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## Introduction

Oil and gas have long been the backbone of the Algerian economy thanks to its vast oil and gas reserves, favorable geology, and new opportunities for both conventional and unconventional discovery/production. Unfortunately, the collapse in oil prices beginning in 2014 and the transition to spot market pricing for natural gas over the last three years revealed the weaknesses of this economic model. Because Algeria has not meaningfully diversified its economy since 2014, oil and gas production is even more essential than ever before to the government's revenue base and political stability.

Today's conjoined global health and economic crises, coupled with persistent declining production levels, have therefore placed Algeria's oil and gas industry, and the country, at a critical juncture where it requires ample foreign investment and effective technology transfer. One path to the future includes undertaking new oil and gas projects in partnership with international companies (large and small) to revitalize production. The other path, marked by inertia and institutional resistance to change, leads to oil and gas production levels in ten years that will be half of today's production levels.

After two decades of autocracy, Algeria's recent passage of a New Hydrocarbons Law seems to indicate that the country may choose the path of partnership by profoundly changing its tax and investment laws in the hydrocarbons sector to re-attract international oil companies. Algeria's new Hydrocarbons Law includes multiple measures to stimulate investment in Algeria's oil and gas sector. Firstly, it reduces taxes paid by Sonatrach and its partners by over 20 percent, from 85 percent to 60-65 percent. It also clarifies the roles of various regulatory bodies (e.g., the Minister of Energy, Sonatrach, the National Agency for the Valuation of Hydrocarbons Resources, and the Hydrocarbon Regulatory Authority). Perhaps most importantly, it reintroduces the system of production sharing.

Alongside the drafting of the new hydrocarbons law, in 2018, Sonatrach unveiled a new vision and strategy, the SH2030, which lays down ambitious objectives. For the hydrocarbon exploration and production segment, Sonatrach is planning to double the annual output of discoveries. It is also aiming to increase the production rate of existing fields and optimize well performance by 2022 and deploy relevant enhanced oil recovery technologies.

## Current Market Trends

### Large Reserves

By landmass, Algeria is the largest country in Africa and the Arab World. It has substantial oil and gas reserves and is an OPEC member. For natural gas, Algeria has the tenth-largest reserves of in the world, is the leading natural gas producer in Africa, and is the sixth-largest overall gas exporter. For oil, Algeria ranks 16th in proven oil reserves and is among the top three oil producers in Africa. All proven oil reserves lie onshore, and there is an interest in developing offshore capacity.

In partnership with Sonatrach, Algeria's National Oil Company (NOC), International Oil Companies (IOCs), and service companies are currently involved in more than 30 major projects in Algeria at different stages.

- 3 in the discovery stage
- 3 in the appraisal stage
- 3 in the exploration stage
- 7 in the development stage
- 13 production stage
- 3 in upgrade/enhanced oil recovery stage

Of the major projects underway, ten are in oil and gas projects, 11 are gas/gas-condensate/tight gas projects, and ten are oil projects. Altogether, these efforts currently result in the production of 50 million tons of oil equivalent feet per year. Most of these projects are in the south, near the cities of Hassi Messaoud and Hassi R'Mel.

