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Another round of Algerian gas for Europe

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Theme

What are the prospects for Algerian gas in the European market?

Summary

This paper delves into recent developments in Algerian natural gas production and exports towards Europe, its drivers and barriers, and the main implications for the EU.

Analysis[1]

The increase in the production and exports of Algerian natural gas in recent years, the launch of a new round of licensing under a more attractive hydrocarbons law and the expected increase in European demand owing to its decoupling from Russian gas has reawakened EU interest in Algerian gas. Among analysts there is a division of opinion between those who foresee a 'burgeoning gas market' and those who doubt whether Algeria will succeed in increasing or even maintaining its exports to the EU. This is a longstanding difference in the perception of Algeria, whose production figures have never matched the official optimistic forecasts, nor substantiate the alarmists' predictions of an imminent collapse in production and exports.

Over the course of the last decade the main prospect confronting Algerian gas was one of deteriorating continuity.[2] At that time, Algeria was incapable of tapping into the opportunities presented by the first disruptions of Russian supplies to position itself as a strategic supplier to the EU. This was mainly due to sluggish investment and production and domestic political stability problems. The geopolitical context of European gas markets also changed substantially after losing the flexibility offered by the Russian pipelines. Furthermore, imports both of Russian gas via Turkstream and in the form of LNG are due to end by 2027. The energy dominance strategy being pursued by the second Trump Administration makes it advisable to preserve sources of diversification away from US LNG if the EU wishes to maintain some strategic autonomy. Algeria's

[1] This analysis has benefitted from various exchanges with members of the Elcano Royal Institute's Energy and Climate Working Group familiar with Algeria and/or the Algerian energy sector. The author is grateful for the comments and suggestions received, which have substantially improved the initial text. However, the usual disclaimer applies and the opinions expressed herein and any error that may persist are the exclusive responsibility of the author.

[2] See Gonzalo Escribano (2017), 'Algeria: global challenges, regional threats and missed opportunities', in Westphal & Jalilband (Eds.), *The Political and Economic Challenges of Energy in the MENA Region*, Routledge, p. 221-235. For a sample of the current debate, see Wood Mackenzie (2024), 'What next for Algeria's burgeoning gas market?, September; and Mostefa Ouki (2025), 'North Africa gas: producers aim to preserve export role', *OIES Energy Comment*, January.

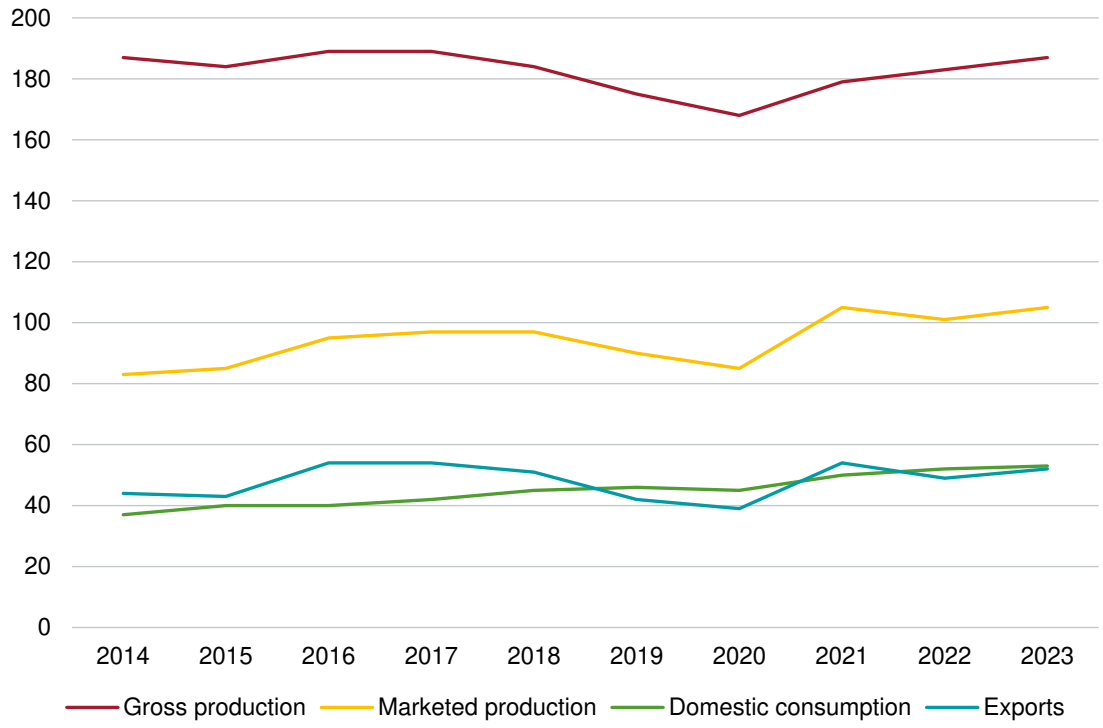
domestic political situation is also perceived to be more stable and secure than over the past decade.

These new circumstances offer Algeria and the EU another round of opportunities to tap into their energy complementarities. To identify and evaluate these opportunities, this analysis starts by presenting the recent evolution of Algerian gas production and exports. Next, attention turns to their prospects, distinguishing between drivers and barriers, both on the domestic front and with the EU, including the latter's new environmental regulations. The paper concludes that the EU should send a clear message of political commitment that displays sensitivity to Algeria's demands, offering demand security prospects for its gas as a strategic European partner and helping the country to comply with new environmental regulations and to design a credible pathway towards the gradual transformation of its energy sector.

