THE FUTURE FOR RENEWABLE ENERGY IN THE MENA REGION
ABOUT THE RESEARCH

This report provides insight into the renewable energy market in the Middle East and North Africa (MENA) region. The market overview section of this report was written by Clean Energy Pipeline, a specialist provider of news, research and data on the clean energy sector. Clean Energy Pipeline is a subsidiary of VB/Research. The legal overview was written by Squire Sanders, an international law firm.

Transaction data included in this report has been extracted directly from Clean Energy Pipeline’s deal databases. To complement this data, interviews were conducted with the following individuals:

- **Yara Anabtawi**
  Director, Business Development, Renewables
  ACWA Power International

- **Waleed Salman**
  EVP Strategy & Business Development
  Dubai Water & Electricity Authority

- **Ahmed Nada**
  Vice President of Business Development for the Middle East
  First Solar

- **Steve Griffiths**
  Executive Director of Institute Initiatives and Professor of Chemical Engineering
  Masdar

- **Browning Rockwell**
  Executive Director
  Saudi Arabia Solar Industry Association (SASIA)

- **Steve Mercieca**
  Project & Export Finance – Middle East, Africa & Pakistan
  Standard Chartered Bank
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The Future for Renewable Energy in the MENA Region
As I reflect on the past twelve months I am struck by the progress the renewable energy sector has made across the Middle East and North Africa (MENA) region.

For a start, some of the world’s largest and most innovative projects achieved major milestones in 2013. The most notable is undoubtedly the 100MW Shams 1 solar CSP plant in Abu Dhabi, a joint venture between Masdar, Total and Abengoa Solar, which came online in March 2013. The project, which took three years to construct, is currently the largest of its kind in the world. Other major projects, including the 300MW Tarfaya wind farm in Morocco and the first phase of Dubai’s 1GW Mohammed Bin Rashid Al Maktoum solar park, also commenced construction in 2013.

This is just the tip of the iceberg. Saudi Arabia plans to install a staggering 54GW of renewable energy capacity by 2032, an extremely ambitious target given that virtually no capacity is currently operational. Meanwhile Morocco and Jordan have outlined plans to install 4,000MW and 1,650MW of renewable energy respectively by 2020.

Despite the obvious potential, many international developers, investors and companies in the supply chain are unclear as to how to enter this market. For a start, the market potential, growth drivers and regulatory structures vary significantly by country. For this very reason, this report starts with an overview of the renewable energy market in each of the major countries in the MENA region.

In addition, the sophistication of the legal infrastructure required to support renewable energy development varies significantly across the MENA region. As a result, the second half of this report provides an overview of the state of preparedness of MENA countries to support their renewable energy programmes.

I would like to thank all of the interviewees for their valuable time in contributing to this report. In addition, I would like to thank Clean Energy Pipeline for their help in writing this report.

We hope you find this report interesting. As ever, we welcome and encourage any feedback.

Kind regards,

Kevin Connor
Coordinating Partner – MENA
Riyadh, Saudi Arabia
Renewables can replace domestic oil consumption

Saudi Arabia has by far the greatest potential for renewable energy in the MENA region. The country has set a target to install 54GW of renewable energy by 2032, comprising 25GW of solar CSP, 16GW of solar PV, 9GW of wind, 3GW of waste-to-energy and 1GW of geothermal. This is extremely ambitious given that there are currently no utility-scale renewable energy projects that are currently operational in Saudi Arabia. The country also plans to install 17.6GW of nuclear capacity during the same period.

Saudi Arabia is now promoting renewable energy so heavily because it has the potential to displace oil for domestic power generation. The country currently produces approximately 12 million barrels of oil per day. Some 3 million barrels are used domestically for power generation, leaving around 9 million for export. By 2030, it is estimated the country will need to consume 7 million barrels per day due to population and industrial growth. At most, only 14 million barrels will be able to be produced per day by 2030, assuming a $6 billion investment in new oil fields and the maintenance of existing ones. This would mean that the volume available for exports would shrink by 2 million barrels per day, or 22% based on current exports. Oil exports currently account for around 80% of government revenues, meaning that a decrease in exports will have a significant impact on Saudi Arabia’s balance of payments.

“At current oil prices there is a huge opportunity cost of burning oil locally for power generation and water desalination,” explained Yara Anabtawi, Director of Business Development for Renewables, at ACWA Power International. “For a nation of 27 million people we consume a lot of energy and water. We are approaching a point where a third of our oil production will be used for local consumption. The country is therefore looking at alternatives, including renewable energy.”

The Saudi government also believes renewable energy can contribute to reducing unemployment, which currently stands at 10.7%. It is hoped that domestic content requirements in procurement contracts will
encourage the development of a local supply chain. “Part of Saudi Arabia’s motivations for promoting solar so heavily is to build a manufacturing base and a local industry that can support jobs,” explained Steve Griffiths, Executive Director of Institute Initiatives and Professor of Chemical Engineering at Masdar. “It is probably the only country in the GCC (Gulf Cooperation Council) that can realistically do this due to the solar capacity it is targeting and the associated local content provisions.”

Competitive procurement process to govern renewables development

The Saudi Arabian Government established a new government agency called K.A.CARE in April 2010 to stimulate and oversee development of the country’s renewable energy sector. In February 2013 K.A.CARE released its draft white paper on renewable energy, which proposed that renewable energy should be managed through a Competitive Procurement Process (CPP). Under the process, a new agency, the Sustainable Energy Procurement Company (SEPC), will issue and manage power purchase agreements (PPAs). PPAs will be issued through competitive tenders in bidding rounds. Price and non-price factors, including the degree of local content, will be considered when awarding projects.

K.A.CARE will initially issue tenders for a 500-800MW introductory round, where it will seek developers for pre-packaged sites it identifies that are easily connectable to the grid. According to K.A.CARE’s white paper, two additional procurement rounds covering up to 6,900MW of capacity will be tendered in the next two to three years. The proposed breakdown of projects to be tendered is shown opposite.

PPAs will last for 20 years and be adjusted annually to reflect changes in the US-KSA exchange rate. K.A.CARE has not yet disclosed when it will issue a call for tenders for the introductory round, although it is widely expected that this will occur in early 2014.

Many questions remain unanswered

K.A.CARE still needs to provide detail and clarity on multiple issues to entice investors. It is yet to release the eligibility requirements and scoring methodologies to select winners in upcoming procurement rounds, and more importantly is yet to outline how renewable energy will be subsidised or how it will incentivize the establishment of a supply chain.

