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Gas Crisis in Europe: A Harbinger of Sustainable Cooperation with North Africa

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ABSTRACT

Europe's natural gas system experienced unprecedented stress following Russia's invasion of Ukraine. Since the outbreak of the war, the European Union has strived to secure alternative supplies, fill its gas storage facilities and reduce consumption. Success on these fronts was enabled by fundamental market changes that the bloc unlocked during a long period of low gas prices over the past two decades, in addition to emergency and diplomatic initiatives launched by the European Commission to seek alternative energy supplies. North Africa stood out as a key partner to secure additional volumes, owing to its geographic proximity, existing pipeline interconnections and natural resources. In this regard, the energy crisis has served as a catalyst to re-launch EU–North Africa cooperation, with natural gas – recognised as a transition fuel – set to play an important role well into the future. More needs to be done in the region in terms of efficiency, declining domestic demand and improved green energy resources, however, if the full potential of this opportunity is to be achieved. A revived EU–North Africa relationship, based on genuine and equal footing, could help resolve future energy predicaments, while generating growth, high-value jobs and spurring innovation.

keywords

European Union | Energy supply | Natural gas | North Africa | Algeria | Egypt | Libya | Mediterranean

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Gas Crisis in Europe: A Harbinger of Sustainable Cooperation with North Africa

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Introduction

The 2020 Covid-19 pandemic reduced demand for fossil fuels worldwide. Energy commodity prices plummeted, with *The Economist* even predicting an end of the oil age and the rise of a "new energy order".[1] Yet by mid-2021, energy prices started picking up again as the world economy recovered. At the time, Russia was suspected of manipulating European natural gas markets by substantially reducing exports and not refilling Gazprom-owned storage sites.[2] Tensions escalated and war eventually broke out on 24 February 2022, as Russia invaded Ukraine. The EU banned Russian coal imports beginning April 2022, followed by a partial embargo on crude oil and oil products staring in December 2022. The conflict, combined with fears of a Russian interruption of hydrocarbon exports to Europe (especially natural gas) threatened energy security in Europe and exacerbated price spikes. European gas prices reached historic highs.[3]

[1] Economist, "Is It the End of the Oil Age?", in *The Economist*, 17 September 2020, https://www.economist.com/leaders/2020/09/17/is-it-the-end-of-the-oil-age.

[2] Gazprom accounts for 7 per cent of EU storage facilities and did not fill its storage facilities before winter 2022. See Gabriel Di Bella et al., "Natural Gas in Europe: The Potential Impact of Disruptions to Supply", in *IMF Working Papers*, No. 22/145 (July 2022), p. 11-12, https://www.imf.org/en/Publications/WP/Issues/2022/07/18/Natural-Gas-in-Europe-The-Potential-Impact-of-Disruptions-to-Supply-520934.

[3] As of August 2022, more than 400 per cent up compared to 2021 average prices, and more than 1,400 per cent up compared to 2019 average prices. See World Bank, *Commodities Price Data (The Pink Sheet)*, December 2022, https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Pink-Sheet-December-2022.pdf.

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The EU uses natural gas for power generation, heating and as a vital input in various industries. The EU consumed about 400 billion cubic metres (bcm) of natural in 2021 which represents 24 per cent of the primary energy mix and about the same share of the EU's electricity mix.[4] The EU relies heavily on imports to meet its gas needs reaching 89 per cent in 2021.[5] Russian imports accounted for 42 per cent of the EU's total imports (132.3 bcm by pipeline and 17.3 bcm in the form of liquefied natural gas – LNG), followed by Norway (23 per cent), Algeria (12 per cent), the United States (6 per cent), Qatar (5 per cent), Nigeria (3 per cent), Azerbaijan (2 per cent), Libya (1 per cent) and Trinidad (1 per cent).[6]

Table 5 | EU natural gas imports by source

	Pipeline (bcm)	LNG (bcm)	Total imports (bcm)	Share of total imports (%)
North America				
US	-	22.4	22.4	6
Latin America				
Peru	-	0.5	0.5	0
Trinidad	-	2.1	2.1	1
Other Americas	-	0.1	0.1	0
Europe				
Norway	80.9	0.2	81.1	23
Other Europe	11.2	0.6	11.8	3
Eurasia				
Russia	132.3	14.3	146.6	42
Azerbaijan	8.2	0	8.2	2
Middle East				
Qatar	-	16.3	16.3	5
Africa				
Algeria	34.1	8.6	42.7	12
Angola	-	0.8	0.8	0
Egypt	-	1.3	1.3	0
Nigeria	-	11.5	11.5	3
Libya	3.1	0	3.1	1
Total imports	**269.8**	**78.7**	**348.5**	

Source: BP, *Statistical Review of World Energy 2022*, cit.

[4] BP, *Statistical Review of World Energy 2022. The EU Energy System in 2021*, June 2022, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-eu-insights.pdf.

[5] Ibid.

[6] BP, *Statistical Review of World Energy 2022*, June 2022, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf.

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Numerous EU member states are heavily dependent on Russian pipeline gas, a circumstance notably applicable to Eastern European countries such as Latvia, Czechia, Finland, Hungary and Estonia, although with different shares of gas in their energy mixes. Germany and Italy are characterised by their considerable gas requirements with significant dependencies on Russian gas. Germany's gas demand in 2021 reached 90.5 bcm and imported more than half,[7] 55 bcm, from Russia via NS1 (a third of the EU's overall pipeline flows from Russia in 2021). Italy also relies on Russia to meet close to half of its gas requirements, 29 bcm out of a total demand of 73 bcm in 2021.[8]

In September 2022, Russia's state-owned gas giant Gazprom announced the indefinite interruption of gas flows through the Nord Stream 1 (NS1) pipeline, critical for supplying the European market, citing turbine failure. This development was widely described as an effort by Russia to end European sanctions, as it followed an announcement by G7 finance ministers to put a price cap on Russian oil. European Commission president Ursula von der Leyen confirmed that sanctions against Russia would not be relaxed, however. Sanctions are not yet applied on gas, but von der Leyen reaffirmed that Europe had to take the costly decision to reduce its reliance on all Russian fossil fuels. Additionally, several underwater explosions destroyed parts of the NS1 twin pipelines and a section of Nord Stream 2 (NS2). This watershed event reinforced the view that an urgent reassessment and reconfiguration of Europe's gas system and supply landscape was indeed vital.

This series of events compelled Europe to seek alternative sources of natural gas, leading to a renewed focus on North Africa and its potential as a possible supply buffer for Europe. This situation presented an opportunity to relaunch Euro-Mediterranean cooperation. However, it is important to acknowledge that North Africa alone cannot meet all of Europe's gas requirements. Moreover, as the global community propels towards achieving net-zero emissions, the imperative of embracing green energy and harnessing the potential of green hydrogen becomes increasingly urgent. Despite numerous challenges, tapping into North Africa's gas reserves and advancing renewable energy sources can promote enhanced sustainable cooperation between Europe and its southern neighbours.

