

# **African Upstream Oil and Gas**

**A Practical Guide to the Law and Regulation**

**Consulting Editors Dr Eduardo G Pereira and Professor Kim Talus**

**Consulting editors**  
Dr Eduardo G Pereira  
Professor Kim Talus

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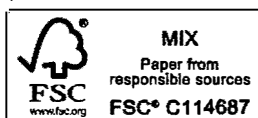
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# Algeria

Emmanuel Gaillard  
Maude Lebois  
Shearman & Sterling LLP

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## 1. Introduction

In 1956 the first commercial quantities of oil were discovered in Algeria and, a few years later in 1963, the state-owned oil company, Sonatrach,<sup>1</sup> came into existence. Half a century later, Algeria is now the ninth-largest gas producer and the sixteenth-largest oil producer in the world. In 2013, Sonatrach's export revenue exceeded US\$63 billion, thus making it the largest company in Africa.

The legal framework governing oil and gas activities in Algeria has developed and evolved considerably since oil was first discovered. Currently, the cornerstone of Algerian hydrocarbon-related legislation is Law 05-07 of April 28 2005, which has been amended and supplemented by Ordinance 06-10 of July 29 2006 and by Law 13-01 of February 20 2013 (the Hydrocarbon Law). The Hydrocarbon Law provides a comprehensive legal framework for hydrocarbon-related activities. One of the defining characteristics of the system created through the Hydrocarbon Law is that Sonatrach holds a majority shareholding in all exploration and production projects in Algeria.

After providing an overview of the situation with regard to oil and gas resources in Algeria, we will discuss the history of the legal framework governing oil and gas activities. We shall then present an analysis of the legal framework currently applicable to hydrocarbon-related activities in Algeria, including a description of the key players in the industry, the most prominent of which is the company Sonatrach, as well as the applicable tax regime. We will also focus on the specificities of the recent amendments to the Hydrocarbon Law that came into force in 2013, creating more attractive contractual and financial conditions for exploration and production activities with respect to unconventional reserves. Lastly, we will reflect on the future development of Algeria's oil and gas activities.

## 2. Historical overview of oil and gas activities in Algeria

Algeria is primarily a gas producing country. According to a study published by the US Energy Information Administration (EIA) in July 2014, Algeria is the world's ninth-largest gas producer.<sup>2</sup> Statistical information from the Organization of the

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1 Société Nationale pour la Recherche, la Production, le Transport, la Transformation et la Commercialisation des Hydrocarbures, hereafter Sonatrach.

2 EIA, *Country Analysis Brief: Algeria*. Analysis last updated July 24 2014, p1. Available at [www.eia.gov/countries/analysisbriefs/Algeria/algeria.pdf](http://www.eia.gov/countries/analysisbriefs/Algeria/algeria.pdf) (last accessed November 18 2014). Hereinafter EIA Report, July 24 2014.

Petroleum Exporting Countries (OPEC) indicates that Algeria's marketed production of natural gas amounted to 79,647 million cubic metres (m<sup>3</sup>) in 2013.<sup>3</sup> Algeria is also the world's sixteenth-largest oil producer, with an estimated average production of 1.2 million barrels per day of crude oil and another 600,000 barrels per day of non-crude oil liquids in 2013.<sup>4</sup>

As for the country's reserves, according to the *Oil & Gas Journal* estimates released in January 2014, Algeria has 159 trillion cubic feet (TCF) of proven gas reserves (ie, 4,502 million m<sup>3</sup>) and has thus the world's tenth-largest proven natural gas reserves. Algeria also holds an estimated 12.2 billion barrels of proven crude oil reserves, placing it in the top three African countries with the greatest oil reserves behind Libya and Nigeria.<sup>5</sup>

Moreover, in 2013 a study sponsored by the EIA found that Algeria's technically recoverable shale gas reserves could stand at 707 TCF (ie, almost 20 billion cubic metres), which would make them the world's third-largest technically recoverable reserves of shale gas, behind those of China and Argentina.<sup>6</sup> Such reserves are said to represent nearly 10% of the world's technically recoverable shale gas reserves.<sup>7</sup> Algeria's estimates of its unconventional gas reserves are consistent with the figures published by the EIA.<sup>8</sup> However, at present, exploration and production of unconventional resources, including mostly shale gas, is still in its infancy in Algeria and it is therefore difficult to predict what the impact of such resources could be.

To date, Algeria counts over 200 oil and gas fields in production, mostly located in the southern and eastern regions.<sup>9</sup> Almost half of the oil and gas produced is extracted from just a few large fields. Hassi Messaoud, which is the largest and oldest oilfield located in the eastern part of the country near the Libyan border, accounted for close to 40% of total crude oil production in Algeria in 2013.<sup>10</sup> According to Sonatrach, the Hassi Messaoud-Dahar region contains about 71% of Algeria's proven, probable and possible oil reserves. Algeria's largest natural gas field, Hassi R'Mel, located in the centre of the country, holds proven reserves of about 85 TCF, that is, more than half of Algeria's total proven natural gas reserves according to the EIA.<sup>11</sup>

With an average drilling density of 15 exploration wells per 10,000 square

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3 OPEC, *Annual Statistical Bulletin 2014*, p8, available at [www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/ASB2014.pdf](http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2014.pdf) (last accessed November 18 2014).

4 EIA Report, July 24 2014, p6.

5 EIA Report, July 24 2014, p5.

6 EIA, *Analysis and Projections – “Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States”*, June 10 2013, available at [www.eia.gov/analysis/studies/worldshalegas](http://www.eia.gov/analysis/studies/worldshalegas) (last accessed November 17 2014).

7 *Ibid.*

8 See ALNAFT, *Unconventional Resources: Tight Gas Sands & Shale Gas*, edited on December 5 2012, available at [www.mem-algeria.org/francais/uploads/slides/Unconventional\\_Resources\\_Tight\\_Gas\\_Sands\\_Shale\\_Gas.pdf](http://www.mem-algeria.org/francais/uploads/slides/Unconventional_Resources_Tight_Gas_Sands_Shale_Gas.pdf) (last accessed November 17 2014). EIA Report, July 24 2014, p10.

9 M Attar and M Hammat, *Algeria's Hydrocarbon Potential, Contribution from SONATRACH Exploration Division*, p2, undated: “The Hydrocarbons reserves discovered to date in Algeria are contained in approximately 200 oil and gas fields, with 73 situated in the Illizi Basin, 57 in the Central Saharan basins, 34 in the Ghadamés-Rhourde Nous, and 31 in the Oued Mya Basin.” See [www.mem-algeria.org/fr/hydrocarbures/w4\\_0.pdf](http://www.mem-algeria.org/fr/hydrocarbures/w4_0.pdf) (last accessed November 17 2014).

10 EIA Report, July 24 2014, p6.

11 *Ibid.*, p10.

12 See the Sonatrach website, *Sonatrach An Integrated Oil & Gas Company*, p3, [www.sonatrach.com/en/PDF/Presentation\\_sonatrach\\_uk.pdf](http://www.sonatrach.com/en/PDF/Presentation_sonatrach_uk.pdf) (last accessed November 17 2014).

kilometres (km<sup>2</sup>), it can be said that Algerian soil is underexplored.<sup>12</sup> Further, all producing fields are as yet located onshore, mainly in the Sahara desert, with only limited offshore exploration.

In economic terms, hydrocarbon revenue has long been the foundation of the country's economy. In 2012, revenue generated from hydrocarbons made up 36% of Algeria's gross domestic product,<sup>13</sup> over 95% of export earnings, and 60% of budget revenue, according to the International Monetary Fund.<sup>14</sup>

More than 60% of total oil and gas production in Algeria is exported.<sup>15</sup> According to the Middle East Economic Survey, oil and natural gas export revenue exceeded US\$63 billion in 2013.

Of Algeria's crude oil exports, 72% is transported to Europe via subsea pipelines.<sup>16</sup> The remainder is exported to the Americas (18%), and to Asia and Oceania (10%).<sup>17</sup> Algeria is also one of the principal gas suppliers to Europe,<sup>18</sup> behind Russia and Norway.

### 3. History of the legal framework governing hydrocarbon activities in Algeria

#### 3.1 The concession regime under the Saharan Petroleum Code

Commercial oil and gas exploration in Algeria goes back to the mid-20th century with the first commercial oil discovery in Edjelleh in 1956, which was immediately followed by the important discovery of the Hassi Messaoud oilfield.

Shortly after the first discoveries of oil in commercial quantities during the French colonial era, the French authorities in Algeria enacted legislation known as the 'Saharan Petroleum Code' to govern hydrocarbon-related activities in the Sahara desert.<sup>19</sup> One of the goals of the Saharan Petroleum Code was to promote intensive

13 Tarik Benbahmed and Hervé Lohoues, *Algeria 2014*, p3, available at [www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN\\_Long\\_EN/Algerie\\_EN.pdf](http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN_Long_EN/Algerie_EN.pdf) (last accessed November 17 2014).

14 EIA Report, July 24 2014, p1; International Monetary Fund, *Algeria 2013, Article IV Consultation*, Country Report 14/32, p34, available at [www.imf.org/external/pubs/ft/sctr/2014/cr1432.pdf](http://www.imf.org/external/pubs/ft/sctr/2014/cr1432.pdf) (last accessed November 17 2014); Globe Muslims, *Algeria*, February 2 2013, available at [www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN\\_Long\\_EN/Algerie\\_EN.pdf](http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN_Long_EN/Algerie_EN.pdf) (last accessed November 17 2014).

15 EIA, International Energy Statistics, Africa, All flows, from 2009 to 2013, available at [www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=3&pid=3&aid=6&cid=r6&syid=2009&eyid=2013&unit=TCF](http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=3&pid=3&aid=6&cid=r6&syid=2009&eyid=2013&unit=TCF) (last accessed November 17 2014). *Jeune Afrique*, "Algérie: faut-il avoir peur du gaz de schiste" ["Algeria: Should we fear shale gas?"], November 8 2013: "les réserves de gaz conventionnel sont, elles, estimées à 4 500 milliards de m<sup>3</sup>, avec une production moyenne annuelle de 85 milliards de m<sup>3</sup>, dont 55 milliards destinés à l'exportation" ["conventional gas reserves are estimated at 4,500 billion m<sup>3</sup>, with annual production of 85 billion m<sup>3</sup>, 55 billion m<sup>3</sup> of which are exported"], available at <http://economie.jeuneafrique.com/entreprises/entreprises/energie/20328-algerie-faut-il-avoir-peur-du-gaz-de-schiste.html> (last accessed November 17 2014).

16 EIA Report, July 24 2014, p7.

17 *Ibid*, p7.

18 Audrey Garric, "L'Algérie, tournée vers l'exportation de ses hydrocarbures" ["Algeria shifted towards its oil and gas exports"], *Le Monde*, January 17 2013: "Alger fournit notamment 10% des besoins de gaz de l'Union Européenne" ["Algiers supplies 10% of the European Union's gas demand"], available at [www.lemonde.fr/afrique/article/2013/01/17/l-algerie-tournee-vers-l-exportation-de-ses-hydrocarbures\\_1818187\\_3212.html](http://www.lemonde.fr/afrique/article/2013/01/17/l-algerie-tournee-vers-l-exportation-de-ses-hydrocarbures_1818187_3212.html) (last accessed November 17 2014); EIA Report, July 24 2014, p14.

19 The main text of the Saharan Petroleum Code is Ordinance 58-1111 of November 22 1958 relating to the exploration, exploitation, pipeline transportation of hydrocarbons and to the tax regime for these activities in the regional *départements* of Oasis and the Saura, *Official Journal of the French Republic* of November 23 1958, p10526.

oil and gas extraction and it therefore granted broad freedom and many advantages to the foreign companies operating the fields.

Under the Saharan Petroleum Code, a 'concession' was the title of exploitation granted to foreign companies. This concession was granted for a minimum of 50 years and the areas covered by the exploration permits were large – up to 150,000 km<sup>2</sup>.<sup>20</sup> Taxes amounted to less than half the profit generated by the production activities.<sup>21</sup> In addition, under Article 22 of Ordinance 58–1111, the performance of a concession agreement granted the concessionaire ownership rights over the property, which could be mortgaged. Many concession agreements were entered into under the terms of the Saharan Petroleum Code.

However, one of the immediate consequences of Algeria's independence from France in 1962 was that Algeria found itself bound by France's prior obligations to foreign oil companies under the Saharan Petroleum Code and the concession agreements.<sup>22</sup>

After applying this concession regime for a few years, the newly formed Algerian government gradually felt the need to redefine concession rights granted to foreign companies and attempted to renegotiate long-term concession contracts with the foreign oil companies, but to no avail. During the same period, the Algerian government set up the necessary structure to organise the hydrocarbon sector, a process that led to the creation of the state-owned oil and gas company Sonatrach in December 1963.

