frameworks is ‘open-textured,’ which allows decision-makers to respond to different concerns in a given legal problem, yet the enabling statute provides little to no detail on operationalizing that language during adjudication.<sup>220</sup>

Regulators too, as *Star Wire India*,<sup>221</sup> *Siwana Power*<sup>222</sup> and *SECI*<sup>223</sup> show, are empowered with discretionary powers that grant them flexibility in responding to peculiar and compelling circumstances, but there is often little prior guidance on how those powers ought to be exercised. Part of the Tribunal’s interactive expertise, therefore, is to identify, understand, and accept the impact of the characteristics of particular disputes on adjudication, such as in granting interim relief after taking into account the risk of ‘technical degradation of idling solar panels’, ‘irreparable loss to the generators who have invested huge sums in these projects’, and the ‘objective behind of setting up solar projects,’<sup>224</sup> or directing that regulatory powers be exercised in particular ways to promote the objectives embedded in these overlapping frameworks.<sup>225</sup>

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<sup>219</sup> Warnock (n 10) 164.

<sup>220</sup> Warnock (n 10) 164.

<sup>221</sup> *Star Wire* (n 175).

<sup>222</sup> *Siwana Power* (n 82).

<sup>223</sup> *Solar Energy Corporation of India* (n 70).

<sup>224</sup> *Balarch Renewable* (n 103).

<sup>225</sup> E.g., *Solar Energy Corporation of India* (n 70); *Amplus Infrastructure* (n 98).

The cases mapped in chapter 3 point to two inherent characteristics: first, the interaction of structural characteristics of infrastructure with legislative and regulatory goals;<sup>226</sup> and second, the need for certainty, calculability, and reliability of actions.<sup>227</sup> Tariff and contractual disputes are clear examples. These features impact how disputes are adjudicated upon. The interplay of what is statutorily legitimate, advisable by policy, and regulatorily possible, shape the Appellate Tribunal's capacity to adequately interact with and respond to disputes. Fostering APTEL's interactional expertise, therefore, (that is, the need to interact with other disciplines as they relate to the conceptualisation of a legal problem) requires 'understanding the complexities, ambiguities and nuances' of the legal problem and its discourses.<sup>228</sup>

This involves engaging with a range of different disciplines and fostering the Appellate Tribunal's critical capacity to subject concepts from different disciplines to the kind of scrutiny given to legal concepts in its reasoning.<sup>229</sup> A key aspect of this is to understand the different ways in which a legal problem can be framed and reasoned. That understanding stems from a mastery of language and its intended effects. This highlights the concept of co-production discussed in chapter 1. The process of co-production, as defined earlier, refers to:

'the proposition that the ways in which we know and represent the world are inseparable from the ways in which we choose to live in it. Knowledge and its material embodiments are at once products of social work and constitutive of forms of social life... [scientific knowledge] both embeds, and is

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<sup>226</sup> E.g., *Ramnad Renewable* (n 13) [8 (xxi)] (adopt 'lenient' approach in matters relating to the promotion of electricity from solar power plants); *Amplus Infrastructure* (n 98) (third party model vis-à-vis treatment of beneficial legislation).

<sup>227</sup> E.g., *Tata Power Delhi* (n 99); *Balarch Renewable* (n 103).

<sup>228</sup> Fisher (n 39) 50.

<sup>229</sup> Fisher (n 39) 50.

embedded in social practices, identities, norms, conventions, discourses, instruments and institutions.’<sup>230</sup>

Fisher argues that co-production can also be understood as a process of ‘framing’, which acts as an ‘interpretive context’ and allows things to be made sense of and acted upon.<sup>231</sup> Framing is a powerful activity.<sup>232</sup> How a particular legal process or object is framed by the law and reasoned by the Appellate Tribunal will impact how it is understood and acted upon and the kind of relationships that are established with it, and also determine how it is administered/regulated by the concerned electricity commissions.

In *Balarch Renewable*,<sup>233</sup> for example, the appellant was aggrieved by an order of the State Commission which invalidated the competitive bidding process that resulted in the PPA executed with the respondent DISCOM. The appellant argued that the State Commission’s decision would render its entire project a stranded asset despite being ‘fully complete and ready to generate’ and drew attention to the impact of the order on its financial position, both in terms of project investment and monthly losses on account of being left un-commissioned.<sup>234</sup> In arriving at its decision, the Appellate Tribunal considered the risk of ‘technical degradation of idling solar panels’,<sup>235</sup> ‘irreparable loss to the generators who have invested huge sums in these

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<sup>230</sup> Sheila Jasanoff (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004) 2-3.

<sup>231</sup> Fisher (n 39) 51.

<sup>232</sup> Fisher (n 39) 51.

<sup>233</sup> *Balarch Renewable* (n 103).

<sup>234</sup> *Balarch Renewable* (n 103) [1] - [5].

<sup>235</sup> *Balarch Renewable* (n 103) [10].

projects’,<sup>236</sup> and the ‘objective behind of setting up solar projects’,<sup>237</sup> that is, public interest in promoting solar generation, in granting relief.<sup>238</sup> Its reasoning brought together legal, technical, financial and regulatory knowledge in framing and responding to the dispute and arriving at an outcome.

The Tribunal’s interactional expertise is at the heart of linking the larger, more abstract goals of transition to the smaller, more practical legal problems in the marketplace, e.g., bringing into view that certainty in tariff regimes and cost structures are needed to build a stable solar market place.<sup>239</sup> This comes through in the Tribunal’s reasoning of appeals involving delays in commissioning power projects, grant of deemed generation and must-run status of power plants, and in appeals against the invalidation of PPAs seen in chapter 3.<sup>240</sup> It co-produces understandings about solar infrastructure and associated energy markets entrenched in the Indian legal order.

Fostering the Tribunal’s interactional expertise, therefore, is closely woven with the kind of energy and infrastructural future we want to transition towards. Law and adjudication are significant in shaping that future. Considered in their interactional context, therefore, legal texts distribute roles, attribute capacities, assign authority, create entities, provide for appeal procedures, and so on, and their application impacts social ordering.<sup>241</sup> These texts however

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<sup>236</sup> *Balarch Renewable* (n 103) [10].

<sup>237</sup> *Balarch Renewable* (n 103) [10].

<sup>238</sup> *JBM Solar* (n 158).

<sup>239</sup> E.g., *Balarch Renewable* (n 103); see Arthurs (n 19) 6.

<sup>240</sup> *Taxus Infrastructure* (n 163) [12].

<sup>241</sup> Bruno Latour, *The Making of Law: An Ethnography of the Conseil D’Etat* (Polity 2010) 275.

are mere roadmaps complemented by a variety of policy and regulatory regimes that are operationalized during adjudication through its interactional expertise. A tactile appreciation of these materials is integral to fostering the Tribunal's interactional expertise.

## 2 Contributory Expertise

APTEL's contributory expertise enables its participation, interaction and contribution to developing legal understandings about energy transition and associated solar infrastructure. This is an important facet of the Appellate Tribunal's adjudicative competence and ability to respond to the hot and cold circumstances generated by transition. By identifying, interpreting, and applying applicable legal and policy provisions to particular disputes, the Appellate Tribunal is actively developing the law concerned with transition. It is creating legal stability. APTEL's decisions, as chapters 2 and 3 have shown, have been especially influential in guiding State Electricity Commissions on the interpretation and application of renewable energy regulations<sup>242</sup> and in shaping their role and duties in the context of transition.<sup>243</sup> Its contributions are also seen in stabilising the legal treatment of delays in commissioning power projects,<sup>244</sup> in the granting of 'must run' and 'deemed generation' status,<sup>245</sup> and on the legal

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<sup>242</sup> E.g., *Amplus Infrastructure* (n 98) (interpretation of beneficial legislation).

<sup>243</sup> E.g., *Ramnad Renewable* (n 13) (regulatory powers of State Commission); *Kamuthi Renewable* (n 95) (regulatory and adjudicatory powers of State Commission).

<sup>244</sup> *ES Solar* (n 203); *Taxus Infrastructure* (n 163).

<sup>245</sup> *Siwana Power* (n 82); *Ramnad Renewable* (n 13) (methodology for estimating status); *JBM Solar* (n 238); *Madhya Pradesh Power Management Corporation Ltd v Madhya Pradesh Biomass Developers* (APTEL, 02 Aug 2017) (must run status only for solar and wind projects); *Kamuthi Renewable* (n 95) (must run); *Jaiprakash Power* (n 70).

treatment of tariffs agreements and uncertainty created by faulty bidding processes.<sup>246</sup> The Appellate Tribunal has also created a significant jurisprudence on the interpretation and application of the RPO and REC frameworks vis-à-vis new solar infrastructure.<sup>247</sup>

APTEL's capacity to foster contributory expertise and develop the law, however, is in many ways related to its interactional expertise, and vice versa. Its contributions to the law occur through meaning-making faculties that derive force from its statutory mandate and continuous interaction with the disputes appealed before it.<sup>248</sup> Institutional norms and practices inevitably influence that engagement through the accountability mechanisms embedded in them and by placing limitations on what it can do.<sup>249</sup> Much of what constitutes APTEL's contributory expertise, therefore, comes bundled with interactional knowledge, specific infrastructural histories, policy aims, statutory goals and a 'tacit understanding'<sup>250</sup> of how these elements fit together. It is this closely-knit relationship between interactional and contributory expertise that is disrupted by transition, and why transition is framed as a process that is disruptive of adjudicative processes.<sup>251</sup>

Disputes created by the construction of new solar infrastructure offer a site to not only consider how enforceable obligations may be legally constructed around trades in renewable

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<sup>246</sup> *GMR Gujarat Solar Power Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Apr 2015) (tariff determination); *Gujarat Urja Vikas Nigam* (n 98); *Tata Power Delhi* (n 99); *Siwana Power* (n 82).

<sup>247</sup> *Green Energy Association* (n 60); *Rajasthan Renewable Energy Corporation* (n 101); *JSW Steel* (n 101).

<sup>248</sup> *Jasanoff* (n 291) 248.

<sup>249</sup> *Jasanoff* (n 291) 249.

<sup>250</sup> Harry Collins, *Tacit and Explicit Knowledge* (University of Chicago Press 2013) 14.

<sup>251</sup> See Fisher (n 8) 174, 199-200.

energy between states, and how tariff agreements may be legally determined, but also offers an opportunity to reflect upon deeper questions about the rights and responsibilities of individual actors vis-à-vis the wider public interest in transitioning towards renewable sources of energy.<sup>252</sup> How these questions are legally framed, reasoned and incorporated into the legal order is practically and imminently important, and acquires wider legal significance in a ‘precarious’ world that is learning to live, adapt, and organise itself around the effects of climate change.<sup>253</sup> The contributory expertise of the Appellate Tribunal to that end is in legally engaging with the precarity brought out by the disputes before it.

Precariousness is an insightful concept and one that is seldom associated with critical infrastructure and even less so as something for the APTEL to grapple with. Critical infrastructure such as electricity<sup>254</sup> is typically invisible until it breaks down or undergoes a fundamental change of the sort being realised by the ongoing transition.<sup>255</sup> These moments of rupture, breakdown, or change in business-as-usual, raise technical questions as much as they ask questions of the legal and regulatory frameworks about how to organise, standardise, and stabilise its operations. This then is the paradox; legal infrastructure, that is of the role of law, adjudication and reasoning, is so intertwined with key physical infrastructure, yet there is

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<sup>252</sup> *SunE Solar BV* (n 70); *Solar Energy Corporation of India* (n 70); *Punjab Energy* (n 70); *Energy Watchdog* (n 70); *Green Energy Association* (n 70).

<sup>253</sup> See generally, Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton University Press 2015) 163 on precariousness; Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (2016) on living with climate change.

<sup>254</sup> National Electricity Policy 2005 [1.2].

<sup>255</sup> See Sanja Bogojević and Mimi Zou, ‘Making Infrastructure ‘Visible’ in Environmental Law: The Belt and Road Initiative and Climate Change Friction’ (2021) 10 (1) TEL 35, 36; See also Stephen Graham (eds), *Disrupted Cities: When Infrastructure Fails* (Routledge 2010); Winthereik and Thomas Yarrow, ‘Current Thinking- An Introduction’ in Simone Abram and others (eds), *Electrifying Anthropology: Exploring Electrical Practices and Infrastructures* (Routledge 2020) 4.

glaringly little scholarship on this relationship and the institutions making sense of it. Without this legal infrastructure, stable and legitimate knowledge of renewable infrastructure, transition and associated energy markets cannot exist. Energy transition depends on a web of specialised legal knowledge that holds the process of energy transition together and roots it into the existing legal landscape. This fundamental legal work is not accounted for by thin descriptions that focus on ‘text without wider context’.<sup>256</sup> Thin descriptions tell us much about structure and framework but offer little legal detail of the intellectual tools used to make sense of these frameworks, rendering this infrastructure largely invisible to the legal eye.

Chapter 3’s discussion of APTEL’s role in developing stable legal understandings about the meaning and operation of novel legal constructs, interpretation of statute, policy, regulation, and contractual provisions, illustrate its contributory expertise in responding to this precarity. The reasoning in these responses has coalesced a robust and particular jurisprudence on these matters and regulation thereof. This expertise, on the one hand, rests on the acquisition of legal knowledge and ‘adequate knowledge or experience in dealing with the matters relating to electricity generation, transmission and distribution and regulation or economics, commerce, law or management,’<sup>257</sup> and on the other hand, needs tacit knowledge developed through its participation as a legal actor in the electricity sector.<sup>258</sup> There is also a need for legal imagination, which I discuss in the next chapter. My simple point is that the coordination of these aspects is needed to adjudicate disputes proficiently and to contribute to the development of law in precarious times.<sup>259</sup>

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<sup>256</sup> Fisher (n 5) 624.

<sup>257</sup> Electricity Act 2003, s 113 (1) (b) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal).

<sup>258</sup> Collins (n 250) 14; see chapter 2 of this thesis.

<sup>259</sup> Collins (n 250) 14.

Contributory expertise in adjudication involves responding to context, which is what connects it to interactional expertise. That context depends on the facts and nature of disputes before the Tribunal. Contextual awareness in interpreting and applying statutory and policy frameworks is crucial. This enables a purposive rather than mechanical application of frameworks.<sup>260</sup> This, however, is not without criticism.<sup>261</sup> Promoting solar generation, as the reader would have noted from chapter 3, is a key contextual consideration in the APTEL's legal reasoning of appeals against orders by concerned State Commissions- this has resulted in a variety of outcomes, e.g., orienting the exercise of regulatory and adjudicatory powers of State Commissions,<sup>262</sup> resolving tariff disputes,<sup>263</sup> and interpreting the RPO and REC frameworks in particular ways.<sup>264</sup>

The distinctions between contributory and interactional expertise are more than scholarly tags for how and what the APTEL does. They are forms of knowledge and knowledge-making, and, in the present instance, knowledge of an ongoing socio-technical process that is actively reshaping the organisation of activities as they relate to the generation, transmission, and distribution of electricity through new energy sources. This legal reshaping can be viewed as the process of 'constructing an interpretive view of a phenomenon or issue',<sup>265</sup>

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<sup>260</sup> E.g., *Amplus Infrastructure* (n 103).

<sup>261</sup> Waldron (n 37) 3-6 (on literal interpretation, predictability and implications for rule of law).

<sup>262</sup> *Ramnad Renewable* (n 13) (regulatory powers of State Commission); *Kamuthi Renewable* (n 95) (regulatory and adjudicatory powers of State Commission).

<sup>263</sup> *Punjab State Power Corporation* (n 70).

<sup>264</sup> *Green Energy Association* (n 60); *Green Energy Association* (n 70).

<sup>265</sup> E.g., Chris Hilson, 'Framing Time in Climate Change Litigation' 9(3) *Oñati Socio Legal Series* 361-379, 365.

that is, defining the issue for a particular audience- here, participants of the Indian electricity sector and renewable energy market.<sup>266</sup>

How energy transition is seen and legally engaged with is not a ‘neutral fact existing out there’;<sup>267</sup> it is, in the Indian experience, actively constructed by APTEL adjudication in the exercise of its contributory and interactional expertise. Fostering contributory expertise, therefore, asks inevitable questions about how the relationship between specific knowledge and experts can be made more robust. It asks about the integrity and legitimacy of connections made and how they are articulated.<sup>268</sup> It also emphasizes an overlap of different forms of expertise, and the struggle in the limitations of their interactions with existing frameworks.<sup>269</sup> Fostering contributory expertise therefore inevitably involves thinking about coordinating expertise.

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<sup>266</sup> Hilson (n 265) 365.

<sup>267</sup> Hilson (n 265) 365.

<sup>268</sup> See Warnock (n 10) 93-94, 111, 198.

<sup>269</sup> E.g., *Star Wire* (n 175).

### 3 Coordinated Expertise and Legal Stability

Socio-technical processes like energy transition need to be incorporated into the legal order for them to acquire legitimacy and stability. This requires coordinated expertise. Fisher and Shapiro explain that:

‘coordinated expertise requires that people trained in different disciplines interact in decision-making regarding each other’s disciplinary information even though they do not share frameworks of expertise’<sup>270</sup>

As is clear from the case law mapped in chapter 3, that APTEL’s adjudication and reasoning involves integrating different forms of expertise: the application of legal rules, statutory provisions and legal principles to specific circumstances; the evaluation of infrastructure, technical information, financial and economic imperatives; and other specialised disciplines. These attributes necessitate the coming together and coordination of experts that constitute the Tribunal. This coordination is an integral part of APTEL’s adjudicative competence and capacity to provide reasoned judgments that hold the potential to set precedent and normatively shape the actions of regulators. Understanding the nature and/ or complexity of a dispute is not enough, the APTEL’s adjudicative competence is made visible by its capacity to contribute to legal development. This, however, depends on its ability to reason thoughtfully, assess, and consider ‘the quality of evidence and interpretations of that evidence made from experts from different disciplines’.<sup>271</sup>

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<sup>270</sup> Fisher and Shapiro (n 171) 57.

<sup>271</sup> Fisher and Shapiro (n 171) 57.

