

GIES OCCASIONAL PAPER

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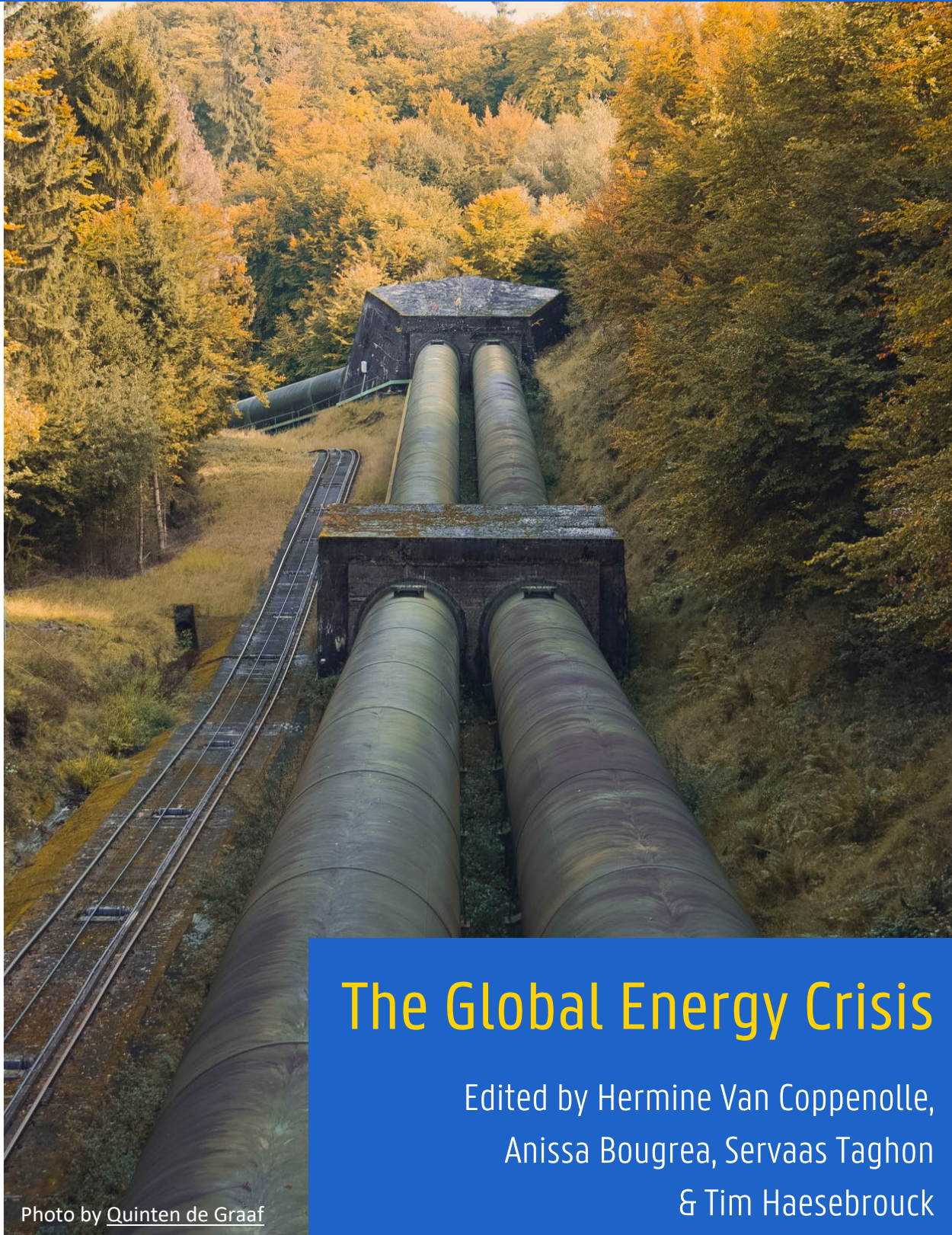


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The Global Energy Crisis

Edited by Hermine Van Coppenolle,
Anissa Bougrea, Servaas Taghon
& Tim Haesebrouck

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INTRODUCTION

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February 2023 marks the one year-anniversary of the start of Russia's so-called 'Special Military Operation' in Ukraine. The world is not only reeling from the war, but also hit by a global energy crisis. Though the roots of the crisis go deeper than the war in Ukraine – catalysed by the economic rebound from the pandemic¹ – the two issues are strongly entwined. For the EU, responses to the energy crisis were marked by a rush towards independence from Russian gas.² Beyond the Union's borders, this inadvertently tightened gas and other energy markets all over the world.³ As the crisis feeds into steep inflation and households worrying how to heat their homes, the global energy crisis hit hard on many levels and in many sectors.⁴

The GIES Occasional Paper is an initiative that aims to contextualise big crises or shocks from the myriad of perspectives held by our in-house researchers. Like we did in the first volume of the Occasional Paper "[War in Ukraine](#)", the Ghent Institute for International and European Studies banded together to provide 12 perspectives on the global energy crisis. This time, we were joined by researchers from other research groups and

departments within Ghent University, including the Center for Sustainable Development and the Department of Public Management and Administration, as well as from the Institute for Environmental Studies of VU Amsterdam.

To introduce the volume at large, three broad categories of perspectives bring together all of the contributions. A first three contributions start off with cautionary messages, warning for the need for a long-term perspective as opposed to ad-hoc decision-making. [Thijs Van de Graaf](#) warns that the energy crisis will not be won by the end of winter. Handling the energy crisis and the challenges to come requires long- and mid-term plans, not just a yearly race to keep prices down and gas storage up. [Reinhilde Bouckaert](#) dives into Algeria's gas markets and what short-sighted EU energy policy looks like from the perspective of one of its gas suppliers. In her contribution, she highlights the opportunities and the need for both the EU and Algeria to avoid carbon lock-in or stranded assets by consciously capitalising on the crisis. [Hermine Van Coppenolle](#) untangles the dynamics of global climate goals, noting that the looming ambition and implementation gaps

¹ IEA, "Global Energy Crisis," IEA, n.d., accessed on February 16, 2023, <https://www.iea.org/topics/global-energy-crisis>.

² European Commission, "REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition*," *European Commission*, May 18, 2022 https://ec.europa.eu/commision/presscorner/detail/en/IP_22_3131.

³ Moniek De Jong, "Europese Ing-honger maakt slachtoffers in Azië," *De Tijd*, January 31, 2023, <https://www.tijd.be/opinie/algemeen/europese-Ing-honger-maakt-slachtoffers-in-azie/10443736.html>.

⁴ The Economist, "2022 has been a year of brutal inflation," *The Economist*, December 21, 2022, <https://www.economist.com/finance-and-economics/2022/12/21/2022-has-been-a-year-of-brutal-inflation>.

require thoughtfully planned action today to keep climate change at bay.

Under the guise of never wasting a good crisis, two contributions touch on specific opportunities the global energy crisis offers up. Turning the energy crisis on its head, [Kimberley Vandenhole and Erik Paredis](#) argue to reframe the energy transition altogether. The crisis represents an opportunity not to maintain and secure current energy demand, but to lower global energy demand and to develop an energy system based on energy sufficiency and energy efficiency. [Jasper Praet](#) sheds light on how the global energy crisis creates a window of opportunity for radical-right parties to bolster their presence and strengthen their agenda. The cocktail of inflation, the wage crisis and worries around energy security provide the parties with a strong foundation to share their ideology, even in a climate where immigration is not top of mind.

A number of contributions discuss and question some proposed technical solutions to the energy crisis: the turn to LNG and hydrogen, the strategic shifts towards energy security, the EU's return to industrial policy and macroeconomic answers to the rising inflation and wage crisis. [Moniek de Jong](#) in her contribution problematises the turn to LNG. She argues in detail how filling in the gaps of Russian gas with LNG risks new dependencies and continued carbon lock-in when increasing energy efficiency, reducing energy demand and maximising renewables should be the priority. [Marie Dejonghe](#) touches on another key solution for the energy transition: the energy carrier hydrogen. Her contribution puts the challenges and import dependencies that a large-scale hydrogen market still faces into perspective, whilst still highlighting the potential of hydrogen for energy independence and the decarbonisation of heavy industries. In his contribution, [Mathieu Blondeel](#) questions the global turn to energy security and the EU's

quest towards energy independence. By combing through the complexity of clean energy supply chains, Blondeel argues that it is futile for the EU to become completely energy independent. There are, however, critical junctures where the right strategies can provide the EU with greater safety. [Berk Vindevogel](#) unravels the role the arctic has already played in the current global energy crisis and touches on what opportunities remain untapped in the northernmost region of our planet.

In his contribution, [Ferdinand De Ville](#) unpacks the comeback of EU industrial policy. He discusses the driving factors of the return and warns for caution. Though industrial policy holds great democratizing and transformative potential, De Ville pleads for a careful implementation of the policy, Europeanised, targeting new investments and focusing on transparent, conditional and inclusive allocation. [Hielke Van Doorslaer](#) addresses the raising interest rates by central bankers to tackle energy inflation. He details how narrowing down central bank policy to inflation-fighting distracts attention for other threats, such as climate change and secular stagnation. He argues that broadening monetary policy towards credit guidance instead could prove a more helpful tool in this crisis. [Mattias Vermeiren](#) closes off this volume with a strong companion piece to Hielke Van Doorslaers contribution. Providing a historical perspective on the current wage price spiral, Vermeiren details the systematic changes that make the 1970s stagflation crisis different than what we are facing today. He warns for using rate hikes to fight inflation, noting the risks this holds for the most vulnerable of society.

***Hermine Van Coppenolle**, together with **Servaas Taghon**, **Anissa Bougrea**, and **Tim Haesebrouck** brought together this volume of the *GIES Occasional Paper on the global energy crisis*.*

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EUROPE'S ENERGY CRUNCH: NO TIME FOR COMPLACENCY

Thijs Van de Graaf

Ghent Institute for International and European Studies – Ghent University

Ten months after Russia's invasion of Ukraine, winter has arrived in an energy-crunched Europe. Despite this, the mood is surprisingly optimistic. Gas prices have more than halved since the summer and the continent has comfortably filled its gas storages to comfortable levels, making shortages this winter very unlikely.

While it may seem that the tides have turned in the EU's energy war with Russia, it is way too soon to declare victory. Recent trends in prices and storage are positive signs, but they should not lull Europe into a false sense of energy security. Instead, Europe should continue to prepare for a lingering energy crisis in 2023, and beyond.

Europe's response to the energy crisis so far has been too slow, disjointed and, in some cases, incoherent. If Europe does not get its act in order, it faces a risk of (energy) market breakdown and a backlash on efforts to decarbonize. But if it rises to the occasion, the EU can emerge stronger and more resilient from the energy shock.

Europe's gas troubles are far from over

Gas prices: still overheated

Wholesale gas prices have dropped by nearly two-thirds from their peak of almost €340/MWh in late August, despite Russia cutting most of its pipeline gas supplies to Europe (Figure 1).

The decline in gas prices is remarkable and is providing much-needed relief to Europe's economy. Yet, wholesale gas prices are still hovering around a hefty €100/MWh—more than 5 times above the average of 2010-2019.

Moreover, future contracts point to an enduring tightness in gas supplies. The current forward curve suggests that gas prices will average well over €110/MWh in 2023 and over €90/MWh in 2024. For comparison, Europe's pre-2021 gas prices never exceeded €30/MWh.

Although forward curves must be treated with caution, it seems safe to say that Europe is not returning to the pre-2021 gas price levels. This crushes any hope that the gas crunch would be a short-lived event, confined to this and the previous winter.

Figure 1. Wholesale gas prices in Europe (front-month TTF, €/MWh)⁵



Storage: winter buffer is not enough

Gas demand is seasonal and underground gas storage is essential to meet winter demand. In 2021, Europe started the heating season with historically low gas storage levels (76% on November 1st).

This year, the European Council adopted a minimal storage obligation of 80% for November 1st. The EU by far exceeded its own target and hit almost 95% (Figure 2).

However, storage is not enough. Storage typically meets only 25-40% of winter demand. A steady stream of production and imports is still required.⁶ In the winter of 2021-2022, Russian pipeline gas was still flowing into the EU (albeit at

reduced rate). This winter, Russian gas flows have fallen to a trickle.

Europe needs to have enough gas in store at the end of the heating season. If storage levels fall below 50%, the withdrawal rate also begins to fall precipitously. This could be dangerous in the case of a late cold spell, say in March 2023.⁷

Depleting storage levels also make Europe's task of refilling storage ahead of the 2023 winter a lot more difficult. This is important, since it will likely be the first filling season without access to Russian pipeline gas (zero gas pipeline imports from Russia in 2023 is now the IEA's baseline scenario).⁸

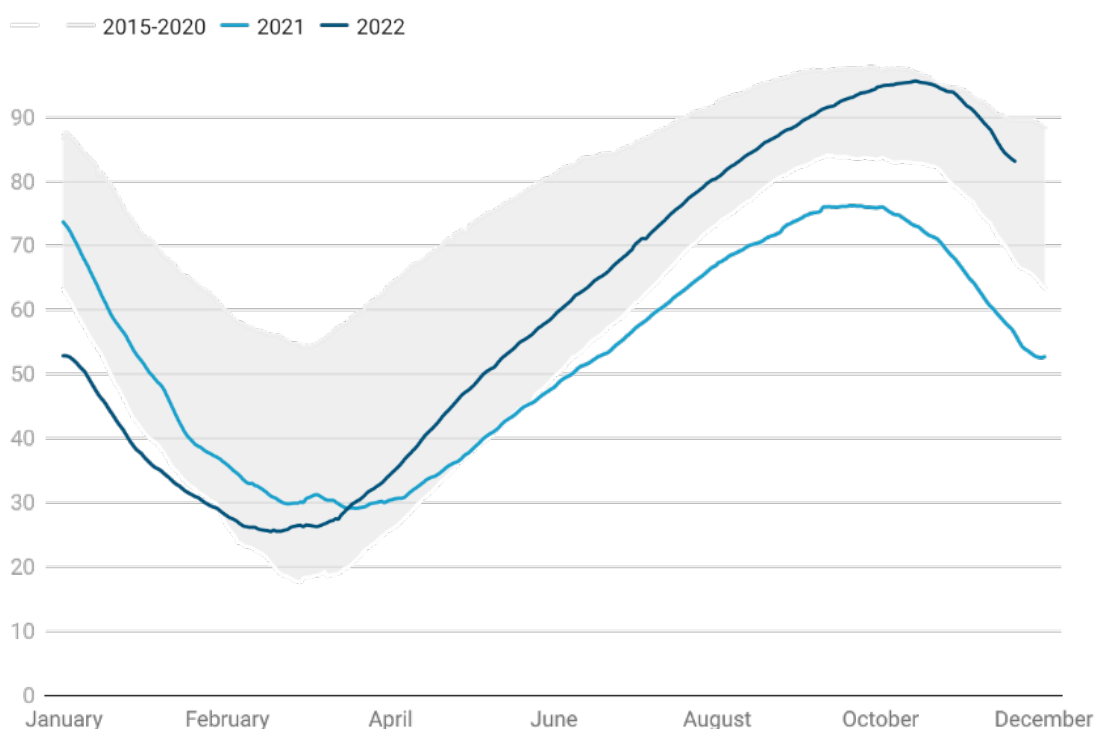
⁵ ICE, "Dutch TTF Natural Gas Futures", <https://www.theice.com>

⁶ Nikos Tsafos, Twitter post. November 3, 2022.

