ALGERIA

INVEST IN THE ENERGY SECTOR OF ALGERIA

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Algeria is well on its way to a more stable political economy, with newly elected President, H.E. Abdelmadjid Tebboune, working on various reforms to attract foreign direct investment. State oil and gas company Sonatrach has also seen a new dawn with recently appointed CEO, Toufik Hakkar, at the helm, aiming to develop new markets, specifically in the natural gas sector.

The country has more than 12 billion barrels of proven oil reserves and 150 tons cubic feet of natural gas. Parliament has also approved a new energy law, which would make international oil and gas investment more appealing to avoid a production decline, while retaining the majority foreign ownership of projects in the industry.

Algeria boasts the largest land size on the African continent with a total area of 919,600 square miles. Algeria is a historical leader of oil and gas production in Africa and globally, with first petroleum discoveries made in the Sahara Desert in the southern region of the country in the 1950s. The country ranks sixteenth place in terms of proven oil reserves globally and contains the tenth-largest proven gas reserves in the world. Currently the sixth-largest exporter of natural gas, the country is increasingly developing the sector in order to generate further revenue and optimize production for its shale gas reserves, which are the third largest globally.

Algeria currently produces 1.1 million barrels of oil per day (bpd) of which 540,000 bpd are exported, just under 50%. National petroleum company, Sonatrach, owns the majority of that production, around 80%, while international oil companies (IOCs) are accountable for the remaining 20%. While exploration campaigns have led to a handful of gas discoveries in recent years, Algerian oil fields are mostly in mature or depletion phases. In order to sustain and even increase current output levels, operators are encouraged to introduce innovative production methods, such as enhanced recovery technology.

In line with the rise of global demand for liquefied natural gas (LNG), the country is showing immense natural gas potential. Algeria boasts 20 trillion cubic me-
ners of technically recoverable shale gas, the third-largest globally. Unconventional re-
ources extraction is an exciting prospect for many IOCs, some of whom have already
signed cooperation agreements with Sonat-
rch to assess technical and commercial feasibility.

Highly dependent on hydrocarbon revenue, which constitutes 95% of its exports and 60%
of its national budget, Algeria’s economy sits on $75 billion in foreign currency reserves.
These reserves have dropped significantly since 2014 due to declining oil and gas pric-
es and predictions reckon the reserves will continuously decrease until 2030.

Despite ranking high in exploration, pro-
duction and exports of oil and gas globally, Algeria’s territory remains relatively un-
derexplored with less than 20 wells drilled per 10,000 square miles. Furthermore, the
country has not led any significant explora-
tion campaigns offshore in the Mediterrane-
nian Sea. Recent governmental initiatives
and the increase of Africa’s role in the global hydrocarbon play are accelerating
Algeria’s diversification strategy, aiming to
generate an exhaustive oil and gas econ-
omy encompassing offshore exploration,

petrochemicals, increased domestic usage
and reduction of reliance on exports. To
that end, a new petroleum law was draft-
ed and approved in 2019. The goal of the
framework, which was updated from the
last version in 2005, aims to attract for-
eign direct investment and IOCs into its
high-potential hydrocarbon upstream sec-
tor. Sonatrach reckons that two-thirds of
its onshore territory is unexplored, while
its offshore potential has not yet been es-
tablished. According to the Minister of En-
ergy, Mohamed Arkab, just one call for ten-
der in five has been awarded since 2008,
due to the lack of solid candidates. The new petroleum law introduces more
favorable fiscal terms for international
operators, such as a tax break on wind-
fall profits and a flat income tax of 30
percent. The law also increases contract
lengths and includes diverse contractual
models, taking into account different in-
dustrial risks. While the contracts guaran-
tee the state ownership of the land, and
Sonatrach has at least 51 percent interest
in all partnerships, the new framework
firmly increases regulatory and fiscal flex-
ibility for international operators. Due to
a rise in internal demand for hydrocarbon
products and a decrease of its oil and gas
production levels, Algeria is on the lookout
for IOCs to invest in the country, take ad-
vantage of exploration opportunities, pro-
vide technological innovation and support
local companies’ growth.

As part of Algeria’s strategy to dynamize
its oil and gas sector and positively im-
pact its economy, Sonatrach has vowed
to develop local small and medium sized
enterprises (SMEs) in the sector. Artic-
ulated around regional and international
cooperation, technology transfer and in-
creased local transformation of hydrocar-
bon products, Sonatrach hopes to boost

the participation of local companies in the
sector, creating a more open and inclusive
oil and gas industry. Finally, although no of-
ficial plan has been unveiled, Algeria’s gov-
ernment has communicated its intention to
develop its offshore potential in the Medi-
terranean Sea. Foreign direct investment
and technology will be crucial aspects of
offshore exploration campaigns, justifying
the government’s will to create an attrac-
tive regulatory and fiscal framework, prior
to launching its next licensing round that
could take place in 2020.
In 2018, Algeria’s population stood at around 42 million people, up from 35 million a decade earlier. According to the Algerian Health Ministry, the current fertility rate is around 3.5 children per woman, which could translate to a total population of over 72 million in 2050. A growing population and an increasing population growth rate is a key priority for the government. With one of the highest population growth rates globally, energy remains a key priority for the government.