1. Russian gas cut-offs and the EU's emergency responses

The EU worked since 2009 to fundamentally change the structure of its gas market. It succeeded in the creation of a flexible, liberalised EU gas market, adopting many measures to increase its resilience by opening new supply routes, deploying liquid gas hubs, developing storage facilities and infrastructure and heavily investing in interconnections, making the system efficient in dispatching gas across the

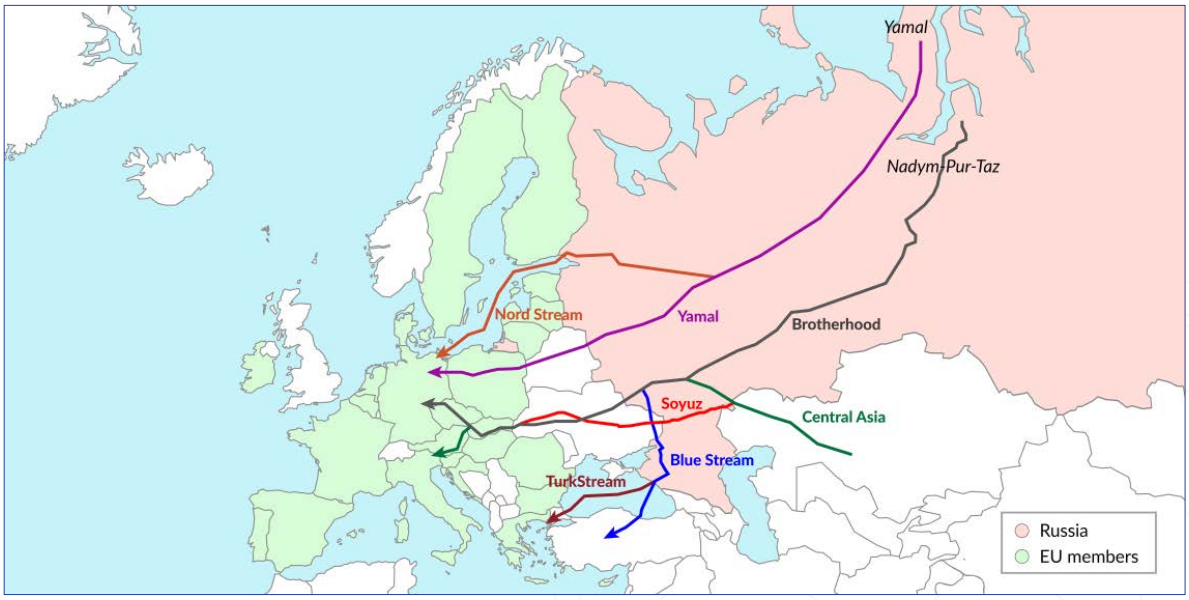
[7] Ibid.

[8] See Italian Regulatory Authority for Energy, Networks and Environment (ARERA) website: *Dati statistici*, https://www.arera.it/it/dati/elenco_dati.htm.

continent. Additionally, as a reaction to single players seeking to take advantage of a dominant position like Russia, EU policymakers encouraged spot and LNG trading and discouraged long-term contracts to bring more flexibility and to allow customers to benefit from reduced prices when available. These policies were also aimed at avoiding being locked into using fossil fuels for years ahead, since the EU aspires to achieve net-zero emissions by 2050. Finally, EU regulations also establish a solidarity mechanism for the provision of solidarity gas in extreme crises. Agreements contain the necessary technical, legal and financial arrangements for practical implementation.[9]

Nevertheless, a notable vulnerability within the EU persisted in its excessive dependence on Russia, particularly accentuated by the twin pipelines of NS1 and NS2 pipelines (27.5 bcm capacity each, totalling 110 bcm/y).[10] The potential realisation of NS2 would have exacerbated this predicament, consolidating more than 50 per cent of Russian gas to Europe into one transportation corridor. Such a scenario would have further deepened the entrenchment of this reliance, perpetuating an unsettling concentration of supply channels.

Figure 1 | Key Russian gas pipelines to Europe



Note: Russian gas flows into Europe were predominantly facilitated by NS1 pipeline flowing under the Baltic sea to Germany, Yamal via Belarus and Poland to Germany, Southern Druzhba (Brotherhood) transiting Ukraine to Germany and Italy, Blue Stream and Turkstream under the Black Sea to Turkey.
Source: Carole Nakhle, "Europe and Russia without Nord Stream", in *GIS Reports*, 23 December 2022, https://www.gisreportsonline.com/?p=43040.

[9] European Commission website: *Secure Gas Supplies*, https://energy.ec.europa.eu/node/5406_en.

[10] Martin Russell, "The Nord Stream 2 Pipeline. Economic, Environmental and Geopolitical Issues", in *EPRS Briefings*, July 2021, https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2021)690705.

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Following Russia's invasion of Ukraine, Germany froze NS2.[11] As the war deepened, the flows through NS1 and Yamal started declining until their eventual interruption.[12] The Ukraine transit which passes through Slovakia, Austria and Italy, also witnessed a stark reduction in flows and was running at a third of its capacity in 2022 compared to 2021 and further declined in 2023.[13] Turkstream, encompassing the transit to Bulgaria, Serbia and Hungary, maintained its operational capacity.[14] Overall, pipeline gas imports from Russia fell by four-fifths while Russian LNG supplies to the EU increased.[15]

As a result, the EU and EU member states undertook quick emergency responses that were facilitated by existing infrastructure and policies highlighted above. Quick fixes fell under three main categories, namely demand and supply side measures in addition to the activation of solidarity agreements. Longer-term and structural solutions included accelerating the roll-out of renewable energies by adopting the RepowerEU programme published in March 2022, heavily developing interconnection capacity (ex. the new Baltic import route from Norway to Denmark and to Poland); and investing in new floating storage regasification unit (FSRU) terminals (mostly in Germany, the Netherlands, Finland and Italy).

1.1 The EU's emergency demand side measures and solidarity agreements

On the consumption side, the European Commission adopted a regulation on a voluntary reduction of natural gas demand by 15 per cent compared to average consumption in the past five years, between 1 August 2022 and 31 March 2023.[16] This voluntary measure has been extended for one year on 28 March 2023.[17] On average, gas consumption at EU-27 level was down by 12 per cent in 2022 compared to 2019–2021 with regional, country-level and sectoral disparities: gas consumption was cut more dramatically in countries closest to Russia, including Finland (-48 per cent) and the Baltics (Estonia -22 per cent, Latvia -27 per cent and Lithuania -29 per cent). Most savings were realised at the level of households and industry (-15 per cent) due to warmer weather, however, hardly any gas was saved

[11] Sarah Marsh and Madeline Chambers, "Germany Freezes Nord Stream 2 Gas Project as Ukraine Crisis Deepens", in *Reuters*, 22 February 2022, https://www.reuters.com/business/energy/germanys-scholz-halts-nord-stream-2-certification-2022-02-22.

[12] Ben McWilliams and Georg Zachmann, "European Natural Gas Demand Tracker", in *Bruegel Datasets*, last update 8 August 2023, https://www.bruegel.org/node/8346.

[13] Ibid.

[14] Ibid.

[15] Ben McWilliams et al., "The EU Can Manage without Russian Liquified Natural Gas", in *Bruegel Policy Briefs*, No. 16/23 (June 2023), https://www.bruegel.org/node/9197.