“A lot of issues need to be resolved before investors can look at this market seriously,” explained Browning Rockwell, Executive Director of the Saudi Arabia Solar Industry Association (SASIA). “There are a lot of issues relating to the bankability of projects. They have put out a white paper and have asked for industry comment. We are still at this stage. The grid is also not really ready for this extra capacity. Saudi Electric Company is responsible for the grid so there will have to be some coordination between them and K.A.CARE.”
The Future for Renewable Energy in the MENA Region
The drivers for renewable energy in Jordan are equally strong but very different to those in Saudi Arabia. Unlike Saudi Arabia, Jordan is a net importer of energy, importing 96% of its total energy consumption according to government statistics. Over 80% of energy is imported via the Arab Gas Pipeline (AGP), which transports natural gas from Egypt to Jordan. However, energy imports have become increasingly volatile in the past three years due to repeated instances of sabotage and political unrest in Egypt. This has resulted in natural gas imports from the AGP falling from 89 billion cubic feet in 2010 to only 29 billion cubic feet in 2011 (Source: US Energy Information Administration). This has resulted in frequent power shortages and blackouts and forced Jordan to operate its power plants on highly expensive imported diesel. As a result, the country is promoting renewable energy as a stable and cost effective power source.

“As a net importer of electricity, Jordan is subject to market and political factors, making solar energy an attractive option,” explained Ahmed Nada, Vice President of Business Development for the Middle East at First Solar. “It is one of the first countries in the Middle East to start looking at solar and they have already taken certain steps to implement the legal framework to allow the private sector to get involved.”

Even before the power supply shortages materialised, the government had established a renewable energy target equivalent to 7% of the energy mix by 2015 and 10% by 2020 as part of its 2007-2020 Energy Strategy. The plan calls for up to 1,000MW of wind, 600MW of solar and 50MW of waste-to-energy to be brought online by 2020.

### A defined regulatory structure underpins development

Unlike many other countries in the region, Jordan has implemented a legal framework to support its renewable energy targets. In April 2012 the country passed the Renewable Energy and Energy Efficiency Law (REEL), which requires the national utility company to purchase electricity from renewable energy projects and for the government to cover the cost of grid connection. At the end of 2012, the country’s Energy Regulatory Commission introduced feed-in tariffs for renewable energy projects. This is the first feed-in tariff to be implemented in the Middle East. The rates offered for different technologies are summarised below:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Tariff (USD/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>$0.115</td>
</tr>
<tr>
<td>Solar PV</td>
<td>$0.163</td>
</tr>
<tr>
<td>Solar CSP</td>
<td>$0.183</td>
</tr>
<tr>
<td>Biomass from waste</td>
<td>$0.122</td>
</tr>
<tr>
<td>Biogas</td>
<td>$0.081</td>
</tr>
</tbody>
</table>

Source: Jordan Energy Regulatory Commission
GCC to assist with financing renewables

In January 2013 Jordan announced it will invest $300 million of a $5 billion grant from the GCC into 50-75MW of wind and 75-100MW of solar capacity in the country. The grant included $1.25 billion of funding each from Saudi Arabia, the UAE, Kuwait and Qatar. Jordan previously secured a £70 million loan from the World Bank in July to part-finance construction of a 100MW concentrated solar project.

Major projects

According to the Jordan Times, the Government has already signed approximately 30 memoranda of understanding with domestic and foreign investors covering up to 1GW of solar and wind projects scheduled to be developed over the next five years. Details of all these projects are not currently available. The table below highlights some of the most notable planned projects in Jordan.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>117MW Tafila wind project</td>
<td>Jordan Wind Project Company (EPGE, InfraMed Infrastructure, Masdar Power)</td>
<td>$302 million</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>100MW Shams Ma’an solar PV project</td>
<td>Kawar Energy, First Solar, Solar Ventures, Ma’an Development Area</td>
<td>$300 million</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>100MW JOAN 1 CSP project</td>
<td>Badr Investments, Chescor Capital, Maisam Architects &amp; Engineers, Parsons Brinckerhoff</td>
<td>$425 million</td>
<td>On hold</td>
</tr>
</tbody>
</table>

Notes: The 117MW Tafila wind farm will be the largest in Jordan once operational. In February 2013 Jordan’s energy minister announced the government had entered talks with Jordan Wind Power Company regarding the project. In April 2013 the European Investment Bank and International Finance Corporation approved a $117 million and $75 million loan respectively for the project. EFK, OFID, FMO and Capital Bank of Jordan are also likely to provide debt financing. It has been widely reported that the turbines will be supplied by Vestas. The project is expected to commence operations in 2014.

Notes: The Shams Ma’an solar PV project is a joint venture of Solar Ventures, Kawar Group and First Solar. A feasibility study was conducted in March 2011 and a draft PPA was secured from MEMR in September 2012.

Notes: The 100 MW JOAN 1 solar CSP project was the first of its type when announced. In 2009, Ausra was selected as the solar steam boiler supplier. Construction was due to start in 2011 and the project was expected to be operational by 2013. However, the project has been delayed and it will now have to pass through the government’s new Expression of Interest Programme.

Projects can be developed at grid parity

Given the high cost of imported fuel, Jordan is an attractive market for renewable energy investment without feed-in tariffs. The planned 100MW Shams Ma’an solar PV farm, one of the country’s most advanced renewable energy projects, will sell electricity to the government at a price of $0.169 per kWh, a significant discount on the $0.24 per kWh generation cost from heavy fuel and the $0.28 per kWh for diesel-based generation.

“Fuel costs are very high in Jordan and demand is increasing, partly due to the influx of refugees,” confirmed Yara Anabtawi, Director of Business Development for Renewables at ACWA Power International. “Jordan also has some of the best solar irradiation in the world. Jordan announced a feed-in tariff program but this is not a driver for us to invest. Grid parity for solar when the sun is shining has already been realized in Jordan and that makes the market lucrative.”
<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>100MW CSP plant</td>
<td>Undisclosed</td>
<td>$600 million</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>90MW Fujeij wind farm</td>
<td>Korea Electric Power Corp</td>
<td>$187 million</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>75MW Quwaira solar project</td>
<td>Undisclosed</td>
<td>$120 million</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>65MW Ma'an wind farm</td>
<td>Kuwait Fund for Arab Economic Development</td>
<td>$149 million</td>
<td>Pre-construction/ construction</td>
</tr>
<tr>
<td>10MW Mafraq solar project</td>
<td>Philadelphia Solar Power Company</td>
<td>$23 million</td>
<td>Pre-construction/ construction</td>
</tr>
<tr>
<td>10MW solar PV and CPV project</td>
<td>Adenium Energy Capital, Bright Power Group</td>
<td>Undisclosed</td>
<td>Pre-construction/ construction</td>
</tr>
<tr>
<td>0.5MW pilot CSP plant and research lab</td>
<td>Solar Euromed</td>
<td>$5.8 million</td>
<td>Pre-construction/ construction</td>
</tr>
</tbody>
</table>

Notes:
- The 100MW CSP plant required a total investment of $600 million, and it was reported in July 2012 that the World Bank was investing $70 million in the project.
- The 90MW Fujeij wind farm project is expected to be operational in 2015.
- The 75MW Quwaira solar project deadline for submissions was April 11, 2013.
- The 65MW Ma'an wind farm project financing will cover the total cost, including 30 turbines, transmission lines, and a substation.
- The 10MW Mafraq solar project will be operational in 2014.
- Adenium Energy Capital and Bright Power Group are developing 30-50MW of solar PV and CSP projects in Jordan.
- The 0.5MW pilot CSP plant and research lab project will be financed by the European Union.