### Declining Production

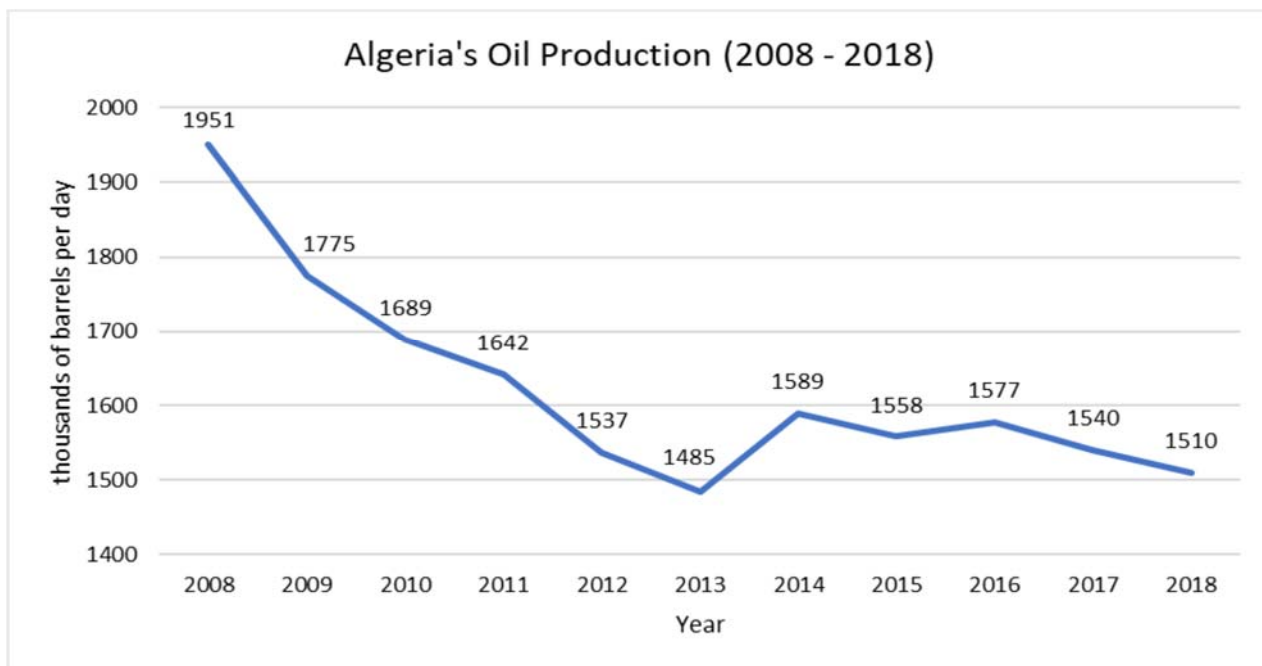
Despite its substantial reserves, Algerian production levels of oil have been declining for the past decade. This gradual decline is because the majority of the country's production stems from mature wells, which continue to age rapidly. Covid-19's impact on international oil prices, which resulted in a drop in prices for Algeria's Saharan blend from \$70 on January 6, 2020, to \$42 per barrel as of June 5, will exacerbate this trend.

# ALGERIA

## UPSTREAM OIL & GAS REPORT



Completed by: M. Smith, Sr. Commercial Officer, K. Achab, Sr. Commercial Specialist, and B. Olinger, Research Assistant



Source: BP Statistical Review of World Energy 2019

Due to the unexpected drop in oil prices, at the end of March 2020, Sonatrach announced the group's plans to reduce its budget for the year 2020 by \$7 billion (50 percent). At the time, Sonatrach's CEO, Toufik Hakkar, said the group would reduce all expenses that would not impact future production levels and would reduce employment expenses by roughly 30 percent. Then, in June 2020, Algeria's Minister of energy welcomed the agreement of the OPEC+ virtual ministerial meeting to sustain cuts in oil production through July. Algeria hopes that sustained reductions will help boost oil prices closer to \$50/barrel for the second half of 2020.

### New Exploration

Even though production has been declining for more than ten years, Algeria's territory remains relatively underexplored. Sonatrach reports that about 66 percent of Algerian territory remains unexplored or mostly underexplored. To understand the magnitude of the country's untapped resources, Sonatrach estimates that it has more than 100 undeveloped discoveries. Most of these areas are in both known and frontier basins, as well as offshore. Realizing that its previous regulatory regime repeatedly failed to attract international oil companies to new exploration projects in these areas, Algeria overhauled its hydrocarbons regime in January 2020 with the passage of the Law on December 11, 2019.

The regulatory changes brought about by this law represent Algeria's first significant attempt to stimulate international investment and boost reserve replacement in more than two decades. Within the last three months, Sonatrach has also signed Memorandums of Understanding (MOUs) with Exxon, Chevron, and Lukoil. These MOUs cover exploration, development, and production opportunities in Algeria, particularly in the context of the new Hydrocarbons Law.