[16] Spain and Portugal are exempt from mandatory gas reductions as they would not be able to free up significant volumes of pipeline gas to the benefit of other member states. See Council of the European Union, *Council Adopts Regulation on Reducing Gas Demand by 15% this Winter*, 5 August 2022, https://www.europa.eu/!fmbcgg.

[17] Council of the European Union, *Member States Agree to Extend Voluntary 15% Gas Demand Reduction Target*, 28 March 2023, https://europa.eu/!BVxbrq.

in the power sector (-2 per cent), due to weak nuclear and hydropower output.[18]

EU countries also put in practice and ramped up gas solidarity agreements[19] which guarantee commitments to keep cross-border flows going, and in the direction most needed. An example of this is when gas used to exclusively flow from Germany to France. This was due to regulatory obstacles, such as the French pipeline system odorising natural gas while the German transmission pipelines did not accept odorised gas, which hindered gas flows from France to Germany. Nevertheless, France[20] successfully supplied gas directly to Germany for the first time on 13 October 2022 in exchange for electricity flow in the other direction.[21]

1.2 The EU's emergency storage and supply diversification strategy

Storage levels were particularly low in 2021 compared to the average. The big deficits were in Gazprom-owned facilities, dragging down the aggregate European average fill levels. In April 2022, the German energy regulator took operational control over Gazprom Germania.[22] Despite this setback, gas storage across Europe continued to be replenished and EU gas storage levels were at 90 per cent of capacity – above the EU target of 80 per cent set for November – one month ahead of schedule.[23]

With the success of demand and storage measures, the remaining supply shortfall was made up by additional inflows either domestically, from gas exporting partners through bilateral deals or through the EU Energy Platform introduced in April 2022.[24] By pooling demand and resources, the EU Energy Platform facilitated the signature of memoranda of understanding (MoU) with Azerbaijan and the US. Azerbaijan increased deliveries of natural gas to the EU from 8.1 bcm in 2021 to 12 bcm in 2022 and will double the capacity of the Southern Gas Corridor to at least 20 bcm annually as of 2027.[25] New US LNG supplies envisioned an additional 15 bcm/y in 2022 and a minimum of 50 bcm/y starting 2023 until at least 2030.[26] EU

[18] Ben McWilliams and Georg Zachmann, "European Natural Gas Demand Tracker", cit.

[19] See European Commission website: *Secure Gas Supplies*, cit.

[20] France sources its gas from Norway (43 per cent), Russia (23 per cent but supplies stopped in September 2022), the Netherlands (10 per cent), Algeria (8 per cent), Nigeria (10 per cent), others (5 per cent) and receives LNG shipments from multiple terminals. See International Energy Agency (IEA), *France Natural Gas Security Policy*, 30 June 2022, https://www.iea.org/articles/france-natural-gas-security-policy.

[21] Liz Alderman, "France Sends Gas to Germany to Offset Russia Supply Cuts", in *The New York Times*, 13 October 2023, https://www.nytimes.com/2022/10/13/business/france-sends-gas-to-germany.html.

[22] Gabriel Di Bella et al., "Natural Gas in Europe: The Potential Impact of Disruptions to Supply", cit.

[23] See ENTSOG gas storage data: https://gasdashboard.entsog.eu/#map-storage.

[24] European Commission website: *EU Energy Platform*, https://energy.ec.europa.eu/node/5060_en.

[25] European Commission, *EU and Azerbaijan Enhance Bilateral Relations, Including Energy Cooperation*, 18 July 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4550.

[26] White House, *Joint Statement on U.S.-EU Task Force on Energy Security*, 3 April 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/03/joint-statement-on-u-s-eu-

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members states also committed to increase their domestic production, Denmark by 2.8 bcm/y starting 2024, Greece by 1 bcm/y starting the first half of 2023, Hungary by 0.5 bcm/y starting 2023, Italy by 2 bcm/y starting 2024 and Romania by 1 bcm/y starting 2022.[27]

Finally, several bilateral deals were signed between EU member states and various suppliers, starting between 2022 and 2027. New gas volumes were guaranteed from Algeria (9 bcm/y to Italy and 0.03 bcm/y to Slovenia), Angola (1.5 bcm/y to Italy), Australia (2.6 bcm/y to Germany), Congo (4.5 bcm/y to Italy), Egypt (3 bcm/y to Italy), Norway (0.2 bcm/y to Estonia and 2.4 bcm/y to Poland), Qatar (2.8 bcm/y to Germany) and the UAE (0.1 bcm/y to Germany). Meanwhile, other bilateral US deals ensured 22.7 bcm/y to various EU member states and the UK, while Russia continued to provide 0.7 bcm/y to Hungary.[28]

Italy emerged as the primary beneficiary, acquiring substantial gas volumes within the framework of these agreements (18 bcm/y) within a timeframe spanning 2022 to 2024.[29] This surge in supply was crucial in compensating for the decline in Russian gas imports, which plummeted from 40 per cent of Italy's gas imports in 2021 to approximately 16 per cent in 2022.[30] Italy's advantage in this situation was reinforced by its diversified gas infrastructure, characterised by six pipeline entry points and three LNG regasification terminals with total nameplate capacity of 15 bcm/yr.[31] Pipelines connections with Algeria provided half those additional volumes. On the other hand, Germany experienced a notable loss of 55 bcm that were previously flowing through NS1. It gained 12.5 bcm of gas supplies from the new agreements, with 94 per cent of those volumes delivered starting 2026, thus representing a future gain for Germany as it relied almost exclusively on pipelines to meet its demand.[32]

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[27] Giovanni Sgaravatti, Simone Tagliapietra and Cecilia Trasi, "National Energy Policy Responses to the Energy Crisis", in *Bruegel Datasets*, last update 15 December 2022, https://www.bruegel.org/node/8375.

[28] Ibid.

[29] Ibid.

[30] Federica Saini Fasanotti, "Libya Exposes Italy's Hurdles in Mediterranean Energy", in *GIS Reports*, 2 March 2023, https://www.gisreportsonline.com/?p=44718.

[31] Tarvisio (Austria), Mazara del Vallo (Transmed pipeline from Algeria), Gries Pass interconnecion (can be used to import gas originating in north-west Europe from Switzerland), Gela (from Libya via the sub-sea Greenstream pipeline), Melendugno interconnection (facilitates Azeri gas imports via the Trans Adriatic Pipeline) and Gorizia interconnection (with Slovenia – rarely used for imports). See IEA, *Italy Natural Gas Security Policy*, 18 October 2022, https://www.iea.org/articles/italy-natural-gas-security-policy.

[32] German Ministry of Economic Affairs and Climate Change (BMWK) website: *Natural Gas Supply in Germany*, https://www.bmwk.de/Redaktion/EN/Artikel/Energy/gas-natural-gas-supply-in-germany.html.

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2. North Africa: A strategic hub for gas cooperation

In 2021, about 15 per cent of the EU's gas imports (55.2 bcm) were supplied by Algeria, Egypt and Libya. The gas crisis in Europe was the catalyst of further cooperation in the gas sector. These recently inked agreements underscore Italy's pivotal position as a historical and future energy ally of North African states as well as the region's vulnerability in an uncertain world.

Algeria

Algeria is the third largest supplier of natural gas to Europe. Algerian gas exports to the EU in 2021 amounted to 42.7 bcm, 34.1 bcm by pipelines – via Medgaz to Spain and the Transmed which sees gas flow to Italy via Tunisia and Sicily – and 8.6 bcm via LNG.

