



# AUCTION STUDY

## Algerian case study

Mechanisms and main factors of a RES auction

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RENEWABLE ENERGY SOLUTIONS  
FOR THE MEDITERRANEAN



# About RES4MED & Africa



## Renewable Energy Solutions for the Mediterranean & Africa RES4MED&Africa

**Who we are:** RES4MED&Africa promotes the deployment of large-scale and decentralized renewable energy and energy efficiency in Southern-Mediterranean and Sub-Saharan African countries to meet local energy needs. Since its inception in 2012, the association gathers the perspectives and expertise of a member network from across the sustainable energy value chain.

**Our work:** RES4MED&Africa functions as a platform for members and partners of emerging markets to foster dialogue and partnerships, share knowledge and build capacity to advance sustainable energy investments in Southern-Mediterranean and Sub-Saharan African countries.

**Our mission:** RES4MED&Africa aims to create an enabling environment for renewable energy and energy efficiency investments in emerging markets through 3 work streams:

- *Acting as a connecting platform for dialogue & strategic partnerships between members and partners to exchange perspectives and foster cooperation;*
- *Providing technical support & market intelligence through dedicated studies and recommendations based on members' know-how to advance sustainable energy markets;*
- *Leading capacity building & training efforts based on members' expertise to enable skills and knowledge transfer that supports long-term sustainable energy market creation;*

At the end of 2015, RES4MED members decided to expand the geographic focus to Sub-Saharan Africa in light of the huge potentials and growth opportunities for Africa's renewable energy sector.

**Members:** RES4MED&Africa gathers a network of 38+ members from across the sustainable energy value chain including industries, agencies, utilities, manufacturers, financing institutions, consultancies, legal and technical services providers, research institutes, and academia.

**Partners:** RES4MED&Africa works with local, regional and international partners, agencies and organizations to pursue its mission and promote renewable energy and energy efficiency deployment in the region of focus.

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## Abbreviations

<b>ANIREF</b>	Intermediation and land Regulation National Agency
<b>CDER</b>	Renewable Energy development center
<b>CSP</b>	Concentrate Solar Power
<b>CREG</b>	Commission of the electricity regulation
<b>EETC</b>	Egyptian Electricity Transmission Company
<b>EGP</b>	Enel Green Power
<b>FiT</b>	Feed in Tariff
<b>FiP</b>	Feed in premium
<b>FNERC</b>	Renewable energy and cogeneration national funds
<b>GHI</b>	Global Horizontal Irradiance
<b>GW</b>	Gigawatt
<b>GRTE</b>	Management of the Electricity Transmission grid
<b>IEA</b>	International Energy Agency
<b>IFC</b>	International Finance Corporation
<b>IRENA</b>	International Renewable Energy Agency
<b>MW</b>	Megawatt
<b>MWh</b>	Megawatt hour
<b>ONEE</b>	National Office of electricity and drinkable water
<b>PIAT</b>	Teminal of In Sallah, Ardrar and Timimoune
<b>PNR</b>	National Programof Renewable Energy
<b>PPA</b>	Power purchase agreement
<b>PV</b>	Photovoltaic
<b>RIN</b>	National Grid Interconnection
<b>RI</b>	Isolated Grid from the South
<b>RE</b>	Renewable energy
<b>RES</b>	Renewable Energy Solutions
<b>RES4MED</b>	Renewable energy solution for Mediterranean
<b>WB</b>	The World Bank

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## Introduction to the auction mechanisms

### 1. EVOLUTION OF SUPPORTING SCHEMES: TOWARDS AUCTION MECHANISMS

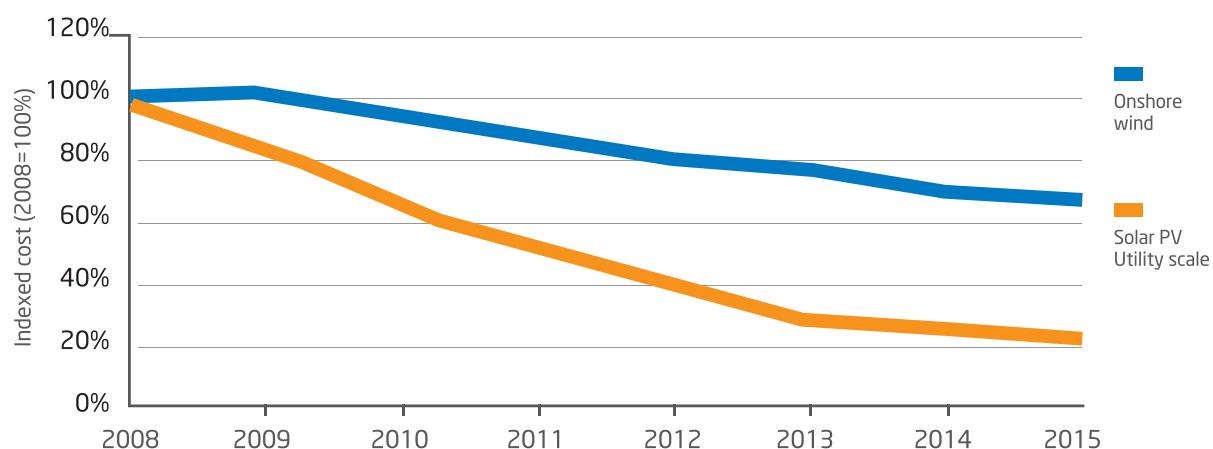
Renewable energies have been developed massively for the last ten years thanks to new supporting schemes such as Feed-in-Tariffs (FiTs) and Feed-in-Premiums (FiPs). This evolution was quite important and total installed capacity grew from 814GW in 2004 to 1560GW in 2013 (Table 1) and reached 1785GW at the end of 2015, doubling the installed power in 12 years.

Total Installed Capacity	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
☀ Solar Photovoltaic GW	2.6	3.1	4.6	7.6	13.5	21	40	71	100	139
☀ Concentrating Solar Power GW	0.4	0.4	0.4	0.4	0.5	0.7	1.1	1.6	2.5	3.4
风电 Wind Power GW	48	59	74	94	121	159	198	238	238	318
🌿 Bio Power GW	39	41	43	45	46	51	70	74	78	88
🌡 Geothermal Power GW	8.9	9.8	10	10.4	10.7	11	11.2	11.4	11.7	12
💧 Hydro Power GW	715	-	-	920	950	980	935	960	990	1,000

**Table 1: Evolution of total installed capacity between 2004 and 2013**

Source: REN21 (2014), "10 years of renewable energy progress", pp.9

This development allowed significant improvements in terms of technology-efficiency and cost. For instance, between 2008 and 2015, the average cost of onshore wind and solar photovoltaic (PV) decreased respectively of 35% and almost 80% (Figure 1).

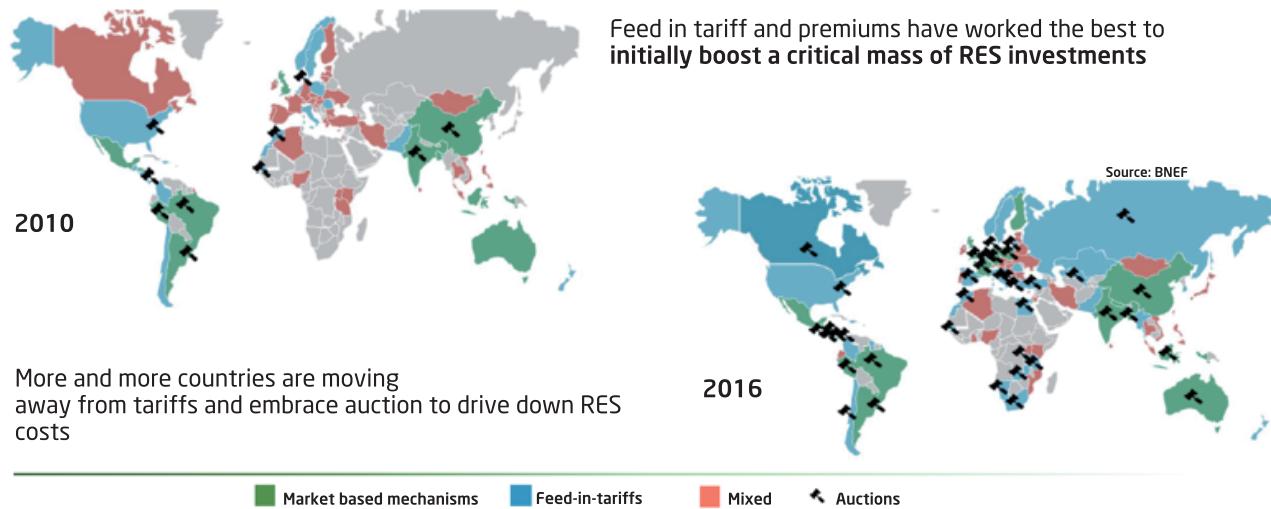


**Figure 1: Indexed cost of onshore wind and utility-scale PV**

Source: IEA (2016), "Next generation wind and solar power" - From cost to value, pp.8

But as these supporting schemes began to be costly for the States while the actual costs were decreasing, new forms of subsidies needed to be used. Consequently, an important switch appeared, between the years 2010 and 2016, from these supporting schemes to a competitive and market based one: **the auction mechanism** (Figure 2).