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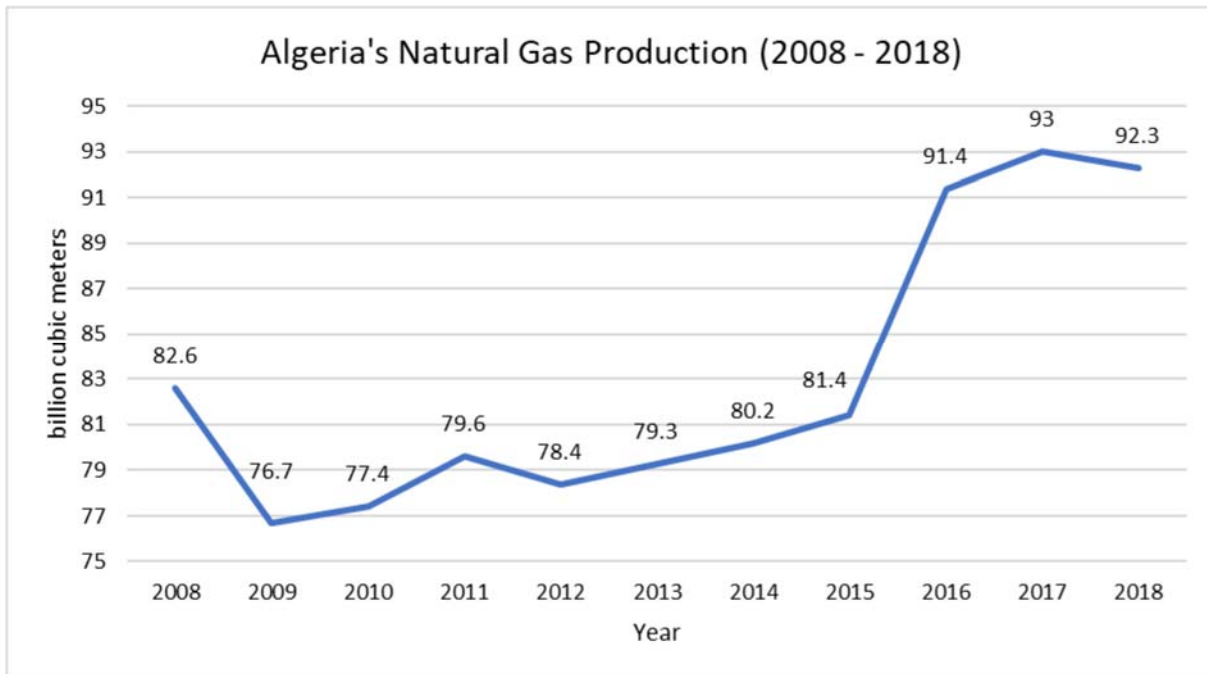
### Enhanced Oil Recovery

As noted above, the bulk of Algeria's production lies in maturing fields, which face heavy rates of decline. For 25 years, Sonatrach has been employing Enhanced Oil Recovery (EOR) techniques to optimize oil and gas field production. A recent example includes a new \$415 million gas compression and reinjection station with a production capacity of 24 million cubic meters per day that was brought online in January 2020. The new station, located six kilometers from Hassi Messaoud, will enable crude oil production to be increased via the injection of up to 16 million m<sup>3</sup>/d of treated gas.

Despite previous investments in EOR, Sonatrach's new leadership understands that additional investments in more cutting-edge forms of EOR are needed improve oil recovery factors and slow the rate of decline. Compared with neighboring countries in the Middle East, Algeria's reservoirs that require EOR techniques have an estimated recovery factor of less than 20 percent, compared with 34 percent in the region.

### Significant Gas Production

Abundant natural gas reserves dominate Algeria's hydrocarbon portfolio compared to crude oil. After producing natural gas for several decades, Algeria has reached a point where its gas balance is facing challenges. Stagnating natural gas production and a rapid domestic gas consumption growth have combined to constrain the country's gas export potential.



Source: BP Statistical Review of World Energy 2019

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Recent efforts to mitigate production decreases include the Southwest Gas Project, which consists of the Reggane Nord, Timimoun, and Touat projects, all of which are at the final stages to start production. For example, the Touat field reached the first production in early September 2019, with the project consisting of 19 development wells and a gas treatment plant with a gathering network and export pipelines. Production at this site will ramp up to a peak of 4.7bcm. The development of the Southwest Gas Project is significant for Algeria's ability to meet contracted exports and rising domestic demand, which grew 5 percent year-over-year between 2008 and 2018.