⁷ IEA, Gas Market Report, Q4-2022 (Paris: IEA/OECD, October 2022).

⁸ IEA, How to Avoid Gas Shortages in the European Union in 2023 (Paris: IEA/OECD, December 2022).

Figure 2. EU gas storage (% full)⁹



Energy savings: cold comfort

Europe's gas demand has been significantly reduced in the face of high gas prices. Across the 27 member states, gas demand has fallen by 11% between January and November 2022, compared with average demand in those months between 2019 and 2021. However, this still falls short of the mandatory target of 15% reduction in gas consumption that the EU set for this winter. Part of the savings are sheer luck. Gas consumption has been moderated by unusually mild temperatures in the Autumn.¹⁰ A few cold spells during the winter may put Europe's readiness to save gas to the test.

Moreover, not all energy savings are alike. A household voluntarily turning down the thermostat is not the same as one choosing between heating or eating. A brewery switching from gas to oil is not the same as a fertilizer plant closing production for weeks or even months. Energy savings are to be encouraged as long as they don't incur social or economic pain.

There is no evidence of deindustrialization in Europe. Industrial manufacturing output went up over the last year.¹¹ Yet, many industries have been shielded from high prices by long-term contracts, which will expire at some point. As Nikos Tsafos aptly put it: We should beware of 'economic ruin masquerading as "energy savings"'.¹²

⁹ Gas Infrastructure Europe, "Storage database", <https://www.gie.eu/transparency/databases/storage-database/>.

¹⁰ John Kemp, "Column: Europe should thank mild autumn for averting gas crisis this winter," Reuters, December 19, 2022, <https://www.reuters.com/article/europe-gas-kemp-idUSL1N3361IH>.

¹¹ Martin Sandbu, "What energy crisis? European industry is showing its adaptability," Financial Times, December 1, 2022.

¹² Nikos Tsafos, Twitter post. November 3, 2022.

Figure 3. Gas savings in the EU (% of savings in Jan.-Nov. 2022 compared to avg. 2019-2021)¹³

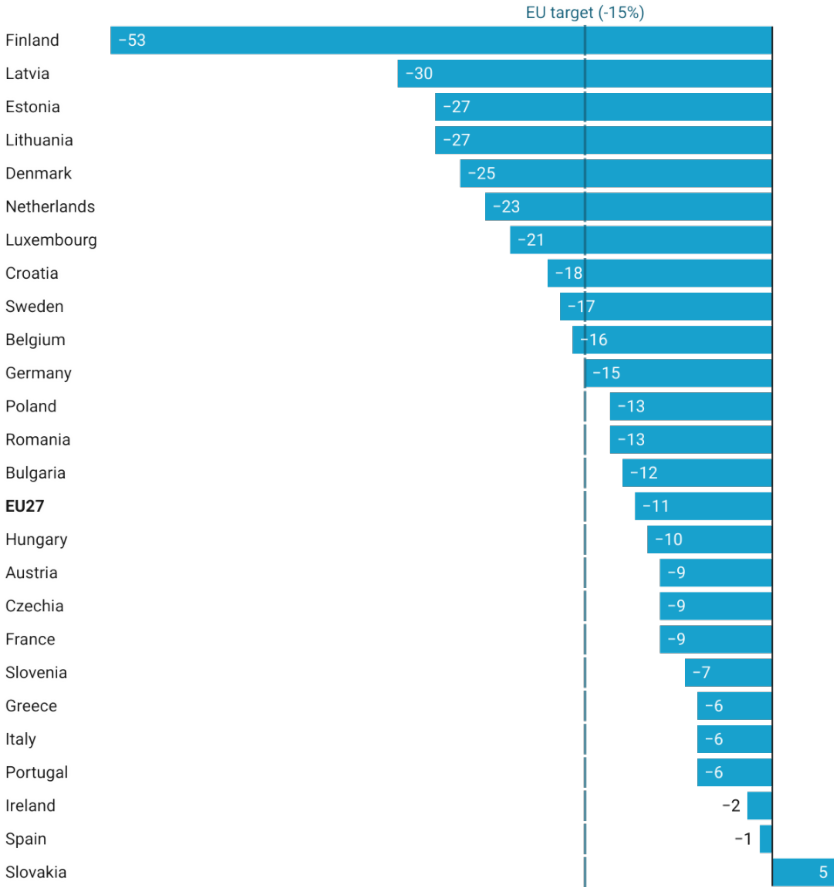
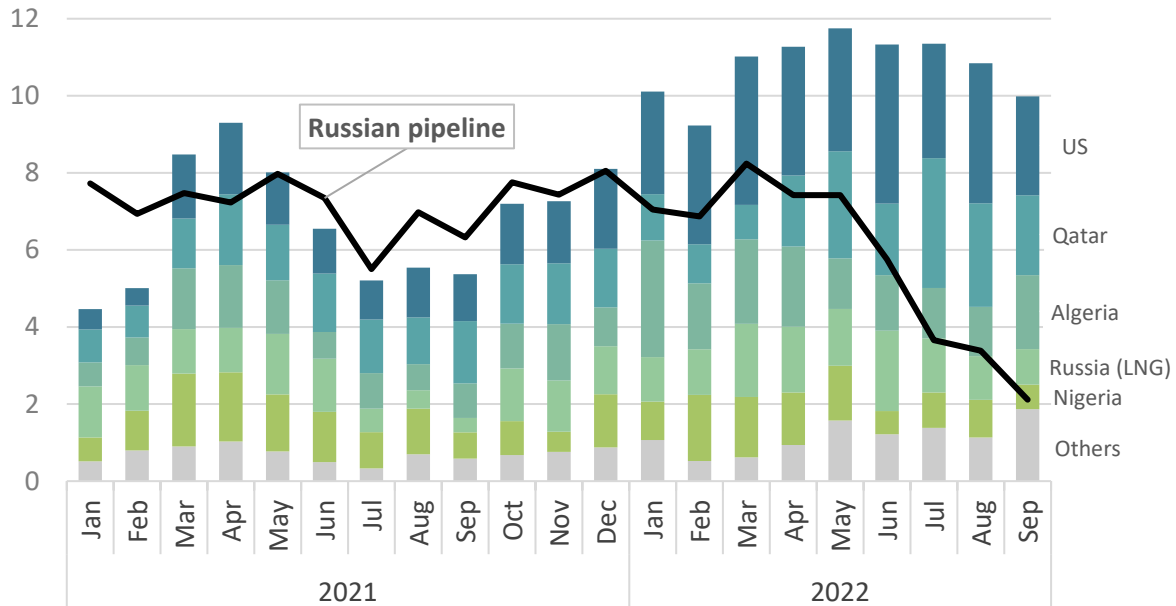


Figure 4. EU Import of LNG and Russian pipeline gas (bcm/month)¹⁴



¹³ Ben McWilliams and Georg Zachmann, “European natural gas demand tracker,” Bruegel Datasets, first published December 7, 2022, <https://www.bruegel.org/dataset/european-natural-gas-demand-tracker>.

¹⁴ Eurostat, “Imports of natural gas by partner country - monthly data”, Eurostat, December 19, 2022, https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_GASM/default.

LNG lifeline: freedom molecules?

As Russia closed the gas spigots, Europe has diversified to other suppliers. If it was not for the massive influx of LNG (with the US now the top supplier), Europe would have probably needed to resort to rationing. Repeating that feat next year will be harder. Europe's record LNG inflows in 2022 were partly enabled by lower demand from China due to covid-induced lockdowns. In 2023, China's LNG import needs may grow by 20 billion cubic meters (bcm), effectively eating up all of the growth in global LNG export capacity, which is expected to be modest anyway.

Moreover, the reorientation of gas trade flows sometimes looks more like problem shifting than a real solution. Ironically, for instance, Europe has increased its imports of LNG from Russia in the past year.

The EU now routinely touts non-Russian gas suppliers as 'reliable', including Qatar (currently in the eye of a corruption storm hitting the European Parliament), Azerbaijan (which recently attacked Armenia), and Algeria (which threatened to cut gas supplies to Spain in April).

With European companies scooping up a large portion of LNG spot cargoes (and even some cargoes sold under long-term contracts to other destinations), it has partly exported its energy crisis to the rest of the world. Developing countries with less deep pockets have struggled to secure LNG imports. As a result, many have resorted to coal and some, like Bangladesh and Pakistan, even suffer from routine blackouts.

The West has not yet won the energy battle

In recent months, Ukraine has made impressive gains on the battlefield. However, in energy

markets, the West has not yet emerged victorious. This is particularly apparent in Ukraine, which is facing a cold and dark winter due to Russian attacks on its energy infrastructure.

The rest of Europe may feel that they have the upper hand in the energy battle with Russia. After all, the EU has effectively banned imports of Russian coal (since August 10) and crude oil delivered by ships (since December 5) without wreaking havoc on energy markets. In fact, both coal and oil prices have declined since the embargoes took effect. And on top of that, Europe has stomachached Russia's gas cut-offs.

Yet, the reality is also that Russia has profited greatly from the war. Over the past few months, the EU has spent twice as much on payments for Russian fossil fuels than on aid to Ukraine (figure 5). In just the first five months after the invasion, Russian oil and gas revenues more than doubled compared with the average of previous years.¹⁵ It is clear that the energy battle with Russia will be a long and complicated one.

Russia and Europe both stand to lose in the gas war

In the REPowerEU plan, proposed by the European Commission in May 2022, the EU aimed to reduce its imports of natural gas from Russia with two-thirds by December.¹⁶ This target was deemed ambitious by the IEA, which had proposed to reduce those imports by just one-third.¹⁷

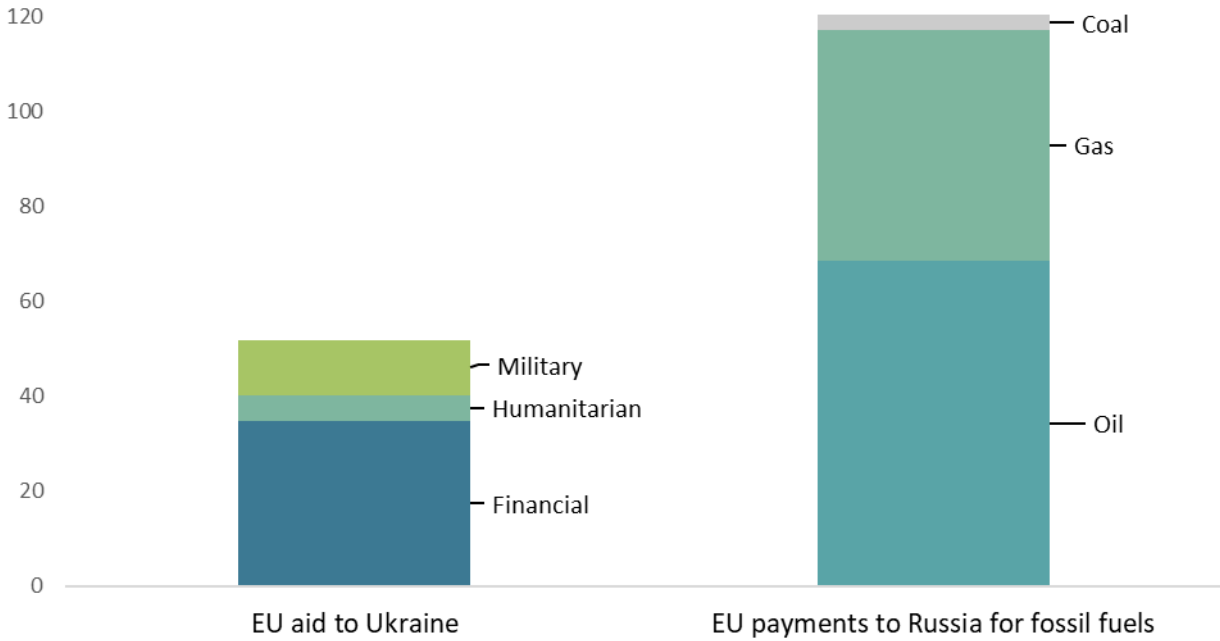
In the end, the unravelling of the decades-old gas relationship between Russia and Europe was done at a pace set by Moscow, not Brussels. Russian gas pipeline exports to the EU dropped by 80% in 2022.

¹⁵ Fatih Birol, "Coordinated actions across Europe are essential to prevent a major gas crunch: Here are 5 immediate measures," IEA Commentary, July 18, 2022, <https://www.iea.org/commentaries/coordinated-actions-across-europe-are-essential-to-prevent-a-major-gas-crunch-here-are-5-immediate-measures>.

¹⁶ European Commission, "REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition," European Commission, May 18, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131.

¹⁷ IEA, A 10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas (Paris: IEA/OECD, March 2022).

Figure 5. Financial transfers from the EU to Ukraine and to Russia since the invasion (bn €)^{18, 19}



Thanks to a massive surge in LNG imports (up 60% from 2021 levels)²⁰, Europe was able to replenish its gas inventories for the winter, but only at a very high cost—some €50 billion or 10 times the historical average.²¹ This import bill will likely remain elevated for years to come. Bloomberg has calculated that surging energy costs in the fallout of Russia’s war in Ukraine have already saddled the EU with a cost of roughly \$1 trillion, and the state of emergency could last for years.²² Governments have pledged to offset roughly €700 billion with aid packages²³, but their fiscal capacity is

already stretched and rising interest rates make it even harder to issue debt.

Russia, from its side, is no winner either. Moscow’s scope to pivot its gas sales to the other markets is limited by a lack of infrastructure. Russia supplied just over 30 bcm of gas to Asia in 2021, compared to 155 bcm of gas exports to the EU. In a best-case scenario for Russia, it will take at least a decade for Russia to scale up its gas exports to Asia to match the pre-war export levels to Europe (Figure 6).

¹⁸ Arianne Antezza et al., “The Ukraine Support Tracker: Which countries help Ukraine and how?,” Kiel Working Paper 2218, 2022; CREA, “Financing Putin’s war: Fossil fuel imports from Russia during the invasion of Ukraine,” 2022, <https://energyandcleanair.org/financing-putins-war/>.

¹⁹ Notes: EU aid to Ukraine covers bilateral commitments from EU members and institutions from Jan. 24 to Nov. 20, 2022. Does not include private donations and support for refugees outside of Ukraine. EU payments to Russia for fossil fuels covers seaborne, pipeline and railway shipments of crude oil, oil products, natural gas, LNG and coal from Feb. 24 to Dec. 16, 2022.