### 3.2 Nationalisation of hydrocarbons

The 1970s were a key decade for the development of legislation to govern the hydrocarbon sector in Algeria, as was also the case in several other countries that had joined OPEC, as Algeria had done in 1969.

On February 24 1971 Algeria, determined to recover full sovereignty over its natural resources,<sup>23</sup> nationalised the hydrocarbon sector. This nationalisation was only partial for the concessions producing crude oil, with 51% of the assets transferred to the state. Natural gas projects and the related production installations were fully nationalised, as were interests in oil and gas pipeline companies.<sup>24</sup> The shares in the various projects were transferred to Sonatrach.

Ordinance 71–22 of April 12 1971<sup>25</sup> defined the framework within which foreign oil companies could now undertake operations relating to the exploration and exploitation of liquid hydrocarbons only, natural gas-related operations being carried out exclusively by Sonatrach.<sup>26</sup> Ordinance 71–22 replaced the traditional system of

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20 The concessionaire's obligations were described as "derisory" by an Algerian author: Nour-Eddine Terki, *Foreign companies in Algeria* (Algiers: OPU, 1976) p137.

21 Ali Aissaoui, *Algeria, The Political Economy of Oil and Gas* (Oxford Institute for Energy Studies, 2001) p57.

22 *Ibid.*, p58.

23 Algeria presented its position internationally during the sixth special session of the UN General Assembly in April 1974. The presentation was entitled "Petroleum, raw materials and development".

24 Aissaoui, *Algeria, The Political Economy of Oil and Gas*, p82.

25 "Ordinance no. 71–22 of April 12, 1971 amending Ordinance no. 58/1111 of November 22, 1958 (Saharan Petroleum Code)", *Journal Officiel de la République Algérienne Démocratique et Populaire (JORA)*, 30, April 13 1971, p366.

26 *Ibid.*

concessions inherited from the colonial period with the 'association' model. Foreign companies wishing to operate in the Algerian hydrocarbon sector could do so only in association with Sonatrach. Foreign companies could hold a maximum stake of 49% in such a venture. Additionally, they were required to that effect to incorporate a commercial company under Algerian law. They were not permitted to act as operator of the oilfield.

In light of the economic environment and legal constraints, Sonatrach's main international partners progressively turned away from Algeria. As Sonatrach supported most of the investment burden alone, the cost of this 'do it alone' policy became extremely high.<sup>27</sup> Therefore, Algeria launched discussions to reform the legal framework governing hydrocarbon activities.

In 1986 and 2005, the Algerian hydrocarbon sector underwent two major legislative and institutional reforms aimed at attracting financially and technically capable partners while maintaining a sufficient level of control in this strategic sector.

### 3.3 Introduction of production sharing contracts

In the mid-1980s, at a time of slow growth and dipping oil prices, Algeria initiated a consultation process aimed at redefining the legal framework governing hydrocarbon-related activities. This resulted in the adoption of Law 86-14 of August 19 1986<sup>28</sup> regarding exploration and production activities, which was amended in 1991.<sup>29</sup> The primary purpose of this legislation was to attract foreign companies in order to jump-start exploration and production.

While reaffirming the sovereignty of the Algerian state over its natural resources, Law 86-14, as amended in 1991, established more incentivising contractual mechanisms for foreign companies.

While foreign companies were still obliged to enter into a contractual relationship with Sonatrach for exploration and production, this relationship could now take the form of a "production sharing agreement",<sup>30</sup> under which the foreign company received a percentage of oil or gas production in exchange for a technological and financial investment.

Although this new type of contract still limited their share of production to 49%,<sup>31</sup> Sonatrach's foreign partners could now act as operators<sup>32</sup> and were no longer required to incorporate a company in Algeria. Furthermore, the 1991 amendments to Law 86-14 allowed foreign participation in existing gas fields, whereas, up until then, only Sonatrach could produce such fields. It also allowed for recourse to

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27 A Megateli, *Investment Policies of National Oil Companies: A Comparative Study of Sonatrach, Nioc, and Pemex*, (New York: Praeger Publishers, 1980) p125, cited in Aissaoui, *Algeria, The Political Economy of Oil and Gas*, p94.

28 Algerian Law no. 86-14 Concerning Activities of Protection, Exploration, Production, and Pipeline Transportation of Hydrocarbons, *JORA*, 35, August 27 1986, p1019.

29 Law no. 91-21 of 4 December 1991, Amending and Supplementing Law no. 86-14, *JORA*, 63, December 7 1991, p1958; Law 91-12 of 7 September 1991, Establishing Complementary Finance Law for 1991, *JORA*, 42, September 11 1991, p1324.

30 Law 86-14, Article 22.2.

31 Law 86-14, Article 25.

32 Law 86-14, Article 27.

international arbitration for the resolution of any disputes between Sonatrach and foreign companies.<sup>33</sup> In the two years following the entry into force of this new legal framework in 1986, Sonatrach entered into 26 exploration and production contracts with foreign companies.<sup>34</sup>

### 3.4 The 2005 Hydrocarbon Law

The second wave of reforms to the hydrocarbon legislation was introduced after the turn of the century with a view to liberalising the sector.

In 2005 Algeria adopted Law 05-07 of 28 April 2005 regarding hydrocarbons,<sup>35</sup> which replaced Law 86-14 of 19 August 1986.<sup>36</sup> Law 05-07 was substantially amended in 2006:<sup>37</sup> while the text adopted in 2005 initially revoked the requirement that Sonatrach hold a minimum stake of 51% in any oil and gas projects, the 2006 amendment reintroduced this condition.

Law 05-07 was further amended in 2013, as explained below.<sup>38</sup> Law 05-07 as amended (the Hydrocarbon Law) currently governs the oil and gas sector in Algeria.

The regime established by the Hydrocarbon Law is examined below.

## 4. Current legislative regime governing the hydrocarbon sector

### 4.1 Main players in the hydrocarbon market in Algeria

The key players in the Algerian hydrocarbon sector are the Ministry of Energy and Mines, the state-owned company Sonatrach and the two agencies created by the Hydrocarbon Law in 2005, ALNAFT and ARH. We will describe each of their missions and organisation in turn.

#### (a) *The Ministry of Energy and Mines*

Pursuant to Executive Decree 07-266 of September 9 2007, the Ministry of Energy and Mines in Algeria is tasked with developing policy and strategy for the exploration, production and valorisation of petroleum, mining and energy resources, and their related industries in general. Its remit includes both liquid and gaseous hydrocarbons, as well as mined resources, all forms of electrical energy transmission, new and renewable forms of energy and nuclear energy. The Ministry of Energy and

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33 Law 86-14, Article 63, modified by Law 91-21, Article 12 (*JORA*, 63, December 7 1991, p1958).

34 See *Historical background of Hydrocarbons in Algeria*, available at [www.sonatrach.com/elements-histoire.html](http://www.sonatrach.com/elements-histoire.html) (last accessed November 17 2014).

35 Law no. 05-07 of 28 April 2005 regarding Hydrocarbons, *JORA*, 50, July 19 2005, p3.

36 Article 114 of the Hydrocarbon Law repealed all provisions of Law 86-14. However, the performance of contracts of association entered into under Law 86-14 continues to be governed by the provisions of such contracts.

37 Ordinance no. 06-10 of 29 July 2006 amending and supplementing Law no. 05-07 of 28 April 2005 regarding Hydrocarbons, *JORA*, 48, July 30 2006, p4.

38 Law no. 13-01 of 20 February 2013, amending and supplementing Law no. 05-07 of 28 April 2005 regarding Hydrocarbons, *JORA*, 11, February 24 2013, p4.

39 Directorate General for Hydrocarbons, Directorate General for Energy, Directorate General for Mines, Directorate General for Strategy, Economy and Regulation, Directorate for Administration and Information, Directorate for the Protection of the Energy and Mining Estate, Directorate for External Relations. These directorates general are made up of various divisions and sub-divisions. The organisation of the Ministry for Energy and Mines is available at [www.mem-algeria.org](http://www.mem-algeria.org) (last accessed November 18 2014).



Mines is composed of a secretary general and seven directorates general, each in charge of a specific type of energy or activity.<sup>39</sup> Moreover, the wilayas, which constitute administrative divisions in Algeria, each have their own Directorate for Energy and Mines which is responsible for the implementation of local policy and action programmes in the energy and mines sector.<sup>40</sup>

**(b) National agencies**

Furthermore, the Hydrocarbon Law created two agencies under the remit of the minister of energy and mines that are currently in charge of the hydrocarbon sector: the National Agency for the Valorization of Hydrocarbons Resources (ALNAFT), and a national agency for the control and regulation of activities in the hydrocarbons sector, the Hydrocarbons Regulating Authority (ARH). The two agencies have separate juridical personalities and are financially independent. They are managed by a management committee consisting of a president and five directors, appointed by presidential decree on the basis of a proposal from the minister of energy and mines.

The mission of the ARH is to oversee compliance with: technical regulations applicable to hydrocarbon activities;<sup>41</sup> regulations with respect to the application of tariffs and the principle of free access for any party to pipeline transportation and storage infrastructure; regulations concerning hygiene, industrial safety, the environment, and major risk management and prevention, in particular the conservation of ground water and aquifers in the exercise of hydrocarbon-related activities; regulations on the use of chemicals, especially with respect to hydraulic fracturing; regulations regarding carbon dioxide; and specifications for the construction of pipeline, transportation and storage infrastructure. In addition, ARH sets and communicates the sales price for petroleum products and natural gas on the domestic market.<sup>42</sup> It is also in charge of examining applications for concessions for transportation by pipeline, as well as permits for the refining, storage and distribution of oil products. It issues recommendations to the minister for energy and mines concerning the award of permits for such activities.

By contrast, ALNAFT focuses on upstream activities and closely monitors the progress of each exploration and production project. More specifically, ALNAFT is tasked with assessing oil and gas resources, promoting investment, granting prospecting permits, initiating calls for competitive bidding and examining bids for exploration and production activities; entering into agreements for exploration and production activities with Sonatrach and foreign companies; monitoring and inspecting, in its capacity as signatory party, the performance of exploration and/or production contracts and approving development programmes. The agency also enjoys the responsibility of determining, collecting and paying over royalties to the

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40 Executive Decree no. 09-304 of 10 September 2009 regulating the creation, organisation and functioning of the wilaya directorates for energy and mines, *JORNA*, 54, September 16 2009, p8.

41 See the ARH website, available at [www.arh.gov.dz/index.php/fr/](http://www.arh.gov.dz/index.php/fr/) (last accessed November 17 2014); Hydrocarbon Law, Article 13.

42 See the ARH website, available at [www.arh.gov.dz/index.php/fr/presentation/missions](http://www.arh.gov.dz/index.php/fr/presentation/missions) (last accessed November 17 2014). Petroleum products are defined in the Hydrocarbon Law, Article 5, as "any products resulting from refining, including lubricants and bitumen, as well as liquefied petroleum gases".

Treasury, ensuring, therefore, that operators pay tax on petroleum revenue, surface tax and, where applicable, charges for gas flaring and water usage. In other words, ALNAFT manages the contractual aspects of upstream activities, ranging from annual development plans to the collection of royalties on behalf of the Treasury for each field.<sup>43</sup>

It also maintains and updates a national record of the state of gas reserves, domestic gas requirements and the quantities of gas available for export. It ensures that the contracting parties – that is, Sonatrach and the foreign companies – supply gas to the domestic market.<sup>44</sup> Further, ALNAFT sets the price of gas for the domestic market and publishes it following approval by a decree of the minister of energy and mines.<sup>45</sup>

(c) **Sonatrach**

Another key player in the hydrocarbon sector in Algeria is, naturally, the state-owned company, Sonatrach.

Sonatrach is involved in the exploration, production, pipeline transportation, processing and sale of hydrocarbons and hydrocarbon derivatives.<sup>46</sup> Sonatrach conducts exploration activities and operates both in Algeria and other regions of the world, including Africa (Mali, Niger, Libya, Egypt, Tunisia, Nigeria, Mauritania) and South America (Peru). In addition, Sonatrach has marketing and transportation activities in Europe (Spain, Italy, Portugal, United Kingdom) and in Asia (Singapore and South Korea).<sup>47</sup> Sonatrach is divided into four main activities: upstream work; pipeline transportation; downstream work; and marketing. Sonatrach also has 'group coordinating divisions'<sup>48</sup> and 'central directions'<sup>49</sup> as well as a cabinet, executive committee and ethics committee. In 2012 Sonatrach employed 50,608 agents<sup>50</sup> and is currently the sole operator of the majority of oil and gas fields in Algeria. According to Sonatrach's 2012 annual report, 74% of the company's overall hydrocarbon production was extracted from fields operated by Sonatrach alone.<sup>51</sup> The remaining 26% was generated by Sonatrach in association with one or several foreign companies.