As the graph on the previous page demonstrates, Algeria's gas production trends have fared much better than oil over the last decade. Despite challenges posed by the movement of the market to spot pricing and a surplus of natural gas globally, gas production will likely increase gradually in the short and medium-term thanks to investments at the Hassi R'Mel field. Over the long term, however, production will mainly be affected by whether additional efforts are made to mitigate production decreases and by the stability of demand from mainland Europe, particularly Spain and Italy.

### Shale Gas

Algeria is estimated to hold the third-largest amount of technically recoverable shale gas resources in the world. Sonatrach commissioned its first shale gas exploration well in the Ahnet Basin in In Salah in December 2014, and exploration has stopped and started several times since. These fits and starts are because shale gas exploitation has been a contentious issue at both the national and community levels, with multiple demonstrations protesting against shale gas in the south of the country. Concerns about shale gas projects are often economical as well as environmental, with some leaders questioning the profitability of shale gas production in the Algerian context due to water scarcity and a lack of domestic expertise in this area.

Despite the controversy surrounding shale gas, shortly after entering office, Algeria's first new president in more than 20 years, President Abdelmadjid Tebboune, stated his belief that shale gas development is a necessity for Algeria. While the President did not give a specific timeline for introducing shale gas development, he said that the government would debate option "once we have overcome the current situation" (e.g., referring to overcoming the country's political instability that began the year prior). Tebboune sees the revenues from shale gas as a means to avoid taking on foreign debt. So while shale gas production may not be in play in the short term, the government is beginning plans to develop its shale reserves.

### Competitive Landscape

#### NOC

Sonatrach, Algeria's well-established NOC (1963), owns roughly 80 percent of total hydrocarbon production in Algeria and IOCs account for the remaining 20 percent. Arguably the largest company in all of Africa, state-owned Sonatrach oversees Algeria's oil and gas exploration, production, transport, processing, marketing, and distribution of oil products and derivatives of liquid and natural gas hydrocarbons. The company has exploration and production activities in other countries, including Libya, Mali, Niger, and Peru.

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Over the last year, Sonatrach has been through multiple leadership changes, with a whopping four different CEOs during this time. After Abdelmoumen Ould Kaddour was removed as CEO in April 2019 (X weeks after the resignation of former President Abdelaziz Bouteflika), Rachid Hachichi served as CEO for seven months until being dismissed in November 2019. Next, Kamel Eddine Chikhi held the position between November 2019, to be dismissed shortly before the country's presidential elections. Then, in early February 2020, the newest CEO, Toufik Hakkar, took the helm.

In terms of assessing the potential of the Algerian market, it is important to note that immediately before becoming CEO, Hakkar served as the Vice President of Business Development and Marketing at Sonatrach. In this capacity, he led the working group that drafted the new Hydrocarbons Law. Further, in less than two months after taking the helm of the organization, he appointed eight new Vice-Presidents.

### IOCs

One of the strengths of Algeria's oil and gas industry is its diversity. The sector includes a relatively diverse number of companies that partner with Sonatrach to execute more than 30 major projects. The ethos of Sonatrach regarding partnerships is "share the risk and share the wealth." Today, more than two dozen international E&P firms are currently present in the market:

- BP (U.K.)
- CEPSA (Spain)
- China National Offshore Oil Corporation (China)
- Edison International (U.S.)
- Enel (Italy)
- Engie (France)
- Eni (Italy)
- Equinor (Norway)
- Gas Group
- Gazprom (Russia)
- Hess (U.S.)
- Occidental (U.S.)
- Partex Oil (Portugal)
- Petroceltic (U.K.)
- Petronas (Malaysia)
- Petrovietnam (Vietnam)
- PTT Exploration and Production Public Company (Thailand)
- Repsol (Spain)
- Rosneft (Russia)
- RWE Dea (Germany)
- Total (France)
- Petramina (Indonesia)
- Maersk Oil (Denmark)
- Royal Dutch Shell (Holland-U.K.)
- BHP Billiton (Australia-U.K.)