In *Subhash Infraengineers*,<sup>272</sup> for example, the appeal was against an order of the State Commission that invalidated the competitive bidding process and power purchase agreements entered between parties as they did not align with the applicable bidding guidelines. APTEL's decision and grant of interim relief, in this case, turned on the technical assessment of the power plant in question.<sup>273</sup> The Tribunal observed that:

‘The primary objective for any power plant is to ensure the plant continuously and reliably operates, thereby generating the maximum economic and energy performance returns. Solar Photovoltaic (PV) power plants are no exception’<sup>274</sup>

It held that the ‘solar panels could not be allowed to be left idle as it would result in technical degradation and irreparable loss to the generators who have invested in the project.’<sup>275</sup> The Tribunal's decision and reasoning, in this case, was based on the interaction between this technical assessment and the legal framework in question in reaching an enforceable outcome. APTEL's contributions to the process of transition therefore can be viewed as the work of ‘housing’<sup>276</sup> these individual judgments that constitute the legal detail and give practical traction to the frameworks mapped in chapter 2. Whilst Waldron used this metaphor to evaluate the work of political institutions,<sup>277</sup> its use in the present analysis crafts a mental picture of what the APTEL's contributions can look like in the bigger picture. I quote him at length:

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<sup>272</sup> *Subhash Infraengineers Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 13 Dec 2016).

<sup>273</sup> See also *Balarch Renewable* (n 103); *JBM Solar* (n 238).

<sup>274</sup> *Subhash Infraengineers* (n 272) [8].

<sup>275</sup> *Subhash Infraengineers* (n 272) [13].

<sup>276</sup> Jeremy Waldron, *Political Political Theory* (Harvard University Press 2016) 36, 293-95.

<sup>277</sup> Waldron (n 276).

‘That politics needs housing, and that building such housing can be equated with framing of a constitution- this image recurs throughout Arendt’s writings. Sometimes the metaphor is less of bricks and mortar than of the furniture that enables us to sit facing one another in politics, in just the right way. At other times, Arendt invokes the imagery of construction outside the house: fences, boundary walls, which make politics possible by securing a space for the public realm. Always the emphasis is on artificial structures, which are more rigid and durable than the actions they accommodate, and which exist as features of a world that men have made for themselves.’<sup>278</sup>

My reference to Waldron is to illustrate that APTEL’s contributions to the law occur in ways and at levels that may not align with the bricks and mortar imagination of legal development associated with traditional high courts. The legal work of the APTEL is something like Waldron’s reference to making furniture and constructing fences. It is, as the reader will have noted, particular and specific. It addresses and responds to disputes about the regulation of what constitutes the process of transition- its actors, processes, and infrastructure. In coordination and bringing together expertise in law, specialised fields, and institutional practices, APTEL’s contributions include: shaping legal understandings of the implications and operation of novel legal constructs;<sup>279</sup> setting out boundaries of regulatory action;<sup>280</sup> invalidating arbitrary decision-making;<sup>281</sup> checking regulatory/ administrative discretion;<sup>282</sup> and interpreting statute, policy and contractual provisions at an everyday level.<sup>283</sup> These

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<sup>278</sup> Waldron (n 276) 293 (emphasis in original).

<sup>279</sup> *Green Energy Association* (n 60).

<sup>280</sup> *Ramnad Renewable* (n 13); *Amplus Infrastructure* (n 103).

<sup>281</sup> *ES Solar* (n 203); *Solar Energy Corporation of India* (n 70).

<sup>282</sup> *Nabha Power* (n 62).

<sup>283</sup> *Ramnad Renewable* (n 13) [4.5].

contributions are of practical relevance and respond to litigants' expectations of coherence, calculability and stability. All those aspects of law that one may find mundane and insignificant, including 'its taste for tradition and occasionally reactionary attitudes' are 'essential' to its functioning and to stabilising legal disruption.<sup>284</sup> Thinking about the intellectual tools used in creating legal stability and co-producing this knowledge is, therefore, crucial- not only for practical reasons but also to think about how the Appellate Tribunal's adjudicative competence and expertise in responding to the contextual force of disputes can be fostered.

APTEL's coordinated expertise is in bringing together legal and 'technical' knowledge, and part of fostering that expertise is in recognising challenges inherent in this process:

'Law holds in its hand the fine thread of a whole set of judgments, texts, precedents, which cannot be broken without lapsing into denial of justice. Whereas the scientist can satisfy herself with partial information because she knows that the power of her instruments will enable other scientists at some point in the future to refine the science and extend the chains of reference, a judge has to ensure that holes are repaired immediately, that tears are darned without delay, gaps are filled and cases resolved. Whereas the fabric of science extends everywhere but leaves a lot of voids, like a lace cloth, the fabric of law has to cover everything completely and seamlessly. Two entirely different ways to cover the whole world...'<sup>285</sup>

Coordinating the different knowledge practices inherent in APTEL adjudication raises questions about how to foster the relationship between knowledge and experts in various systems.<sup>286</sup> As knowledge of this area becomes complex, it becomes even more removed from

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<sup>284</sup> Latour (n 241) 243.

<sup>285</sup> Latour (n 241) 243 (my emphasis).

<sup>286</sup> Arthurs (n 173) 213.

the public eye. This can often go against considerations for the rule of law<sup>287</sup> and raise questions about the legitimacy and integrity of the Appellate Tribunal's reasoning processes.<sup>288</sup> Coordinating expertise must foster thoughtfulness in the application of the law, that is, in APTEL's legal reasoning, which will, in turn, foster its adjudicative competence.<sup>289</sup>

## D CONCLUSION

What has emerged from this chapter is a thick description of APTEL's adjudicative competence. This is typically invisible to the lawyers and law scholars trained to focus on high courts and generalist adjudication.<sup>290</sup> Those who have started to see its contributions do not see it enough. The relationship between APTEL's adjudicative competence in co-producing energy transition, solar infrastructure, and renewable energy market is far more substantive and interdependent than meets the eye. APTEL adjudication inter-penetrates the formulation of core elements that stabilise society and markets during transition, that is, it stabilises questions about identities, institutions, rights, representations, and responsibilities, and in doing so constructs knowledge of the legal and social order.<sup>291</sup>

Thinking about the expertise of specialist adjudicative institutions is facing the complex and precarious legal reality created by the ongoing transition to renewable energy and the

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<sup>287</sup> Waldron (n 37) 3, 6.

<sup>288</sup> Warnock (n 8).

<sup>289</sup> Waldron (n 37) 2.

<sup>290</sup> Fisher and Shapiro (n 171) 100.

<sup>291</sup> Sheila Jasanoff, 'A New Climate for Society' (2010) 27 *Theory, Culture and Society* 232, 236.

construction of associated infrastructure. The intellectual challenges created by this process require fostering the contributory and interactional expertise of adjudicative institutions tasked with responding to these disputes and recognising their legal significance in incorporating socio-technical change into the legal order.

Responding to these intellectual challenges requires legal imagination, that is, an understanding of both what law substantively is, and what it can be, in terms of its limits, but also its creative possibilities.<sup>292</sup> An important aspect of fostering legal imagination is to ‘root’<sup>293</sup> it in legal reality.<sup>294</sup> This act of rooting to a great extent depends on the thoughtfulness of the Tribunal’s reasoning, which derives from the strength of its adjudicative competence and expertise. I explore these ideas in the next chapter.

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<sup>292</sup> Elizabeth Fisher, *Environmental Law: A Very Short Introduction* (OUP 2017) ch 5; Fisher (n 187) 135-36.

<sup>293</sup> Sheldrake (n 16) (root networks).

<sup>294</sup> Fisher (n 292).

## **CHAPTER 5:**

### **RE-IMAGINING APTEL’S CONTRIBUTIONS AND THOUGHTFUL LEGAL REASONING**

#### **A INTRODUCTION**

‘First there was nothing. Then there was everything’<sup>1</sup>

My study of the Appellate Tribunal for Electricity (‘APTEL’ or ‘Tribunal’) began out of a curiosity<sup>2</sup> about the types of legal disputes arising out of India’s ongoing transition to renewable energy. My instinct was that these disputes would have a prominent environmental dimension; the transition to renewable energy was after all being framed in law, policy and international commitments as a step towards decarbonizing energy sources and mitigating anthropogenic climate change. That instinct pointed me to the National Green Tribunal (‘NGT’). I looked for its judgments on solar power projects. Solar energy after all plays a starring role in India’s transition story. Little came up. And so, I found myself back on legal databases. I widened my search. This time, a tribunal I had not heard about showed up in a prominent way. A simple word search for ‘solar power’ between 2015-19 revealed as many as 194 results. Reading these cases made clear that this tribunal had an active role in this process and was building substantial jurisprudence by responding to disputes about solar power projects and energy transition in the Indian electricity sector.

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<sup>1</sup> Richard Powers, ‘Roots’ in *The Overstory* (Vintage 2019) 3.

<sup>2</sup> See Elizabeth Fisher, ‘Law and Energy Transitions: Wind Turbines and Planning Law in the UK’ (2018) 38 (1) OJLS 28 citing David Feldman, ‘The Nature of Legal Scholarship’ (1989) 52 MLR 498, 502. Feldman has argued that scholarship involves curiosity about the world and as such must be guided by a commitment to employing methods of investigation and analysis best suited to satisfying that curiosity.

My curiosity increased, this time with the added motivation of wanting to know more about the tribunal. What did an electricity tribunal do, what was its role and contributions to the on-going energy transition, and how was it doing this? What was all of this telling us about the legal content of energy transition and disputes arising from it? These simple questions inspired the structure of my study.

I began by mapping the legal landscape of transition, and the invisibility of the Appellate Tribunal in legal scholarship on energy transition was striking. It was, as I describe in chapter 2, hidden in plain sight. In that map, I chalked the boundaries of this landscape- of constitution, statute, policy and regulation. In the interstices of those boundaries, a picture of the APTEL began to emerge- as a ‘legal object’ and ‘active participant’ in this landscape. That was the work of chapter 2. It drew the legal sightlines of energy transition. But it was not enough to truly understand the role and contributions of the Appellate Tribunal; I needed to engage with the materiality<sup>3</sup> of transition in order to understand what energy transition meant for the law, legal frameworks, and adjudicative processes.

Chapter 3 brought the ‘legally disruptive’<sup>4</sup> nature of energy transition into view by mapping the ‘hot’ and ‘cold’ situations this transition creates for APTEL adjudication. It studied how the Appellate Tribunal was responding to these disputes and stabilizing disruption through its legal reasoning. A thicker picture started to emerge- not just of the materiality of transition but also of the Appellate Tribunal’s legal work. It showed the sheer complexity of APTEL adjudication and the different ways in which it was, through dispute resolution and ensuring accountability of primary electricity regulators, creating legal stability<sup>5</sup> and continuity

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<sup>3</sup> Donald MacKenzie, *Material Markets: How Economic Agents are Constructed* (OUP 2009) 2. There is rich scholarship on this term. But for the present purpose, I draw on Mackenzie’s definition of materiality to refer to the ‘physical and technical’ manifestation of energy transition.

<sup>4</sup> Elizabeth Fisher and others, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80 MLR 173.

<sup>5</sup> Elizabeth Fisher, *Environmental Law: A Very Short Introduction* (OUP 2017) 24-27.

during transition. APTEL decisions were rooting energy transition into the Indian legal order—a process that was as much about responding to present challenges as ‘crafting’<sup>6</sup> a certain legal future.<sup>7</sup>

This inevitably led to wanting to understand APTEL’s adjudicative ‘competence’ in doing this legal work. Chapter 4 showed that the APTEL’s adjudicative competence is a product of its expert capacity, the validity of which, was ensured by accountability measures embedded in that capacity.<sup>8</sup> It showed the different types of expertise constituting APTEL’s expert capacity and how they were operationalized during adjudication to construct and root particular understandings of energy transition into the legal order. This not only pointed to a number of new ways of seeing the legal work and substantive-ness of APTEL’s contributions to the process of transition, but also made a case for developing a thicker legal understanding of tribunalised adjudication and fostering its adjudicative competence. It emphasized that APTEL’s legal work was important with significant implications for the legitimacy and legal stability of transition and associated energy markets. In this quick look back at the study so far, my aim was to remind the reader of how far we have come from the Tribunal’s invisibility in this space. At first there was nothing. Then there was everything.

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<sup>6</sup> Richard Sennett, *The Craftsman* (Allen Lane 2008) 19-20, 149.

<sup>7</sup> See Navya Jannu, ‘Constructing the Present, Forming the Future: The Role of Courts in India’s Transition to Renewable Energy’ (MPhil thesis, University of Oxford 2019).

<sup>8</sup> Elizabeth Fisher and Sidney Shapiro, *Administrative Competence: Re-imagining Administrative Law* (CUP 2021); Ceri Warnock, *Environmental Courts and Tribunals: Powers, Integrity and the Search for Legitimacy* (Hart 2020).

In this concluding chapter, I draw on my analysis of what exists to make a step towards what ought to be, that is, towards a thicker legal imagination of tribunalised adjudication during energy transition and the problems it addresses when reasoning about the law. This chapter comprises three parts. Part I explores the mental images that shape and limit our legal imagination of APTEL's legal work. The limitations of our legal imagination, that is, how we as lawyers and law scholars understand the law and its institutions, and what they can and cannot do, explains the invisibility of tribunalised adjudication in scholarship on energy transition. By side-lining this work, there is limited engagement with its legal reasoning and, therefore, also a limited understanding of how its decisions are fed into the legal order, and vice versa. As a result, the importance of tribunalised adjudication, despite its everyday significance in responding to legal disruption, becomes largely invisible to the legal community.

This creates particular intellectual challenges in thinking about how to foster the adjudicative competence of institutions, which are, as the previous chapters have shown, substantively shaping the legal, administrative and regulatory realities of energy transition and associated infrastructural change. These challenges include how to make legal sense and mentally picture these institutions and their contributions in developing the law. Mental images influence 'not just what we expect and what we see, but also what we demand and affirm'.<sup>1</sup> Yet, lawyers and law scholars rarely identify let alone ponder these images.<sup>2</sup> I argue that pushing our legal imagination of APTEL adjudication is fundamental to fostering its adjudicative expertise in dealing with the legal disruption caused by energy transition. The

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<sup>1</sup> Jerry Mashaw, *Greed, Chaos and Governance: Using Public Choice to Improve Public Law* (Yale University Press 1997) 1.

<sup>2</sup> Fisher and Shapiro (n 8) 9.

Appellate Tribunal's expert capacity in substantively reasoning this disruption, through rigor and attention to detail, and grounded in established legal principles and frameworks, creates legal stability.<sup>3</sup> This impacts how the legal order develops arounds socio-technical change and vice versa.

Part II argues that rooting disruption in the electricity sector depends on APTEL's capacity for thoughtfulness in legal reasoning. Thoughtfulness in legal reasoning can be viewed as 'the capacity to reflect and deliberate, to ponder complexity and confront new and unexpected circumstances flexibly, with an open mind, and to do so articulately in the company of others.'<sup>4</sup> This is at the heart of the APTEL's expert capacity to stabilize legal disruption. In this section, I explore the modes of thoughtful reasoning enabled by the law in responding to disputes resulting from transition. I do this by considering the application of standards, procedure, and precedent in relation to the case law mapped in chapter 3.

Part III considers the implications of this analysis in pushing the legal imagination of lawyers and law scholars in thinking about the role of tribunalised adjudication and its contributions to the solar marketplace. This section shows that the emphasis on materiality in APTEL case law includes elements of futurity.<sup>5</sup> It also considers the role of legal scholarship in shaping our legal imagination of tribunalised adjudication and its contributions to legal development. It argues that what the legal work of the Appellate Tribunal is viewed as, and

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<sup>3</sup> Fisher (n 5) 24.

<sup>4</sup> Jeremy Waldron, 'Thoughtfulness and the Rule of Law' Public Law & Legal Theory Research Paper Series Working Paper No 11-13 (New York University School of Law, 2011) available at <<http://ssrn.com/abstract=1759550>> accessed 2 Apr 2022.

<sup>5</sup> Warnock (n 8) 101 the real value of adjudication can lie more in shaping the future than sorting out factual events; E.g., *Ramnad Renewable Energy Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 24 Sep 2019) [8 (xxi)] (on regulation of solar power).

imagined to be, will directly relate to the ways in which its adjudicative competence is fostered. This impacts how energy transition is legally understood and rooted into the Indian legal order.

## **B PART ONE: SIGHTLINES AND MENTAL IMAGES**

Mental images and the assumptions that accompany them dominate our legal imagination,<sup>6</sup> often at the expense of seeing certain kinds of legal work and recognizing their contributions in developing law. It is not that a mental image of APTEL's legal work does not exist or is completely out of frame, rather it does not loom large in the legal imagination of lawyers and scholars.<sup>7</sup> Tribunals like the APTEL are framed as pragmatic legal institutions established to address certain kinds of legal problems and alleviate the burden of conventional courts.<sup>8</sup> These legal problems are about how to structure, organize, regulate and integrate the infrastructural change associated with energy transition in the Indian electricity sector. These are substantive questions, yet, tribunals are viewed as technical institutions and tend to be far removed from the public eye.<sup>9</sup> The emphasis on technicality and pragmatism in the legal imagination of

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<sup>6</sup> Fisher and Shapiro (n 8) 9.

<sup>7</sup> Elizabeth Fisher, 'Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars' in James Goudkamp and others (eds), *Taking Law Seriously: Essays in Honour of Peter Cane* (Bloomsbury 2022).

<sup>8</sup> Law Commission of India, *Assessment of Statutory Frameworks of Tribunals in India* (Report No 272, 2017) ('Law Commission Report'); Appellate Tribunal For Electricity, 'About Us' <<http://www.aptel.gov.in/about-us>> accessed 27 May 2022.

<sup>9</sup> Theodore Porter, 'How Science Became Technical' (2009) 100 (2) *Isis*, 293, 298. See for a discussion of what it means to identify something as technical or associate it with technicality. According to Porter, a technical field is not just a difficult one, but one relying on concepts and vocabulary that matter only to specialists; see Elizabeth Fisher, 'Imagining Technology and Environmental Law' in Roger Brownsword and others (eds), *Oxford Handbook of Law, Regulation and Technology* (OUP 2016) 364; Elizabeth Fisher, 'The Enigma of Expertise' (2016) 28 (3) *JEL* 551, 553.

APTEL's work sidelines its significance as both a legal object and legal subject contributing to the development of law.<sup>10</sup>

Doctrinal legal scholarship is inclined to focus on adjudication in high courts and their 'landmark' contributions; this tends to overlook the substantive contributions of day-to-day adjudication in lower courts and tribunals in developing the law.<sup>11</sup> My point here is not to say that this kind of legal scholarship is not important, indeed it has a purpose, rather that this way of imagining the role and contributions of adjudicative institutions in making legal sense of legal disruption misses half the picture and more.<sup>12</sup> It presents an inaccurate image of the role of law and adjudication in the ongoing transition. There is always as much happening belowground as above, and in corners as centerstage, and thus, more than meets the eye.<sup>13</sup> The invisibility of certain kinds of legal work, perhaps a consequence of the 'inattentional blindness' of lawyers and law scholars,<sup>14</sup> does not mean that it does not exist or is unimportant.

