Lighting up the Kingdom of Morocco

Energy strategy and recent developments in power projects

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Population (2011 est.)
32,272,974

GDP (real growth rate) (2011 est.)
4.5%

Electricity (installed generating capacity) (2009 est.)
6.164 millionGW

Government type
Constitutional monarchy

Capital
Rabat

Morocco has been on a steady path of economic recovery since the stagnation of the 1990s, with sound macroeconomic management and sustained growth in non-agricultural sectors.

Source : www.data.worldbank.org

Increasing energy generation by 185% in 15 years

Over the past 10 years, the Kingdom of Morocco has undertaken several political, economic, legal, social and environmental reforms.

Due to its political stability, its geographical location and a political willingness to improve its business climate, Morocco is one of the most attractive Arab and African countries to foreign investors. King Mohammed VI stated that "*Morocco has no choice but to strengthen its local capacity for energy production and to open the way to promising energy supply investments. It must continue its efforts to make alternative and renewable energy a cornerstone of the national energy policy*".

It is contemplated that forthcoming economic projects will increase energy demand by 185% by 2030, and electricity demand by 68% by 2030. To support the acceleration of such projects, Morocco has developed an ambitious 2020-2030 energy strategy (the Moroccan Energy Strategy).

Having no oil resources and relying heavily on energy imports, Morocco wants to make the most of its wind and solar resources to become a top renewable energy producer. To do so, the Kingdom has therefore profoundly reformed its legal and institutional framework.

The Linklaters' Paris team is strongly involved in recent major energy projects in Morocco, and has extensive knowledge of the Moroccan energy market and Moroccan law issues. This note provides a high level analysis of the Moroccan energy market and the Moroccan Energy Strategy through our experience.

- The Investment Charter **(1995)**
- The law on delegated management **(2006)**
- The law on renewable energy **(2010)**
- The law on energy efficiency **(2011)**
- Draft law on PPP **(2012)**

> "Morocco has no choice but to strengthen its local capacity for energy production and to open the way to promising energy supply investments. It must continue its efforts to make alternative and renewable energy a cornerstone of the national energy policy."

Modernised Legislation

To ensure the implementation of the Moroccan Energy Strategy, several legal reforms have been enacted.

The Investment Charter (Charte des Investissements)

The Investment Charter promulgated by law n° 18-95 dated 8 November 1995 sets out the main terms and conditions for the grant of an attractive legal framework for foreign investments in Morocco (in particular with respect to tax and customs incentives).

The electricity legal framework

The legal framework for the generation, transportation and distribution of electricity is primarily governed by:

- Dahir n° 1-63-226 dated 5 August 1963 (as amended), which created the *Office National de l'Electricité* (ONE) and established the basis for private sector participation in energy production projects (Independent Power Producer projects or IPPs);
- Dahir n° 1-11-160 dated 29 September 2011, which promulgated law no. 40-09 creating the *Office National de l'Eau et de l'Eau Potable* (ONEE), which replaces the ONE.

Electricity tariffs are determined by a decree of the Minister of Economic Affairs.

Law n° 54-05 on delegated management (Loi sur la Gestion Déléguée) of services and public works promulgated in February 2006

This law allows the State or local authorities to concede the management of a public service to a private entity. The main sectors in which delegated management were made are electricity, water, irrigation and urban transport.

Law n° 13-09 promulgated on 11 February 2010 relating to renewable energy

This law liberalises the renewable energy sector. It introduces major innovations, including the opening to competition of renewable electricity production and the ability to export electricity from renewable sources, by using the national grid (subject to the payment to the State of an annual fee).

It also sets an authorisation/declaration system, depending on the capacity of the facility as follows:

- a declaration if an electricity generating facility capacity is between 20kW and 2MW;
- an authorisation if an electricity generating facility capacity is equal to or higher than 2MW; and
- in respect of facilities that produce thermal energy, there is only a declaration if the capacity is equal to or higher than 8MW.

Law n° 57-09 creating the Moroccan Agency for Solar Energy (MASEN) setting out a specific framework for solar projects

This law sets MASEN specific targets regarding the implementation of the Solar Plan. MASEN ensures the management of the projects and remains liable for all the decisions which have been taken relating to the project.

