voluntary initiatives. On the one hand, this would allow institutional investors – including foreign institutions which increasingly incorporate ESG in their decision-making processes – to create meaningful benchmarks for screening investment opportunities. On the other, it would help them understand the long-term risks associated with their investments.

As it often the case in the region, the private sector is waiting for the public sector to lead the tango. Given their natural alignment with national development targets and strategies, sovereign investors will need fewer incentives to invest in green growth. According to the 2012 report 'Procurement, Innovation and Green Growth' from the International Institute for Sustainable Development (IISD), not only do sovereign investors and state-owned enterprises have the capacity to influence local equity markets as investors, they are also able to influence firms in their value chain through procurement policies which can include 'green' considerations in the selection criteria.

Governments in the region should seek to attract private investment in green projects by promoting environmental disclosure by corporates as part of their non-financial disclosure. With better disclosure on firms' environmental impact, institutional investors such as pension and mutual funds – whose presence in MENA markets is expected to grow – will be in a better position to evaluate opportunities where green investments are competitive and, equally importantly, to engage with companies whose environmental risks they perceive as excessive. This will not only green MENA economies in the long term, but also help mitigate risks of black swan events – the dramatic consequences of which have already been seen elsewhere.

**The views expressed in this article are those of the author and do not reflect the official views of the OECD or its member countries.*

MENA countries have to bring in the private sector: a perspective from Europe

Ernesto Somma and Alessandro Rubino

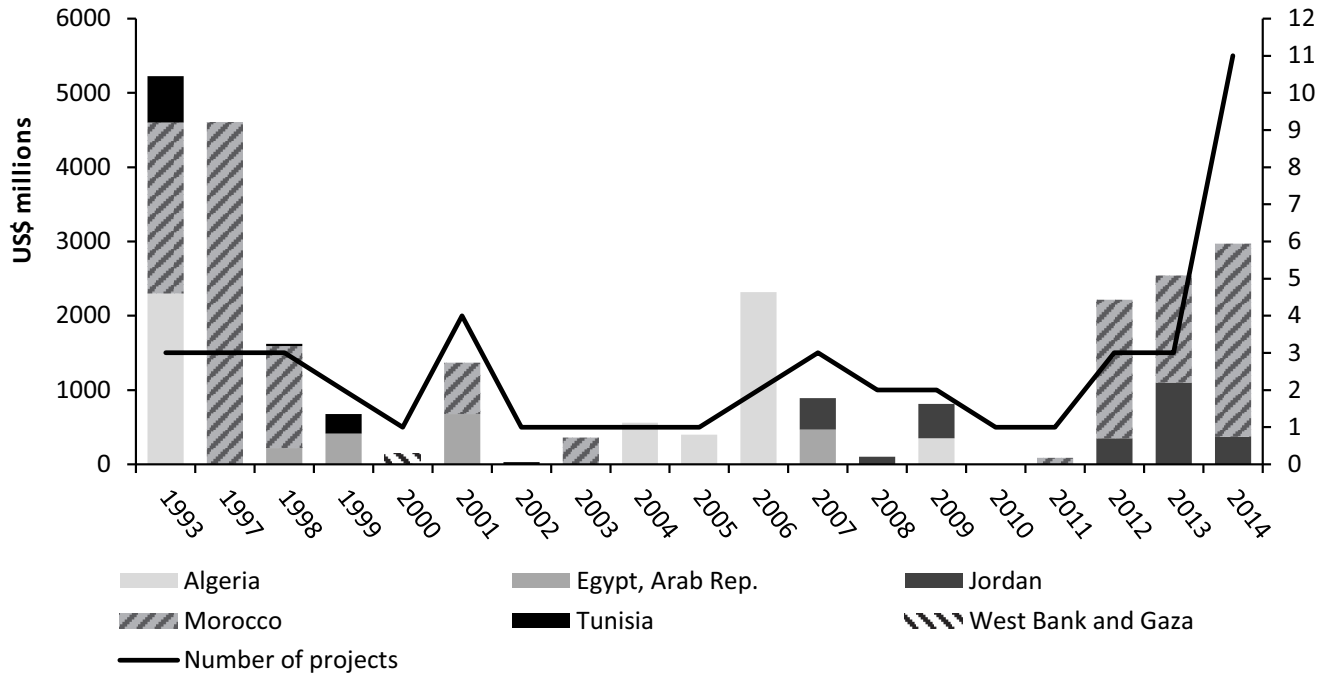
Middle East and North Africa (MENA) countries are expected to grow at twice the rate of the North Mediterranean Countries (NMCs) in the period to 2030, at which point they will make up approximately one-third of the total GDP of the Mediterranean region. According to a Observatoire Méditerranéen de l'Energie (OME) projection, over US$790 billion (700 billion euros) will be needed by 2030 to ensure the additional electricity generation capacity required. Although state-level energy policies are still dominant, it is indisputable that MENA countries will not be able to deliver investment of this variety and size solely via public budgets. Therefore new business models need to be introduced to achieve active private sector participation.