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<sup>10</sup> See chapter 2 of this thesis.

<sup>11</sup> See Harry Arthurs, *'Without the Law': Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985) 6 on the relative social importance of courts and tribunals; See also Ursula Le Guin, *The Carrier Bag Theory of Fiction* (Ignota Books 2019) one might be inclined to view a focus on the work of tribunals as foraging material on legal development as opposed to straightforward hunter-gatherer style scholarship about the law.

<sup>12</sup> Elizabeth Fisher, 'Through 'Thick' and 'Thin': Comparison in Administrative Law and Regulatory Studies Scholarship' in Peter Cane and others (eds), *The Oxford Handbook of Comparative Administrative Law* (OUP 2020) 624-29 for a comparative description of thin and thick legal scholarship.

<sup>13</sup> Powers (n 1) 4.

<sup>14</sup> See generally Fisher.

‘That’s the trouble with people, their root problem. Life runs alongside them, unseen. Right here, right next. Creating the soil. Cycling water. Trading in nutrients. Making weather. Building atmosphere. Feeding and curing and sheltering more creatures than people know to count.’<sup>1</sup>

Powers makes an important point here. What we focus on shapes what we see and how we make sense of it. Our sightlines bring certain kinds of work into view. They draw our intellectual horizons. Those sightlines are as much a product of our experienced reality as the breadth of our legal imagination. The root problem in this is that it often yields a distorted picture of legal reality which causes us to overlook important foundational legal work done by tribunals as a site for scholarly engagement. That said, I must also acknowledge that this is a dynamic area of law and that selections need to be made about what institutions to focus on, which cases are legally significant and what parts of those judgments are relevant.<sup>2</sup> This too is part of legal imagination, that is, an understanding of both, what law substantively is and what it can be, in terms of its limits, but also in its creative possibilities.<sup>3</sup> But my point here is that inherent in this limited imagination is the risk that entire bodies of legal work are left unacknowledged for their contributions. It is a risk we cannot afford to take in light of our precarious legal realities, and in the present context, the significance of the ‘critical’<sup>4</sup> infrastructure at stake.

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<sup>1</sup> Powers (n 1) 4.

<sup>2</sup> Bell and Fisher (n 14).

<sup>3</sup> Elizabeth Fisher, ‘Expanding Legal Imagination’ in *Environmental Law: A Very Short Introduction* (OUP 2017); Elizabeth Fisher, ‘Legal Imagination and Teaching’ in Lavanya Rajamani and Jacqueline Peel (ed), *Oxford Handbook of International Environmental Law* (2nd edn, OUP 2021) 135-36.

<sup>4</sup> National Electricity Policy 2005 [1.2].

To think about how energy transition and disputes relating to solar power projects are being reasoned and resolved, how corresponding regulatory action in the electricity sector is being shaped, and how the broad language of policy and regulation acquires specificity in the application of law to facts, we must look closer at the legal work of the adjudicative institutions dealing with these questions. We need to look at their reasoning regarding these root problems. To understand their legal significance, we need to broaden our sightlines. That is the work of legal scholarship.<sup>5</sup> Understanding this groundwork is central to expanding our legal imagination and fostering the adjudicative competence of tribunals engaged in this work. It is central to creating a legal environment conducive for energy transition.

## 1 Root Problems and Legal Materiality

APTEL's day-to-day engagement with the orders and actions of concerned regulatory commissions, appeals against tariff orders, making sense of the circumstances and consequences of delays in commissioning solar projects, operationalizing novel legal constructs, and interpreting and applying statutory provisions to specific facts is about rooting disruption into the legal order. Rooting is concerned with the materiality of energy transition and its interaction with the law. According to Mackenzie, materiality relates to 'physicality, corporeality and technicality.'<sup>6</sup> It is about the intangible acquiring particular physical form. The metaphoric rootedness of these objects, actors and processes is equally important to their meaning in legal culture. As chapter 2 showed, energy transition in India is about energy

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<sup>5</sup> Elizabeth Fisher, 'Back to Basics: Thinking About the Craft of Environmental Law Scholarship' in Ole Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018).

<sup>6</sup> Mackenzie (n 3) 2-3.

security and access, it is about constructing necessary energy infrastructure and building a competitive market for trades in renewable energy between states.<sup>7</sup> It is also about decarbonizing energy sources to mitigate the impact of climate change. Energy transition is made up of physical objects like solar power projects and grid infrastructure, technologies such as rooftop PV and solar co-generation, and intangible elements such as rights, responsibilities and obligations. These intangible elements, as shown in chapter 3, also acquire physical form: price, for example, must take physical form – as a tariff order or in a PPA – for it to be conveyed from one entity to another. This physical form is legally consequential. There are three ways of looking at this.

First, it shows the integral role of law in this process and the significance of adjudicative institutions embedded in this space. Law and adjudication frame understandings of solar power projects and the decision-making concerning such projects. The disputes mapped in the previous chapters, for example, show that the APTEL’s reasoning regarding solar power projects – their physical infrastructure<sup>8</sup> and technology – is actively framing an understanding of these projects and how they relate to the process of transition.<sup>9</sup> It is also actively shaping a normative understanding about how electricity regulatory commissions should respond to disputes concerning such projects.<sup>10</sup> It was also a theme in the case law mapped in chapter 3,

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<sup>7</sup> See chapter 2 of this thesis.

<sup>8</sup> E.g., *Balarch Renewable Energy Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 Mar 2018) drew attention to the technical degradation of idling solar projects and the huge financial investments needed to construct these projects.

<sup>9</sup> E.g., *Viyat Power Ltd v Kerala Electricity Regulatory Commission* (APTEL, 09 Jul 2018); *Green Energy Association v Central Electricity Regulatory Commission* (APTEL, 12 Apr 2018) promoting solar generation as a key part of transitioning to renewable energy sources.

<sup>10</sup> E.g., *Ramnad Renewable* (n 5) the Tribunal in this case observed that the State Commission should adopt a lenient approach in responding to such disputes; *Amplus Infrastructure Developers Pvt Ltd v Uttarakhand Electricity Regulatory Commission* (APTEL, 10 Apr 2015) emphasizes that regulations in the form of beneficial legislation should be interpreted in view of their object and purpose.

that APTEL judgments recognize the importance of bringing clarity and calculability to decision-making processes regarding regulatory commissions- not in a mechanical way but more responsively- either through interpreting policy and/ or regulatory guidance,<sup>11</sup> or by ensuring that the concerned commission provides reasoned decisions that were clear and understandable.<sup>12</sup>

The application of law to facts in the adjudication of disputes is an important way of ensuring legal stability and rooting disruption into the legal order. Putting an argument across to the Tribunal is an act of showing how that argument is consistent with established rules, precedent and legal principles.<sup>13</sup> The Appellate Tribunal's capacity to reason through these arguments and ground its judgments in an understanding and knowledge of the law and logic behind them creates legal stability. But stability is also created in other ways- for example by responding to problems raised in disputes that do not readily align with existing frameworks.<sup>14</sup> The interpretation and application of statute, and/ or regulation and policy in these situations, results in substantively developing law.<sup>15</sup>

Second, it shows that the actors, objects and processes that constitute energy transition are not dis-embedded, abstract or rootless entities.<sup>16</sup> Law and adjudication play a fundamental

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<sup>11</sup> E.g., *Siwana Power Project Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 27 May 2019) on granting regulatory approval to bid tariffs.

<sup>12</sup> E.g., *Solar Energy Corporation of India ('SECI') v Karnataka Electricity Regulatory Commission* (APTEL, 25 Sep 2019) no reasoning provided by the State Commission in its tariff order.

<sup>13</sup> Bell and Fisher (n 14).

<sup>14</sup> E.g., *Amplus Infrastructure* (n 10) in this case the Tribunal interpreted the ownership models stipulated under the impugned regulations to ascertain whether the Third-Party Model was included in its ambit.

<sup>15</sup> Fisher (n 5) 26 for the limitations of legislation in creating legal stability.

<sup>16</sup> Mackenzie (n 3) 3.

role in shaping their capacities,<sup>17</sup> responsibilities,<sup>18</sup> and legitimacy<sup>19</sup> vis-à-vis the law, and in doing so, root them into the legal order. The Tribunal's reasoning of disputes concerning novel legal constructs, such as RECs and RPOs in *Green Energy Association*, for example, is a case in point.<sup>20</sup> The RPO and REC, the reader will recall, are market-based drivers in the ongoing transition.<sup>21</sup> Through the RPO obligated entities, i.e., power distribution companies ('DISCOMs'), open access consumers and captive power producers are obliged to purchase a certain percentage of electricity from renewable energy sources as a percentage of the total consumption of electricity.<sup>22</sup> This is complemented by the REC framework by way of which renewable energy-generating companies sell electricity to local distribution licensees at rates stipulated for conventional power and recover the balance cost by selling certificates to other distribution companies and obligated entities, enabling the latter to meet their renewable purchase obligations.<sup>23</sup>

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<sup>17</sup> *Omega Infraengineers v Punjab State Electricity Regulatory Commission* (APTEL, 21 Feb 2019).

<sup>18</sup> *Gujarat Energy Transmission Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 09 Jan 2015); *Southern Power Distribution Power Company Ltd of Andhra Pradesh v Hinduja National Power Corporation Ltd* (APTEL, 02 Feb 2022).

<sup>19</sup> *Solar Energy Corporation of India* (n 12) [19 (iii)] reasoning in state commission orders.

<sup>20</sup> *Green Energy Association* (n 9) [12.4]; see chapter 2 of this thesis.

<sup>21</sup> See Ministry of New and Renewable Energy Government of India, 'RPO' (*National Portal for RPO*) <<https://rpo.gov.in/Home/Objective>> accessed 14 May 2022.

<sup>22</sup> Electricity Act 2003, s 86 (1) (e) (Functions of State Commissions); National Tariff Policy 2006.

<sup>23</sup> Solar RPO and REC Framework' (*Ministry for New and Renewable Energy, Government of India*) <<https://mnre.gov.in/solar/rpo/>> accessed 03 October 2021; See chapters 2 and 3 of this thesis.

To that end, Appellate Tribunal has made clear that RECs:

‘cannot be compared to other commodities in the market such as shares or goods, because they are based on the fiction of breaking up the cost of power between conventional and non-conventional sources/ components of electricity’<sup>24</sup>

‘...the concept of REC sought to address the mismatch between availability of renewable energy resources and the requirement of obligated entities to meet their RPO...the REC mechanism was basically aimed at promoting development of renewable energy sources and to provide an alternative mode to renewable energy generators for recovery of project costs through brown and green components’<sup>25</sup>

In articulating these novel legal constructs as such, the Appellate Tribunal is creating a particular understanding of the legal nature of these mechanisms, and how regulatory decision-making ought to be done in their regard. These understandings are hugely important to how energy transition is legally constructed, stabilized, and comes to be incorporated into the Indian legal order. It impacts how participants relate, structure, and organize their behavior and activities around transition. The intellectual tools that constitute APTEL’s expert capacity and enable grasping what is going on in an energy transition and understanding what that means for its reasoning and adjudicative processes and vice versa, therefore, ought to attract scholarly engagement. The renewable energy market constituted by the ongoing transition, for example, is complicated and involves a diverse set of economic, financial, infrastructural and state-specific considerations.<sup>26</sup> The case law mapped in the previous chapters has shown the legal

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<sup>24</sup> *Green Energy Association* (n 9) [12.4]; *Indian Wind Power Association v GERC* (APTEL, 16 Feb 2015) (my emphasis).

<sup>25</sup> *Green Energy Association* (n 9) (my emphasis).

<sup>26</sup> See chapter 2 of this thesis.

complexities of understanding and bringing these considerations together in legal reasoning,<sup>27</sup> while acting within its constitutional and statutory boundaries.<sup>28</sup> In condensing these considerations into a single legal judgment, APTEL's legal work is more than simple institutional pragmatism but involves shaping and holding stable actions of actors and the legal consequences of those actions in the ongoing energy transition.

The legal reasoning in its judgments, as seen in chapters 3 and 4, involves moving across different frameworks. That movement, like the movement of roots through soil, perhaps here and more appropriately viewed as the legal landscape of transition, results in an intermeshing and crisscrossing of different frameworks and knowledge practices, the outgrowths of which, as judgments, clasp together in creating legal stability and building a responsive legal foundation to support the actions, activities and infrastructure that constitute the process of transition. APTEL adjudication is so embedded in this legal terrain that its work makes the peculiarity of legal disruption caused by transition both recognizable and instantly locatable in the interstices of existing frameworks that constitute this landscape.<sup>29</sup>

Given the nature of disputes before the Tribunal, this can often look very specific. In *Amplus Infrastructure*, for example, the question before the Tribunal was whether the Third-Party ownership model for grid-connected rooftop and small solar PV plants was included in the ambit of the Renewable Energy Regulations 2013.<sup>30</sup> The question here appears quite

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<sup>27</sup> *Welspun Renewable Energy Pvt Ltd v Tamil Nadu Electricity Regulatory Commission* (APTEL, 11 Nov 2019).

<sup>28</sup> E.g., *Star Wire (India) Vidyut Pvt Ltd v Haryana State Electricity Regulatory Commission* (APTEL, 15 Mar 2016); *Damodar Valley Corporation v Central Electricity Regulatory Commission* (APTEL, 23 Nov 2007).

<sup>29</sup> *Amplus Infrastructure* (n 10).

<sup>30</sup> *Amplus Infrastructure* (n 10).

specific, involving interpreting a particular ownership arrangement and reasoning whether it could be included in the scope of the ambit of a specific set of regulations. But it is in working through this specificity that the Tribunal's legal work acquires particular significance. Through its reasoning, the Appellate Tribunal is in effect developing an understanding about the content and implications of these Regulations and how they should be applied. These Regulations, as chapter 2 showed, constitute important mental sightlines- they on one hand, point concerned actors and entities to how they should organize their activities, and on the other hand, formatively shape the relationship between the regulator and regulated. APTEL's analysis and decision directed the State Commission to frame the necessary procedure by which the direct commercial relationship carved out through its reasoning would be incorporated into the Regulations and extend its benefits to a wider pool of solar generators.<sup>31</sup> In generating this knowledge, the Appellate Tribunal is furthering an understanding of the application of these Regulations by strengthening its roots and application in legal arrangements.

This is active and formative legal work. The idea of roots and rootedness derives from the case law mapped in chapter 3. It is not a free-floating or fanciful metaphor but one that comes from my analysis of disputes and legal frameworks that shape the Appellate Tribunal's legal imagination. In order to foster APTEL's adjudicative competence and re-imagine the Appellate Tribunal's role and contributions to the ongoing transition, understanding how its reasoning is rooting legal disruption into the legal order is necessary. Viewing APTEL's legal work in this way is neither obvious nor easy. Our carefully constructed and culturally conditioned mental images of tribunalised adjudication produce an inevitable mental resistance to seeing this work as anything more than pragmatic dispute resolution.<sup>32</sup>

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<sup>31</sup> See chapter 3 of this thesis; *Amplus Infrastructure* (n 10) [37].

<sup>32</sup> Law Commission Report (n 8); APTEL (n 8).

But perhaps, what is missing in that mental image is the recognition of tribunalised adjudication as a form of ‘state-sponsored’ legal and adjudicative pluralism.<sup>33</sup> What distinguishes the work of the Appellate Tribunal from other forms of dispute resolution is an element of ‘futuraity’: an adjudicative ruling of this Tribunal, unless specified otherwise, impacts future cases and regulatory decision-making concerning solar infrastructure in relation to the ongoing transition.<sup>34</sup> The way these disputes are reasoned and resolved has material implications for how the physical infrastructure and associated processes are understood, and are incorporated into the present and future. APTEL’s legal work can, to that end, be viewed as devising ‘ways of adapting to rapid and accelerating change’<sup>35</sup> through legal reasoning-substantively and normatively.<sup>36</sup>

There are two implications of this for legal scholarship: first, it encourages scholars to consider how the future is being crafted by the ‘day-to-day’ adjudication of disputes in tribunals as a field for intellectual enquiry.<sup>37</sup> There has been little systematic research about how law interacts with the ‘taken-for-granted category of the future’.<sup>38</sup> To that end, Stokes observes:

‘What is missing is any widespread recognition of the legal temporalities at play here, which requires an expanded understanding of how law’s rules institutions and discourses work to construct the future that they are then deployed to regulate. Rather than existing somewhere ‘out there’ in the

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<sup>33</sup> Elizabeth Fisher, ‘The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers’ (2012) 1 TEL 43; Warnock (n 8) 103-106.

<sup>34</sup> Warnock (n 8) 102.

<sup>35</sup> See Stokes 175.

<sup>36</sup> See chapter 3 of this thesis.

<sup>37</sup> Stokes (n 35) 176.

<sup>38</sup> Stokes (n 35) 177.

external world, the future is actually produced through legal techniques and interventions’<sup>39</sup>

The legally disruptive nature of energy transition and the role of adjudication in stabilizing it through the application of existing legal frameworks, as seen in the foregoing chapters, makes clear that this work is as much about stabilizing a legal present disrupted by transition, as is about crafting a stable future. This emphasizes the need for a more robust understanding of how law and the APTEL’s expertise- interactional, contributory and coordinated- ought to evolve in that regard.<sup>40</sup> Recognizing the impact of its decisions on the relationship between the legal present and future is to acknowledge how legal institutions, which tend to be understood in thin terms, are in fact sites which embody a crucial temporal practice that casts its legal and social significance in a new light. This is not to say or suggest that the future is distinct from the vantage of APTEL adjudication, rather my point is to emphasize the manner in which the legal present and future fold into each other in the co-production of energy transition through APTEL’s legal work. Each is drawn on the production of the other,<sup>41</sup> that is, the legal present and future, and indeed also the legal and social orders in which they are embedded. A simple example of the creation of a competitive market for trade in renewable energy between states as part of the future,<sup>42</sup> is predicated upon the manner in which the novel legal constructs, that is, the RPO and REC mechanisms, are framed and incorporated into the legal present through the Tribunal’s reasoning of it.<sup>43</sup>

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<sup>39</sup> Stokes (n 35) 177.

<sup>40</sup> See chapter 4 of this thesis.