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43 Hydrocarbon Law, Article 14.

44 *Ibid*, Article 59.

45 *Ibid*, Article 61.

46 The relevant pieces of legislation for the determination of Sonatrach's legal status are Decree 63-491 of December 31 1963 authorising the national company for transportation and marketing of hydrocarbons, and its by-laws (*JORA*, 4, January 10 1964, p23), as amended by Decree 66-96 of September 22 1966 (*JORA*, 84, September 30 1966, pp939-940), as well as Presidential Decree 98-48 (*JORA*, 7, February 15 1998, p5).

47 Sonatrach, *Annual Report 2012*, pp71-72, available at [www.sonatrach.com/PDF/RapportAnnuelSH2012.pdf](http://www.sonatrach.com/PDF/RapportAnnuelSH2012.pdf) (last accessed November 17 2014).

48 Sonatrach's Group Coordination Management Divisions include: strategy, planning and economy; finance; human resources; central activities; subsidiaries and holdings; technical; associations; and petrochemicals. See [www.sonatrach.com/organisation.html](http://www.sonatrach.com/organisation.html) (last accessed November 17 2014).

49 Sonatrach has the following central departments: legal; contracting; and IT and information systems. See [www.sonatrach.com/organisation.html](http://www.sonatrach.com/organisation.html) (last accessed November 17 2014).

50 Sonatrach, *Annual Report 2012*, p43.

51 *Ibid*, p18.

## 4.2 Legal framework

### (a) *General principles underpinning the legal framework*

Algeria has a civil law-type system, firmly anchored in statutory law.<sup>52</sup> All legal texts are published in Arabic, which is one of Algeria's official languages, and in French in the *Official Journal (Journal Officiel de la République Algérienne Démocratique et Populaire (JORA))*, publicly available online.<sup>53</sup>

The Constitution,<sup>54</sup> which is an expression of the "constituent power [that] belongs to the people", is at the top of the hierarchy of norms. According to Article 17 of the Algerian Constitution:

*[p]ublic property belongs to the Algerian people. It includes the subsoil, mines and quarries, natural energy sources, the mineral, natural and biological riches of the various national maritime areas, the waters and the forests.*<sup>55</sup>

Article 122 of the Constitution provides that:

*Parliament shall legislate on the subject matters assigned to it by the Constitution as well as the following fields: the general legal regime of mines and hydrocarbons.*

The Algerian Constitution further provides that expropriation cannot be undertaken except within the framework of an act of parliament and must give rise to prior, fair and equitable compensation.<sup>56</sup>

All hydrocarbon-related activities in Algeria are subject to a single piece of legislation and its implementing acts, namely the Hydrocarbon Law adopted in 2005 and amended in 2006 and 2013.<sup>57</sup> According to Article 1 of the Hydrocarbon Law, the purpose of this law is to define:

*the legal regime with respect to the exploration, production, transportation via pipeline, refining, processing of hydrocarbons, commercialisation, storage and distribution of petroleum products, as well as infrastructure and facilities allowing for such activities.*<sup>58</sup>

The Hydrocarbon Law is a comprehensive set of norms, although a large number of implementing decrees mentioned in the Hydrocarbon Law have not yet been published.

The Hydrocarbon Law is composed of 115 articles. With the exception of general

52 According to Article 1 of the Algerian Civil Code, "the law applies to all matters referred to by the wording or the spirit of one of its provisions. In the absence of a legal provision, the judge shall apply Islamic law and failing that, customary law. Where applicable, he shall refer to natural law and the rules of equity" (Ordinance 75-78 of September 26 1975 establishing the Algerian Civil Code, modified and amended).

53 See [www.joradp.dz/HFR/Index.htm](http://www.joradp.dz/HFR/Index.htm) (last accessed November 17 2014).

54 See *JORA*, 76, December 8 1996, amended by Law 02-03 of April 10 2002, *JORA*, 25, April 14 2002, p11, and Law 08-19 of November 15 2008, *JORA*, 63, November 16 2008, p8.

55 Algerian Constitution dated 1996, revised in 2008, available at [www.conseil-constitutionnel.dz/indexFR.htm](http://www.conseil-constitutionnel.dz/indexFR.htm) (last accessed November 17 2014). This principle is restated in Article 3 of the Hydrocarbon Law: "The substances and resources from discovered or undiscovered Hydrocarbons located in the soil and subsoil of the national territory and Maritime Spaces under national sovereignty are the collective property of the nation, embodied in the State. These resources must be extracted using efficient and rational means in order to ensure optimum preservation while at the same time observing environmental protection regulations."

56 Article 20 of the Algerian Constitution. Article 52 also states that "Private ownership is guaranteed." See also Law 91-11 of April 27 1991 establishing the regulations with regard to expropriation for reasons related to the general interest of the public, at [www.interieur.gov.dz/Dynamics/frmlitem.aspx?html=322&s=1](http://www.interieur.gov.dz/Dynamics/frmlitem.aspx?html=322&s=1) (last accessed November 17 2014).

57 To the authors' knowledge, no consolidated version of the law has yet been published.

58 Hydrocarbons are defined by Article 5 of the Hydrocarbon Law as "liquid, gaseous or solid hydrocarbons, in particular, tar sands and oil shale".

and transitional provisions, most of the provisions of this law are related to hydrocarbon exploration and production (upstream activities).<sup>59</sup> Only about a dozen articles deal with downstream<sup>60</sup> activities (eg, refining, processing, marketing, storage, pipeline transportation and distribution of petroleum products and by-products).

Articles 16 and 17 are general principles applicable to all activities subject to the Hydrocarbon Law and provide that the contracting parties undertake such activities in such a way as to manage the risks inherent in those activities.

More specifically, the 2013 amendment added a general obligation on any contracting party to submit an environmental impact study and an environmental management plan before undertaking any activity governed by the Hydrocarbon Law.<sup>61</sup> This study, which is submitted to the ARH for approval, must include a description of preventive measures and plans for the management of environmental risks associated with the said activities in accordance with the environmental legislation and regulations in force in Algeria. The ARH is in charge of coordinating these studies with the ministry in charge of the environment, and for assessing the study's compliance with the legislation in force. Studies submitted to the ARH are considered admissible one month after their submission, unless otherwise stated by the ARH.

For certain activities, a study of the risks and hazards involved must also be submitted. This should describe the risks generated by the activities and justify any preventive and protective measures implemented. Such hazard studies should be updated at least every five years.<sup>62</sup>

**(b) *Exploration and production activities for conventional hydrocarbons***

This section describes the regime included in the Hydrocarbon Law for the exploration and production of conventional hydrocarbons. The Hydrocarbon Law sets specific conditions for the exploration and production of unconventional hydrocarbons, which we shall examine in Section 5.

**Types of permit or contract:**<sup>63</sup> According to the Hydrocarbon Law, ALNAFT is the exclusive holder of any mining licences granted by the Algerian State. This agency may grant authorisation of two types to Sonatrach and foreign companies in relation to exploration and production activities: prospecting permits and exploration and/or production contracts.<sup>64</sup>

First, ALNAFT grants prospecting permits, following approval by the minister of energy and mines, to any company intending to perform works with a view to the discovery of hydrocarbons<sup>65</sup> on one or several prospecting areas.<sup>66</sup>

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59 Hydrocarbon Law, Article 5.

60 *Ibid.*

61 Hydrocarbon Law, Article 18.

62 *Ibid.*

63 Article 5 of the Hydrocarbon Law defines the Mining Title as "the decision carrying all authorisations for the exploration and/or production of hydrocarbons; such decision does not transfer the proprietary right over the soil or sub soil".

64 See Executive Decree 07-185 of June 9 2007 establishing the conditions for the issuance of mining licences for the exploration and/or production of hydrocarbons, modified by Executive Decree 13-354 of October 26 2013.

Prospecting permits are granted for a maximum period of two years, and may be renewed once for a further two years.<sup>67</sup>

An Executive Decree of October 26 2013 relating to procedures and conditions for hydrocarbon prospecting permits defines the conditions for the prospecting phase. A prospection permit authorises operators to carry out stratigraphic drilling.<sup>68</sup>

The right to perform prospecting works on a specific perimeter is non-exclusive. Further, a prospecting permit does not grant the holder any rights over deposits that it may find during the course of its prospecting work.<sup>69</sup> However, in the event that a perimeter for which a prospecting permit was granted is subject to a call for competitive bidding with a view to the execution of an exploration and/or production contract, the companies having carried out or carrying out prospecting activities on the perimeter have a preferential right, on condition that these companies participate in the call for tenders and align their offer on the best bid obtained for the said perimeter. In such cases, prospecting costs having received prior approval from ALNAFT may be considered exploration investments and may be reimbursed depending on the terms of the joint operating agreement, as discussed below.<sup>70</sup>

The second type of authorisation takes the form of an exploration and production contract or a production contract.<sup>71</sup> Exploration and/or production contracts are entered into by ALNAFT and a contracting party – which may be Sonatrach on its own, or Sonatrach and one or several foreign companies.<sup>72</sup>

Exploration and/or production contracts grant exclusive rights over exploration and production in the perimeter and the geological stratum or strata defined by the said contract.<sup>73</sup>

Exploration and/or production contracts do not grant ownership rights over the land defined by the contract.<sup>74</sup> The hydrocarbons extracted within the scope of the contract are the property of the contracting party (Sonatrach and the foreign company) only at the point of measurement – that is, the point within the perimeter of production where the quantities of hydrocarbons extracted will be measured.<sup>75</sup>

The exploration and/or production contracts are confidential and there is no model of such contract publicly available.

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65 Hydrocarbon Law, Article 5, “Prospecting”.

66 Hydrocarbon Law, Article 20. See Executive Decree 07–294 of 26 September 2007 establishing the conditions for the award of hydrocarbon prospecting permits, modified by Executive Decree 13–354 of October 26 2013.

67 Hydrocarbon Law, Article 20.

68 Article 2 of Executive Decree 13–354 of October 26 2013, p6, amending and supplementing Executive Decree 07–294 of September 26 2007 establishing the procedures and conditions for the granting of hydrocarbon prospecting permits: “the prospecting permit allows the beneficiary to make, at his own expense and risk and in the elected perimeter, actions for the purpose of prospecting for hydrocarbons, using geological, geophysical and geochemical methodologies including stratigraphic drilling”.

69 Hydrocarbon Law, Article 5.

70 *Ibid*, Article 22.

71 *Ibid*, Article 24.

72 *Ibid*, Articles 23 and 30.

73 *Ibid*, Article 24.

74 *Ibid*, Article 27.

75 *Ibid*, Article 25.

**Association with Sonatrach:** According to the Hydrocarbon Law, the exploration and production activities are performed either by Sonatrach alone or by Sonatrach and one or several foreign companies. Sonatrach must hold a minimum share of 51% in the project.<sup>76</sup>

When the contracting party consists of both Sonatrach and a foreign company, Sonatrach and the foreign company enter into a joint operating agreement. The joint operating agreement is annexed to the exploration and/or production contract. ALNAFT is not a party to the joint operating agreement. Therefore, while the exploration and/or production contract is entered into by Sonatrach, the foreign companies and ALNAFT, the joint operating agreement is concluded solely by Sonatrach and the foreign companies.

The joint operating agreement defines the rights and obligations of Sonatrach and the other company making up the contracting party. It also defines the conditions for funding exploration costs and Sonatrach's repayment of these, where applicable, and for funding production costs.

According to the Hydrocarbon Law, it is mandatory for the joint operating agreement to contain a clause for the joint commercialisation of any gas produced following a discovery, should that gas be intended for sale abroad. However, Sonatrach may agree to market that gas on behalf of the foreign companies constituting the contracting party.<sup>77</sup>

There is no model joint operating agreement publicly available.

**Bidding process:** Exploration and/or production contracts are granted as a result of a tender process.<sup>78</sup> Only pre-qualified companies (ie, those holding a certificate issued by ALNAFT on the basis of the applicant's technical and financial capacities) are allowed to bid.<sup>79</sup> The legal, technical and financial prerequisites for applications for pre-qualification are listed in the appendices to Executive Decree 07-184 of June 9 2007.