1. Evolution and trends

Algeria significantly increased natural gas production between 2020 and 2023. Both the gross and the marketed production (gross production minus the gas reinjected into the gas fields) rose by some 20 bcm, enabling both exports and domestic consumption to grow (see Figure 1). Although the recent trend is positive, neither Algeria's gross production nor its exports of gas have exceeded the maximum levels of the previous decade (see Figures 1 and 2), and the World Bank is predicting a slight fall in output in 2024.

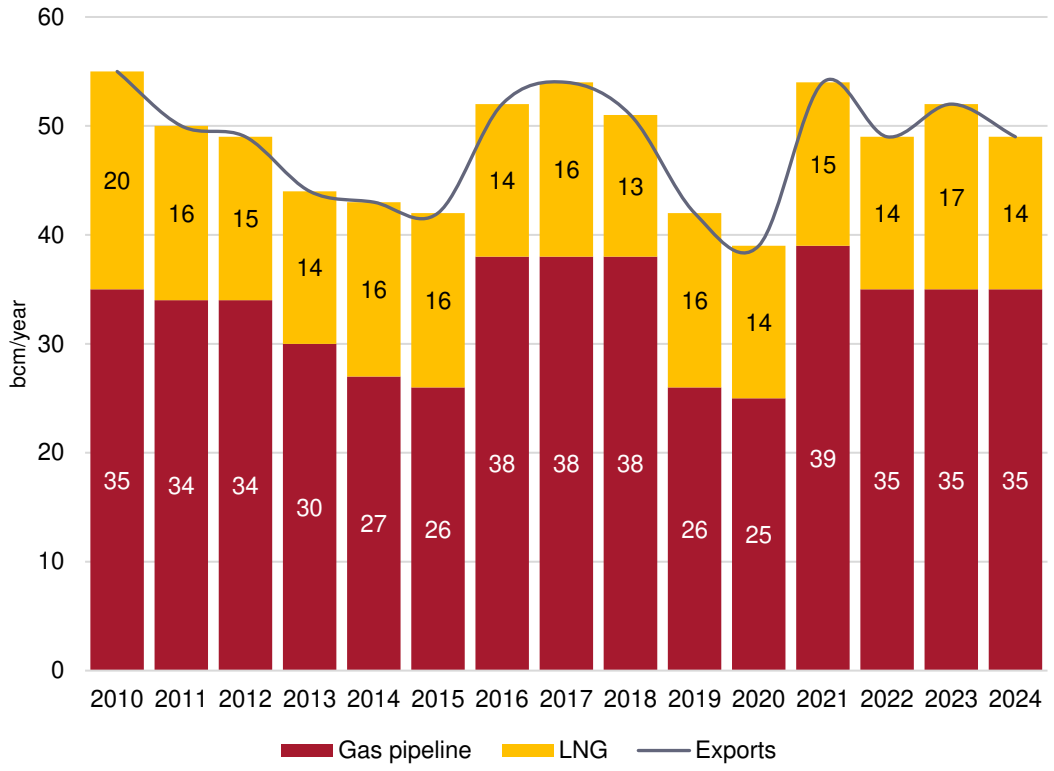
Figure 1. Gross and marketed production and exports of Algerian Gas, 2014-23 (bcm)



Note: bcm: billion cubic metres. Source: GECF, 2024 Annual Statistical Bulletin.

Exports of natural gas climbed from 39 bcm in 2020 to 49 bcm in 2024, with pipeline-transported gas rising from 25 to 35 bcm, while exports of LNG remained at 14 bcm after peaking in 2023 (see Figure 2). A fall in exports was recorded in 2024, which was particularly marked during the summer owing to reduced European demand and the increased domestic demand for air conditioning because of the heatwave that affected the country.

Figure 2. Exports of Algerian gas, 2010-24 (bcm)



Source: MEES based on figures from JODI, SNAM, ENAGAS, ETAP, KPLER.

Despite Algerian promises to increase exports during the European energy crisis unleashed by the Russian invasion of Ukraine, its exports of gas to the EU have shown little change. According to Bruegel, they fell from 37 bcm in 2021 to 32 bcm in 2024. After halting exports through the Maghreb-Europe Gas Pipeline (MEG), which passed through Morocco, there was a re-routing of Algerian exports from Spain and Portugal to Italy via the Transmed pipeline. In 2024, however, Algerian exports to Italy fell to as low as 21 bcm, the lowest level in four years, despite both countries being committed to boosting them.

This is a disappointing trend considering that it includes the gas that Algeria has been exporting to Slovenia through Italy since 2023 and to the Czech Republic since 2024, but it is explained mainly by the lack of Italian demand. In 2024, the gas transported through Transmed reached its lowest level since 2021, barely 21 bcm compared with a capacity of 33.5 bcm. Medgaz, which directly links Algeria with Spain and whose annual capacity was increased from 8 to 10.5 bcm in 2022, carried a record 9.4 bcm in 2024.

