



A QUARTERLY JOURNAL FOR DEBATING ENERGY ISSUES AND POLICIES

*'When large-scale oil reserves were first discovered in Saudi Arabia in 1938, who would have believed that growth in the Middle East and North Africa (MENA) would ever have been oil led?'* This question comes up in one of our articles in this special issue of the *Oxford Energy Forum*. The question is very well timed; for while MENA continues to play a pivotal role as the world's supplier of oil and, to a lesser extent, gas the collapse in global oil prices since mid-2014 has refocused the debate on the region's ability to use oil revenues to build sustainable economies that can one day function without oil, or at least reduce their dependence on the export of only a single commodity. The Paris Climate Conference in December 2015 will provide an opportunity to the global community, including MENA countries, to contribute new vision and perspectives to the debate, and to engage proactively in leading regional green policy efforts. In this issue, we ask the question directly: can the MENA economies use this time to initiate the switch from fossil fuels to renewables, from wasteful energy consumption towards energy efficiency? Can the region re-invent itself? Can it 'grow green'?

In the editorial to this issue, *Laura El-Katiri* argues that sustainability is not actually an alien concept to the region, but is in fact in the interests of us all. Despite glaring differences in income and political stability across MENA countries, the author argues, the region as a whole faces some very tough, common challenges in the

management of its natural capital – its energy and water resources. At a time when the pivot of global energy market growth is shifting away from traditional consumer markets in Europe and North America towards the Middle East and Asia, developments in energy demand and supply in the MENA region are critical factors influencing future balances on global energy markets. We are therefore turning all our attention to the *how* and *when* of the region's gradual energy transition.

*Jonathan Walters* looks more closely at an as yet underdeveloped natural resource that the MENA region has not made use of in its full potential: solar power. Walters looks at the range of potential counter-arguments; these range from political instability over price subsidies for conventional fuels to water stress, dust, and sand and he establishes that none of these factors actually explains the lack of past success of the technology in the region. Walters concludes: *'An increasingly integrated part of the global economy. And a solar resource that is the best in the world. And all of this sitting inside a market with very fast-growing electricity demand, and next to a rich market in Europe which pays a premium for solar energy.'*

*Thani Al Zeyoudi* traces the history of innovative energy policy planning in the United Arab Emirates (UAE), one of the MENA region's fastest developing markets for renewable energy technologies and green policy planning. He explains the

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UAE's motives in urging policy reform in the direction of more sustainable energy policy practice (including that for new resources such as natural gas inside the country), as energy demand has risen much faster than new resources can be exploited. Changing market conditions also play an important role in the UAE's choices: while prices for oil and natural gas on international markets are volatile, the cost of renewable energy technologies such as solar power has, in recent years, fallen by over 80 per cent. Dubai's recent success in bringing down the cost of new utility-size photovoltaic (PV) power underlines, on an economic basis, the future of renewables in the country – a development the UAE see as a strategic step in making their economy more resilient over the long term.

*Robin Mills* examines the competitive advantage of solar power in the Middle East more closely. Beginning with Dubai's success story in implementing utility-scale solar power that enjoys what are among the lowest costs in the world, Mills argues that we are seeing the beginning of a 'second age' of solar power in the region, one that is 'driven by economics, not by environmental concerns or government fiat'. In addition to Dubai, he points to increasing deployment in energy-importing countries such as Egypt and Jordan. Mills also refutes the suggestion that consumer price subsidies for fossil fuels and electricity, per se, hinder the development of renewable energy projects in the region, for governments and utilities, considered holistically, 'should seek the lowest-cost generation mix, even if they continue to subsidize the end-consumer'. Mills argues that with continuing expected falls in PV costs, residential rooftop solar in Dubai could be commercial without subsidies by the early 2020s.