It is ALNAFT that decides which perimeters and deposits may be subject to competitive bidding. It also determines the type of contract to be awarded and the selection criteria for each of the deposits or perimeters that are subject to competitive bidding.<sup>80</sup> For each call for tender, a special tender committee is set up within ALNAFT to launch and monitor the tender procedure.<sup>81</sup>

The tender committee sets a fee for access to the tender documentation.<sup>82</sup> The draft model exploration and/or production contract and its annexes, which include

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76 According to the last paragraph of Article 32, "[i]t is mandatory for exploration and production contracts and production contracts to contain a clause for the participation of national enterprise SONATRACH-SPA, the interest of which is set at a minimum of 51%, prior to each call for competitive bidding in said contracts."

77 Hydrocarbon Law, Article 48.

78 Article 32 of the Hydrocarbon Law makes an exception in the event of reasons pertaining to the "the general interest". The procedure is detailed in Executive Decree 07-184 of June 9 2007 establishing the procedure for the conclusion of contracts for hydrocarbon exploration and production following a call for tender, amended by Executive Decree 13-425 of December 18 2013, *JORA*, 40, June 17 2007, p15.

79 Executive Decree 07-184, Article 5.

80 *Ibid*, Article 20.

81 *Ibid*, Article 21.

82 *Ibid*, Article 24. This fee is fixed at a minimum of Ad1 million (around US\$12,200).

the model joint operating agreement, are contained in the tender documentation.<sup>83</sup>

The bidders may submit suggested amendments to the draft exploration and/or production contract and the joint operating agreement to the ALNAFT tender committee. The committee then organises a meeting with each of the bidders, where the latter may ask for clarification relating to provisions of the draft exploration and/or production contract and its annexes. Following these meetings, the tender committee circulates to the bidders the final version of the contract.<sup>84</sup>

A bank deposit amounting to Ad10 million (around US\$120,000) must be put down with each bid.<sup>85</sup>

The sealed bids are opened in public by the tender committee on the final day of the bidding process.<sup>86</sup> The tender committee announces the result of the bid on the same day.<sup>87</sup>

Before entering into a contract with ALNAFT and Sonatrach, the successful foreign bidder must establish a legal representation in Algeria for legal and tax purposes. This legal representation must remain for the duration of the contract.<sup>88</sup>

**Operatorship:** The joint operating agreement specifies which entity will act as the operator during the exploration phase. The operator may be just the foreign company, or Sonatrach and the foreign company acting jointly.

During the production phase, the Hydrocarbon Law provides that the operator is "any person constituting the contracting party or any other form of joint organisation set up by the persons constituting the contracting party, following approval from ALNAFT"<sup>89</sup> In practice, the operator is Sonatrach alone or, more frequently, Sonatrach and the foreign company acting jointly, following approval from ALNAFT. Any change of operator is subject to ALNAFT's prior approval.<sup>90</sup>

**Duration and other contractual provisions:** During the production phase, the foreign company and Sonatrach each finance Opex and Capex in proportion to their respective shares as indicated in the joint operating agreement. The contracting party, either Sonatrach alone or Sonatrach and the foreign company, bears the total expenses required for the performance of the contract.<sup>91</sup> ALNAFT does not finance any activities governed by exploration and/or production contracts. The state has no obligation to provide or guarantee funding and has no liability towards third parties in the performance of the contract.<sup>92</sup>

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83 Executive Decree 07-184, Article 28.

84 *Ibid*, Article 30.

85 *Ibid*, Article 36.

86 Hydrocarbon Law, Article 34; Executive Decree 07-184, Article 38.

87 Hydrocarbon Law, Article 40; Executive Decree 07-184, Article 38.

88 Hydrocarbon Law, Article 44; Executive Decree 07-184, Article 38.

89 Hydrocarbon Law, Article 29: "*Pendant la période d'exploitation, le rôle d'opérateur pour la conduite des opérations pétrolières est assuré par toute personne composant le contractant ou par toute autre forme d'organe conjoint convenue par les personnes constituant le contractant et préalablement approuvée par l'agence nationale pour la valorisation des ressources en hydrocarbures (ALNAFT)*".

90 Hydrocarbon Law, Article 29.

91 *Ibid*, Article 44.

92 *Ibid*, Article 45.

Production contracts covering existing fields last 25 years as of the date on which the contract takes effect.

Exploration and production contracts are divided into two phases. The first is an exploration phase lasting seven years as of the date on which the contract takes effect,<sup>93</sup> which can be broken down into an initial exploration phase of three years, followed by second and third exploration phases each lasting two years.<sup>94</sup>

The second phase is a production period lasting 25 years as of the date of notification of ALNAFT's approval of the development plan. The contracting party may apply for an optional extension of this production period for an additional five years. This period may be followed by a second optional extension lasting a further five years upon the contracting party's request and subject to ALNAFT's approval.<sup>95</sup> If one of the exploration phases has not been used, the production phase will be extended for a period equal to that exploration phase. Further, an additional period of five years is added to the production period in the case of deposits of natural gas.<sup>96</sup>

The surface area of the contractual perimeter, excluding the production perimeter or perimeters subject to an extension of the exploration period, decrease at the end of each phase of the exploration period according to a contractually defined rate.<sup>97</sup> At the end of the exploration period, all surface areas and geological strata not covered in the development plan approved by ALNAFT must be relinquished.<sup>98</sup>

Exploration and/or production contracts must specify the minimum works programme that the contracting party commits to undertaking during the exploration period. Foreign companies must take out a bank guarantee with an Algerian bank to cover the cost of this minimum works programme.<sup>99</sup>

If at the end of the exploration phase the contracting party has declared no discovery of a commercial nature, the exploration contract is automatically terminated.<sup>100</sup>

In the event of a commercial discovery, the contracting party must submit for ALNAFT's approval a notification to declare a commercial deposit, along with a proposed development plan (describing the associated costs) and a delimitation of the production area, as well as a proposed location for the measurement point.<sup>101</sup>

Work programmes and the corresponding budget relating to approved

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93 In certain cases, an extension may be requested for the exploration phase, pursuant to Article 37 of the Hydrocarbon Law.

94 Hydrocarbon Law, Article 35.

95 *Ibid.*

96 Article 36 of the Hydrocarbon Law.

97 Article 38 of the Hydrocarbon Law.

98 Article 38 of the Hydrocarbon Law. However, an exception is made in the event of the discovery of one or more hydrocarbon deposits for which no commercial declaration can be made during the exploration due to insufficient or lacking pipeline infrastructure or due to the verifiable absence of a market for the production of gas. In that case, the contracting party may notify ALNAFT before the expiry of the exploration period of its decision to maintain a surface area covering the deposit(s) for a period of three to five years (Hydrocarbon Law, Article 42). See also Executive Decree 07-183 of June 9 2007 establishing the selection and delimitation procedure for perimeters subject to requests for retention, production perimeters and returned surface areas. as amended by Executive Decree 13-437 of December 23 2013.

99 Hydrocarbon Law, Article 43.

100 *Ibid.*, Article 37.

101 *Ibid.*, Article 47.



development plans should be submitted to ALNAFT for approval annually and at least three months before the start of the year in question.<sup>102</sup>

The contracting party should also communicate to ALNAFT on January 31 of year ( $n + 1$ ) at the latest an annual report of the state of reserves for the year ( $n$ ) at January 1 of year ( $n + 1$ ).<sup>103</sup>

Executive Decree 13–435<sup>104</sup> specifically provides that an annual inventory of hydrocarbon reserves must be communicated to ALNAFT.<sup>105</sup> This inventory must be drawn up using a specific nomenclature<sup>106</sup> and listing the existing reserves,<sup>107</sup> whether these are proven<sup>108</sup> (recoverable, in production or not), probable<sup>109</sup> or possible.<sup>110</sup> With this information, ALNAFT will ensure that deposits are extracted in a rational manner, on the basis of regular and transparent monitoring of the estimate of hydrocarbon reserves concerned in the contract.

Upon the contract's expiry, all works and facilities realised for the performance of the operations will revert to the state free of any charge. For any work that the State does not wish to have transferred to it, the costs of abandonment and restoration of the site are covered by the contracting party.<sup>111</sup> In order to cover the costs of abandonment or site rehabilitation, the contracting party must pay funds into an escrow account each calendar year.<sup>112</sup> The amount of such provision is defined by ALNAFT based on an expert report.<sup>113</sup>

**Transfer:** All transfers of rights and obligations under the exploration and/or production contract must be approved by ALNAFT. In the case of a transfer by the foreign company, Sonatrach has a right of pre-emption that it must exercise within 90 days of the notification of the transfer from ALNAFT.<sup>114</sup> Any direct or indirect transfer by a foreign company of all or part of the rights and obligations under an exploration and/or production contract (including by way of a change of control of the foreign company) is subject to a two-stage approval process involving both ALNAFT and the Council of Ministers. First, the transferring party must seek the approval of ALNAFT and the transfer is implemented by way of an amendment to the exploration and/or production contract. Such amendment should then be approved by a Decree of the Council of Ministers, published in the *Official Journal*.

In the event of a transfer (except for transfers to a wholly owned subsidiary) the

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102 Hydrocarbon Law, Article 48.  
103 *Ibid*, Article 49. See Executive Decree 07–311 of October 7 2007 establishing the procedure for the provision to the national agency for the valorisation of hydrocarbon resources, and of all data and results of hydrocarbon prospecting works (*JORA*, 64, October 10 2007, p14).  
104 See Executive Decree 13–435 establishing the conditions for submission of the annual state of hydrocarbon reserves by the contracting party to the ALNAFT (*JORA*, 67, December 29 2013, p6).  
105 *Ibid*, Article 2.  
106 *Ibid*, Article 3.  
107 *Ibid*, Article 4.  
108 *Ibid*, Article 5.  
109 *Ibid*, Article 7.  
110 *Ibid*, Article 8.  
111 Hydrocarbon Law, Article 80.  
112 *Ibid*, Article 82.  
113 *Ibid*.  
114 *Ibid*, Article 31.

person making the transfer is liable to payment to the public Treasury of a non-deductible tax amounting to 1% of the value of the transaction.<sup>115</sup>

**National treatment:** Exploration and/or production contracts generally provide for priority to be given to local subcontractors for services and goods of a similar price and quality, and to local personnel with similar qualifications to foreign subcontractors. Training programmes are also to be implemented by the foreign company in order to develop the skills of the local workforce.

In accordance with Article 50 of the Hydrocarbon Law, for reasons pertaining to the objectives set by the national energy policy, caps on the production of liquid hydrocarbon deposits, as well as the preferential supply of liquid hydrocarbons to the domestic market, may be applied.<sup>116</sup>

Furthermore, priority must be given to supplying the domestic gas market.<sup>117</sup> ALNAFT may request that each gas-producing contracting party contribute to meeting domestic needs. The maximum contribution per contracting party and the modalities and conditions for the supply of gas to the national market must be defined in the exploration and/or production contract.<sup>118</sup> The price applied to the quantities of gas collected in the context of this contribution is calculated by reference to the weighted average, by volume, of the prices of the various agreements for the sale of Algerian gas for export conducted by the contracting party.<sup>119</sup>

**Contract approval process:** Any exploration and/or production contract, as well as any amendments to a contract, must be approved by decree adopted by the Council of Ministers, following a request presented by the minister of energy and mines.<sup>120</sup> Contracts and amendments take effect on the date that the decree of approval is published in the *Official Journal*.<sup>121</sup>

**Conversion and money transfer policies:** The rules regarding money transfers depend on whether the foreign company is considered to be an Algerian resident or not.

Any non-resident company should import sufficient foreign currency convertible into dinars necessary to meet its expenses for the relevant development, exploration and/or production activities, as well as the amounts necessary for payment of royalties, duties and taxes payable to Algeria. Such amounts are to be transferred to the Bank of Algeria.<sup>122</sup> Provided that the import of currency is documented and “that the exploration expenses are provided for in the form of duly imported convertible currency”, the non-resident entity may maintain the proceeds from its hydrocarbon exports acquired within the scope of the contract abroad during the production period.<sup>123</sup>

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115 Hydrocarbon Law, Article 31. See Executive Decree 07–336 of October 31 2007 establishing the method of calculation and settlement of the transfer fees of the rights and obligations contained in a hydrocarbon exploration and production.

116 Hydrocarbon Law, Article 50.

117 *Ibid.*, Article 51.

118 *Ibid.*

119 *Ibid.*

120 *Ibid.*, Article 11.

121 *Ibid.*, Article 30.

122 *Ibid.*, Article 55.

