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## European Energy Crises, Climate Action and Emerging Market of Carbon-Neutral LNG

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### Abstract

*Liquefied Natural Gas (LNG) has received world-wide attention due to its growing market demands as pointed out by International Energy Agency (IEA), and McKinsey. This article aims to observe contemporary European developments in accordance with the Union's energy strategy and the Paris Agreement. With the reduction in import of Russian gas, purchasing LNG became an alternative policy option to meet overall energy needs in Europe. European governments and companies are making large investments in land-based regasification terminals and floating storage and regasification units (FSRUs). These trends have fueled hopes that Europe may be able to avoid the worst-case scenario of massive gas shortages, rationing, and industrial shutdowns in the coming months. Nonetheless, such positive short-term developments should not obscure the challenges Europe's energy-dependent industries are facing due to high gas and electricity prices, which will likely remain elevated for some time. Industries with gas-intensive production or with high absolute demand for gas could still see disruptions during this winter.*

*Moreover, this article also evaluates the role of carbon-neutral LNG in European energy crises and its link with eco-friendly processes as set out by the EU and its consequences for the Asian market. The major findings include that the existing carbon measurement framework does not meet the global needs of the LNG industry. Moreover, the breadth of LNG usage is linked to viable GHG emission framework availability.*

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### Introduction

Liquefied Natural Gas (LNG) is a liquefied form of natural gas. The gas obtained through the well is taken to a liquefaction facility to convert into liquid form and stored in LNG containers, which are eventually transferred in specially designed LNG tankers. The regasification facility receives the LNG containers where conversion and onward transportation to end users is made. The process has made gas a tradable commodity in remote regions and markets not accessible previously and, therefore, more prone to global trends. LNG is a fossil fuel with relatively fewer carbon emissions and is generally considered a bridge fuel in meeting the long-term energy transition goals. The natural gas is 95% methane, the main Green House Gases (GHG) associated with the LNG; CO<sub>2</sub> is emitted during combustion and is easy to trace, whereas methane emissions are volatile and difficult to quantify due to leakage from wellheads and pipes. Most (~65-70%) GHG emissions occur at the regasification terminal and burner tip, whereas upstream GHG emissions are between ~25-35%.<sup>1</sup>

LNG has received recent media attention due to market surveys as conducted and published by the IEA, McKinsey, and the European Commission. With the possible Russian gas phase-out in 2022, LNG is becoming a popular policy option to meet European energy needs. European governments and private companies are making large investments in land-based regasification terminals and floating storage and regasification units (FSRUs). In Germany, two land-based regasification terminals are estimated to be operational by 2025/2026. European countries, including Netherlands and Germany, have leased twenty-five floating storage and regasification units (FSRUs) within six months.<sup>2</sup> This major policy shift can have crucial regional and global policy implications, such as,

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<sup>1</sup> Selina A. Roman-White *et al.*, "LNG Supply Chains: A Supplier-Specific Life-Cycle Assessment for Improved Emission Accounting," *ACS Sustainable Chemistry & Engineering* 9, No. 32 (2021).

<sup>2</sup> "Europe is Counting on Floating Gas Terminals to Get Through the Winter," available at <https://qz.com/europe-is-counting-on-floating-gas-terminals-to-get-thr-1849553587>, (accessed on 13 November 2022).