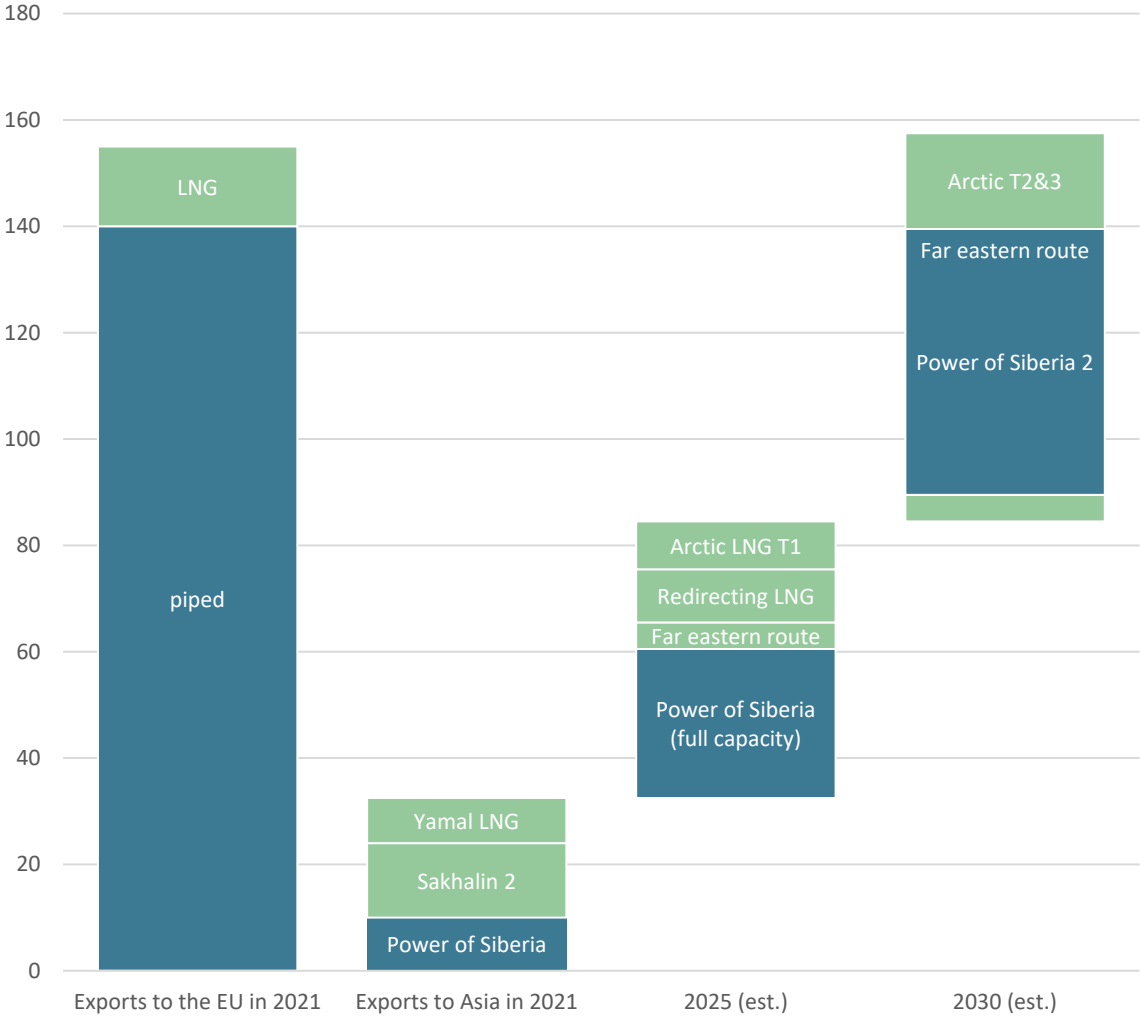
²⁰ IEA, How to Avoid Gas Shortages in the European Union in 2023 (Paris: IEA/OECD, December 2022).

²¹ Bozorgmehr Sharafedin, “European gas storage on track to meet target but at a cost,” Reuters, August 4, 2022, <https://www.reuters.com/business/energy/european-gas-storage-track-meet-target-cost-2022-08-04/>.

²² “Europe’s \$1 Trillion Energy Bill Only Marks Start of the Crisis,” Bloomberg, December 18, 2022.

²³ Giovanni Sgaravattik, Simone Tagliapietra and Georg Zachmann, “National policies to shield consumers from rising energy prices”, Bruegel Datasets, November 29, 2022, <https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices>.

Figure 6: Time needed for Russia to shift its gas exports to Asia^{24, 25}



Russia can also forget about becoming a main supplier of gas to Europe again, not just because Nord Stream, the main conduit to export natural gas to Europe, was damaged in an act of sabotage, but also because its reputation as a reliable supplier is completely in tatters.²⁶

Oil warfare: brace for a diesel shock

Although oil prices have fallen in the last 6 months (from over \$120 to under \$80 a barrel), it would be a mistake to think that Europe’s energy problems are limited to gas. In fact, the strong

dollar has caused the eurozone to experience an oil shock this year. Oil prices in euros have never been higher than they were in June 2022, and while they have decreased, they remain elevated by historic standards.

Moreover, beneath the surface, tectonic shifts are occurring in the oil market. In 2022, IEA member governments agreed to release almost 200 million barrels of oil—the largest stock release since the agency’s founding in 1974. These releases only provide temporary relief, however,

²⁴ Greg Molnar, ‘Turning East: How fast can Russia divert its gas supplies away from Europe to Asia?’ LinkedIn post, 2022, https://www.linkedin.com/posts/greg-moln%C3%A1r-38601171_gas-lng-russia-activity-6931859734513762304-XAm1; Nikos Tsafos, “Can Russia Execute a Gas Pivot to Asia?,” CSIS Commentary, May 4, 2022, <https://www.csis.org/analysis/can-russia-execute-gas-pivot-asia>.

²⁵ Blue denotes pipeline deliveries, green denotes LNG.

²⁶ For a different perspective, see: Javier Blas, “Can Europe’s Energy Bridge to Russia Ever Be Rebuilt?,” Bloomberg, December 12, 2022.

and the US government is already planning to refill its strategic storage instead of releasing more stocks. Meanwhile, ‘OPEC Plus’—a group of about two dozen oil-exporting countries led by Saudi Arabia and Russia—decided to reduce their collective output in October, further decreasing global oil supply.

Since early December, the EU’s embargo on sea-borne crude oil imports from Russia has gone into effect, along with a G7-agreed oil price cap. The price cap means that Western maritime insurance companies—which provide about 90% of global maritime (re)insurance services—can only cover tankers carrying Russian oil if it is priced below \$60 per barrel.

The Western oil embargo is thus fiddled with loopholes. Hungary got an exemption from the crude oil embargo, which can still be supplied through the southern leg of the Druzhba pipeline. At the insistence of the US, the EU’s embargo (which originally included a full ban on insurance) was weakened by the price cap mechanism. It appears that Washington’s fear of supply shortages and price spikes was higher than its desire to reduce Putin’s oil export revenues.

Yet, the oil embargo’s full effects have yet to be seen. The real test will probably come in early February 2023 when the EU’s embargo on oil products (such as diesel) kicks in.

The EU’s energy crisis response has fallen short

While the EU rightfully places much of the blame for its current energy crisis on Moscow, there are many things it could have done better.

Sleepwalking into an energy crisis

In a way, the EU (and some of its major member states) sleepwalked into an energy crisis that was partially self-inflicted. After Russia had cut-off gas to Ukraine several times, and annexed Crimea, the EU vowed to reduce its dependence on

Russian gas. In reality, the opposite happened. Business as usual prevailed, with the emphasis on ‘business’. The EU’s mantra was that a liberalized internal energy market provided the best guard against energy security threats.

However, the pendulum swung too far toward unfettered markets. The EU’s liberalization packages included ‘ownership unbundling’ for gas production and transmission, but not for storage. This allowed Gazprom to begin squeezing Europe’s gas market in the summer of 2021, when it failed to refill its storage sites in Germany, the Netherlands and Austria. The fact that there were no mandatory gas storage obligations at the EU level also reflects the dominance of the market paradigm.

On the supply side, gas markets were not liberalized. The interlocutors of European utilities were state-owned companies like Gazprom, Equinor, Sonatrach and Qatargas. The EU was effectively a “liberal actor in a realist world”.²⁷ The height of the blind and naïve faith in market forces of some European elites was exemplified by Germany’s insistence that Nord Stream 2 was just a “commercial” project, and by the fact that it did not build a single LNG import terminal, even as insurance.

Crisis management: too little, too late?

The EU acted too slowly in addressing the energy crisis, particularly in regards to energy savings, which is a key and no-regret measure. It wasn’t until August 2022 that the EU adopted a gas savings regulation, and even then, the savings were not mandatory.²⁸ It took even longer to come up with an electricity demand reduction plan, which also remained non-binding.²⁹ The energy crisis did not start on February 24, but months earlier. Discussions on joint gas purchases, wholesale gas price caps, and other measures have dragged on for months.

The EU also responded to the crisis in a disjointed way. At the start of the crisis, it merely offered a

²⁷ Andreas Goldthau and Nick Sitter, *A liberal actor in a realist world: The European Union regulatory state and the global political economy of energy* (Oxford: Oxford University Press, 2015).

²⁸ Council Regulation (EU) 2022/1369 on coordinated demand for gas, August 8, 2022.

²⁹ Council Regulation (EU) 2022/1854 on an emergency intervention to address high energy prices, October 7, 2022.

toolbox of policy options but essentially left it to individual member states to figure out their responses. Some governments implemented measures that primarily benefited their own companies and households, using tools not available to others. Spain and Portugal capped the price of gas for power generation (an extraordinary measure justified by the Iberian Peninsula’s limited interconnection with the rest of Europe), France froze power and gas tariffs (with state-owned company EDF absorbing the costs), and Germany earmarked more than €300 billion to shield its domestic consumers from high energy bills (using its huge financial firepower).

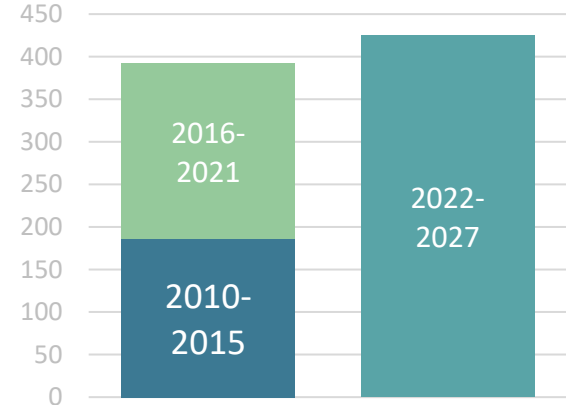
The EU’s energy crisis response was also incoherent in its aims and insufficient in its results. For instance, the EU agreed to put in place a revenue cap of at least €180/MWh on so-called infra-marginal producers (e.g., wind farms or nuclear plants), potentially undermining investor confidence at a time when Europe needs to roll out renewables as soon as possible. At the same time, EU leaders introduced a wholesale gas price cap of €180/MWh which contains so many safeguards that skeptics denounce it as a political illusion. The EU also created an Energy Platform to facilitate joint purchasing of natural gas, yet individual member states continue to pursue bilateral gas deals with foreign suppliers (even if a new regulation now requires that at least 15% of gas storage is filled through joint purchases in 2023).

Concluding thoughts

Europe is facing a longer-term energy crisis that requires a mid-term and long-term plan, rather than simply addressing emergencies on a winter-by-winter basis. Fortunately, the European Green Deal and its accompanying policy packages, such

as the ‘Fit for 55’ initiative, offer a roadmap for transitioning to a more sustainable energy future. Despite some positive developments, such as the EU’s projected addition of 50-60GW of renewable capacity this year and the prospect of adding more renewable capacity in the next five years than the previous decade (Figure 7), there are also concerning trends, such as the rush to build new natural gas and LNG connections and conclude new LNG supply deals, which could lock in gas infrastructure that conflicts with the EU’s climate goals. It is crucial that the EU remains committed to the European Green Deal since it is the only effective solution to address the ongoing energy crisis.

Figure 7. Renewable capacity additions, Europe (GW/year)³⁰



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³⁰ IEA, Renewables 2022 (Paris: IEA/OECD, December 2022).

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

THE CASE OF ALGERIA

EU Short-Term Energy Policy Inconsistencies and their Possible Long-Term Consequences

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Since 2014 Algeria's hydrocarbon sector has been under stress. Declining production and rising internal consumption, tumbling global hydrocarbon prices, and security concerns across the region created a challenging environment for its hydrocarbon sector. This instigated Algeria to look for alternatives. Between 2014 and 2020 the government made regulatory efforts to promote renewable energy. Further, a national fund to support renewable energy as well as a new economic growth model saw light. The new mindset about the unsustainability of its high reliance on hydrocarbons and about the consequent needs for economic diversification was clear. In 2016, Algeria and the EU agreed upon an annual action plan dedicated to renewable energy and energy efficiency which was a 'first' in their relationship that would remain for the years to come.

A new Commission and a new Government: towards an energy transition

In Algeria, the new government under President Teboune worked further on the needed enabling framework, creating a Commission on Renewable Energy and Energy Efficiency within the Prime Minister's Office in October 2019. Further, a renewable energy college at the University of

Batna as well as a new Ministry of Energy Transition and Renewable Energy were established in 2020. Meanwhile in the EU the newly elected Commission von der Leyen pursued the same direction, enshrining its net zero emission goal by 2050 into law.

By March 2020 the COVID-19 pandemic caused an extreme drop in hydrocarbon demand. As the Algerian government had been distributing more than it earned to the population in exchange for public acquiescence it was desperately looking to attract new investments and created a new legal framework to open up the market to attract foreign investors.

During the first two months of 2021, the European Commission and the European Council were focused on a green recovery, also externally. They declared in the Joint Communication³¹ and Council Conclusions³² the need to invest in a green future with a focus on importing green hydrogen, discourage further investments into fossil fuel-based energy infrastructure projects in third countries, while taking action to reduce methane emissions.

³¹ European Commission, "Renewed partnership with the Southern Neighbourhood: A new Agenda for the Mediterranean," SWD(2021) 23, February 9, 2021.

³² European Council, "Council conclusions on Climate and Energy Diplomacy - Delivering on the external dimension of the European Green Deal," ST 5545/21, January 25, 2021.

Algeria saw an opportunity to replace its diminishing rents from hydrocarbons, agreeing in May 2021 on a national plan for the production of green hydrogen. Its aim was to become one of the best students in the fossil fuel exporting countries class proposing to export hydrogen via its pipelines to Spain and Italy. The government agreed on a transition plan based on energy efficiency and renewable energy. It reformed the 2002 law on electricity to open up the market for SME's working in the renewable energy sector and created a stand-alone renewable energy company, SHAEMS.

By the end of 2021, Algerian leaders announced plans to reign in unsustainable deficit spending and green its taxation. It seemed the path dependent process known as carbon lock-in was at its end, being on track to break out of the rentier state. With carbon prices staying low for many years, a lack of investment in the Algerian hydrocarbon sector, diminishing hydrocarbon demand and a rising internal energy consumption, the government had few other options.

The invasion of Ukraine

The invasion of Russia in Ukraine a few months later however, profoundly changed the political and economic landscape. The EU Member States changed their energy policy priorities, including towards Algeria. While it took some time for the European Commission to be able to take concrete action, the EU Member States took action alone, promising new middle to long-term investments in Algeria's gas infrastructure as well as agreeing upon price increases. It has to be noted that in each agreement, renewable energy cooperation is mentioned as well, though this seemed to be rather in the margins.