Italian Prime Minister Giorgia Meloni's first visit to Africa in January 2023 was to Algiers, accompanied by Eni head Claudio Descalzi. They stroke deals for additional gas volumes of 4 bcm in 2022 and a further 5 bcm between 2023–2024 worth 4 billion euro.[33] Algeria thus surpassed Russia as Italy's leading gas supplier in 2022.[34] Eni's exploration and production activities in Algeria were also accelerated culminating in significant quantities of oil and gas for export towards the old continent and billions of dollars of foreign direct investments towards Alegria.[35]

However, while its supplies to Italy increased, Algeria's gas exports to Spain decreased by 40 per cent from 2021 to 2022,[36] matching the Maghreb Europe gas pipeline capacity transiting through Morocco. The transit agreement between Morocco and Algeria was not extended in 2021 due to diplomatic concerns.[37]

[33] "Italian Energy Giant Eni Signs Deal to Boost Algerian Gas Supply", in *Al Jazeera*, 26 May 2022, https://aje.io/6353q4.

[34] Federica Saini Fasanotti, "Libya Exposes Italy's Hurdles in Mediterranean Energy", cit.

[35] Eni, *Eni Announces Another Discovery in the Berkine North Onshore Basin, Algeria*, 25 July 2022, https://www.eni.com/en-IT/media/press-release/2022/07/eni-announces-another-discovery-berkine-north-onshore-basin-algeria.html; and *Eni Signs a New Contract on Blocks 404-208 in Algeria*, 19 July 2022, https://www.eni.com/en-IT/media/press-release/2022/07/eni-signs-new-contract-blocks-404-208-algeria.html.

[36] See Enagas, *Monthly Bulletin of Gas Statictics, December 2021*, January 2022, https://www.enagas.es/content/dam/enagas/en/files/gestion-tecnica-del-sistema/energy-data/publicaciones/boletin-estadistico-del-gas/Monthly-Bulletin-Gas-december-2022.pdf; and *Monthly Bulletin of Gas Statictics, December 2022*, January 2023, https://www.enagas.es/content/dam/enagas/en/files/gestion-tecnica-del-sistema/energy-data/publicaciones/boletin-estadistico-del-gas/Monthly-Bulletin-Gas-december-2022.pdf.

[37] There are three pipelines that link Algeria to Europe. Two are operational: (i) TransMed (capacity 34 bcm); (ii) MedGaz (capacity 10.5 bcm/y); (iii) the Maghreb-Europe gas pipeline, which transited via Morocco, and used to supply Spain and Portugal, has been offline since 2021 after Morocco and Algeria decided not to extend their transit agreement because of diplomatic concerns (TransMed and MedGaz can together transport up to 42 bcm to Europe). See Carole Nakhle, "North Africa's Natural Gas: No Panacea for the EU's Gas Crisis", in *GIS Reports*, 19 July 2022, https://www.gisreportsonline.com/?p=36113.

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Moreover, Naturgy, the Spanish utility and gas company, announced in October 2022 that it negotiated an upward revision of the pricing terms in its contracts with Sonatrach. The revised price will be implemented retroactively for the quantities supplied until the end of 2022. These contracts, which were established over two decades ago, remain in effect between Naturgy and Sonatrach until 2030, with an annual volume of approximately 5 bcm worth more than 10 billion euro.[38] Geoplin, a company from Slovenia Sonatrach, also entered into a 0.3 bcm/y agreement starting January 2023.[39]

Additionally, Algeria's potential for gas exports is hindered by various above-ground factors. Notably, the country's gas balance has been influenced by a rapid increase in domestic consumption, driven by domestic gas subsidies, population growth and urbanisation. Consequently, Algeria's gas exports reached their peak in 2003 and have since witnessed a steady decline. Moreover, Algeria possesses the highest LNG export capacity in the region. However, in 2021, it barely used 25 per cent of this capacity out of an available capacity of 34 bcm. Furthermore, Algeria is renowned for its notable presence among the top ten nations with the highest flaring rates. This practice has led to significant losses, averaging 9 bcm annually over the past five years.[40]

Egypt

Egypt supplied Europe 1.3 bcm of LNG in 2021 as it exports more to the Asian market (around 6.1 bcm/y representing 78 per cent of its total Egyptian LNG exports). Yet, Italy, Egypt and Israel signed an MoU to boost LNG shipments by 3 bcm/y starting 2022. Cairo nonetheless has a long history of cooperation with Italy, as Eni operated 56 per cent of Egypt's entire gas production in 2021; of which about 60 per cent is used for electricity generation, with Eni contributing 40 per cent.[41]

The Eastern Mediterranean (East-Med) yielded major discoveries in the past decade, starting with Tamar and Leviathan fields off the coast of Israel; the Aphrodite field off the coast of Cyprus between 2009–2011; and the Zohr natural gas field off the coast of Egypt made by Eni in 2015, the East-Med's largest natural gas find. The proximity of the fields and interwoven economic opportunities pointed to new potential for regional integration and cooperation. While tensions persisted between Turkey and Greece, some progress has ensured, as demonstrated by the historic maritime border agreement between Israel and Lebanon signed on 27 October 2022. Negotiations between the two states, which remain technically at

[38] Miguel Ángel Patiño, "Naturgy sella la paz con Sonatrach con contratos de más de 10.000 millones", in *Expansión*, 6 October 2022, https://www.expansion.com/empresas/energia/2022/10/06/633eeaf0e5fdea28128b45c7.html.

[39] Slovenia Government, *Slovenia Concludes Deal on the Supply of Natural Gas from Algeria*, 15 November 2022, https://www.gov.si/en/news/2022-11-15-slovenia-concludes-deal-on-the-supply-of-natural-gas-from-algeria.

[40] Carole Nakhle, "North Africa's Natural Gas: No Panacea for the EU's Gas Crisis", cit.

[41] Eni website: *Our Work in Egypt*, https://www.eni.com/en-IT/eni-worldwide/africa/egypt.html.

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war since 1948, led to an agreement that established the demarcation of maritime borders and ended the dispute over part of the Karish gas field and the Qana gas prospect, opening the way for the exploitation of natural resources in the area. This breakthrough also followed a series of concurrent Turkish diplomatic overtures to Egypt, Israel and Greece and talk of Lebanon negotiating its maritime boundary with Syria as well.[42]

Additionally, Egypt suggested in 2018 the creation of the Eastern Mediterranean Gas Forum (EMGF), an energy forum, where suppliers, buyers and transit countries in the East-Med region cooperate on developing export infrastructure. The EMGF became a formal international organisation in September 2020 with membership including Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Palestine with the EU and the US as observers. One of the goals of the forum was to build the East-Med pipeline to connect the gas reserves of the East-Med to Greece.[43]

Yet, the pipeline project presented several weak points. The 2,000 km undersea pipeline had technical and financial would have cost about 6 billion euro. The exclusion of Turkey was a geopolitical timebomb and led to gunboat diplomacy including a dangerous manoeuvring of naval assets to stop drilling ships from reaching designated drill locations in Cypriot seas in 2018. Additionally, the US retracted its support for the East-Med pipeline in early 2022, justified by the need to focus on clean energy sources and its non-alignment with Europe's green energy plans and encouraged the integration of electricity grids.[44] Finally, the new Cypriot government which came to power in March 2023 is more interested in a shorter 300 km link to Israeli fields that can provide Cyprus and Europe with access to cheap gas and give Israel another export outlet in addition to Egypt.[45] All these circumstances point to the end of the idea of an East-Med gas pipeline.