Law n° 47-09 relating to energy efficiency dated 29 September 2011

This law lays the foundations of future thermal regulation by capitalising on French and German experiences.

It aims to increase the efficiency of energy resource consumption, to reduce energy costs on the national economy and to contribute to sustainable development. It also encourages the use of solar water heaters and energy-saving light bulbs.

> "...the need to develop contractual and public-private mechanisms in order to maximise the investments."

Draft law on Public-Private Partnerships (PPPs)

King Mohammed VI recently insisted on "*the need to develop contractual and public-private mechanisms in order to maximise the investments*", including in infrastructure and new technologies sectors.

In early August 2012, a draft law on PPPs was published.

This draft is strongly inspired by the French Ordinance of 17 June 2004 on PPPs, but also follows the approach used by the UK Private Finance Initiative experience.

By way of example, the draft duplicates the concept of "availability-based payments", whereby remuneration of the private entity depends on the availability of an asset or the performance of a service.

New Institutions

To take up the challenges set out above and in conjunction with the Moroccan Energy Strategy, Morocco has made several reforms to meet its energy targets, such as dealing with the security challenges of sourcing, reducing energy bills, preserving the environment and ensuring sustainable development.

A number of institutions have been set up to reach these energy goals. These include:

- the **ONEE** (Office National de l'Electricité et de l'Eau Potable), which is the public utility in charge of the production, transport and distribution of electricity. It is the main entity in charge of thermal and renewables (other than solar) IPPs;
- **MASEN**, which is the state-owned agency in charge of solar IPPs;
- the *Société d'Investissements Energétiques*[1] (**SIE**), which provides partial State financing through a direct equity investment or a co-investment through a financial partner in project companies; and
- the National Agency of Development of Renewable Energy and Energy Efficiency (*Agence Nationale pour le Développement des Energies Renouvelables et de l'Efficacité Energétique*, **ADEREE**), which is primarily active in the Corporate Energy Efficiency Programme.

30%

irradiation... 30% higher than the best sites in Europe

10,000 hectares

spread over five sites

Strategic Targets

The Solar Plan

Moroccan solar resources are significant. With an extremely favourable irradiation (>2300 kWh/m²/y), which is 30% higher than the best sites in Europe, investing in solar projects in Morocco could be an interesting lever for investors.

The US$9bn Solar Plan calls for the development of 2000MW by 2020, with 10,000 hectares of solar installations to be spread over five sites (Ouarzazate, Ain Beni Mathar, Foum El Oued, Boujdour, Sebkhat Tah).

These projects are to be based on two major technological variants: Concentrated Solar Power (CSP) and Photovoltaic (PV) technologies.

[1] The SIE is an investment fund focused on renewable energy which operates in the energy field, and more specifically in the field of renewable energy and energy efficiency. It was created in 2010 with MAD1bn capital from the Energy Development Fund (*Fonds de Développement Energétique*) through equity injections from the Kingdom of Saudi Arabia, the United Arab Emirates and the Moroccan Hassan II Fund for Economic and Social Development (*Fonds Hassan II pour le Développement Economique et Social*).

> CSP is a technology which generates electricity by using reflectors to focus sunlight onto a fluid-filled vessel.

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Photovoltaics (PV) is a method of generating electrical power by using solar photovoltaic panel or solar cells which convert sunlight into electricity directly.

> The CSP plant of Ain Beni Mathar is already supplying electricity to the grid. This plant uses a cutting-edge design, combining a large array of 224 parabolic mirror collectors concentrating solar energy and boosting the steam output needed to produce electricity in this 470MW facility.

  The project has been co-financed by ONEE, the African Development Bank (ADB) and the Global Environment Facility (GEF).

> In 2009, MASEN launched the development of the 500MW Ouarzazate plant. This ambitious project is being developed in two phases based on two technological variants.

  The first phase of the Ouarzazate project entails the construction of a CSP solar thermal plant with a 160MW capacity, which should result in a reduction of 240,000 tons of CO_2 equivalent emissions per year. This first phase will use parabolic trough mirror technology, while the next phase implements the CSP tower technology. Work is scheduled to begin on the first phase of the Ouarzazate facility in the third or fourth quarter of 2012 and to finish in 2016.