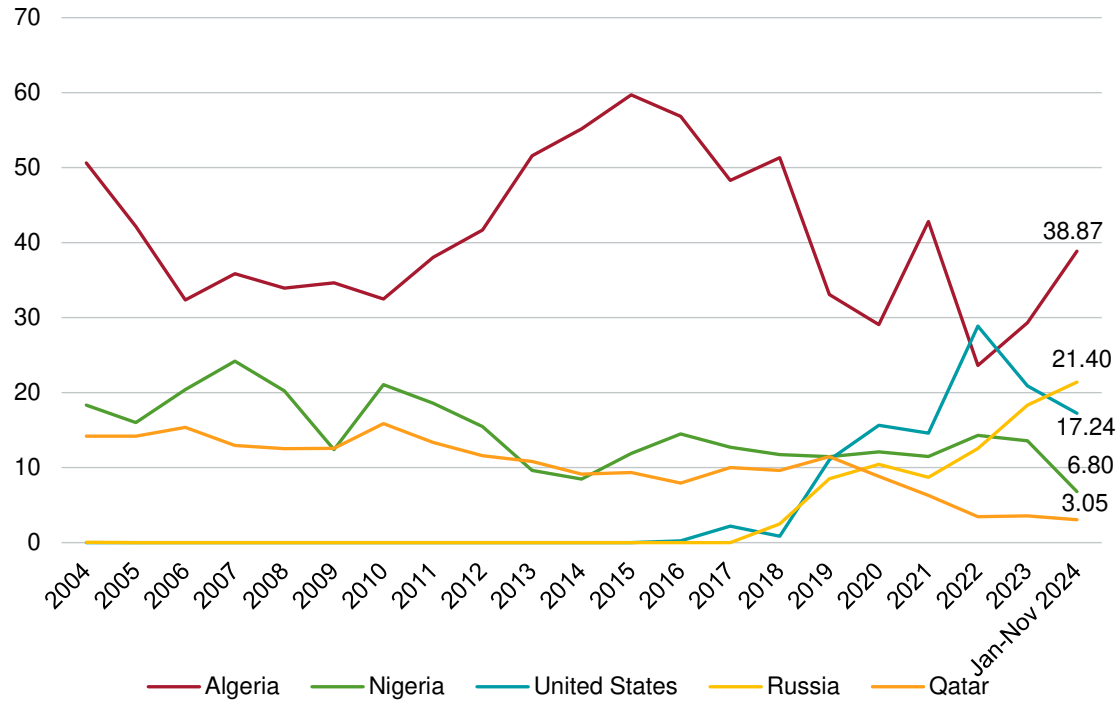
This amount is still below the typical volumes exported by Algeria to Spain prior to 2021, when the MEG ceased to operate.

Algeria is one of the pioneers of LNG,[3] which it exports mainly to Europe. Its LNG exports reached almost 17 bcm in 2023, the highest level since 2010, but fell 14% in 2024 to a level of 14.5 bcm, according to MEES (see Figure 2). In 2024, Turkey was the main destination for Algerian LNG, followed by France, Spain and Italy. By contrast, the Sonatrach strategy of diversifying towards Asian markets has been hampered by the Houthi attacks in the Red Sea, and in 2024 it exported only two shipments. During the European energy crisis, Sonatrach renewed its LNG supply contract with the Turkish company BOTAS, the Greek company DEPA and the French companies Engie and TotalEnergies. These long-term supply contracts account for more than 10 bcm, and Sonatrach sells the remainder on the LNG spot market.

Algerian gas continues to play a major strategic role for Spain. Spanish imports of Algerian gas almost exceeded 60% of the total by around 2015, but subsequently fell, especially after the closure of the MEG, to 24% in 2022 (see Figure 3). That year, the US overtook Algeria as the main supplier of gas to Spain, a position it regained in 2023 and 2024. With data up to November 2024, Algeria supplied 39% of Spanish gas imports, 31% via the Medgaz pipeline and 8% in the form of LNG (Figure 4). The growth of the volumes imported in 2023 and 2024 was due above all to LNG; in 2024 Medgaz was operating almost at its nominal capacity and transported record volumes despite the fact that in September 2024 its flow was reduced owing to standard scheduled maintenance work.

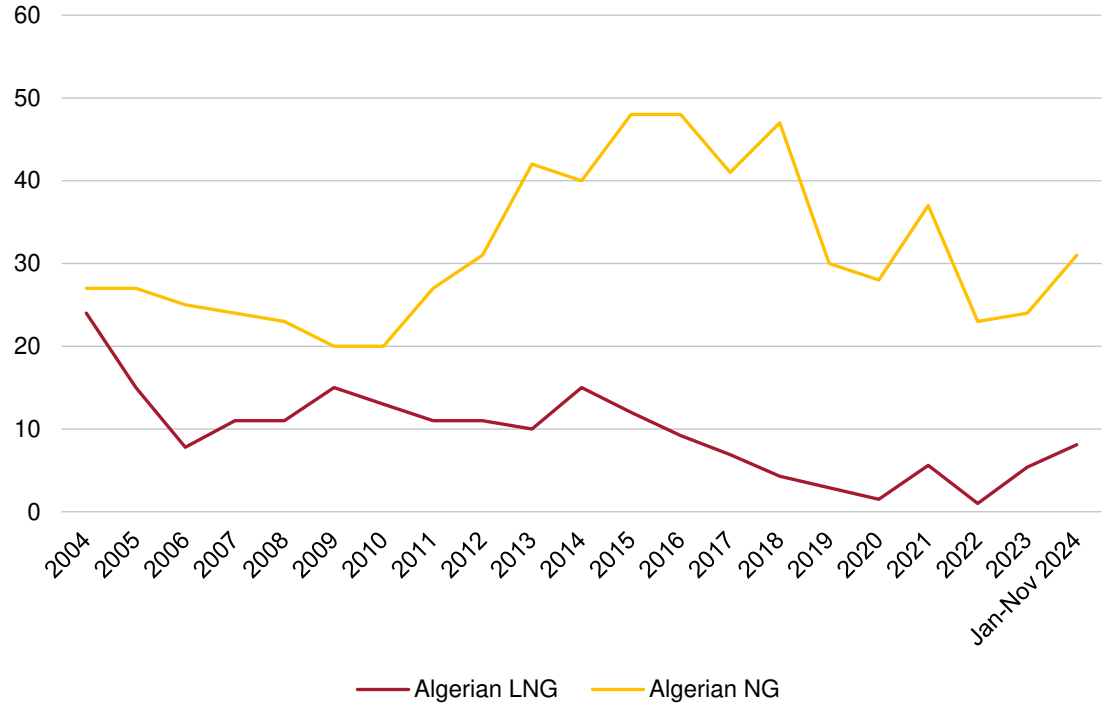
[3] The first commercial shipment of LNG was exported in 1964 from the Algerian facility of Arzew, the first high-capacity liquification terminal; the first export shipment to Spain was in 1969.