Egypt's strength remains its ownership of the only existing gas liquefaction facilities in the East-Med: Damietta and Idku with a total liquefaction capacity of 18 bcm annually. In June 2022, Israel and Egypt signed an MoU with the EU to export Israeli natural gas to the EU for the first time. According to the agreement, Israeli gas will first be liquefied Egypt before being sent to the EU. Cyprus also seeks to connect its Aphrodite gas field to Egypt by pipelines to supply the global LNG market.[46] Therefore, Egypt is technically a minor player as an LNG exporter to Europe but has stepped into the spotlight as a potential East-Med gas hub.

[42] Michaël Tanchum, "Eastern Mediterranean Energy and Regional Cooperation: 2021 Outlook", in *IEMed Mediterranean Yearbook 2021*, p. 80-84, https://www.iemed.org/?p=66043.

[43] See EMGF website: https://emgf.org.

[44] Michaël Tanchum, "Eastern Mediterranean Energy and Regional Cooperation", cit.

[45] Michele Kambas, "Cyprus Changes Tack with Plan for Mediterranean Gas Link to Israel", in *Reuters*, 21 June 2023, https://www.reuters.com/world/middle-east/cyprus-changes-tack-with-plan-mediterranean-gas-link-israel-2023-06-20.

[46] Sharon Wrobel, "Israel's NewMed and Partners to Connect the Aphrodite Gas Field off Cyprus to Egypt", in *The Times of Israel*, 31 May 2023, https://www.timesofisrael.com/israels-newmed-and-partners-to-connect-the-aphrodite-gas-field-off-cyprus-to-egypt.

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Libya

Italy is the only country in Europe to purchase pipeline gas from Libya through the GreenStream pipeline, which has a capacity of 11 bcm/year, but only supplied about 3.1 bcm/y in 2021, making up 4 per cent of total Italian imports.[47] Those flows have dropped from 3.2 bcm in 2021 to 2.6 bcm in 2022. On 28 January 2023, Prime Minister Meloni and Eni's Descalzi met with her Libyan counterpart, Dbeibah, and the new Libyan National Oil Corporation (NOC) head Farhat Bengdara after their visit to Algiers.

Eni and the NOC announced a new round of investments to ramp up natural gas production on 24 August 2022.[48] Furthermore, while visiting Libya, Meloni witnessed the signing of a substantial 8 billion US dollars agreement between Eni and NOC. This agreement pertains to the development of offshore natural gas reserves. Over a span of 40 years, starting in 2026, the agreement aims to significantly increase gas production to a daily output of 22.6 million cubic metres. A significant portion of the gas retained by Eni will be directed into the GreenStream subsea pipeline.[49]

Nevertheless, these agreements face challenges due to the internal turmoil prevailing in Libya. The country's Minister of Oil and Gas, Mohamed Oun, who served as Libya's representative to OPEC between April 2015 and June 2019, has declared the deal null and void, citing the absence of prior approval from his ministry. The persistent civil unrest has eroded the authority of established power structures, leaving the nation in a state of disarray and susceptible to external influences. The ongoing civil strife opens room for the presence of external military forces, particularly the Russian Wagner group, within Libyan borders introduces an additional obstacle to onshore oil operations, given the opposition they pose to the Eni–NOC arrangement.[50]

3. Green energy integration and cooperation in the Mediterranean

The EU has so far weathered the energy crisis with the success of its emergency response and a warm winter.[51] The EU adopted ambitious legislation across multiple policy areas to implement its commitments on climate change before the war. The EU Fit-for-55 programme introduced a binding target for a net domestic reduction of at least 55 per cent in greenhouse gas emissions by 2030 compared to

[47] See ARERA website: *Dati statistici*, https://www.arera.it/it/dati/elenco_dati.htm.

[48] Eni, *The President of the Libyan National Oil Corporation, Fahat Omar Bengdara, Met the CEO of Eni, Claudio Descalzi*, 24 August 2022, https://www.eni.com/en-IT/media/press-release/2022/08/national-oil-corporation-chairman-farhat-omar-bengdara-meets-eni-s-ceo-claudio-descalzi.html.

[49] Federica Saini Fasanotti, "Libya Exposes Italy's Hurdles in Mediterranean Energy", cit.

[50] Jason Burke, "It Is Like a Virus that Spreads': Business as Usual for Wagner Group's Extensive Africa Network", in *The Guardian*, 6 July 2023, https://www.theguardian.com/p/zcvxz.

[51] Ben McWilliams et al., "Preparing for the Next Winter: Europe's Gas Outlook for 2023", in *Bruegel Policy Briefs*, No. 1/23 (February 2023), https://www.bruegel.org/node/8714.

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1990, and the bloc also vowed to achieve climate-neutrality by 2050. Furthermore, under the REPowerEU, the European Commission set 2030 as a target of reaching renewable energy capacity of 1,236 gigawatt (GW) to save up to 21 bcm of gas per year. The Commission introduced an ambitious target to reach 20 million tons of green hydrogen by 2030, of which 10 produced domestically and 10 imported through priority corridors.

In the medium to long-run, gas is considered a transition fuel, given its relatively low carbon emissions. The EU's long-term plan to abandon natural gas is reflected in bilateral gas deals where the EU clearly acknowledges that "natural gas shall continue to play an important role in terms of energy consumption and electricity generation in the European Union until 2030, after which its use in the European Union will decline in line with its climate neutrality commitment by 2050".[52] Such agreements also promote hydrogen, green energy production and energy efficiency by encouraging public and private sector corporations to cooperate on means for achieving green energy goals.[53] The latter also extends to parties that do not export gas to the EU.

In this context, the EU has made significant funding available through initiatives such as the 300 billion euro Global Gateway established in December 2021 and the European Fund for Sustainable Development Plus, which will guarantee loans for up to 135 billion euro in foreign infrastructure projects by 2027. The G7 Partnership for Global Infrastructure and Investment, established in June 2022 as a counterweight to China's Belt and Road Initiative, aims to offer 600 billion US dollars in infrastructure funding over the following five years. These measures, and the sweeping transition they aim to support, create significant opportunities for Europe's energy partners that join it in this effort – and great risks for those that do not, such as historic oil and gas producers.

Morocco has been among the countries that benefitted from this flow of financing. Following the war in Ukraine, the EU and Morocco consolidated their cooperation on protecting the environment, conserving biodiversity and fighting climate change with the launch of the "EU-Morocco Green Partnership" on 18 October 2022. On 25 October 2022, 115 million euro were allocated for the "Terre Verte" or "Green Earth" programme to support Morocco's agriculture and forestry sectors, and their ecological, inclusive and innovative evolution. Following the deal, the European Council chose to extend the partnership with Morocco among other North African countries in January 2023.[54] In June 2023, Morocco and the Netherlands also signed an agreement to establish a 300 million euro investment fund, of which 35

[52] European Union, Egypt and Israel, *Memorandum of Understanding on Cooperation Related to Trade, Transport, and Export of Natural Gas to the European Union*, Cairo, 15 June 2022, https://energy.ec.europa.eu/node/4742_en.