  On 24 September 2012, Morocco awarded to the consortium led by the Saudi company ACWA Power International the US$1bn contract to build the Ouarzazate 160MW solar power plant. The Saudi-led consortium includes Spanish firms Aries and TSK.

  On 23 January 2013, Masen launched request for qualification process to select potential sponsors to develop the next CSP phase of the Ouarzazate solar power complex through IPP project. The CSP next program is divided into two separate projects: a CSP tower project with a contemplated capacity of around 100 MW and a CSP parabolic trough project with a contemplated capacity of around 200 MW.

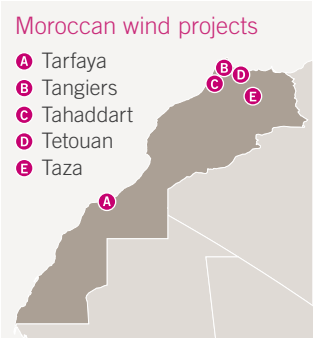
Le programme de développement du marché des chauffe-eau solaires (PROMASOL)
This programme involves the installation of 440,000 m² of thermal solar sensors in 2012 and 1.7 million m² in 2020. In terms of thermal energy produced annually, these figures will correspond to 1190GWh by 2020.

This programme will reduce CO_2 emissions by 920,000 tons per year and create 920 permanent jobs.

Both the Solar Plan and PROMASOL were designed to fall within the Clean Development Mechanism (CDM) criteria[2].

920,000 tons

reduced CO_2 emissions per year



The "Moroccan Integrated Programme of Wind Energy" (the Wind Energy Programme)

Spanning over a period of 10 years and with a total investment estimated at MAD 31.5bn, the objectives of the Wind Energy Programme are (i) to increase the share of wind power in the national energy balance to 14% by 2020, (ii) to achieve a production capacity from wind power of 2GW and annual production capacity of 6600GWh, corresponding to 26% of current electricity generation and (iii) to save 1.5 million tons of fuel annually and prevent the emission of 5.6 million tonnes of CO_2 per year.

14%

increase in the share of wind power in the national energy balance by 2020.

[2] The CDM, as defined under Article 12 of the Kyoto Protocol, allows a country with an emission-reduction or emission-limitation commitment under such protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one ton of CO_2, which can be counted towards meeting Kyoto targets.

280MW

of wind power is provided by wind farms

> "ONEE guarantees the transit on the national grid of all energy produced from renewable sources..."

Currently, 280MW of wind power is provided by the wind farms of Adbelkhalek Torres (50MW) and Lafarge (30MW) in Tetouan, Amougdoul in Essaouira (60MW) and Tangier 1 (140MW), with 720MW being developed in Tarfaya (300MW), Akhfenir (200MW)[3], Bab El Oued-Laayoune (50MW), Haouma (50MW) and Jbel Khalladi (120MW).

Five new potential sites have been planned for the construction of wind farms with a total nominal capacity of 1000MW: Tangier 2 (150MW), Koudia El Baida in Tetouan (300MW), Taza (150MW), Tiskrad Laayoune (300MW) and Boujdour (100MW).

Companies have already been invited to submit bids to pre-qualify for the five future wind energy projects under the second phase of the Wind Energy Programme and recently, ONEE announced the six pre-qualified candidates. Calls for tender for those projects are expected to be launched among those pre-qualified candidates by year end.

GDF Suez and Nareia Holding announced, on 7 February 2013, the start of the construction works of Tarfaya Windfarm Project, for which Linklaters Paris was the lenders' Counsel.

The "EnergiPro" programme

This programme allows ONEE's industrial clients to build up renewable energy facilities dedicated to supplying energy to their own facilities. ONEE guarantees the transit on the national grid of all energy produced from renewable sources and undertakes to repurchase under an attractive tariff any excess electricity not purchased by such industrial clients.

Thermal Power

Moreover, to support the economic and social development of the Kingdom and to meet growing electrical energy demands, significant thermal power IPPs are on-going and the development of a greenfield 1320MW coal-fired IPP in Safi.