- Asian countries are the major LNG importers, and the increased LNG demand in the EU may conflict with Asian LNG demand. High LNG demand in Europe and a potential shift to coal in Asia might promote carbon lock-in for the next decades and contradict EU and global climate targets and regulations.
- Carbon-neutral LNG has been introduced recently to mitigate LNG's carbon footprint. The idea behind carbon-neutral LNG is to estimate the carbon footprint along the supply line and mitigate it with voluntary carbon abatement programs. However, without action to better account for, reduce, and offset natural gas and LNG emissions, the breadth, and length of its use will increasingly come into question - including, by developing countries with growing energy demand who see a diminishing incentive to favor natural gas over high-emitting but fiscally cheap fuel sources, such as coal.<sup>3</sup>
- Currently, a global framework does not exist to account/estimate the carbon emissions from the LNG supply chain.<sup>4</sup> There are generic estimates without any clear methodology, moreover, the abatement programs are also dubious. The USA is the largest exporter of LNG, and existing carbon accounting protocols are USA based and respond to the specific requirements of the American LNG industry.<sup>5</sup> America, Russia, Canada, and Qatar are the largest producers and exporters of LNG worldwide. American gas reaches the terminal from multiple routes. Hence, it is challenging to locate the exact source of gas molecules. In contrast, in the case of other major producers, the supply chain is relatively simple and thus does not involve complications like American LNG. Therefore, it is essential to have an LNG accounting framework that meets the needs of the global and EU LNG industry.

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<sup>3</sup> "What is Carbon-Neutral LNG?", available from <https://www.woodmac.com/news/opinion/what-is-carbon-neutral-lng/>, (accessed 11/13/2022).

<sup>4</sup> "The Carbon-Neutral LNG Market: Creating a Framework for Real Emissions Reductions," (2021), (accessed 11/13/2022) from <https://www.energypolicy.columbia.edu/research/commentary/carbon-neutral-lng-market-creating-framework-real-emissions-reductions>.

<sup>5</sup> Jonathan Stern, "Greenhouse Gas Emissions from LNG Trade: From Carbon Neutral to GHG-verified," *Energy Insight* (September 2022). Visit at <https://a9w7k6q9.stackpathcdn.com/wp-content/uploads/2022/09/Insight-124-Greenhouse-Gas-Emissions-from-LNG-Trade.pdf>

### EU and Carbon-Neutral LNG

Historically, Europe has heavily relied on Russia for its energy needs; almost 40% of the EU gas was imported from Russia before the Ukraine-Russia war.<sup>6</sup> However, contrary to an expected gradual replacement of Russian gas by 2030, recent political developments have completely halted Russian gas to the EU. The resulting situation has increased European reliance on alternative energy sources such as American and Canadian LNG. The USA is the major exporter of LNG to Europe; according to the U.S. Energy Information Administration (EIA), in the first quarter of 2022, Europe imported almost 74% of the American LNG.<sup>7</sup> Canada indirectly contributes to the global LNG supply, helping the EU in this situation. Recently Canadian gas supply to the USA has increased, and this, in return, is assisting the EU consumers.<sup>8</sup> Canadian LNG infrastructure has a couple of years to go online and actively supply the LNG to global consumers.

The existing global energy demand continues to rise due to increasing poverty and population growth. The growth in renewables is not sufficient to meet the increasing energy demand. According to IEA, fossil fuels still supply more than 84% of global energy.<sup>9</sup> Most global energy forecasts from organizations like IEA, Shell, etc. project an increasing LNG demand through 2050.<sup>10</sup> Shell predicts an even tight market outlook and foresees an LNG shortage due to added uncertainty of recent political developments.<sup>11</sup>

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<sup>6</sup> "In Focus: Reducing the EU's Dependence on Imported Fossil Fuels," (20 April 2022), visit at [https://ec.europa.eu/info/news/focus-reducing-us-dependence-imported-fossil-fuels-2022-apr-20\\_en](https://ec.europa.eu/info/news/focus-reducing-us-dependence-imported-fossil-fuels-2022-apr-20_en).

<sup>7</sup> "U.S. Liquefied Natural Gas Exports to Europe Increased During the First 4 Months of 2022," *Today in Energy*, (7 June 2022), at <https://www.eia.gov/todayinenergy/detail.php?id=52659> (accessed 11/13/2022).

<sup>8</sup> "Canada to boost energy exports to U.S. to aid in supply crisis triggered by Russia's war in Ukraine," *The Global and Mail*, 24 March 2022, available at <https://www.theglobeandmail.com/business/article-canada-to-boost-energy-exports-to-us-to-aid-in-supply-crisis-triggered/> (accessed 11/13, 2022).