Figure 3. Spanish imports of natural gas by supplier, 2004-November 2024 (% of the total in gigawatt hours)



Source: Cores.

Figure 4. Spanish imports of Algerian gas, 2004-November 2024 (% of the total in gigawatt hours)



Source: Cores.

An increasingly important factor given the EU's new regulations on methane are the high Algerian emissions of this greenhouse gas. The World Bank's Methane Tracker shows that in 2023 the country ranked 19th among the world's methane emitters, and 11th among energy-related methane emitters, with almost 80% of its methane emissions stemming from the energy sector. Out of all energy sector emissions, 70% arose from oil, mainly from the venting and flaring of large volumes on non-recovered gas. The gas sector accounted for almost 25% of these emissions, above all because of venting; just as in the oil sector, losses attributable to leaks are also significant in the gas sector.

2. Gas drivers

The prospects for Algerian gas output and exports reflect a mixed picture. Drivers inducive to growth include: (a) the gradual coming onstream of projects that have been underway for years and the exploitation of undeveloped resources; (b) improvements to the Hassi R'Mel mega-field; (c) bilateral agreements with international companies; (d) the new round of upstream licences; (e) a more favourable hydrocarbons law; (f) the interest shown by Chevron and Exxon in exploiting the country's major non-conventional resources; (g) an untapped capacity for exporting to Europe, which is seeking to replace its Russian imports of gas and maintaining some sources of diversification from LNG imports from the US; (h) the perception that the country benefits from a relatively favourable geopolitical context; and (i) a greater political stability than other North African producers.

(a) The slow bringing onstream of projects that have been dogged by years of delays has enabled gas production to grow and the World Bank is forecasting moderate rises in 2025 and 2026 after the slight fall of 2024. In 2023 Sonatrach announced investments of US$50 billion over the course of 2024-28 in the country's oil and gas sector, more than 70% of which is earmarked for exploration and production. Wood Mackenzie forecasts that marketed production will peak in 2027, after which it will start to *plateau*. The production increases stem above all from projects in the south-west, whether phase 1 or phase 2 projects, both severely delayed. Some phase 1 projects have proved to be highly challenging technically and their delayed exploitation has revised downwards previous estimates of recoverable reserves. Another source of output growth is the exploration of undeveloped resources, although Algeria now has few conventional gas fields left untapped.

(b) The improvements to Hassi R'Mel, the country's largest gas field and hub (accounting for approximately half of the marketed output), have underpinned production in recent years and will continue to be key over the short to medium term. As well as the improvements already implemented, Sonatrach is planning new work on compression to keep output stable up to 2030. Despite being a mature field whose decline augurs a further descent that can only be postponed, Hassi R'Mel has shown in the past a surprising capacity to respond to boosting and upgrades, meaning that its prospects for production may be being underestimated.

(c) The bilateral agreements reached with major international companies like Exxon, Chevron, Eni, Sinopec and TotalEnergies represent another potential source of investment. Their interest makes up for the withdrawal in recent years of BP, Shell,

ConocoPhillips and Petronas, diversifying Algeria's upstream market and providing new investment and technical resources.

(d) The new round of exploration and production tendering was launched in October 2024 to coincide with the North Africa Energy and Hydrogen Exhibition and Conference (NAPEC) held in Oran. It is the first such round since the 2014 licensing round, which was a resounding failure, with only four of the 31 blocks on offer being awarded. According to some analysts, this time it could be different. Although the country's geology has not changed, the regulatory circumstances are now more propitious. All six areas on offer, bar one, are located in hydrocarbon deposits that are known to be conducive to natural gas and close to existing infrastructure, making development and transport easier. In principle, five rounds will be launched, one per year until 2028, and it is expected that the next will focus on new gas projects. Algeria hopes to obtain up to 20 bcm per annum from these licences over the next five to 10 years.

(e) The regulatory environment has improved thanks to the 2019 hydrocarbon law 19-13, which replaces the highly nationalistic law of 2005, enhancing the fiscal conditions. According to Wood Mackenzie, the government shareholding in a typical gas field is set to fall from 80% to 56%-69%, while the internal rates of return could increase from 5%-10% to 19%-23%. These new conditions have increased Algeria's competitiveness in terms of attracting upstream investments, which are now more attractive than those in Egypt and Libya.

(f) The 2024 signing of two memorandums of understanding between Sonatrach and Chevron and ExxonMobil, respectively, to evaluate and develop non-conventional gas resources significantly improves the prospects for Algerian output. Chevron and ExxonMobil have deep pockets and considerable experience in shale gas, both in the US and the Argentine Vaca Muerta field, where ExxonMobil has just sold its assets. There is widespread consensus that the exploitation of non-conventional resources is the only way for Argelia to make up for the decline in conventional production and keep up export levels. According to the US EIA, Algeria has the third-largest reserves of recoverable non-conventional gas, only behind China and Argentina. In contrast to the last licensing round in 2014, when the authorities appeared unclear about what to do with their best deposits of shale gas, the new round seems to be committed to their exploitation. The terms of the 19-13 Act also incentivise such exploitation through lower royalties and taxes. The government is now aligned with the strategy of Sonatrach, which has devised a plan to offset the local opposition voiced in the past. There is a consensus among sector representatives and analysts that non-conventional gas is the driver that may enable Algeria to reposition itself in exploration and production over the long term; some also think that this time the US companies are seriously committed. From a geo-economic perspective, incorporating them into the EU-Algeria energy interdependency pattern could eventually contribute to mitigate eventual gas dominance attempts from the Trump Administration.