The Italian Energy Minister visited Algeria only a few days after the invasion, with the respective national oil companies closing a Memorandum of

Understanding a few months later. This included a permission to increase gas flow capacities of Gazoduc progressively to 9 billion cubic metres of gas per year in 2023-2024.³³ The Memorandum also covers the technical and economic evaluation for a green hydrogen pilot project, with the goal of supporting the decarbonisation of a gas plant. In July, a "production sharing" contract had been signed for approximately 4 billion euro for 25 year to exploit oil and gas deposits in the Berkine basin between Sonatrach and Italy's Eni, the US-based Occidental and France's Total. President Emmanuel Macron visited Algeria on the 25th of August 2022 in the context of a "declaration for a renewed partnership." Details about the discussed energy matters remained scant, however reports were that deliveries could rise by 50%. The CEO of Engie announced this would only come in the medium to long-term as opposed to this winter.³⁴

The most recent Member State visiting Algeria at the time of writing has been Slovenia, agreeing in November on a three-year contract. Willing to buy about 300 million cubic meters of gas per year from Algeria, Slovenia's partially state-owned fossil gas trader Geoplin aims for a longer-term agreement and higher quantities.³⁵ The officials agreed to sign a Memorandum of Understanding soon. In addition to increasing the volumes and extending the duration of the agreement, the Memorandum would also define strategic cooperation in renewable energy and the exchange of digital competences.

After the Summer, the European Commission also started its diplomatic efforts in Algeria. The President of the European Council Charles Michel visited Algeria on the 5th of September 2022, and stated that "Given the international circumstances that we are all aware of, energy cooperation is obviously essential, and we see Algeria as

³³ Sud Ouest, "Le premier ministre Mario Draghi obtient un accord de l'Algérie pour plus de gaz à l'Italie," 11 April 2022, <https://www.sudouest.fr/international/afrique/algerie/le-premier-ministre-italien-a-alger-pour-solliciter-plus-de-gaz10566371.php> - Last consulted 14 April 2022.

³⁴ Aydin Calik, "Algeria And France Talk Gas," MEES, Issue: 65 / 35, 2 September 2022, <https://www.mees.com/2022/9/2/news-in-brief/algeria-and-france-talk-gas/a3444190-2ab5-11ed-a675-59c7ec4c9da2> - Last consulted 22 December 2022.

³⁵ Sebastijan R. Maček, "Slovenia secures Algerian gas to cover third of its needs," *Euractiv*, 16 November 2022.

a reliable, loyal and committed partner in the field of energy cooperation.” On October 11th, the EU’s Energy Commissioner Simson Kadri hailed a long-term strategic partnership with Algeria, “being the EU’s reliable supplier.”

The EU’s inconsistency causing long term carbon lock-ins?

These investment agreements seem difficult to match with the Green Deal and its external component, neither with the REPower EU plan that was published after the invasion on the 18th of May.³⁶ The REPower EU plan claims that in the new reality, “the EU’s gas consumption will reduce at a faster pace, limiting the role of gas as a transitional fuel.” If this gas shock follows the same trend as the oil shock did in the 1970s, decline of gas will be structural. This will have consequences, certainly for Algeria, reliant for more than 80% on the EU for its fossil fuel export.³⁷

Recently, some exploration efforts have delivered (limited) oil and gas discoveries, however, not enough to deliver the demanded export volumes in the short term. After years of underinvestment, the Member States agreements with Algeria are focusing on the need for more gas exploration, production and infrastructure investments to fulfil demand. At the start of 2022, Sonatrach announced plans to invest approximately 40 billion euro over five years for exploration and extraction of gas as well as oil exploration, production and refining, however adding in June that it counted on the buyers of Algerian gas

to make the investments in upstream development.³⁸

Urgent need to refocus and grasp the moment

Although the boom in global hydrocarbon prices seems to have limited Algeria’s interest in focusing on an energy transition, Algeria had reached a moment of ‘plasticity’. As Davis claims, you need to seize the opportunity during moments of plasticity. If not grabbing that moment, it is unlikely the transition will succeed as this will result in a new carbon lock-in³⁹ or stranded assets when new investments will be made in its hydrocarbon infrastructure. Further, these investments are to the detriment of renewable energy and energy efficiency.⁴⁰

Algeria’s export potential of hydrocarbons had been diminishing because of a lack of investments and rising internal consumption.⁴¹ This means that in order to fulfil the external hydrocarbon demand, investments are needed. However, the EU shouldn’t make those in new hydrocarbon infrastructure or expansion for at least three reasons. First of all, the rise in demand for gas from the EU is focused on the short-term. Investment in new extraction takes time and could cause a carbon lock-in for the decades to come.⁴² Secondly, these are incompatible with the Communication and Conclusions the EU and its Member States made one year upfront. All of this dismisses many of the efforts Algeria (and the EU) made the last couple of years towards diversification away from

³⁶ European Commission, “Repower EU plan,” COM(2022) 230 final, 18 May 2022.

³⁷ EIA, “Natural gas exports,” 25 March 2019, <https://www.eia.gov/international/analysis/country/DZA> - Last consulted 18 December 2022.

³⁸ Monika Bolliger, “Könnten Sie morgen Gas nach Deutschland liefern, Herr Arkab?,” *Der Spiegel*, June 19, 2022, <https://www.spiegel.de/ausland/algerien-interview-mit-energieminister-mohamed-arkab-ueber-moegliche-gas-lieferungen-a-8822f45c-39c7-4b78-9d57-6d09d87cc862> – Last consulted 13 December 2022.

³⁹ Steven Joseph Davis et.al., “Carbon Lock-In: Types, Causes, and Policy Implications,” *Annual Review of Environment and Resources* 41(1) (2016): 29.

⁴⁰ Reinhilde Bouckaert and Claire Dupont, “Turning to Algeria to replace Russian gas: a false solution,” Policy and Research Report 2/2022 University Ghent, <https://www.ugent.be/eb/publiek-management/en/news-events/bijlagen/policybriefturning> - consulted 25 November 2022.

⁴¹ British Petroleum, “Statistical Review of World Energy”, <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/energy-charting-tool-desktop.html#/results/et/oil-prod/unit/kb/d/regions/DZA/view/area> - Last consulted 17 December 2022.

⁴² Claire Dupont and Sebastian Oberthür, “Decarbonization in the European Union: Internal Policies and External Strategies”, *Palgrave Macmillan* (2015): 184.

hydrocarbons. Third, investing in new gas fields is not consistent with the Paris Agreement. Science clearly indicates that to stay within a 1.5°C carbon budget (50% probability) implies leaving almost 40% of ‘developed reserves’ of fossil fuels unextracted.⁴³ This would be incompatible with the EU aims to be a climate leader.

However, there are solutions that are aligned with the Paris Agreement as well as the Green Deal, which would result in more gas delivery to the EU in a shorter term. First of all, the focus should be on energy efficiency and demand reduction in Algeria. Here the EU can come in through knowledge sharing, technology and research development and making investments focused on the energy efficiency of the industry as well as the households. One of the tricky points for decades has been the subsidy system. The IEA estimates that the Algerian subsidies for electricity and gas are almost EUR 8 billion representing 4% of its GDP.⁴⁴ Although some tentative measures were taken in 2016 when subsidies temporarily went down because of the lower hydrocarbon price, in 2018 they were rising again reaching an all-time high. A new attempt in 2021 has soon been reversed with rising gas prices. The gas price in Algeria is estimated at EUR 0.46/MMBtu⁴⁵ which is below the cost of production, transmission and distribution. This doesn't stimulate energy efficiency as well as leaves little room for the renewable energy sector to enter the market.

This leads to the second solution. The renewable energy sector has gigantic potential. Algeria is

Africa's most electrified country, with more than 99% connectivity.⁴⁶ However, 99% of the electricity generation is fossil fuel-based. This makes Algeria, with sun and wind abundantly present on a possible fast track to decarbonise. The EU should use this opportunity, focusing on knowledge sharing, strengthening the legal and regulatory framework, build institutional capacity and making investments in enabling technologies such as batteries, EV-smart charging, digital while improving financing availability and establishing guarantee schemes to mitigate specific risks. Diversifying Algeria's energy policy towards using more renewable energy internally, while using its hydrocarbon rents from its export to finance this transition, could make Algeria less vulnerable to the financial instability of hydrocarbon rents in the future while aligning itself with its climate targets.⁴⁷

Third, diminishing gas flaring should also be addressed. In the Commission's Communication 'external energy engagement in a changing world' from May 2022, actions to ensure its energy security include as well diminishing flaring. The aim of the EU is to couple additional gas with technical assistance to tackle methane leaks and to address venting and flaring with the "you collect, we buy" schemes. Through this, the EU can collect more gas faster than through investing in new extraction facilities. Algeria is currently one of the fossil fuel extracting countries with the highest flaring numbers.⁴⁸ Focusing on recovery rates would result in quick wins. Italy aims to buy an increasing

⁴³ Kelly Trout, Greg Muttitt, Dimitri Lafleur, Thijs Van de Graaf, Roman Mendelevitch, Lan Mei and Malte Meinshausen, "Existing fossil fuel extraction would warm the world beyond 1.5 °C", *Environmental Research Letters*, Vol. 17 (6) (2022).

⁴⁴ IEA, "Fossil-fuel consumption subsidies by country, 2018," IEA, October 26, 2022, <https://www.iea.org/data-and-statistics/charts/fossil-fuel-consumption-subsidies-by-country-2018>.

⁴⁵ International Gas Union, "Global Gas Report 2019," <https://www.igu.org/resources/global-gas-report-2019-2/> - Last consulted 10 April 2022.

⁴⁶ International Trade Administration, "Algeria Country Commercial Guide, Department of Commerce," 10 November 2021, <https://www.trade.gov/country-commercial-guides/algeria-power> - Last consulted 17 December 2022.

⁴⁷ Thijs Van de Graaf and Michael Bradshaw, "Stranded wealth: Rethinking the politics of oil in an age of abundance," *International Affairs*, 94(6), (2018):1309-1328.

⁴⁸ Ouki Mostefa, "Algerian Gas in Transition: domestic transformation and changing gas export potential," *The Oxford Institute for Energy Studies*, (2019): 20.

9 bcm of gas per year in 2023-2024.⁴⁹ This is exactly the known flaring number of Algeria through which could fulfil very soon the needs of Italy.

Conclusion

With the invasion of Ukraine, the crisis mode has been turned on in the EU Member States which seems to have resulted in inward-looking actions neglecting the wider implications for its fossil fuel supplier Algeria. While the Commission declared in its REPower EU Plan that it enters a fast path towards the diminished use of fossil gas, its Member States rushed towards Algeria begging for more gas entering into middle to long-term agreements. This shift could jeopardize the urgently needed decarbonisation shift, cause a lock-in for the concerned fossil fuel exporting country as well as the EU losing its attractiveness to convince others to follow its climate leadership. The EU should pay attention to act consistent in order to assure others to follow as well as give consistent signals to investors and fossil fuel partners in regards to which direction it aims to go.

Since Algeria exports the majority of its gas to the EU (83% of total gas exports in 2019)⁵⁰, the EU could, in theory, strongly influence Algeria to pursue its own green energy transition, if coherent politics, policy and diplomacy are accompanied by targeted investments in energy efficiency, renewable energy as well as reducing flaring. This is an inexpensive way of combating climate change and for EU companies to enter rapidly growing markets and it would boost economic development and diversification in partner countries while the EU can remain a thrustable climate leader it aims to be.

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⁴⁹ Sud Ouest, "Le premier ministre Mario Draghi obtient un accord de l'Algérie pour plus de gaz à l'Italie," 11 April 2022, <https://www.sudouest.fr/international/afrique/algerie/le-premier-ministre-italien-a-alger-pour-solliciter-plus-de-gaz10566371.php> - Last consulted 14 April 2022.

⁵⁰ EIA, "Natural gas exports," 25 March 2019, <https://www.eia.gov/international/analysis/country/DZA> - Last consulted 17 December 2022.

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

THE ENERGY CRISIS AND GLOBAL CLIMATE GOALS: POPPING EMPTY PROMISES?

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In a world where climate change is felt more and more deeply each year, the need for climate action becomes increasingly pressing. Observers are noting an increasingly tight geopolitical climate for environmental action caused by the war in Ukraine and the resulting food and energy crises.⁵¹ Are countries maintaining their trajectory towards limiting global warming, or are their climate plans popping under the pressure of the energy crisis?

This paper first zooms into the status quo, detailing why looking at climate pledges is becoming increasingly important and where climate action has been coming short. Next, this paper looks at how the energy crisis has been dealt with, and reflects on what this means for climate action in the medium and long term.

The importance of climate pledges

With the adoption of the Paris Agreement, there has been an increased focus on formulating climate plans and climate goals. This is because the Paris Agreement introduces an overall climate target instead of setting specific emission reduction targets in stone for each involved country. Three targets, in fact, are central to the Paris Agreement: limiting global warming to 2°C, aiming for 1.5°C and reaching net zero emissions by

the second half of this century. In order to reach these targets, countries formulate their own climate plans, or 'Nationally Determined Contributions' (NDCs). These NDCs play a central role to the Paris regime, as it tries to foster climate action through repeated cycles of reformulating these plans and raising ambition.⁵²

The Agreement has created an iterative process where countries' main obligations are to formulate NDCs, communicate progress reports and emissions data, and systematically raise ambition. This process aims to close the so-called 'ambition gap', or the space between policy plans and the goals set out by the Paris Agreement itself. This ambition gap, though central to the whole debate, is only one of the challenges that countries face on the way to effective climate action.

The gaps to bridge

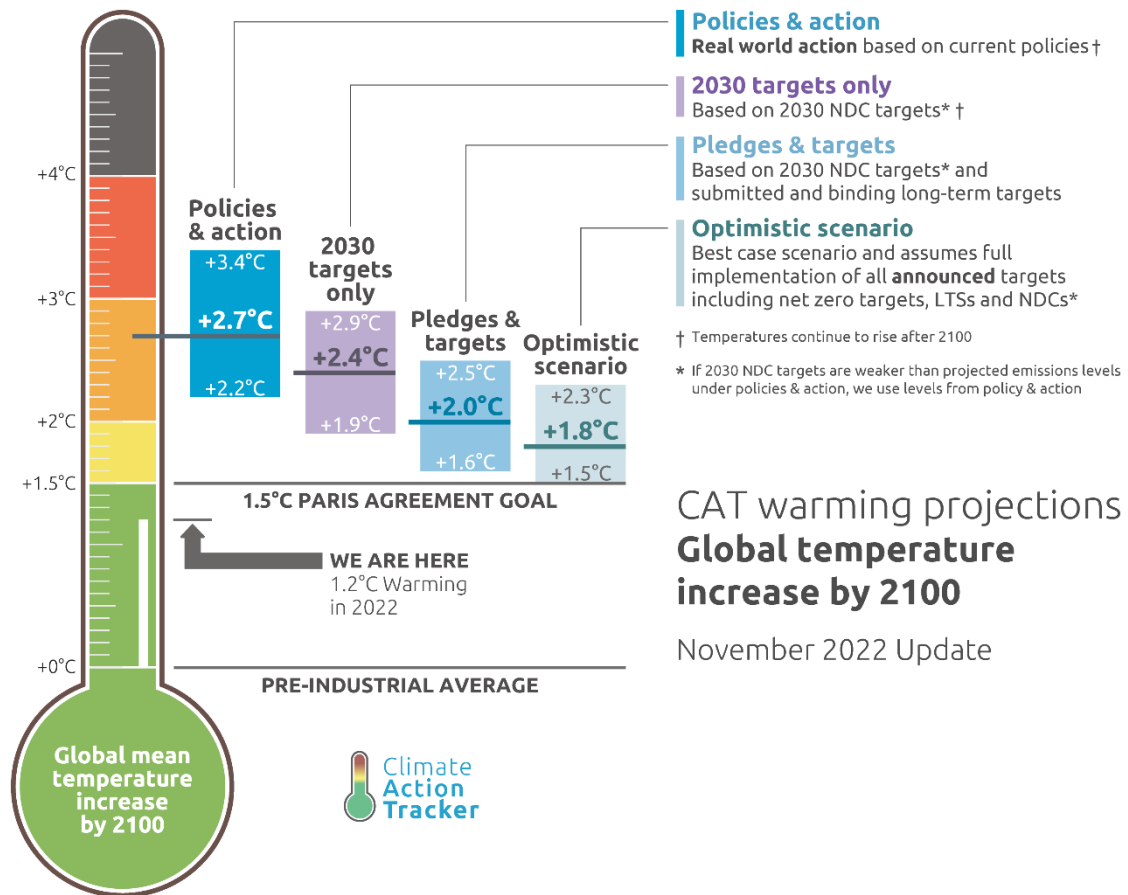
When it comes to global climate governance, there is both the ambition gap and the implementation gap that needs to be dealt with. Both of these are visualised in figure 1. On the one hand, it shows the gap between the overall goals of limiting global warming to 1.5° and 2°, and the warming projections of policies and actions, targets, and pledges. On the other, it shows the gap between the actual policy and the set goals, or the

⁵¹ Jessica Rawnsley, "Food and energy crises threaten to distract from climate talks," updated October 10, 2022, <https://www.ft.com/content/6f352052-f2bc-401a-beed-b89d9e98a23d>.