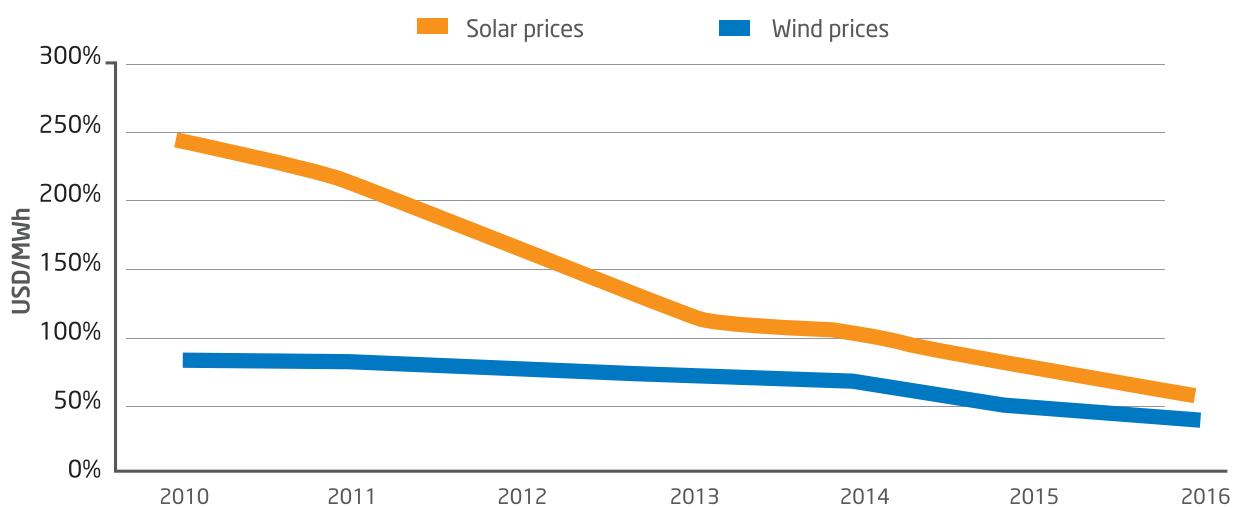
Across the world, in both developed and developing countries, this process is massively adopted for its capacity to develop RE technologies at a lower price than any other subsidy system.



**Figure 2: From FiTs and FiPs to auctions in countries around the world**

Source: Bloomberg New Energy Finance

The introduction of competition in a state funded sector changed the rules and gave public authorities the access to market based prices, brought by the organized competition between actors. For instance, in 2010, the auction processes around the world for solar PV resulted in a global average price of almost Dollars US (USD) 250/MWh, to compared with the average price of USD 50/MWh obtained in 2016. This results in a reduction of 80%, thanks to the auction system and to the cost efficiency innovation introduced by the competition. Recent bids in Zambia or Morocco even reached respectively USD 60.2/MWh for solar PV and USD 30/MWh for wind. This cost-efficiency is the reason why most countries now choose this system for medium and large-scale RE projects.



**Figure 3: Average prices resulting from auctions from 2010 - 2016**

Source: IRENA (2017) "Renewable Energy Auctions: Analysing 2016"

## 2. MAIN CHARACTERISTICS OF AUCTIONS

Although the wind and solar PV technologies become competitive almost all around the world, providing price security to investors is still the best way to boost their development by giving price securities to investors. But countries need to find a cost-efficient way to do so, and for many countries around the world auctions proved successful in this sense. The main benefits from auctions is to allow public authorities to reveal the real prices of the projects while letting subsequent opportunities for the private sector to invest in a profitable project.

If three main types of auctions can be found (sealed bid, iterative and hybrid processes), the global process is similar: the public authority informs the market about a specific RE development project and ask the private sector to make offers of price and quantity, together with commercial, financial and social details on how they will fulfil the project. Then the winner(s) of the bid is/are chosen, either on the base of one single offer or after several stages of offers and negotiations, depending on the type of auction.

Once a winner, or a group of winners, is selected, a clear and transparent agreement is signed between the public authority and the private actors on a long-term duration basis and the construction and exploitation process can start. Diverse types of contracts are possible but the most common is the Power Purchase Agreement (PPA), because of its high flexibility and adaptability. Among all agreements contracted between the government and the investors, the PPA is the most important as it will secure the payment stream for the duration of the project.

It also sets the required design, outputs, operation and maintenance specifications for the power plan. It can include penalties for both parties in case of delays in execution or payments, conditions for the investor not to fulfil its duty because of force majeure or purchaser breach of contract.

Overall, the process for the first project takes about 2 years. When the tendering process has already been established in a Country, it can take only several month (excluding the construction stage). The outcome is a reliable project for both the public authority and the private investors on a 20-25 years basis.

### Benefits and weaknesses of the tendering process

Benefits	Weaknesses
<p><b>Efficient price discovery</b> Introduction of competition allows lower prices.</p> <p><b>Flexibility</b> Adaptable to each case in each country, whatever the market model and it can include local socio-economic requirements.</p> <p><b>Stable &amp; transparent</b> Clear commitments and liabilities for each party, regulatory certainty for investors. Foster investments in emerging markets.</p> <p><b>Greater certainty for policy makers</b> Enable government to select price and quantity of RE.</p> <p><b>Benefits grid planning</b> Scheduled implementation allows the authority to plan grid development and connection as well as predictability of production.</p>	<p><b>Transaction costs</b> High transaction costs for bidders and public authority.</p> <p><b>Underbuilding and delays</b> Cancelled projects make investors lose up-front investment. Delays can outdated original bids if political-economic conditions change.</p> <p><b>Deficient competition</b> Possible underbidding (price under costs) causing loss of profitability. Predatory bidding can keep out small bidders (cannot reach very low prices) and let an oligopoly choosing the prices.</p> <p><b>Other risks</b> External market factors, grid costs and delays, heavy domestic content requirements, environmental impact assessments, poor project management.</p>

**Table 2: Benefits and drawbacks of the auction process**

Source: IRENA and CEM (2015), "Renewable Energy Auctions"

All in all, auction programs are a very efficient way of developing RE technologies, and the weaknesses highlighted in the table above can be eliminated relatively easily. Indeed, the auction process and the related contracts need to be duly drafted, either by an experienced public authority or by an external advisor. This

allows fixing guarantees for public and private stakeholders through lowering risks for both investors and lenders: the authority obtains a low price and knows the quantities and the schedule of development; the investors are comforted with a reliable and secured investment with fixed prices on a well-known duration. In these conditions, developing countries can obtain access to foreign capital by attracting international investors with opportunities of secured investments. Moreover, the authority can even include local economic development to ensure that the country will benefit from the operation.

### **Optimizing the benefits and minimizing the risks**

To make sure that the process takes only the best outcomes of the auction programs, different critical points can be identified based on researches and best practices around the world:

**A healthy competition needs** to be guaranteed to ensure that the market mechanisms will push the prices down. In order to get competition, the size of the tender must depend firstly on the amount of capacity that the network can assure, although it can be split across multiple sites. It means that the terms of the auction must be well defined to comfort the investors and that the lots should be dimensioned to be accessible to medium size companies. However, larger size projects could mean that the transaction costs are a smaller part of the overall project and the price can be lower. On average for solar PV, the investment costs are about 2.2 million euros per MW installed, and 1.7 million for the wind.

**However**, an arbitrage can be done, if the government wants to favour investors that have access to the necessary financing capabilities, it can dimension moderately large lots (more than a 100MW each). But in that case the PPA, the securities and guarantees need to be highly reliable, as the risk for the company becomes higher with a high undiversified investment.

**Then the Agreement needs** to be very complete, transparent and clear with every guarantee for investors and authorities so that no unexpected event can notably harm either the company or the authority.

**This can only happen** with a clear framework raising investor's confidence significantly, if it is transparent, stable and consistent and with credible timelines that need to be respected by the authority. Other tools to improve the investment climate for RE include long-term PPAs, (USD or EURO-denominated) and grid expansion planning within the adequate legislative framework.

**In emerging countries**, the RE development can't be done without considering a healthy local growth and job creation targets which nevertheless needs to be realistic and grounded in the market context. That is why a domestic content and socio-economic component must be considered in the winner selection. Indeed, price criteria and local added value should be weighted according to their mutual importance.

**Another crucial point** is to reduce entry barriers for the participants while ensuring competent companies will apply. This is made through adapted prequalification requirements. If too high, the pool of bidders will be reduced, limiting competition and thereby raising the prices. If too low, risks of underbidding will occur together with excessive delays due to the lack of experience of the bidders. Clear penalties can be used to avoid this risk.

**To favour a large variety of bidders**, the government shall offer good financing possibilities so the smaller companies could have access to interesting loans through mechanisms such as guarantees, partnerships with international or national institutions, public or private banks. The duration of the agreement (the so-called PPA) is usually between 20 and 25 years, giving investors a secured and fixed investment with long term visibility. However, PPA duration can be reduced once the auction procedure is well settled.

## Cases study: Renewable Energy tenders in Africa

The following sections will investigate the main points of auction mechanisms through the study of African auction cases, totally or partially successful, organized by countries like Zambia, Egypt or Morocco. This tends to identify the key points for the success of an auction and to show that whenever the location, some specific features can ensure the efficiency of the process.