Due to Sonatrach's partnership model, as well as previous investments in corporate training and education, the country's oil and gas sector has a fully trained workforce. This advantage was particularly evident during the COVID crisis when production sites were able to continue operations because they were not overly reliant on international employees. Starting more than 40 years ago, Sonatrach embarked upon a human resources transformation by creating a corporate university, which used to have ties to the University of Texas and the University of Oklahoma. Though the company mostly stopped investing in competency-based training 25 years ago, most of the company's current leaders were beneficiaries of this program. It is important to note that current market players feel the absence of the once robust corporate training program, noting that the newest generation of employees lacks the know-how and applied knowledge that the former training program imparted.



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### International Oil and Gas Service Companies

In addition to hosting a wide variety of international E&P firms, a similar diversity of international oil and gas service companies provides Sonatrach and its affiliates with oil and gas services.

- [ABB Group](#) (Switzerland)
- [ACS Labs](#) (U.S.)
- [AREVA](#) (France)
- [Baker Hughes](#) (U.S.)
- [BeicipFranlab](#) (France)
- [BJ Services](#) (U.S.)
- [CCECA/ARKEMA Group](#) (France)
- [ChampionX](#) (U.S.)
- [Chemostrat Inc.](#) (U.K.)
- [Emerson Process Management](#) (U.S.)
- [Entrepose Group Algérie](#) (France)
- [Expro Group](#) (U.K.)
- [Flowserve](#) (U.S.)
- [Fluid Control](#) (France)
- [Halliburton](#) (U.S.)
- [Fores Engineering](#) (Italy)
- [GE \(General Electric\) -- Sensing](#) (U.S.)
- [GEOLOG Surface Logging](#) (Italy)
- [GeoScience Limited](#) (U.K.)
- [Gyrodata Ltd.](#) (U.S.)
- [Hazemeyer](#) (France)
- [Halliburton](#) (U.S.)
- [IGEISS](#)
- [International Reservoir Technologies, Inc.](#) (U.S.)
- [JAB Company](#) (France)
- [JGC Holdings Corp.](#) (Japan)
- [John Wood Group](#) (U.K.)
- [KELTON](#) (U.K.)
- [Landmark \(Halliburton Digital & Consulting Solutions\)](#) (U.S.)
- [M-I SWACO Algeria SpA](#) (U.S.)
- [Nabors Drilling International](#) (U.S.)
- [NALCO](#) (U.S.)
- [Parker Drilling](#) (U.S.)
- [PetroTel](#) (U.S.)
- [ProTechnics/Core Laboratories](#) (U.S.)
- [REDA Oilfield](#) (U.K.)
- [Reed Hycalog](#) (U.S.)
- [Reservoir Team](#) (Australia)
- [ROXAR](#) (U.S.)
- [Schlumberger](#) (U.S.)
- [SIS \(Schlumberger Information Solution\)](#) (U.S.)
- [SCM International Inc.](#) (U.S.)
- [Scomi Oil Tools](#) (Malaysia)
- [SGS Group](#) (France)
- [Smith Bits](#) (U.S.)
- [SPIE](#) (France)
- [Sperry Drilling Services](#) (U.S.)
- [Swagelok](#) (U.S.)
- [TAM International](#) (U.S.)
- [TechnipFMC Technologies Algeria](#) (U.K.)
- [Urbica](#) (France)
- [VAREL International Energy Services](#) (U.S.)
- [Weatherford](#) (Ireland-Switzerland)
- [WEXIS](#) (France)

### Best Prospects for U.S. Exporters

The Algerian government has stated it needs foreign partners to double exploration and production in the next five years, including exploring and developing new offshore fields in the Mediterranean Sea and inland areas containing shale oil and gas resources. To develop its uniquely stacked resources (e.g., vertically layered deposits of conventional, non-conventional, and technically challenging deposits), Sonatrach is selecting specific blocks for targeted partnerships with either existing partners or new, highly specialized partners. To support these ambitious efforts, Sonatrach estimates that it will work with hundreds of new smaller companies to support future production.

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More specifically, over the past few years, Sonatrach has identified six areas of significant importance: reservoir management, well selection and completion, drilling and hydrocarbon production, gas processing, site safety and environmental management, and decision support and data flow. Small to medium-sized, independent U.S. companies providing equipment and services in these areas are well-positioned to partner with Sonatrach or its IOC joint venture partners.