(g) Algeria has significant untapped export capacity at the EU's doorstep. According to the REPowerEU plan, by 2027 the EU has to replace the imports of Russian gas that

are still arriving in the form of LNG and through the Turkstream pipeline. The closure of the gas pipelines between Russia and Europe increases the strategic value of the existing connections with Algeria, Azerbaijan, Libya and Norway. The pipelines that export Norwegian gas to Germany, Belgium and Denmark are operating at close to their nominal capacity, with only the one exporting to the Netherlands having spare capacity. The Trans-Anatolian gas pipeline (TANAP), which transports Azerbaijani gas, is also operating at full capacity. The Greenstream running from Libya to Italy is operating at low capacity and is subject to significant production volatility. By contrast, Algeria boasts three gas pipelines feeding into the EU: Medgaz, connecting it to Spain, is operating at almost nominal capacity, but the MEG pipeline to Spain and Portugal is closed and the TransMed connecting it with Italy is operating well below capacity. These are in addition to its liquefaction terminals and its fleet of LNG carriers.

(h) The country's geopolitical situation is perceived to be relatively stable, more so than in recent years and in other Mediterranean producers such as Libya and Israel. Egypt has gone back to being a net gas importer and the major producers in the Persian Gulf, like Qatar, are still facing risks to shipping in the Red Sea. Although the situation in Libya and the Sahel is complex, Algerian production infrastructures are well protected and have not suffered significant attacks since the assault on the In Amenas field in 2013. Nor have the military and diplomatic tensions with Morocco been identified as a threat to the sector. The risk of the Mediterranean pipelines being damaged is much lower than in the Baltic, both because of the depths at which they are laid and because of Algeria's strategic relations with Russia (and China).

(i) Greater domestic stability is also apparent compared with the previous decade, when Bouteflika's health and the jostling to succeed him created considerable uncertainty. The domestic political environment is more predictable, the *Hirak* protest movement has been curbed and its revival seems unlikely. President Tebboune has just been re-elected for a second term and although there are rumours about his health, the political-military elite that controls the levers of power (*Le Pouvoir*) is seemingly preparing a smooth succession.

3. Algerian barriers

The domestic barriers to increased gas production and exports include: (a) the growth of domestic consumption; (b) the requirements to reinject gas into the reservoirs; (c) the systematic delays in completing projects; (d) doubts about the outcome of the new licensing round and the agreements and memorandums of understanding with international companies; (e) including the exploitation of non-conventional gas; as well as (f) some limitations on export capacity. The EU itself also poses barriers and uncertainties to Algerian gas, such as (g) the medium- to long-term difficulty of reconciling the European energy transition with Algerian gas exports; (h) the EU's environmental regulations on methane, the CBAM and the ETS; and (i) the lack of credible cooperative energy proposals over the long term that go beyond natural gas.

(a) The increase in domestic consumption continues to put pressure on exports, exceeding the latter in several recent years (see Figure 1) and growing at an annual

rate of 4% between 2014 and 2023. This year it reached 53 bcm, just over half of the marketed production according to figures from GECF. This pronounced growth in consumption contrasts with zero growth in gross production and growth of 2.7% in marketed output over the same period. The policies to restrict domestic demand for gas basically consist of reducing subsidies and developing renewables to replace domestic gas consumption and free it up for export. A reduction of subsidies has been recently implemented, but only for the industrial sector. Raising gas and electricity prices for the residential sector is ruled out because of its unpopularity, meaning that the impact of demand measures will be limited. Sonatrach will need to strike a balance between its income from exports and industrial sales, and its production costs and payments to international companies; without such a balance there will be no incentive to invest in developing new fields. The AIE estimates that demand for electricity in Algeria grew 5.4% in 2024 and forecasts 5.2% annual growth until 2027, with natural gas representing 99% of generation. In July 2024, Algeria registered a record demand, exceeding 19 GW, for an installed capacity of more than 25 GW. Thanks to improvements in the network and the new Mostaganem power station, Algeria is now able to manage its growing demand. Although the country has a renewable energy generation target of 15 GW by 2035, the current capacity is below 600 MW, around 450MW of solar power and barely 10 MW of wind power. The government's target is to reach 22 GW of installed renewable capacity and 27% of renewable generation by 2030. While this is unlikely to be achieved, a significant growth in photovoltaic solar power, which could reach 9 GW by then, cannot be ruled out. The deployment of renewables will in any event be a slow process in which Algeria may benefit from European backing; but also with the involvement of China, as made evident in recent years.

(b) Reinjection requirements constitute an additional barrier to increasing the volumes of marketed gas. One of the indirect vectors of growth has been the limits placed on the production of oil by OPEC+, which have reduced the reinjections of gas into crude oil wells. Up until 2020, Algeria reinjected between 30% and 40% of its gross gas output to produce oil but, following the restrictions imposed by OPEC+, the reinjection rate fell to 25%. If recent OPEC+ announcements to withdraw its production restrictions are confirmed, Algeria might increase its reinjection rates again. However, some observers doubt whether the country could increase its production of crude oil in the short term in any substantial way.

(c) The repeated delays incurred by the phase 1 projects in the south-west and the difficulties that have arisen in extraction may re-arise in phase 2, meaning that output may suffer, bringing forward and accelerating its decline. The new projects for extracting undeveloped resources are marginal discoveries that are becoming increasingly small and technically complex, where output and profitability will be inferior to the large fields already on stream. Together with the projects underway, the new developments may maintain the level of marketed production into the early 2030s, but not beyond. To reverse the decline in production over the long term, Algeria needs to develop other resources.