Regarding electricity specifically, substantial investments have been made in conventional power plants in order to modernize equipment and optimize production ratios, ultimately aiming to meet growing demand. Secondly, these investments aim to involve Algeria’s national energy long-term vision, which now includes the development of renewable energy with a view to better preparing the energy transition and gradually overcome, in the medium and long term, reliance on hydrocarbons and fossil fuels. Algeria’s strategy to improve energy coverage and offer universal access to power to its citizens has established a replicable model to other African countries. The efforts made by the state to strengthen the production capacity of electricity, as well as transport and distribution infrastructure—both electricity and gas—have ensured optimal energy coverage in the country. Today, all citizens have access to electricity and gas at affordable prices. The official figure for electricity coverage stands at 99% in Algeria, the highest in Africa, while the continental average struggles at 43%.

The number of subscribers to the electricity and gas networks has increased sharply since 2000, from 4.5 to 9.5 million for electricity and from 1.4 to almost 6 million subscribers for natural gas in 2019. The State took charge of electricity networks to achieve total electrification of the national territory, as well as a high penetration rate for domestic gas pipelines. Propane islets have also been developed in isolated areas to provide stable access to power. Since Algeria is a gas producer, more than 97% of its electricity is produced from natural gas, a cleaner primary resource than other fossil resources. In order to preserve fossil resources for future generations, the country has also favored combined cycle power plants, which boast better energy efficiency.

Meanwhile, public authorities have demonstrated their commitment to increased energy access with the use of clean products such as unleaded fuel in the transport and power generation sectors and the use of natural gas and liquefied petroleum gas in replacement of different oil products, thus translating to less carbon emissions, especially in urban areas.

In order to reach its ambitious power and energy development goals, Algeria is cranking up its bilateral cooperation strategy. Having historically linked strong ties with European countries such as France and Italy, with whom sizeable transport and transformation projects are ongoing, the country is now looking south to sub-Saharan Africa where immense potential for energy development lies. Discussions and projects are ongoing regarding vast electrical interconnections as well as oil and gas pipelines between sub-Saharan countries and the Maghreb region. Algeria’s government has well understood the economic development potential of the African region, especially in the energy sector. It is a founding member of the African Petroleum Producers Organization as well as the Gas Exporting Countries Forum (GECF), in which many African countries are represented. Indeed, during the GECF’s 5th Summit in Malabo, Equatorial Guinea, Algeria signed a Memorandum of Understanding with the host country around cooperation in the African region, especially in the energy sector. It is a founding member of the African Petroleum Producers Organization as well as the Gas Exporting Countries Forum (GECF), in which many African countries are represented. Indeed, during the GECF’s 5th Summit in Malabo, Equatorial Guinea, Algeria signed a Memorandum of Understanding with the host country around cooperation in the field of natural gas. Together with their public commitment as well as high-level meetings with African country delegations, these initiatives show Algeria is to be counted on as Africa rises as a key energy player.

Despite declining oil production numbers, The Algerian government’s proactive stance proves it understands the needs of its population and economy and is committed to meeting national expectancies.
Algeria is strongly reliant on fossil fuels which represents 94% of the country’s exports. With one of the highest prices per barrel globally needed to fuel the national economy, this need translates into a situation of dependency to oil price variations. Since 2014, the transition out of fossil fuels into cleaner forms of energy has become a priority for the Algerian government.

Algeria has the largest landmass on the continent, including a 1,200Km coastline, around 3,650 hours of sunshine per year, as well as substantial energy potential from wind, biomass and geothermal activities.

Talks around an energy transition have been present for several years in the country, supported both by the government and the civil society. Last year, however, saw significant initiatives pushed by the Algerian state. In 2012, it announced the launch of the Algerian Renewable Energy Development and Energy Efficiency Program (PENREE). In 2019, following half a decade of unstable oil prices and a struggle to attract international investors, former energy minister Mustapha Guitouni announced the government’s intention to relaunch the PENREE with an established goal of producing 22,000 megawatts (MW) from clean energy sources by 2027. The necessary investment required to reach this target is estimated at around $4 billion and the calls for tender will be open to private and public investors, both national and international.

The announcement comes as Algeria’s neighbors in the Maghreb region – namely Morocco and Egypt – have made significant progress in renewable energy development in solar and wind power. Minister Guitouni further expressed that Algeria will focus on solar energy by launching call for tenders in 2020 to build a 150MW solar plant in the Algerian Highlands, north of the country. Public goals state 2,000MW to be produced by 2020.