<sup>9</sup> "Fossil Fuels Still Supply 84 Percent of World Energy — And Other Eye Openers from BP's Annual Review," *Forbes*, 20 June 2020, <https://www.forbes.com/sites/rrapier/2020/06/20/bp-review-new-highs-in-global-energy-consumption-and-carbon-emissions-in-2019/?sh=407796f166a1>. (accessed 11/14, 2022).

<sup>10</sup> Laura Cozzi *et al.*, *World Energy Outlook 2020*, Vol. 2050 (2020). Visit at <https://iea.blob.core.windows.net/assets/a72d8abf-de08-4385-8711-b8a062d6124a/WEO2020.pdf>.

<sup>11</sup> Stern, "Greenhouse Gas Emissions from LNG Trade: from carbon neutral to GHG-verified."

Experts at McKinsey claim that any serious net-zero scenario will have LNG as a significant contributor.<sup>12</sup>

Another interesting fact is that, unlike previously, long-term LNG contracts are becoming popular in Europe and worldwide. Enbridge acquired 30% ownership in Woodfibre, a Canadian LNG project; the same project has secured long-term contracts with B.P. Plc. for the next 15 years.<sup>13</sup> Similarly, Cheniere Energy, the largest US exporter, has made two long-term contracts with two Canadian LNG exporters such as Tourmaline Oil and ARC Resources.<sup>14</sup> Two important points can be inferred from it: LNG will stay longer as a prominent fuel mix, and the market anticipates long-term growth. Secondly, the LNG sector will have a massive influx of capital and human resources necessary for research and development, which might make LNG a more competitive fuel mix.

As gas markets are becoming commoditized, less regional, and more international due to greater flexibility, the emission intensity of the LNG supply chain is receiving more scrutiny, giving rise to carbon-neutral LNG where emissions are accounted for throughout the LNG supply chain and offset through carbon abatement programs. Recently, there's been an increase in carbon-neutral LNG trading. In 2019, the first carbon-neutral cargo was exported to Japan by Shell; however, there has been tremendous growth in carbon-neutral LNG exports in recent years. Nevertheless, efforts to accurately calculate carbon emissions are still in their infancy. There are two main issues,

- Generic assumptions are made regarding emissions calculations
- Different organizations are involved in calculating emissions regarding downstream, transportation, and upstream segments of the supply chain; therefore, estimates are unrealistic.

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<sup>12</sup> Ibid.

<sup>13</sup> "Enbridge Takes 30% Stake in Woodfibre LNG Project," *Financial Post*, 29 July 2022. Visit at <https://financialpost.com/commodities/energy/oil-gas/enbridge-takes-30-stake-in-woodfibre-lng-project>, (accessed 11/14/ 2022).

<sup>14</sup> Deborah Jaremko, "U.S. Exporting Canadian Natural Gas as Global LNG Demand Surges," (8 July 2022), at <https://www.canadianenergycentre.ca/u-s-exporting-canadian-natural-gas-as-global-lng-demand-surges/>. (accessed 09/29/2022).

In short, the industry needs a standard methodology for emission calculation. It can be crucial for the future outlook of the LNG industry to act as a bridge fuel in meeting net zero global targets and complying with European climate targets. Therefore, it is essential to have robust Measurement, Reporting, and Verification (MRV) of Emissions from all LNG supply chain segments. The US is the largest LNG producer and exporter, so evolving methane emissions certifications are tremendously based on U.S. standards and practices. Two prominent initiatives are those established by MiQ and Project Canary. MiQ is developing an LNG standard module and a transmission and storage module and will certify organizations from the wellhead to the regasification terminal once finalized.<sup>15</sup> Project Canary provides measurement and continuous monitoring of methane emissions for both the upstream and midstream operators to audit Environmental, Social, and Governance (ESG) commitments for air, water, land, and community.<sup>16</sup> However, their mechanism is confidential. GTI Energy introduced veritas, a set of protocols to develop a standardized approach to measuring and verifying methane emissions.<sup>17</sup> These measurement protocols respond to distinct U.S. regulatory needs and might not serve the global LNG market. In the case of non-US-based LNG export, a different framework is required due to the simplicity of tracking emissions and the comparatively less complex LNG supply chain. Responding to industry needs, in November 2021, two frameworks for MRV of emissions were published by GIIGNL and the Statement of Gas Emissions (SGE) partners. The GIIGNL Framework requires a cargo statement documenting emissions, offsets used, and an emission reduction plan.<sup>18</sup> GIIGNL is still in the development phase and has not been adopted yet.