(d) Doubts persist about the result of the new licensing rounds and the sealing of bilateral deals. Despite the improvements in the fiscal terms, the new 19-13 law retains the

49/51 principle that keeps 51% of the projects under Sonatrach ownership. This lack of control over the projects is highly criticised by the international companies, which ask for greater room for manoeuvre. The coexistence of the bilateral path with the licensing rounds entails competition between the two: if the companies believe they can secure better conditions in their bilateral agreements, they may not bid in the rounds or do so half-heartedly. There are also doubts about how many of the agreements and memorandums of understanding signed with the international companies will materialise in contracts and final investment decisions, and under what conditions. Exxon, Chevron, Eni, Sinopec and TotalEnergies possess undeniable technical and investing prowess, but it will be important to diversify the portfolio of the country's upstream operators. Other memorandums of understanding have a political nature and do not add anything to Algerian gas production nor exports, such as those signed with Venezuela's PDVSA and Bolivia's YPFB.

(e) The agreements with Chevron and ExxonMobil to develop non-conventional resources present a more uncertain future. Their extraction is highly complex in technical terms, highly intensive in capital and requires great investment and logistical flexibility. There are countless obstacles to its extraction in Algeria: a geology where fracking has never been tried, substantial costs, water scarcity, public opposition, limits in the supply chain and an inefficient, slow and rigid bureaucracy. It is likely that the companies will try to negotiate favourable contractual, fiscal and logistical-administrative conditions that may raise hackles in more nationalist quarters. Even if the agreements bear fruit, rapid and wide-scale development as in the US is unrealistic. A closer model might be Argentina, where production of shale gas at Vaca Muerta was at one point ruled out owing to similar logistical, regulatory and bureaucratic hurdles. Their removal has boosted production and proves that they are not insurmountable. The major difference is the conditions under which private companies operate, so they are therefore likely to ask for improvements in shareholding conditions (the 49/51 principle), a streamlined framework for the logistics of equipment supply (customs, a free-trade zone), as well as a competitive export market. Attracting smaller and more dynamic companies would involve an additional commitment to transparency and contractual improvements that are hard to foresee. In the best-case scenario, Algeria might be able to obtain its first non-conventional gas in the next decade, in time to offset the decline of its conventional fields. Some observers argue that its potential will not be confirmed until some two years after the start of the exploration and production activities.

(f) Despite having spare capacity in the TransMed and in its liquefaction plants, the state of the latter and the closure of the MEG limit Algeria's ability to increase and diversify gas exports. The MEG operates in a reverse Spain-Morocco flow and the Medgaz is almost at full capacity. When the scheduled maintenance works on Medgaz temporarily reduced its flow in September 2024, gas prices in Spain rose significantly; however, some market participants believe that it did not have a major effect on Spanish gas prices and the increase took place in the context of a rising market. The bilateral tensions with Morocco make a reopening of the MEG unlikely, so that this corridor and the flexibility if offers seem to be lost for geopolitical reasons. Sonatrach has four liquefaction plants in operation and seven medium-sized LNG carriers of its own. Three of the plants are in Arzew and the fourth is in Skikda,

recently overhauled by Sinopec but with recurring technical problems that prevent it from operating at full capacity. These capabilities are considerable for supplying the European and Turkish LNG markets, but it is not clear that they would be able to bear a significant increase in exports to Asia. It seems likely that the European markets will continue to absorb the bulk of Algerian LNG.

(g) From a European perspective it is difficult to reconcile the energy transition over the medium and long term with imports of Algerian gas. The EU's decarbonisation strategy requires reducing the greenhouse gas emissions from natural gas consumption. The REPowerEU plan envisages faster declines in the demand for natural gas and its replacement by renewables, as well as a greater role for alternative suppliers to Russia, such as Norway and Azerbaijan via gas pipelines. Although Algeria features among the suppliers courted by the EU, REPowerEU does not include an increase in its supplies, precisely because of the uncertainties surrounding its gas production and exports. The fall in European gas demand generates demand security concerns in Algeria (the security that Europe will continue demanding Algerian gas), but for now its strategy of diversification towards more dynamic markets in Asia faces restrictions. Long-term demand security is important for a country that has to launch major exploratory licensing rounds of conventional and non-conventional resources, the fruits of which will only materialise over the medium to long term.

(h) EU regulations on methane emissions, the ETS and the CBAM create new barriers to the access of Algerian gas to the European markets.[4] EU methane regulations, addressing the natural gas supply chain emissions and penalising them from 2030, is the probably the greatest barrier to Algerian gas. Natural gas is also affected by the EU's recent application of the ETS to the maritime sector. The ETS2, scheduled for 2027, will include emissions released by buildings and small industries and is also perceived by Algeria as a threat to its gas in the EU. The CBAM already affects its exports of fertilisers, cement and steel, and it would affect the exports of electricity being proposed by Algeria. The barriers in question are not only economic in nature, but also hurdles in terms of monitoring, reporting and verification (MRV) for European importers but, above all, for Sonatrach itself.

(i) The lack of credible, transformative and cooperative proposals that go beyond natural gas. The necessity has been highlighted for a new Euro-Mediterranean energy and climate roadmap based on the diversification of European gas imports from Russia, but also on decarbonisation and climate action. Algeria is a natural partner for this diversification, but it is asking the EU for a gradual timetable to reduce its carbon footprint and cooperation in its climate initiatives, both in terms of mitigation and adaptation. In parallel, it is trying to diversify its positioning towards new vectors of energy interdependence with the EU, such as electricity, hydrogen and decarbonised industry. With minor exceptions, European support for decarbonisation in Algeria has been restricted to fostering renewables and adapting to the new regulations.

[4] See Mostefa Ouki (2024), 'Market and regulatory headwinds build for MENA gas exporters to Europe', *OIES Paper*, NG 194, October.