<sup>41</sup> Stokes (n 35) 177.

<sup>42</sup> Solar RPO and REC Framework (n 23).

<sup>43</sup> See e.g., *Green Energy Association* (n 9).

Thin understandings of tribunals and their work focus on their institutional pragmatism and on their capacity and ability to alleviate the burden of superior courts by dispensing efficient and expeditious justice,<sup>44</sup> but what this overlooks are the subtle ways in which the application and evolution of law through this legal work stabilizes and performs versions of a future that echo wider, culture-specific imaginaries of socio-technical change.<sup>45</sup> In India, for example, as chapter 2 showed, that collective imaginary is about addressing energy inequality, creating energy security and access to cost-effective solar power, socio-economic development, and mitigating the impact of anthropogenic climate change.<sup>46</sup>

To that end, regulatory bodies ought to embrace the temporal significance of their tasks, which is reflected in the functions they are empowered to perform but rarely transcends into the consciousness of agencies performing them.<sup>47</sup> The work of the APTEL, in shaping and orienting the regulatory powers of concerned commissions responding to the legal disruption created and exacerbated by transition, appears to be crafting the conditions in which the connections between the present and future are able to flourish.<sup>48</sup>

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<sup>44</sup> Law Commission Report (n 8).

<sup>45</sup> Stokes (n 35) 177; Sheila Jasanoff, 'Imagined and Invented Worlds' in Sheila Jasanoff and Sang-Hyun Kim (ed), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015); See also Jens Beckert, *Imagined Futures: Fictional Expectations and Capitalist Dynamics* (Harvard University Press 2016).

<sup>46</sup> See chapter 2 of this thesis.

<sup>47</sup> See Electricity Act 2003, s 73, s 79 (Functions and duties of the Central Commission); Electricity Act 2003, s 86 (Functions and duties of the State Commission).

<sup>48</sup> See Stokes (n 35) 179.

Understanding how those conditions are being created demands that scholars look beneath the surface of thin descriptions and engage with deeper everyday connections forged through the kind of disputes that tribunals are tasked with resolving. It is only by situating the work of tribunals as sites of inter-disciplinary expertise co-producing particular legal and social futures, that lawyers and adjudicators can begin to see the significance and responsibility of their tasks and approach it with the sense of legal thoughtfulness I discuss in the later parts of this chapter. In thinking about a future sought through transition, therefore, scholarship ought to focus on the legal present and the work of adjudicative institutions in constructing that present. This requires deliberating on understandings of law and transition as they are being stabilized, and considering how this stabilization is achieved. What that means is concerning oneself less with the legal and institutional instrumentalism typically associated with tribunals, and more with its adjudicative competence, capacity to set norms, and the reasoning used to perform the future into the present, and vice versa.<sup>49</sup>

Second, this shows the social significance and social responsibility of tribunalised adjudication in doing that work.<sup>50</sup> Both these aspects are integral to re-imagining the role and contributions of the APTEL in shaping a substantive understanding of the legal present and reflecting upon its role in constructing the future, or at least important elements of it.<sup>51</sup> Arthurs points to the ‘superior-inferior dichotomy’ between higher courts and tribunals that, on one

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<sup>49</sup> See Sheila Jasanoff, ‘Future Imperfect: Science, Technology, and Imaginations of Modernity’ in Jasanoff and Kim (n 45).

<sup>50</sup> Arthurs (n 11) 6-7.

<sup>51</sup> See Jannu (n 7); See Beckert (n 45) 217.

hand, is all-pervasive in thinking about the work of tribunals as quasi-judicial institutions,<sup>52</sup> and on the other hand, does not necessarily correspond to their relative social importance.<sup>53</sup>

APTEL's judgments in determining tariff orders, resolving conflicts over delays, addressing concerns about the exercise of regulatory power and discretion, and crafting a legal understanding about novel legal constructs (as mapped in chapter 3), involves major social responsibility. These judgments not only create legal, administrative and regulatory stability for participants engaged in this process, but also for the constituents of a wider society who rely on this critical infrastructure in the conduct of their everyday affairs. Then, APTEL's decisions, in addition to granting these material remedies, also create norms- and in doing so become part of expository justice.<sup>54</sup> This not only acknowledges the element of futurity in APTEL's legal work but also its role in developing the law through the adjudication of disputes. The development of norms affects the behavior of actors and institutions, impacting how they make sense of and participate in the process of energy transition. Those norms percolate the legal order and acquire the capacity to shape the manner in which law, policy, and regulation is understood and applied in this landscape.

These are decisions that affect our everyday lives in major and minor ways. In the face of this, it is surprising that the legal work of tribunals does not figure more substantively in scholarship or in our understanding of the kind of disputes arising from socio-technical change. The legal imagination of adjudicative institutions is a product of legal culture. This legal culture, especially in the common law world, has turned to 'crown jewels of the professions'

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<sup>52</sup> See e.g., *Chandra Kumar v Union of India*, AIR 1997 SC 125 (Supreme Court of India) tribunals are not substitutes for high courts.

<sup>53</sup> Arthurs (n 11) 6.

<sup>54</sup> Warnock (n 8) 102 citing Owen Fiss, 'The Forms of Justice' (1973) 93 Harv L Rev 1; E.g., *Ramnad Renewable* (n 10).

when advertising the craft and contributions of its adjudicative institutions. It seems unsurprising, therefore, that scholars too should turn to ‘watershed moments’ when they want to mull over legal problems.<sup>55</sup> This kind of thinking often leads us to believe that there is nothing to explain, discuss or analyze about day-to-day adjudication.<sup>56</sup> Nevertheless, the map in chapter 3 showed that when it comes to understanding what energy transition and changes associated with the process mean for the law, and for its participants, and vice versa- it is this seemingly mundane work – pictured to be the province and concern of specialists – that is most significant and concerns us all. This suggests that the law can develop and the future can be crafted in seemingly ‘unexpected’<sup>57</sup> places.

The day-to-day adjudication of disputes through tribunals results in refining the application of law to facts. This results in particularizing the understanding of law, and in doing so responds to the need for calculability, predictability and certainty in the solar marketplace. It speaks to the adjudicative integrity of the Tribunal’s reasoning.<sup>58</sup> That integrity is created when the Tribunal responds to the inherent nature of the legal problems it is tasked with resolving, which in turn attracts the normative legitimacy of tribunalised adjudication.<sup>59</sup> At the heart of creating that integrity is the need for thoughtfulness in legal reasoning. This is considered in the section that follows.

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<sup>55</sup> Harry Collins, *Are We All Scientific Experts Now?* (Polity 2014) 10.

<sup>56</sup> Collins (n 55); Contra Arthurs (n 11) 6.

<sup>57</sup> See Elizabeth Fisher, ‘Afterword: Law in Unexpected Places’ in Elizabeth Fisher and Brian Preston (eds), *An Environmental Court in Action: Function, Doctrine and Process* (Bloomsbury 2022) 313.

<sup>58</sup> See Ceri Warnock, ‘Environment and the Law: Normative Force of Context and Constitutional Challenges’ (2020) 32 JEL 365.

<sup>59</sup> Warnock (n 8) 126.

## C PART TWO: THOUGHTFULNESS IN LEGAL REASONING

Thoughtfulness in legal reasoning can be viewed as ‘the capacity to reflect and deliberate, to ponder complexity and confront new and unexpected circumstances flexibly, with an open mind, and to do so articulately in the company of others.’<sup>60</sup> Such thoughtfulness must encompass APTEL’s role and contributions in rooting energy transition into the legal order. It is at the heart of fostering the Appellate Tribunal’s adjudicative competence and the integrity of its reasoning processes. The adjudication of disputes raised by transition, as the previous chapters have shown, can take many forms- this ranges from the straightforward application of law to fact by following well-established legal tests and principles, or a more dynamic form as seen in the adjudication of hot circumstances, that is, situations where agreed frames for how to understand and act in the world are in ‘constant state of flux and contestation.’<sup>61</sup> In either situation, for legal reasoning to be thoughtful it must be grounded in the legal landscape yet show an appreciation for the ways in which the legal problem it is tasked with resolving resonates with those frameworks. That is the challenge inherent in adjudicating these disputes.

Energy transition and associated infrastructural change is a period of social, economic, financial and infrastructural upheaval.<sup>62</sup> How law organizes, structures and stabilizes that upheaval will ultimately shape and legitimate how it progresses, which will in turn have implications for social ordering and the organization of associated energy markets. This is not to say that it will result in rigid finality, this is undoubtedly an evolving space, but to emphasize that tribunalised adjudication has significant implications for the legal certainty and stability

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<sup>60</sup> Waldron (n 4); see Warnock (n 58); Fisher and Shapiro (n 8) 217.

<sup>61</sup> Elizabeth Fisher, ‘Environmental Law as ‘Hot’ Law’ (2013) 25 JEL 347, 347-348.

<sup>62</sup> See chapter 2 of this thesis; See Arthurs (n 11) 1-4.

of energy transition and associated infrastructural change. Thoughtful legal reasoning in responding to these disputes is therefore crucial.

Legal certainty and calculability matter during transition and in constructing associated solar infrastructure. Solar-generating companies and distribution licensees crave the security of expectations, and investing parties need to be able to calculate what to count on in setting up solar power projects which require significant financial commitments.<sup>63</sup> The rule of law in these circumstances is unsurprisingly understood as predictability and calculability.<sup>64</sup> For adjudication, this can mean clearly establishing the rights and responsibilities of contracting parties.<sup>65</sup> In *Gujarat Energy Transmission Corporation*, for example,<sup>66</sup> the Appellate Tribunal had to decide whether the responsibility for constructing a dedicated transmission line from the place of generation to the sub-station rested with the distribution licensee or the power generator based on the Electricity Act, national and state electricity policies, and concerned tariff order. This involved reconciling applicable provisions with the PPA in order to delineate contractual responsibilities.

This type of decision-making, although ‘routine,’<sup>67</sup> plays a fundamental role in shaping relationships and the certainty of agreements during transition. The Tribunal’s reasoning in

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<sup>63</sup> E.g., *Ramnad Renewable* (n 5); *Balarch Renewable* (n 8); *JBM Solar Power Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 09 Mar 2018); *Subhash Infraengineers Pvt Ltd v Haryana Electricity Regulatory Commission* (APTEL, 13 Dec 2016).

<sup>64</sup> Waldron (n 4) 3 clarity and certainty in rule of law.

<sup>65</sup> Jeremy Waldron, ‘The Rule of Law in Public Law’ in Mark Elliott and David Feldman (eds), *The Cambridge Companion to Public Law* (CUP 2015) 57-58; E.g., *Gujarat Energy Transmission Corporation Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 09 Jan 2015).

<sup>66</sup> *Gujarat Energy Transmission Corporation* (n 65).

<sup>67</sup> Bell and Fisher (n 14).

these decisions ought to be built on the careful consideration of the provisions in question. This needs legal thoughtfulness, which often involves some evaluative judgment on the part of the judge applying it, for example, in understanding the intent and purpose embedded in the language of these provisions rather than a mechanical application of it to facts.<sup>68</sup> The Tribunal has similarly also in other instances defined and clarified the responsibilities of the concerned electricity commissions as primarily regulators, often also shaping/ orienting their discretion with the objectives of transition.<sup>69</sup>

Creating calculable circumstances can also mean the enforcement of contract through an emphasis on well-reasoned orders,<sup>70</sup> and clarifying the meaning and interpretation of provisions and terms of statute, regulation and policy. There is however a fine distinction between providing meaning and interpretation. The former is typically governed by a rule or convention.<sup>71</sup> This is made visible by the type of reasoning provided by the Appellate Tribunal in the two circumstances.<sup>72</sup> In explaining the meaning of an expression, the reasons refer to the rules of the language; take, for example, the Tribunal's explanation of 'calendar month' in *ES Solar* to determine the date of commissioning the solar power project.<sup>73</sup>

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<sup>68</sup> E.g., *Nabha Power Ltd v Punjab State Power Corporation Ltd* (APTEL, 17 May 2018).

<sup>69</sup> E.g., *Ramnad Renewable* (n 5); *Amplus Infrastructure* (n 10); *Welspun Renewable* (n 27). See also chapter 3 of this thesis.

<sup>70</sup> E.g., *Amplus Infrastructure* (n 10).

<sup>71</sup> Andrei Marmor, 'Meaning and Interpretation' in *Interpretation and Legal Theory* (Clarendon Press 1992) 21.

<sup>72</sup> E.g., *ES Solar Pvt Ltd v Managing Director, Bangalore Electricity Supply Company Ltd* (APTEL, 08 May 2019).

<sup>73</sup> *ES Solar* (n 72).

Interpretation, on the other hand, arises when no such rules or conventions are present, or when conflicting meanings arise in light of competing or multiple frameworks.<sup>74</sup> Interpretation, like other intellectual activities, tends to be guided by the paradigms existing in a particular interpretative community.<sup>75</sup> What this means in the present context is that the APTEL as an adjudicative institution, when providing particular interpretations of the terms in question, will be guided by the landscape in which it is embedded, the frameworks available to it, and by applying the powers and procedural autonomy with which it is vested. These interpretations are normatively shaped by the wider social imaginaries permeating this landscape.<sup>76</sup>

In interpreting expressions, provisions of contract, statute, policy or regulation, judges are often required to apply judgment in bringing together legal, technical, economic or financial knowledge to reach a particular outcome.<sup>77</sup> It might well seem that we, in looking for thoughtfulness in this kind of legal work, are looking for something other than the rule of law.<sup>78</sup> That is because, as lawyers and adjudicators are trained to understand, the rule of law aims to ensure that laws are applied with as little independent input from the judge as possible; judges

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<sup>74</sup> E.g., *Star Wire* (n 28); *Damodar Valley* (n 28).

<sup>75</sup> Marmor (n 71).

<sup>76</sup> See chapter 2 of this thesis.

<sup>77</sup> E.g., *Welspun Renewable* (n 27); *Balarch Renewable* (n 8).

<sup>78</sup> Waldron (n 4). See generally, Brian Tamanaha, 'Substantive Theories' in *On The Rule of Law: History, Politics and Theory* (CUP) for a discussion of competing understandings of the Rule of law. Some believe that the Rule of law is purely formal in nature, requiring only that laws be set out in general, clear terms, and be applied equally to all. Others believe that this includes the protection of individual rights, and ideals such as democracy or a tool for governance. Others assert this encompasses the social, economic and cultural conditions under which one's legitimate aspirations can be realized.

should be bound rigidly by the text in front of them.<sup>79</sup> To do otherwise would have implications for the legitimacy of their decisions.<sup>80</sup>

Disputes mapped in the previous chapters, however, have shown that the questions raised by transition do not always fit comfortably into established frameworks.<sup>81</sup> The experienced legal reality of energy transition, as seen from the vantage of the Appellate Tribunal, shows that energy transition can be a significant source of legal and adjudicative disruption.<sup>82</sup> This is, on the one hand, due to the socio-technical nature of transition itself; energy transition raises issues that are relatively novel for legal systems and therefore has implications for the nature of adjudication and legal reasoning in any disputes raised by it. On the other hand, transition has evidently exacerbated existing legal disputes, making them more complex and fragile in light of the nature of infrastructure involved and relief sought.<sup>83</sup> The Tribunal's reasoning of these disputes shapes how the pre-existing intertwines with novel circumstances brought by transition, and how this new shape is rooted into the legal order.

In *Balarch Renewable*,<sup>84</sup> for example, the appellant was aggrieved by an order of the State Commission which invalidated the competitive bidding process and therefore also its PPA with the respondent DISCOM. The Tribunal's reasoning in this case considered the risk

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<sup>79</sup> Waldron (n 4).

<sup>80</sup> See generally Warnock (n 8); Peter Cane, *Administrative Tribunals and Adjudication* (Hart 2009).

<sup>81</sup> Fisher (n 4).

<sup>82</sup> Fisher (n 4).

<sup>83</sup> E.g., consideration of the 'must run' and 'deemed generation' status of solar projects in *Ramnad Renewable* (n 5); *Siwana Power* (n 11); *JBM Solar* (n 8); *Kamuthi Renewable Energy v Tamil Nadu Electricity Regulatory Commission* (APTEL, 30 May 2019).

<sup>84</sup> *Balarch Renewable* (n 8).

of ‘technical degradation of idling solar panels’, ‘irreparable loss to the generators who have invested huge sums in these projects’, and prioritized the ‘objective behind setting up solar projects’ in granting appropriate relief.<sup>85</sup>

The rule of law has typically been associated with predictability, clarity, and precision.<sup>86</sup> Thoughtfulness is indeed needed to ensure the rule of law understood in this sense, but viewing the entirety of APTEL’s legal work in this way sells it short. Tribunals, as Warnock explains, are highly dynamic and specialized forms of adjudication.<sup>87</sup> While the novel legal nature of these institutions raises particular normative challenges,<sup>88</sup> their capacity to develop law and stabilize disruption in the face of socio-technical change shows that there is more to what we value in legality and stability than rules, predictability and certainty.<sup>89</sup> We want to be governed thoughtfully.<sup>90</sup> And the APTEL, in having the power to develop the law and accordingly regulation vis-à-vis the ongoing transition within the electricity sector, ought to foster thoughtfulness in its legal work.

While it might well be the case that the end goal of the rule of law, understood as the rule of thoughtfulness, may also be about fostering the values embraced by conventional definition of the rule of law, thoughtfulness, permits an account of the technicality and

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<sup>85</sup> *JBM Solar* (n 8).

<sup>86</sup> See generally, Jeremy Waldron, ‘The Rule of Law’ in *The Law* (Routledge 1990) 29-55.

<sup>87</sup> Ceri Warnock, ‘Reconceptualising Specialist Environment Courts and Tribunals’ (2017) 37 LS 391.

<sup>88</sup> See Warnock (n 87).

<sup>89</sup> Waldron (n 4) 5.

<sup>90</sup> Fisher and Shapiro (n 8) 217.

complexity involved in mastering both the understanding and application of law in responding to legal disruption, an aspect frequently overlooked and underestimated by legal scholarship.

