



International energy crisis: impacts on decarbonization strategies

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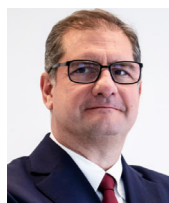
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Introduction



Paola Testa
EY Europe
West Energy
& Resources
Consulting Leader



Sergio Nicolini
EY Europe West
Energy Sector
Leader

The 1970s oil crisis led Western Europe to form an energy partnership with the Soviet Union, as an alternative to Middle Eastern suppliers.¹ Geopolitical changes since the early 2000s set the foundation for the current scenario, with critical supplies of Russian gas to EU countries under threat.

Paper objectives:

- ▶ **Provide an overview** of the impacts that the current geopolitical situation is having on the EU energy scenario.
- ▶ **Assess the REPowerEU Plan and its pillars**, designed to face this crisis and other potential threats.
- ▶ **Highlight our efforts** to support decarbonization initiatives.





This crisis will impact Western European countries differently, depending on their current level of Russian gas imports and ability to find alternatives. Denmark, the UK, Belgium, Spain and Portugal are either minimally affected by the Russian gas supply detachment, or not affected at all. France has always focused on nuclear power and its dependence on Russian gas is low – equal to 24% of its total imports. Germany is going to pay the highest price, as its import equals 49%. Italy follows second, importing from Russia 46% of its total imported gas.⁴

Severing energy dependence with Russia will be difficult. According to EY data, the EU imported around 40% of its natural gas, more than 25% of its oil and about half of its coal from Russia in 2019. Furthermore, despite bold promises about cutting ties with Russia, European nations have thus far opted for easy and cheap energy. The amount of Russian oil and gas entering Europe has increased since the start of the current war in Ukraine – with the intent to fill storages for winter and mitigate the risk of a worsening situation.

The US and the UK were the first major countries to ban Russian oil, but neither of them depended heavily on these imports. In March 2022 alone, EU countries paid Russia roughly €22b for oil and gas supplies.

According to EY data, only a coordinated response at the EU level could significantly impact Russia's ability to redirect the current European supply to alternative buyers in the global market.

In order to pursue a different solution, some Members States are implementing plans to diversify their energy sources, and reduce the flow of Russian oil and gas. This strategy is based on the increase in natural gas imports from foreign countries, but there is uncertainty whether each European country will move toward this solution.⁵

An increase in the LNG production and consumption from European regasification terminals to decrease dependence on Russian gas is likely.

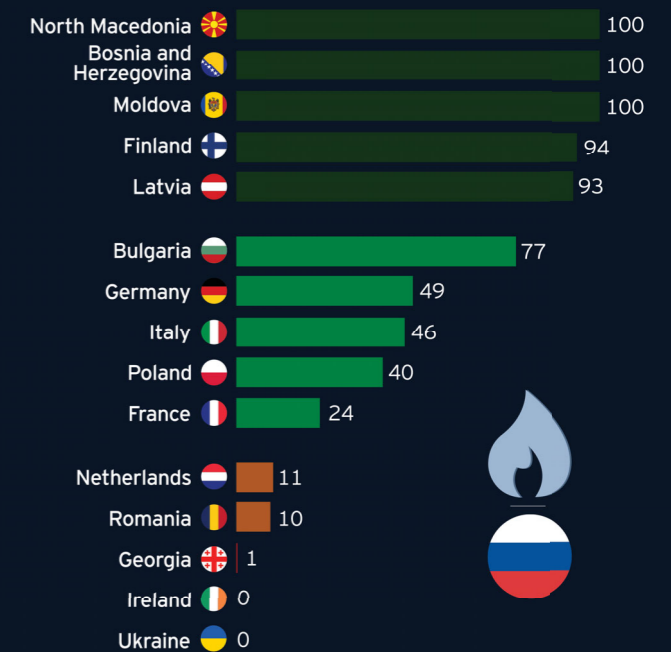
The main LNG supplier for the EU in 2020 was Qatar.⁶ But its supply availability is bounded to the long-term sales contracts of Asia-Pacific (APAC) and European infrastructures are not ready to manage a large increase in imports of LNG. (For instance, Germany does not have any regasification plants). According to EY data on gas pipelines, Norway is the second largest European supplier, but has limited production capacity.