4. Implications for the EU

The latter three barriers entail direct implications for the EU: offering Algeria secure prospects of European gas demand as a natural EU strategic partner, cooperating to enable the country to comply with the new environmental barriers and offering credible proposals to transform its gas sector over the medium term and its energy sector in the longer run.

The first implication is that Algeria is a natural and increasingly strategic partner for the EU's natural gas markets: in 2024 it was the EU's fourth-largest supplier, accounting for almost 15% of its imports (11.1% arriving through pipelines and 3.8% in the form of LNG), surpassed only by Norway (almost 32%, all via pipelines), Russia (almost 19%, pipelines and LNG combined) and the US (18%, LNG), and a long way ahead of Azerbaijan (4.6%, pipeline) and Qatar (3.9%, LNG). The closure of the Ukrainian corridor at the end of 2024 accelerated Europe's decoupling from Russian gas following the closure of the Yamal and Nord Stream I and II pipelines. The only operating pipeline is now Turkstream, which runs through the Black Sea and Turkey to Bulgaria, Serbia and Hungary (around 16 bcm per year). There is an additional 20 bcm in European imports from Russia as LNG. The REPowerEU plan envisages the non-binding cessation of all these flows by 2027. Pressures to include gas in the new EU sanctions against Russia have increased, but an announcement from the Commission was recently postponed under pressure from some member States and increased geopolitical volatility regarding US-Russian negotiations on Ukraine.

The successive closures of the Russian pipelines have reduced the flexibility of the European natural gas market. The pipelines constitute a source of continuous supply, based on long-term contracts that lend flexibility to the system and reduce storage needs. Three distinct types of flexibility in the gas market are often mentioned: supply, intermediate or midstream and demand flexibility, and Algeria contributes to at least the first two. Algeria offers relatively positive prospects of maintaining its production capacity for export in the coming years and has spare export capacity via pipelines and, with certain limitations, in LNG, which give flexibility to the European midstream. Moreover, the EU's gas demand is complementary to Algeria's, which contrary to Europe has demand peaks in summer and valleys in winter.

The combination of pipelines with spare capacity and LNG place Algeria in a good position in the European markets. The loss of Russian gas and the fear of excessive dependency on US LNG enhances the strategic value of Algerian gas. Its geographical proximity offers comparative advantages over its competitors in the US, the Persian Gulf and West Africa. It is important to convey to Algeria that the EU recognises this reality and its status as a natural strategic partner, one that will not be affected by any future US demands for the EU to increase its LNG imports or by a U-turn on the European decoupling from Russian gas; that it will continue buying its gas over the course of the next decade, even though total imports and from other suppliers may fall; and that the decarbonisation of the European electricity sector will continue needing Algerian gas to provide it with the flexibility (gas peakers) that a deep penetration of renewables requires.

The Mediterranean Member States need to make the Commission understand that the supplies and long-term contracts agreed with Algeria, some of which are due for renewal

in the coming decade, are key to the stability of their markets. This position is aligned with the Draghi Report, which emphasises the need to sign long-term gas agreements with strategic partners. Some observers also see opportunities for Algeria in terms of offering new energy services that lend flexibility to EU markets, specifically the storage of gas as a means of addressing the European winter.

The second implication is that the EU needs to accompany Algeria to comply with the new and future European environmental measures. The regulation approved by the EU in 2024 aimed at reducing methane emissions in the European energy sector and its global supply chains is likely to be the one that most affects Algerian gas exports. It will require European importers to provide detailed information about the emissions of their foreign sources of natural gas and will penalise breaches of the regulations involving the intensity of methane emissions.[5] Although it will not be applied in full until 2030 and the speed with which each Member State will apply it remains unclear, compliance represents a challenge for Algeria.

The regulations also affect the Member States: importers of Algerian oil and gas such as Spain, France, Greece and Italy are among the EU countries with the highest intensity of methane emissions (and other greenhouse gases, GHGs) in their energy imports and it is in their interest to reduce them. Environmental and technical cooperation in this area has significant potential, particularly the application of new technologies and equipment for identifying, avoiding and preventing fugitive emissions.

Regarding the EU's Emissions Trading System (ETS), it incorporated maritime transport in 2024, also adding to CO_2 another two GHGs, methane and nitrous oxide. Although this increases the cost of shipping LNG from Algeria to the EU, its proximity to the European Mediterranean terminals affects it less than more distant suppliers. The carbon border adjustment mechanism (CBAM) will also affect Algeria, by encompassing products that use natural gas when they are manufactured; for example, nitrogenous fertilisers, of which it is one of the largest exporters to the EU. The 2024 directive on renewable gas, natural gas and hydrogen also introduces restrictions on future long-term natural gas contracts that do not include carbon capture, utilisation and storage (CCUS) abatement measures.

These barriers also give comparative advantages for accessing the European market to those countries that are most advanced in reducing GHG emissions and to those that can show the carbon footprint of imports is lower, in line with the greenshoring strategy pursued by the EU. Proximity works in favour of Algeria, but not the high intensity of its GHG emissions, the marginal role of renewables, the absence of operational CCUS projects, the unpreparedness of its liquefaction terminals and its high levels of flaring (the burning of non-recoverable gas), among other factors.

The problems Algeria faces in decarbonising its energy sector with renewables have already been described. There is a consensus that the EU should support renewable deployment in Algeria to cooperate with the country's energy transition, thereby also

[5] Kim Talus, Gunnar Steck & James Atkin (2024), 'EU methane regulation and its impact on LNG imports', *The Journal of World Energy Law & Business*, https://doi.org/10.1093/jwelb/jwae022.

releasing gas for export. With regard to CCUS, and despite this technology being in the country's strategic interest, it continues to be an untried technology in Algeria. The country had a CCUS project that had to close and there is a new one at the research stage with Equinor, but it does not have any plants in operation. Various representatives of the European gas sector believe that the EU should keep the CCUS pathway flexibly open to exports of Algerian gas, which under the new regulations should make headway on emissions abatement. Emphasis has also been placed on the opportunities for cooperation with the EU involving Algeria's large potential capabilities for CO_2 storage thanks to its gas fields and infrastructure. According to some market participants, supporting a major upgrade of carbon capture (for example, for blue hydrogen) on the part of the EU could be important for Algeria's development as a supplier of decarbonised gas.