Like CO<sub>2</sub> pricing mechanisms, a new EU regulation proposes methane charges for all fossil fuel imports from 2025, requiring a robust mechanism for MRV for LNG. Unlike the U.S. inflation act, if methane charges are based on CO<sub>2</sub> prices, this will have critical commercial consequences. According to

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<sup>15</sup> MiQ Standard for Methane Emissions Performance, Main Document (2022), at <https://miq.org/document/miq-standard-transmission-storage/>. (accessed 11/14, 2022).

<sup>16</sup> "Introducing Project Canary: Impact," at <https://www.projectcanary.com/blog/introducing-project-canary-impact/>. (accessed 11/14, 2022).

<sup>17</sup> "GTI Launches Veritas, an Initiative to Measure and Verify Companies' Methane Emissions Reductions," <https://www.gti.energy/gti-launches-veritas-an-initiative-to-measure-and-verify-companies-methane-emissions-reductions/>. (accessed 11/14, 2022).

<sup>18</sup> "Driving Transparency on Emissions and GHG Neutral LNG Cargoes," available from <https://giignl.org/framework/>. (accessed 11/14, 2022).

the second Kyoto Protocol (2013-20) it was decided to use a Global Warming Potential (GWP) metric over a 100-year time horizon. Methane emissions were assigned a GWP of 25 in CO<sub>2</sub>e units in the IPCC's Fourth Assessment Report, which was raised to 29.8 for fossil methane and 27.2 for non-fossil methane in the Sixth Assessment report published in 2022 extended this figure.<sup>19</sup> However, after the Paris agreement, many governments are required to meet the net zero target by 2050; hence GWP of methane in these countries is roughly 75 times, and cargoes landing in those countries will have to pay a significantly higher CO<sub>2</sub> charge. In short, LNG can play a crucial role in filling the energy gap and diversifying the energy mix in Europe; however, existing GHG accounting arrangements are insufficient to quantify and report carbon footprint.

### **Consequences for Asian buyers**

Today more than ever, there is a widespread understanding of the role a reliable energy source can play in sustainable growth. A successful transition toward net zero means universal access to cleaner and low-carbon fuel; in other words, our choices ought to be strategic in our attempt to achieve long-term goals, and hence we want to avoid energy choices that exacerbate the problem. Although LNG is categorized as a low emitter, it is often seen as a catalyst in achieving the net zero goals. According to IEA, electricity produced by LNG produces 50 percent fewer emissions, and Canadian LNG would further reduce it to 62%, a study by the *Journal of Cleaner Production*.<sup>20</sup> Similarly, according to Oxford Institute, once operational, the global average emission intensity of LNG Canada is expected to be .15 as compared to the global average of 0.35; similarly proposed Indigenous-led project Cedar would have 0.08% and Woodfibre LNG 0.03 percent, respectively.<sup>21</sup>

However, without ensuring the proper GHG accounting and mitigating the harm through regulated carbon credits abatement programs is not possible. Moreover, careful consideration must be paid to incentivize the LNG among

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<sup>19</sup> European Commission, "Kyoto 2nd Commitment Period (2013–20)," available at [https://climate.ec.europa.eu/eu-action/climate-strategies-targets/progress-made-cutting-emissions/kyoto-2nd-commitment-period-2013-20\\_en](https://climate.ec.europa.eu/eu-action/climate-strategies-targets/progress-made-cutting-emissions/kyoto-2nd-commitment-period-2013-20_en). (accessed 11/14, 2022).