Increasing supplies from the Middle East and Africa will mean relying on volatile scenarios.⁷ Through its proposed REPowerEU Plan, the EU is aiming to reduce its dependence on Russian gas imports by two-thirds within a year and phase them out altogether “well before” the end of 2030.

Across Europe, new LNG import

Which European countries depend on Russian gas?

Percentage share of gas supply from Russia in selected European countries (2020 or latest available)



Ukraine buys its gas from the EU since 2015.
Source: EU Agency for the Cooperation of Energy Regulators.



statista

capacity and pipelines would be required to source gas from elsewhere.

On 25 March 2022, investors' confidence in the US LNG sector skyrocketed, leading to a race to bring export projects online. This favorable investor sentiment has been supported by the US and European leaders' recent announcement of a cooperation plan to help European countries move away from Russian gas supply. With energy security taking center stage, Germany would invest in LNG regasification

terminals, whereas other countries have announced plans to delay the closure of some of their nuclear and coal-fired power plants.

Capital investments in infrastructure are expected. Europe's energy transition is expected to help spur the development of alternative sources of energy, including renewables and emerging

fuels, such as blue and green hydrogen.

The energy mix could remain a long-term challenge for Europe, given that local energy prices are likely to remain at higher levels for many years, or at least until a clear and common vision is defined. While decarbonization is still on the long-term agenda, European governments have a clear immediate

focus on ensuring the security of supply for national energy independence.

While forging new energy partnerships, governments must evaluate, "Whom do we trust?"

Source: European countries responding to the energy crisis (EY data elaboration).

UK

- ▶ Announced to phase out Russian oil and coal by end of 2022, and Russian LNG gas imports as soon as possible thereafter.

Belgium

- ▶ Reversed its decision to close nuclear power plants.
- ▶ Increased its offshore wind target to 8GW by 2030.

France

- ▶ Planning on building up to 14 nuclear reactors by 2050, with construction potentially beginning in 2028.

Netherlands

- ▶ Accelerated building of offshore wind farms – doubling the planned capacity by 2030 – to meet climate goals and reduce dependence on Russian gas.

Finland

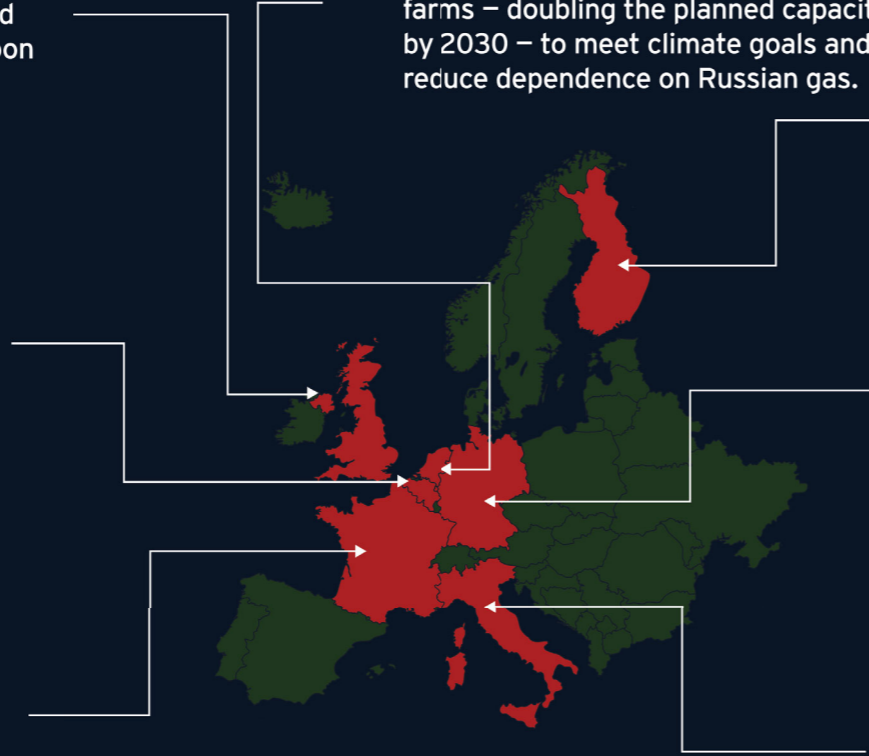
- ▶ Constructing new nuclear plants that are expected to meet 14% of the power demand by 2025.