The MENA region has historically been poor in attracting private investment. Private Participation in Infrastructure

'THE MENA REGION HAS HISTORICALLY BEEN POOR IN ATTRACTING PRIVATE INVESTMENT.'

(PPI hereafter, PPP and PPI are used interchangeably) in MENA countries is lagging, both in relative and absolute terms. PPP only represented 3 per cent (around US$27.5 billion) of global investment in the region between 1990 and 2014, making this the lowest performing region globally. By contrast, the best performing region (Latin America and the Caribbean) has been able to attract more than a third of global PPP investment in energy infrastructure (US$303 billion). It is true that investment in infrastructure in North Africa and the Levant is currently recovering from the financial crisis in 2008 and the effect of the social unrest related to the 'Arab Spring' in 2011 (see the figure opposite, 'Total investment in energy in MENA'). But it is also useful to see the investment dynamic registered in different MENA countries and what interesting best practice can be picked up.

It is notable that private participation in energy infrastructure in the region experienced a 'double dip', both in 2008 (in the aftermath of the financial crisis) and in 2011 (following the outbreak of the 'Arab Spring'). The volume of investment now is just above the pre-2008 level; however, in the years since 2009 PPP investment in energy has only taken place in two countries, Morocco and Jordan. Eleven projects were closed in 2014 (ten in Jordan, one in Morocco) for a total of US$2.9 billion – an increase of 17 per cent on a year-on-year basis. This healthy performance has been achieved with the conclusion, since 2012, of a total of 17 new projects, 15 of which are in renewable generation.



Total investment in energy in MENA: PPP in energy (by year)

Source: Authors' elaboration based on World Bank and PPIAF, PPI Project Database (http://ppi.worldbank.org) 11 July 2015

Bringing in the private sector

The level of private sector investment depends on a number of factors. Within this long list, it is interesting for us to identify those that have played a significant role in the energy context for MENA countries. We can group these factors into three main categories:

- Factors that determine whether governments will engage in public–private partnerships (PPPs);
- The underlying context, in terms of the overall macroeconomic environment;
- Factors that affect the incentive and motivation of the private sector to enter into a PPP.

In relation to the first group, most MENA countries, in order to raise the expected level of investment for generation infrastructures over the next 15 years, are devoting increasing attention to developing an investor-friendly environment. Some of the most recent energy policies, including the establishment of national Renewable Energy Source (RES) targets and feed-in tariffs for newly added renewable generation, have been set up to encourage private participation in energy investment and to signal a gradual opening of internal markets. As of today, all countries in the region have announced targets for the deployment of renewable technologies in their energy systems.

'THE INSTABILITY OF THE REGION INHERENTLY CREATES UNCERTAINTY ABOUT THE FUTURE, MAKING LARGE UPFRONT COMMITMENTS DIFFICULT.'