<sup>20</sup> Yuhao Nie *et al.*, "Greenhouse-gas emissions of Canadian liquefied natural gas for use in China: Comparison and synthesis of three independent life cycle assessments," *Journal of Cleaner Production* 258 (2020).

<sup>21</sup> J. Peter Findlay, "Canadian LNG Competitiveness," *OIES PAPER*: No. 156 (Oxford Institute for Energy Studies, December 2019).

developing countries such as India and Pakistan. Carbon-neutral LNG is sold at a premium, and the supply challenges due to the European situation might make LNG a less favorable option for Asian buyers.

LNG clearly has a role to play now and, in the years, ahead. Population growth and development worldwide will require more energy, with fewer CO<sub>2</sub> emissions. It is not surprising to see growing LNG demand in countries like Korea and China. Natural gas use is expected to triple by 2040 as developing countries replace high-carbon molecules from other energy sources, such as coal. At present, developing countries are heavily invested in fossils, and moving directly to renewables is not rational for most developing countries. First, in developing countries, the energy demand is immensely high, and renewables cannot support the baseload. Secondly, a lack of resources prevents developing countries from committing heavy investments toward clean energy infrastructure; hence, LNG is popular among developing countries due to its low carbon footprint and modest capital investment. Therefore, it is not unexpected to note that Asia is the largest importer of LNG; however, Europe has become a hot market for LNG due to current political developments. The USA, once the largest exporter to Asia, is now exporting mainly to the U.K. and Europe. It is expected that due to strategic and political reasons, it is likely that the EU will be a priority for American and Canadian LNG.

LNG has great potential to address short-term energy crisis in Europe; however, careful consideration is needed to evaluate the potential carbon lock-ins and reduction in Asian LNG demand. Moreover, there is increasing pressure on LNG exporters to avoid carbon lock-ins and meet global climate targets to develop an emission framework. Once developed, the standard adopted will also have consequences for Asian markets. The carbon-neutral LNG will be sold at a premium, and the premium price will vary depending upon the quality of carbon credits purchased. The price-sensitive developing markets will have less incentive to prefer LNG over cheap and easily accessible coal.

### **Key policy considerations**

In the dynamic world with climate change and the decarbonization megatrend, carbon-neutral Liquefied Natural Gas (LNG) is essential to make LNG more competitive environmentally with renewable energy in response to environmental, social, and corporate governance (ESG) pressures.



Following are some key considerations for policy in the backdrop of the current European energy crises and the importance of standard MRV framework to mitigate LNG's GHG impact:

- Population growth and development worldwide will require more energy, with fewer carbon footprint. The current global LNG share is 12%, growing at 3-4% per annum, and is expected to double in the coming 20 years. LNG-importing countries are four times high. According to the IEA, LNG demand is expected to rise through 2050. Shell's latest energy outlook expects LNG demand to cross 700 million tons by 2040; the outlook is so bullish on demand that it anticipates a supply shortage in mid the 2020s.<sup>22</sup>
- Unlike the past, long-term LNG contracts are becoming popular due to limited global supply, higher prices, and expected future shortages. For example, PetroChina and Shell signed the first long-term contract for carbon-neutral LNG. Enbridge Inc also made the first LNG investment by acquiring a 30% stake in the \$5 billion Woodfibre LNG project. Tourmaline Oil made an agreement with Cheniere Energy for 15 years of LNG exports. Cheniere Energy made a similar agreement with ARC Resources.<sup>23</sup>
- The EU has been very proactive regarding climate targets and is expected to achieve net zero targets by 2050 as per EU climate law and is planning to reduce emissions by 55% by 2030.<sup>24</sup> In meeting long-term net zero targets, natural gas is regarded as a bridge fuel; natural gas plays a vital role in the transition regardless of advancements in renewable energy. Natural gas emits relatively 45-55 less GHG than other fossils and hence has a key role in Energy transition. However, the breadth and length will depend on actions to better account for, reduce and offset natural gas and LNG emissions.
- Carbon-neutral LNG is sold at a premium, which could affect price-sensitive buyers in Asia, such as India and Pakistan.
- Carbon-neutral LNG has immediate impacts like carbon sequestration and broader benefits, including soil and air quality. Therefore, it could be crucial for Europe to meet its emission targets. Europe has voluntarily