Thoughtfulness, Waldron emphasizes, is something that ‘everyone knows is required to fulfil the intellectual demands that law places on real-world practitioners’<sup>91</sup> but this ‘must be stated clearly and forcefully in the environment in which the rule of law is to be reflected upon and made explicit.’<sup>92</sup> In other words: the legal culture and local context in which considerations for the rule of law are being reflected upon matter. According to Waldron, thoughtful elements of the rule of law are made visible by three aspects- first, in the use of standards as opposed to rules, second, through legal procedure by stimulating certain forms of argumentative thoughtfulness – in the arguments presented before the court – and third, in the application of precedent which provides a shared intellectual premise for the kind of legal thoughtfulness needed to responsively develop the law.<sup>93</sup>

In the sections that follow, I consider these three aspects in the context of the case law mapped in chapter 3. I argue that thoughtfulness in legal reasoning is what enables the law to partner with legal norms in shaping the present and future during transition. That partnership needs legal imagination to help tribunals evolve their reasoning processes to be more responsive in addressing the problems they are tasked with adjudicating upon, and in doing so, to foster the rule of law in the legal and regulatory landscape of the ongoing transition.

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<sup>91</sup> Waldron (n 4) 6.

<sup>92</sup> Waldron (n 4) 6.

<sup>93</sup> Waldron (n 4) 7.

## 1 Thinking about Thoughtfulness in APTEL Adjudication

Statute, policy and regulation frequently involve the application of rules and standards. While rules are the end product of evaluative judgments made by the legislature, standards require some judgment on the part of the person applying them.<sup>94</sup> This capacity for judgment is handed downstream from the legislature.<sup>95</sup> Typically, it is applied at first-instance by the primary administrators/regulators, that is, the concerned electricity commissions, and then, as the case may be, by the Appellate Tribunal during adjudication. Reasonableness, for example, is a normative standard that inevitably requires evaluative judgment by the person applying it on a case-specific basis. This evaluation requires administrative and/ or regulatory discretion as the case may be. In the case law mapped, reasonableness as a standard was evaluated in disputes about relief<sup>96</sup> and compensation,<sup>97</sup> costs and expenditure,<sup>98</sup> delays, and in review of the components factored into tariff orders.<sup>99</sup> Thoughtfulness in legal reasoning, in these cases, was triggered by assessing the specific contexts in which these disputes had arisen.

Employing the use of reasonableness as a standard to assess whether the delay was ‘beyond reasonable control’ of the solar generator, for example, was a less technically specific

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<sup>94</sup> Waldron (n 4) 7.

<sup>95</sup> Waldron (n 4) 7.

<sup>96</sup> E.g., *Rammad Renewable* (n 5); *ACB India v Gujarat Electricity Regulatory Commission* (APTEL, 18 Jan 2019).

<sup>97</sup> E.g., *ES Solar* (n 72).

<sup>98</sup> E.g., *JBM Solar* (n 8).

<sup>99</sup> E.g., *Gujarat Energy Transmission Corporation* (n 65) in considering capital costs factored into assessment of tariff.

and more flexible assessment which permitted consideration of a variety of delays not limited to bureaucratic action,<sup>100</sup> force majeure clauses in PPAs,<sup>101</sup> extreme weather events,<sup>102</sup> and delays in procuring land for project development.<sup>103</sup> Reasonableness was also invoked in determining applicable tariff structures. In *Chamundershwari Electricity Supply Company*, for example, the Appellate Tribunal held that it was within the State Commission's jurisdiction to determine the reasonableness of a tariff that it found to be unviable, and accordingly re-negotiate the rates found through competitive bidding processes.<sup>104</sup> It cited with approval the reasoning in one of its previous judgments where it held that the 'mere fact that a PPA contains such a term and that the Commission had earlier approved the PPA' does not prevent the State Commission from holding that a tariff for solar energy, which was in that instance 'less than one third of the generic tariff determined by the Commission,' was 'unconscionable'<sup>105</sup> and therefore unreasonable. The use of standards, as opposed to rigid legal provisions, permits thoughtful modes of reasoning that are able to respond to the specific contexts in which disputes arise.

Thoughtfulness is also often involved in the consideration of formal procedure through which legal determinations are arrived at, that is, in the presentation of reason and argument

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<sup>100</sup> E.g., *Earth Solar Pvt Ltd v Punjab State Electricity Regulatory Commission* (APTEL, 11 Nov 2019).

<sup>101</sup> E.g., *Taxus Infrastructure and Power Projects Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 04 Jul 2018).

<sup>102</sup> E.g., *Ramnad Renewable* (n 5).

<sup>103</sup> *Gujarat Urja Vikas Nigam Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 11 Mar 2016).

<sup>104</sup> *Chamundershwari Electricity Supply Company Ltd v Saisudhir Energy (Chitradurga) Pvt Ltd* (APTEL, 21 Mar 2018) [10 (e)].

<sup>105</sup> *Chamundershwari Electricity Supply Company* (n 104).

by parties, and in the judicial consideration of the same when providing reasoned decisions. It is what encourages judges to meaningfully take arguments into account. For Waldron, adjudicative procedure is ‘a device which gives formal and institutional expression to the influence of reasoned argument.’<sup>106</sup> It opens modes of thoughtfulness that allows rival and competing claims to confront and engage with one another in an orderly process.<sup>107</sup> Law becomes a matter of argument, something that can be made sense of, and what parties are doing in presenting their arguments, therefore, is discerning ways in which the legal disruption resulting from transition can be integrated into the legal order in a way that makes intellectual sense.

Law is an argumentative discipline and to that end creates argumentative thoughtfulness in the courtroom.<sup>108</sup> APTEL’s capacity for thoughtful legal reasoning, in that sense, depends on the thoughtfulness of the arguments presented before it. Lawyers, in interpreting law and presenting arguments before the Appellate Tribunal, therefore, are its foremost proponents. APTEL’s novel legal nature is designed to foster and facilitate a culture of inter-disciplinary argument that it is then able to structure and sponsor as a site for argumentative thoughtfulness. Modes of argumentation before the Appellate Tribunal are crucial but appear to be rarely engaged with in this way.

This view encourages litigating parties to frame their legal arguments in a manner that takes the law’s aspiration for coherence and continuity into account whilst also enabling them to take advantage of different reasoning strategies drawn from outside the law but within the

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<sup>106</sup> Waldron (n 4) 12.

<sup>107</sup> Waldron (n 4) 12.

<sup>108</sup> Waldron (n 4) 12.

APTEL’s statutorily defined forms of expertise.<sup>109</sup> The appellants in *Welspun Renewable*, for example, relied on provisions of the Electricity Act, National Tariff Policy, and state-level tariff regulations to argue that the State Commission was essentially an economic regulator, and, as such: was legally bound to provide a tariff that provided necessary economic and financial incentives; was rational; and was not arbitrary.<sup>110</sup> While neither of these instruments explicitly frames the work of the State Commission as that of an economic regulator, that the appellants should normatively frame its work in this manner is supported by the Tribunal’s ‘granular analysis’ of each of the eight tariff components in question in this case.<sup>111</sup>

Viewing tribunalised adjudication in this way undoubtedly sits uncomfortably with conventional understandings of the rule of law, which focus on legal certainty and calculability.<sup>112</sup> Arguments can be unsettling in that they bring something new into view – a new way of viewing things – and while this sponsors scope for uncertainty in the law, it also enables the development of responsive understandings of the law in the context of socio-technical change.<sup>113</sup>

The third aspect, Waldron highlights, is ‘the way law provides not only the terms that channel legal thoughtfulness and the procedures that structure it in formal settings but also the premises with which it works’.<sup>114</sup> Law permits shared pathways for argumentation, and in

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<sup>109</sup> Electricity Act 2003, s 113 (1) (b) (Qualification for Appointment as Chairperson and Members of the Appellate Tribunal); Electricity Act 2003, s 112 (2) (b) (Composition of the Appellate Tribunal).

<sup>110</sup> *Welspun Renewable* (n 27) [6.1], [7.4].

<sup>111</sup> *Welspun Renewable* (n 27) [8.6].

<sup>112</sup> Waldron (n 4) 13.

<sup>113</sup> Waldron (n 4) 13.

<sup>114</sup> Waldron (n 4) 14.

doing so enables socio-technical change to be rooted into the legal order, while also establishing legal continuity. To that end, precedent – that is, the common law idea that we should be constrained by the principles laid down in previous decisions – is often defended in favor of predictability.<sup>115</sup> But following precedent, Waldron observes, cannot ‘just be a matter of making legal outcomes more predictable’.<sup>116</sup> Applying precedent in legal reasoning involves thinking about the meaning of precedents and their bearings on the dispute being dealt with, long after considerations for predictability have been reflected upon.

It is true that, in the present context, there are certain judgments that strongly shape the legal treatment of certain kinds of legal problems.<sup>117</sup> What these precedents, in the sense explained in chapters 2 and 3, do is limit the spectrum for legal argument, even if they do not directly determine the outcome of a particular case. They also act as substantial points of departure in argument, unlike the legal treatment of statutory provisions in crafting arguments.<sup>118</sup> Legal thoughtfulness, in this sense, is specific and permits the law to develop in a manner that fosters legal continuity rather than disjuncture.

Waldron argues that these characteristics are central to thinking about the rule of law.<sup>119</sup> For appellate adjudication, this has implications for the exercise of expert capacity and the proficiency with which the Appellate Tribunal is able to respond to disputes. In other words, this has implications for its adjudicative competence. It also has implications for the exercise

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<sup>115</sup> Waldron (n 4) 14.

<sup>116</sup> Waldron (n 4) 14.

<sup>117</sup> E.g., *Ramnad Renewable* (n 5); *Green Energy Association* (n 9); *Amplus Infrastructure* (n 10); *JBM Solar* (n 8).

<sup>118</sup> E.g., *Star Wire* (n 28).

<sup>119</sup> Waldron (n 4) 16.

of judicial discretion, and indeed, as seen in chapter 3, the APTEL does shape the exercise of statutory functions prescribed for primary regulators.<sup>120</sup> By directing, constraining,<sup>121</sup> and channelling the exercise of discretion in particular ways,<sup>122</sup> specifically with an emphasis on well-reasoned orders,<sup>123</sup> the APTEL is not only demonstrating its capacity for thoughtfulness in legal reasoning but also fostering this capacity in regulatory action.

The foregoing analysis also suggests that the Appellate Tribunal ought to foster this thoughtfulness in arguments presented before it by encouraging thoughtful rather than mechanical ways of challenging orders of the concerned electricity regulatory commission under the auspices of the rule of law.<sup>124</sup> Legal thoughtfulness, therefore, is deeply intertwined with the manner in which socio-technical change comes to be understood, regulated, and rooted into the legal order. It sponsors the kind of adjudicative integrity needed to foster the normative legitimacy of APTEL's legal work.<sup>125</sup> Although legal thoughtfulness is no substitute for the kind of public political thoughtfulness needed when thinking and shaping wider civic discourse about energy transition, it does provide a substantive intellectual impetus for the adjudicative institutions tasked with the responsibility of responding to the particular legal problems raised by this process, and enables them to consider their role and contributions to energy transition. By that I do not suggest that it needs to be one way or the other, rather, I wish to point to the

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<sup>120</sup> E.g., *Ramnad Renewable* (n 5); *Amplus Infrastructure* (n 10); *Balarch Renewable* (n 8).

<sup>121</sup> E.g., *Ramnad Renewable* (n 5).

<sup>122</sup> E.g., *Siwana Power* (n 11) see chapter 3 of this thesis for a detailed analysis of this case.

<sup>123</sup> E.g., *Solar Energy Corporation of India* (n 12); *Welspun Renewable* (n 27).

<sup>124</sup> See Waldron (n 4) 17 on the relationship between legal thoughtfulness and administrative thoughtfulness.

<sup>125</sup> See Warnock (n 87).

acute lack of awareness about legal thoughtfulness in the thinking about the judicial craft of appellate institutions.

My emphasis on thoughtfulness was not to sideline the importance of predictability or clarity in tribunalised adjudication. Rather, my aim was to show that thoughtfulness in legal reasoning is what enables the law to partner with legal norms in shaping the present and the future during transition, and that this partnership needs legal imagination. Thoughtful legal reasoning, to that end, is something which uses the forms, channels and points of departure that law provides. It enables ‘celebrating being ruled by law’<sup>126</sup> which is, in large part, a celebration of the influence of thoughtful reasoning and our participation in that process, towards shaping the way we live and order our lives during socio-technical change.

In the next section, I consider the implications of my analysis so far on pushing the legal imagination of lawyers and law scholars towards thinking about the role of tribunalised adjudication and its contributions to developing the law during transition and stabilizing the legal disruption it causes in the solar marketplace. What APTEL’s legal work is viewed as, and imagined to be, directly influences the ways in which its adjudicative competence is fostered. This impacts how energy transition is legally understood and rooted into the Indian legal order.

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<sup>126</sup>

Waldron (n 4) 20.

## D PART THREE: RE-IMAGINING APTEL ADJUDICATION

Imagination is a fundamental way of thinking.<sup>127</sup> It is how we make sense of the world, and in the present context, of a changing world.<sup>128</sup> Legal imagination, to that end, is a fundamental way of thinking about the law and its institutions; it is stimulated by legal reasoning. The previous section argued that legal thoughtfulness ought to guide that process, it highlighted the importance of legal imagination in thinking about the role of law and adjudication during transformative change. APTEL's legal work to that end, underscores the importance of legal imagination. By bringing into view the kind of legal 'friction'<sup>129</sup> and 'disruption'<sup>130</sup> associated with infrastructural change and constructing a renewable energy market, APTEL's legal work shows how law and tribunalised adjudication provide a fundamental mechanism for legal stability. Its legal work also makes infrastructure visible in thinking about energy transition and climate change, and draws attention to the role of legal imagination in fostering its adjudicative competence, responding to disputes about infrastructure.

In the case law mapped in chapter 3 for example, judges were required to respond to a legal question, often more than one in a given dispute. Their process of reasoning and responding depended on their imagination regarding the boundaries of APTEL's legal work, and indeed also on their understanding of the relationship between that work and the process of energy transition. Their imagination had implications for the reasoning of disputes. To talk

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<sup>127</sup> Ursula Le Guin, 'The Operating Instructions' in *Dreams Must Explain Themselves: The Selected Non-Fiction of Ursula K Le Guin* (Gollancz 2018) 259, 262.

<sup>128</sup> Fisher (n 7) 267.

<sup>129</sup> Sanja Bogojević and Mimi Zou, 'Making Infrastructure 'Visible' in Environmental Law: The Belt and Road Initiative and Climate Change Friction' (2021) 10 (1) TEL 35.

<sup>130</sup> Fisher (n 4).

about of legal imagination, therefore, is to highlight how mental images configure the way law is understood and applied.<sup>131</sup> It is what is used to navigate a legal problem in applying law to facts, and to determine the quality of legal reasoning.<sup>132</sup> This is at the heart of fostering APTEL's adjudicative competence and capacity to engage, stabilise and root the legal precariousness associated with transition into the Indian legal order.

Legal imagination is needed in APTEL adjudication, not only to apply the broad language of statute and policy to specific circumstances, as seen in the Appellate Tribunal's responses to disputes about RPOs and RECs,<sup>133</sup> but also to ensure a predictable regularity in responding to cold situations for adjudication, such as the appeals raised against tariff orders and enforcement of PPAs.<sup>134</sup> Case law mapped in chapter 3 showed that responding to tariff disputes often involved cross-cutting legal and factual considerations e.g., following administrative procedure, remedying arbitrary decision-making, and considering the legality of resulting orders vis-à-vis the quantum of financial investments, fragility of idling solar infrastructure, and the statutory duty to promote solar power generation placed on the concerned commissions. These disputes also raised questions about the lack of or inadequacy of reasoning in orders issued by the State Commission,<sup>135</sup> and challenged the methodology

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<sup>131</sup> Fisher (n 7) 267.

<sup>132</sup> Fisher (n 7) 267.

<sup>133</sup> E.g., *Green Energy Association* (n 9).

<sup>134</sup> See chapter 3 of this thesis.

<sup>135</sup> E.g., *Welspun Renewables* (n 27).

used to determine tariffs<sup>136</sup> and preferential rates.<sup>137</sup> The Tribunal's responses not only highlighted the importance of reason-giving in creating legal, administrative and regulatory stability but also underlined the need for legal imagination in crafting reasons. In other words, how energy transition is legally constituted, regulated and limited by law is bracketed by our legal imagination.

## 1 Picturing Legal Disruption

Legal disruption caused by energy transition need not look like the deep fault lines created by seismic movement; disruption, although foundational, can also resemble hairline cracks. Accordingly, the kind of legal work needed to make sense of and stabilize legal disruption can look quite unlike our conventional mental images of that work. This needs to be acknowledged. For most lawyers and adjudicators, the contributions of law and adjudication must be 'revolutionary';<sup>138</sup> legal development ought to result in landmark decisions that fundamentally change the functioning of our socio-economic order. Indeed, this legal imagination is a product of a legal culture that focused on the heroic contributions of high courts and the Indian Supreme Court. What this way of viewing the contributions of law and adjudication tends to overlook is how the law stabilizes everyday disruption and creates legal certainty by establishing continuity in legal reasoning when responding to routine legal disputes. The changes envisaged by energy

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<sup>136</sup> E.g., *GMR Gujarat Solar Power Pvt Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 23 Apr 2015) (billing period); *Gujarat Urja Vikas Nigam Ltd v Gujarat Electricity Regulatory Commission* (APTEL, 11 Apr 2018) (operation and management expenses); *Welspun Renewables* (n 27) (capital cost, exchange rate, evacuation cost, depreciation, maintenance of spares, degradation of spares, returns on equity, auxiliary consumption); *Tata Power Delhi* (n 140).

<sup>137</sup> *Welspun Renewables* (n 27).

<sup>138</sup> Elizabeth Fisher, 'Climate Change, Legal Change, and Legal Imagination' (*UCL The Climate Change and Rule of Law Blog*, 13 Dec 2021) <<https://www.ucl.ac.uk/law-environment/blog-climate-change-and-rule-law/climate-change-legal-change-and-legal-imagination>> accessed 16 Apr 2022.

transition, as mapped in chapter 2, show the deeply intertwined nature of legal change with social, technological and political change. Law and adjudication are a part of those changes. Their contributions to this process, however, can be slow and hard to recognize. The question then becomes, how should lawyers and law scholars think about the role of law and adjudication in the face of the infrastructural change associated with transition.

First, what is needed is to develop a thicker legal picture of law and adjudication.<sup>139</sup> The previous section dealt with the rule of law and showed how thinking about the rule of law during transition is as much about establishing predictability and legal certainty as about fostering legal thoughtfulness and calculability. Seeing this helps make sense of the legal frameworks addressing energy transition and the contributions of tribunalised adjudication to that process. APTEL factors a concern for promoting the generation of electricity from renewable energy sources into its reasoning.<sup>140</sup> But the implications of that reasoning on the nature and trajectory of legal development and on fostering a mental picture of that formative legal work is rarely considered in legal scholarship. Viewing contributions in this way helps thicken our understandings of law and adjudication. It also develops a sharper picture of the role and legal significance of tribunalised adjudication, especially with regard to its contributions in responding to the precariousness associated with energy transition.