Source: Clean Energy Pipeline
MOROCCO

Renewables targeted to displace expensive energy imports

Morocco is one of the largest potential markets for renewable energy across the MENA region. The country is targeting sufficient renewable energy to account for 42% of its energy generation mix by 2020. In 2009 it outlined plans to develop 2,000MW of solar capacity across five sites at an anticipated cost of $9 billion. It also plans to bring online 2,000MW of wind capacity by 2020.

The country is heavily promoting renewable energy because it faces a massive energy shortage. Morocco currently meets about 95% of its energy needs through imports. Rising oil prices and a rapidly growing population mean that the cost of importing energy is now seriously aggravating the country’s trade deficit. Energy imports accounted for over a quarter of total imports in 2012, when the trade deficit grew 8% to a record $23.6 billion. Renewable energy also makes sense in Morocco since it possesses excellent solar resources throughout the country and wind resources along its Atlantic coast.

“Morocco has an increasing power demand that is expected to quadruple by 2030,” explained Yara Anabtawi, Director of Business Development for Renewables at ACWA Power International. “Morocco is the only North African country with no oil resources and the largest importer of energy in the region. There will have to be new generation from somewhere. It can’t rely on fossil fuels as it has to import fuel, which is very expensive at the moment.”

A secondary driver is the potential to export renewable energy to southern Europe. Morocco is a partner in Deserterec, a consortium of European companies and North African agencies that proposes a massive renewables build-out in the Sahara Desert, which will export power to Europe via transmission links under the Mediterranean. However, it may take a long time for Deserterec to become a reality, and the initiative suffered a major setback in July 2013 when The Desertec Foundation announced it was terminating its membership in Dii, the Germany-based consortium through which it planned to execute the projects.

Wind in focus

Morocco’s target of 2,000MW installed capacity by 2020 is very ambitious given that only 291MW was operational at the end of 2012. Some large projects are in the pipeline, including GDF Suez and Nareva Holding’s 300MW Tarfaya wind farm, which commenced construction in June 2013, and Nareva Holding’s 50MW Haouma and 50MW Foum El Oued wind farms, which are due to commence construction imminently. A table of notable operational and planned wind farms in Morocco is shown in the table on the next page.
<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>300MW Tarfaya wind farm</td>
<td>GDF Suez, Nareva Holding</td>
<td>$610 million</td>
<td>Under construction</td>
</tr>
<tr>
<td>Notes: In 2011 Nareva Holding secured the development contract for the Tarfaya wind farm, which is set to be the largest in the country on completion. In February 2013 GDF Suez announced that it had become 50:50 owner of the project with Nareva. Project financing was closed in December 2012. A consortium of three Moroccan banks – Attijariwafa Bank, Banque Centrale Populaire and Banque Marocaine du Commerce Extérieur – will provide the $488 million debt financing tranche. The sponsors will invest circa $122 million equity. The project commenced construction in June 2013 and is scheduled to be operational by the end of 2014.</td>
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</tr>
<tr>
<td>300MW Tétouan wind farm</td>
<td>Theolia, Office National de l’Electricité (ONE)</td>
<td>Undisclosed</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>Notes: In May 2011 Theolia and ONE signed an agreement to develop a 300MW wind farm at the site of the existing 50MW Koudia al Baida wind farm. The first phase involves the replacement of the existing turbines with more efficient ones totalling 100MW. Turbine suppliers are currently bidding for the supply contract. A second phase totalling 200MW will be installed at adjacent sites.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>150MW Taza wind farm</td>
<td>EDF EN, Mitsui</td>
<td>Undisclosed</td>
<td>Pre-construction/Under construction</td>
</tr>
<tr>
<td>Notes: In April 2012 a consortium led by EDF EN was selected as preferred bidder to develop the Taza wind farm. No development time scale has been disclosed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140MW Dahr Saadane wind farm</td>
<td>Undisclosed</td>
<td>$300 million</td>
<td>Operational</td>
</tr>
<tr>
<td>Notes: In July 2010 the Dahr Saadane wind farm came online. It is located near Melloussa, 34 km south-east of Tangiers. It was the largest wind farm in Africa at the time it commenced operations. The project was financed by a consortium of the European Investment Bank, which invested $99 million, Instituto Crédito Oficial and KfW.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>60MW Amogdoul wind farm</td>
<td>Office National de l’Electricité (ONE)</td>
<td>Undisclosed</td>
<td>Operational</td>
</tr>
<tr>
<td>Notes: The Amogdoul wind farm came online in April 2007. It is located near the city of Essaouira, on the Atlantic coast.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50MW Koudia Al Baida wind farm</td>
<td>Theolia</td>
<td>Undisclosed</td>
<td>Operational</td>
</tr>
<tr>
<td>Notes: The Koudia Al Baida wind farm was brought online in 2000. It is located in Tétouan, near Tangiers. It was acquired by Theolia in 2008. In May 2011 Theolia and ONE signed an agreement to develop a 300MW wind farm at the site. This will involve the replacement of the current turbines.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50MW Haouma wind farm</td>
<td>Nareva Holding</td>
<td>Undisclosed</td>
<td>Pre-construction/Under construction</td>
</tr>
<tr>
<td>Notes: The Haouma wind farm is located in northern Morocco, approximately 30 km east of Tangier. It will deploy turbines manufactured by Siemens.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50MW Foum El Oued wind farm</td>
<td>Nareva Holding</td>
<td>Undisclosed</td>
<td>Pre-construction/Under construction</td>
</tr>
<tr>
<td>Notes: The Foum El Oued wind farm will be built in the municipality of Laâyoune, 9 km south-east of the port of Laâyoune in Southern Morocco. It will deploy turbines manufactured by Siemens.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Clean Energy Pipeline
In order to hit its target, Morocco’s National Office of Electricity and Water (ONEE) is evaluating bidders for a massive 850MW wind complex that will comprise five wind farms in different parts of the Sahara desert. The projects are to be built on a build, own, operate and transfer basis. Six bidders were shortlisted in November 2012. These are:

- A group led by Saudi infrastructure developer ACWA Holding that also includes Spanish wind turbine manufacturer Gamesa.
- A Moroccan-Spanish consortium made up of Acciona’s project development and wind turbine divisions, together with Moroccan investment firm At Ajial Funds.
- A Franco-Japanese consortium featuring renewable energy project developer EDF Energies Nouvelles, engineering and power specialist Alstom and Japanese conglomerate Mitsui & Co.
- General Electric.
- A group comprising renewable energy developers Nareva Holding and Enel Green Power, UAE-based energy company Taqa and wind turbine maker Siemens.
- Power sector consultancy British International Power and wind turbine manufacturer Vestas.