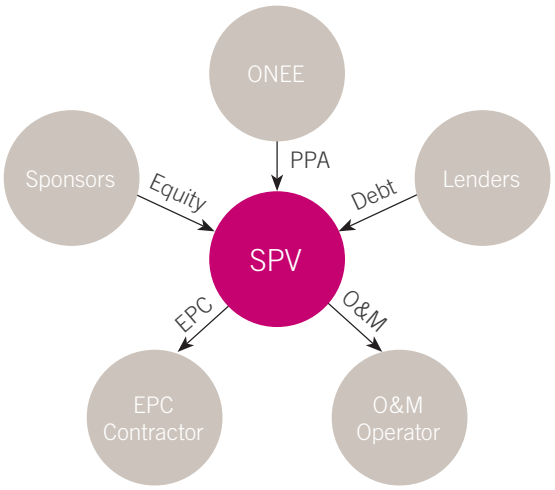
The extension of the existing Jorf Lasfar power plant, (two additional units of 350 MW each) involving a financing of approximately US$1.4bn and for which Linklaters Paris was the lenders' counsel, reached financial close on 28 January 2013.

Mature and Tested Financing Structure

The contractual scheme of recent energy projects generally follows the following "classical" project finance structure:

- the Project Company is in charge of developing, owning, operating and maintaining the facility, its shareholders are private sponsors but in recent transactions, ONEE or MASEN sometimes take (or have an option to take) a minority stake;
- the EPC contractor enters into a construction agreement with the Project Company; and
- the operator is in charge of operating the asset.

Classical project finance structure



EPC: Engineering, Procurement and Construction Contract
PPA: Power Purchase Agreement
O&M: Operating and Maintenance Agreement

[3] Both Tarfaya and Akhfenir projects are being developed by Nareva Holding, a subsidiary of the "Omnium Nord-Africain" (ONA) group, which specialises in renewable energy.

> The current global financial turmoil has increased the appetite for concessional funds...

The financing scheme of recent energy transactions includes both commercial banks (international and Moroccan) and concessional funds (from the Clean Technology Fund (CTF) and the World Bank Group (through the International Bank for Reconstruction and Development (IBRD)).

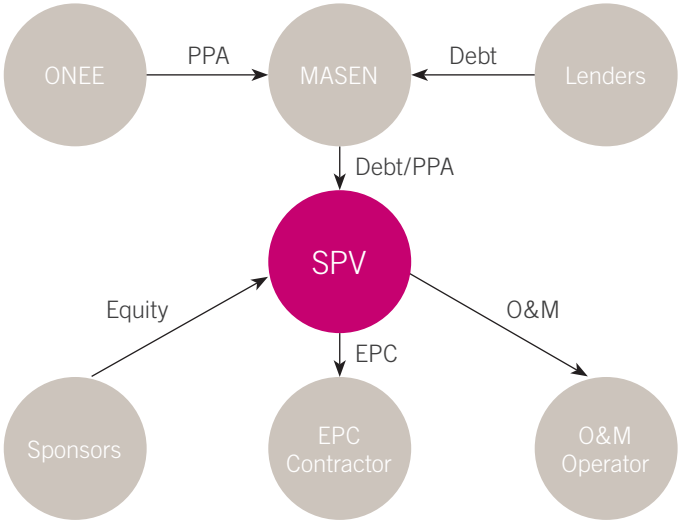
The current global financial turmoil has increased the appetite for concessional funds granted by International Financial Institutions (IFIs) and Export Credit Agencies (ECAs), such as the *Agence Française de Développement* (AFD), European Investment Bank (EIB), the World Bank, Japan Bank for International Cooperation (JBIC), Nippon Export and Investment Insurance (NEXI) and the Korean bank KEXIM, as well as an increasing recourse to Moroccan liquidities, with Moroccan *Attijariwafa Bank* and *Banque Centrale Populaire* taking the lead.

On the Jorf Lasfar extension IPP, the financing comprises ECA tranches (JBIC and KEXIM), covered (NEXI and KEXIM) and uncovered tranches with international lenders (BNP Paribas, Société Générale, Standard Chartered) and Moroccan lenders (*Banque Centrale Populaire, Banque Marocaine pour le Commerce et l'Industrie, Société Générale Marocaine des Banques*). In the wind farm sector, some projects have been financed solely by Moroccan banks.

In contrast, in the Ouarzazate solar IPP, the financing comprised an allocation from the World Bank's Trust Fund and a grant from the European Neighbourhood Investment Facility of the European Commission, as well as additional loans from several IFIs, such as the ADB, the AFD, the EIB and the German KfW.

