



Africa Energy Futures: Algeria

19 November 2021

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Over the last 5 years, how has the energy mix changed, and what have been the key drivers?

In 2018, Algeria's energy mix was composed of 1% liquid petroleum gas (LPG), 20% oil products and 79% gas.¹ Experts believe that the country will reach “peak oil” between 2035 and 2040.

Concerning the legal framework, law No. 02-01 of February 5, 2002, relating to electricity and gas distribution by pipeline, had given priority to renewable energy. It deregulated the electricity market. A stock exchange with a market operator was established. It allowed a feed-in law, allowing access to the electricity market for renewable energies. Over time executive decrees have been issued to supplement Law No. 02-01, providing additional details on the matter.

Despite the enactment of Law No. 04-09 of August 14, 2004, on the promotion of renewable energies in the framework of sustainable development, no concrete governmental decision to promote renewable energies has been taken since.

However, the issue of energy transition became a priority for the Algerian government back in 2011. Algeria's transition to a new energy model was enshrined in the establishment of a renewable energy development program (PNER) as well as incentive measures. The PNER initially aimed at installing a renewable energy capacity of around 22 GW by 2030. Thus, by 2030, 37% of the installed capacity and 27% of local electricity production would be sourced from renewables. The first phase (2015-2020) aimed to achieve a capacity of 4000 MW, from photovoltaic and wind power with about 60 plants, as well as 500 MW from biomass, cogeneration and geothermal. However the program's implementation schedule was never met. Out of all the pilot projects totalling the 110 MW planned, only three projects were carried out, with a total capacity of 36 MW:

- The Hassi-Rmel hybrid plant (gas and solar thermal), with 25 MW of concentrated solar power (CSP) (commissioned in 2011)
- The 1.1 MW photovoltaic (PV) plant in Ghardaïa, including all four PV technologies, with and without solar tracking (commissioned in 2014)
- The 10.2 MW wind power plant in Kabertène (Adrar), comprising 12 wind turbines with a rated power of 850 KW each (commissioned in 2014)

Even though the second phase (2021-2030) aims to achieve a capacity of 16.5 GW from photovoltaic, wind and CSP as well as 1 GW from biomass, cogeneration and geothermal, Algeria has fallen behind in the transformation of its energy model as initially planned.

What is the outlook for the energy and natural resources sector in the next 5 years? In particular:

Key policy decisions

Following the statements of the Minister of Energy Transition and Renewable Energies in June 2021, a call for tenders will be launched for the realisation of solar power plants with a production capacity of 1000 MW in 2021.

During these statements, the minister confirmed the abandonment of the former project aiming at an additional capacity of 4000 MW, considering it to be unrealistic.² It was decided that a 1000 MW project would be launched instead. According to the ministry, technical studies have been finalised and the nine *wilayas* (provinces) that will host this project have been identified.

Main policy challenges

As underlined by the *Commissariat aux Energies Renouvelables et à l'Efficacité Energétique* (CEFERE – the public entity responsible for renewables and energy efficiency in Algeria), Algeria's world-class renewable resource deposits and territorial extension that allow it to benefit from a forward-looking energy policy are insufficient predispositions for an energy transition to renewables.

The challenges are multiple, and the success of the energy transition can only be achieved if certain fundamentals are met:

- identifying the components to be manufactured locally through large-scale investments;
- technology transfer, especially concerning the local manufacturing of strategic equipment;
- setting up schools and institutes for engineers and technicians specialized in conventional or renewable energy;
- the establishment of strategic partnerships;
- transparency in the implementation of projects; and
- credibility of institutions.

The anticipated role that renewable and/or new technologies will play

Renewable energies are set to play an essential role in the Algerian energy mix, as mentioned above.

As early as 2017, a first international call for tender procedure was put in place. The Executive Decree No. 17-98 of February 26, 2017, defined the procedure for the production of renewable energy or cogeneration and their integration into the national system of electric energy supply. This initiative was the prelude to a specific legal framework for the launch of a new 4000 MW solar PV program. In the end, this project, which included, in addition to the production of solar photovoltaic (PV) electricity, an accompanying industrial component, was never followed up and was not the subject of any call for tenders.

Nevertheless, given the current economic situation and the evolution of the price of oil in the international markets, the Algerian state will still need to integrate renewable energy into its energy mix.

What are the key investment opportunities in the energy and natural resources sectors over the next 5 to 10 years?

Renewables: As indicated above, investments in renewable energies, and more specifically in photovoltaic energy, will be the priority in the coming years.

Green hydrogen: The former Minister of the Energy Transition celebrated Green Hydrogen Day on April 19, 2021, declaring the possibility of replacing natural gas with hydrogen in the energy mix. The idea is relevant, insofar as the network of gas pipelines that transport gas could be modified to deliver hydrogen to Europe. However, this ambitious project will not be realised until 2030.

Shale gas: Currently, the government is slowing down on the development of shale gas projects in southern Algeria. There are ecological and environmental pollution risks: the Algerian Sahara contains a water table of 45 trillion m³ of freshwater, fauna, flora and populations that are highly dependent on this ecosystem.

With particular focus on sustainability, and on reducing carbon emissions, how will the energy and natural resources landscape change over the next 5 to 10 years?

In light of the above, it would seem that the energy transition in the next ten years will result mainly through the development of renewable energy sources. The promising project of integrating green hydrogen in the energy mix and the exploitation of shale gas do not seem to be on the government's agenda for the time being.

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¹“Algeria, 100% renewable energy”, January 2021, p.14

² In May 2020, the former Minister of Energy, Mohamed Arkab, announced the implementation of a mega project to build up to 4000 MW of solar PV power plants.