As far as LNG is concerned, unlike their Qatari and US counterparts, the Algerian terminals were built many years ago, are more intensive in emissions and are not as well prepared to reduce them. Notwithstanding this, both the US and Qatar have opposed EU methane regulations, threatening not to comply with them. Nevertheless, the improvement and modernisation of Algerian liquefaction facilities are another driver of gas cooperation with the EU. The same goes for the reduction in flaring. Despite Sonatrach's recent gas recovery projects, according to the World Bank Algeria was the sixth-largest burner of gas in the world in 2023. As with venting, the lower level of gas burning in recent years is also explained by lower oil production and may resume as the latter increases. Strengthening the projects to reduce venting and flaring would be a threefold contribution to the reduction in emissions and increasing gas marketed production and exports.

Lastly, the EU should offer Algeria credible proposals for transforming its gas sector over the medium term and its energy sector over the longer run. This requires a pact between equals that coordinates the expectations of both. Just as the EU needs a strategic partner in natural gas, Algeria needs a strategic companion for the energy transition. In 2021 the European Commission unveiled its strategy titled *A New Agenda for the Mediterranean*, firmly rooted in the foreign dimension of the European Green Deal and with little traction in the face of the subsequent European gas crisis. In her new Commission, President von der Leyen has tasked the new Croatian Commissioner for the Mediterranean, Dubravka Šuica, with negotiating a Mediterranean Pact that includes a Trans-Mediterranean energy and clean-tech cooperation initiative, although the bulk of her mission letter refers to cutting down on immigration.

The criticism has been made that this new focus on the Mediterranean is highly limited by the EU's geopolitical interests, essentially immigration and energy, and that it takes a bilateral rather than regional approach. However, it should represent an opportunity that enables the EU to be receptive to some of the energy demands of Algeria in addition to natural gas. Included among these is that of diversifying its energy interdependence with the EU and projecting it into the future with exchanges of electricity and hydrogen. The ELMED project, a Tunisia-Italy electricity interconnector, has been declared an important project of common European interest, and Algeria has hopes of connecting to it. An electrical interconnection with Spain is another Algerian aspiration, which the EU should

at least consider, as Spain is already doing with the proposal for a third Spain-Morocco interconnection.

It should be made clear, however, that future European imports of electricity will be subject to CBAM, meaning that exports of gas-generated electricity will pose the same problems as natural gas itself. Concerning renewable electricity generation and decarbonised hydrogen, the European approach should first favour the decarbonisation of the Algerian industry itself (starting with its energy sector), subsequently making gradual progress towards the deployment of a portfolio of decarbonised technologies, ranging from CCUS to solar energy. The EU should avoid raising irrational expectations about the short-term potential of importing renewable electricity and hydrogen, but it should, however, include them in a revamping of Euro-mediterranean energy cooperation over the long term.

The EU and its Member States should explain to their Algerian counterparts their strategic vision for Algeria's energy role and the shared opportunities that exist, sending a clear message of political commitment. To this end they should increase the frequency of joint official and business visits and energy industry meetings, while also encouraging the creation of new and broader spaces of conversation, as some Member States like Italy are already doing.

Conclusions

In recent years the growth in Algeria's gas production and exports has surprised the market. The new licensing rounds, under less fiscally restrictive legislation, may maintain the trend and trigger the possible development of the country's non-conventional gas. Meanwhile, the accelerated reduction in European imports of Russian gas and the risks implicit in the new Trump Administration's policy of energy dominance have increased the strategic importance of Algeria for a European gas market that has lost significant flexibility. Other positive developments for Algeria are the completion of delayed projects and the exploitation of undeveloped resources, the improvements to the Hassi R'Mel field, the agreements with international companies, the interest shown by Chevron and Exxon in Algerian non-conventional resources and significant pipeline spare capacity for exports. In addition to these energy factors is the perception that the country now benefits from a comparatively favourable geopolitical and domestic political context.

However, to the traditional domestic barriers afflicting Algerian gas production adds the European energy transition and its related environmental regulations. Prominent among the former are the growth of domestic consumption, high rates of gas reinjection, repeated delays in completing increasingly complex projects and doubts about the results of the new licensing round and the memoranda of understanding with international companies, including those referring to non-conventional gas, as well as certain limits on its LNG-exporting capabilities and the closure of the MEG. The main European barriers from the Algerian perspective are the EU's reluctance to offer a guaranteed demand for gas during its energy transition, the environmental regulations on methane, the CBAM and the ETS, and the lack of any long-term credible energy interdependence proposal beyond natural gas.

The EU and its Member States should work with Algeria to strengthen the drivers underpinning its gas exports to Europe and to help the country overcome the barriers it faces. To this end, they should respond to Algerian preferences, offering clear gas demand prospects, cooperating with the country to comply with the new environmental regulations and devising credible proposals for gradually transforming its energy sector. The EU should undertake to ensure that Algerian gas exports will be unaffected by the new US policy of energy (LNG) dominance, excluding any discriminatory treatment regarding complying with methane emissions' regulations, or by a U-turn on the European decoupling from Russian gas. Such a vision needs to be expressed in the form of a political commitment and explained to the Algerian authorities and the country's energy sector, encouraging official and business visits at the highest level, fostering sectoral encounters and creating new forums for strategic dialogue.