[53] Ibid.

[54] European Commission, *The EU and Morocco Launch the First Green Partnership on Energy, Climate and the Environment Ahead of COP 27*, 18 October 2022, https://neighbourhood-enlargement.ec.europa.eu/node/4126_en.

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per cent in the form of a grant, to finance projects in the fields of infrastructure, water, agriculture and renewable energy in the presence of the Moroccan Head of Government Aziz Akhanouch and the former Dutch Prime Minister Mark Rutte[55] before his resignation in 7 July 2023,[56] putting the MoU in jeopardy.

Furthermore, Morocco is qualified to become a key player in the development of green hydrogen owing to its exceptional renewable resources that constituted 37 per cent of the country's overall installed capacity in 2020 (about 4 GW) (the plan is to bring it forward to 52 per cent by 2030). Due to its geographic location and its energy interconnections, the country eyes the European market for green hydrogen exports. This is already paying off as Morocco is now experiencing an influx of green hydrogen investment from EU member states, including the Power-to-X project, which is the first large-scale green hydrogen industrial project in Morocco, in collaboration between the Moroccan Agency for Sustainable Energy (MASEN) and the German government. Another example is the Hevo Ammonia Morocco Project, which aims to produce green ammonia and hydrogen with a Portuguese company, Fusion Fuel Green, and a global provider of engineering solutions, Consolidated Contractors (CCC).[57]

The EU and Egypt have also taken a further step to boost their long-term cooperation on clean energy transition by establishing strategic partnerships on renewable hydrogen and preparing the ground for the energy transition in Egypt in light of the COP27 summit that was hosted in Sharm El Sheikh. On 16 November 2022, an MoU was signed on this occasion.[58] Furthermore, the Energy Wealth Initiative was launched by the Egyptian government and the European Bank for Reconstruction and Development (EBRD) to implement the energy pillar of the Nexus of Water, Food and Energy Initiative designed to accelerate the implementation of the country's new climate change strategy for 2050 launched in May 2022. The energy initiative aims to shut down 5 GW of existing and inefficient gas-based power generation capacity (equivalent to around 5 per cent of Egypt's total electricity supply) and facilitate investments to support the installation of 10 GW of new renewable energy capacity. The commission announced on 16 November 2022 its intention to contribute through a 35 million euro grant for this initiative to the EBRD under the EU's Economic and Investment Plan for the Southern Neighbourhood.[59]

[55] Sara Zouiten, "Morocco, Netherlands Launch €300 Million Investment Fund for Green Initiatives", in *Morocco World News*, 22 June 2023, https://www.moroccoworldnews.com/2023/06/356075/morocco-netherlands-launch-euro-300-million-investment-fund-for-green-initiatives.

[56] Senay Boztas, "Mark Rutte Hands in Resignation as Dutch Government Collapses over Asylum Row", in *The Guardian*, 8 July 2023, https://www.theguardian.com/p/zcz3f.

[57] Rim Berahab and Afaf Zarkik, "The Case of Green Hydrogen in Morocco. Maintaining a Competitive Edge between Domestic Demands and International Market Pressures", in *Friedrich Naumann Foundation Policy Papers*, December 2022, https://www.freiheit.org/sites/default/files/2023-05/policypaper.pdf.

[58] European Union and Egypt, *Memorandum of Understanding on a Strategic Partnership on Renewable Hydrogen*, Sharm El Sheikh, 16 November 2022, https://energy.ec.europa.eu/node/4863_en.

[59] European Commission, *COP27: EU and Egypt Step up Cooperation on the Clean Energy Transition*, 16 November 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6925.

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EU member states have also approved a Commission proposal to spend 602 million euro in cross-border energy infrastructure under the Connecting Europe Facility (CEF) for the Trans-European Networks for Energy, including smart electricity grids, underground gas storage and offshore LNG terminals. Increasing cross-border energy infrastructure connectivity was also emphasised as a priority in the REPowerEU strategy. The biggest funding, 307.6 million euro, was earmarked for an electrical transmission project of the first underwater high-voltage electrical line between Italy and Tunisia. This new link, known as the ELMED interconnector, will improve the security and sustainability of Europe's electricity supply by allowing for better renewable energy integration. The Italian Ministry for the Environment and energy security has started the authorisation process for the project, which should cost around 850 million euro in total.[60]

Algeria's economic model, on the other hand, is anchored by fossil fuel exports, which have for decades funded both the subsidies governments deploy to maintain social stability. As a result, the Algerian government is concerned about the risk of abandoning these resources in favour of new technology. The surge in oil and gas prices further adds to Algeria's apprehension about venturing into the unknown. To date, Algerian officials have made only a token attempt to promote renewables, even though the country's gas exports have been in decline since 2003, owing to rising domestic consumption fuelled by domestic gas subsidies, population growth and urbanisation. Authorities have recently begun to speak more openly about the need to curb domestic consumption for Algeria to retain its vital oil and gas exports.

These challenges, along with increasing visible effects of climate change, represents one possible plane of engagement for the EU to partner with Algeria in promoting renewables. For instance, Algeria is positioning itself in the blue hydrogen economy. The existing pipeline interconnections between Algeria and EU countries are seen as providing an accelerator for the blue hydrogen economy. As a first step, combining hydrogen produced from natural gas with carbon capture (blue hydrogen) is perceived as offering some potential to speed up hydrogen adoption in the short- and medium-term while making the long-term transition to a greater proportion of green hydrogen, for deep decarbonisation of the economy. The European parliament thus recognised the importance and transitional value of natural gas by including it into the EU Taxonomy.[61]

[60] European Commission, *Connecting Europe Facility: Over € 600 Million for Energy Infrastructure in Support of the European Green Deal and REPowerEU*, 8 December 2022, https://energy.ec.europa.eu/node/4917_en.

[61] European Commission, *EU Taxonomy: Commission Welcomes the Result of Today's Vote by the European Parliament on the Complementary Delegated Act*, 6 July 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4349.

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Conclusion and recommendations

Against serious odds the EU successfully managed to overcome the 2022 winter even when faced with unprecedented stress. The global energy landscape has already experienced significant change, in the long-term new developments beyond oil and gas supply chains will reshape future international relations.

For many decades, the EU and North Africa have struggled to promote genuine cooperation and integration, notwithstanding the historical and geographic links, trade flows and diplomatic ties. North African governments are members of the EU's Southern neighbourhood policy and the Union for the Mediterranean, which includes cooperation on biodiversity protection, climate action and sustainable energy. Furthermore, following the 25th anniversary of the launch of the Barcelona Process, the EU proposed a new "Agenda for the Mediterranean" that includes a dedicated Economic and Investment Plan (EIP) to spur the long-term socio-economic recovery. It proposes a range of actions along the key policy areas including green transition, encompassing everything from climate resilience to energy and the environment in general.