⁵² Daniel Bodansky, "The Paris Climate Change Agreement: A New Hope?," *The American Journal of International Law*, April, 2016.

implementation gap. The figure shows plainly how limiting global warming to 1.5°C is a goal that remains strongly out of reach.⁵³

Figure 8: Warming projections by Climate Action Tracker⁵⁴



The year 2023 will be important for global climate governance since it marks the very first ‘global stocktake’. At COP28 in November, all parties to the Paris Agreement will come together in the United Arab Emirates to reflect on the collective progress towards the Paris goals.⁵⁵ This is one of the pivotal moments in the Paris Agreement’s timeline. This very first global stocktake will not only clarify the procedure that is meant to be repeated every five years, but it will also have to

fulfil its main function for the very first time: serving as a catalyst for increased ambition.

Overall, the Paris Agreement has coincided with increased ambition. On one hand, we see that most parties are actively involved in the regime and complying with its procedures. This is exemplified in figure 2, which shows most parties submitting their first climate plans and adding new updates to these NDCs within the set 5-year

⁵³ Adam Vaughan, “The world’s 1.5°C climate goal is slipping out of reach - so now what?,” NewScientist, updated June 7, 2022, <https://www.newscientist.com/article/2323175-the-worlds-1-5c-climate-goal-is-slipping-out-of-reach-so-now-what>.

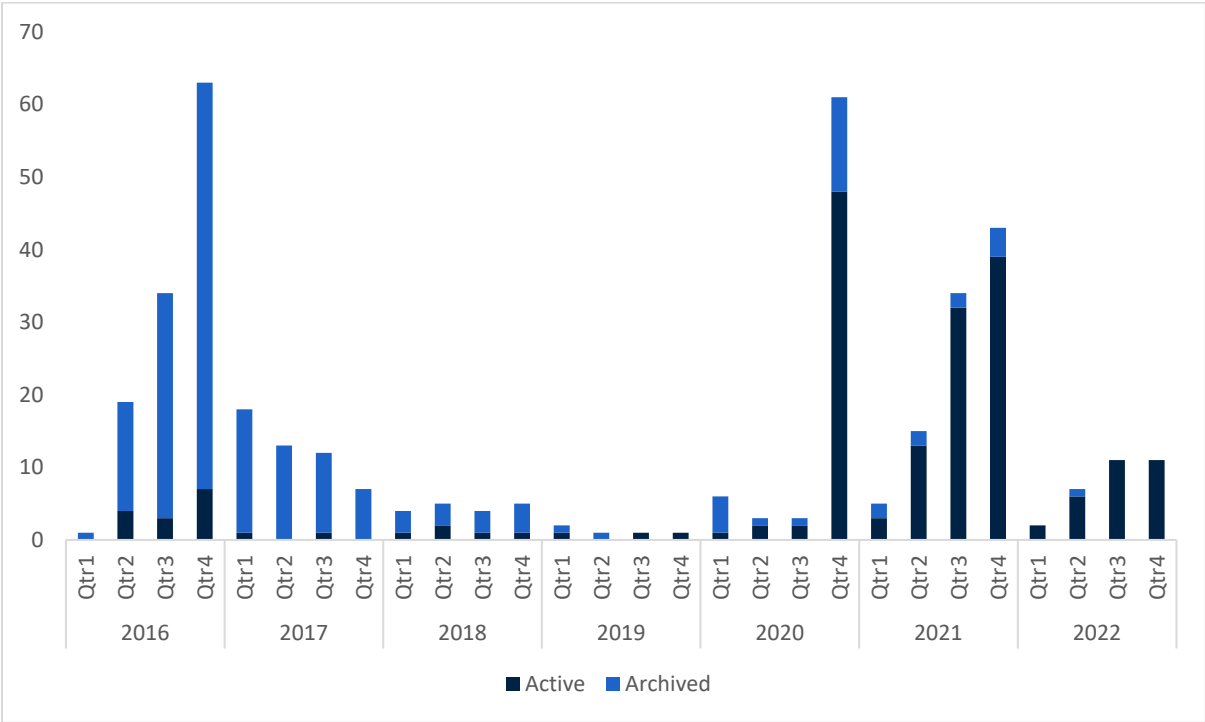
⁵⁴ Climate Action Tracker, “Massive gas expansion risks overtaking positive climate policies,” updated November 10, 2022, <https://climateactiontracker.org/publications/massive-gas-expansion-risks-overtaking-positive-climate-policies/>.

⁵⁵ Jamal Srouji, Nate Warszawski, and Hannah Roeyer, “Explaining the First “Global Stocktake” of Climate Action,” World Resources Institute, updated November 7, 2022, <https://www.wri.org/insights/explaining-global-stocktake-paris-agreement>.

timeframe. This is also verified in the 2022 NDC Synthesis Report by the United Nations Framework Convention on Climate Change (UNFCCC)⁵⁶, confirming that 94% of all Parties are providing the necessary information to facilitate the Paris

processes. Aside from procedure, the revised pledges have also been steadily increasing in ambition, with the 2022 updates leading to about 9.5% less emissions in 2030 than their 2021 counterparts.⁵⁷

Figure 9: NDC submissions until January 3, 2023⁵⁸



The ambition gap remains steep, however. The gap between unconditional NDCs and the 1.5°C scenario is about 23 GtCO₂e⁵⁹ and the gap between the 2°C scenario is about 15 GtCO₂e.⁶⁰ For reference: the average total yearly emissions between 2010 and 2019 was 54.4 GtCO₂e. Additionally, there are cases where countries slid back in their climate ambitions, garnering media

attention as well as legal action. In Mexico, Greenpeace México won a lawsuit against the Mexican authorities, revoking the submitted 2020 climate target for being less ambitious than the 2016 revised climate plans.⁶¹ This is a concrete example of how domestic climate litigation has made the multilateral Paris Agreement more enforceable.⁶²

⁵⁶ UNFCCC Secretariat, *Nationally determined contributions under the Paris Agreement; Synthesis report by the secretariat* (October 26 2022), <https://unfccc.int/ndc-synthesis-report-2022>.

⁵⁷ UNFCCC Secretariat, *NDC Synthesis Report 2022*.

⁵⁸ Notes: Nationally Determined Contributions are archived when new (active) plans are submitted to the UNFCCC secretariat. Source: NDC Registry, UNFCCC, “NDC Registry,” n.d., <https://www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx>; red line indicates the end of a 5-year period from the 3rd quarter of 2022, thus the expectation of submitting updated NDCs.

⁵⁹ Gigatonnes of carbon dioxide equivalent emissions.

⁶⁰ UNEP, *Emissions Gap Report 2022: The Closing Window - Climate crisis calls for rapid transformation of societies*, United Nations Environmental Programme (Nairobi: United Nations Environmental Programme, 2022), <https://www.unep.org/emissions-gap-report-2022>.

⁶¹ Climate Action Tracker, “Mexico,” updated 5 July, 2022, <https://climateactiontracker.org/countries/mexico/targets/>.

⁶² Lennart Wegener, “Can the Paris Agreement Help Climate Change Litigation and Vice Versa?,” *Transnational Environmental Law* 9, no. 1 (2020), <https://doi.org/10.1017/S2047102519000396>,

Though the procedures of the Paris Agreement are progressing as expected, critics are increasingly calling not just for revised climate plans to decrease the ambition gap, but to back up the plans with tangible actions to deal with the implementation gap.⁶³

At COP27, the 27th meeting of the Parties to the UNFCCC in November 2022, implementation took centre stage, underlined by the motto ‘Together for implementation’. The COP agreement was dubbed the ‘Sharm el-Sheikh Implementation Plan’.⁶⁴ However, instead of concrete policy plans and accomplishments such as a statement on the phase-out of fossil fuels, the agreement merely built on what was done before.⁶⁵ The silver lining was the proposed climate fund for loss and damage, which will now have to be developed further in preparation for COP28.⁶⁶

To make the implementation gap more concrete: the United Nations Environmental Program (UNEP) found in 2022 that the implementation gap for emissions in 2030 is about 3 GtCO₂e and 6 GtCO₂e for the unconditional and conditional NDC scenarios respectively.⁶⁷ These gaps had even increased compared to 2021 because ambitions were raised ahead of policy change. This gap combined with the significant ambition gap, shows the breadth of the challenge ahead.

Is the crisis increasing pressure?

Global climate policy in response to climate change has two significant gaps to face. Countries worldwide need to raise ambition in their climate plans in order to bridge the gap to limit global warming to 2°C and 1.5°C. Additionally, there is a dire need for policy to meet the ambitions set in climate plans, to actually implement the change needed.

Regarding climate ambition, the question remains how countries will update their NDCs during and following the crisis. The EU has already committed to updating its NDC to reflect raised ambitions in their ‘fit for 55 package’.⁶⁸ United Nations Secretary-General Antonio Guterres has also planned to convene a ‘Climate Ambition Summit’ in September 2023, ahead of COP28, to support more ambitious climate action.⁶⁹

Direct climate policy has been severely influenced by the energy crisis. As other entries in this volume also mention, the war and resulting energy crisis meant an increased need for EU-member states to diversify energy supplies, looking for alternatives for Russian gas. Though a number of EU-member states reverted to coal-fired plants to shift away from Russian gas, coal exit strategies and targets do remain in place. This means that, even if the current shift to coal may lead to a short-term emissions increase, its long-term

<https://www.cambridge.org/core/article/can-the-paris-agreement-help-climate-change-litigation-and-vice-versa/5740A983674D197C6F070B081ADAB400>.

⁶³ Katie Kouchakji, “The climate crisis: are we building back better?,” International Bar Association, updated November 29, 2022, <https://www.ibanet.org/The-climate-crisis-are-we-building-back-better>.

⁶⁴ United Nations, “Delivering for people and the planet,” United Nations, updated n.d., 2022, <https://www.un.org/en/climatechange/cop27>.

⁶⁵ Amir Sokolowski and Pietro Bertrazzi, “The COP27 agreement is far from a plan for implementation, but non-state actors can help bridge the gaps,” updated December 8, 2022, <https://www.cdp.net/en/articles/governments/the-cop27-agreement-is-far-from-a-plan-for-implementation-but-non-state-actors-can-help-bridge-the-gaps>.

⁶⁶ Climate Action Network and The Loss and Damage Collaboration, “Briefing: Towards a Glasgow Dialogue that matters,” updated May, 2022, https://www.germanwatch.org/sites/default/files/can_ldc_briefing_towards_a_glasgow_dialogue_that_matters.docx.pdf.

⁶⁷ UNEP, *Emissions Gap Report 2022: The Closing Window - Climate crisis calls for rapid transformation of societies*.

⁶⁸ Kate Abnett, “EU tells COP27 it will increase climate ambition,” updated November 15, 2022, <https://www.reuters.com/business/cop/eu-tell-un-summit-it-plans-raise-climate-target-2023-source-2022-11-15/>.

⁶⁹ IISD, “UN Secretary-General to Convene “Climate Ambition Summit” in 2023,” updated December 21, 2022, <https://sdg.iisd.org/news/un-secretary-general-to-convene-climate-ambition-summit-in-2023/>.

impact will be trivial.⁷⁰ In the long-term, the IEA has noted, renewable power is also being turbocharged, driven by the want of countries to become more self-reliant in their energy generation.⁷¹

Another element of global climate action and ambition is the impact of the crisis on climate finance. In order to deal with historical climate injustices and appeal to the UNFCCC's creed of 'Common but Differentiated Responsibilities and Respective Capabilities'. The promise was made in the 2009 Copenhagen Accords, and formalised in the 2010 Cancun Agreement, for developed countries to provide developing countries with 100 billion USD in climate finance by 2020.⁷² This deadline was not met, though there are voices saying 2023 is the year the goal will finally come within reach.⁷³ The energy crisis and resulting rise in inflation in many countries has wide-reaching impacts on this global financial regime, as well as national and transnational investment in emission mitigation, adaptation and loss and damage.⁷⁴ A tight investment climate and distributional effects are just some of the factors that could slow down projects like investments in renewable energy sources. It is also yet to be seen how the Loss and Damage fund (introduced at

COP27) will fit into the already fragmented global climate finance regime.⁷⁵

Conclusion

Is the global climate action bubble popping? There is an undeniable need to strengthen commitments and close the ambition gap, as current climate plans still do not limit global warming to the symbolic 1.5°C. More than that, there is the looming implementation gap. This means a need for swift and concrete action to implement these pledges. It is especially on this implementation front that the energy crisis has a risk of creating dents in current policy that could be felt far more in the future. There are however positive trends as well, with the energy crisis providing a boost to the renewable energy transition.

The current climate pledges stand where they are, with short-term and long-term goals that need significant increases. It is the action today that determines if they will pop come 2030 and 2050.

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⁷⁰ Sarah Brown, "Coal is not making a comeback: Europe plans limited increase," updated July 13, 2022, <https://ember-climate.org/insights/research/coal-is-not-making-a-comeback/>.

⁷¹ IEA, "Renewable power's growth is being turbocharged as countries seek to strengthen energy security," updated December 6, 2022, <https://www.iea.org/news/renewable-power-s-growth-is-being-turbocharged-as-countries-seek-to-strengthen-energy-security>.

⁷² Jocelyn Timperley, "The broken \$100-billion promise of climate finance — and how to fix it," updated October 20, 2021, <https://www.nature.com/articles/d41586-021-02846-3>.

⁷³ Valentina Romano, "Climate aid target 'will be met in 2023', EU finance ministers say," Euractiv, updated October 6, 2022, <https://www.euractiv.com/section/climate-environment/news/climate-aid-target-will-be-met-in-2023-eu-finance-ministers-say/>.

⁷⁴ Edward Calthrop, "Energy crisis makes public banks even more important," European Investment Bank, updated November 11, 2022, <https://www.eib.org/en/stories/energy-crisis-net-zero-transition>.

⁷⁵ Arthur Wyns, "COP27 establishes loss and damage fund to respond to human cost of climate change," *The Lancet Planetary Health* (2022), [https://doi.org/10.1016/S2542-5196\(22\)00331-X](https://doi.org/10.1016/S2542-5196(22)00331-X).