**Solar in focus**

Development of Morocco’s solar industry is being managed by the Moroccan Agency for Solar Energy (MASREN), which issues tenders for power purchase agreements. Projects will be built through a build, own, operate, transfer model.

The first power purchase agreement was awarded in November 2012, when a consortium led by ACWA Power signed a 25-year PPA worth $1 billion with MASREN for the 160MW first phase of the Ouarzazate CSP project. Ouarzazate will eventually have a capacity of 500MW, which would make it the largest CSP plant in the world. It is scheduled to commence commercial operations in the second half of 2015.

Morocco will launch further tenders for two CSP plants with a combined capacity of 300MW near Ouarzazate by the end of September. The tender will cover one 200MW plant and a separate 100MW project. Three consortia led respectively by Abengoa, GDF Suez and ACWA Power have been pre-selected for both tenders, while a group led by EDF was also approved to bid for the 100MW plant.

“In order to hit its target, Morocco’s National Office of Electricity and Water (ONEE) is evaluating bidders for a massive 850MW wind complex that will comprise five wind farms in different parts of the Sahara desert.”
Like Saudi Arabia, the UAE is promoting renewable energy to meet rapidly growing energy demand and to preserve as much of its domestic oil for export as possible. The country currently generates approximately 80% of its electricity from natural gas, some of which is imported from Qatar via the Dolphin pipeline. However, the cost of natural gas is rising as much of the gas found in Abu Dhabi is extremely rich in sulphur, which is expensive to extract. UAE is also keen to use its natural gas to power its oil extraction industry. In this context renewable energy offers the country electricity at a stable price and enables natural gas and coal to be freed up for export. In parallel, the UAE is seeking to increase natural gas imports from Qatar alongside a nuclear development program to meet its growing power requirement.

The potential scope for renewables deployment is much smaller in the UAE than in Saudi Arabia given its much smaller population size and industrial base. Abu Dhabi expects to bring 1.6GW of renewable capacity online by 2020 while Dubai expects to install approximately 1GW by 2030. These targets pale in comparison to the 54GW targeted by Saudi Arabia by 2032.

Individual emirates are responsible for developing renewable energy programs for their own region. The emirates with the most potential for renewable energy are Abu Dhabi and Dubai.

**Dubai in focus**

In 2011 the Dubai government set a target to generate 1% of all energy from renewable sources by 2020 and 5% by 2030. This 5% target equates to approximately 1GW to be installed by 2030. This capacity will be almost exclusively solar PV or CSP. All non-rooftop solar capacity will be developed at the Mohammed Bin Rashid Al Maktoum site, which has the potential to accommodate up to 1GW of solar capacity and is managed by the Dubai Electricity & Water Authority (DEWA).

“We have selected the Mohammed Bin Rashid Al Maktoum site for solar development as it has the best characteristics in terms of humidity, dust, irradiation and grid connection,” explained Waleed Salman, EVP of Strategy & Business Development at the DEWA. “We don’t want this site to just include solar projects. We also want to build an academy, research and development capabilities, and an innovation centre. We are not just building a plant but an entire industry. We really want to attract developers and manufacturers to invest in Dubai. We want Dubai to be the hub for renewable energy across the Middle East.”

The first 13MW pilot project at the site is currently being constructed by First Solar. DWEA selected First Solar following an EPC tender. According to Salman, future projects will be realised through an IPP tender. “We
will adopt an IPP approach for further projects to encourage more private developers to the region,” he said. “DEWA will be a partner with developers and will probably own a significant stake in projects.” A tender for the next 100MW is expected to be launched this year.

Dubai also has great potential for rooftop solar. DEWA has identified that distributed rooftop solar power systems could meet 20% of Dubai’s power needs through about 2.5GW of installed capacity by 2030. The emirate is currently in the process of implementing technical, commercial and legal frameworks that will facilitate the integration of rooftop solar power. “Dubai has significant potential for rooftop solar,” confirmed Salman. “We expect to get all of the relevant endorsements from the government by the end of the year and will hopefully be ready to launch the rooftop solar market in 2014.”

**Abu Dhabi in focus**

In 2009 the Abu Dhabi Government set a target for renewable energy to account for 7% of the energy mix by 2020, equating to 1.5-1.6GW. The emirate only has approximately 100MW of wind potential meaning that solar will make up the brunt of this target. The majority of the capacity will be developed by Masdar, a wholly-owned subsidiary of the Abu Dhabi Government-owned Mubadala Development Company.
## Major projects

The most notable operational and planned renewable energy projects are shown in the table below.

<table>
<thead>
<tr>
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<tr>
<td>100MW Shams 1 CSP plant</td>
<td>Shams Power Company (Masdar, Total, Abengoa Solar)</td>
<td>$768 million</td>
<td>Operational</td>
</tr>
</tbody>
</table>

In March 2013 the 100MW Shams 1 CSP project came online. It is currently the world's largest operational CSP project. The project, which took three years to bring online, represented a total investment of $768 million. Financial close was achieved in March 2011. A group of ten banks comprising BNP Paribas, National Bank of Abu Dhabi, Natixis, Société Générale, Mizuho, Bank of Tokyo Mitsubishi, Sumitomo, WestLB, KfW and Union National Bank provided a $615 million 22-year term loan including a $35 million standby facility.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>100MW Noor 1 solar PV farm</td>
<td>Masdar</td>
<td>Undisclosed</td>
<td>Pre-construction</td>
</tr>
</tbody>
</table>

The 100MW Noor 1 solar PV project is located east of Al Ain city. It is currently at the advanced planning stage.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>100MW Abu Dhabi waste-to-energy project</td>
<td>Abu Dhabi National Energy Company (TAQA)</td>
<td>$850 million</td>
<td>Pre-construction</td>
</tr>
</tbody>
</table>

The incinerator plant will be located near the Mussaffah Sea Port. It will burn a million tonnes of municipal, commercial and industrial waste per year and produce 100MW of energy. TAQA will select an EPC contractor this year. It is expected to be operational by 2017.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>30MW Sir Bani Yas wind farm</td>
<td>Masdar</td>
<td>Undisclosed</td>
<td>Pre-construction</td>
</tr>
</tbody>
</table>

In 2009 Masdar signed a framework agreement with Abu Dhabi’s Tourism Development & Investment Company to develop a 30MW wind farm in the Sir Bani Yas Island, located 250 km south-west of Abu Dhabi City. The project is currently at the advanced planning stage, though one pilot turbine, supplied by Vestas, is currently operational.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>13MW Dubai solar PV project</td>
<td>Dubai Electricity and Water Authority</td>
<td>Undisclosed</td>
<td>Operational</td>
</tr>
</tbody>
</table>

In October 2012 DEWA appointed First Solar to construct the 13MW project, situated in Seih Al Dahal, Dubai. This project is the first phase of the Mohammad Bin Rashid Al Maktoum Solar Park, which has the potential for 1,000MW of solar capacity. The project came online in October 2013.