The ‘cold’ and ‘hot’ circumstances for adjudication created by energy transition draw attention to the different tasks that constitute APTEL’s legal work. This involves managing existing disputes exacerbated by transition and also responding to novel circumstances created by the process. In reading these cases, one cannot not develop a more nuanced mental picture of the kind of legal disruption associated with infrastructural change in the Indian legal context.

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<sup>139</sup> Fisher (n 138).

<sup>140</sup> E.g., *Tata Power Delhi* (n 140); *Solar Energy Corporation of India* (n 12); *Rannad Renewable* (n 5).

One can also not ignore that recognising the entanglement of legal, social, technical and economic dimensions is fundamental to responding to both these tasks.<sup>141</sup> These elements are often difficult to recognise, but even more so to untangle. Thus, in responding to a question of law, the Appellate Tribunal is inevitably also responding to other strands of that whole. This interconnectedness makes the precarity of disputes raised by transition visible.

Legal responses to this precariousness have varied significantly. For some, this is the content of legislation, for others it is what arises at the intersection of statute and policy.<sup>142</sup> And then there are those who focus on its global<sup>143</sup> and/ or economic dimensions.<sup>144</sup> Re-imagining tribunalised adjudication and its contributions to socio-technical change involves reworking how we picture legal disruption caused by transition, the role of institutions like the APTEL in it, and the nature of disputes arising from it. It involves reworking our mental images.

In cases like *Ramnad Renewable*,<sup>145</sup> *Amplus Infrastructure*,<sup>146</sup> and *Balarch Renewable*,<sup>147</sup> discussed in chapter 3, the Appellate Tribunal is seen developing a nuanced

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<sup>141</sup> Mackenzie (n 3).

<sup>142</sup> Lavanya Rajamani, 'The Indian Way: Exploring Synergies between Development, Energy and Climate Goals' in Donald Zillman and others (eds), *Beyond The Carbon Economy: Energy Law in Transition* (OUP 2008); Daniel Rich and others (eds), *The Solar Energy Transition: Implementation and Policy Implications* (Westview Press 1983).

<sup>143</sup> Centre for Policy Research, *Understanding India's Energy Transition in Global Context: Panel Discussion* (2019).

<sup>144</sup> International Institute for Sustainable Development and others, *India's Energy Transition: Mapping Subsidies to Fossil Fuels and Clean Energy in India* (GSI Summary Report, Nov 2017).

<sup>145</sup> *Ramnad Renewable* (n 5).

<sup>146</sup> *Amplus Infrastructure* (n 10).

<sup>147</sup> *Balarch Renewable* (n 8).

understanding about how decision-making with regard to solar power projects should be done and how regulatory powers of State Commissions ought to be exercised. This understanding is not made in a vacuum but arises from an understanding of the legal frameworks addressing the ongoing transition. The previous chapters provide many more such examples. In each, what can be seen is that developing the law and understandings about energy transition and associated solar infrastructure through tribunalised adjudication does not occur in isolation to the legal landscape in which it is occurring, it is not an abstract rootless thing. Rather, APTEL's substantive contributions to this process comes from embracing this landscape, understanding it, and evolving it in light of the ongoing transition.<sup>148</sup> This is a craft skill.<sup>149</sup> Re-imagining the role and contributions of the APTEL involves acknowledging and engaging with that craft, which inevitably results in fostering our legal imagination of the Appellate Tribunal and its proficiency in doing this legal work. But talking about legal imagination, as Fisher notes, can be 'counter-intuitive'<sup>150</sup> because too often the role of law and adjudication in responding to energy transition is perceived in pragmatic and instrumental terms.

Adjudicating energy transition involves legal imagination, it involves developing and evolving legal thinking from existing legal thought to ensure that law relates to reality.<sup>151</sup> It seems unsurprising, therefore, that in thinking about these contributions in shaping our energy future, we ought to in fact be thinking about the legal present.

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<sup>148</sup> See Fisher (n 138).

<sup>149</sup> Fisher and Shapiro (n 7) 52-55; see also Jerry Mashaw, *Bureaucratic Justice: Managing Social Security Disability Claims* (Yale University Press 1983) 67 cited in Fisher and Shapiro (n 7) 52.

<sup>150</sup> Fisher (n 138).

<sup>151</sup> Fisher (n 138).

To put it differently:

“What we talk about when we talk about the future.” The short answer is “the present,” since that’s all we have to go on... the future doesn’t really exist...it is up for grabs...’<sup>152</sup>

How we picture legal disruption in the legal present inevitably shapes the legal thinking that is slowly crafting our legal future. Thinking about how to foster the proficiency of this craft involves expanding our legal imagination and deepening our understanding of law, adjudicative institutions and the process of legal reasoning, and to think about their relationship with the future. It is about changing how we think about the law, and what is possible, by reasoning thoughtfully. This involves thinking about the craft of tribunalised adjudication. I explain what I mean by this in the section that follows.

## 2 APTEL Adjudication as a Craft

The tribunalised adjudication of disputes resulting from energy transition is largely about understanding the legal and regulatory landscape in which it is occurring and dealing with the materiality of transition. It also involves a normative dimension in reflecting and fostering the values associated with energy transition that are expressed through statute, regulation and policy.<sup>153</sup> Indeed, the APTEL is an appellate authority, and much has been written about the craft of the common law appellate adjudication in traditional courts,<sup>154</sup> but that is not what I focus on in this section. My aim here is a simple one: to invite the reader to consider, in their

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<sup>152</sup> Margaret Atwood, *Burning Questions: Essays and Occasional Pieces 2004-21* (Penguin Random House 2022) 170.

<sup>153</sup> See chapter 2 of this thesis.

<sup>154</sup> E.g., Roger Cotterrell, ‘Realism, Pragmatism and the Appellate Judge’ (1991) 54 (4) MLR 0026 explores the realist and communitarian conceptions of the judicial role and the necessity of a sociological perspective to understand the judge’s position in a particular professional community or system.

legal imagination of the APTEL as a specialist adjudicative institution responding and rooting energy transition into the Indian legal order, the kind of craftsmanship involved in its legal work and how this ought to be fostered.

The concept of craft is not new to scholarship on adjudication and the juristic method.<sup>155</sup> It can be viewed as a part of Llewellyn's law-jobs theory referred to in chapter 4.<sup>156</sup> My use of the term here, however, is largely inspired by Fisher's use of the idea of craft in developing an understanding of expertise.<sup>157</sup> The ideas of craft and craftsmanship draw attention to certain aspects of tribunalised adjudication helpful in developing a thicker picture of APTEL's legal work. It is 'not just a descriptor but denotes a set of practices'<sup>158</sup> that delineates the APTEL's expertise.

First, it suggests the importance of tradition as a steadying factor in reasoning, it emphasizes legal continuity, and it highlights the role of legal culture. Second, the craftsman is not an isolated individual but one who is both part of and informed by certain communal expertise.<sup>159</sup> Expertise is acquired through immersion in a particular interpretive community.<sup>160</sup> APTEL's legal work in that sense is a 'craft expertise' and ought to be 'driven forth by the

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<sup>155</sup> Fisher (n 5); Karl Llewellyn, 'The Crafts of Law Re-Valued' (1942) 28 ABAJ 801; Brett Schraffs, 'Law as Craft' (2001) 54 Vanderbilt L Rev 2245; Nicolas Mostyn, 'The Craft of Judging and Legal Reasoning' 12 (3) Judicial Review 359; Upendra Baxi, *Courage, Craft, and Contention: The Indian Supreme Court in the Eighties* (NM Tripathi 1985); Amnon Reichman, 'The Dimensions of Law: Judicial Craft, Its Public Perception, and the Role of the Scholar' 95 California L Rev 1619; Malcolm Sparrow, *The Regulatory Craft: Controlling Risks, Solving Problems, and Managing Compliance* (Brookings Institution Press 2000) regulation studies.

<sup>156</sup> See chapter 4 of this thesis; William Twining, 'The Idea of Juristic Method: A Tribute to Karl Llewellyn' (1993) 48 (1) U Miami L Rev 119, 154.

<sup>157</sup> Fisher (n 5).

<sup>158</sup> Fisher (n 5).

<sup>159</sup> Twining (n 156) 148.

<sup>160</sup> Fisher (n 5).

desire to do a job well for its own sake'.<sup>161</sup> This resonates with Warnock's arguments about fostering the normative legitimacy of tribunalised adjudication, that is, the idea that the tribunal ought to inspire trust in its decisions from the relevant community.<sup>162</sup> Third, viewing crafts as means to an end must be considered in relation to wider goals and ideals in light of which outcomes are sought.<sup>163</sup> This encourages us to see the role and contributions of law and tribunalised adjudication in a broader context; the influence of social and political context in its work; and the challenges that this creates for the integrity and legitimacy of its judgments.<sup>164</sup>

It therefore appears fitting to think of APTEL's legal work in this way, it is a craft in that its legal work involves specialization and is in large part about establishing legal stability and continuity in the face of novel circumstances. Its work as that of craftsman arises in and is conditioned by the knowledge, vocabulary and practices of the Indian electricity sector. From such a standpoint, its work as that of a specialist demands an appreciation of and a commitment to the practices, values and interpretive techniques of reasoning operative in this particular community.<sup>165</sup> A major component of APTEL's legal work is to explain to this community, in clear and familiar language, the changing relationships between statutory rules, precedent, regulation and policy, in recognition of the changing social and infrastructural circumstances created by transition, to which it must adapt. In *Green Energy Association*,<sup>166</sup> for example, the Appellate Tribunal made clear that novel legal constructs such as RECs:

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<sup>161</sup> See Fisher (n 5).

<sup>162</sup> Warnock (n 58).

<sup>163</sup> Twining (n 156) 151.

<sup>164</sup> Warnock (n 162).

<sup>165</sup> See also, Warnock (n 162).

<sup>166</sup> *Green Energy Association* (n 9).

‘cannot be compared to other commodities in the market such as shares or goods, because they are based on the fiction of breaking up the cost of power between conventional and non-conventional sources/ components of electricity’.<sup>167</sup>

The Tribunal further explained that:

‘...the concept of REC sought to address the mismatch between availability of renewable energy resources and the requirement of obligated entities to meet their RPO...the REC mechanism was basically aimed at promoting development of renewable energy sources and to provide an alternative mode to renewable energy generators for recovery of project costs through brown and green components’<sup>168</sup>

This legal work is largely viewed as a practical interest in interpretation of regulatory decisions, statutory and policy provisions, but what this overlooks is the fine and continually changing balance between pragmatism and responsiveness needed in APTEL adjudication.<sup>169</sup> Achieving that balance can be fostered through thoughtfulness in legal reasoning, which in turn strengthens the adjudicative integrity of its judgments. My interest, however, is in the skills needed to root and stabilize legal disruption. That is, the expertise needed to integrate with skill the material of rules, principles, regulation and policy into legal doctrine, and reconcile established practice with pragmatic adjustments to disruptions created by transition.<sup>170</sup> Legal stability and continuity can then be viewed as a ‘product of craft techniques which engineer

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<sup>167</sup> *Green Energy Association* (n 9) [12.4]; *Indian Wind Power Association v GERC* (APTEL, 16 Feb 2015) (my emphasis).

<sup>168</sup> *Green Energy Association* (n 9) (my emphasis).

<sup>169</sup> See Cotterrell (n 154) 603-604.

<sup>170</sup> Cotterrell (n 154) 604.

reasonable solutions to shared problems'<sup>171</sup> arising from transition. Those solutions and the reasoning in them root and stabilize disruption.

Participants in the process of energy transition crave certainty and predictability in the law; constructing new energy infrastructure involves a significant commitment of resources after all. The APTEL's capacity to create and foster these legal conditions comes from its legal and judicial craftsmanship, that is, its 'the trained, tradition-determined manner of handling material.'<sup>172</sup> In other words, it comes from its thoughtfulness in legal reasoning and its adjudicative competence. Legal certainty as to what a particular doctrine means now, and predictability as to how it might develop and be applied in future cases, can be explained in terms of the Appellate Tribunal's craftsmanship. The craft of legal interpretation and tribunalised adjudication also offers insight into the legal nature and context of these disputes.<sup>173</sup> This is needed to develop a genuine and responsive understanding of APTEL's contributions to infrastructural change.<sup>174</sup>

Fostering the craft of APTEL adjudication involves thinking about legal reasoning and associated legal skills, such as its expertise in being able to thoughtfully respond to disputes. Adjudicating disputes resulting from transition requires legal imagination, and an important aspect of fostering that legal imagination is to ground it in legal reality.<sup>175</sup> That is, to enhance a tactile understanding of the legal materials with which it works. The case law mapped in

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<sup>171</sup> Cotterrell (n 154) 54.

<sup>172</sup> Cotterrell (n 154) 594.

<sup>173</sup> See Warnock (n 58).

<sup>174</sup> Cotterrell (n 154) 599.

<sup>175</sup> Elizabeth Fisher, 'Legal Imagination and Teaching' in Lavanya Rajamani and Jacqueline Peel (eds), *Oxford Handbook of International Environmental Law* (2nd edn, OUP 2021).

chapter 3, for example, shows a visible disjuncture between what is perceived to be the legal work of the Appellate Tribunal and what it actually entails in the face of an ongoing energy transition. It is much more substantive than what one conventionally pictures it to be. Putting this disjuncture front and center and letting it propel our legal imagination of the Tribunal's legal work, is at the heart of thinking about how to foster the craft of APTEL adjudication. This needs active and engaged legal scholarship.

The somewhat obvious next step is to consider the role of legal scholarship in shaping legal imagination. That begins with a recognition of such scholarship as a body of expertise driven by the desire to do a job well for its own sake.<sup>176</sup> This ought to include an intellectual acknowledgement of the institutional contexts within which it acquires meaning, the materials used, and the challenges inherent in that engagement.<sup>177</sup> Scholarship plays an important role in developing the mental images I refer to at the start of this chapter. It also plays an important role in illuminating, evolving and problematizing them. One of my own struggles in writing this thesis, for example, was confronting the glaring paucity of legal scholarship on the Appellate Tribunal in legal scholarship concerning transition. That paucity brought several intellectual challenges into view- first, the legal challenges raised by transition do not fit into traditional lines of scholarly analysis. This creates difficulties in identifying a research method, developing an intellectual toolkit for legal analysis,<sup>178</sup> and grappling with the discipline-specific vocabularies at work in writing about these disputes.

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<sup>176</sup> Fisher (n 5) 26-27.

<sup>177</sup> Fisher (n 5).

<sup>178</sup> See Elizabeth Fisher and others, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21 (2) JEL 213 for an insightful discussion of the need to address these methodological challenges head on in order to develop this body of scholarship.

It also involves moving across disciplinary boundaries. I, for example, given the nature of energy transition and the kind of disputes it gives rise to, found myself moving between different Bodleian libraries in search of scholarly frameworks that would allow me to make sense of the nature of problems that transition created for APTEL adjudication, whilst also allowing me to capture the nuances of the Appellate Tribunal's reasoning and responses to those problems. This is a difficult intellectual exercise and creates particular challenges for thinking about the work of adjudicative institutions dealing with critical infrastructure and energy transition, and inevitably involves cutting across traditional disciplinary boundaries,<sup>179</sup> e.g., reflecting on the challenges created at the interface of infrastructure and the law.<sup>180</sup> These challenges made obvious why so little had been written about the Appellate Tribunal, but what it also did is encourage me to continue thinking about this legal work, and highlighted the importance of what my study was trying to show. These intellectual and methodological challenges are now beginning to be recognized by a growing body of legal scholarship that is bringing these questions front and center in thinking about the kind of legal scholarship needed to address and respond to the precariousness of our time.<sup>181</sup>

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<sup>179</sup> Maria Lee and others, 'Crossing Disciplines in Planning: A Renewable Energy Case Study' in Ole Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018).

<sup>180</sup> Elizabeth Fisher, 'Sciences, Environmental Laws, and Legal Cultures: Fostering Collective Epistemic Responsibility' in Emma Lees and Jorge Viñuales (eds), *Oxford Handbook of Comparative Environmental Law* (OUP 2019) for perspective on challenges at the interface of science and environmental law and responses to those challenges, and the significance of legal culture and epistemic responsibility in that engagement.

<sup>181</sup> See generally Ole Pederson, 'Introduction' in Ole Pederson (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (CUP 2018); Eloise Scotford, 'Legislation and the Stress of Environmental Problems' (2021) 74 *Current Legal Problems* 299 on crafting legislative responses to precarious environmental problems; see also Elizabeth Fisher, 'Executive Environmental Law' 83 (1) *MLR* 163 on the role of the executive in defining the norms, ambitions and accountabilities of environmental law in precarious political environments; Eloise Scotford, 'Environmental Principles Across Jurisdictions: Legal Connectors and Catalysts' in Emma Lees and Jorge Viñuales (eds), *Oxford Handbook of Comparative Environmental Law* (OUP 2019) on how legal principles can act as complex intellectual connectors in thinking about environmental problems across jurisdictions and catalysts for legal innovation.

This scholarship emphasizes the need to develop a rigorous discourse about the scholarly method in thinking about the complex relationship between law, adjudication and socio-technical change. The goal of scholarship in developing legal imagination can also be that of illuminating and bringing into view, as my aim has been in this study. By showing that which exists, specifically that which is hidden in plain sight, I encourage the reader to look closer at the legal realities that constitute our present and are also actively shaping our future. I also show that law can develop in ‘unexpected’ ways and in ‘unexpected’ places.<sup>182</sup> This unexpectedness is both a product and consequence of our legal sightlines and the mental images that shape and limit our engagement with the law and its institutions.

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<sup>182</sup> See 2021 Journal of Environmental Law Workshop ‘Different Voices, Different Knowledges’.

## E CONCLUSION

The aim of this thesis was to show the substantive contributions of law and tribunalised adjudication in India's transition to renewable energy. By making visible APTEL's role in crafting legal understandings about energy transition and the construction of associated solar infrastructure, and what this means for the legal present and future, this thesis offered a thick legal account of what APTEL's legal work entails and the significance of that work in co-producing energy transition in the Indian legal order. This inevitably also made the substantive role of law visible in this process and, as such, sought to encourage lawyers, adjudicators and law scholars to think more deeply about tribunalised adjudication and its adjudicative 'competence'<sup>183</sup> in responding to disputes raised by energy transition. This competence is integral to creating the legal, regulatory and administrative stability needed to achieve desired energy futures.