This part aims to identify the main reasons why some auction processes succeeded and why some others failed or encountered difficulties, and doing so, identifying the lessons to learn from these cases.

### 1. Case study Zambia



Thanks to the Scaling Solar program of the International Finance Corporation (IFC) and the World Bank, Zambia organized a successful solar auction of a 73MW power plant, in 2015. In a nutshell, the Scaling Solar program is an IFC facilitating program, giving to the governments the main keys to drive an efficient and secured solar auction program. It also allows both governments and investors to benefit from securities, first importance element in African developing countries.

By giving strong financial securities with the support of the IFC and the World bank, the government attracted 48 solar power developers, among which seven reached the final proposal step. The winners of the first layer (45MW) of the auction were First Solar and Neoen, with a record low contracted price in Africa of USD 60.2/MWh and the second (28MW) was Enel Green Power with USD 78.4/MWh.

These record low prices in Africa could have been reached mainly through the expertise of the IFC and the World bank and through the securities brought in the project. Indeed, the World Bank's insurance products and the Multilateral Investment Guarantee Agency's guarantees were used, together with the financial possibilities, such as the IFC's debt financing. Same for the duration of the PPA, 25 years of power purchasing are guaranteed to the companies, providing secured revenues every year on a long-term perspective. But, according to the IFC, securities need to be backed by three important aspects in the tenders: scale, repetition of the process and competition.

To optimize these points, some pre-requirements steps were already done by the Zambian government, that chose the project site and secured all documentation the bidders would need (construction permits, land exploitation...). The government also found the right balance between over and under-scaled prequalification required: they had a pool made of competent companies, experienced and numerous enough to create a real competition effect. Moreover, the well-structured, transparent bidding process allowed not only to comfort the investors but also to make them respect the schedule: nine months after the first engagement with IFC for advice on the auction process, the bidders were chosen and the project finalized less than a year later.

If there is no perfect auction procedure for every African country, Zambia's example proves at least that the main factors of success in auctions around the world work also in developing countries and should be considered in any RE tendering process.

## 2. Case study Morocco



In 2012, Morocco started an auction program to develop 850MW of wind energy generation in the country. This ambitious target is more than the current capacity of the country in wind energy (787MW in 2015).

If the specific terms of the project are still under negotiation, the winning consortium of Enel Green Power (EGP), Nareva Holding and Siemens Wind Power has been pre-awarded the right to develop, design, finance, construct, operate and maintain the wind projects. According to EGP, the construction will require a total investment of about one billion euros and the end of construction and operation date is expected to be between 2017 and 2020.

The 850MW auction process was launched by ONEE (Office National de l'Electricité et de l'Eau potable), national electrical Moroccan agency, and divided in five batches:

- Midelt (150 MW)
- Tanger (100 MW)
- JbelLahdid (200 MW)
- Tiskrad (300 MW)
- Boujdour (100 MW)

Among the numerous consortia that applied for the program, five have been shortlisted by ONEE, including:

- Spanish Acciona Energia and Acciona Wind Power
- France's EDF Energies Nouvelles with Qatar Electricity and Water Company
- Fipar Holding and Alstom Wind
- Saudi group International Company for Water and Power Project in cooperation with GamesaEolicaSI
- Enel Green Power with the Moroccan company Nareva Holdings and the turbine builder Siemens.

The price obtained was a considerable success for the country, with USD 30/MWh (Euro 28/MWh), making the technology even cheaper than coal for Morocco. However, the ONEE's decision to retain the consortium was not only based on the price offered but also on the local content that they had to include that was given a significant weight by the national agency in the formula that determined the scoring of each bidding consortium. The minimum local requirement was imposed by ONEE: the development of a local wind industry, through the creation of blade production units in Morocco, the local production of towers and the implementation of formation centre, allowing for a true added value and a skill transfer for the country. The local content requirements were then quite engaging for the investors, but considered by many as fair, considering the size of the project and the amount of the investment.

Through loans contracted by ONEE as at very low rates as concessional financing and granted to the Project companies where ONEE itself was a minority shareholder, the tender was equipped with very attractive financing conditions. To do this, numerous international financial institutions were involved in the financing of the project. For instance, the ONEE raised funds through the German Bank of Development (KfW) for 130 million euros, the European Investment Bank (EIB) for 200 million euros, the European Commission for 15 million euros, the African Bank of Development (ABD) for 40 million euros and other entities. This operation allowed to reduce the risks for the investors, as much as the cost of debt.

Concerning the PPA itself, although currently still in negotiations, EGP was satisfied with the general terms

including a 20 years old duration, numerous but fair penalties and a mixed currency for the purchasing of the power, partly in an international currency and in the Moroccan Dirham. This mixed currency is common in the projects in developing country, being a fair compromise between investor's request (100% international currency) and government's request (100% local currency).

The PPA, as we can see, is a good example of a bankable contract with strong securities and guarantees, good competition and appropriate local content. However, the project was not exempt from some difficulties concerning the timelines, due to the large scale of the project and the many entities involved in the various transactions.

As a first large-scale RE development auction, the Moroccan government delegated the oversight of the project to the national energy company: ONEE. Although an effective way to organize the auction through an experienced and specialized entity, the skill concession had also its drawbacks. Indeed, ONEE was given many roles in the process: awarding authority, second main investor (50% of the total investment) and lender, via funds raised from international financial institutions. Even if the national company have successfully managed the project well, producing an exemplary bankable PPA and granting concessional financing to the project, the multiple roles ONEE took in the transaction require the build-up of complex procedures and corporate structures. This will result in a long and exhausting tender process (it took almost 7 years from the publishing of the project to the contraction of agreement).

### **3. Case study Egypt**



The Egyptian government started in 2010 a national plan whose goal is to install a total capacity of 11GW of RE until 2020, among which 2GW is to be constituted of wind energy. Stopped during the Arab spring, the plan started again in 2013 and had some new development recently: indeed, a 250MW wind farm in the Suez region has been awarded to a consortium of companies (ENGIE, Toyota, and Orascom) in 2016. The auction was organized in a single lot of 250 MW, designed to be awarded to one bidder, individual or consortium of companies. This moderate size lot, together with adequate pre-qualification conditions, allowed the Egyptian Electricity Transmission Company (EETC), organizing the bid, to attract many companies and to benefit from a sane competition.

Indeed, the bidders had to justify the understanding of the project's scope, the exploitation of at least three similar wind projects in the past 5 years, a healthy history of the company, good human and financial resources/capabilities.

Moreover, as the expected total investment is relatively important (about 345 million dollars), the New and Renewable Energy Authority (NREA) has started to raise consequent amounts funds through international entities: the EBI, for 115 million euros; the KfW, for 72 million; the Agence Française de Développement, for 50 million, the European commission, for 30 millions and finally the Egyptian government should provide around 78 million euros. Those funds have been lent mostly through the form of subventions, part of the international program to favour RE development in African countries, and are just a possibility offered to the consortium for the 75% of debt required in the PPA to finance the project. If not mandatory, it is most likely that these funds will be used, considering the very low interest rates those institutions usually allow.

Concerning the local content, it was required initially that it should account for 25% of the project. Including the fact that labour to be employed during construction and operation of the Project was requested to be made only of Egyptian nationals for unskilled and semi-skilled tasks in accordance with Egypt Labour Law. The scoring weight of the different elements (price, local content...) was not given to the initial bidders, but

the importance of the socio-economic local development was proven by a compliance criterion: if after the Commercial Operation Date (COD) the consortium cannot demonstrate that the guaranteed local content is achieved, this will be treated as a breach of contract.

First in discussion with Lekela Power-Actis, which offered the lowest prices, the EETC is now awarding the project to a consortium formed between ENGIE, Toyota and Orascom. This change is because the previous company did not complete the procedures and requirements announced by the ministry. However, if the winning bid was not the lowest, it is still an international record low price, indeed, the consortium won the bid at the price of USD 46/MWh. The ministry even announced that it will set this price as the overall figure for negotiations in any other tender in the future.

Considering the political instability of the country, strong guarantees and adequate penalties have been set. For instance, the government will pay what the companies are owned if the Ministry of Electricity (via the EETC) was unable to pay the price of generated electricity. Same for the delays, which have been covered for both parties. For the consortium, in case of delay in achieving the COD, 120 000 USD per day up to 180 days will be given to the EETC and a development bond (40 million USD up to 1 year after COD) is mandatory for the consortium to contract. Concerning the EETC, 660 million USD will be issued by the Egyptian Ministry of Finance to guarantee payment obligations of EETC to the Project Company pursuant to the PPA, together with 120 000 USD for each day of delay. Besides, the consortium negotiated for the payment of the tariff in two currencies (instead of only the national one): USD and Egyptian Pounds (EGP). This option is the most viable and balanced for both public and private actors.

The PPA itself is a 20 years contract, as it is commonly seen in the wind energy sector, based on strong liabilities for the buyer and on the take or pay mechanism, giving locked and secured revenues for the seller. The contract locks the guarantee concerning the ministry of finance possibility of payment failure and the currency in which the different elements are paid. Although the initial contract was planning a decommissioning bond (of about 9 million euros), further negotiations allowed to remove this clause.