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Project cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10MW Masdar City solar PV project</td>
<td>Masdar</td>
<td>$50 million</td>
<td>Operational</td>
</tr>
</tbody>
</table>

In June 2009 the 10MW solar PV project came online. The facility provides electricity for the construction of Masdar City and the company’s temporary onsite headquarters. Excess power is fed into the Abu Dhabi grid.

Source: Clean Energy Pipeline
Like Saudi Arabia and the UAE, Kuwait is seeking to build renewable energy capacity to preserve its oil and natural gas resources for export. The country currently produces around three million barrels of oil each day but uses circa 10% of this for domestic energy generation. Renewable energy is attractive since it enables the country to replace oil for its own power generation.

With this in mind, Emir Sabah al-Ahmad Al-Sabah announced plans to generate 15% of the country’s energy consumption from renewable resources by 2030 during a speech at the United Nations climate talks in Doha in December 2012. The majority of renewables capacity will be developed at the Shagaya Multi-Technology Renewable Energy Park, which is capable of housing 2GW of renewables generation capacity by 2030. This would eliminate the need for 12.5 million barrels of oil to be used for electricity generation per year.

In June 2013 Kuwait invited bidders to submit proposals for the construction of the first phase of the park, a 70MW renewable energy project comprising 50MW of solar thermal capacity, 10MW of solar PV and 10 MW of wind. 37 consortia are pre-qualified to bid for this project out of the 107 bidders that registered an interest. This project will be fully financed by the Kuwaiti Government and is expected to be operational during the first half of 2016.

A second 930MW phase and a third 1,000MW phase will follow. The third phase is expected to be fully operational by 2030. These additional phases will be tendered to private developers on a build-operate-transfer basis. The government has committed to purchase the power from these phases for 25 years.

“The majority of renewables capacity will be developed at the Shagaya Multi-Technology Renewable Energy Park, which is capable of housing 2GW of renewables generation capacity by 2030. This would eliminate the need for 12.5 million barrels of oil to be used for electricity generation per year.”
Qatar is the world’s largest producer of liquefied natural gas and also has significant oil reserves. Like many other countries in the region, it wants to preserve its gas and oil reserves for the export market.

The county will launch a tender in 2014 to build a mammoth 1.8GW solar plant at an estimated cost of $10-$20 billion. Energy generated from the solar installation will be used to power desalination plants, which are currently gas-fuelled and crucial to supplying Qatar with drinking water. A 1.8GW solar plant would help boost the amount of renewable energy in the country’s energy mix from approximately zero to about 16% by the time it is operational in 2018. The country hopes to meet 20% of electricity demand from renewable sources by 2024.

Kahramaa (Qatar General Electricity & Water Corporation), Qatar’s sole transmission and distribution system operator, is also planning to develop 150-200MW of solar energy. The first phase of this project will involve the development of a series of small-scale 5-10MW facilities. The country also plans to introduce a feed-in tariff to encourage residents to install rooftop solar panels.

“The county will launch a tender in 2014 to build a mammoth 1.8GW solar plant at an estimated cost of $10-$20 billion. Energy generated from the solar installation will be used to power desalination plants, which are currently gas-fuelled and crucial to supplying Qatar with drinking water.”
OMAN & YEMEN

The potential for renewable energy outside of the countries listed above is limited, although plans are in place for a small number of projects.

In May 2013 Oman announced it had identified locations for the construction of four large-scale solar projects. The country’s Public Authority for Electricity & Water (PAEW) commissioned a study on renewable energy in Oman and, after testing 23 possible sites, settled on four locations. Of those four, land has been allocated at locations in the towns of Adam and Manah, where projects in the 100-200MW range are due to be built once tenders have been approved.

PAEW is still deciding whether to use photovoltaic or concentrated solar thermal power technology for the installations. Oman is targeting alternative energy sources to meet rapidly growing energy demand.

In January 2013 the government of Yemen approved a $63.8 million loan agreement signed with the Arab Fund for Economic and Social Development (AFESD) for development of the 60MW Al-Mokha wind farm. The loan will be used to finance advisory services and programs as well as the Al-Mokha wind farm itself. This follows a previous grant issued by Agence Française de Développement to fund the feasibility study that raised the size of the project from 15MW to 60MW. Yemen’s Public Electricity utility is developing Al-Mokha.

Yemen is keen to promote renewable energy since the country’s current generation capacity can only satisfy roughly a third of demand. These plans for renewable energy projects have been delayed in recent years following anti-government uprisings in 2011.
FINANCING RENEWABLE ENERGY PROJECTS IN THE MENA REGION

MFOs and ECAs are essential in oil importing countries

Financing structures will differ significantly between countries depending on the level of their oil reserves. International commercial banks will be more than willing to finance renewable energy projects in oil rich countries due to their high credit rating and the high quality of the project sponsors and off-takers. Many of these countries, such as Saudi Arabia, also have strong domestic banking systems, which will also be a significant source of debt financing.

However, the credit ratings of countries without oil or natural gas reserves are significantly worse, meaning that participation from multilateral financial organisations and export credit agencies will be critical to unlock commercial debt. For example, Jordan has a credit rating of BB- while Morocco has a rating of BBB-.

Encouragingly, multilateral investors have already demonstrated a willingness to invest in renewable energy projects in both Jordan and Morocco. The 160MW first phase of the Ouarzazate CSP project closed $300 million debt financing in November 2012 from a number of Multilateral Financial Organisations (MFOs) and Export Credit Agencies (ECAs), including the World Bank, African Development Bank, European Investment Bank, Agence Française de Développement and KfW Bankengruppe. The European Investment Bank and International Finance Corporation also approved $117 million and $75 million loans respectively for the 117MW Tafila wind project situated in Jordan in April 2013. A table of notable transactions in the MENA region is shown opposite.

<table>
<thead>
<tr>
<th>Country</th>
<th>S&amp;P</th>
<th>Moody’s</th>
<th>Fitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAE</td>
<td>AA</td>
<td>Aa2</td>
<td>AA</td>
</tr>
<tr>
<td>Kuwait</td>
<td>AA</td>
<td>Aa2</td>
<td>AA</td>
</tr>
<tr>
<td>Qatar</td>
<td>AA</td>
<td>Aa2</td>
<td>N/A</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>AA-</td>
<td>Aa3</td>
<td>AA-</td>
</tr>
<tr>
<td>Oman</td>
<td>A</td>
<td>A1</td>
<td>N/A</td>
</tr>
<tr>
<td>Jordan</td>
<td>BB-</td>
<td>B1</td>
<td>N/A</td>
</tr>
<tr>
<td>Bahrain</td>
<td>BBB</td>
<td>Baa1</td>
<td>BBB-</td>
</tr>
<tr>
<td>Morocco</td>
<td>BBB-</td>
<td>Ba1</td>
<td>BBB-</td>
</tr>
<tr>
<td>Tunisia</td>
<td>BB-</td>
<td>Ba2</td>
<td>BB+</td>
</tr>
<tr>
<td>Iran</td>
<td>N/A</td>
<td>N/A</td>
<td>B+</td>
</tr>
<tr>
<td>Lebanon</td>
<td>B</td>
<td>B1</td>
<td>B</td>
</tr>
<tr>
<td>Libya</td>
<td>N/A</td>
<td>N/A</td>
<td>B</td>
</tr>
<tr>
<td>Egypt</td>
<td>CCC+</td>
<td>Caa1</td>
<td>B-</td>
</tr>
<tr>
<td>Yemen</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Algeria</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Clean Energy Pipeline
### Financing Renewable Energy Projects in the MENA Region