Russia's war in Ukraine has fast tracked the EU's energy efficiency and supply diversification. North African countries have tremendous potential to become significant partners in Europe's energy transformation in the medium and long-term. The region has huge renewable energy potential and is also a viable location for future green hydrogen generation. As the EU's energy matrix will become more diversified, there will be winners and losers, and it is in the interest of both shores of the Mediterranean that this opportunity be grasped to promote win-win partnerships that are capable of facing future challenges and uncertainties.

In the mid-term, oil and gas producing countries will still have the possibility to produce, export and profit from hydrocarbons. However, they are on a race against time to diversify their economies as the EU gradually phases out its overall reliance on fossil fuels. Algeria's current capacities and above ground factors including increasing domestic demand, low efficiency, high flaring rates and unattractive business environment, confirm that it is likely to play only a marginal role as a supply buffer. Output in the next few years can be supported by smaller, more recently discovered gas fields by Eni in Algeria and other locations, but here too, the uncertainty of supplies remains. Addressing demand management and energy efficiency issues (flaring and LNG export capacity use) seem like the most plausible approaches for the country to enhance its role as a gas supplier to the EU, which is fast developing other alternative sources as well.

The transformation of existing energy systems and the build-up of modern ones based on renewables in oil and gas rich Algeria, however, will not be an easy task. The country has been locked in the resource curse since hydrocarbons account for more than 90 per cent of its export revenues and around half of the state budget in recent decades. It is now clear that the country will be hard pressed to develop

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export-oriented renewables in time to contribute to Europe's 2030 energy import objectives. That said, there are avenues for cooperation in blue hydrogen with the EU.

On the East-Med side, a regional export strategy via Egyptian liquefaction facilities might give a first chance for Egypt, Israel and Cyprus to explore commercial gas cooperation. The long-standing position of the EU in increasing spot LNG imports and its strategic interest in strengthening its autonomy and boosting its transition towards a climate-neutral energy system puts Egypt, the sole proprietor of liquefaction plans, in the spotlight as an LNG trading hub. The Eastern Mediterranean has also entered a period of geopolitical détente with the interweaving of Egyptian, Israeli, Cypriot and Greek infrastructures and interests, albeit Turkey continued exclusion remains a challenge to more structured cooperation. Therefore, Egypt's outlook in terms of its future relevance to Europe looks promising.

Libya's ongoing internal unrest which invites the presence of external military forces, poses grave risks to gas production and exportation. Increasingly interlinked with the East-Med, developments in Libya require concerted action by EU and external actors, but progress at the moment remains uncertain.

As the EU steers away from oil and gas imports, new forms of trade will take place including cross-continental interconnections effectively substituting pipelines with cables. Regional integration is very challenging for the power sector, as it is a very localised industry, compared to broader energy structures, where international trade is prevalent. These mega-infrastructures will need to be implemented on a bilateral basis, as southern countries can supply solar power and northern ones the funds needed for these initiatives, helping to spur investment in renewable energy in the region. Tunisia seems to have benefitted from this as it plans to increase its share of renewables to 30 per cent, although its electricity generation mix is still largely dominated by natural gas, while renewable energy resources represented only 3 per cent in 2019.[62] Morocco had already embarked on a serious energy transition pathway out of necessity and even became a net electricity exporter in 2019 through its interconnection with Spain.[63] That, combined with a surge of international interest in green hydrogen to decarbonise hard-to-electrify sectors, means Morocco is reaping additional dividends from its strategic choices which are attracting investments and economic opportunities.

While keeping the focus on North African, it is undeniable that the energy challenges faced today are worrying and are amplified by the energy crisis brewing in an uncertain world. The underlying differences in natural resource availability,

[62] International Renewable Energy Agency (IRENA), *Renewable Readiness Assessment: The Republic of Tunisia*, June 2021, https://www.irena.org/publications/2021/Jun/Renewables-Readiness-Assessment-The-Republic-of-Tunisia.

[63] "Le Maroc est devenu exporateur net d'électricité", in *Médias24*, 6 August 2019, https://medias24.com/2019/08/06/le-maroc-est-devenu-exportateur-net-delectricite.

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along with other factors such as the availability of funds to smooth the transition process and the legal framework supporting the transition are, at least partially, responsible for the pace and commitment with which these countries managed their energy transition so far. Countries that have not yet made significant strides in their transition should not be penalised. Rather, the EU can make policy design and implementation another potential area of assistance.

Beyond the transformation of supply side systems in North Africa, energy cooperation between North and South Mediterranean countries' can extend to demand and intermediary levels to manage energy more efficiently and sustainably, with a vision for collaboration in technology transfer and capacity building in cleantech, including smart energy (positive energy buildings, storage solutions etc.), smart mobility (public transportation applications, vehicle to grid applications, smart parking solutions etc.) and city resource management solutions (including waste-to-energy plants, smart public lighting and smart grid). These innovations can deliver significant cost savings, improve the region's quality of life and position North Africa as a hub for cleantech services and industry. The proximity and youthful workforce of North Africa also provides the EU with a prospective workforce for technological manufacturing closer to home compared to Asian markets, but also the skills required for significant future collaboration in research and development (R&D).

Further cooperation and green diplomacy are needed to underpin energy security, energy transition and climate-change mitigation and adaptation efforts made by the EU and North Africa in a win-win approach, by reviving, repurposing and recalibrating the approach to multilateral problem-solving. For a fruitful collaboration, the two sides of the Mediterranean must share a commitment to navigate the current uncertainties of the international system and growing multipolarity, inviting other parties such as civil society and the private sector to re-develop and re-imagine new frameworks of Euro-Mediterranean cooperation and integration.

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References

Liz Alderman, "France Sends Gas to Germany to Offset Russia Supply Cuts", in *The New York Times*, 13 October 2023, https://www.nytimes.com/2022/10/13/business/france-sends-gas-to-germany.html

BP, *Statistical Review of World Energy 2022*, June 2022, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf

BP, *Statistical Review of World Energy 2022. The EU Energy System in 2021*, June 2022, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-eu-insights.pdf

Rim Berahab and Afaf Zarkik, "The Case of Green Hydrogen in Morocco. Maintaining a Competitive Edge between Domestic Demands and International Market Pressures", in *Friedrich Naumann Foundation Policy Papers*, December 2022, https://www.freiheit.org/sites/default/files/2023-05/policypaper.pdf

Senay Boztas, "Mark Rutte Hands in Resignation as Dutch Government Collapses over Asylum Row", in *The Guardian*, 8 July 2023, https://www.theguardian.com/p/zcz3f

Jason Burke, "It Is Like a Virus that Spreads': Business as Usual for Wagner Group's Extensive Africa Network", in *The Guardian*, 6 July 2023, https://www.theguardian.com/p/zcvxz

Council of the European Union, *Council Adopts Regulation on Reducing Gas Demand by 15% this Winter*, 5 August 2022, https://www.europa.eu/!fmbcgg

Council of the European Union, *Member States Agree to Extend Voluntary 15% Gas Demand Reduction Target*, 28 March 2023, https://europa.eu/!BVxbrq

Gabriel Di Bella et al., "Natural Gas in Europe: The Potential Impact of Disruptions to Supply", in *IMF Working Papers*, No. 22/145 (July 2022), https://www.imf.org/en/Publications/WP/Issues/2022/07/18/Natural-Gas-in-Europe-The-Potential-Impact-of-Disruptions-to-Supply-520934