To enforce the implementation of the PENREE, Algeria’s government approved in November 2019 the creation of a renewable energy and energy efficiency...
commission. Composed of sector experts, the objective of the commission is to create an energy transition masterplan and to deal with constraints met during the first PENREE implementation in 2012. The commission will work around the publicized goal of reaching 27% of its total electricity production from renewable sources by 2027. Since 2011, just 22 solar power plants have been installed in the country, totalling a capacity of just under 400MW altogether. That number is 20 times lower than the initial goal, set at 8,000 MW. Among the listed difficulties of the implementation of PENREE, experts identified lack of funding and adequate financing models; a lack of high-quality technical skills available on the local market, as well as miscoordination and miscommunication between different departments in charge.

The commission will put together a global plan encompassing all aspects of the energy transition, introducing sector-specific policies pertaining to renewable energy and energy efficiency; creating a legal and regulatory framework aiming to encourage investment and attract private operators; conducting studies around monetization and promotion of clean energy sources; as well as providing innovative financing models in line with government goals. To reach its ambitious targets, the commission will deploy regional and local units and provide a training framework to raise local capacity.

The designated entity to lead the transition to renewables is the National Company for Electricity and Gas, Sonelgaz. Created in 1969, Sonelgaz is a state-owned utility in charge of electricity and natural gas distribution in Algeria. Throughout 2019, Sonelgaz’ chief executive officer, Chahe Boulakhra, repeatedly expressed the government’s commitment to increasing the stake of renewables in the national energy mix. In December 2019, Algeria officially declared its intention to develop synergies with the German renewable energy consortium; Dii Desert Energy (from the former name Desertec Industry Initiative). The consortium is composed of several German companies involved in building solar and wind projects in North Africa and the Middle East region. The favored cooperation areas include the launch of technical and commercial studies to evaluate renewable energy potential in Algeria; promote common goals and research and development initiatives; promote studies around electricity transport models and access to international markets; training, local capacity building and technology transfer frameworks; among others. According to the Algerian energy ministry, a memorandum of understanding will be signed imminently pertaining to these key goals.

In November 2019, the Algerian government announced the creation of a network of companies in the field of energy efficiency. Supported by the German cooperation agency, the network is composed of eight Algerian public and private companies and aims to educate professionals and create awareness around the importance of energy efficiency.
HARNESSING RENEWABLES

Renewable energy will account for 27% of the energy mix by 2030

<table>
<thead>
<tr>
<th>Solar PV</th>
<th>Solar Thermal</th>
<th>Biomass</th>
<th>Geothermal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>13,575 MW</strong></td>
<td><strong>2,000 MW</strong></td>
<td><strong>1,000 MW</strong></td>
<td></td>
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<tr>
<td><strong>5,010 MW</strong></td>
<td></td>
<td></td>
<td><strong>200 MW</strong></td>
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<tr>
<td><strong>Wind</strong></td>
<td><strong>400 MW</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biomass</strong></td>
<td></td>
<td><strong>1,000 MW</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Geothermal</strong></td>
<td></td>
<td></td>
<td><strong>15 MW</strong></td>
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Renewable Energy Production Outlook

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<tr>
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<tbody>
<tr>
<td>3,000 PV + 0 MW CSP</td>
<td>1,010 MW</td>
<td>360 MW</td>
<td>5 MW</td>
</tr>
<tr>
<td>10,575 PV + 2,000 MW CSP</td>
<td>4,000 MW</td>
<td>640 MW</td>
<td>10 MW</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>13,575 MW</strong></td>
<td><strong>5,010 MW</strong></td>
<td><strong>1,000 MW</strong></td>
<td><strong>15 MW</strong></td>
</tr>
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</table>

Renewable energy will account for 27% of the energy mix by 2030.
Sonatrach, headed by Toufik Hakkar, is Africa’s largest oil and gas company, the key driver of Algeria’s economy and aims to become one of the world’s top performing NOCs through its SH2030 vision.