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

FROM THE ENERGY CRISIS TO (RE)IMAGINING THE ENERGY TRANSITION

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How the energy crisis is framed

On the website of the European Council, the headline reads: “Europe is experiencing an unprecedented energy crisis. EU countries are working together to address high prices and secure energy supplies for Europeans.”⁷⁶ The main goals of the EU’s response to the energy crisis are to: “ensure affordable and competitive energy for EU consumers; increase the EU’s energy security and preparedness in the event of emergencies; strengthen the energy resilience and autonomy of EU countries.”⁷⁷

This illustrates how the EU predominantly frames the energy crisis: in terms of energy supply security and in terms of energy affordability. As Russia is blamed for the energy crisis⁷⁸, attention is largely turned away from the connection between the energy crisis and other crises such as the climate crisis. The political answer focuses in the first instance on diversification of gas supply, keeping energy prices under control and trying to accelerate renewable energy production in order to reduce dependency on energy imports. Reduction of demand is also part of the package, but

these measures are non-binding, and address citizens and businesses at an individual level, with suggestions as turning down heating, adjusting boiler settings or reducing speed on the highway.

Why do we think this is problematic, not only to address the energy crisis, but also when looking for an answer that takes into account the climate crisis?

Energy demand is (too) high and increasing

An important step is recognising that current global energy consumption, for almost 85% based on fossil fuels, is already too high for remaining within the 1,5°C climate target of the Paris Agreement, without hoping for massive negative emissions⁷⁹ (by investing in technologies such as CCUS that have not yet proven their effectiveness at scale, and have a risk of further carbon lock-in). Global energy demand is rising – recently reaching its highest level in history⁸⁰ – and is further projected to rise over the coming decades. To give a telling example: global energy demand for cooling in ‘emerging and developing’ economies in 2050 alone is expected to be as much as today’s

⁷⁶ European Council, “Energy prices and security of supply,” last modified January 25, 2023, <https://www.consilium.europa.eu/en/policies/energy-prices-and-security-of-supply/>.

⁷⁷ Ibid.

⁷⁸ IEA, “World Energy Outlook 2022,” Paris : 2022, <https://www.iea.org/reports/world-energy-outlook-2022>.

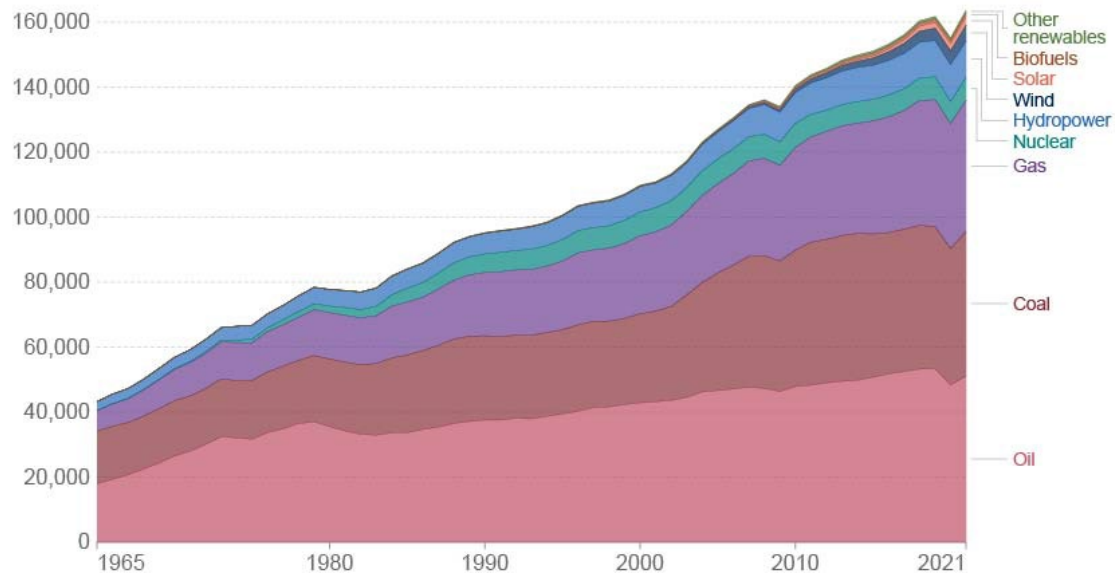
⁷⁹ IEA, “Global Energy Review 2021,” Paris: 2021, <https://www.iea.org/reports/global-energy-review-2021>.

⁸⁰ IEA, “Renewable Electricity,” Paris: 2022, <https://www.iea.org/reports/renewable-electricity>.

overall energy demand by the European Union.⁸¹ Under the current energy system, fast rising demand increases emissions and contributes directly to climate change and other environmental

problems (such as soil and air pollution). Meanwhile, fast increasing demand also raises energy prices.⁸²

Figure 10: Absolute energy consumption by source for the world⁸³



The policy answers to this situation take two main directions: a swift and massive shift from fossil fuels to renewables, and keeping control over energy demand by investing in efficiency measures. Both are obviously crucial, but they also have some important limits. Without a central role for demand reduction, deep decarbonisation is impossible. Demand-side solutions are useful in the Global North as well as in the Global South⁸⁴, but given the major inequalities between North and South, the abandonment of high-carbon lifestyles in the North, as a collective societal ambition, is of high priority (while simultaneously taking into account the inequal distribution within e.g. the EU as well).

Let us first look at the limits of current policy. A massive shift to renewables is essential, and indeed, the share of renewable energy in total energy consumption is increasing, but slowly and insufficiently fast to reach e.g. the IEA's Net Zero Emissions by 2050 Scenario.⁸⁵ To do so, the share of renewable energy would have to increase twice as fast as it did over the previous year.⁸⁶ The growth of renewable energy should at least cover the predicted growth in global energy demand over the coming decades. Where past renewable energy did cover the growth in electricity demand (2019; 2020) this was "largely due to exceptionally slow or declining demand, suggesting that renewables outpacing the rest of the electricity sector is not yet the new normal."⁸⁷ Moreover,

⁸¹ IEA, "World Energy Outlook 2022".

⁸² IEA, "Electricity Market Report - January 2022," Paris: 2022, <https://www.iea.org/reports/electricity-market-report-january-2022>.

⁸³ Our World in Data, "Energy consumption by source, World," Last Updated July 8, 2022, <https://our-worldindata.org/grapher/energy-consumption-by-source-and-country?stackMode=absolute>.

⁸⁴ Felix Creutzig et al., "Beyond Technology: Demand-Side Solutions for Climate Change Mitigation," Annual Review of Environment and Resources 41 (2016): 173–98.

⁸⁵ IEA, "Renewable Electricity".

⁸⁶ Ibid.

⁸⁷ IEA, "Electricity Market Report - July 2021," Paris : 2021, <https://www.iea.org/reports/electricity-market-report-july-2021>.

research into the history of the energy system over the last 200 years shows that new energy sources (coal, oil, gas, nuclear) have always added to total energy use, instead of substituting one source for another. The contribution of modern renewables “has thus far primarily added to the total energy supply, rather than providing any absolute displacement of fossil fuels.”⁸⁸ Without a dramatic change in this trend, reaching 2050 climate goals becomes impossible.

What about energy efficiency? It is obvious that energy demand for e.g. housing, transport, production processes or food provisioning should be met efficiently. However, energy research has proven that a sole focus on efficiency has potential pitfalls. First, since the industrial revolution energy efficiency has served to boost productivity and growth⁸⁹. Unfortunately, economic growth is a main driver of greenhouse gas emissions, as the latest IPCC report observes once more.⁹⁰ Second, when some energy demands are met more efficiently, costs are reduced, which provides people and businesses to buy more and/or new products and services, in that way undercutting potential efficiency gains. This so-called rebound effect might thus even increase total energy use.⁹¹

This brings us to the conclusion we formulated a few paragraphs earlier: reversing the global trend in emissions necessitates reducing global energy consumption. This implies severely scaling down energy demand in the Global North, so that e.g. the EU can develop towards its fair share of the remaining global carbon budget. Upscaling renewable supply and efficiency is necessary but reducing energy demand should take centre stage. The current energy crisis presents an opportunity

to engage with this process. However, so far, the crisis has been framed in terms that poorly allow for, and even stand in the way of, such an energy transition.

From energy crisis to (re)imagining the energy transition

Before we sketch a framework for the necessary energy transition, we return to the current framing of the energy crisis. The crisis exposes the fragility, unsustainability and untenability of the current energy system.⁹² A broader understanding of the energy crisis and a larger perspective on energy questions are needed.

First, attributing high energy prices entirely to Russia’s invasion in Ukraine is incorrect. This framing deflects blame and criticism away from our own energy model and separates energy from the larger context in which it operates, including climate change and the energy transition. The current energy crisis might be triggered by the Russian-Ukrainian war, the deeper causes are to be found in an unduly liberalized and globalised fossil-fuel based energy market. Re(imagining) our energy system to prevent future crises demands recognising the embeddedness of energy in issues of climate change, and global distribution and justice.

Second, in order to secure energy supply, governments increased oil- and coal-fired (particularly in Europe) electricity generation⁹³, extended the lifetimes of nuclear power plants (Belgium and Germany), and searched for additional gas storage⁹⁴ - all short-term measures tackling the symptoms instead of the disease itself. Curing energy supply disruptions makes more sense by reducing

⁸⁸Isak Stoddard et al., “Three Decades of Climate Mitigation: Why Haven’t We Bent the Global Emissions Curve?,” *Annual Review of Environment and Resources* 46 (2021): 668.

⁸⁹Joel Millward-Hopkins et al., “Providing decent living with minimum energy: A global scenario,” *Global environmental change* 65 (2020), <https://doi.org/10.1016/j.gloenvcha.2020.102168>.

⁹⁰Felix Creutzig et al., “Demand, services and social aspects of mitigation,” in IPCC (2022), *Climate Change 2022: Mitigation of Climate Change*, (2022): 518.

⁹¹Matthew J. Burke, “Energy-Sufficiency for a Just Transition: A Systematic Review,” *Energies* 13, no. 10 (2021): 1-14.

⁹²IEA, “World Energy Outlook 2022”.

⁹³IEA, “Electricity Market Report - July 2022,” Paris: 2022, <https://www.iea.org/reports/electricity-market-report-july-2022>.

⁹⁴IEA, “World Energy Outlook 2022,” Paris: 2022, <https://www.iea.org/reports/world-energy-outlook-2022>.

the amount of energy to be supplied (reducing energy demand) than by just shifting suppliers. Moreover, these measures contribute to worsening climate change and hinder moving towards a sustainable energy system.

Third, the focus on keeping energy affordable for households is of course necessary – as the crisis exacerbates energy poverty and food insecurity, especially among the least well-off in both the Global North and the Global South⁹⁵ – but its current interpretation isn't contributing to a more sustainable energy model. Seeking to lower energy prices, the EU mandated its member states to reduce overall energy demand through a 'RE-PowerEU' and a 'Safe Gas for a Safe Winter' plan. In previous paragraphs, we explained why reducing the energy demand is key to the energy transition. However, there are different ways to reduce energy demand. Seeking to do so from the framework of securing energy supply and energy affordability – the EU's plans seek a reduction of energy demand through reduced energy consumption during peak hours⁹⁶ and through efficiency measures – fails to fully acknowledge the role of reduced energy demand in the energy transition, limits its impacts on mitigating climate change, and neglects important questions of justice. Besides, the current appeal to reducing energy demand tastes somewhat bitter: what could not be demanded as a measure in tackling the climate crisis, is now portrayed as part of the solution to the energy crisis. Once the energy crisis is over and prices lower, will people keep their energy demand reduced? High energy prices predominantly hit the least well-off, forcing them to refrain from basic needs such as heating and cooking. Do we find reducing energy demand in these situations desirable? How and when do we – as society – can and want to reduce energy consumption in light of the energy transition? The next section provides at least some starting points for thinking about this.

⁹⁵ Ibid.

⁹⁶ European Council, "Infographic – Energy crisis: Three EU-coordinated measures to cut down bills," (2022), <https://www.consilium.europa.eu/en/infographics/eu-measures-to-cut-down-energy-bills/>.

⁹⁷ Priyadarshi R. Shukla et al., "Climate Change 2022. Mitigation of Climate Change: Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change," (2022): 1799.

Concepts for moving towards a fair energy system within environmental limits

The academic literature on climate change and its societal consequences has been booming for years. Concepts are emerging that can guide policies along a double track: quickly and deeply cutting emissions in order to bring a future energy system within environmental limits, while simultaneously ensuring a just distribution of the efforts and of the available environmental space. This justice aspect is, by the way, not only a moral argument, but is also political and pragmatic, in the sense that the deep societal changes that are ahead of us, will not be acceptable for populations worldwide (and nationally) without a fair process and results.

As far as we can see, all of these emerging concepts and frameworks take demand reduction and the idea of sufficiency as central elements. We briefly present several interconnected concepts that can inspire future fair low-carbon policies. These include Decent Living Standards (DLS), energy sufficiency, energy justice, 1,5°C lifestyles and sustainable consumption corridors. It is an important step that several of these concepts have also been picked up in a new chapter in the last IPCC AR6 report on mitigation. Although in the past, the IPCC already paid some attention to demand and sufficiency, technology supply-side solutions have always been central. The new chapter on demand, services and social aspects of mitigation highlights recent research from the social sciences and considerably broadens the scope of possible approaches.

One of the central concepts is the idea of Decent Living Standards (DLS). A DLS is a set of minimal material requirements essential for achieving basic human well-being, which includes needs such as adequate nutrition, shelter, basic living conditions, clothing, healthcare, education, and mobility.⁹⁷ These needs can be met in different ways, depending on local contexts, cultures,

geography, available technologies, social preferences, and other factors. Meeting these needs in a low-carbon way will have to become a top priority in the future. This will require a double movement. On the one hand, countries and populations below DLS levels will have to scale up, while relying on low-carbon services. Countries and populations with consumption far above DLS levels will have to scale down, while meeting needs in a low-carbon collective and individual lifestyle. This has been formulated as a search for “sustainable consumption corridors,”⁹⁸ where an establishment of minimum and maximum standards of consumption creates the opportunity to remain collectively within environmental limits, while simultaneously reducing inequality.

Policy would thus build on energy sufficiency, i.e. providing everyone with sufficient energy to fulfil needs without causing social and environmental harm. Energy sufficiency relates to the relationship between energy consumption and well-being. Contrary to what is often assumed, the relationship between energy consumption and well-being is not linear. Increased energy consumption is associated with improved well-being and higher living standards only to a certain point, after which increased energy consumption no longer improves living standards and even adversely affects well-being.⁹⁹ Many in the Global North have reached this threshold, and many have transgressed it. Maintaining a level of sufficiency would consequently increase well-being.

One of the conclusions of the IPCC report therefore reads that “there is *high evidence* and *high agreement* in the literature that through

equitable distribution, well-being for all can be assured at the lowest-possible energy consumption levels (...) by reducing emissions related to consumption as much as possible, while assuring DLS for everyone” (italics in the original).¹⁰⁰ It is essential to see that this implies policies that go way beyond targeting individual behaviour change. It supposes a society-wide collective endeavour where investments in e.g. infrastructure and universal basic services provide the backbone within which social practices and individual behaviour can change.