The second group of factors depends on the general framework under which infrastructure investment takes place. In addition to the strong demographic growth that resulted in a bottom-heavy population pyramid, the IMF *World Economic Outlook* expects an average GDP growth of 5.1 per cent up to 2018. While these factors have typically led to an expansion of infrastructure needs, recent political developments have led to a contraction of fiscal space. The instability of the region inherently creates uncertainty about the future, making large upfront commitments difficult. The political stability score, as defined by the Worldwide Governance Indicators project (WGI) of the World Bank, is significantly lower, on average, for the MENA region, when compared to other regions in the database. According to the WGI project, within the MENA region Morocco and Jordan are relatively politically stable, with a score respectively of 2 and 1.88 (zero = weak; five = strong), against an average of 1.71 in the region. As a comparison, the score for Egypt in 2013 (last observation available) was 0.88.

Finally, the third group of factors takes into consideration all those aspects considered critical by private investors such as: an adequate regulatory framework, proper enforcement of laws, and the independence of the regulatory system. The Regulatory

Quality (RQ) score represents a synthetic indicator that can reflect those aspects. According to this indicator, Morocco and Jordan are above the regional average, with scores of 2.33 and 2.61 respectively (zero = weak; five = strong, again according to the WGI project). As a benchmark, for the same indicator, the score registered in Algeria is 1.31 and in Egypt is 1.8.

Morocco's gradual energy strategy

The seeds of this success, relative to the performance of the overall MENA region, is evident in cases such as Morocco and Jordan. The process of energy sector liberalization in Morocco dates back to 1995, when a first liberalization strategy (to liberalize power generation) was introduced. However, it was only at the end of the last decade that the government of Morocco considered a more far-reaching energy strategy, to respond to the challenges that this sector represents for the country. In 2009, the Moroccan government developed a national energy strategy that focused on achieving tangible results and attaining precise targets:

- Establish an optimized fuel mix;
- Increase deployment of renewable technologies;
- Promote private investments;
- Promote energy saving and use efficiency;
- Promote regional integration.

Accordingly, additional power capacities were scheduled to be added by the year 2020. In addition, Morocco launched its renewable energy programme, which consists of achieving overall installed capacities of 2000 MW wind energy and 2000 MW solar energy, and of increasing its hydropower capacity to 2000 MW, by 2020. To achieve the renewable energy targets a new institutional framework was set up which resulted in the creation of:

- The Moroccan Solar Energy Agency (MASEN) to pilot the solar programme (Plan Solaire),
- An energy investment firm to promote private investments in energy sector,
- An institute (IRESEN; L'Institut de Recherche en Energie Solaire et Energies Nouvelles) to promote research, innovation, and development in the energy sector.

Meanwhile, the government started to update, renew, or set new rules in the legal and administrative framework related to power generation, transmission, and distribution with special focus on renewables. Therefore, within the Moroccan context, a variety of stakeholders are concerned with renewables. The existence of this institutional stakeholders' arena demonstrates the high level of interest that Morocco has in renewable energy in particular, and in sustainable development in general. As a result Morocco was able to feature among the top six destination countries for energy investment between 2012 and 2014, attracting nearly US$6 billion of PPP (representing 5.6 per cent of the total investment in the period considered).

'… THE TREND FOR PUBLIC–PRIVATE PARTNERSHIPS IN THE ENERGY SECTOR IS ROBUST IN MOROCCO …'

Four large projects were financed. However, the lack of incentives and regulatory framework for distributed generation and small-scale projects (such as roof top PV), as well as the lack of any specific indication in relation to the type of technologies targeted by the Plan Solaire, prevented market expansion. For instance, a system of feed-in tariffs is still missing, while net-metering schemes have been under discussion for a very long time now with no concrete progress. Thus, the current legal and administrative frameworks do not yet enable an effective development of small and medium-scale renewable energy projects. Notwithstanding these possible downsides, the trend for public–private partnerships in the energy sector is robust in Morocco and is driving a slow, but steady transition toward a sustainable energy system.

Renewable energy in Jordan

The policy of the Government of Jordan in the field of energy was shaped through the adoption of the updated National Energy Strategy (NES) in Jordan for the period 2007–20. The main goals of the Energy Strategy are:

- The provision of a reliable energy supply by increasing the share of local energy resources in the energy mix;
- Reducing dependency on imported oil;
- Diversifying energy resources;
- Enhancing environmental protection.