The auction process was thus a success, and as the PPA negotiations have finished, the operational phase is most likely to start in the coming year. Nevertheless, as for the Moroccan case, the process was not exempt from timeline difficulties. For instance, the qualification phase was in 2009 and the request for proposal was issued in 2013, due to the Arab spring and the high political instability of the country. Overall, the process took 8 years so far and is still in negotiation phase, but once again, this is also due to the will of the Egyptian authority to organize carefully its first ambitious RE auction process, considering its lack of experience in this domain. For the Egyptian case, the initial agreement was considered quite unclear, as it did not lock the situation for the future with currency or payment guarantees. Egypt being more unstable than Morocco, and economically less certain, the agreement needed to be revised and renegotiated by the consortium, but the conditions seem to have been accepted and the PPA might well be a bankable one.

## Analysis of the Algerian Case and Recommendations for Preparing a Suitable Auction Mechanism

After launching its renewable energy (RE) development plan in 2015, Algeria reiterated its ambition to support the deployment of alternative energy sources in May 2017, by establishing a "Ministère de l'Environnement et des Energies Renouvelables" (Ministry of Environment and Renewables) which became the point of reference for the development of future RE projects. Recently the government defined the role of this new ministry by leaving it the responsibility of small plants and rooftop plants whereas the Ministry of Energy will be in charge of managing the large scale plants. Finally, CREG will take over on managing the tenders for large scale projects.

The next step might be the launching of an auction for installing solar photovoltaic (PV) plants with a total capacity of 4 GW. This tendering procedure, now under revision, might play a decisive role in the development of RES in Algeria, as well as in the achievement of its national targets by 2030.

Before presenting the recommendations for the preparation of a future successful auction by Algeria (listed at the end of this chapter), it is worth outlining its context. The initial part of this chapter will thus deal with the Algerian context for RE deployment: first, the role assigned to RE in Algeria in the past few years; then, the Algerian energy market, as well as the regulatory aspects and the framework applicable to the future tenders. The last part of the chapter will describe the recommendations formulated by RES4MED members, based on their expertise, to support Algeria in the drawing-up of an optimal auction process, in the interest of both the country and investors.

### **1. The role of RES in Algeria**

The integration of RE into the national energy mix poses a major challenge in view of diversifying power generation technologies and preserving fossil reserve in Algeria.

#### **Large Potential and Significant Challenges**

Algeria has a large potential of RES that is still untapped. For Algeria, this potential is a viable alternative to curb the utilisation of its conventional energy sources, still dominant in the country, to safeguard its rich domestic energy sources and to start a gradual energy transition.

Moreover, thanks to their availability and flexibility, some of these RES, namely solar energy, offer opportunities for distributed power generation and, thus, for providing power and comfort to communities living in the most remote areas of the country.

#### **• Solar energy**

The renewable source with the largest potential in Algeria is solar. The solar potential accounts for 3,000 hours of insolation per year and covers a surface area of 2,381,745 km<sup>2</sup>. This potential is mostly located in the southern part of the country, with an insolation ranging from 1,800 to 2,400 kWh/m<sup>2</sup> (GHI - Global Horizontal Irradiance). Since 2015, about twenty PV facilities, with a total capacity of 343MW, have been in operation in the regions of the Hauts-Plateaux and the south of the country.

#### **• Wind energy**

The abundance of winds in the south-western and north-western parts of the country offers opportunities for installing wind farms. The average wind speed is equal to 5,4 - 6,2 m/s.

## 2010: The “Programme national de recherche en énergies renouvelables” (PNR)

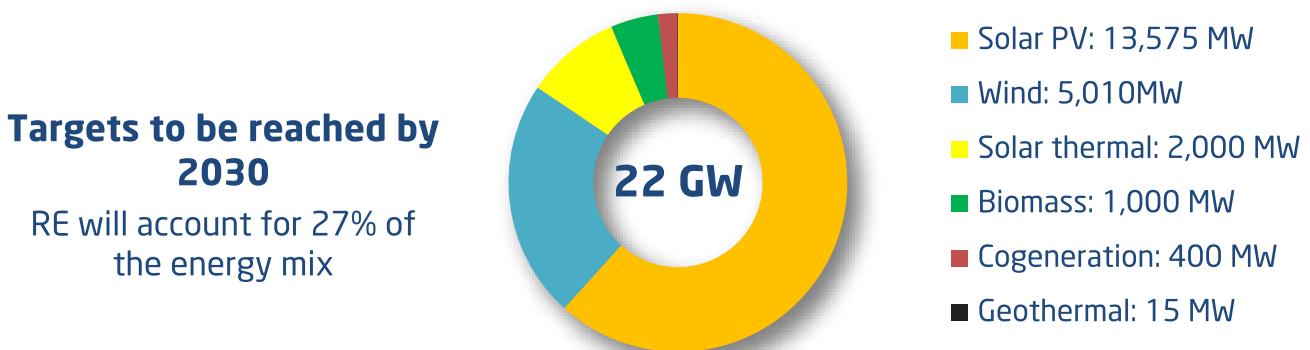
In October 2010, Algeria rolled out its “Programme national de recherche en énergies renouvelables” (PNR - national RE research programme). The programme was launched with the aim to estimating its RE potential, improving RE conversion, transformation and storage processes and acquiring knowledge of the full cycle of power generation from RES. Research was organised around a working programme focused on six technologies: solar energy, wind energy, geothermal energy, bioenergy, hydrogen, fuel cells, and multiple RES. The programme highlighted the Algerian intent to work towards developing national knowledge of RES by cooperating with national and international researchers.

## 2011 & 2015: “Programme national de développement des énergies renouvelables” (2011-2030)

In early 2015, the Algerian Government adopted a revised version of its “Programme national de développement des énergies renouvelables” (national RE development programme), which had been preceded by a pilot programme in 2011. The new programme has the purpose of organising the development of RES in the 2015-2030 period, with a view to attaining the national target of 22GW of installed renewable capacity. This target, which will account for nearly 27% of the Algerian power generating mix by 2030, will enable the country to start its energy transition.

The 2011 preliminary programme had the goal of collecting a sufficient number of data to formulate at best the future RE development programme through the implementation of pilot projects and technological tests. The programme was revised in 2015, taking into account new knowledge acquired and progress made in terms of RES. The key changes of the programme concerned the development of solar PV and wind energy, the introduction of waste-to-energy systems, cogeneration, and geothermal energy, as well as updates on the development of the CSP technology by 2021.

Hence, the national RE development programme allocated the 22GW target among the following technologies:



**Figure 4: Algerian RES programme: allocation of the 22-GW target to be achieved by 2030**

Source: CDER portal

The programme launched in 2015 is expected to have two stages of development: the first, spanning the 2015-2020 period, will lead to the installation of 4.5 GW; the second, beginning in 2021, will make it possible to reach an installed base of 22 GW by 2030, by stepping up the development of each technology and introducing CSP projects.

The implementation of this programme benefits from public support through the “Fonds National des Energies Renouvelables et Cogénération” - FNERC (national fund for RE and cogeneration). This fund is fed by a 1% levy that the State imposes on oil royalties. Furthermore, the regulation promoting wind and solar projects provides

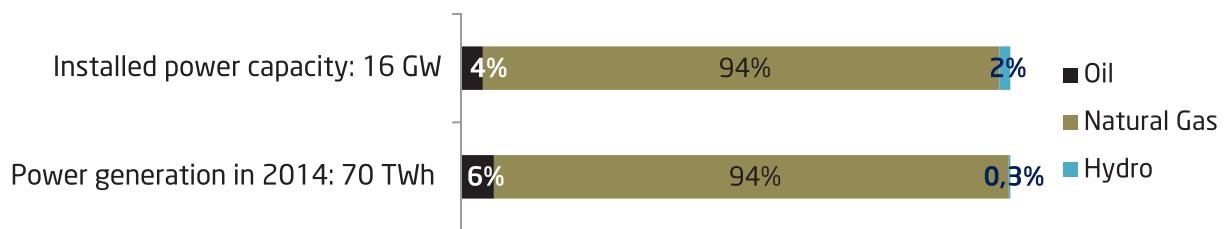
for an incentive mechanism that is based on guaranteed feed-in tariffs (FITs).

## 2. Context of the Algerian market for preparing an auction mechanism

Algeria is one of the largest power markets in North Africa. In 2014, the Algerian electricity scenario was as follows:



The use of gas remains dominant in the Algerian energy mix, given the abundance of domestic resources. Nevertheless, the country intends to diversify its energy sources rapidly, by integrating RES (i.e. solar and wind) into its energy mix, i.e. solar and wind. This choice will enable Algeria to preserve its fossil resources, initiate its energy transition and acquire energy security thanks to more diversified energy supply sources. Furthermore, the harnessing of RES for power generation will free up volumes of gas that can be exported.



**Figure 5: Installed capacity and power generation in Algeria in 2014**

Source: Enerdata, IMF Oct 2014, REN21

Law no. 02-01 of 5 February 2002 (electricity and gas distribution via pipelines) introduced the progressive opening-up of the electricity market, the unbundling of electricity transmission, generation and distribution, and the regulated third-party access to power grids/ gas networks.