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor(s)</th>
<th>Financing secured</th>
<th>Financing date</th>
<th>Debt provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>100MW Shams 1 CSP plant (UAE)</td>
<td>Shams Power Company</td>
<td>$615 million loan and $35 million standby facility</td>
<td>Mar-11</td>
<td>BNP Paribas, National Bank of Abu Dhabi, Natixis, Société Générale, Mizuho, Bank of Tokyo Mitsubishi, Sumitomo, WestLB, KfW and Union National Bank</td>
</tr>
<tr>
<td>300MW Tarfaya wind farm (Morocco)</td>
<td>GDF Suez, Nareva Holding</td>
<td>$610 million</td>
<td>Dec-12</td>
<td>Attijariwafa Bank, Banque Centrale Populaire and Banque Marocaine du Commerce Extérieur</td>
</tr>
<tr>
<td>140MW Dahr Saadane wind farm (Morocco)</td>
<td>Office National de l’Eau Potable</td>
<td>$308 million</td>
<td>Jul-05</td>
<td>European Investment Bank, Instituto Crédito Oficial and KfW</td>
</tr>
<tr>
<td>100MW CSP plant (Jordan)</td>
<td>World Bank</td>
<td>$70 million</td>
<td>Jul-12</td>
<td>World Bank</td>
</tr>
</tbody>
</table>

Notes: Financial close was achieved in March 2011. A group of ten banks comprising BNP Paribas, National Bank of Abu Dhabi, Natixis, Société Générale, Mizuho, Bank of Tokyo Mitsubishi, Sumitomo, WestLB, KfW and Union National Bank provided a $615 million 22-year term loan including a $35 million standby facility.

Project financing was closed in December 2012. A consortium of three Moroccan banks - Attijariwafa Bank, Banque Centrale Populaire and Banque Marocaine du Commerce Extérieur — will provide the $488 million debt financing tranche. The sponsors will invest circa $122 million equity.

The project was financed by a consortium of the European Investment Bank, which invested $99 million, Instituto Crédito Oficial and KfW.

The project has closed debt financing from the World Bank, African Development Bank, European Investment Bank, Agence Française de Développement and KfW Bankengruppe.

In April 2013 the European Investment Bank and International Finance Corporation approved a $117 million and $75 million loan respectively for the project. EFK, OFID, FMO and Capital Bank of Jordan are also likely to provide debt financing.

In July 2012 it was widely reported that the World Bank had agreed to invest $70 million in a 100 MW CSP plant situated in Jordan. The project requires a total investment of $600 million. No further details on the project were provided. The Jordanian government is seeking further sources of financing.

Source: Clean Energy Pipeline
"International banks are present in oil-exporting countries such as Saudi, Qatar, the UAE and Kuwait where no political or commercial risk cover is needed," confirmed Steve Mercieca, Director of Project & Export Finance - Middle East, Africa & Pakistan for Standard Chartered Bank. “These are all A-class rated countries given their budget surplus due to their significant oil exports. As we have done in the past, we would be interested in financing projects in any of these countries. Then you look at countries such as Jordan, Egypt and Oman to a lesser extent.

"International banks will have issues financing projects in these countries without some form of commercial and political risk cover. It is in these countries where the MFOs and ECAs will have a key role to play."

**New structures will be needed in the future**

Most countries in the MENA region are at the very early stages of their renewables programs meaning there is not currently a significant pull for financing. However, Saudi Arabia plans to bring online about 4GW of renewable energy capacity per year between 2015 and 2020, according to its projections, which will create a huge annual demand for capital.

“There are a limited number of banks at the end of the day,” explained Steve Mercieca. “Banks will not want to be overexposed to certain technologies or countries, so there will need to be other forms of financing, such as the bond or sukuk market. Pension funds and infrastructure funds could also get involved. In the first two or three years I think Saudi renewable energy projects will be financed using bank debt but we will have to look at new structures as financing demand grows.”

Sukuk financing, an Islamic bond that is compliant with Sharia law, and conventional bond structures have already been used to finance renewable energy projects, albeit not in the Middle East. In February, SGI-Mitabu, a consortium of Australian developers, announced that it would finance its 250MW Indonesian solar through an offshore-domiciled sukuk. A seven-year $104 million sukuk will be issued to finance the first 50MW phase. Conventional bonds have been more frequently used. A table of notable clean energy bond issuances worldwide is shown opposite.
<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor</th>
<th>Funds raised</th>
<th>Rating</th>
<th>Interest rate</th>
<th>Tenor</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.7MW UK solar PV portfolio</td>
<td>Foresight Group</td>
<td>£60 million ($93 million)</td>
<td>N/A</td>
<td>2.60%</td>
<td>21 years</td>
<td>May-13</td>
</tr>
<tr>
<td>550MW Topaz solar PV farm (CA, USA) Under construction</td>
<td>MidAmerican Energy Holding Co</td>
<td>$250 million</td>
<td>BBB</td>
<td>4.88%</td>
<td>26 years</td>
<td>Apr-13</td>
</tr>
<tr>
<td>44MW Touwsrivier solar CPV project (South Africa) Pre-construction</td>
<td>Soitec Solar GmbH</td>
<td>ZAR1,000 million ($111 million)</td>
<td>Baa2.za (equivalent to BBB)</td>
<td>11%</td>
<td>16 years</td>
<td>Apr-13</td>
</tr>
<tr>
<td>166MW Comber wind farm (ON, Canada) Operational</td>
<td>Brookfield Renewable Energy Partners</td>
<td>C$450 million ($438.6 million)</td>
<td>BBB</td>
<td>5.13%</td>
<td>18 years</td>
<td>Feb-13</td>
</tr>
<tr>
<td>40MW Sombra and Moore solar PV projects - St. Clair Holding - (ON, Canada) Operational</td>
<td>NextEra Energy Inc</td>
<td>C$171.8 million ($175 million)</td>
<td>BBB</td>
<td>4.80%</td>
<td>19 years</td>
<td>Sep-12</td>
</tr>
<tr>
<td>204MW Oaxaca II &amp; IV wind farms (Oaxaca, Mexico) Operational</td>
<td>Acciona SA</td>
<td>$299 million</td>
<td>BBB-</td>
<td>7.25%</td>
<td>19.5 years</td>
<td>Aug-12</td>
</tr>
<tr>
<td>550MW Topaz solar PV farm (CA, USA) Under construction</td>
<td>MidAmerican Energy Holding Co</td>
<td>$850 million</td>
<td>BBB-</td>
<td>5.75%</td>
<td>27 years</td>
<td>Feb-12</td>
</tr>
</tbody>
</table>

Source: Clean Energy Pipeline
The media is replete with articles describing the ambitious solar power generation programs announced in the MENA region. However, as every investor or industry player knows, political will, though critical, is only part of the story. This section provides an overview of the state of preparedness of the legal framework in the selected MENA countries to support the programs announced.