The concepts we presented can be used internationally but also at EU level or nationally. For the EU, the biggest potential for developing collective 1,5°C lifestyles lies in the areas of food (reducing animal-based products and food waste), housing (heating, cooling, equipment, living area) and mobility (car possession, flights). Equity and redistribution will be key, because also within the EU (energy) consumption diverges enormously between regions and between individuals. In a revealing study, Oxfam found that in the 25 years between 1990 and 2015, in which the EU’s consumption emissions fell by around 12%, the richest 10% of EU citizens were responsible for over a quarter (27%) of these EU emissions, the same amount as the poorest half of the EU population combined. Most remarkable is that the total annual consumption emissions of the poorest 50% of EU citizens fell by 24%, and those of the 40% of EU citizens with ‘middle incomes’ by 13%, while the emissions of the richest 10% grew by 3%, and of the richest 1% by 5%.¹⁰¹ This is obviously untenable in the future.

⁹⁸ Thomas Wiedman et al., “Scientists’ warning on affluence,” *Nature Communications* 11 (2020): 3107.

⁹⁹ Matthew J. Burke, “Energy-Sufficiency for a Just Transition: A Systematic Review,” *Energies*, 13, no. 10 (2020): 1-14.; Corina Corina Pîrlogea, “The Human Development Relies on Energy. Panel Data Evidence,” *Procedia Economics and Finance* 3 (2012): 496-501. [https://doi.org/10.1016/S2212-5671\(12\)00186-4](https://doi.org/10.1016/S2212-5671(12)00186-4).; Julia K. Steinberger and J. Timmons Roberts, “From constraint to sufficiency: The decoupling of energy and carbon from human needs, 1975–2005,” *Ecological Economics*, 70, no. 2 (2010): 425-433. <https://doi.org/10.1016/j.ecolecon.2010.09.014>.

¹⁰⁰ Felix Creutzig et al., “Demand, services and social aspects of mitigation,” in IPCC (2022), *Climate Change 2022: Mitigation of Climate Change*, (2022): 518.

¹⁰¹ Sivan Kartha et al., “The Carbon Inequality Era: An assessment of the global distribution of consumption emissions among individuals from 1990 to 2015 and beyond,” *Oxfam* (2020), <https://policy-practice.oxfam.org.uk/publications/the-carbon-inequality-era-an-assessment-of-the-global-distribution-of-consumpti-621049>.

Final remarks

Recent studies show that energy efficiency and energy sufficiency could lower global energy consumptions in 2050 to 60% of today's energy use.¹⁰² In energy-intensive countries, about 95% of energy consumption can be avoided while ensuring a decent living to all¹⁰³, as high standards of living can be achieved with relatively low levels of energy consumption.¹⁰⁴

Reducing energy demand in the context of the energy transition does not have to constitute a concern and a burden as experienced by many people in the context of the energy crisis. Rather, it bears the potential of improving quality of life, well-being and social and environmental justice.¹⁰⁵ Not only is lowering energy consumption through energy efficiency and energy sufficiency the fastest, cheapest, most reliant and most flexible way of mitigating climate change, but it is also a more just pathway than other (pathways to) 'sustainable' futures¹⁰⁶, notwithstanding the complementarity of renewable energy. The latest IPCC report, with its overview of recent social science insights, provides us with a set of concepts to guide that transition.

The current energy crisis presents an opportunity to (re)imagine the energy transition, as being about lowering global energy demand, and re-think our energy system, as being based on the principles of energy efficiency and energy

sufficiency, as such enabling universal access and affordability of energy. However, current framings of the energy crisis make little of the opportunity, and the focus on securing (fossil) energy supply in the Global North threatens the transition towards a more sustainable, climate-aligned and just energy model.

The need for energy consumption reductions in the Global North is often dismissed from unsubstantiated trust in future Carbon Dioxide Removal (CDR) technologies, and illusory optimism in the speed and scale of renewable energy deployment. Not only is this gambling with human lives and our planet, as it rests on good faith in dubious, dangerous and controversial technologies that do not even exist or are deployed today, but it also refutes moving towards more prosperous (in terms of well-being) and just societies.

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¹⁰² Joel Millward-Hopkins et al., "Providing decent living with minimum energy: A global scenario," *Global environmental change* 65 (2020), <https://doi.org/10.1016/j.gloenvcha.2020.102168>.

¹⁰³ Ibid.

¹⁰⁴ Matthews J. Burke, "Energy-Sufficiency for a Just Transition: A Systematic Review," *Energies* 13, no. 10 (2020): 1-14.

¹⁰⁵ John Barret et al., "The Role of Energy Demand Reduction in Achieving Net-Zero in the UK," *Centre for Research into Energy Demand Solutions* (2021): Oxford, UK.

¹⁰⁶ Ibid.

THE EUROPEAN RADICAL-RIGHT AND THE ENERGY CRISIS: A WINDOW OF OPPORTUNITY

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The year 2022 saw soaring inflation and public fears about energy insecurity. While the energy crisis is a major financial burden on households and firms, it is also a window of opportunity for radical-right parties across Europe to push forward their agenda. Best-known for their views on immigration and integration policy, radical-right parties also tackle other issues in their bid to sway voters. In France, the protection of purchasing power was at the core of Marine Le Pen’s 2022 presidential campaign.¹⁰⁷ In coal producing countries such as Poland and Hungary, the radical-right continues to favour coal mines as a way to ensure cheap energy, to provide jobs and to retain mining as a source of national pride.¹⁰⁸ Furthermore, radical-right actors across Europe vehemently support nuclear energy production, framing it as a ‘cheap and reliable’ energy source.¹⁰⁹ Financial and economic themes have penetrated radical-right discourse in an

environment of high gas prices and questions about energy security.

A combination of ideological and strategic motives helps explain why radical-right parties are among the most vocal actors in this debate in some European countries. In fact, the current situation provides an excellent political opportunity structure to shore up support for their program. This is not in the least because their responses to the crisis get conveniently connected to longstanding positions and ideological views associated with the radical-right.

The radical-right and energy imports

When it comes to battling the increase in gas and electricity prices, there have been widespread attempts to reduce European dependence on energy imports. This call for domestic energy production, or energy autarky, resonates loudly with radical-right parties, in line with their **nationalist** views. For example, some radical-right politicians

¹⁰⁷ Aurélie Lebel, Vincent Vériér & Victor Tassel, “Présidentielle 2022 : Marine Le Pen et les cinq failles de son programme économique,” *Le Parisien*, last modified April 19, 2022, accessed January, 4, 2023, <https://www.leparisien.fr/elections/presidentielle/presidentielle-2022-marine-le-pen-et-les-cinq-failles-de-son-programme-economique-19-04-2022-KEHZC6M7NBA5ZLCVCT2P6KBJMU.php>.

¹⁰⁸ Anna Kyriazi, “The environmental communication of Jobbik: between strategy and ideology,” in *The far right and the environment: politics, discourse and communication*, ed. Bernhard Forchtner (Milton Park, Abingdon: Routledge, 2020), 183-199; Piotr Żuk and Kacper Szulecki, “Unpacking the right-populist threat to climate action: Poland’s pro-governmental media on energy transition and climate change,” *Energy research & social science* 66 (2020): 101485.

¹⁰⁹ Kostas Gemenis, Alexia Katsanidou, & Sofia Vasilopoulou, “The Politics of Anti-Environmentalism: Positional Issue Framing,” *PSA Annual Conference Belfast, April*, (2012): 1–24. <https://research.utwente.nl/en/publications/the-politics-of-anti-environmentalism-positional-issue-framing-by-2>

would like to sever ties with Islamic regimes in oil producing countries like Qatar or Saudi-Arabia and focus on domestic energy production instead. In Britain, former UKIP party leader Nigel Farage, currently the chairman of *Renew UK*, favours renewed oil exploitation in the North Sea as an alternative to oil imports from the Middle-East.¹¹⁰ In this particular example, Farage's comments are related to the radical-right's culture war against Islam, which they treat as a dangerous religion and an inferior culture.

Radical-right politicians across the continent denounce conservative Islamist autocrats because of their anti-democratic policies, but some of these politicians cosy up with other dictators in their pursuit of a 'realistic' energy policy. For example, while many radical-right parties across the continent have condemned Russia's invasion in Ukraine as a violation of national sovereignty (the Dutch *Forum for Democracy* leader Thierry Baudet being a notable exception)¹¹¹, skyrocketing energy prices provide an excellent excuse to play nice in the relationship with Putin. Radical-right parties across Europe have called for a removal of the sanctions against Russia at least since the beginning of the summer of 2022, as they hope the uninhibited flow of gas will calm the markets and reduce the price of gas and electricity. The German *Alternative für Deutschland (AfD)* even asked to open the Nord Stream 2 pipeline.¹¹² They claim European leaders need to be pragmatic and must

protect the interests of the people. Interestingly, while the energy crisis was the sign for some radical-right parties to rekindle the relationship with a violent and belligerent regime, mainstream politicians focused on making a reduced dependency on Russian gas work. And indeed, at the turn of the year, the most acute phase of the energy crisis has subsided for now. While much work still needs to be done and current mainstream policies seem far from perfect, the contrast with the strategy of radical-right '*Putinversteher*s' is striking.

Remarkably, this 'pragmatic' viewpoint appears to be most popular among politicians and parties that used to have cordial relations with the Kremlin before the invasion. European radical-right parties and Russia's regime share a conservative or even reactionary disdain for Western cosmopolitanism and what they call 'gender ideology'. Ideological similarities and potentially even financial support from Moscow could be a reason for radical-right parties to turn a blind eye towards that particular autocratic regime.¹¹³ However, the position vis-à-vis Russia is also one of the major splits between Europe's radical-right parties. Poland's ruling party *Prawo i Sprawiedliwość (PiS)*, for example, has been critical of Russian foreign policy in the years prior to the war because of historical and personal reasons, and has supported strict sanctions against Russia.¹¹⁴ Another exception is Georgia Meloni, the current prime minister

¹¹⁰ "What The Farage: 'The Saudis Are Very Upset That the West Now Seems to Be Going towards Iran,'" *GBNews*, Publication March 16, 2022, accessed December 21, 2022, <https://www.youtube.com/watch?v=WnGZ3AYHUOM>.

¹¹¹ Arjan Meesterburrie, "Thierry Baudet is vrijwel de enige Poetin-sympathisant in Europa die de Russische inval in Oekraïne niet veroordeelt: dit zeiden Marine Le Pen, Viktor Orbán en anderen," *BusinessInsider*, last modified February 28, 2022, accessed January 4, 2023, <https://www.businessinsider.nl/thierry-baudet-oekraïne-poetin-rusland-aanval-invasie-veroordeling-le-pen-salvini-trump/>.

¹¹² "AFD-Chef Fordert Erneut Inbetriebnahme Von Nord Stream 2," *Merkur.de*, last modified July 15, 2022, accessed on December 20, 2022, <https://www.merkur.de/deutschland/mecklenburg-vorpommern/afd-chef-fordert-erneut-inbetriebnahme-von-nord-stream-zr-91667379.html>.

¹¹³ Neil Datta, "We know Russia funds Europe's far Right. But what does it get in return?," *Open democracy.net*, last modified 6 April 2022, accessed December 20, 2022, <https://www.opendemocracy.net/en/5050/russia-ukraine-war-putin-europe-far-right-funding-conservatives/>

¹¹⁴ Adam Folvarčný and Lubomír Kopeček, "Which conservatism? The identity of the Polish Law and Justice party," *Politics in Central Europe* 16, no. 1 (2020): 159-188.; Barbara Moens. "Eastern Europeans Push for New Penalties as EU Sanctions Fail to End Putin's War," *POLITICO*, last modified April 2, 2022. Accessed December 19, 2021. <https://www.politico.eu/article/eastern-europeans-conjure-up-plans-to-raise-new-penalties-pressure-on-vladimir-putin-russia/>.

of Italy, who changed course in an effort to present herself as an acceptable partner on the international and European level. Meloni also maintains close ties with *PiS*, as the two parties belong to the same group in the European Parliament: the *European Conservatives and Reformers*. Meloni's U-turn shows that tactics also play an important role in the stance towards Russia and the energy crisis. In short, energy imports usually do not fit a nationalist and protectionist agenda, unless strategic considerations or an admiration for the anti-liberal credentials of energy exporters trump nationalist ideology.

Renewable energy or nuclear power?

Domestic energy production typically pleases radical-right actors, but not all types of power sources are treated equally. For example, many radical-right parties have supported nuclear energy production and this position is even more common than before. Back in 2012, Gemenis and colleagues noted that radical-right parties in Austria, Germany and Denmark reject nuclear power, while many other members of that party family were in favour.¹¹⁵ Today however, the *AfD*, and the *Nye Borgerlige* have become staunch defenders of nuclear energy in Germany and Denmark respectively. Only Austria stands out as one of the few European countries where nuclear energy is still deemed unacceptable across the political spectrum. Radical-right proponents of nuclear energy support prolonged lifespans of active reactors, but also call for investment in new, modular, nuclear plants. One of the main arguments for prioritising this type of domestic energy production are the supposedly lower financial costs. Apparently, they regard nuclear energy as the silver bullet to reduce high electricity prices. A Belgian member of parliament for *Vlaams Belang* stated that energy production must be "reliable,

affordable and environmentally friendly" and claims that nuclear energy is the best way to achieve these goals.¹¹⁶

The focus on the financial benefits of nuclear energy is remarkable considering its high investments costs and the very low marginal costs of the most obvious alternative: renewable energy sources.¹¹⁷ Additionally, renewable energy provided by photovoltaics and windmills also ensures domestically produced energy and could as well be treated as a source of national pride. Therefore, some radical-right parties accept renewables, for example to complement nuclear energy. However, nationalism is more often an obstacle to than a facilitator for investment in renewable energy sources. Many radical-right parties have serious issues with these forms of energy production. Windmills in particular draw criticism because they are believed to be environmentally unfriendly and because they 'spoil the view' on natural landscapes. This bond between the people and their ancestral lands is a strong theme in far-right communication and blood and soil politics do not always go hand in hand with renewable energy if the latter threatens the natural environment.¹¹⁸ In short, while there is some scattered support for renewable energy sources among radical-right parties across the continent, wind energy is typically viewed as a threat to society and is therefore rejected.¹¹⁹

Fierce resistance against wind energy is also related to conspiracy theories. In Finland, the radical-right Finns' Party launched a fantastical story about windmills that would cause bats to explode. A heated debate ensued in the (tabloid) press, but soon it became clear that Finnish bats were safe. The party also argued that windmills have detrimental effects on human health, but

¹¹⁵ Gemenis, Katsanidou, and Vasilopoulou, *The Politics of Anti-Environmentalism*, 1–24.

¹¹⁶ "Aftrap campagne voor betaalbare energie: "Ze laten u in de steek," *Vlaams Belang*, last modified October 27, 2022, accessed December 21, 2022, <https://www.vlaamsbelang.org/nieuws/aftrap-campagne-voor-betaalbare-energie-ze-laten-u-de-steek>.

¹¹⁷ Benito Mignacca, Giorgio Locatelli, and Tristano Sainati, "Deeds not words: Barriers and remedies for Small Modular nuclear Reactors," *Energy* 206 (2020): 118137.

¹¹⁸ Bernhard Forchtner and Christoffer Kølvrå, "The nature of nationalism: Populist radical right parties on countryside and climate," *Nature and Culture* 10, no. 2 (2015): 199-224.