Although the electricity market has been open since 2002, its main players remain Sonelgaz and its subsidiaries (see diagram below). Sonelgaz plays the role of single buyer for power generation acting through "Opérateur du Système Electrique" (OSE—power system operator), a subsidiary that it set up in 2006.

So far, private investors have been poorly present on the Algerian electricity market owing, above all, to lack of competition, which does not allow them to obtain competitive selling prices. Nonetheless, the ambition of Algeria to launch an auction for developing solar energy aroused the interest of international investors. This project represents an opportunity for attracting private investors to the Algerian electricity sector, if competition is adequately encouraged.

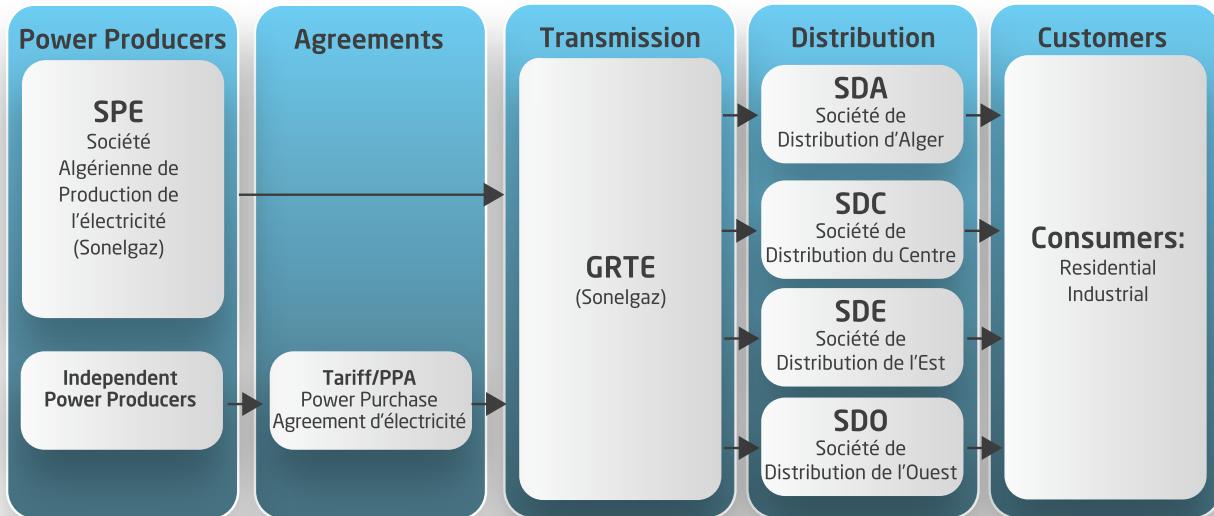


Figure 6: Structure of the Algerian electricity market

## The players of the Algerian electricity market

### "MINISTÈRE DE L'ENVIRONNEMENT ET DES ÉNERGIES RENOUVELABLES"



In May 2017, as part of the new Algerian governmental organisation, the responsibility for RE was entrusted to the "Ministère de l'Environnement" (Ministry of Environment), renamed "Ministère de l'environnement et des énergies renouvelables" (Ministry of Environment and Renewables).

The new Ministry took up its post on 27 May 2017. It was emphasised that the creation of a new independent ministry highlights the level of national priority that is assigned to these two sectors. However, as challenges remain significant, the Ministry plans to strengthen efforts and coordination of players in these sectors.

### CREG



The "Commission de Régulation de l'Électricité et du Gaz" (CREG - electricity & gas regulator), established under law no. 02-01 of 5 February 2002, took office on 24 January 2005.

Its mission is to exercise oversight with a view to ensure of a competitive and transparent operation of the Algerian electricity and gas markets, in the interest of consumers and players. Info: [www.creg.gov.dz](http://www.creg.gov.dz)

### CDER



The "Centre de Développement des Energies Renouvelables" (CDER - RE development centre) is a publicly owned scientific and technological institution ("Etablissement Public à caractère Scientifique et Technologique" - EPST), which has been operational since 22 March 1988. This research centre has the mission of designing and implementing scientific and technological R & D programmes, as well as systems using solar, wind, geothermal, and biomass sources. CDER participates in the preparation of the national research programme, as well as in the strategy of integration and deployment of RES at local level. CDER is also in charge of the Algerian RE portal, featuring key data and useful links regarding the relevant regulation, institutions and projects.

Source and info: [www.cder.dz](http://www.cder.dz) and <http://portail.cder.dz>

## SONELGAZ

Under a follow-up of law no. 01-02 of 5 February 2002, the SONELGAZ Group was restructured (the restructuring was validated in 2017). Thanks to its new organisation, Sonelgaz/SPA has become an industrial group with 16 subsidiaries, carrying out activities of electricity generation, transmission and distribution, as well as of gas transmission and distribution via pipelines. The status of Sonelgaz was revisited in 2011, when Sonelgaz/Spa was converted into a "holding company", called Sonelgaz, without creating a legal entity. Now, it is the holding company that steers the Group's activities by fulfilling its policy- and strategy-making mission.

More info: [www.sonelgaz.dz](http://www.sonelgaz.dz)

The "Pôle des Industries Energétique" (PIE – energy industry hub) is in charge, among others, of monitoring the following subsidiaries, which play a key role in the national electricity sector:

**"GRTE - Gestion du réseau de transport de l'électricité"** operates and manages the power transmission grid under an authorisation granted by the "Ministère de l'Energie et des Mines" (Ministry of Energy and Mines), after seeking the opinion of the "Commission de Régulation de l'électricité et du gaz (CREG)". [www.grte.dz](http://www.grte.dz)

**"CEEG - Compagnie de l'Engineering de l'Electricité et du Gaz"** is in charge of energy infrastructure projects (planning, design/engineering, construction, supervision, acceptance and commissioning). ([www.ceeg.dz](http://www.ceeg.dz))

**"OSE - Opérateur du Système Electrique"** is in charge of real-time management and operation of the power generation and transmission system, and of continuous monitoring and control of the power grid, ensuring the balance between demand and supply. (More info: [www.ose.dz](http://www.ose.dz))

**"SPE - Société de Production de l'électricité"**

**"SDA - Société de distribution de l'électricité et du gaz à Alger"** is in charge of electricity and gas distribution in Algiers, namely of the distribution centres of Belouizdad, Bologhine, Gué de Constantine and El Harrach. (More info: [www.sda.dz](http://www.sda.dz))

**"SDC - Société de distribution de l'électricité et du gaz au centre"** is in charge of electricity and gas distribution in the central part of Algeria, namely of the distribution centres of: Blida, Bouira, Médéa, Tizi ouzou, Djelfa, Ouargla, Biskra, El Oued, Laghouat, Ghardaïa, Illizit , Tamanrasset , Tipaza and Boumerdes. (More info: [www.sdc.dz](http://www.sdc.dz))

**"SDE - Société de distribution de l'électricité et du gaz à l'est"** is in charge of electricity and gas distribution in the eastern part of Algeria, namely of the distribution centres of: Sétif, khenchela, Guelma, M'sila, Annaba, Ali mendjeli, Batna, Béjaia, Constantine, El Tarf, Oum E I Bouaghi, Tebessa, Mila, Seybouse, Bordj Bou Arreridj, Skikda, Souk Ahras, El hidab, Jijel. (More info: [www.sde.dz](http://www.sde.dz))

**"SDO - Société de distribution de l'électricité et du gaz à l'ouest"** is in charge of electricity and gas distribution in the western part of Algeria, namely of the distribution centres of: Tissemsilt, Tiaret, Ain Defia, Chlef Nord et centre, Relizane, Mostaganem, Mascara, Oran et Es-Sénia, Ain-Témouchent, Tlemcen, Sidi Bel Abbès, Naâma, Saida, El Bayadh, Bechar, Tindouf, and Adrar. (More info: [www.sdo.dz](http://www.sdo.dz))

**"SKTM - Shariket Kahraba wa Taket Moutadjadida"** has the mission of managing and operating isolated power plants in the southern regions of the country and of providing support for the use of solar energy in these regions. (More info: [www.sktm.dz](http://www.sktm.dz))



## SONATRACH

**"Société NAtionale pour la recherche, la production, le Transport, la transformation et la Commercialisation des Hydrocarbures" - SONATRACH** - is a publicly owned company, which was established in 1963. SONATRACH plays a key role in the oil industry. In particular, it is engaged in hydrocarbon production and maritime transport. SONATRACH intends to play a significant role in the RE sector, namely through the projects that will be implemented as a result of the future auction.



## Legislative Frameworks



### **Law no. 99-09: Energy policy**

- launch of the national energy policy programme, including the promotion of RES;
- creation of the "Fonds National pour les Energies Renouvelables" (FNER - national RE fund), then renamed "Fonds National pour les Energies Renouvelables et la Cogénération" (FNERC - national RE and cogeneration fund).



### **Law no. 02-01: Electricity and gas distribution introducing some market liberalisation principles:**

- establishment of an independent market regulator, CREG;
- opening-up of the market to private investors;
- establishment of a transmission system operator, GRTE;
- creation of a renewable energy support scheme.