Jordan and Morocco have the most advanced legal infrastructure in place to support renewable energy projects, followed by Saudi Arabia and the UAE. Qatar has plans and programs and the Qatar Foundation (QF) is active but there are no laws to which investors can turn. Kuwait and Oman are in earlier stages of the development cycle while other countries such as Yemen are struggling with continuing unrest and instability, which is hampering the creation of the legal infrastructure needed to precipitate renewable investment.

Jordan and Morocco, both net importers of oil and gas, have a strong need to attract renewables investment and in many ways already have the right legislative infrastructure to encourage investment. This includes renewable energy laws, programs, and financial incentives. Jordan, for example, has established a tariff structure, energy purchase laws, grid connection laws, and bidding and procurement rules and procedures. Morocco and Jordan also permit and even encourage developers to propose their own projects. However, broad legislative support means little if practical issues, such as the ability to quickly register companies, prove difficult or onerous.

Gulf Cooperation Council (GCC) countries share many common principles and laws — low taxation, government participation in energy projects, requirements for local partners and a preference for training the local population. Saudi Arabia and the UAE possess the most advanced programs either in place or recently proposed to support renewables, particularly solar. This includes initiatives from K.A.CARE in Saudi Arabia, Masdar in Abu Dhabi, DEWA in Dubai and QF in Qatar. Saudi Arabia and the UAE are closest to announcing regulatory policies and feed-in tariffs to support the initial government-supported initiatives for solar project development, though none are yet available. Dubai and Qatar are also thought to be working on the regulations needed to support the rooftop solar projects proposed for those countries.

While Kuwait and Oman have expressed support for renewables, the programs, laws, and precise ministerial support to bring these ideas into fruition are not yet accessible.
For renewables the key issue throughout the region is the need for a certain regulatory framework, and clear tariff and off-take mechanisms. In the GCC the nascent regulatory framework is made more difficult by subsidized oil and gas. Only Jordan, Morocco and Dubai have laws in place to bolster renewables and these do not cover the whole range of energy regulations required (e.g. large utility-sized plants vs. individual PV installations).

Other industry specific considerations include the somewhat start-and-stop nature of initiatives, general uncertainty as to the effectiveness of regulators and the uncertain timing of various project launches. Other aspects include uncertainty over which solar technologies will be preferred and in what applications, how solar will be incorporated into the grid competitively in light of market distortions created by oil and gas subsidies, and the technical challenges related to connecting solar projects to the grid.

For any company in the renewables sector, the legal environment that has to be navigated includes a requirement to involve local partners, the company structure, availability of materials, custom duties, availability of labor, requirements to hire and train the local labor force, as well as the usual myriad of other issues which may affect any investment, such as licensing, tax, customs duties, the ability to expatriate monies, and permitting, to name just a few.

Setting up companies

The list of active players includes PV manufacturers, solar technology companies, developers, contractors, operators, regulatory experts, financiers, and private equity companies. Consulting companies, lawyers, and accountants have set up, or are considering setting up special departments to service this growing industry. Experienced solar companies from China, Europe, and North America have expressed increased interest in ventures in the region.

Some companies have had a business presence in Jordan, Morocco or the GCC for years, but many are new to the market. New entrants will have to establish an operating entity in one or more countries, and/or will want to enter into discussions with potential partners to bid on solar projects and establish a strategy going forward.

“New entrants will have to establish an operating entity in one or more countries, and/or will want to enter into discussions with potential partners to bid on solar projects and establish a strategy going forward.”
Navigating individual national laws and requirements requires diligence and perseverance and, while the laws do encourage investment, the practical application is not always straightforward. Indeed numerous examples exist where despite the extreme interest of the governments supporting renewables, encouraging investment and welcoming foreign investors, practical barriers result in some company registrations being too slow or never happening altogether. In other countries, despite the official stance on encouraging investment and welcoming foreign investors, practical barriers result in some company registrations being too slow or never happening altogether. This is deeply frustrating for investors and inevitably results in a spike in transaction costs before a bid is ever made.

All the GCC countries, as well as Jordan and Morocco permit companies to establish at least one or two types of entities. While 100% ownership may be technically possible in the energy sector (in Saudi Arabia, Dubai’s free trade zones, Kuwait, and Qatar, with Ministry approval), investors will typically require state-owned partners that hold stakes sized between 25% (Saudi EPC contractors) and 51%. In Dubai or Abu Dhabi the government would own at least 51% (60% in Abu Dhabi) of a power production joint venture company.

In reality almost all investments will benefit from local involvement, either through governments owning a percentage of projects or a joint venture structure.

**Key renewables laws**

The renewable energy projects being developed now are all being implemented with extensive government support. This allows the early entrant investors to benefit from government support and assistance to deal with both common investment issues such as land ownership rules, company ownership rules, tax issues, etc., and also industry specific issues such as grid connections and tariffs.

Jordan’s April 2012 passage of the Renewable Energy and Energy Efficiency Law (REEL) together with more recent amendments have created the most complete legislation for renewables in MENA. There is a set tariff structure, and requirements for the National Electric Power Company to purchase the output and to fund grid connection for larger projects. REEL also allows investors to propose renewable energy projects, a rare attribute in the region.
The direct proposal capacity set out in REEL enables investors to negotiate at a high level relatively quickly in order to get their projects underway. Additional support comes from codes for energy efficiency buildings, green building guides, tax exemptions and tax incentives.

During 2010 and 2011 Morocco enacted significant legal reforms to develop and strengthen the legal and regulatory framework for renewable energy. Law 13-09 on Renewable Energies provides the framework for renewables investors and developers. Its main attribute is that there are no set limits on the amount of power that can be generated or on the source of the energy. The law also allows for the output to be used locally, transmitted across the country or exported. Morocco has also published other rules and regulations to aid the industry, including energy efficiency laws and the establishment of public agencies to aid the development of the sector. This includes the creation of public-private partnership the Moroccan Agency for Solar Energy (MASEN).

Saudi Arabia, UAE and Qatar have renewables programs setting out precise capacity targets. In Saudi Arabia K.A.CARE laid out its plans together with general legal and technical requirements for the renewable energy industry. Like other countries in the region, the next step will be the specific legislation that investors will follow.