To that end, this chapter was about legal imagination and how it can be fostered through thoughtful legal reasoning, and vice versa. It encouraged the reader to widen their repertoire of mental images in thinking about the legal work and the contributions of tribunalised adjudication to the process of energy transition. In widening that legal imagination, it drew attention to the role of the APTEL in rooting and stabilizing legal friction and disruptions associated with infrastructural change. It made a case for fostering thoughtfulness in legal reasoning as a step towards furthering the adjudicative competence of APTEL's legal work. It argued that the manner in which we transition towards a certain energy future depends on the thoughtfulness with which adjudicative institutions like the APTEL reason and respond to disputes arising from this process. The role of law and adjudication tends to be invisible in thinking about energy transition, despite their fundamental role in constructing, organizing and

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Fisher and Shapiro (n 8) 296.

operationalizing the infrastructural changes associated with this process at an everyday level. We hardly notice their presence. The APTEL's substantive yet unobtrusive presence in the legal landscape of this transition ought to attract robust legal scholarship as a site to study how this legal reasoning as a form of craftsmanship both embeds and stabilizes the precariousness of transformative processes.

The role of adjudication in creating legal stability is acknowledged, but the capacity and proficiency with which tribunals like the APTEL are rooting legal disruption, in a metaphoric sense, is equally important, especially in thinking about their institutional role and contributions in constructing a legal understanding about energy transition and associated infrastructure. To that end, this thesis offered a thicker picture of the APTEL as a pragmatic legal institution, by showing that this pragmatism includes thinking functionally, rather than just instrumentally.<sup>184</sup> APTEL decision-making in this sense, is a joint intellectual exercise that operationalizes its expertise and 'practical intelligence'<sup>185</sup> about the Indian electricity sector, solar infrastructure, and the regulation thereof, and their interaction with the many frameworks constituting the legal landscape of the on-going energy transition, mapped in chapter 2.

The relationship between this kind of pragmatism and APTEL's co-production of legal knowledge about energy transition and associated infrastructure emphasizes that the idea of rootedness ought to find a place in the way we view law's capacity to firmly fix yet remain flexible to the ebbs and flows of a changing energy and infrastructural landscape. Fostering our legal imagination of law and adjudication in this way at once brings the 'hiddenness' of institutions like the APTEL into view, a mental picture of our complex legal present, and glimpse at our legal future.

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<sup>184</sup> See Fisher and Shapiro (n 8) 142.

<sup>185</sup> Fisher and Shapiro (n 8) 142 citing John Dewey, *The Public and Its Problems* (Ohio University Press, 1954).

## BIBLIOGRAPHY

### BOOKS

- Abram S and others (eds), *Electrifying Anthropology: Exploring Electrical Practices and Infrastructures* (Routledge 2020)
- Arthurs H, 'Without the Law': *Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985)
- Ascher W and Krupp C (eds), *Physical Infrastructure Development: Balancing the Growth, Equity, and Environmental Imperatives* (Palgrave Macmillan 2010)
- Atwood M, *Burning Questions: Essays and Occasional Pieces 2004-21* (Penguin Random House 2022)
- Austin G, *The India Constitution: Cornerstone of a Nation* (Oxford University Press India 1999)
- Barber P and Board C, *Tales from the Map Room: Fact and Fiction about Maps and their Makers* (BBC Books 1993)
- Baviskar A, *In the Belly of the River: Tribal Conflicts of Development in the Narmada Valley* (2nd edn, Oxford University Press India 2004)
- Baxi U, *Courage, Craft, and Contention: The Indian Supreme Court in the Eighties* (NM Tripathi 1985)
- Beckert J, *Imagined Futures: Fictional Expectations and Capitalist Dynamics* (Harvard University Press 2016)
- Bhatia G, *The Transformative Constitution: A Radical Biography in Nine Acts* (Harper Collins 2019)
- Bogojević S, *Emissions Trading Schemes: Markets, States and Law* (Hart 2013)
- Brian Tamanaha, *On The Rule of Law: History, Politics and Theory* (Cambridge University Press 2004)
- Brotton J and Millea N, *Talking Maps* (Bodleian Library University of Oxford 2019)
- Burrows A, *Thinking about Statutes: Interpretation, Interaction, Improvement* (Cambridge University Press 2018)
- Callon M, *The Laws of the Markets* (Blackwell 1998)
- Cane P, *Administrative Law* (5th edn, Oxford University Press 2011)
- Cane P, *Administrative Tribunals and Adjudication* (Hart 2009)
- Choudhry S and others (eds), *Oxford Handbook on the Indian Constitution* (Oxford University Press India 2016)
- Collins H and Evans R (eds), *Rethinking Expertise* (University of Chicago Press 2007)
- Collins H, *Are We All Scientific Experts Now?* (Polity 2014)
- Collins H, *Tacit and Explicit Knowledge* (University of Chicago Press 2013)
- Cotterrell R, *Oxford Handbook of Comparative Law and Legal Culture* (Oxford University Press 2006)
- Das G, *India Grows at Night: A Liberal Case for a Strong State* (Allen Lane 2012)
- De Botton A, *The Architecture of Happiness* (Penguin 2006)

De R, *A People's Constitution: The Everyday Life of Law in the Indian Republic* (Princeton University Press 2018)

Del Mar M, *Artefacts of Legal Inquiry: The Value of Imagination in Adjudication* (Hart 2020)

Dewey J, *The Public and Its Problems* (Ohio University Press 1954)

Dobbin C, *London Underground Maps: Art, Design and Cartography* (Ashgate 2012)

Dubash N (ed), *India in a Warming World: Integrating Climate Change and Development* (Oxford University Press India 2020)

Dubash N and Morgan B, *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies* (Oxford University Press 2013)

Dubash N and others (eds), *Mapping Power: The Political Economy of Electricity in India's States* (Oxford University Press India 2018)

Dubash N, *Handbook of Climate Change and India: Development, Politics, and Governance* (Oxford University Press 2012)

Edgerton D, *The Shock of the Old: Technology and Global History Since 1900* (Profile Books 2006)

Endicott T, *Administrative Law* (5th edn, Oxford University Press 2021)

Fisher E and Shapiro S, *Administrative Competence: Re-imagining Administrative Law* (Cambridge University Press 2021)

Fisher E, *Environmental Law: A Very Short Introduction* (Oxford University Press 2017)

Ghosh A, *The Great Derangement: Climate Change and the Unthinkable* (Penguin 2016)

Ghosh S (ed), *Indian Environmental Law: Key Concepts and Principles* (Orient Black Swan 2019)

Goldemberg J and Lucon O, *Energy, Environment and Development* (2nd edn, Earthscan 2010)

Graham S (ed), *Disrupted Cities: When Infrastructure Fails* (Routledge 2010)

Guha R (ed), *Makers of Modern India* (Belknap Press 2013)

Guha R, *Environmentalism: A Global History* (Penguin 2014)

Guha R, *India After Gandhi: The History of the World's Largest Democracy* (London Macmillan 2017)

Harvey P and Knox H, *Roads: An Anthropology of Infrastructure and Expertise* (Cornell University Press 2015)

Harvey P and others (eds), *Infrastructures and Social Complexity: A Companion* (Routledge 2016)

Hochschild A, *Strangers in their Own Land: Anger and Mourning on the American Right* (New Press 2016)

Hommels A, *Unbuilding Cities: Obduracy in Urban Socio-technical Change* (MIT Press 2005)

Jasanoff S (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004)

Jasanoff S and Kim S (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015)

Jasanoff S, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton University Press 2005)

Jasanoff S, *Science at the Bar: Law, Science, and Technology in America* (Harvard University Press 1997)

Jelley, *Renewable Energy: A Very Short Introduction* (Oxford University Press 2020)

Jenkins N, *Energy Systems: A Very Short Introduction* (Oxford University Press 2019)

Kapur D and Khosla M (eds), *Regulation in India: Design, Capacity, Performance* (Hart 2019)

Khilnani S, *The Idea of India* (Penguin 2012)

Khosla M, 'Supreme Court' in Kapur D and others (eds), *Rethinking Public Institutions in India* (2017)

Khosla M, *India's Founding Moment: The Constitution of a Most Surprising Democracy* (Harvard University Press 2020)

Khosla M, *Oxford Short Introductions: The Indian Constitution* (Oxford University Press 2012)

Kirpal BN and others eds, *Supreme But Not Infallible: Essays in Honour of the Supreme Court of India* (Oxford University Press India 2001)

Kirpal BN and Subramaniam G (eds), *Supreme But Not Infallible: Essays in Honour of the Supreme Court of India* (Oxford University Press India 2004)

Krishnaswamy S, *Democracy and Constitutionalism in India: A Study of the Basic Structure Doctrine* (Oxford University Press India 2011)

Kumar A and Chatterjee S, *Electricity Sector in India: Policy and Regulation* (Oxford University Press 2012)

Latour B, *The Making of Law: An Ethnography of the Conseil D'Etat* (Polity 2010)

MacEachren A, *How Maps Work: Representation, Visualization and Design* (Guilford Press 1995)

MacKenzie D, *Material Markets: How Economic Agents are Constructed* (Oxford University Press 2009)

Marmor A, *Interpretation and Legal Theory* (Clarendon Press 1992)

Mashaw J, *Bureaucratic Justice: Managing Social Security Disability Claims* (Yale University Press 1983)

Mashaw J, *Greed, Chaos and Governance: Using Public Choice to Improve Public Law* (Yale University Press 1997)

Mashaw J, *Reasoned Administration and Democratic Legitimacy: How Administrative Law Supports Democratic Government* (Cambridge University Press 2018)

McLeod I, *Principles of Legislative and Regulatory Drafting* (Hart 2009)

Mehta D, 'The Judicial Implementation of Environmental Law in India' in Ghosh S (ed) *Indian Environmental Law: Key Concepts and Principles* (Orient Black Swan 2019)

Miller N, *Mapping the City: The Language and Culture of Cartography in the Renaissance* (Continuum 2003)

Morgan B and Yeung K, *An Introduction to Law and Regulation* (CUP 2007)

Nariman F, *India's Legal System: Can It Be Saved?* (Penguin Books India 2006)

Nurminen J and others, *The Mapmakers' World: A Cultural History of the European World Map* (The Pool of London Press 2015)

Peel J and Osofsky H, *Climate Change Litigation: Regulatory Pathways to Cleaner Energy* (Cambridge University Press 2017)

Polanyi M, *The Tacit Dimension* (University of Chicago Press 2009)

Porter T, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton University Press 2020).

Powers R, *The Overstory* (Vintage 2019)

Rajan MG, *Global Environmental Politics: India and the North-South Politics of Global Environmental Issues* (Oxford University Press 1997)

Ramesh J, *Green Signals: Ecology, Growth, and Democracy in India* (Oxford University Press India 2015)

Ramesh M, *The Climate Solution: India's Climate-Change Crisis and What We Can Do About It* (Hachette India 2019)

Rankin W, *After the Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century* (University of Chicago Press 2016)

Rich D and others (eds), *The Solar Energy Transition: Implementation and Policy Implications* (Westview Press 1983)

Roy A, *The Algebra of Infinite Justice* (Flamingo 2002)

Roy A, *The Cost of Living* (Flamingo 1999)

Sahu G, *Environmental Jurisprudence and the Supreme Court: Litigation, Interpretation, Implementation* (Orient Black Swan 2014)

Sathe SP, *Administrative Law* (7<sup>th</sup> edn, LexisNexis India 2013)

Scotford E, *Environmental Principles and the Evolution of Environmental Law* (Hart 2017)

Sennett R, *Building and Dwelling: Ethics for the City* (Penguin 2018)

Sennett R, *The Craftsman* (Allen Lane 2008)

Sheldrake M, *Entangled Life: How Fungi Make Our World, Change Our Minds, and Shape Our Futures* (Vintage 2020)

Singh MP and Kumar N, *The Indian Legal System: An Enquiry* (Oxford University Press India 2019)

Smil V, *Energy Transitions: History, Requirements, Prospects* (Praeger 2010)

Smil V, *How the World Really Works: A Scientist's Guide to Our Past, Present and Future* (Viking 2022)

Solnit R, *Infinite Cities: A Trilogy of Atlases: San Francisco, New Orleans, New York* (University of California Press 2019)

Sparrow M, *The Regulatory Craft: Controlling Risks, Solving Problems, and Managing Compliance* (Brookings Institution Press 2000)

Stacey J, *The Constitution of Environmental Emergency* (Hart 2018)

Tett G, *The Silo Effect: Why Putting Everything in its Place isn't Such a Bright Idea* (Little Brown 2015)

Thiruvengadam A, *The Constitution of India: A Contextual Analysis* (Bloomsbury 2017)

Tsing A, *Friction: An Ethnography of Global Connection* (Princeton University Press 2005)

Tsing A, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton University Press 2015)

Urban F, *Low Carbon Development: Key Issues* (Routledge 2013)

Urban F, *Low Carbon Transitions for Developing Countries* (Routledge 2014)

Visvanathan S, *A Carnival for Science: Essays on Science, Technology and Development* (Oxford University Press India 1997)

Visvanathan S, *Theatres of Democracy: Between the Epic and the Everyday* (Chandan Gowda ed, Harper Collins 2016)

Waldron J, *Political Political Theory* (Harvard University Press 2016)

Warnock C, *Environmental Courts and Tribunals: Powers, Integrity and the Search for Legitimacy* (Hart 2020)

Zilman D and others (eds), *Innovation in Energy Law and Technology: Dynamic Solutions for Energy Transitions* (Oxford University Press 2018)

### **BOOK CHAPTERS**

Akerman J, 'Finding Our Way' in Akerman J and Karrow R (eds), *Maps: Finding Our Place in the World* (University of Chicago Press 2007)

Arthurs H, 'Paradigms of Law' in 'Without the Law': *Administrative Justice and Legal Pluralism in Nineteenth-Century England* (University of Toronto Press 1985)

Callon M, 'An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology' in Callon M (ed), *The Laws of the Markets* (Blackwell 1998)

Callon M, 'Introduction: The Embeddedness of Economic Markets in Economics' in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998)

Drèze J and Sen A, 'A New India?' in *An Uncertain Glory: India and its Contradictions* (Penguin 2013)

Dubash N, 'New Regulatory Institutions in Infrastructure: From De-politicization to Creative Politics' in Kapur D and others (eds), *Rethinking Public Institutions in India* (Oxford University Press India 2017)

Fisher E, 'Administrative Law, Pluralism and the Legal Construction of Merits Review in Australian Environmental Courts and Tribunals' in Harlow C and others (eds), *Administrative Law in a Changing State: Essays in Honour of Mark Aronson* (Hart 2008)

Fisher E, 'Administrative Tribunals: An Essay about the Legal Imagination of Administrative Law Scholars' in Goudkamp J and others (ed), *Taking Law Seriously: Essays in Honour of Peter Cane* (Bloomsbury 2022)

Fisher E, 'Afterword: Law in Unexpected Places' in Fisher E and Preston B (eds), *An Environmental Court in Action: Function, Doctrine and Process* (Bloomsbury 2022)

Fisher E, 'Back to Basics: Thinking About the Craft of Environmental Law Scholarship' in Pedersen O (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (Cambridge University Press 2018)

Fisher E, 'Expanding Legal Imagination' in *Environmental Law: A Very Short Introduction* (Oxford University Press 2017)

Fisher E, 'Expert Executive Power, Administrative Constitutionalism and Co-production: Why They Matter' in Weimer M and de Ruijter A (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017)

Fisher E, 'Imagining Technology and Environmental Law' in Brownsword R and others (eds), *Oxford Handbook of Law, Regulation and Technology* (Oxford University Press 2016)

Fisher E, 'Legal Imagination and Teaching International Environmental Law' in Rajamani L and Peel J (eds), *Oxford Handbook of International Environmental Law* (2 edn, Oxford University Press 2021)

Fisher E, 'Making Sense of the WTO Sanitary and Phytosanitary Agreement: An Essay about Scholarly Expertise' in Weimer M and de Ruijter A (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Bloomsbury 2017)

Fisher E, 'Sciences, Environmental Laws, and Legal Cultures: Fostering Collective Epistemic Responsibility' in Lees E and Viñuales J (eds), *Oxford Handbook of Comparative Environmental Law* (Oxford University Press 2019).

Fisher E, 'Through 'Thick' and 'Thin': Comparison in Administrative Law and Regulatory Studies Scholarship' in Cane P and others (eds), *Oxford Handbook of Comparative Administrative Law* (Oxford University Press 2020).

Fisher E, 'Unpacking the Toolbox: Or Why the Public/ Private Divide is Important in EC Environmental Law' in Freedland M and Auby J (eds), *The Public Law/Private Law Divide: Une Entente Assez Cordiale?* (Hart 2006).