In addition, the contractual structure mandated by MASEN is quite different from that of other IPPs in Morocco, since MASEN is entering into a power purchase agreement (PPA) with ONEE (based on ONEE's high voltage tariff) and a second PPA with the Project Company (based on the project's full cost of CSP generation). Thus, MASEN will buy high-cost CSP production and will sell it to ONEE at a price equivalent to the currently lower coal generation cost; the gap ultimately being covered by the Moroccan Government which, pursuant to the MASEN law, undertakes to guarantee the financial sustainability of the Solar Plan, on a project-by-project basis.

MASEN IPP structure



> ...Morocco has become a thriving IPP market, for which our team has developed a unique experience.

Security

Moroccan law provides for a wide range of instruments to secure financing, including, in particular:

- assignment of receivables (strongly inspired by the French *Loi Dailly*), pledges over bank accounts, share pledges (with the caveat that private foreclosure is not available), and transfer of insurance policies indemnities either through an assignment of receivables or a delegation; and
- security interests over real assets including mortgages (to the extent a real right is available over the relevant site – see developments in paragraph below), a pledge over machinery and equipment (covering primarily the turbines) and a pledge over the business of the Project Company.

Until recently, Moroccan energy projects were financed under a Build, Transfer, Operate (BTO) scheme. Under such a scheme, and due to the Project site being part of the public domain of the State, the Project Company was only granted a usufruct right (*droit de jouissance*) over such land rather than a legal entitlement (*droit réel*). As a result, a mortgage in favour of lenders could not be granted. This is due to the fact that the public domain is inalienable and not, as a matter of principle, transferable to another entity for an unlimited period.

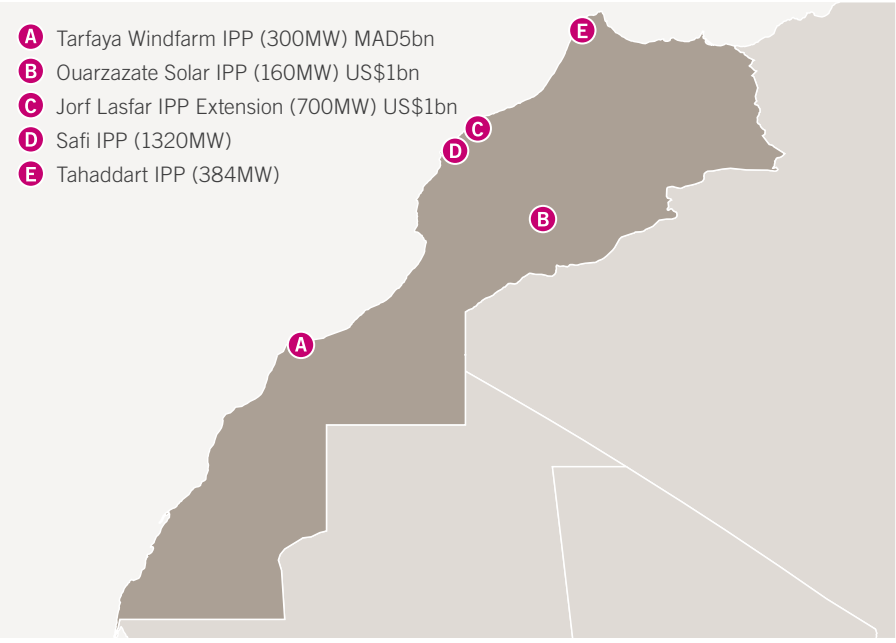
To increase the bankability of these transactions, another project finance scheme has been adopted in recent Moroccan energy projects.

Following a Build, Own, Operate and Transfer (BOOT) scheme, the Moroccan State reclassifies the relevant areas from the public domain of the State to the State private domain and then transfers full ownership of them (*droit de superficie*) to a private entity by way of a reclassification (*déclassement*) procedure.

Conclusion

With its long track record of being a reliable place to invest, together with investment-friendly legislative developments, Morocco has become a thriving IPP market, for which our team has developed a unique experience. This is a trend which should continue with the pipelines of energy projects which the Government of Morocco wants to push through.

Our experience in power projects in the Kingdom of Morocco



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