### **Law no. 04-09: RES**

defining incentive schemes for supporting and promoting the development of RES.  
One of these schemes provides for guaranteed feed-in tariffs (FITs).

### **Decree no. 04-924: Subsidies for RES**

laying down provisions for subsidising RE projects.



### **Ordinance of 21 February 2008: Connection to the power grid**

setting forth technical rules for connection to power grids and rules for the management and operation of the power system.



### **Addition to the Budget Law 2009: 51/49% rule for foreign investment**

introducing of a rule under which foreign investment shall be based on the setting-up of a partnership leaving at least 51% of the capital to the resident national shareholder.



### **"Programme national des énergies renouvelables et de l'efficacité énergétique" (2011-2030)**

Based on law no. 99-09, this preliminary national RE and energy efficiency programme sets the first national target of 12 GW to be achieved by 2030 (target revised in 2015).

### **Law no. 11-11: Funding of the FNERC**

- Increase of the rate of the levy on oil royalties feeding the FNERC to 1%
- Extension of the scope of the FNERC to cogeneration.



### **Executive Decree 13-2018: Requirements for guaranteed FITs**

- Introduction of a guaranteed FIT for wind, PV, biomass, hydro, and hybrid plants;
- Distributor's obligation to purchase electricity at the guaranteed FIT;
- Definition of procedures for benefiting from guaranteed FITs;
- Obligation of connecting authorised RE plants to the grid.



### **Decree of 2 February 2014: Value of the FIT and duration of the Power Purchase Agreement (PPA)**

- Setting of the value of the FIT for solar and wind projects of more than 1 MW;
- Setting of the duration of the PPA to 20 years.



### **Revision of the "Programme national des énergies renouvelables et de l'efficacité énergétique (2015-2030)"**

setting the target of 22 GW of installed renewable capacity (27% of energy mix) to be achieved by 2030.



### **Executive Decree no. 17-98: Tendering procedure for RE projects**

- Definition of the tendering procedure for RE and cogeneration projects;
- Definition of processes for RE project integration into the national grid.

## National Power Grid

The Algerian transmission grid, operated by GRTE, is suitable for the population density and number of firms that are present over the country. The grid is denser along coasts and near gas production plants.

The Algerian grid consists of three parts:

- the “Réseau Interconnecté National” (**RIN - national interconnected grid**), covering the northern part of Algeria (20% of its total surface area);
- **Pole In Salah, Adrar and Timimoune (PIAT)**, connected to and fed by the gas turbines of d'Adrar and In Salah;
- the “Réseaux Isolés du Sud” (**RIS southern isolated grids**), covering the southern part of Algeria (representing 80% of the country, but hosting only 3% of its population).

The grid is also connected to neighbouring countries, Morocco and Tunisia, although so far cross-border trade in electricity has been very small.

A study conducted by CESI, RES4MED and Sonelgaz showed that the Algerian grid is capable to support the integration of the entire amount of power programmed by the Algerian government by 2020. However, few accommodations could be necessary to achieve the 2030 country's targets.

## Possible solutions for implementing RE projects

In the Algerian electricity market and under the current regulatory framework, various schemes for electricity generation from RES are possible, pending the preparation of an auction:

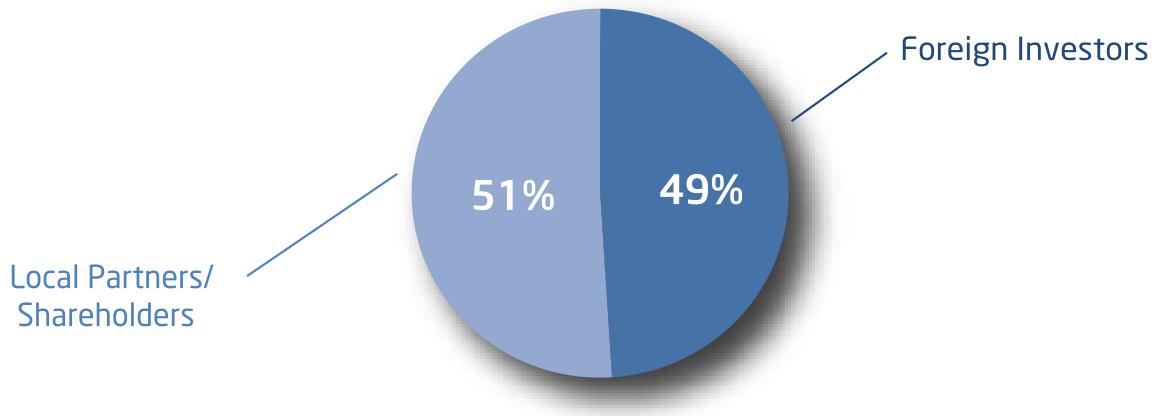
- development of projects supported by FITs; the decree of April 2014 defines the requirements for the application of FITs to solar and wind projects and sets their duration to 20 years;
- under law 02-01 of 2002, the electricity generated by an independent producer may be sold to a large consumer. However, no such project has been implemented so far.
- self-generation.

**The implementation of an auction mechanism will provide investors with a new opportunity to develop RE projects.**

### **3. Regulatory framework for a future public tendering**

#### **The 51/49% rule**

Introduced by the Budget Law 2009, the 51/49% rule applies to foreign investment in Algeria. This rule defines the sharing of the capital of a partnership between local shareholders and foreign investors in the following way:



**Figure 7: Allocation of the capital for foreign investment**

Source: Algerian Government - Budget Law 2009 on foreign investment

This law implies that:

- foreign investors may have a holding of up to 49% of the capital of an Algerian partnership company;
- repatriation of profits is possible, but companies are encouraged to reinvest their income in Algeria;
- the Algerian State shall have a pre-emption right;
- foreign companies shall organise their means of funding with local banks;
- all the activities related to foreign investment shall be reported to the "Agence Nationale de l'Investissement" (national investment agency) and approved by the "Conseil National des Investissements" (national investment council);
- Companies may benefit from tax breaks to be reinvested in Algeria.

#### **Executive Decree no. 17-98: tendering procedure**

Executive Decree no. 17-98 of 26 February 2017 was published in the Official Journal of the Algerian Republic on 5 March 2017. The decree sets out the tendering procedure for a tendering process for generation of electricity from RES and cogeneration, as well as its integration into the national electricity supply system.

##### **• Requirements for an auction**

The auction shall be launched by the Minister in charge of RE projects<sup>1</sup>, which shall also process the bids. The process shall cover: design/engineering of RE plants, supply of equipment, construction, operation and sale of electricity generated therefrom.

<sup>1</sup>When the decree was enacted, the Energy Minister was responsible for RES. This is the reason why the decree mentioned the Energy Minister. However, since May 2017, the management of RE projects has been entrusted to the Ministry of Environment and Renewables.

One of the key requirements for participating in the auction shall be the submission of an energy project jointly with an industrial project. For both the industrial part and the energy part, the ministry shall appoint the publicly owned companies that shall participate in these projects. Technical, economic, practical and financial requirements shall be set out in the tender specifications.

Recently the government indicated CREG as responsible for the tendering process rather than the new born Ministry of Renewable Energy which will manage small plants and rooftop plants.

### • Auction documents

To participate in a tendering process, investors shall be invited to submit documents presenting the energy project, the industrial project, as well as an economic assessment model.

For the energy project, investors shall file:

- a technical proposal, consisting of an administrative document and of a detailed technical document;
- protection of grid equipment;
- a financial proposal, presenting a financial assessment and specifying the price of the equipment to be used.

For the industrial project, investors shall file:

- an industrial project proposal;
- a financial and commercial proposal, presenting a financial assessment of the project, as well as the prices of the equipment to be used.

### • Processing of the auction documents

A commission shall assist the Minister of the energy in the processing of bids. The Minister himself/herself shall determine the membership and functioning of the commission. As regards industrial aspects, the Minister of Industry shall be in charge of appointing representatives to serve on the commission.

The commission shall draw up an assessment report, identifying the eligible bids, ranked according to their kWh selling price, set by investors through their economic assessment models.

If investors do not accept the results of the commission, they may file an appeal with the chairperson of the appeal commission, which was set up to assist the Minister in accomplishing this task. The appeal shall be lodged within 10 days of the announcement of results. Subsequently, investors shall receive an answer within 8 days.

### **Power Purchase Agreement (PPA)**

The duration of PPAs between private producers and buyers has been so far set to 20 years by the Decree of 2 February 2014.

The PPA shall be used in the case of an auction between power producers and the power system operator.

### **Connection to the grid**

Law 02-01 guarantees the right of access to the national grid for private producers. To obtain the right of access, the private producer shall file an application with the power grid operator. The ordinance of February 2008 defines the technical requirements for connection of private producers to the grid.

Under decree no. 17-98, the costs for grid connections making part of a tender for a renewable energy development project shall be borne by the investor.

### **Transmission costs and requirements**

Transmission costs, established by CREG, shall be entirely covered by the consumer. General transmission requirements shall be set out in an agreement made with GRTE and previously approved by CREG.

## Access to land

Most of the available land belongs to the State and is made available to private investors. The "Agency National d'Intermédiation et de Régulation Foncière" (ANIREF – intermediation and land regulation national agency) has the role of identifying available land. In a public tender for developing RE projects, the project sites shall be selected by the Minister at the proposal of CREG.