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<sup>22</sup> Shell, "Shell LNG Outlook 2022", (2022).

<sup>23</sup> Jaremko, "U.S. exporting Canadian natural gas as global LNG demand surges".

<sup>24</sup> Lasse Toft Christensen and Nichole Dusyk, *Why Canadian Liquefied Natural Gas Is Not the Answer for the European Union's Short-Term Energy Needs*, (Canada: International Institute for Sustainable Development, 2022).

revised its net zero targets and has set 2040 as a new deadline. GHG associated with LNG is easier to quantify; however, the real challenge is on the methodological front; no MRV-specific framework is available in the industry. European countries are investing in LNG terminals and looking to diversify their energy mix. However, with progressive climate targets, it will not be possible to target the EU LNG market with robust MRV.

- The industry can mainly act in the upstream emissions (25-35%); most of the emissions are either leaks or during liquefaction. However, Canada can be a leader in carbon-neutral LNG export due to potential renewable run liquefaction, cold weather, and a short distance to Asia. The relatively clean and less expensive Canadian LNG can have a competitive advantage in Asian markets.

Europe is facing a difficult and uncertain economic outlook. Governments, households, and firms are grappling with an energy and cost-of-living crisis that was exacerbated by the war in Ukraine. Amid high inflation and rapidly tightening monetary policy, many European countries are expected to suffer a recession over the winter.

Moreover, persistently high prices could create lasting damage, eroding Europe's competitiveness in high-energy manufacturing activities, causing losses in market share, and prompting companies to relocate to countries with lower energy costs. Germany, which combines a large manufacturing sector with high energy use in industrial production, appears particularly vulnerable to the fallout from the energy crisis. While fears of deindustrialization may be overblown, Europe's policymakers face difficult trade-offs as they adjust to new geopolitical and energy market realities.<sup>25</sup>

Europe's energy crisis has upended the green transition and undermined efforts keep global warming below 1.5 degrees Celsius, all the stakeholders emphasized, with one warning of an "existential threat" to climate goals.

With parts of Europe facing a possible fuel shortage this winter, panelists at the Reuters IMPACT sustainability conference in London addressed the challenge of keeping the power on - sometimes by producing and using more coal - without giving up on the region's climate goals. Prices for thermal coal,

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<sup>25</sup> <https://www.un.org/en/desa/energy-crisis-poses-threat-europe-industrial-sector>.

used to generate electricity, and other fossil fuels have soared, as many European countries go with less Russian gas. While coal demand had been expected to decline in the long-term, there's been a resurgence in Europe in recent months as coal plants are turned back on.

"We need (coal) in the short term of the energy crisis," said Christian Rynning-Tønnesen, CEO of Europe's largest generator of renewable energy, Stat kraft. "But policy wise, we need to go for low emissions and renewables in the long-term." With the next two years expected to be economically challenging, the Ikea is introducing more energy efficient products for customers feeling the cost-of-living crunch, including LED lighting and electronics powered by solar light and batteries.