These goals are to be achieved through maximizing the utilization of domestic resources such as oil shale and natural gas, expanding the development of renewable energy projects, and promoting energy conservation and awareness.

Jordan's government has underlined its commitment to reach these ambitious targets and issued the Renewable Energy and Energy Efficiency Law on 17 April 2012. With this law, for the first time, unsolicited or direct proposal submission is allowed, where investors have the opportunity to identify and develop renewable grid-connected electricity production projects on their own and propose them to the Ministry of Energy and Mineral Resources. The Tafila wind power project, with a capacity of 117 MW, was the first project to be undertaken through the direct proposal process.

Specifically, the government invited developers to submit expressions of interest for the development of renewable projects, indicating the maximum tariffs that the government would pay for different types of renewable power. In the developers' expression of interest, the land required for the project and the proposed size and type of facility had to be identified. Memoranda of understanding are issued for expressions of interest which are acceptable to the government; these provide developers with an exclusivity period of 24 months, during which time they are required to develop the project, sign project agreements with the government, and reach financial closure.

As a result of the introduction of this bottom-up approach, 13 PPP projects were developed between 2012 and 2014, amounting to an investment commitment of US$1.8 billion. The number of requests for the connection of renewable energy systems, according to the Net-Metering system, has reached 430 requests with 12,352 kW of capacity; of these, 291 (with 2554 kW of capacity) were connected and in operation during the year 2013.

Looking forward

Public–private partnerships are expected to play a growing role in infrastructure investment because they represent a shortcut to the modernization of the energy sector and the provision of much-needed infrastructure. Different strategies are possible to achieve the attraction of private stakeholders. The two most successful cases in the MENA region illustrate that both decentralized and centralized models can be viable.

'PUBLIC–PRIVATE PARTNERSHIPS ARE EXPECTED TO PLAY A GROWING ROLE IN INFRASTRUCTURE INVESTMENT …'

In the first case, positive results have emerged from Jordan following an attempt to promote widespread diffusion and social acceptance of RES, while promoting, at the same time, domestic and residential installations. Decentralized energy projects are also promoted as part of government's localism and rural development agenda, as citizens, rural communities, local authorities, and private organizations are now involved in energy projects and investments, thus developing solutions that meet local needs and involve local stakeholders.

In contrast, Morocco has promoted a centralized investment strategy, to attract a few flagship projects, in combination with a policy to develop, at the same time, green growth and a RES industrial sector. This main strength of the policy framework also represents the main limitation of the Moroccan renewable energy strategy – that it is focused solely on large-scale projects.

The evidence collected illustrates the fact that stabilization of the remuneration provided with the most common regulatory tool for RES technologies (in particular a RES quota and target) is essential to provide the necessary guarantees, and certainly represents a positive step toward RES penetration. However, while widely diffused, such measures need to be accompanied by a long-term strategy – one capable of generating an environment conducive to investment – in order to become effective. In such a framework, the strategies adopted in Morocco and Jordan, although different in their approach, have been able to provide these preconditions. These two approaches can well represent possible alternative models for the active participation of the private sector in energy investment. To this end, recent policy development, particularly in Egypt and Algeria, testifies for a move toward a more sustainable and investment-friendly environment in the region.

Kuwait needs to rethink its energy mix

Osamah Alsayegh

The Stone Age did not end because we ran out of stones; we transitioned to better solutions (Steven Chu and Arun Majumdar, Nature, August 2012).

We all know that the oil dominance era will not end because we will run out of oil; it will fade away because the world will have alternative options.

Countries with economies that are highly dependent on oil exports and excessive energy intensity (energy consumed per unit of GDP), such as Kuwait, will be significantly impacted if sustainable energy measures and economic diversification actions are not adopted.

The expected decline of oil demand in the long term is suggested by evidence already in existence. Each year, new policies are enacted toward the mitigation of greenhouse gas (GHG) emissions; these require the continuous development of energy efficiency measures and increased use