The costs associated with the land concession shall be borne by the project developer and set on a case-by-case basis depending on the site of the project.

## Recommendations for Optimising the Preparation of an Auction Mechanism

This chapter will describe recommendations both of a general nature and focused on the Algerian case – to optimise the preparation of a public tender, in the interest of both bidders and of the country launching the tender. With a view to supporting countries in their future projects, the initial part of the chapter will address the mistakes to be avoided and the key factors for a successful auction, based on the experience of RES4MED members. Then, the crucial issue of the PPA bankability will be tackled and some important points to consider in the preparation a bankable PPA will be listed.

The last part will be focused on the Algerian case and on its current framework, with a view to providing specific recommendations. The goal is to optimise the preparation of the public tendering and ensure its attractiveness to international investors.

### **1. Mistakes to be avoided**

Over the years, the members of RES4MED have gained sufficient expertise to identify the mistakes to be avoided during the preparation of an auction.

<b>An unclear and uncertain framework</b>	<ul style="list-style-type: none"> <li>• Vague regulation</li> <li>• Uncertainties about the PPA bankability</li> <li>• Inaccurate decision-making criteria</li> <li>• Regulatory authority that is unstable and not independent.</li> </ul>
<b>Build-up of criteria potentially discouraging investors</b>	<ul style="list-style-type: none"> <li>• Insufficient size of proposed projects</li> <li>• Local development criteria that are too ambitious and impracticable for investors</li> <li>• Obligation to develop an unrealistic industrial project</li> <li>• Lack of visibility concerning the key aspects of the auction: land access, grid connection, financial aspects...</li> <li>• Obligation to create a joint venture or sponsorship by a local companies or partners.</li> <li>• High development costs for shareholders and developers</li> <li>• Lack of visibility of the key features of the sites, if the latter are proposed by the State.</li> </ul>
<b>Accumulation of delays in the programme</b>	<ul style="list-style-type: none"> <li>• Overlasting auction process</li> <li>• Owing to delays, downscaling for the capacity tendered</li> <li>• Postponement of the tender project owing to inappropriate planning</li> </ul>
<b>Lack of competition</b>	<ul style="list-style-type: none"> <li>• The tender does not allow enough bidders to participate</li> <li>• The lack of competition does not facilitate the setting of a price and the submission of an optimal project</li> </ul>
<b>A non-bankable PPA</b>	<ul style="list-style-type: none"> <li>• Uncertainties about the PPA bankability</li> <li>• Price expressed only in local currency and not in hard currency</li> </ul>

## 2. The key factors of a successful auction

The key factors listed below concern various aspects associated with the preparation of a public tender and represent the toolkit for a successful auction.

<b>Strong and committed local institutions</b>	<ul style="list-style-type: none"> <li>• All the institutions involved should be stable, committed and transparent.</li> <li>• The entity in charge of regulating tender projects should be strong and independent.</li> <li>• There should be a clear allocation of roles between institutions and players involved in the tendering procedure.</li> <li>• The involvement of market players during the design of the tendering procedure is essential for its success.</li> </ul>
<b>A clear and transparent framework</b>	<ul style="list-style-type: none"> <li>• Administrative burden related to public tendering should be minimized.</li> <li>• It is necessary to ensure a clear and transparent communication on the tendering procedure, during both planning and implementation phases.</li> <li>• Rules and standards that are suitable for both local and international investors are recommended.</li> <li>• The legislative framework should be firm and transparent throughout the preparation of the project (even after the auction).</li> <li>• The action plan and the responsibilities of players in the long term should be clearly described.</li> <li>• The process of the auction should be visible, clear and monitored by the competent authorities (right of land access, financial clause, grid connection...).</li> </ul>
<b>A flexible structure of the auction that encourages competition</b>	<ul style="list-style-type: none"> <li>• In the different rounds of the tendering procedure, the ceilings for the volumes to be auctioned should be set below the potential market demand and be realistic; this will give a signal of scarcity that promotes competition and price decreases.</li> <li>• The auction should be fair for all investors, so as to spur competition.</li> <li>• Flexibility of the energy market and of the framework of the auction is recommended in order to enhance competition.</li> <li>• The structure of the auction should be flexible and adjustable, depending on the intended requirements and goals.</li> <li>• Selection criteria should be precise and clear.</li> </ul>
<b>A bankable PPA</b>	<ul style="list-style-type: none"> <li>• Prices should be expressed both in dollars (USD) and in the local currency.</li> <li>• The legislation governing the PPA should be stable and transparent.</li> <li>• Before launching the auction, the bankability of the PPA should be ensured.</li> </ul>
<b>Guarantees provided</b>	<ul style="list-style-type: none"> <li>• Investors should be certain that the specified volumes and prices are feasible.</li> <li>• The Government should provide investors with risk-sharing guarantees.</li> <li>• The opportunities for support by the Government should be visible and certain.</li> <li>• The participation of international financial institutions is a plus to ensure financial guarantees in the auction.</li> </ul>
<b>Structured and feasible timescales</b>	<ul style="list-style-type: none"> <li>• The authorities involved should set and meet clear and accurate timescales.</li> <li>• Deadlines should be realistic.</li> <li>• The tendering process should not be too long, so that projects can be quickly implemented.</li> <li>• Waste of time in the definition of the tender framework and during the tendering procedure should be avoided, as this might be critical for future projects.</li> <li>• Continuity in the frequency of the auctions should be ensured, so as to avoid risks associated with stop &amp; go support measures and to reduce the investment risk and allow investors for economy of scale.</li> </ul>

### **3. Recommendations for preparing a bankable PPA**

One of the primary elements of the auction is the agreement to be signed between the buyer and the future project developer. The PPA, which sets out all the commercial clauses for the sale of electricity between the parties, is a key instrument in the project funding process and provides legal certainty to both the offtaker and the project developer.

The current market standard and often the most competitive solution for financing medium- large scale RE project is funding new project through non-recourse financing. Projects are therefore financed purely on the basis of the quality of the project, a key factor being the reliability of the power purchase agreement. A PPA that does not provide adequate guarantees to lenders could result in bad financing condition, as well as the rejection of the project. Therefore, to be put in the condition to obtain competitive financing and consequently place a competitive bid, investors need a bankable PPA.

To this end, it may be useful to turn to International Financial Institutions that have experience in this field, to seek their opinion and advice on the actual bankability of the proposed PPA, and to make changes thereto accordingly. The following are a few recommendations for developing a bankable PPA.

- **Coverage of the dispatching risk**

The agreement should specify guaranteed volumes, i.e. through take-or-pay or take-and-pay clauses (under which the buyer undertakes to pay for the electricity generated, whether dispatched or not, at the set price), in order to provide the developer with return-on- investment certainty.

- **Currency in which the electricity price is expressed**

The electricity price should be expressed in hard currency (USD/EUR) or in the local currency with the conversion into USD/EUR.

- **Adjustment of the electricity price on a yearly basis**

The electricity price indicated in the contract should be yearly adjusted in USD/EUR, to take into account the annual depreciation of the currency and other factors.

- **Guarantee of solvency**

The agreement should include a form of liquidity support, such as an escrow account, a demand guarantee issued by a qualified bank, or a sovereign guarantee that may be used in case of insolvency of the buyer.

- **Agreement termination indemnity**

In case of premature termination of the contract by the buyer, the latter should indemnify the seller for an amount covering the debt, own funds and the return on the investment expected by seller.

- **Price adjustment in case of legal and economic changes**

The agreement should include a price adjustment clause, covering changes that might occur after the date of its signature in terms of legislation, taxation and economic context and that might have an impact on the project developer's return on investment.

- **Designation of an expert mediator**

The parties (or the International Center for Expertise of the International Chamber of Commerce) should jointly designate a qualified person or independent entity in charge of settling disputes.

- **Arbitration**

Any dispute not solved by the mediator should be settled in compliance with the rules adopted by the international community (UNCITRAL or ICC).

- **Guaranteed payment in case of errors attributable to the buyer**

Payments for the assumed electricity generation should be guaranteed in case of delay or damage attributable to the buyer and making the transfer of electricity impossible.

- **Force majeure clause**

The agreement should include a force majeure clause to cover unforeseen events beyond the control of the developer that prevent it/him/her from fully honouring its/her/his commitments.

- **Duration**

The PPA is usually covering a long-term period as 25 years, which may then be extended, is recommended. However, the most appropriate type of PPA will change over time in order to dispatch the risk.

## **4. Recommendations for the preparation of the future Algerian auction**

In December 2016, the Ministry of Energy announced the future launch of a national and international auctioning process for the installation of solar PV plants with a total capacity of 4,050MW. Even if this project was deferred many times, it remains topical for the Algerian State, which is trying to prepare an optimal public tendering procedure.

With a view to supporting Algeria in this project, RES4MED and its members formulated a list of specific recommendations for designing an auction that is optimal for the country and as attractive as possible to potential investors.

These recommendations result from the contributions of numerous members and partners of RES4MED, active in the different branches of RE. The recommendations take into account the current regulatory framework of Algeria, namely decree no. 17-98 on the tendering procedure. The auctioning procedure is expected to ensure the achievement of the RE development target, set by the Algerian Government, at the least possible cost, by fostering a sound and effective competition among the project proponents.