Germany

- ▶ Refused to approve the Nord Stream 2 Baltic Sea gas pipeline project (55 bcm) from Russia.
- ▶ Accelerating deployment of two LNG terminals.

Italy

- ▶ Secured additional supply from Algeria, and further plans to look at Azerbaijan, Qatar, Congo, Angola and Mozambique to reduce dependence on Russian gas.
- ▶ Examining potential to reopen coal units.



The war in Ukraine has accelerated decarbonization plans. The REPowerEU Plan, approved on 18 March 2022, sets the measures to respond to this ambition.⁸

Energy demand savings are the most immediate and cheapest way to address the matter. To increase the energy efficiency measures in the Fit for 55 package of the European Green Deal directive, the Commission proposed to raise the binding target for energy efficiency from 9% to 13% for the Member States included.⁹

To prepare for the potential challenge of next winter, it is necessary that Europe starts saving energy now.¹⁰

This policy could allow market operators to exploit the growing trend of the energy efficiency sector to invest and develop new offers, or dedicated business models.

The EU Commission published an “EU Save Energy Communication” suggesting short-term behavioral changes to cut gas and oil demand by 5%; and encourage Member States to start specific communication campaigns targeting households and industry. Member States are also driven to use fiscal measures to achieve energy savings, such as reduced value-added tax (VAT) rates on energy-efficient heating systems, building insulation, appliances and products.

In the event of a supply disruption, the Commission has defined emergency measures with a set of guidelines to define priorities, as well as a coordinated plan for reducing the demand for gas from the EU.¹¹ The policies implemented to promote the spread of energy efficiency have proved to be economically sustainable, but with little effect on public policies and regulations.¹²

Moreover, the energy efficiency is improved when it evolves to a full outsourcing model for the customer, where there is no pressure on the final user for capex financing. Offering a 360-degree service, such as an “energy efficiency as a service” model, substantially increases the value proposition for the customer, making the choice for energy efficiency a no-brainer.

Diversifying supplies and supporting international partners are necessary to enable voluntary common purchases of gas, LNG, and hydrogen. Thanks to the collaboration with international partners, the EU has managed to diversify its sources, and secured important new supplies with record-high levels of LNG imports and enhanced volumes of gas pipelines.¹³

A boost in voluntary, common and pooled purchasing of gas, LNG, and hydrogen will be enabled through the new EU Energy Platform. Moreover, this will also provide optimizations in infrastructure usage and coordination toward supplier outreach.¹⁴

A “joint purchasing mechanism” will be considered for development by the Commission – similar to what has been done for the common vaccine-purchasing program – for negotiating gas-purchasing contracts on the behalf of EU Member States.¹⁵ It is likely that this “negotiation structure setup” will favor a policy that is more focused on new energy partners’ identification.