### Reservoir Management

- Expert systems for reservoir engineering; expert systems for designing and selecting enhanced oil recovery (EOR) processes.
- Technologies and equipment for conformance control (reservoir water management).
- Technologies and equipment for reducing unwanted water fluid production.

### Well Selection and Completion

- Exploration geophysics technologies and equipment.
- Smart well completion technologies and equipment.
- "Intelligent well" technologies and equipment (direct monitoring or remote control equipment installed within the well completion).
- Multiple well completion (e.g., dual well completion) technologies and equipment.

### Drilling and Hydrocarbon Production

- Technologies for remote-controlled drilling of oil wells.
- Underbalanced drilling (UBD) technologies and equipment (pressure in the wellbore is kept lower than in the formation being drilled; as a result, formation fluid flows into the wellbore and up to the surface).
- Multiphase pumps.
- Gas lift technologies and equipment (using external high-pressure gas for supplementing formation gas to lift the well fluids).
- Technologies and equipment to prevent the formation of hydrates in gas lift lines in the winter.
- Equipment for multiphase metering
- Technologies and equipment for workovers on damaged wells.
- Software/expert systems for offshore platform design
- Technologies to optimize hydraulic fracturing (fracking): choice of chemicals and proppants; fracking design and stimulation technologies; technologies and equipment for analysis of fracking fluids, pre-use, and post-use.

### Processing of Gas

- Equipment and materials for removal/processing of pollutants found in natural gas (CO<sub>2</sub>, H<sub>2</sub>S).
- Processes/Equipment for the transformation of C<sub>x</sub>H<sub>x</sub>.
- Equipment for the recycling/processing of flared gas



### Site Management/Site Safety/Environmental Management

- New technologies for overall management, supervision, and safety at oil and gas production sites (Power Management Systems, SCADA, CCTV)
- Technologies/equipment for the processing of oily wastewater.
- Processes/equipment for the management of waste chemicals and lubricants used at production sites.
- Equipment for implementing energy solutions at oil and gas production sites (for lighting, for other power needs to personnel lodging facilities).

### Decision Support and Data Flow

- Real-time oil and gas well data collection and data treatment
- Increase the digitalization of reporting and decision-making processes across the sector.

### Regulatory Environment

Among the myriad of factors that contribute to the attractiveness of a country's oil and gas sector, Algeria made an enormous step forward in improving its fiscal and regulatory environment when it passed a new Hydrocarbons Law in December 2019. This law substantially changes the tax rates and investment conditions for foreign investors in the hydrocarbons sector. These changes were made to entice international oil companies to begin making new investments in Algeria after years of limited activity.

### New Hydrocarbons Law

The 2019 Algeria Hydrocarbons Law addresses critical deficiencies of the former 2005 hydrocarbons law and related tax regimes. The previous law included high taxes and duties on Exploration and Production (E&P) activities as well as unclear contract-sharing agreements with Sonatrach, the national oil company. Algeria amended the 2005 law four times (in 2006, 2013, 2014, and 2015) and yet, failed repeatedly to attract foreign investors. Since 2010, the number of new contracts signed dropped to an average of only two signed contracts per year. In response to this problematic situation, the GoA decided to reduce taxes across a variety of E&P activities significantly.

It also removed other customs duties and taxes on most imported E&P equipment. Moreover, reforms award VAT exemptions for professional activities in the sector.

Complementing the reduction of taxes, the 2019 Hydrocarbons Law simplifies and improves contract agreement types for E&P as well as contracting procedures. Firstly, the reforms place Sonatrach, the national oil company, as the Algerian party to contracts, wholly eliminating ALNAFT, the former hydrocarbons contractual regulator. Secondly, IOCs can enter into one of three contract agreement types, up from one.

- Participation Agreements (PA): Sonatrach now holds at least 51 percent stake and largely mirrors the same standard as in 2005 laws,
- Production Sharing Agreements (PSA): IOC gets a share of produced oil/gas, in consideration for its investment,
- Risk Service Agreements (RSA): IOCs receives a fee per barrel produced above a minimum level of production.