In contrast, companies considered as Algerian residents must repatriate and transfer to the Bank of Algeria the proceeds of their hydrocarbon exports pursuant to the currency exchange regulations in force in Algeria. Such entities may, however, freely transfer abroad dividends to their non-resident shareholders. Any resident may also freely make any foreign transfer, following approval from the Monetary and Credit Council, which will allow it to exercise abroad the activities that fall within the scope of the Hydrocarbon Law.<sup>124</sup>

**Arbitration and applicable law:** The Hydrocarbon Law provides that any dispute between ALNAFT and a foreign company arising from an exploration and/or production contract, or between Sonatrach and a foreign company arising from a joint operating agreement, may be resolved by international arbitration. The Hydrocarbon Law specifies that Algerian law will be the applicable law to resolve any dispute.

Several authors have highlighted that the Hydrocarbon Law constitutes a set of overriding mandatory provisions, regardless of any contrary or incompatible contractual provisions. In this regard, Professor Trari Tani, *Maître de Conférence* Lecturer at the Law School at the University of Oran, has stated:

*In the context of the Algerian Hydrocarbon Laws, there is neither question of the issue of the law applicable to the exploration and/or exploitation contract, or of the law applicable to the merits of the dispute in the event of arbitration. The Hydrocarbon Law, as any law pertaining to foreign investment, would function as overriding mandatory provisions, which are territorial in their application.*<sup>125</sup>

#### 4.3 Tax regime

The Hydrocarbon Law defines the tax regime applicable to exploration and production activities. All taxes except one, as explained below, are paid not by each company but on behalf of the contracting party (ie, Sonatrach alone or the joint venture composed of Sonatrach and the foreign company together). The contracting party is subject to the taxes set out next.

##### (a) Land tax

A land tax (also known as 'surface tax') is payable annually in Algerian dinars or US dollars to the Public Treasury by the operator for and on behalf of the contracting party. The calculation of the surface tax is based on the area of the perimeter as it stands at the date of payment. The amount payable varies from Ad4,000 to Ad32,000 (approximately US\$50 to US\$400) depending on the various phases of the contract (exploration, retention or production), and the tax area (Algeria is divided into four areas, A, B, C and D, and each contractual perimeter is located in one of these areas).<sup>126</sup> The surface tax is non-deductible.

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123 Hydrocarbon Law, Article 55.

124 *Ibid.*

125 Mostefa Trari Tani, "The new legal framework for the prospecting, exploration and exploitation of hydrocarbons in Algeria", *RDAl/IBLJ*, 1, 2008, pp65–66.

**(b) Royalties**

Royalties are payable on the quantity of hydrocarbons produced and measured. Operators pay royalties to ALNAFT on a monthly basis, for and on behalf of the contracting party. The rate varies between 5.5% and 20% of the value of the hydrocarbons produced, calculated at the point of measurement, depending on the area where the contract perimeter is located. The amount is calculated by multiplying the value of the hydrocarbons by the applicable royalty rate. Royalties are payable in cash, unless ALNAFT requests payment in kind. Such royalties are a deductible expense.

**(c) Tax on petroleum revenue**

A tax on petroleum revenue (TRP) is payable monthly to the Public Treasury by the operator for and on behalf of the contracting party. The TRP is determined on the basis of the production value that is used to calculate royalties, minus authorised deductions such as investments, provisions for abandonment, and training costs. The rate is set on the basis of the project profitability. The TRP is paid in 12 monthly instalments and a settlement is performed at the end of the year. It is a deductible expense.<sup>127</sup>

**(d) Other taxes**

In addition, some other taxes relating to specific activities may be due.

For instance, while gas flaring is prohibited, ALNAFT may, exceptionally and for limited periods, grant authorisation for flaring at an operators' request.<sup>128</sup> A gas flaring tax equal to Ad8,000<sup>129</sup> per thousand normal cubic metres is then payable to the Public Treasury. For remote or isolated areas, especially where the infrastructure for carrying gas is insufficient or lacking, specific pricing conditions are determined.

Similarly, the use of water from the public domain for oil and gas operations is subject to a specific tax equal to Ad80<sup>130</sup> per cubic metre used. This tax is payable annually.

The only tax that each entity forming the contracting party is individually subject to is additional income tax, payable annually to the Public Treasury. The details for calculating additional income tax are set out in the Hydrocarbon Law.<sup>131</sup>

In addition, as explained above, any entity transferring rights and obligations in an exploration and/or production contract, directly or indirectly, is liable to the

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126 Executive Decree 07-127 of May 5 2007 relating to the division and classification of the mining estate into areas and the definition of prospecting, exploration and production perimeters; Executive Decree 13-436 of December 23 2013 and Executive Decree 08-314 amending and supplementing Executive Decree 07-127 of May 5 2007 relating to the division and classification of the mining estate into areas and the definition of prospecting, exploration and production perimeters.

127 Executive Decree 07-130 of May 7 2007 establishing the method of calculation of provisional monthly payments as a down payment on the TRP; Executive Decree 07-147 of May 20 2007 establishing the nature of investments for research and development deductible from the hydrocarbons of the bases of the TRP.

128 Hydrocarbon Law, Article 52.

129 Approximately US\$100.

130 Approximately US\$1.

131 See Executive Decree 07-131 of May 7 2007 establishing the method of calculation of the additional income tax.

payment of a non-deductible transfer duty of 1% of the value of the transaction.<sup>132</sup>

Gas and oil exploration and production are exempt from certain taxes, such as: value added tax relating to certain equipment, goods and services; professional activity tax; and customs duties.<sup>133</sup>

In 2006 Algeria introduced a windfall profit tax (or tax on exceptional profits) in response to the exponential increase of the oil price and its continued high price.<sup>134</sup> This tax came into being on August 1 2006 and is applicable to contracts concluded before the entry into force of the Hydrocarbon Law in 2005.

This windfall profit tax is applicable to the production share of the foreign companies when the average monthly price of Brent crude is above US\$30.<sup>135</sup> The rate of taxation can range from a minimum of 5% to a maximum of 50% of the share of production reverting to the foreign company. This tax does not apply to contracts subject to the Hydrocarbon Law – that is, contracts entered into after 2005.<sup>136</sup>

#### 4.4 Downstream activities

The Hydrocarbon Law mostly focuses on exploration and production and has a limited effect on other petroleum-related activities. These are merely defined in the text, which also provides a description of the entities permitted to perform such activities.

##### (a) Pipeline transportation

Transportation via pipeline is defined under the Hydrocarbon Law as:

*the transport of liquid or gaseous hydrocarbons or of petroleum products, including the associated storage, except for the network of manifolds and lines on the fields and the gas network serving exclusively the domestic market.*<sup>137</sup>

Only Sonatrach or one of its subsidiaries may be responsible for the transportation of hydrocarbon production on Algerian territory.<sup>138</sup> Transportation within Algerian territory is a restricted activity, which is not open to foreign interests.<sup>139</sup> However, concessions may be granted for international pipelines that enter from outside the territory of the country and that partially or totally cross it, and for international pipelines that originate from the national territory. The minister may allow Sonatrach to take a share in all concessions for the transport of hydrocarbons via international pipelines.<sup>140</sup>

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132 The transaction value is calculated according to Executive Decree 07-336 of October 31 2007 depending on the nature of the transfer (assignment, change of control, merger or acquisition).

133 Hydrocarbon Law, Article 89.

134 Ordinance 06-10 of July 29 2006 introducing a new Article 101bis in Law 05-07 (Ordinance 06-10 of July 29 2006 amending and completing Law 05-07 of April 28 2005 on hydrocarbons), *JORA*, 48, July 30 2006, p4.

135 Executive Decree 06-440 of December 2 2006 establishing the procedure, conditions of application and method of calculation of the tax on exceptional profits (TPE).

136 Hydrocarbon Law, Article 101bis.

137 *Ibid.*, Article 5.

138 *Ibid.*, Article 68.

139 *Ibid.*, Article 78.

140 *Ibid.*, Article 73.

**(b) Refining and processing hydrocarbons**

According to the definitions provided by the Hydrocarbon Law, 'refining' refers to "operations that separate the petroleum or the condensate in liquid or gaseous products suitable for direct use".<sup>141</sup>

'Processing' is defined as the:

*process of separating liquefied petroleum gases, gas liquefaction, transforming gas into petroleum products or other products, Gas To Liquids (GTL), the processing of petroleum by-products into any other goods, petro-chemistry and "gazochimie".*<sup>142</sup>

Refining and processing are activities undertaken by Sonatrach, either alone or in association with a foreign company, in which case Sonatrach (or its subsidiaries) has a minimum share of 51%.<sup>143</sup>

**(c) Storage and distribution**

The Hydrocarbon Law defines 'storage' as the:

*storing, on the surface or underground of petroleum products, including refined products, butane, propane and liquefied petroleum gas, allowing for the establishment of reserves to ensure supply to the domestic market for a specific period of time. The facilities for storage do not involve the storage associated with the transportation pipelines, nor those associated with the refining facilities, those associated with the exploitation activities in the field, or those associated with the facilities for separation of the liquefied petroleum gas.*<sup>144</sup>

'Distribution' of petroleum products is taken to mean "any wholesale or retail sales activities of Petroleum Products".<sup>145</sup>

The ARH may grant authorisation for the storage and distribution of petroleum products. As set forth in Article 18 of the Hydrocarbon Law,

*all persons which implement a geological storage plan, for carbon dioxide in particular, shall draw up a feasibility study and risk management plan and submit it for approval to ARH. The conditions and modalities for obtaining authorisation for geological storage shall be defined by regulation.*

**4.5 Access to infrastructure**

For the transport of hydrocarbons, Algeria boasts a pipeline network of more than 18,512 km.

Algeria also has several dispatching centres. First, the Liquid Hydrocarbons Dispatching Centre, located in Hassi Messaoud (Haoud El Hamra): 1.4 million barrels per day presently transit through this dispatching centre. Secondly, the Gas Dispatching National Centre is located in Hassi R'Mel. This is a hub where gas gathering and dispatching occurs through gas pipelines to local customers (Sonelgaz, third-party clients and Sonatrach plants' own final use) and international customers (delivery to liquefaction complexes and transcontinental gas pipelines). Further,

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141 *Ibid*, Article 5.

142 *Ibid*.

143 *Ibid*, Article 77.

144 *Ibid*, Article 5.

145 *Ibid*.

Sonatrach has 22 pipeline transportation systems (20 in operation, one under construction and one in a launch phase) with 82 pumping and compression stations (of which 39 pumping stations are designed for crude oil). Their operational capacity is 145 million tonnes.<sup>146</sup>

In terms of exporting infrastructure, Sonatrach owns several berths for the loading of gas and oil at three ports located in the coastal cities of Arzew, Bejaia and Skikda.

The country's gas exporting infrastructure is currently made up of three transcontinental gas export pipelines: two transport natural gas to Spain and one to Italy. The largest pipeline, Pipeline Enrico Mattei, jointly owned by Sonatrach, the Tunisian government and ENI, runs 1646.4 km from Algeria to Italy via Tunisia. It has a capacity of 1.2 TCF per year. The Pedro Duran Farell pipeline has been in operation since 1996 and travels 521.4 km through Morocco to Spain, with a capacity of 414 billion cubic feet (BCF) per year. The newest pipeline, MEDGAZ, came on line in 2011 and is owned by Sonatrach, Cepsa, Endesa, Iberdrola and GDF Suez. It stretches 201.2 km onshore and offshore, from Algeria to Spain via the Mediterranean Sea. In addition to these three subsea pipelines, Algeria plans to develop two additional transcontinental export pipelines in the future, namely the GALSI pipeline to Italy and the Trans-Saharan Gas Pipeline to Nigeria (via Niger) – although the construction works have not yet started.<sup>147</sup>

With respect to downstream activities, Sonatrach has three liquefied natural gas (LNG) complexes: two in Arzew and one in Skikda with a total production capacity of 44 billion cubic metres of LNG per year; two liquefied petroleum gas (LPG) plants in Arzew with a total production capacity of 9 million tonnes per year; two helium extraction plants (one in Arzew and one in Skikda); five crude oil refineries (Algiers, Skikda, Arzew, Hassi Messaoud, Adrar); and one condensate refinery (Skikda).<sup>148</sup>

The Hydrocarbon Law upholds the principle of third-party access rights to transportation and storage infrastructure. This principle grants any third party a right of access to pipeline transportation and storage infrastructure in Algeria, within the limits of the available capacities, against payment of a non-discriminatory tariff and under the condition that the products involved meet the technical specifications with respect to such infrastructures.<sup>149</sup> There is no mention in the Hydrocarbon Law of access to facilities other than transportation and storage infrastructure.