Regulatory measures by the Commission will also focus on Member States’ diversification of gas supply over time. The joint purchasing platform will also enable and boost the supply of renewable hydrogen.¹⁶

“The EU external energy strategy adopted today will facilitate energy diversification and build long-term partnerships with suppliers, including cooperation on hydrogen or other green technologies. In line with the Global Gateway, the strategy prioritizes the EU’s commitment to the global green and just energy transition – increasing energy savings and efficiency to reduce the pressure on prices; boosting the development of

renewables and hydrogen; and stepping up energy diplomacy.”¹⁷

The EU will develop major hydrogen corridors in the Mediterranean and the North Seas. However, it is important to remember that the global energy transport system is vulnerable to disruption at key maritime choke points, such as the Straits of Malacca and Singapore, Bab Al-Mandab, the Suez Canal, the Turkish Straits, and the Strait of Hormuz.

Still, setting measures to close international straits are generally illegal in peacetime. Additionally, international law requires maintaining rights of transit passage during exceptional events.

Establishing and maintaining legal and political norms around the security of maritime choke points – considering user states, consumer states and international bodies – is essential. To maintain this system, a cooperative mechanism has to be in place between coastal states to gain and ensure confidence. Consequently, the likelihood of deliberate disruptions could be reduced by industry and its government measures to mitigate their effects.

“In the end, the security of maritime choke points ultimately rests on the observance of international law, and on the willingness and capacity of interested members of the international community to enforce it, if necessary.”¹⁸

It is likely that the new energy product mix, with a higher weight of renewable energies, will eventually lead to less costs for European citizens – effectively reducing the “raw material cost.” At first, the reduction of raw material cost will be balanced by the increase of “system costs” due to the technological adaptation of the transport and distribution infrastructure. But later, when the network is technologically mature, the sum of raw material costs and system costs will result in a lowering of the energy bill. The break even between offers and demand could be achieved through the increase in the supply to match the market-based demand, and the infrastructure needed to distribute the supply to the requesters. It is likely that these inputs may give rise to a European industry-induced development of infrastructures with positive impacts on Members States’ gross domestic product (GDP).

A growth in the usage of renewable sources for energy production in multiple sectors (including transport and logistics, domestic and commercial buildings, and industrial sectors) will foster the energy transition. Such a growth will also reduce costs for implants and related prices of the supply. As a part of the Fit for 55 measures, the Commission has proposed to bring the target for renewable energy from 40% to 45% by 2030. This ambitious new plan will also include other initiatives, such as:¹⁹

- ▶ A dedicated EU Solar Strategy to double solar photovoltaic capacity by 2025 and install 600 GW by 2030.
- ▶ A Solar Rooftops Initiative with a phased-in legal obligation to install solar panels on new public and commercial buildings, and new residential buildings.
- ▶ Doubling the rate of deployment of heat pumps; and measures to integrate geothermal and solar thermal energy in the modernized district, and municipal heating systems.
- ▶ A Commission recommendation to tackle slow and complex permissions for major renewable projects, and a targeted amendment to the Renewable Energy Directive to recognize renewable energy as an overriding public interest.
- ▶ As per the EU Commission’s recommendation, Member States should identify ad hoc areas – with few environmental risks and simplified authorization procedures – to support the development of renewable energy production plants. Europe is developing a digital mapping tool to support Member States in identifying these areas by providing them data related to energy, industry and infrastructure.²⁰
- ▶ Setting a target of 10 million tons of domestic renewable hydrogen production and 10 million tons of imports by 2030 – to replace natural gas, coal and oil in hard-to-decarbonize industries, and transport sectors.

To foster the development of the hydrogen market, specific objectives should be agreed for specific sectors, such as transportation and logistics (public, air and ships). The EU Commission is also proclaiming specific regulations to govern hydrogen production, aiming to complete decarbonization. According to this, an amount worth €200m has been allocated for innovation research. Additionally, the first important projects that reached the Commission’s desk will be evaluated by the summer of 2022.²¹

A biomethane action plan to increase production to 35 bmc by 2030 has also been proposed. A new partnership with industrial players and financial incentives has been introduced, as well as the definition of a common agricultural policy.²²

It is likely that a technological push on these issues – along with the development of an incentive system to unlock any costs of technologies that are still “out of the market” – would help the renewable energy system cover a part of the gas needs. To accelerate the transition and adoption of hydrogen technology, EY teams can help simplify the paths to access incentives and funds. EY teams’ prior experience in supporting public administrations, and the banking, financial services and insurance sectors provides help in such projects. EY teams can also support in creating a safety net to avoid risks related to potential financial leakage not in line with the incentive and fund purposes, as well as to avoid fraudulent activities.