Enagas, *Monthly Bulletin of Gas Statictics, December 2021*, January 2022, https://www.enagas.es/content/dam/enagas/en/files/gestion-tecnica-del-sistema/energy-data/publicaciones/boletin-estadistico-del-gas/Monthly-Bulletin-Gas-december-2022.pdf

Enagas, *Monthly Bulletin of Gas Statictics, December 2022*, January 2023, https://www.enagas.es/content/dam/enagas/en/files/gestion-tecnica-del-sistema/energy-data/publicaciones/boletin-estadistico-del-gas/Monthly-Bulletin-Gas-

ISSN 2280-6164

december-2022.pdf

Eni, *Eni Announces Another Discovery in the Berkine North Onshore Basin, Algeria*, 25 July 2022, https://www.eni.com/en-IT/media/press-release/2022/07/eni-announces-another-discovery-berkine-north-onshore-basin-algeria.html

Eni, *Eni Signs a New Contract on Blocks 404-208 in Algeria*, 19 July 2022, https://www.eni.com/en-IT/media/press-release/2022/07/eni-signs-new-contract-blocks-404-208-algeria.html

Eni, *The President of the Libyan National Oil Corporation, Fahat Omar Bengdara, Met the CEO of Eni, Claudio Descalzi*, 24 August 2022, https://www.eni.com/en-IT/media/press-release/2022/08/national-oil-corporation-chairman-farhat-omar-bengdara-meets-eni-s-ceo-claudio-descalzi.html

European Commission, *Connecting Europe Facility: Over € 600 Million for Energy Infrastructure in Support of the European Green Deal and REPowerEU*, 8 December 2022, https://energy.ec.europa.eu/node/4917_en

European Commission, *COP27: EU and Egypt Step up Cooperation on the Clean Energy Transition*, 16 November 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6925

European Commission, *EU and Azerbaijan Enhance Bilateral Relations, Including Energy Cooperation*, 18 July 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4550

European Commission, *The EU and Morocco Launch the First Green Partnership on Energy, Climate and the Environment Ahead of COP 27*, 18 October 2022, https://neighbourhood-enlargement.ec.europa.eu/node/4126_en

European Commission, *EU Taxonomy: Commission Welcomes the Result of Today's Vote by the European Parliament on the Complementary Delegated Act*, 6 July 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4349

European Union and Egypt, *Memorandum of Understanding on a Strategic Partnership on Renewable Hydrogen*, Sharm El Sheikh, 16 November 2022, https://energy.ec.europa.eu/node/4863_en

European Union, Egypt and Israel, *Memorandum of Understanding on Cooperation Related to Trade, Transport, and Export of Natural Gas to the European Union*, Cairo, 15 June 2022, https://energy.ec.europa.eu/node/4742_en

International Energy Agency (IEA), *France Natural Gas Security Policy*, 30 June 2022, https://www.iea.org/articles/france-natural-gas-security-policy

ISSN 2280-6164

International Energy Agency (IEA), *Italy Natural Gas Security Policy*, 18 October 2022, https://www.iea.org/articles/italy-natural-gas-security-policy

International Renewable Energy Agency (IRENA), *Renewable Readiness Assessment: The Republic of Tunisia*, June 2021, https://www.irena.org/publications/2021/Jun/Renewables-Readiness-Assessment-The-Republic-of-Tunisia

Michele Kambas, "Cyprus Changes Tack with Plan for Mediterranean Gas Link to Israel", in *Reuters*, 21 June 2023, https://www.reuters.com/world/middle-east/cyprus-changes-tack-with-plan-mediterranean-gas-link-israel-2023-06-20

Sarah Marsh and Madeline Chambers, "Germany Freezes Nord Stream 2 Gas Project as Ukraine Crisis Deepens", in *Reuters*, 22 February 2022, https://www.reuters.com/business/energy/germanys-scholz-halts-nord-stream-2-certification-2022-02-22

Bethan McKernan and Peter Beaumont, "Israel Attacks Jenin in Biggest West Bank Incursion in 20 Years", in *The Guardian*, 3 July 2023, https://www.theguardian.com/p/zby53

Ben McWilliams and Georg Zachmann, "European Natural Gas Demand Tracker", in *Bruegel Datasets*, last update 8 August 2023, https://www.bruegel.org/node/8346

Ben McWilliams et al., "The EU Can Manage without Russian Liquified Natural Gas", in *Bruegel Policy Briefs*, No. 16/23 (June 2023), https://www.bruegel.org/node/9197

Ben McWilliams et al., "Preparing for the Next Winter: Europe's Gas Outlook for 2023", in *Bruegel Policy Briefs*, No. 1/23 (February 2023), https://www.bruegel.org/node/8714

Carole Nakhle, "Europe and Russia without Nord Stream", in *GIS Reports*, 23 December 2022, https://www.gisreportsonline.com/?p=43040

Carole Nakhle, "North Africa's Natural Gas: No Panacea for the EU's Gas Crisis", in *GIS Reports*, 19 July 2022, https://www.gisreportsonline.com/?p=36113

Miguel Ángel Patiño, "Naturgy sella la paz con Sonatrach con contratos de más de 10.000 millones", in *Expansión*, 6 October 2022, https://www.expansion.com/empresas/energia/2022/10/06/633eeaf0e5fdea28128b45c7.html

Martin Russell, "The Nord Stream 2 Pipeline. Economic, Environmental and Geopolitical Issues", in *EPRS Briefings*, July 2021, https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2021)690705

Federica Saini Fasanotti, "Libya Exposes Italy's Hurdles in Mediterranean Energy", in *GIS Reports*, 2 March 2023, https://www.gisreportsonline.com/?p=44718

ISSN 2280-6164

Giovanni Sgaravatti, Simone Tagliapietra and Cecilia Trasi, "National Energy Policy Responses to the Energy Crisis", in *Bruegel Datasets*, last update 15 December 2022, https://www.bruegel.org/node/8375

Slovenia Government, *Slovenia Concludes Deal on the Supply of Natural Gas from Algeria*, 15 November 2022, https://www.gov.si/en/news/2022-11-15-slovenia-concludes-deal-on-the-supply-of-natural-gas-from-algeria

Michaël Tanchum, "Eastern Mediterranean Energy and Regional Cooperation: 2021 Outlook", in *IEMed Mediterranean Yearbook 2021*, p. 80-84, https://www.iemed.org/?p=66043

White House, *Joint Statement on U.S.-EU Task Force on Energy Security*, 3 April 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/03/joint-statement-on-u-s-eu-task-force-on-energy-security

World Bank, *Commodities Price Data (The Pink Sheet)*, December 2022, https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Pink-Sheet-December-2022.pdf

Sharon Wrobel, "Israel's NewMed and Partners to Connect the Aphrodite Gas Field off Cyprus to Egypt", in *The Times of Israel*, 31 May 2023, https://www.timesofisrael.com/israels-newmed-and-partners-to-connect-the-aphrodite-gas-field-off-cyprus-to-egypt

Sara Zouiten, "Morocco, Netherlands Launch €300 Million Investment Fund for Green Initiatives", in *Morocco World News*, 22 June 2023, https://www.moroccoworldnews.com/2023/06/356075/morocco-netherlands-launch-euro-300-million-investment-fund-for-green-initiatives

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