*Alissa Amico* discusses the region's corporate and investment climate and its role in channelling green investment in the future. Amico suggests that a major reason for the region's scarcity of basic resources is underinvestment in utilities and network industries, which continue to be dominated by state-owned

enterprises. The transition to low-carbon, greener economies in the region will require the mobilization of not only public, but also of private investment, the author argues; however, private capital is not currently encouraged by either existing investment frameworks or the overall geopolitical climate. In order to transition from ad hoc investments, the region will need to move to the mainstreaming of environmentally conscious investing, and fiscal frameworks containing guidance and mechanisms for environmental impact disclosure – a mechanism that has proven effective in encouraging green developments in the OECD.

*Ernesto Somma* and *Alessandro Rubino* look in more detail behind the question of how to attract more private investment into the MENA region's energy sector. Looking back at the relatively slow start of public-private partnerships in the region, Somma and Rubino highlight the enormous potential that green energy, in particular, offers in attracting new investors. Renewables have already drawn in considerable private investment (more than for any conventional forms of energy) in two of the region's most advanced renewable energy promoters, Morocco and Jordan. A further elaboration of investment codes and the creation of a favourable regulatory climate, including the liberalization of underlying utility sectors, are, in their analysis, key to making use of the opportunities provided by green energy.

'We all know that the oil dominance era will not end because we will run out of oil', argues *Osamah Alsayegh*. He points out the fact that economies such as that of Kuwait (highly dependent on oil exports and excessive energy intensity) 'will be significantly impacted if sustainable energy measures and economic diversification actions are not adopted'. Kuwait still ranks among the world's largest consumers of energy and highest emitters of CO<sub>2</sub> on a per capita basis. Faced with an as yet growing energy footprint, the author urges pressing reforms for the country's domestic energy sector, matched up with the

more strategic use of available domestic resources such as natural gas and solar power. The parallel lack of demand-side management policies is more of a threat to Kuwait's long-term economic future than the challenge of fossil fuel resource depletion – making proactive energy policies of pivotal importance for Kuwait's long-term growth and continued socio-economic development.

*Rabia Ferroukhi* and *Arslan Khalid* focus on another potentially beneficial side effect of adopting green energy technologies, the potential for indigenous job creation in the renewables sector. Looking at opportunities in the GCC region, Ferroukhi and Khalid argue that the job creation potential for renewables (particularly solar energy) in the region is significant. While construction and installation will undoubtedly lead job creation to start with, future growth in the market may also help create more employment options in the manufacturing and R&D segments of the sector. Key to using the green sector to drive employment opportunities in the GCC, however, will be the creation of a stable and predictable policy framework. The authors urge regional governments to further back up their policy commitment by ramping up future efforts into renewable energy and training – a new branch within local energy sector development.

*Waleed Alsuraih* asks whether the 2014/15 oil price collapse may actually prove to be an opportunity for the region not only to focus on 'green' economic thinking, but on maximizing energy productivity overall. Indeed, Alsuraih argues, given their large hydrocarbon resources the GCC countries in particular have a large stake in the global transition towards sustainable energy. Using clean energy as a tool to raise their energy productivity can support these economies' growth, providing them with opportunities to engage in R&D. Such opportunities are important both from a labour market and an industrial diversification perspective, as they provide the sort of 'home grown' industries that policymakers have been promising their young and increasingly educated populations.



Jason Bordoff and Akos Losz appeal for a different way of 'greening' the GCC economies by targeting their underlying market incentives – eliminating subsidies on fossil fuels. The GCC economies, alongside those of many other MENA oil and gas producers, have for decades engaged in the practice of supplying their valuable hydrocarbon resources to their domestic markets at a fraction of their international value. Not only do fossil fuel subsidies in the GCC result in the systematic encouragement of wasteful and inefficient energy consumption patterns, but they also create a structural market impediment to the diversification of the region's energy mix towards alternative sources of energy and away from oil and gas. Without subsidy reforms, the authors argue, 'Saudi Arabia and the other leading oil exporters in the GCC risk losing, both in the short and the long run'.