The perspective of EY teams on the main challenges to achieve energy independence has been encapsulated below.

Despite input price rises, construction of the net “new solar and wind capacity” remains faster, and more economically sustainable than coal or natural gas. Therefore, the policies that increase renewable energy production could be further accelerated.²³

To achieve the goals of the REPowerEU Plan, it is likely that Member States and EU institutions will have to deal with the following challenges:

- ▶ Timing issues related to the update of the energy grid of each country to become receptive to energy input without overriding the national energy transport system.
- ▶ Technology issues to adapt infrastructure to transport and stock hydrogen.

In the short term, technological innovation will likely speed up as stakeholders affected by rising energy or commodity inputs look for more economical substitutes. These innovations will also accelerate as stakeholders further see the importance of compensating measures, such as carbon capture and sequestration.

Rising energy prices could encourage capital inflow into the renewables sector. In the meantime, public and

EU investments aimed to reduce infrastructural fixed costs could provide an additional driver in the medium to long term to lead a relevant capital injection in the sector.

While the normative issue is to identify the correct way to accelerate the creation of new renewable energy plants, a cultural change is also needed to:

- ▶ Boost awareness among local communities to accept new infrastructure and drive growth.
- ▶ Grow more diffused behaviors relating to sustainable and responsible use of energy.
- ▶ Train all stakeholders to ease their choice toward renewable energy.

To achieve this goal, every single EU country – in a coordinated manner with a central EU organization – has to set up two communication campaigns aiming to target two different kinds of citizens.

The first is an urgent campaign necessary to increase awareness among EU citizens regarding what is happening and how the EU institutions are going to face the actual crisis. This campaign also has the goal to show EU citizens that some infrastructures are necessary – both to make their economy more sustainable and contribute to accelerating the green deal.

The second campaign must be focused on the young generation. In the primary and secondary schools, specific subjects



should be introduced to create positive awareness for the future generations.

New financial instruments to support green initiatives (e.g., incentives and nonrepayable financing policy) have to be issued. The transition acceleration will only be possible if implemented with sufficient commitment from the public, private and social sectors. Leaders need to recognize that investments in renewables, energy efficiency and decarbonization are not causes of energy price increases, and insecurity – but solutions to those problems. Therefore, governments are required to be forward-looking in seeking broad consensus; and leveraging it to make substantial, thoughtful and short-term investments in these solutions, and their supporting supply chains.

In Europe, renewable investments are expected to accelerate to offset short-term fossil fuel investments, with the EU's commitment to achieving net zero by 2050 unchanged.

Regarding the last pillar of the REPowerEU Plan, it must be noted that renewable-generation assets require onetime capital expenditures, but minimal operating costs.

The EY network is deeply involved and active in energy transition initiatives. This involves multidisciplinary teams supporting the development of business strategies related to energy communities, transition to hydrogen,

interconnection of cross-country energy grids and power-purchase agreements.

EY teams can leverage an international network of professionals, with key experience in several areas, including regulatory activities, LNG supply, renewable energy sources, energy efficiency and energy technology (e.g., solar rooftop and other green technologies).

EY teams support exploring long-term strategies that lead to the transition to renewables. EY professionals can facilitate the adoption of assets powered by sustainable energy sources and innovative energy technologies to accelerate decarbonization (e.g., to achieve carbon neutrality or carbon-negative goals). This can help the stakeholders achieve their objectives regarding clean energy.

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