### By the Numbers

<table>
<thead>
<tr>
<th>Created</th>
<th>Employees</th>
<th>Subsidiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>200,000</td>
<td>154</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Drilling Target</th>
<th>Gas Production Target</th>
<th>Planned Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Wells per year</td>
<td>$140 Bn Cubic Meters by 2023</td>
<td>$53 Bn 2017-2021</td>
</tr>
</tbody>
</table>

### Transport via pipelines

- **Network Size**: 22,000 km
- **Managed Ports**: Algiers - Arzew - Bejaia - Skikda
- **Planned Investments**: 2019-2023 $2 billion
- **Loading Capacity**: 80,000-320,000 metric tons

### Downstream

<table>
<thead>
<tr>
<th>Refineries</th>
<th>Total capacity</th>
<th>30 million tons per annum (MTA)</th>
</tr>
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<tbody>
<tr>
<td>5</td>
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</table>

<table>
<thead>
<tr>
<th>Petrochemical plants</th>
<th>Total capacity</th>
<th>-</th>
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<tr>
<td>2</td>
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</table>

<table>
<thead>
<tr>
<th>Natural gas liquefaction plants</th>
<th>Total capacity</th>
<th>56 million cubic meters per year</th>
</tr>
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<tbody>
<tr>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquefied Petroleum Gas processing plants</th>
<th>Total capacity</th>
<th>10.4 MTA</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td></td>
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</table>
## Developing the Sector

<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
</tr>
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<tbody>
<tr>
<td>First oil discovery in the Sahara region</td>
<td>1954</td>
</tr>
<tr>
<td>Discovery of the giant Hassi Messaoud oilfield containing 6.4 billion barrels of oil</td>
<td>1956</td>
</tr>
<tr>
<td>Algeria declares independence over France through a referendum</td>
<td>1962</td>
</tr>
<tr>
<td>Creation of the Société Nationale du Transport et de Commercialisation des Hydrocarbures (Sonatrach)</td>
<td>1963</td>
</tr>
<tr>
<td>Creation of the Société Nationale de l’Electricité et du Gaz (Sonelgaz)</td>
<td>1969</td>
</tr>
<tr>
<td>Algeria joins the Organization of Petroleum Exporting Countries (OPEC)</td>
<td>1969</td>
</tr>
<tr>
<td>Creation of the African Petroleum Producers Organization (APPO) with Algeria as a founding member</td>
<td>1987</td>
</tr>
<tr>
<td>The Gas Exporting Countries Forum (GECF) is formally launched with Algeria as a founding member</td>
<td>2001</td>
</tr>
<tr>
<td>Peak oil production at 443,000 barrels per day</td>
<td>2007</td>
</tr>
<tr>
<td>Introduction of a new petroleum law aiming to attract foreign direct investment</td>
<td>2019</td>
</tr>
<tr>
<td>Algeria and Equatorial Guinea’s state owned gas companies sign a historic cooperation MoU</td>
<td>2019</td>
</tr>
</tbody>
</table>
Africa Energy Series | Algeria Special Report | 2020

This is the launch event for the Equatorial Guinea 2020 Year of Investment campaign, whose goals are to attract investment into key industries in Equatorial Guinea, boost entrepreneurship, generate profit for investors and create jobs. Organized in partnership with the Ministry of Mines and Hydrocarbons of Equatorial Guinea and the African Energy Chamber, the event puts a spotlight on investment-ready projects spanning the value chain.

JUNE 1, 2020
MALABO, EQUATORIAL GUINEA

AFRICA OIL & INVESTMENT FORUM 2020

The Angola Oil & Gas Conference & Exhibition will return for a second year as the focal point of an international investment drive, aiming to bring new deals to the table and sign up new entrants in oil and gas. Surrounding the conference will be a year-long global drive in multiple cities to present opportunities to a targeted audience of relevant companies.

JUNE 16-17, 2020
LUANDA, ANGOLA

AFRICA OIL & GAS 2020

Supported by the Government of Senegal, Cos-Petrogaz, Petrosen and Senelec, the conference will herald a new era of investment in one of West Africa’s leading business destinations, on the back of world-class offshore oil and gas discoveries and several dynamic energy projects that have been put in motion. The conference will be a vehicle to promote the new deepwater licensing round and for public-private partnerships spanning the value chain.

MAY 27-28, 2020
DAKAR, SENEGAL

SENEGAL OIL & POWER 2020

Africa’s Energy Event returns for its fifth anniversary as a crucial platform for promoting investment in the energy industries of African countries. In 2020, we expand our format to welcome more countries, pavilions, strategic partners and delegates.

SEPTEMBER 15-17, 2020
CAPE TOWN, SOUTH AFRICA

AFRICA OIL & POWER 2020

Now in its fourth edition, South Sudan Oil & Power has emerged as the leading investment event for the country as it strives to increase capital investments in hydrocarbons, infrastructure, power generation and technology. The conference is organized under the auspices of the Ministry of Petroleum and the Ministry of Energy & Dams.

OCTOBER 29-30, 2020
JUBA, SOUTH SUDAN

SOUTH SUDAN OIL & POWER 2020

The Government of Equatorial Guinea prepares to announce new transactions and agreements emanating from the inaugural Africa Oil & Gas Investment Forum. Join Equatorial Guinea’s government, its entire energy industry and the energy finance community for two days of deal making.

NOVEMBER 24-25, 2020
MALABO, EQUATORIAL GUINEA

AFRICA ECONOMIC FORUM