K.A.CARE’s announced time frame for releasing the procurement RFPs has slipped (first round 2012; second round 2013/2014). However, the concrete steps K.A.CARE has taken to put the infrastructure in place and permit investor/industry/stakeholder comment provides an expectation that the required laws and legislation will be forthcoming, and will prove strong.

Qatar has not adopted specific renewable energy laws or regulatory framework. QF is promoting renewable energy and has reached an agreement with the sole government electric utility, Kahramaa, on the purchase of power from QF projects. Qatar also plans rooftop projects. No further laws are on the horizon and investors will have to watch for opportunities in individual projects.

In Kuwait the Partnerships Technical Bureau (PTB), combined with the Ministry of Energy and Water (MEW), for energy projects, are the key government entities responsible for renewable energy installation. Kuwait does not have any laws related to renewables, which makes investing a challenge. Although the PTB can consider unsolicited proposals for solar power projects, review processes, project requirements and the interaction process with MEW are unclear. MEW, the country’s sole electricity producer and distributor, has agreed to purchase all output but details are lacking.

Like Kuwait and Qatar, Oman has not formally drafted specific laws for renewable energy. While initial plans have been made, including new guidelines for large scale projects and the promotion of renewable energy in rural areas, and further steps are being taken, such as the recent (May 2013) identification of four sites for large scale solar projects, the laws, rules and regulations investors need have not yet been completed.
AN OVERVIEW OF THE LEGAL FRAMEWORK
Bidding, RFPs, land and labor concerns

Other aspects related to large energy projects include bidding and procurement rules and procedures, the availability of financial incentives, and a whole host of regulatory requirements and approvals as well as real estate ownership rules.

Most MENA countries have experience with the procurement of energy plants and the required reviews, approvals, and other provisions that are required for large energy projects. Renewables projects will be similar in structure. Likewise, competitive bidding is the norm. Jordan and Morocco also provide the ability to propose projects directly.

The White Paper published by K.A.CARE in Saudi Arabia outlines the anticipated procurement process and identifying criteria to be used in awarding renewable energy projects there.

Jordan, Morocco, Saudi Arabia, the UAE and Qatar intend to provide or offer “pre-packaged” sites for the initial locations. As an example, in Saudi Arabia the White Paper lays out the anticipated steps, which include pre-qualification; a “Statement of Opportunity” with details of the specific project; and a formal RFP, which will include a standard PPA. A key requirement for investors interested in the Saudi market is that the bidder must be a Saudi entity or one that is undergoing registration. This requirement places a premium on interested parties for establishing a presence in Saudi Arabia while reviewing, considering and deciding how they will approach the bidding rounds.

The White Paper provides the criteria expected to be used in evaluating proposals received in any given bidding round, as well as the evaluation, rating and scoring of the criteria. Many of the factors require bidders to have made significant plans and progress in areas including the securing of local permits and approvals, obtaining major equipment, and incorporating local content including construction labor and engineering and professional services.

The difficulty for investors in Saudi Arabia, UAE, Qatar and other countries is the uncertainty surrounding the launch of a procurement program. In Saudi Arabia where much has to be preplanned, the change in timing makes it very difficult for developers to make meaningful progress in obtaining local permits and sourcing any equipment. The local content provision lends further importance to an investor's need for information regarding the launch of the bidding rounds, as many of the big industry players are international companies who may need time to develop relationships with local entities. Moreover, foreign equipment and service suppliers may want to set up permanent establishments in the country in order to qualify for the local content requirement.

Real estate laws can also have a significant impact on project viability in the region. Utilizing solar and wind energy requires significant amounts of land, and the laws in each country typically prohibit or restrict foreign ownership. A solution to this constraint is to lease the land from the owner. In many cases the government owns the land, which will make the leases simpler to organize. However, for any project where the government does not provide the land – in Jordan and Morocco, for instance, where investors can propose projects – the need to fully understand land ownership and leasing laws is crucial. The projects underway or planned in all GCC countries to date come with government support, and a main resource they have provided is the site itself, reducing the need for investors to focus on this issue just yet.

Labor can be an issue in all the countries and finding qualified local staff is difficult. Bringing the necessary experts and labor in Qatar, UAE, Kuwait and Oman is somewhat easier.
due to the countries’ comparatively small size. In Saudi Arabia, while it is possible, the government has put pressure on the private sector to pursue “Saudization” — the hiring of Saudis for many positions. In all countries the renewables energy sector is seen as a source of good quality jobs and the emphasis is on local hiring, training and transfer of knowledge.

**Ease of doing business**

In the Ease of Doing Business 2013 rankings determined by the World Bank, Morocco was placed at 97, and Jordan at 106 out of 185 countries. Saudi Arabia ranks highest overall in the GCC at 22nd, followed by the UAE (26th) Qatar (40th), Oman (47th), and Kuwait (82nd).

For the MENA region, Morocco scored highly at 3 (of 19), while Jordan is 9 of 19 in the ‘Ease of Starting a Business’ category. Qatar ranked 10th in the MENA region, placing it below most other GCC countries in terms of starting a business. Unsurprisingly, the UAE is 1st in the MENA region for starting a business while Saudi Arabia is 6th.

These rankings matter because they serve as a guide to what investors can expect when operating in the region. They are not infallible however and a country with a favourable rating may still have unexpected issues.

**Summary**

While each country has taken some of the steps needed to encourage investment in renewables, none has yet introduced the full package investors need. Jordan and Morocco are close, but could benefit by improving factors involved with the ease of doing business. Saudi Arabia and the UAE rank high on ease of doing business but do not have the rules and regulations in place that would prove beneficial.

Investors seek profits, and certainty in the rules and regulations under which they must operate is a key factor in any business. In the renewable sector, despite the potential, there are difficulties that make investing unfeasible without government support.

The way in which investors approach these issues and the specifics of any RFP will have a direct impact on the final outcome. Investors should also be aware of the potential risk factors.
Squire Sanders has a long established track record in all aspects of renewable energy projects encompassing construction and development, planning & consenting, real estate and environmental, health & safety, regulatory, antitrust, financial incentives, tax structuring, construction and procurement, IP, M&A, consortia arrangements and all aspects of debt and project financing. Our expertise includes wind, solar, biomass, biofuels, W2E, geothermal and cleantech.

A leading projects and renewables practice in the Middle East and around the world – we understand the relevant issues and can offer expertise gained from handling projects throughout the region and globally.

Strong projects and EPC practice – we have in-depth project knowledge to support our renewable energy clients having advised on BOO, BOOT, DBOT and EPC contracts for power, water, wastewater and water/power projects in growth and emerging markets. We provide in-depth and comprehensive services on a diverse range of subjects and at all stages of a project. These include issues unique to energy and renewables in the Middle East, as well as more general corporate concerns.

Multinational team locally and internationally qualified including multilingual lawyers – Squire Sanders renewable energy lawyers are skilled in local customs, fluent in Arabic, connected with local business and legal networks, and versed in local legal and business nuances. Our legal team is multilingual and we have full in-house translation capabilities.

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