Hancher L and Moran M, 'Organizing Regulatory Space' in Hancher L and Moran M (eds), *Capitalism, Culture and Economic Regulation* (Oxford University Press 1989)

Jaitley A, 'Renewable Energy' in Kapur D and Dubash N (eds), *Regulation in India: Design, Capacity, Performance* (Hart Studies in Comparative Public Law 2019)

Jasanoff S 'Future Imperfect' in Jasanoff S and Kim S (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015)

Jasanoff S, 'Constitutions of Modernity: Science, Risk and Governable Subjects' in Weimer M and de Ruijter A (eds), *Regulating Risks in the European Union: The Co-production of Expert and Executive Power* (Hart 2017)

Jasanoff S, 'Imagined and Invented Worlds' in Jasanoff S and Kim S (eds), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2015)

Jasanoff S, 'The Idiom of Co-production' in Jasanoff S (ed), *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2004)

Jasanoff S, 'The Intersections of Science and Law' in *Science at the Bar: Law, Science, and Technology in America* (Harvard University Press 1997)

Khilnani S, 'Temples of the Future' in *The Idea of India* (Penguin 2012)

Kingsbury B and Donaldson M, 'Roles of Law in the Regulatory States of the South' in Dubash N (ed), *The Rise of the Regulatory State of the South* (Oxford University Press 2013)

Le Guin U, 'The Carrier Bag Theory of Fiction' in *Dreams Must Explain Themselves: The Selected Non-fiction of Ursula K. Le Guin* (Gollancz 2018)

Le Guin U, 'The Operating Instructions' in *Dreams Must Explain Themselves: The Selected Non-Fiction of Ursula K Le Guin* (Gollancz 2018)

Lee M and others, 'Crossing Disciplines in Planning: A Renewable Energy Case Study' in Pedersen O (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (Cambridge University Press 2018)

Llewellyn K, 'Appellate Judging as a Craft' in *The Common Law Tradition: Deciding Appeals* (Little, Brown & Co. 1960)

Orwell G, 'In Front of Your Nose' in *Narrative Essays* (Harvill Secker) (Penguin 2009)

Padmanabhan A, 'Foundations for Sustainable Growth: India's Constitution and its Supreme Court' in Jacobsen K (ed), *Routledge Handbook of Contemporary India* (Routledge 2018)

Pederson O, 'Introduction' in Pederson O (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose, Shape and Direction* (Cambridge University Press 2018)

Psygkas A, 'Accountability' in Cane P and others (eds), *Oxford Handbook of Comparative Administrative Law* (Oxford University Press 2020)

- Rajamani L, 'The Indian Way: Exploring Synergies between Development, Energy and Climate Goals' in Zillman D and others (eds), *Beyond the Carbon Economy: Energy Law in Transition* (Oxford University Press 2008)
- Ramesh J, 'Energy Dilemmas' in *Green Signals: Ecology, Growth, and Democracy in India* (Oxford University Press India 2015)
- Ramesh J, 'Gross to Green' in *Green Signals: Ecology, Growth, and Democracy in India* (Oxford University Press India 2015)
- Robinson D, 'Energy as Critical Infrastructure' in *The Energy Economy: Practical Insight to Public Policy and Current Affairs* (Palgrave Macmillan 2015)
- Roy A, 'The Greater Common Good' in Arundhati Roy, *The Algebra of Infinite Justice* (Flamingo 2002)
- Scotford E, 'Environmental Principles Across Jurisdictions: Legal Connectors and Catalysts' in Lees E and Viñuales J (eds), *Oxford Handbook of Comparative Environmental Law* (Oxford University Press 2019)
- Twinning W, 'Academic Law and Legal Development' Taylor Lectures (University of Lagos Law Faculty 1975)
- Waldron J, 'Clarity, Thoughtfulness, and the Rule of Law' in Geert Keil and Ralf Poscher (eds), *Vagueness and Law: Philosophical and Legal Perspectives* (Oxford University Press 2016)
- Waldron J, 'The Rule of Law in Public Law' in Elliott M and Feldman D (eds), *The Cambridge Companion to Public Law* (Cambridge University Press 2015)
- Waldron J, 'The Rule of Law' in *The Law* (Routledge 1990)
- Winthereik BR and Yarrow T, 'Current Thinking- An Introduction' in Abram S and others (eds), *Electrifying Anthropology: Exploring Electrical Practices and Infrastructures* (Routledge 2020)
- Yergin D, 'Climate Map' in *The New Map: Energy, Climate, and the Clash of Nations* (Penguin 2021)

## **JOURNAL ARTICLES**

- Bell J and Fisher E, 'Exploring a Year of Administrative Law Adjudication in the Administrative Court' (2021) *Public Law* 505
- Bhardwaj A and Khosla R, 'Superimposition: How Indian City Bureaucracies are Responding to Climate Change' (2021) 4 (3) *Environment and Planning E: Nature and Space* 11
- Bogojević S and Zou M, 'Making Infrastructure 'Visible' in Environmental Law: The Belt and Road Initiative and Climate Change Friction' (2021) 10 (1) *Transnational Environmental Law* 35
- Bogojević S, 'Ending the Honeymoon: Deconstructing Emissions Trading Discourses' (21) *On Making Infrastructure Visible: Putting the Non-Humans to Rights* 443
- Bogojević S, 'EU Climate Change Litigation, the Role of European Courts, and the Importance of Legal Culture' (2013) 13 (3) *Law and Policy* 184
- Boute A, 'Environmental Force Majeure: Relief from Fossil Energy Contracts in the Decarbonization Era' (2021) 33 *Journal of Environmental Law* 339

Busby J and Shidore S, 'Solar Federalism: What Explains the Variation in Solar Capacity Additions in India's States?' (2021) 71 *Energy Research and Social Science* 101815

Carnwarth R, 'Climate Change Adjudication After Paris: A Reflection' (2016) 28 *Journal of Environmental Law* 5

Cotterrell R, 'Realism, Pragmatism and the Appellate Judge' (1991) 54 (4) *Modern Law Review* 0026

Deshmukh R and others, 'India's Solar Mission: Procurement and Auctions' (2011) 46 (28) *Economic and Political Weekly* 22

Dubash N and others, 'India & Climate Change: Evolving Ideas & Increasing Policy Engagement' (2018) 43 *Annual Reviews* 395

Feldman D, 'The Nature of Legal Scholarship' (1989) 52 *Modern Law Review* 503

Fisher E and others, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21 (2) *Journal of Environmental Law* 213

Fisher E and others, 'Rethinking Judicial Review of Expert Agencies' (2015) 93 *Texas Law Review* 1681.

Fisher E and others, 'The Legally Disruptive Nature of Climate Change' (2017) 80 *Modern Law Review* 173

Fisher E, 'Climate Change Litigation, Obsession, and Expertise: Reflecting on the Scholarly Response to *Massachusetts v EPA*' (2013) 13 (3) *Law and Policy* 236

Fisher E, 'Environmental Law as 'Hot' Law' (2013) 25 *Journal of Environmental Law* 347

Fisher E, 'Executive Environmental Law' 83 (1) *Modern Law Review* 163

Fisher E, 'Law and Energy Transitions: Wind Turbines and Planning Law in the UK' (2018) 38 (1) *Oxford Journal of Legal Studies* 28

Fisher E, 'Strangers in Their Own Land: Anger and Mourning on the American Right by Arlie Russel Hochschild and *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* by Anna Lowenhaupt Tsing' (2017) 29 (2) *Journal of Environmental Law* 383

Fisher E, 'The Enigma of Expertise' (2016) 28 (3) *Journal of Environmental Law* 551

Fisher E, 'The European Union in the Age of Accountability' (2004) 24 *Oxford Journal of Legal Studies* 495

Fisher E, 'The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers' (2012) 1 *Transnational Environmental Law* 43

Fisher E, 'Environmental Law as 'Hot' Law' (2013) 25(3) *Journal of Environmental Law* 347

Fisher L, 'Challenges for the EU Climate Change Regime' (2020) 21 *German Law Journal* 5

Fisher L, 'Climate Change Litigation, Obsession and Expertise: Reflecting on the Scholarly Response to *Massachusetts v EPA*' (2013) 35 *Law & Policy* 231

Fisher L, 'Environmental Law, Scholarship, and Epistemic Responsibility' (2022) 33 *On Making Infrastructure Visible: Putting the Non-Humans to Rights* 521

Fiss O, 'The Forms of Justice' (1973) 93 *Harvard Law Review* 1

Ghosh S and others, 'Appellate Authorities under Pollution Control Laws in India: Powers, Problems and Potential' 14 *Law, Environment and Development Journal* 49

Gill G, 'A Green Tribunal for India' (2010) 22 *Journal of Environmental Law* 461

GP Girish and others, 'Renewable Energy Certificate Trading Through Power Exchanges in India' (2015) 5 (3) *International Journal of Energy Economics & Policy* 805

Hall N and others, 'Societal Acceptance of Wind Farms: Analysis of Four Common Themes Across Australian Case Studies' (2013) 58 *Energy Policy* 200

Harriss-White B and others, 'Political Architecture of India's Technology System for Solar Energy' (2009) 44 *Economic and Political Weekly* 49

Hilson C, 'Framing Time in Climate Change Litigation' (2019) 9 (3) *Oñati Socio Legal Series* 361

Jasanoff A, 'A New Climate for Society' (2010) 27 *Theory, Culture and Society* 232

Jasanoff S and Kim S, 'Sociotechnical Imaginaries and National Energy Policies' (2013) 22 *Science as Culture* 189

Larkin B, 'The Politics and Poetics of Infrastructure' (2013) 42 *Annual Review of Anthropology* 327

Lee M and others, 'Public Engagement in Decision-Making on Major Wind Energy Projects' (2016) 27 *Journal of Environmental Law* 139

Lee M and others, 'Techniques of Knowing in Administration: Co-production, Models and Conservation Law' (2018) 45 (3) *Journal of Law and Society* 427

Lee M, 'Knowledge and Landscape in Wind Energy Planning' (2017) 37 *Legal Studies* 3

Lee R and Stokes E, 'Environmental Governance: Reconnecting the Global and Local' (2009) 36 (1) *Journal of Law and Society* 1

Llewellyn K, 'The Normative, the Legal, and the Law-Jobs: The Problem of Juristic Method' (1940) 49 *Yale Law Journal* 1355

Llewellyn K, 'The Crafts of Law Re-Valued' (1942) 28 *American Bar Association Journal* 801

Malakar Y and others, 'The Temporalities of Energy Justice: Examining India's Energy Policy Paradox Using Non-Western Philosophy' (2019) 49 *Energy Research & Social Science* 16

Markell D and Ruhl JB, 'An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?' (2012) 64 *Florida Law Review* 15

Mostyn N, 'The Craft of Judging and Legal Reasoning' 12 (3) *Judicial Review* 359

Nelken D, 'Thinking About Legal Culture' (2014) 1 *Asian Journal of Law and Society* 1

Pedersen O, 'A Study of Administrative Environmental Decision-making before the Courts' (2019) 31 *Journal of Environmental Law* 59

Pinch T, 'On Making Infrastructure Visible: Putting the Non-Humans to Rights' (2010) 40 *Cambridge Journal of Economics* 77

Porter T, 'How Science Became Technical' (2009) 100 (2) *Isis* 293

Porter T, 'Thin Description: Surface and Depth in Science and Science Studies' (2012) 27 *Osiris* 209

Preston B, 'Characteristics of Successful Environmental Courts and Tribunals' (2014) 26 *Journal of Environmental Law* 365

Preston B, 'The Contribution of Courts in Tackling Climate Change' (2016) 28 *Journal of Environmental Law* 11

Rajamani L, 'India and Climate Change: What India Wants, Needs, and Needs to Do' (2008) 8 (3) *Indian Journal of International Law* 340

Rajamani L, 'India's Approach to International Law in the Climate Change Regime' (2018) 57 *Indian Journal of International Law* 1

Reichman A, 'The Dimensions of Law: Judicial Craft, Its Public Perception, and the Role of the Scholar' 95 *California Law Review* 1619

Rosencranz A and Sahu G, 'Assessing the National Green Tribunal after Four Years' (2014) 5 Journal of Indian Legal Studies 191

Schraffs B, 'Law as Craft' (2001) 54 Vanderbilt Law Review 2245

Scotford E, 'Legislation and the Stress of Environmental Problems' (2021) 74 Current Legal Problems 299

Shereef RM and Khaparde SA, 'Current Status of REC Mechanism in India and Possible Policy Modifications to Way Forward' (2013) 61 Energy Policy 1443

Silbey S, 'After Legal Consciousness' (2005) 1 Annual Review of Anthropology 323

Singh A, 'Towards a Competitive Market for Electricity and Consumer Choice in the Indian Power Sector' (2010) 38 Energy Policy 4196

Srikrishna BN, 'The Indian Legal System' (2008) 36 (2) International Journal of Legal Information 242

Stokes E, 'Wanted: Professors of Foresight in Environmental Law!' (2019) 31 On Making Infrastructure Visible: Putting the Non-Humans to Rights 175

Twining W, 'The Idea of Juristic Method: A Tribute to Karl Llewellyn' (1993) 48 (1) University of Miami Law Review 119

Viswanathan A, 'Future Shock: Does India's Electricity Act 2003 Have the Power to Reverse A Decade of Failed Reforms?' (2003) International Energy Law Taxation Rev 313

Waldron J, 'Thoughtfulness and the Rule of Law' Public Law & Legal Theory Research Paper Series Working Paper No 11-13 (New York University School of Law 2011)

Warnock C, 'Environment and the Law: Normative Force of Context and Constitutional Challenges' (2020) 32 Journal of Environmental Law 365

Warnock C, 'Reconceptualising Specialist Environment Courts and Tribunals' (2017) 37 Legal Studies 391

Webber J, 'Culture, Legal Culture, and Legal Reasoning: A Comment on Nelken' (2004) 29 Australian Journal of Legal Philosophy 27

## **REPORTS**

Birol F and Kant A, 'India's Clean Energy Transition is Rapidly Underway, Benefiting the Entire World' (International Energy Agency, 10 Jan 2022)

Dutt A and Aggarwal M, State of Renewable Energy Sector: Drivers, Risks and Opportunities (Council on Energy, Environment and Water, 2018)

Forum of Regulators, Policies on Renewables: Report (2008)

Ghosh A and others, Reforming the Tribunals Framework in India: An Interim Report (Vidhi Centre for Law and Policy, 2018)

International Energy Agency, India 2020: Energy Policy Review (2020)

International Institute for Sustainable Development and others, India's Energy Transition: Mapping Subsidies to Fossil Fuels and Clean Energy in India (GSI Summary Report, Nov 2017)

Janardhan N, Transition to Energy Secure Future: Policies Enabling Energy Transition in India (Institute for Global Environmental Strategies, 2012)

Joshi M and Khosla R, India: Meeting Energy Needs for Development While Addressing Climate Change in Sustainable Energy in the G20: Prospects for a Global Energy Transition (Institute for Advanced Sustainability Studies 2016)

Kaladharan M, 'Renewable Energy in India: An Analysis of the Regulatory Environment and Evolving Policy Trends' (Initiative on Climate Energy and Environment, Centre for Policy Research, New Delhi, 2016)

Law Commission of India, Assessment of Statutory Frameworks of Tribunals in India (Report No 272, 2017)

Manu Aggarwal and Arjun Dutt, State of Renewable Energy Sector: Drivers, Risks and Opportunities (Council on Energy, Environment and Water, 2018)

Mukherjee M, India's Progress on its Climate Action Plan: An Update in Early 2022 (Oxford Institute for Energy Studies, Mar 2022)

National Electricity Policy- A Review Thirteenth Report (10 August 2017)

Niti Ayog Government of India and others, The Indian Power Sector: Low Carbon Transition Strategy for Renewable Energy Integration (2018)

Niti Ayog Government of India, Report on India's Renewable Electricity Roadmap 2030

Pargal S and Banerjee SG, More Power to India: The Challenge of Electricity Distribution (The World Bank, 2014)

Planning Commission, 'Report of the Working Group on Energy Policy' (1979)

Planning Commission, 'Sixth Five Year Plan' (1980)

Sanyal D and others, Reforming the Tribunals Framework in India: An Interim Report (Vidhi Centre for Law and Policy, 2018)

Standing Committee on Energy (2002) Thirteenth Lok Sabha, Ministry of Power Thirty First Report on The Electricity Bill 2001 (Lok Sabha Secretariat, 2002)

The World Bank, World Development Report 1994: Infrastructure for Development (Oxford University Press, 1994)

## **PRESS RELEASES**

Ministry for New and Renewable Energy Government of India, Renewable Energy Sector Makes Rapid Strides in 2019 (Press Information Bureau 2020)

Ministry for New and Renewable Energy Government of India, Deployment of Renewable Energy (Press Information Bureau 2019)

Ministry for New and Renewable Energy Government of India, Generation of Solar Power (Press Information Bureau 2019)

Ministry of New and Renewable Energy Government of India, A Path Breaking Journey in Renewable Energy Through the Last 4 Years (Press India Bureau 2018)

Ministry of New and Renewable Energy Government of India, A Path Breaking Journey in Renewable Energy Through the Last 4 Years (Press Information Bureau 2018)

Ministry of New and Renewable Energy Government of India, Year End Review (Press Information Bureau 2017)

Ministry of New and Renewable Energy Government of India, India's INDC Targets (Press Information Bureau 2016)

Ministry of New and Renewable Energy Government of India, India's INDC Targets (Press India Bureau 2016)

Ministry of New and Renewable Energy Government of India, Year End Review (Press Information Bureau 2016).

### **NEWSPAPER ARTICLES**

Anand U, 'Better to Wind Up Tribunals If Members Can't Follow Propriety: SC' Hindustan Times (26 Jan 2022)

Jairaj B, 'India's Solar Capacity: Milestones and Challenges' The Hindu (16 Mar 2022)

Karan M, 'How India in a Short Period of Time Has Become the Cheapest Producer of Solar power' The Economic Times (22 July 2019)

Op-Ed, 'View: APTEL's Judgement on TN DISCOM Welcome, But Disputes Over Compensation Amount Might Persist' The Economic Times (07 Aug 2021)

Press Trust of India 'APTEL to Hear Delhi DISCOMs Plea to Let Them Stop Buying Costlier Power from NTPC's Dadri I Plant' The Print (23 Jan 2022)

Press Trust of India, 'DISCOMs are Instrumentalities of the State within Article 12: Supreme Court' Outlook (02 Feb 2022)

Press Trust of India, 'Every Action of State is Required to be Guided by the Touchstone of Non-Arbitrariness' The Economic Times (02 Feb 2022)

Sirur S, 'Green Bonds, Push for Indigenous Solar Panels, EVs: Spotlight on Climate Change in Budget 2022' The Print (1 Feb 2022)

### **THESIS**

Mehta D, 'The Environmental Rule of Law in India' (DPhil thesis, University of Oxford 2017).  
Malsukhum V, Legal Culture, Legality and the Determination of the Grounds of Judicial Review of Administrative Action in England and Australia (DPhil thesis, University of Oxford 2018).

Jannu N, 'Constructing the Present, Forming the Future: The Role of Courts in India's Transition to Renewable Energy' (MPhil thesis, University of Oxford 2019).

### **BLOGS**

Fisher E, 'Climate Change, Legal Change, and Legal Imagination' (UCL The Climate Change and Rule of Law Blog, 13 Dec 2021)

Ranjan R, 'Unilateral Termination of PPAs by DISCOMs is Against Public Interest – Supreme Court' (Mercom Clean Energy Insights)

Saran S, 'India's Climate Change Policy: Towards a Better Future' (Ministry of External Affairs Government of India 2019)

Sengupta R, 'Landmark Verdict on RE Power Curtailment By APTEL' (Solar Quarter, 10 Aug 2021)

## **CONFERENCES/ DISCUSSION PANELS**

2021 Journal of Environmental Law Workshop 'Different Voices, Different Knowledges'  
Centre for Policy Research, Understanding India's Energy Transition in Global Context: Panel  
Discussion (2019)