Moreover, the IKEA CEO also said during with an interview with Reuters. "The transition to renewable energy will go faster now". noting the crisis would also encourage energy efficiency. Also, the next two years expected to be the most challenging years in terms of energy crisis as well as in terms of climate change.<sup>26</sup>

### **Recent Scenario & Options for Policy-Makers**

Faced with a sharp increase in fossil fuel prices and an incentive to reduce reliance on oil and gas from Russia, policy-makers have two options: one increase the availability and decrease the price of low-carbon substitutes – by, for example, building more renewable energy capacity and subsidizing electric vehicles – or cut taxes on fossil fuels and increase their supply, both domestically and from other countries.

Governments have pursued both options so far. On the one hand, the Netherlands, the UK, and Italy announced an expansion of wind capacities compared to what was planned, in an attempt to reduce their dependence on Russian gas, like France ended gas heaters subsidies. On the other hand, half of EU member states have cut fuel taxes for a total cost of €9 billion in month of March 2022, the UK plans to expand oil and gas drilling in the North Sea, and Italy might re-open coal-fired plants.

To guide policymakers faced with the current energy crisis, there are valuable lessons to draw from the experiences of energy policy reform in

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<sup>26</sup> <https://www.reuters.com/business/energy/reuters-impact-energy-crisis-seen-posing-existential-threat-climate-goals-2022-10-03/>.

France, the UK and Germany. France's push for nuclear energy in the 1970s shows that large-scale structural reform of electricity and heat production is possible and may lead to large drops in CO<sub>2</sub> emissions and an economy less dependent on domestic or foreign supplies of fossil fuels. A similar "Messmer plan" could be implemented in the EU, with the goal of replacing power plants using coal and natural gas with large-scale solar PV parks, wind farms and batteries for storage. Similarly, the German experience shows the potential danger of implementing a policy to alleviate one concern – the risk of nuclear accidents – with the consequence of facing a different concern later on – the dependence on fossil fuel imports.

One additional challenge is that the current energy crisis calls for a short-term response, while investments in low-carbon technologies made today will only deliver in a few years. Short-term energy demand reduction policies can help, on top of long-term energy efficiency measures. For example, a 1°C decrease in the temperature of buildings heated with gas would decrease gas use by 10 billion cubic meters a year in Europe, that is, 7 percent of imports from Russia. Similarly, demand-side policies could reduce oil demand by 6 percent in the next four months, according to the International Energy Agency.

Ending the reliance on Russian fossil fuels and alleviating energy costs for firms and households is clearly an important objective for policymakers. However, by signing new long-term supply agreements for natural gas and cutting energy taxes, policymakers in the EU may create a carbon lock-in and increase fossil fuel usage by households, thereby making the inevitable low-carbon transition even more difficult. The solutions thus need to take the looming climate crisis into account. For example, any tax relief or increased domestic fossil fuel generation should have a clear time limit; more generally, all policies decided today should be evaluated in terms of their contribution to domestic and European climate objectives. In this way, the current energy crisis is not only a challenge but also a historic opportunity to accelerate the low-carbon transition.<sup>27</sup>

The State of the Energy Union report reviews the latest policy developments and describes the progress made at Union level towards meeting the objectives of the Energy Union, including the Union's 2030 targets for energy

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<sup>27</sup> <https://freepolicybriefs.org/2022/05/24/energy-climate-crisis-europe/>.

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and climate. The 2022 edition of the report takes stock of the EU's energy policy response to the current energy crisis and elaborates on their scope, anticipated impacts and consistency. This report is accompanied by proposals addressing energy prices and security of supply ahead of this winter.

Russia's unprovoked and unjustified aggression against Ukraine has upended energy markets, triggering price volatility and energy insecurity across the world with impacts and repercussions for the EU's energy system. The EU and its Member States are dynamically reshaping their energy strategies to reflect new geopolitical realities and to address the need for affordable energy. This includes intensified actions to increase gas supplies from the EU's trusted partners. Record-high energy prices since the second half of 2021 have been exacerbated by the conflict, with Russia's weaponization of energy supplies and heavily impacted also by the record-high temperatures in the summer. It is imperative to accelerate the transition to clean energy and bring dependence on Russian energy to an end as soon as possible and well before the end of this decade.