The Hydrocarbon Law also provides that the right to land occupancy and land acquisition through sale or expropriation may be granted to the contracting party, provided that the project in question is in the interests of the general public. The contracting party must apply to ALNAFT to obtain such authorisation. Any costs related to this procedure will be exclusively borne by the contracting party.<sup>150</sup>

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146 Sonatrach – An Integrated Oil & Gas Company, p4, available at: [www.sonatrach.com/en/PDF/Presentation\\_sonatrach\\_uk.pdf](http://www.sonatrach.com/en/PDF/Presentation_sonatrach_uk.pdf) (last accessed November 18 2014).

147 See the Sonatrach website, “Gas Pipeline Projects in Progress”, available at [www.sonatrach.com/en/transport-par-canalisation.html](http://www.sonatrach.com/en/transport-par-canalisation.html) (last accessed November 17 2014); see also EIA Report, July 24 2014, p13.

148 See Sonatrach – Une Compagnie Pétrolière Gazière Intégrée, [“Sonatrach – An Integrated Oil Gas Company”], pp4–6, [www.sonatrach.com/PDF/Presentation\\_Sonatrach\\_PetroliereGaziere.pdf](http://www.sonatrach.com/PDF/Presentation_Sonatrach_PetroliereGaziere.pdf), (last accessed November 17 2014).

149 See Hydrocarbon Law, Article 79.

150 *Ibid*, Article 7.

#### 4.6 International investment protection

Algeria ratified, on November 5 1988, the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, adopted in New York on June 15 1958.<sup>151</sup>

Algeria also approved, by way of an ordinance dated January 21 1995, the Convention on the Settlement of Investment Disputes between States and Nationals of Other States of March 18 1965,<sup>152</sup> creating the International Centre for Settlement of Investment Disputes (ICSID), an international arbitration institution seated in Washington.

Since 1991, Algeria has entered into 47 bilateral investment treaties (BITs),<sup>153</sup> establishing the terms and conditions for private investment by foreign companies in Algeria. To date, Algeria has entered into 27 BITs that are currently in force<sup>154</sup> with: Argentina, Austria, Bahrain, the Belgium–Luxembourg Economic Union, Bulgaria, China, Denmark, Egypt, Ethiopia, Finland, France, Germany, Greece, Iran, Italy, Jordan, Mali, Mozambique, the Netherlands, Oman, Portugal, Romania, South Korea, Spain, Sweden, Switzerland and the United Arab Emirates. The other bilateral investment treaties entered into by Algeria are not yet in force.<sup>155</sup>

Bilateral investment treaties provide several substantive types of investment protection. For instance, foreign investors receive the same protection as local investors and any other foreign investors;<sup>156</sup> foreign investments should be treated fairly and equitably;<sup>157</sup> foreign investments enjoy full protection and security without any impairments of unjustified, unreasonable or discriminatory measures;<sup>158</sup> foreign investments may not be nationalised or expropriated except for a public purpose or interest, under due process or procedure of law, on a non-discriminatory basis and accompanied by prompt, adequate and effective compensation;<sup>159</sup> and the returns generated from the foreign investments are freely transferable, subject to the terms of the BIT and regulation in place.<sup>160</sup>

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- 151 Decree 88-244 of November 5 1988 approving, with some reservations, the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, adopted by the United Nations in New York on June 15 1958 (*JORA*, 48, November 23 1988, p1256).
- 152 Ordinance 95-04 of January 21 1995 (*JORA*, 7, February 15 1995, p5).
- 153 Investment Policy Hub, UNCTAD, International Investment Agreements – Algeria, <http://investmentpolicyhub.unctad.org/IIA/CountryBits/3#iialnnerMenu> (last accessed November 17 2014).
- 154 All bilateral investment treaties entered into by Algeria and currently in force are available on the official website of Algeria's National Agency of Investment Development, [www.andi.dz/index.php/en/cadre-juridique/accords-conventions](http://www.andi.dz/index.php/en/cadre-juridique/accords-conventions) (last accessed November 17 2014). The full name of bilateral investment treaties is generally of this type: "Agreement between the Government of Spain and the Government of the Democratic People's Republic of Algeria for the Promotion and Protection of Investments." For convenience, we have abbreviated the full name of each bilateral investment treaty into a short form, for instance, Algeria–Spain BIT.
- 155 The BITs that have not yet entered into force have been entered into with Cuba, Kuwait, Indonesia, Libya, Malaysia, Mauritania, Niger, Nigeria, Qatar, Russian Federation, Serbia, South Africa, Sudan, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Ukraine, Yemen and Vietnam.
- 156 Article 3(1) and (2), Algeria–Korea BIT; Article 3(1) and (2), Algeria–Denmark BIT; Article 4(1) and (2), Algeria–Ethiopia BIT; Article 3(2), Algeria–Finland BIT; Article 4, Algeria–Jordan BIT.
- 157 Article 3(1) and (2), Algeria–Korea BIT; Article 3(1) and (2), Algeria–Denmark BIT; Article 3(1), Algeria–Ethiopia BIT; Article 2(2), Algeria–Finland BIT; Article 3, Algeria–Jordan BIT.
- 158 Article 2(2), Algeria–Denmark BIT; Article 3(4), Algeria–Finland BIT; Article 2(3), Algeria–Sweden BIT; Article 3, Algeria–Egypt BIT; Article 3, Algeria–France BIT; Article 3, Algeria–Jordan BIT.
- 159 Article 4, Algeria–Korea BIT; Article 5, Algeria–Denmark BIT; Article 5(2), Algeria–Ethiopia BIT; Article 4, Algeria–Finland BIT; Article 5, Algeria–Jordan BIT.
- 160 Article 5, Algeria–Korea BIT; Article 7, Algeria–Denmark BIT; Article 6, Algeria–Ethiopia BIT; Article 6, Algeria–Finland BIT; Article 6, Algeria–Jordan BIT.



The 27 BITs currently in force in Algeria also set forth dispute resolution mechanisms.<sup>161</sup> Where a dispute between an investor and the state hosting the investment cannot be settled by mutual negotiation within a set period, the investor may resort to international arbitration.<sup>162</sup> The BIT defines the competent arbitration institution(s) should the foreign investor choose to initiate international arbitration proceedings. Some BITs provide for arbitration initiated pursuant to the ICSID Convention;<sup>163</sup> other bilateral investment treaties leave it to the initiating party to choose between arbitration pursuant to the ICSID Convention, *ad hoc* arbitration established in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL)<sup>164</sup> or an arbitration established in accordance with the International Chamber of Commerce Rules of Arbitration,<sup>165</sup> the Arbitration Rules of the Arbitration Institute of the Stockholm Chamber of Commerce<sup>166</sup> or the Unified Agreement for the Investment of Arab Capital in the Arab States.<sup>167</sup>

According to publicly available information, Algeria has acted as respondent in five investment arbitration proceedings initiated pursuant to the ICSID Convention. Two cases are still pending.<sup>168</sup> One case ended in 2013 without a decision having been rendered by the arbitral tribunal. The other two cases gave rise to two awards rendered in 2005 and 2008. In the first decision, the arbitral tribunal declared that it lacked jurisdiction.<sup>169</sup> In the second case, the arbitral tribunal declared, in an award rendered on November 10 2008, that there was no breach of the BIT entered into by Algeria and Italy.<sup>170</sup>

## 5. New provisions relating to unconventional hydrocarbons

The expression ‘unconventional hydrocarbons’ was introduced into the Hydrocarbon Law for the first time with the amendments of Law 13–01 of February 20 2013. As we will see below, the Hydrocarbon Law, as modified in 2013, defines the concept of ‘unconventional hydrocarbons’ and establishes a more favourable legal regime for the exploration and production of unconventional hydrocarbons than that governing the exploration and production of conventional hydrocarbons. The tax regime is also more attractive for the exploration and production of

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- 161 Some BITs further expressly provide that any difference or dispute shall be amicably settled in terms of consultation and/or negotiation. See Article 12(1), Algeria–Iran BIT; Article 10(1), Algeria–Austria BIT; Article 8(1), Algeria–Switzerland BIT.
- 162 Article 7, Algeria–Korea BIT; Article 7, Algeria–Jordan BIT; Article 9, Algeria–Denmark BIT; Article 9, Algeria–Ethiopia BIT; Article 9, Algeria–Denmark BIT.
- 163 Article 9, Algeria–Netherlands BIT; Article 7, Algeria–Bahrain; Article 9(3), Algeria–Greece BIT; and another 20 BITs.
- 164 Article 8(2), Algeria–Finland BIT; Article 12(2)(c), Algeria–Iran BIT; Article 8(2)(c), Algeria–Sweden BIT; and another 18 BITs.
- 165 Article 10(2)(III), Algeria–Austria BIT; Article 9(3)(c), Algeria–Portugal BIT; Article 11(2), Algeria–Spain BIT.
- 166 Article 11(2), Algeria–Spain BIT.
- 167 Article 10, Algeria–Oman BIT.
- 168 *Orascom TMT Investments Sàrl v People's Democratic Republic of Algeria*, ARB/12/35; *Gelsenwasser AG v People's Democratic Republic of Algeria*, ARB/12/32.
- 169 Award rendered on January 10 2005 in *Consortium Groupement LESI SpA – DIPENTA v People's Democratic Republic of Algeria*, ARB/03/8.
- 170 *LESI SpA and Astaldi v People's Democratic Republic of Algeria*, ARB/05/3.

unconventional resources.<sup>171</sup> Further, there are safeguards put in place by the Hydrocarbon Law to prevent or minimise the environmental risks associated with the production of unconventional hydrocarbons.

#### 5.1 Definition of ‘unconventional hydrocarbons’

Since the entry into force of Law 13–01 of February 20 2013, the Hydrocarbon Law contains a definition of unconventional hydrocarbons. Article 5 of the Hydrocarbon Law provides for five separate categories of unconventional hydrocarbons depending on the technical characteristics (permeability, porous nature, pressure and temperature) of the geological formations in which such hydrocarbons are to be found:

*unconventional hydrocarbons are existing hydrocarbons produced from a reservoir or geological deposit meeting at least one of the following conditions or having at least one of the following characteristics:*

- *Compact reservoirs with average matrix permeability equal to or less than 0.1 millidarcies and/or which can only be produced from a horizontal well or by multi-stage fracturing;*
- *Clay or shale formations with little or no permeability that can only be produced from a horizontal well or multi-stage fracturing;*
- *Geological formations containing hydrocarbons of which the viscosity exceeds 1000 centipoises or the density is lower than 15° API (American Petroleum Institute);*
- *High pressure and high temperature reservoirs of which the pressure and temperature meet the following criteria: bottom-hole pressure equal to or greater than 650 bars, bottom-hole temperature above 150°C;*
- *Natural gas or coal bed methane (CBM) located in the micropores of coal beds located deep underground that have either not yet been mined or incompletely mined. Coal Bed Methane (CBM) is adsorbed into the solid matrix of coal through a process known as ‘adsorption’. This natural gas distinguishes itself by the use of unconventional extraction methods such as a decrease in pressure.<sup>172</sup>*

In addition to the three types of unconventional gas (most commonly referred to shale gas, tight gas and coal bed methane) and shale oil,<sup>173</sup> the Hydrocarbon Law

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171 The law applies to contracts entered into after the law’s entry into force and ongoing contracts for the exploration and production of the hydrocarbons defined in Article 5 of the law as ‘unconventional’. See Article 110bis of the Hydrocarbon Law (as modified in 2013).

172 Article 5 of the Hydrocarbon Law (as modified in 2013). The definition of ‘reservoir’ included in the Hydrocarbon Law was also amended in 2013 in order to take unconventional hydrocarbons into consideration. A reservoir is “The porous and permeable part of a geological formation containing a distinct accumulation of hydrocarbons and characterised by a unique system of pressure such that the production of hydrocarbons in one part of the reservoir affects the pressure of the entire reservoir, or a clay and/or shale formation with little or no permeability which can only be produced using horizontal wells and multi-stage fracturing, or coal beds located deep underground that have either not yet been mined or have been incompletely mined and with micropores containing natural gas or coal bed methane (CBM).”

173 International Energy Agency (IEA), *Golden Rules of a Golden Age of Gas: World Energy Outlook, Special Report on Unconventional Gas*, 2012, Box 1.1 Unconventional gas resources, p18, available at [www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/weo2012\\_goldenrulesreport.pdf](http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/weo2012_goldenrulesreport.pdf) (last accessed November 17 2014).

considers high-pressure reservoirs and high-temperature reservoirs to be geological formations from which unconventional hydrocarbons can be extracted.