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But despite this historic legislation, the impact of reforms on the overall sector is likely to be gradual. The first reason for this is that contract formalization under the former 2005 laws saw a lengthy process of nearly ten years. While contract timeframes can decrease with the new reforms, the overall landscape will likely take up to a couple of years to warp. The second reason for this is that the new legislation only addresses a portion of the challenges facing exporters and investors in Algeria's oil and gas industry.

### Other Regulatory Challenges

Algeria never has been or will be a market for quick WINS and requires a medium to long-term view on the part of exporters and investors. Additional significant regulatory and operational challenges in the market include investment restrictions that limit the stake of international companies to 49 percent vis a vis Sonatrach or one of its subsidiaries. In addition, most companies report significant problems (usually in the form of bureaucracy and red tape) with clearing equipment through customs, obtaining work permits for key personnel, registering their companies at the National Trade Register Center, and obtaining construction permits. Non-resident companies must also transfer currency to the Bank of Algeria to meet non-export-proceed obligations.

### Market Entry Strategies

CS Algeria recommends that new entrants to the market either partner with or subcontract to a company in the market that has experience navigating the local laws and bureaucracy. To explore opportunities in the market, U.S. companies can view tenders, which Sonatrach and the Ministry of Energy announce, on the Baosem website: <https://www.baosem.com/v4/fr/index.php>.

The procurement process in the oil and gas industry is transparent and well established, and procurements are made through international or national tenders. Decision-makers evaluate the proposals according to technical merits first, followed by a shortlist of the best proposals for a financial and commercial round of commercial and financial negotiations and selection.

### U.S. Commercial Service Information

To explore the market and discuss customized market entry strategies, please contact:

Michele Smith  
Senior Commercial Officer  
[michele.smith@trade.gov](mailto:michele.smith@trade.gov)  
Tel: +213 770 224 890

Kamal Achab  
Senior Commercial Specialist  
[kamal.achab@trade.gov](mailto:kamal.achab@trade.gov)  
Tel: +213 770 990 651

## Technical Barriers to Trade and More

### FTA with EU

There is a free trade agreement with the European Union, makes products from European suppliers competitive as there are no customs. Customs and shipping fees of American products make the cost comparison challenging. However, import tax exemptions introduced in December 2019 for goods and services in the exploration and production sector exist.

Lengthy government procedures, difficulties meeting decision-makers, language barriers, and long decision timeframes can make Algeria a challenging market in which to conduct business. With French is the primary business language, companies seeking entry into the Algerian market should prepare accordingly to overcome potential challenges. U.S. firms must have active, well-connected, and well-respected local partners to navigate the complex bureaucratic and regulatory environment.

In the recent past, declines in crude oil and gross natural gas production have been partly due to slow government approvals, infrastructure gaps, technical challenges, and difficulties attracting investment partners. Additional project delays may occur as a result of hydrocarbon companies' capital expenditure budget cuts from the 2014 and 2020 drops in oil prices.

### Security Concerns

Regional instability remains a material threat to the Algerian oil and gas sector, which continues to face the dangers of terrorism, banditry, and kidnapping. Vast, with lightly populated spaces, and closed borders to the West, the Algerian south comprises 85 percent of the national territory and most of its oil and gas operations and reserves but less than 9 percent of its population. The Wilayas (i.e., states) bordering Tunisia, Libya, Mali, and Niger experience unpredictable security occurrences as criminal groups operate sporadically in the remote desert areas of Tebessa, El Oued, Ouargla, Illizi, and Tamanrasset.

## Upcoming Trade Events

- North African Petroleum Exhibition and Conferences (NAPEC), September 6-9, 2020
- Hassi Messaoud Expo, October TBD, 2020
- ALGEST – International Sub-Contracting Fair, November TBD, 2020
- OGEX – Oil and Gas Exhibition, June TBD, 2021
- Algiers International Fair (FIA), June 14-19, 2021

## Local Industry Resources

- [U.S. Commercial Service in Algeria](#)
- [U.S. Embassy](#)
- [The Algerian Ministry of Energy](#)
- [The Algerian Ministry of Commerce](#)
- [BP Statistical Review of World Energy 2019](#)
- [American Chamber of Commerce in Algeria](#)
- [U.S.-Algeria Business Council](#)