Hence, the sole purpose of this chapter is to share the expertise acquired by different players of the RE sector with a view to preparing an adequate public tender.



### **Ensuring an understandable and transparent governance framework**

- Specify the competent authorities and the governmental institutions involved and their responsibilities.
- Carefully define the role of each player involved in the preparation of future projects.
- Reduce the diversification of information sources and the co-mingling of roles for the different player involved, which may rapidly increase the complexity of the tender structure and procedure.

### **Streamlining the business framework**

- The 49/51% rule under which investors have a minority holding of the capital will decrease the attractiveness of the public tender to international investors.
- The increase of the stake assigned to investors will improve competition and favour the most suitable projects.
- Carefully define the responsibility of each player having a stake in the capital.
- Define the governance rules of shareholders' agreements (voting rights, dividend distribution, funding rules, transfer of shares...).

### **Laying down clear rules for obtaining permits and authorisations**

- Clarifications should be given with a view to identifying the owner of the land selected for the implementation of the project.
- To investors, it will be more attractive to have direct ownership of the land, where the applicable legislation authorises foreigners to own land.

### **Specifying the requirements for connection to the national grid**

- Specify the clauses of the agreement governing electricity injections into the grid.
- In the auction, the requirements for connection to the grid should be expressed in terms of cost sharing, tariffs, connection timescales, prevention of delays and compensation for damages, if any.

### **Ensuring the bankability of the PPA**

- The purchasing price of the electricity should be expressed in US dollars (USD) or euro.
- The use of a standard PPA, whose clauses are well known by project developers (e.g. those defined by International Financial Institutions); can ensure its bankability, thereby reducing the risk premium demanded by investors.
- The adoption of a simple and secure payment procedure can lower the risk premium demanded by investors and thus improve the competitiveness of the auctioning procedure.
- The duration of the PPA should be as close as possible to the mean deadlines of the loans granted by banks, so as to reduce interest.

### **Ensuring an understandable, transparent and effective tendering procedure in order to favour competition between or among project proponents**

- The preparation, assessment and revision of the auction might be supported by independent experts.
- The tendering procedure should provide details about the energy project and the industrial project.
- The procedure should clearly specify the auction timeline and deadlines.
- The postponement of the launch of the auction may entail a loss of visibility of investors on the market. As a consequence, upon the launch of the tendering procedure, the Government should provide a firm and clear framework aimed at strengthening investors' confidence in the process.

### **Establishing accurate, clear and firm criteria for ensuring the competitiveness of the auction**

- Turning to independent experts for identifying the criteria of the process would be a plus.
- Describe the selection criteria to be applied to the future auction in a clear and detailed manner.
- The mechanism might propose not only solar PV but also wind projects, in order to start harnessing these two energy sources in parallel.
- The part concerning local development should be described and be feasible for investors.

### **Clarifying conditions of industrial and energy projects**

- The relationship between the energy project and the industrial project ought to be clear.
- The separation between these two projects might facilitate the process.
- The industrial project should remain feasible for investors.

### **Ensuring transparency about tariff ceiling**

- If the methodology for setting the tariff ceiling is not officially published, it should be as clear as possible in the tendering procedure.

### **Defining the right size of projects in order to ensure competition and effective project implementation**

- A significant capacity to be installed may be interesting, if it is divided into multiple lots, enabling multiple bidders to participate.
- The multiplication of lots and thus of winners also makes the auction more attractive.

### **Establishing appropriate and realistic local content requirements**

- The requirements for procuring local content should be expressed as a percentage of the goods or services used directly or indirectly for implementing the project. These requirements shall be consistent with the actual capacity of local firms to supply given goods or services.
- A too high percentage of goods or services to be procured locally vs. the actual capacity of local firms to respond to this demand may decrease the competitiveness of the project, increase costs and cause delays.

**PRE-QUALIFICATION****Setting precise and simple pre-qualification requirements to ensure quality of bidders**

- Setting out precise and simple obligations for bidders makes it possible to develop and automatize a pre-qualification process and to reduce the costs of the tendering process.
- Pre-qualification requirements, if any, should be defined in a clear and fair way and ensure an optimum level of competition within the process.

**GUARANTEES****Reducing and sharing investment risk by provision of suitable funding guarantees**

- Develop funding options for the projects through international funding institutions.
- National banks should make their project funding skills known.
- The bankability of the PPA should be confirmed by international funding institutions.
- Solutions for sharing financial risks (sovereign guarantees, coverage of the exchange rate risk...) are necessary to ensure the bankability of the project.

**TIMESCALES****Avoiding delays and failed deliveries**

- The creation of a one-stop shop for the granting of permits by public authorities enables to cut the costs of project development and the transaction costs incurred by the project proponents.
- Where site selection falls under the responsibility of the Government, the latter should procure all the necessary authorisations connected with land access and use, as well as environmental permits.
- Sanctions and penalties may reduce the risk of delays and failed deliveries by contractors.

## List of sources

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IEA (2017), "Annual Energy Outlook 2017" - Cost and Performance Characteristics of New Generating Technologies. pp. 2 IRENA and CEM (2015), "Renewable Energy Auctions" – A Guide to Design. pp. 14 - 15  
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### Websites

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Site du ministère de l'énergie Algérien: [www.energy.gov.dz/](http://www.energy.gov.dz/)  
CREG: [www.creg.gov.dz](http://www.creg.gov.dz)  
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Sonatrach: [www.sonatrach.dz/](http://www.sonatrach.dz/)

## **Articles**

"How Zambia's New Solar Programme Sets a Benchmark for Africa - Development Finance," <https://www.devfinance.net/zambias-new-solar-programme-sets-benchmark-africa/>

"ENEL Green Power with Nareva and Siemens awarded preferred bidder status for 850 MW of wind capacity in Morocco" <https://www.enelgreenpower.com/es/medios/press/d201603-enel-green-power-with-nareva-and-siemens-appointed-preferred-bidder-status-for-850-mw-of-wind-capacity-in-morocco.html>.

"Projet Éolien Intégré de l'ONEE: Les Consortiums Soumissionnaires Retenus," accessed June 23, 2017, <http://www.leseco.ma/economie/28793-projet-eolien-integre-de-l-onee-les-consortiums-soumissionnaires-retenus.html>

## **RES4MED's members support**

ENEL GREEN POWER - PÖYRY - PwC - ASJA - EnR (Renewable Energy Partner) - FIMER - SONEGАЗ

## **Useful Links**

**RE:**

**Law no. 04-09 of 14 August 2004 on promotion of RES:**

<http://www.joradp.dz/FTP/jo-francais/2004/F2004052.pdf>

**Grid connection and transmission:**

**Law no. 02-01 of 5 February 2002 on electricity and gas distribution via pipelines:**

[http://www.sonelgaz.dz/Media/upload/loi\\_n\\_02\\_01\\_rel.pdf](http://www.sonelgaz.dz/Media/upload/loi_n_02_01_rel.pdf)

**Ordinance of 21 February 2008 laying down technical rules for connection to power transmission grids and rules for management and operation of the power system.**

<http://extwprlegs1.fao.org/docs/pdf/alg81228.pdf>

**Legislative and regulatory texts on gas and electricity distribution:**

<http://www.energy.gov.dz/francais/index.php?page=electricite-et-distribution-de-gaz>

**Executive Decree no. 17-98 of 26 February 2017 defining auctioning procedures for electricity generation from RES**

<http://www.joradp.dz/FTP/JO-FRANCAIS/2017/F2017015.pdf>

**Land access:**

ANIREF:

<http://www.aniref.dz/index.php/fr/>

Executive Decree 7-98 of 26 February 2017 defining auctioning procedure for electricity generation from RES:

<http://www.joradp.dz/FTP/JO-FRANCAIS/2017/F2017015.pdf>

**Investment:**

Budget Law 2009 on foreign investment:

[http://www.mf.gov.dz/article\\_pdf/upl-f04f6772589c921aeecc6da24b7719aee.pdf](http://www.mf.gov.dz/article_pdf/upl-f04f6772589c921aeecc6da24b7719aee.pdf)

**Auction procedure:**

Executive Decree no. 17-98 of 26 February 2017 defining auctioning procedures for electricity generation from RES:

<http://www.joradp.dz/FTP/JO-FRANCAIS/2017/F2017015.pdf>

**Other:**

Ordinance of 2 February 2014 setting FITs and defining requirements for their application:

[http://www.energy.gov.dz/francais/uploads/2016/Textes\\_Legislatifs\\_et\\_Reglementaires/Legis\\_Energies\\_Renouvelables/Art2\\_2-Fevrier-2014\\_tarifs\\_achat\\_garantis\\_conditions\\_application\\_Elect\\_photovoltaïque.pdf](http://www.energy.gov.dz/francais/uploads/2016/Textes_Legislatifs_et_Reglementaires/Legis_Energies_Renouvelables/Art2_2-Fevrier-2014_tarifs_achat_garantis_conditions_application_Elect_photovoltaïque.pdf)

Executive Decree no. 13-218 defining requirements for granting premiums for costs associated with diversification of power generation:

<http://www.joradp.dz/FTP/JO-FRANCAIS/2013/F2013033.pdf>