The rationale for this definition of unconventional hydrocarbons is that the geological formations in question require greater investment to carry on exploration and production activities than conventional oil and gas fields.

## 5.2 Peculiarities of the legal framework for exploration and production of unconventional hydrocarbons

First, the size of the contractual perimeters for prospecting, exploration and production may differ depending on whether they contain conventional or unconventional hydrocarbons. Article 8 of Decree 13-436 dated December 23 2013 relating to the delineation and division of the mining estate into zones and the definition of prospecting, exploration and production perimeters states that “[t]he geological subdivision takes into consideration the intrinsic characteristics of the petroleum targets revealed through the prospecting or exploration for hydrocarbons”, including “the nature of the hydrocarbons it contains”.<sup>174</sup> The decree distinguishes between three different types of geological formations: conventional reservoirs, unconventional reservoirs and other “complex entities”. The size of the perimeters may therefore differ depending on the type of geological formations.

In the context of the fourth national call for tenders launched on January 21 2014 by the Ministry of Energy and Mines and ALNAFT, perimeters containing potential unconventional reservoirs were significantly larger than the conventional ones.<sup>175</sup> The few perimeters that contain exclusively unconventional gas, like the Tindouf and the Mouydir perimeters, respectively cover areas of over 20,000 km<sup>2</sup> and 38,000 km<sup>2</sup>, while the average perimeter size for conventional hydrocarbons is around 10,000 km<sup>2</sup>.<sup>176</sup>

Secondly, Law 13-01 of February 20 2013 introduced a new article (Article 35) in the Hydrocarbon Law extending the length of the exploration and production phases of contracts for unconventional hydrocarbons. The duration of the exploration phase was extended to eleven years for unconventional oil and gas, as opposed to seven years for conventional hydrocarbons. In fact, a so-called ‘pilot’ phase, which can last up to four years, is added to the exploration phase.<sup>177</sup> The

174 Article 6 of Executive Decree 13-436 of December 23 2013 relating to the delineation and breakdown of the mining estate into zones and the definition of prospecting, exploration and production perimeters, supplementing Article 8 of the Hydrocarbon Law (*JORA*, 67, December 29 2013, p10).

175 See the Ministry of Energy and Mines of Algeria’s website, [www.mem-algeria.org/actualites\\_2014/4eme\\_AC\\_ALNAFT/4eme\\_AC\\_version\\_francaise.pdf](http://www.mem-algeria.org/actualites_2014/4eme_AC_ALNAFT/4eme_AC_version_francaise.pdf), also displayed on ALNAFT’s website, [www.alnaft.gov.dz/spip.php](http://www.alnaft.gov.dz/spip.php) (both last accessed November 17 2014).

176 *Ibid*; see also *Jeune Afrique*, “Algérie : faut-il avoir peur du gaz de schiste?” [“Algeria: Should we fear shale gas?”], November 8 2013, available at <http://economie.jeuneafrique.com/entreprises/entreprises/energie/20328-algerie-faut-il-avoir-peur-du-gaz-de-schiste.html> (last accessed November 18 2014); DjaZaïress, “Recherche de ressources non conventionnelles: le cap sur le gaz de schiste” [“Seeking unconventional resources: focus on shale gas”], February 5 2014, available at [www.djazair.com/fr/liberte/215178](http://www.djazair.com/fr/liberte/215178), (quoting from *Liberté Algérie*) (last accessed November 18 2014).

177 Article 35 of the Hydrocarbon Law (as modified in 2013). Subsequent to the three exploration phases, the law provides for another “pilot phase of a duration of up to (4) years which will extend one of the exploration phases. So-called pilot phases may be granted to the contracting party by ALNAFT”. Article 46 of the Hydrocarbon Law (as modified in 2013) further provides that “in the case of unconventional hydrocarbons the contracting party may, in carrying out the pilot study, be granted authorisation for early production within the time limit set for the pilot”.

production phase was lengthened to 30 years for unconventional oil and 40 years for unconventional gas, as opposed to 25 years for the production of conventional hydrocarbons.<sup>178</sup>

Further, with authorisation from ALNAFT, exemptions from the flaring prohibition can be obtained in certain circumstances determined by regulation.<sup>179</sup>

Executive Decree 13–400 relating to flaring<sup>180</sup> states that ALNAFT must grant authorisation for any flaring<sup>181</sup> for a limited period. These temporary authorisations are granted in specific circumstances such as for the purposes of “the assessment of the productivity of wells during the pilot phase for unconventional hydrocarbons”.<sup>182</sup> During the production phase, exceptional authorisation is granted for “the first exploratory use of a production well”, for maintenance, or for the assessment of the productivity of wells recently drilled.<sup>183</sup>

Any application for exceptional authorisation for flaring must contain a well location report providing the provisional date, duration and estimated volumes to be flared. Lastly, a detailed technical programme for testing the well, which should also describe the required safety measures that have been taken, must be submitted.<sup>184</sup>

### 5.3 Tax regime for unconventional hydrocarbons

The tax provisions are a key element of the reform introduced by Law 13–01 of February 20 2013.<sup>185</sup> The law introduced a more advantageous tax regime for unconventional hydrocarbon-related activities, considering the capital-intensive nature of such activities.

The annual surface tax is calculated on the basis of the geographic location of the contractual perimeter and the stage of progress of the exploration phase.<sup>186</sup> The minimum rate is systematically applied to unconventional hydrocarbon-related activities.<sup>187</sup> The production of unconventional hydrocarbons is also subject to a lower rate of royalties payable to ALNAFT. For unconventional hydrocarbons, the rate is limited to 5%, whereas it varies from 5% to 23% for conventional hydrocarbons.<sup>188</sup>

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178 Article 35 of the Hydrocarbon Law (as modified in 2013). An additional five-year extension may be granted for natural gas at the contracting party's request. A second five-year extension may be granted upon the contracting party's request and ALNAFT's approval.

179 Hydrocarbon Law, Article 52.

180 See Executive Decree 13–400 of November 27 2013 establishing the conditions in which the ALNAFT may grant exceptional authorisation for flaring, the admissible thresholds and the specific pricing conditions for outlying or isolated areas.

181 *Ibid*, Articles 2 and 4.

182 *Ibid*, Article 5.

183 *Ibid*, Article 6.

184 *ibid*, Article 9.

185 According to a press release by Wood Mackenzie on April 3 2013, “the new incentives should make tight gas developments more attractive. However, Wood Mackenzie's analysis suggests shale gas will remain uneconomic until costs are reduced by at least 20%, lead times are shortened and wells can consistently achieve initial flow rates at around 5 million cubic feet per day (mmcfd).” Wood Mackenzie, Media Centre, Press Release, “Wood Mackenzie's assessment of Algerian fiscal reform, Increased value, added complexity”, 2013, available at [www.woodmacresearch.com/cgi-bin/wmprod/portal/corp/corp/PressDetail.jsp?oid=11195717](http://www.woodmacresearch.com/cgi-bin/wmprod/portal/corp/corp/PressDetail.jsp?oid=11195717) (last accessed November 18 2014).

186 Hydrocarbon Law (as modified in 2013), Article 83.

187 *Ibid*: “For the purposes of calculating the land tax relating to unconventional hydrocarbon exploration and production perimeter, the amounts in Algerian dinars for said tax are those applicable to zone A.”

188 *Ibid*, Article 85.

Lastly, Article 87 of the Hydrocarbon Law, as amended in 2013, sets out the method for calculating the TRP. A specific TRP has been established for unconventional hydrocarbons where the rate of taxation is maintained at minimal levels.<sup>189</sup>

#### 5.4 Minimising environmental risks

Unconventional natural gas reserves are often scattered over a large surface area and may require more extraction wells than the production of conventional gas. Whereas conventional onshore fields often only require one well every 10 square kilometres, unconventional fields might need more than one well per square kilometre.<sup>190</sup> Furthermore, extraction of unconventional hydrocarbons is often done by means of hydraulic fracturing, also called fracking, which requires large volumes of water. Hydraulic fracturing generally also requires the addition of chemicals to the water, which is then injected into the rock in order to release the gas.

The Hydrocarbon Law promotes strict rules of caution concerning hydraulic fracturing, flaring and more generally the potential repercussions of exploration and production of unconventional hydrocarbons.<sup>191</sup> These rules are described below.

##### (a) *Regulation by the Council of Ministers and the hydrocarbon agencies*

As discussed above, all exploration and/or production contracts, whether they relate to conventional or unconventional hydrocarbons, must be approved by decree of the Council of Ministers.<sup>192</sup> Moreover, Law 13–01 of February 20 2013 added an article specifically concerning the Council of Ministers' power to regulate unconventional hydrocarbon-related activities, stating that "the exercise of activities regarding the extraction of clay and/or shale formations with little or no permeability (shale gas or oil) using hydraulic fracking shall be subject to the approval of the Council of Ministers".<sup>193</sup>

In addition to the Council of Ministers' specific regulatory control, ALNAFT and ARH have been given further prerogatives under Law 13–01 of February 20 2013. The ARH is, among other things, responsible for ensuring compliance with "regulations concerning hygiene, industrial safety and the environment"<sup>194</sup> and "regulations concerning prevention and major risk management, in particular, the conservation

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189 Article 87bis of the Hydrocarbon Law (as modified in 2013) states: "If the R1 coefficient is less than or equal to 1, the rate of the TRP is equal to 10% ... If the R2 coefficient is less than or equal to 1, the rate of TRP is 40%."

190 IEA, *Golden Rules for a Golden Age of Gas: World Energy Outlook, Special Report on Unconventional Gas*, 2012, p19, [www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/weo2012\\_goldenrulesreport.pdf](http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/weo2012_goldenrulesreport.pdf) (last accessed November 17 2014).

191 *Ibid.*, p9.

192 Hydrocarbon Law (as modified in 2013), Article 11.

193 Article 23bis of the Hydrocarbon Law (as modified in 2013). The matter of unconventional hydrocarbons was discussed at a meeting of the Council of Ministers on May 21 2014, at which the Council gave its "approval for the launch of the required procedures with regard to foreign partners, on the understanding that draft agreements for prospecting will be subject to the Council's approval at the relevant time." The Council of Minister's minutes also state: "however, in order to confirm the commercial potential of these resources a programme including at least 11 wells over a period of 7 to 13 years is necessary." See [www.el-mouradia.dz/francais/president/activites/PresidentActi.htm](http://www.el-mouradia.dz/francais/president/activites/PresidentActi.htm) (last accessed November 18 2014).

194 *Ibid.*, Article 13.

of ground water and aquifers in the exercise of the activities".<sup>195</sup> The ARH also ensures compliance with the "regulations on the use of chemicals in the exercise of activities",<sup>196</sup> especially with regard to hydraulic fracturing.<sup>197</sup> Failure to comply with these regulations may result in fines or other penalties. The amounts of fines and the conditions for their application is determined by regulation.<sup>198</sup> The ARH may enlist the expertise of specialised monitoring firms in order to evaluate compliance with the above-mentioned regulations.<sup>199</sup>

The works programme submitted to ALNAFT should include detailed information on the drilling programme and location.

**(b) Mandatory environmental impact study**

As explained above, the Hydrocarbon Law now provides that "an environmental impact study and an environmental management plan which shall include a description of preventive measures and plans for the management of environmental risk associated with said activities in accordance with the environmental legislation and regulations in force" should be submitted prior to any exploration or production activities.<sup>200</sup>

The ARH must share information on seismic activities and drilling issues included in the environmental impact studies with the relevant ministerial departments and local wilayas in order to obtain their opinion on such matters.<sup>201</sup>

**(c) Water preservation**

The only technique currently used to extract unconventional hydrocarbons, namely hydraulic fracturing, requires large volumes of water. The National Agency of Water Resources in Algeria has emphasised the potential risks associated with the use of such great volumes of water, especially in the south of the country, where much of Algeria's farmlands lie.<sup>202</sup>

The Hydrocarbon Law (as modified in 2013) creates stringent conditions for water usage and, in the case of unconventional hydrocarbons, requires prior authorisation from the National Agency of Water Resources, with the approval of ALNAFT. The Hydrocarbon Law also states that "as regards operations related to unconventional hydrocarbons, water must be used in a rational manner, in

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195 *Ibid.*

196 *Ibid.*

197 *Ibid.* Article 13 also provides that the ARH shall ensure compliance with "application of standards established on the basis of international best practices" and that "are defined by regulation". The regulation mentioned in this article has not yet been created.