Walid Matar leads on from this position to discuss the need for alternative fuel prices for more efficient allocation of resources. He argues that reforming the energy prices facing industries such as petrochemicals, cement, and the power sector can bring huge benefits in terms of reducing energy consumption and changing the energy mix towards renewables and nuclear, which will free more oil for exports. While such a transition would involve adjustment costs, the benefits overwhelm these costs. According to Matar, these benefits can be achieved without increasing prices sharply, reflecting the large inefficiencies that are associated with the current pricing policy.

Similar conclusions are reached by Jim Krane, who simulates the effect of a rise of all energy prices across sectors in the GCC to international levels. Krane finds that subsidized prices in the Gulf account for a significant share of energy consumption, and reforming end-user subsidies by raising prices 'would go a long way toward rationalizing demand'. Looking at the large projected growth in regional energy demand over the next two decades, Krane thus offers us a demand-led rather than a supply-led model to

reduce the region's carbon footprint while reducing wasteful energy consumption. Interestingly, the author also finds in his own country-based studies that a regional energy price revision might not actually be as controversial as has been widely thought; according to his work, a majority of Saudi citizens would 'agree to higher prices on electricity if compensated'.

Mari Luomi looks ahead at how the GCC states have been, and at how they could be, participating in building the post-2015 development agenda, in particular in the area of sustainable energy. Luomi argues that the unfolding paradigm shift in the region's development thinking is already under way, for reasons that include the food price and global financial system crises, biodiversity loss, and climate change. Luomi explains how the Gulf Arab states have stepped up their participation in multilateral sustainable development forums, as shown, for example, by the UAE's active role in the process that led to the development of the UN Sustainable Development Goals (SDGs) that will guide international development through 2030. Luomi argues that the GCC states now have an important opportunity to translate their economic interdependence and participation in international cooperation in the area of sustainable energy into domestic policies and action, and to turn their 'brown' wealth into green growth.

Eckart Woertz takes the discussion away from a sole focus on energy, linking the green energy cluster to the wider nexus of water, energy, and food security. While MENA is the world's largest oil exporting region, it is also its largest importer of cereals, poultry, and sugar, and due to its high aridity and limited local agricultural production, it is a large importer of 'virtual water'. Woertz argues that water, food, energy, and climate change should very much be treated as interrelated issues that should be tackled with an integrated approach. This is even more important as the MENA region 'is not only the world's petrol station' but has also become 'its own best customer'. Woertz calls for overall better resource governance, and

good stewardship of interrelated natural resources such as water, energy, and food, whose positive externalities have been for too long taken for granted.

Nivine Issa and Phillipa Grant explore climate-friendly policy choices in the context of the UAE. As the country has started to engage more proactively in climate adaptation, the authors explore the country's dual approach towards reducing its carbon footprint: demand-side policies focusing on reducing overall national energy demand and increasing energy efficiency, and supply-side policies aimed at diversifying the country's energy mix towards renewables and nuclear power. Part and parcel of the UAE's policy reform efforts have been regulatory changes such as green building codes, while the emirate of Dubai has moved ahead with the region's first energy policy planning document: Dubai's Integrated Energy Strategy 2030. While the UAE is realistically only standing at the beginning of a more structural energy transition, it is policy initiatives such as these that are likely to form the basis of the country's long-term resilience to global shocks and the stability of its economy.

In their article on 'solar aid', Kishan Khoday and Stephen Gitonga take a closer look at the big picture – the relationship between, on the one hand, the post-2015 development agenda and global policy commitment to the goal to ensure access to affordable, reliable, sustainable, and modern energy for all; and on the other, the MENA region's vast socio-economic challenges. With an estimated more than 20 million refugees inside the MENA region alone, the region's wealthy and stable nations are called to use international sustainable development objectives to help people throughout the region to create sustainable livelihoods. New sustainable energy partnerships that address the issue of today's refugee and migration crisis in the Middle East, Khoday and Gitonga argue, 'can help serve as a model for efforts to bring the benefits of green growth and innovation to the most needy in the world'.