198 *Ibid.* Article 13 provides that the ARH is in charge "for any activity related to hydrocarbons under the present law, to make sure the sanctions and penalties payable to the national treasury in the event of non-compliance with laws and regulations".

199 *Ibid.*, Article 17.

200 *Ibid.*, Article 18.

201 *Ibid.*

202 Ministry of Water Resources, Department of Purification and Environment Protection, *Experts Consultation on Wastwater [sic] Management in the Arab World*, May 2011, p8, available at [www.arabwatercouncil.org/administrator/Modules/CMS/Algeria-Country-Report.pdf](http://www.arabwatercouncil.org/administrator/Modules/CMS/Algeria-Country-Report.pdf) (last accessed November 18 2014).

203 Hydrocarbon Law (as modified in 2013), Article 53: "The use of water from the public domain for operations related to unconventional hydrocarbons is subject to authorisation or a concession contract."

particular by re-use after treatment”.<sup>203</sup> Water extracted from the wells following fracking must thus be treated in order to be reused.

Furthermore, royalties are charged for the use of water from the public domain, which should encourage operators to rationalise their water consumption.<sup>204</sup>

**(d) Regulation of the chemicals used in hydraulic fracturing**

Article 17 of the Hydrocarbon Law (as modified in 2013) stipulates that the following should be observed in the context of exploration and production activities: “the content of laws and regulations in force concerning environmental protection and the use of chemicals, in particular when it concerns unconventional hydrocarbon resources”.<sup>205</sup> The law provides, in particular, that specialised monitoring firms may be called on to manage risks.<sup>206</sup>

**6. Challenges and future developments**

Future production in oil and gas producing countries is the subject of much discussion and speculation, and Algeria is no exception.

Gross gas and oil production has been in constant gradual decline over the past five years, as Algeria’s largest fields are mature and are past their production peak.<sup>207</sup> In 2013, total oil and gas production in Algeria stood at 190 million tonnes of oil equivalent,<sup>208</sup> down 4% in comparison to the previous year, according to Sonatrach.

In addition to the natural depletion of the oldest fields, Algeria has to contend with a steady rise in domestic consumption, which is heavily subsidised.<sup>209</sup> Algeria’s hydrocarbon consumption has increased by an annual average of 5% since 2004.

However, new projects are constantly coming on line. Algeria is in the process of developing gas fields in the southwest of the country, including the Reggane Nord, Timimoun and Touat fields, which are expected to come online in 2017.

While gross natural gas production will most likely continue to decline in the short term, it should recover in the medium term if planned projects come online. Output from the proposed projects to date could even potentially increase Algeria’s output by 1 TCF per year or more after 2018, according to the EIA study published in July

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204 *Ibid*: ALNAFT “shall provide ... a non-deductible specific tax known as the ‘levy for the use of water from the public domain’ ... payable by the operator and effected in accordance with the legislation and regulations in force”.

205 *Ibid*, Article 17.

206 *Ibid*. Article 17 provides that “In carrying out its monitoring role, the authority for regulating hydrocarbons [ARH] may enlist the help of authorised specialised monitoring firms, in order to prevent any risks.”

207 EIA Report, July 24 2014, p7.

208 Patrick Markey and Lamine Chikhi, “INTERVIEW – Algeria sees strong initial interest in energy round”, Reuters, May 12 2014, available at <http://uk.reuters.com/article/2014/05/12/algeria-energy-idUKL6NONXONG20140512> (last accessed November 18 2014).

209 EIA Report, July 24 2014, pp2 and 3; International Monetary Fund, *Algeria 2013, Article IV Consultation, Country Report 14/32*, p13, available at [www.imf.org/external/pubs/ft/scr/2014/cr1432.pdf](http://www.imf.org/external/pubs/ft/scr/2014/cr1432.pdf) (last accessed November 18 2014). According to the IMF, Algeria has the second-lowest domestic natural gas price in Africa, after Libya, as retail prices have not changed since 2005 and are now, according to the IMF, below operational costs; Nikolaus Supersberger and Laura Führer, “Integration of Renewable Energies and Nuclear Power into North African Energy Systems: An Analysis of Energy Import and Export Effects”, p5, available at [http://graduateinstitute.ch/files/live/sites/iheid/files/shared/executive\\_education/Oil%202012-2013/Nuclear%26Renewable%20effects%20on%20Oil%26Gas%20export.pdf](http://graduateinstitute.ch/files/live/sites/iheid/files/shared/executive_education/Oil%202012-2013/Nuclear%26Renewable%20effects%20on%20Oil%26Gas%20export.pdf) (last accessed November 18 2014).

2014.<sup>210</sup> However, some of these projects are contingent on attracting new investors or retaining existing investors and building or upgrading existing infrastructure.

In recent years it has proved more challenging for Algeria to attract investors for exploration and production. In the past three licensing rounds, investors showed limited interest in undertaking new oil and gas projects.<sup>211</sup> In the 2008 bidding round four of the 16 blocks on offer were awarded, in 2009 three out of eight were awarded and two out of 10 were successful in 2011. The terrorist attack that took place on January 19 2013 at the In Amenas gas field operated by a joint venture composed of BP, Statoil and Sonatrach also prompted security concerns. Since then, both the joint venture company and the Algerian authorities have implemented additional security measures in the region.<sup>212</sup>

This context goes some way towards explaining the measures taken in 2013 to amend the Algerian Law on Hydrocarbons so as to make the legal framework more favourable and attractive for foreign companies.

On the basis of this new law, ALNAFT initiated, on January 21 2014,<sup>213</sup> a call for tender for the exploration and production of 31 perimeters located in four different basins, some of which contain reserves of unconventional hydrocarbons.<sup>214</sup>

The deadline for submissions was September 30 2014 and the submitted offers were opened at a public event on that date in Algiers. Four blocks were awarded: the Timissite perimeter was awarded to a consortium of Statoil, Shell and the Norwegian company Sigma. The second perimeter located in Boughezoul was awarded to Repsol and Shell. The other perimeters of Msari Akabli and Tinhert Nord were awarded to Dragon Oil, a company established in Dubai, and Enel. Some of the awarded blocks contain both conventional and unconventional hydrocarbons.<sup>215</sup>

Extraction of unconventional hydrocarbons is extremely capital-intensive and, according to ALNAFT, an amount of US\$300 billion will need to be invested in order to produce 60 billion cubic metres of shale gas per year.<sup>216</sup> Algeria's overall gas output may significantly increase over the next decade if its shale gas reserves come into production.<sup>217</sup> According to the specialist press, Algeria may at some point replace

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210 EIA Report, July 24 2014, p7.

211 *Ibid*, p1.

212 See the BP website, [www.bp.com/en/global/corporate/about-bp/bp-worldwide/bp-in-algeria.html](http://www.bp.com/en/global/corporate/about-bp/bp-worldwide/bp-in-algeria.html) (last accessed November 18 2014).

213 *Jeune Afrique*, "L'Algérie lance un appel d'offres pour l'exploitation des gisements non-conventionnels" ["Algeria calls for tenders for production of unconventional oil and gas fields"], January 22 2014, available at <http://economie.jeuneafrique.com/entreprises/entreprises/energie/21182-algerie-31-perimetres-offerts-a-la-concurrence.html> (last accessed November 18 2014).

214 In particular, the following blocks were described in the tender documentation as potentially containing unconventional resources: Mouydir North, Mouydir South, Timimoun II, Tindouf West, Tindouf East, Tindouf South, Bechar, Hodna East and Boughezoul. See the fourth call for tender published by the Ministry of Energy and Mines and ALNAFT, p3, available at [www.mem-algeria.org/actualites\\_2014/4eme\\_AC\\_ALNAFT/4eme\\_AC\\_version\\_francaise.pdf](http://www.mem-algeria.org/actualites_2014/4eme_AC_ALNAFT/4eme_AC_version_francaise.pdf), (last accessed on November 18 2014).

215 See *Communiqué de Presse Ouverture des offres du 4ème Appel à la Concurrence AC4-14* ["Press Release – Opening Bids for the 4th Call for Competition AC4-14"], available at [www.alnaft.gov.dz/spip.php?article118](http://www.alnaft.gov.dz/spip.php?article118) (last accessed November 18 2014).

216 Agence Ecofin, "L'Algérie veut doubler sa production de gaz d'ici 2024 grâce aux gisements non conventionnels" ["Algeria seeks to double its natural gas output by 2024 with its unconventional deposits"], January 16 2014, available at [www.agenceecofin.com/gaz-de-schiste/1601-16745-l-algerie-veut-doubler-sa-production-de-gaz-d-ici-2024-grace-aux-gisements-non-conventionnels](http://www.agenceecofin.com/gaz-de-schiste/1601-16745-l-algerie-veut-doubler-sa-production-de-gaz-d-ici-2024-grace-aux-gisements-non-conventionnels) (last accessed November 18 2014).



Norway – the extensive reserves of which are set to decline from 2015 – as Europe's primary supplier of natural gas: "with large conventional and unconventional natural gas reserves and suitable export infrastructure, Algeria appears primed to succeed Norway as Europe's primary regional natural gas supplier."<sup>218</sup>

Of course, the actual volumes of gas exported to Europe will depend on the progress made in the extraction of unconventional gas reserves within Europe as well, which is still uncertain.

In parallel with developing new oil and gas projects, Algeria is attempting to reduce its dependence on natural gas for electricity production by initiating more renewable energy projects. In 2011, Algeria adopted a national plan for renewable-energy development:

*This ambitious program seeks to install 22 000 MW of renewable energy capacity between 2011 and 2030, of which 12 000 MW will be earmarked for domestic electricity supply and 10 000 MW will be for export. With this program, renewable energy has become a key component of Algeria's energy and economic policy. By 2030, about 40 per cent of the domestic energy supply will be obtained from renewable sources.*<sup>219</sup>

In 2013 the government took measures to implement the national plan for renewable-energy development, working towards the goal of using solar energy to provide 37% of the country's electricity needs by 2030. Further, Sonelgaz, the state-owned electricity and gas company, entered into contracts to bring online solar projects and recently initiated a wind farm pilot programme.<sup>220</sup>

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- 217 L'Express – L'Expansion, "L'Algérie veut doubler sa production de gaz et de pétrole" ["Algeria seeks to double its gas and oil output"], March 20 2014, available at [http://energie.lexpansion.com/energies-fossiles/l-algerie-veut-doubler-sa-production-de-gaz-et-de-petrole\\_a-31-8023.html](http://energie.lexpansion.com/energies-fossiles/l-algerie-veut-doubler-sa-production-de-gaz-et-de-petrole_a-31-8023.html) (last accessed November 18 2014); See also *Le Figaro*, "L'Algérie veut doubler sa production de gaz" ["Algeria seeks to double its natural gas output"], January 16 2014, available at [www.lefigaro.fr/flash-eco/2014/01/16/97002-20140116FILWWW00541-l-algerie-veut-doubler-sa-production-de-gaz.php](http://www.lefigaro.fr/flash-eco/2014/01/16/97002-20140116FILWWW00541-l-algerie-veut-doubler-sa-production-de-gaz.php); and Agence Ecofin, "L'Algérie veut doubler sa production de gaz d'ici 2024 grâce aux gisements non conventionnels" ["Algeria seeks to double its natural gas output by 2024 with its unconventional deposits"], January 16 2014, available at [www.agenceecofin.com/gaz-de-schiste/1601-16745-l-algerie-veut-doubler-sa-production-de-gaz-d-ici-2024-grace-aux-gisements-non-conventionnels](http://www.agenceecofin.com/gaz-de-schiste/1601-16745-l-algerie-veut-doubler-sa-production-de-gaz-d-ici-2024-grace-aux-gisements-non-conventionnels) (all last accessed November 18 2014).
- 218 Marc Lanthemann, "In Europe, the Strategic Importance of Algerian Natural Gas", *Natural Gas Europe*, January 23 2013, available at [www.naturalgaseurope.com/strategic-importance-of-algerian-natural-gas-for-europe](http://www.naturalgaseurope.com/strategic-importance-of-algerian-natural-gas-for-europe) (last accessed November 18 2014): "Algeria is particularly important as a future supplier for European countries that rely heavily on North Sea natural gas reserves."
- 219 Ministère de l'Energie, "Programme des Energies Renouvelables et de l'Efficacité Énergétique", [[www.mem-algeria.org/francais/index.php?page=enr](http://www.mem-algeria.org/francais/index.php?page=enr)] available at [www.mem-algeria.org/francais/index.php?page=enr](http://www.mem-algeria.org/francais/index.php?page=enr) (last accessed November 18 2014).
- 220 EIA Report July 24 2014, pages 3 and 16.