¹¹⁹ Marine Le Pen, "L'écologie," *Projet pour la France Marine Le Pen* (2022).

again, their claims lack proof. Ultimately, a spokesperson for the Finns' party admitted that the story about the exploding bats was primarily meant to cause controversy.¹²⁰ These events show that energy policy has ended up in what Ruth Wodak has called 'the far-right perpetuum mobile'. She illustrates how far-right actors make outrageous claims to generate public attention and mobilise militants. When confronted with criticism and ridicule, such parties claim that their opponents, 'political elites' or 'leftists', are out of touch with the experiences of ordinary people. By the time public interest faded away, the party had attracted days or even weeks of media coverage it would otherwise have missed out on.¹²¹ It remains unclear whether support for the construction of new windmills has changed, but the case probably did not much to increase the willingness of party voters to accept wind power.

In sum, the radical-right does support different types of energy generation. They claim to be mostly concerned about financial considerations and stable supply, although nationalist preconceptions or conspiracy theories can influence their rhetoric.

Radical-right climate scepticism

Domestic energy production is not the only reason why European radical-right parties have been on top of energy debates. The political choice to favour certain forms of energy production over others is intimately connected to the challenge of global warming. Climate scepticism among radical-right actors has evolved over time. Several European radical-right parties used to doubt human-made climate change in the past, but many

of these parties no longer explicitly deny the existence of climate change (although there are still exceptions). However, two alternative types of climate scepticism have come to the fore.¹²² Doubts about the scientific knowledge generation process or criticism of the political decision-making process has been called process scepticism. Response scepticism on the other hand entails criticism of the actual climate policies, and that is where energy policy comes into play. While the latter two arguments appear to be less extreme than outright climate change denial, they are still used to justify the idea that no special efforts to combat global warming are needed.¹²³

The energy crisis in the context of efforts to reduce Greenhouse Gas (GHG) emissions has been an extra opportunity to delegitimise and insult Green politicians and climate activists. In the rhetoric, the decision-makers who need to tackle global warming are responsible for higher gas and electricity prices. Greens and leftists in particular are accused of deliberately crafting the current crisis to reach their 'dubious' goals. In response to fears about potential energy shortages this winter, a senior member of the Swiss radical-right party *SVP* stated: "Their [The Greens'] secret plan for the purpose of re-educating the population and expanding a state eco-dictatorship is working out."¹²⁴ Georgia Meloni, leader of the radical-right *Brothers of Italy* speaks of 'climate fundamentalism' after denouncing the dependency on raw materials to support the electrification

¹²⁰ Niko Hatakka and Matti Välimäki, "The allure of the exploding bats: The Finn's Party populist environmental communication and the media," in *The far right and the environment: politics, discourse and communication*, ed. Bernhard Forchtner (Milton Park, Abingdon: Routledge, 2020), 135-149.

¹²¹ Ruth Wodak, *The politics of fear: The shameless normalization of far-right discourse*. (Sage Publications, 2020).

¹²² Bernhard Forchtner and Balsa Lubarda, "Scepticisms and beyond? A comprehensive portrait of climate change communication by the far right in the European Parliament," *Environmental Politics*, 1–26 (2022): <https://doi.org/10.1080/09644016.2022.2048556>

¹²³ Willem Van Rensburg, "Climate change scepticism: A conceptual re-evaluation," *Sage Open* 5, no. 2 (2015): <https://doi.org/10.1177/2158244015579723>

¹²⁴ "SVP Wittert 'Geheimplan Für Öko-Diktatur,'" *Blick*, last modified on July 21, 2022. Accessed on December 19, 2022, <https://www.blick.ch/politik/drohende-energie-krise-svp-wittert-geheimplan-fuer-oeko-diktatur-id17679186.html>.

effort.¹²⁵ Such extreme partisanship, also called affective polarization, is a phenomenon which has been associated with right-wing **authoritarianism**.¹²⁶ Radical-right parties delegitimise and insult proponents of ambitious climate programs, reminiscent of how they treat foreigners or minorities. The ‘othering’ of political opponents can also happen in a **populist** fashion. The radical-right can frame the soaring energy prices supposedly caused by climate policy as a symptom of a corrupt and malevolent elite failing to defend the interests of the people.¹²⁷ In turn, radical-right politicians promise to take up the mantle. Thus, these parties appeal to the political cynics among their voters by suggesting the political system cannot be trusted because it bears the responsibility for the current energy crisis.

Response scepticism, another manifestation of climate scepticism boils down to criticism of the policy instruments to reduce the human impact on global warming.¹²⁸ The radical-right rejects current climate policies and proposals to increase efforts mitigating global warming in a way that is typical for **conservatives**. Resisting political and social change comes in the form of at least three arguments that have been used by reactionaries time and again.¹²⁹ The *perversity thesis* posits that every progressive political action will be counterproductive and lead to the opposite to the intended situation. In Belgium, the Federal Government planned to open new gas power plants to

compensate for the closure of nuclear plants. Radical-right party *Vlaams Belang* continuously criticised these policies for being hypocritical and counterproductive. Even before Russia’s invasion in Ukraine in 2022, gas power was regarded as too polluting and too expensive. With the *futility thesis* a conservative politician claims that political action is futile. Going back to the same example, *Vlaams Belang* indeed argues that any policy to reduce carbon emissions is pointless because they argue that the European Union is currently responsible for less than 10% of global emissions. Instead, policy must become much more inward looking to account for the *jeopardy thesis*, or the claim that progressive policies will counteract previous achievements in society. High energy prices in particular have been linked to current climate policy instruments. While climate policy might have perverse effects or be even completely futile, *Vlaams Belang’s* main concern is that it will cost society and the economy dearly in terms of stable energy supply and the price of energy.¹³⁰ The energy crisis has also resulted in renewed calls for a reduction in (or even the abolishment of) taxes and levies on energy products, reflecting the desire to roll back the state. Analysis of the climate discourse of other radical-right parties suggest that the concerns about the socio-economic impact of current climate policies are widely shared by the European radical-right.¹³¹ It illustrates that the old conservative goal to

¹²⁵ “Meloni e il “Fondamentalismo Climatico” e Salvini Dice Il Riscaldamento Globale Che Non Esiste!,” *YouTube*, Published June 24, 2022. Accessed on December 19, 2022, <https://www.youtube.com/watch?v=juXGG67QenQ>.

¹²⁶ Emma A. Renström, Hanna Bäck, & Royce Carroll, “Protecting the Ingroup? Authoritarianism, Immigration Attitudes, and Affective Polarization,” *Frontiers in Political Science*, 4, (2022): 1–12. <https://doi.org/10.3389/fpos.2022.919236>.

¹²⁷ Robert A. Huber, Tomas Maltby, Kacper Szulecki, & Stefan Četković, “Is populism a challenge to European energy and climate policy? Empirical evidence across varieties of populism,” *Journal of European Public Policy* 28 no. 7 (2021): 998–1017. <https://doi.org/10.1080/13501763.2021.1918214>

¹²⁸ van Rensburg, *Climate Change Scepticism: A Conceptual Re-Evaluation*.

¹²⁹ Albert O. Hirschman, *The rhetoric of reaction*. (Cambridge: Harvard University Press, 1991).

¹³⁰ Jasper Praet, “The Ideological Roots of Populist Radical-Right Climate Scepticism,” *Politics of the Low Countries* no. 3 (2022): 250–280.

¹³¹ Anne Küppers, “‘Climate-Soviets,’ ‘Alarmism,’ and ‘Eco-Dictatorship’: The Framing of Climate Change Scepticism by the Populist Radical Right Alternative for Germany,” *German Politics* (2022): 1–21: <https://doi.org/10.1080/09644008.2022.2056596>; Forchtner and Lubarda, “Scepticisms and beyond? A comprehensive portrait of climate change communication by the far right in the European Parliament,” 1–26: <https://doi.org/10.1080/09644016.2022.2048556>.

protect society against change is particularly widespread among the European radical-right.

Conclusion

In conclusion, the energy crisis provides a good opportunity for radical-right parties to push through their ideas in an ideologically consistent way. They successfully implement their core ideology in their discourse about energy policy: nationalism, conservatism, authoritarianism or populism are clearly visible. More generally, they succeed in connecting the crisis to longstanding positions such as a pro-nuclear or pro-Russian stance. While the radical-right party family is flexible enough to respond to a developing situation and members strategically adapt to a particular national context, the many similarities in the discourse of European radical-right parties are

clearly noticeable. It indicates that radical-right parties could appeal to voters even outside the context of immigration policy by adapting old arguments to a 'new' context. The adaptation of radical-right ideas to debates about the energy crisis also suggests that radical-right parties need not fear a political environment where immigration is not on top of the political agenda and it could even help normalise radical-right views and positions.

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GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

LNG: SAVIOUR OR A NEW PROBLEM IN THE MAKING?

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A month after the Russian invasion of Ukraine, the European Union (EU) announced in its REPowerEU program that Russian gas imports would be reduced by two-thirds by the end of 2022 and should stop altogether before the end of the decade. In response to this and EU sanctions against Moscow, Russia reduced gas flows to the EU to a trickle. Individual countries were blocked from gas supplies after they refused to pay in roubles, and technical issues were used as an excuse to reduce gas flows through Nord Stream until September when supply was fully terminated. Since then, the Nord Stream pipeline has been sabotaged and gas flows through the pipeline are not possible. These events made the gas situation in the EU dire. In total, the EU needs to replace 155 billion cubic meter (bcm) of Russian gas.¹³² This has left the continent on a global hunt for alternative gas supplies.

Plans to expand existing pipeline infrastructure (see for example the planned expansion of the Southern Gas Corridor to Azerbaijan) were made, but a lot of redirection was aimed at increasing liquid natural gas, or LNG, import capacity. According to Eurostat, the share of LNG in the EU's gas imports has increased from 19% in October 2021 to 38% in November 2022. This share is

expected to raise even further, as seven floating storage and regasification unit (FSRU) terminals are expected to come online before March in Germany, the Netherlands, Estonia and Finland. In September, the Eemshaven FSRU terminal in the Netherlands opened and in mid-December, the German FSRU terminal in Wilhelmshaven started importing LNG. 19 more LNG terminals are planned across the EU.¹³³ This increased development of LNG importing infrastructure raises some questions about the impact on geopolitics and climate ambitions.

But first, what is LNG?

LNG is natural gas turned liquid by cooling it to minus 162 degrees Celsius in a liquification terminal. After liquification, this LNG can be commercially transported using spherical shipping tankers as its volume has now shrunk to 1/600th its normal size.¹³⁴ Before LNG can be used for heating, electricity-generation and industrial processes, it needs to be regasified in a regasification terminal.

LNG is not a new technology, but dates back to 1873 Germany, when the first LNG compressor

¹³² Alice Hancock, "Europe's new dirty energy: the 'unavoidable evil' of wartime fossil fuels," *Financial Times*, 6 September 2022, <https://www.ft.com/content/b209933f-df7f-49ae-8f82-edc32ed622a6>.

¹³³ Hancock, "Europe's new dirty energy: the 'unavoidable evil' of wartime fossil fuels."

¹³⁴ Satish Kumar et al., "LNG: An eco-friendly cryogenic fuel for sustainable development," *Applied Energy* 88 (2011).

and refrigeration was engineered.¹³⁵ After the costs to produce LNG reduced, demand started to grow. The expansion of LNG has changed the gas market dynamics. The predominantly regional markets were complemented by a global market, as gas was no longer restricted to the physics of pipelines. LNG can be shipped to any market with a regassification terminal, making it more flexible than piped natural gas.

The LNG technology is not without incidents. In 1944, more than 130 fatalities were reported when an LNG storage tank exploded in Cleveland, United States (US), and in 1973 there were 40 casualties during cleaning activities on an LNG storage tank in New York City. 27 people were killed in Skilda, Algeria when an LNG tank exploded in 2007.¹³⁶ An explosion at Freeport LNG (in Texas) in June 2022 fortunately did not lead to human casualties, but rendered the liquefaction terminal non-operational for the remainder of 2022. Freeport is the second-biggest LNG terminal in the US.

The geopolitics of LNG

The EU has learned the hard way that gas pipelines can be used to exert pressure and is looking at LNG as a solution for its gas shortages. But LNG is not free from geopolitics. Today, there are only 21 LNG producers. Of these 21, only three have substantial production capacities: US, Qatar and Australia. By supply and demand, this means that these three can exert geopolitical pressure. Only limited volumes of Australian gas reach the European market (Australian LNG represented 0.005% of total LNG imports in the first 9 months of 2022), because of its geographical distance. Australian LNG is mostly supplied to the Asian

market. Qatari and US LNG does reach the EU market in bulk, 18% and 30% respectively from all LNG imports in 2022, and can therefore result in more geopolitical pressure.¹³⁷

Evidence of these geopolitics of LNG were painfully uncovered in the final weeks of 2022, as the European Parliament was shaken by a corruption scandal with alleged ties to Qatar. On the 18th of December, Qatar made it clear that their LNG comes with strings attached, when it implied that the fallout of the Qatargate investigation could result in supply disruptions.¹³⁸ Increased gas imports from Qatar had already raised eyebrows in the run up to the World Cup, as construction workers died and the working conditions were heavily criticised.¹³⁹ The FIFA boycott of beer sales and rejection to wear the ONE LOVE captain band, presumably to accommodate the Qatari host, added fuel to the fire. The allegations of corruption in the European Parliament should be a warning sign for the EU. However, Germany seems eager to repeat its mistake, as Germany's Minister for Economic Affairs, Robert Habeck has stated that the scandal should not be connected to gas purchases, which is reminiscent of Merkel's refusal to link the Nord Stream 2 pipeline and the poisoning of Navalny.¹⁴⁰

The geopolitics of LNG is not limited to Qatar, as the United Arab Emirates (UAE) have requested the reduction of visa restrictions in exchange for more gas deliveries to the European market. Also, US LNG deliveries might not be as innocent as they appear. The US is a NATO ally, which has promoted its LNG as "freedom gas" under former US President Donald Trump. Similarly, current US President Joe Biden committed 15 bcm of

¹³⁵ Kumar et al., "LNG: An eco-friendly cryogenic fuel for sustainable development."

¹³⁶ Jiansong Wu et al., "A quantitative LNG risk assessment model based on integrated Bayesian-Catastrophe-EPE method" *Safety Science* 137 (2021).

¹³⁷ "Imports of natural gas by partner country - monthly data," 2022, accessed 16 December

¹³⁸ Reuters, "Qatar reiterates denial that its government involved in EU corruption case," *Reuters*, 18 December 2022, <https://www.reuters.com/world/qatar-reiterates-denial-that-its-government-involved-eu-corruption-case-2022-12-18/>.

¹³⁹ "Qatar World Cup of Shame," 2022, <https://www.amnesty.org/en/latest/campaigns/2016/03/qatar-world-cup-of-shame/>.

¹⁴⁰ "As corruption scandal unfolds, Germany's Habeck wants to keep Qatar gas," *Politico Pro*, 2022, <https://www.politico.eu/article/robert-habeck-germany-qatar-wants-to-stick-to-qatar-gas-purchases-despite-corruption-scandal/>.

additional US LNG supplies to the EU in March 2022.¹⁴¹ Yet, the record volumes of US LNG to the European continent had nothing to do with the warm Trans-Atlantic relations or the involvement of the US administration. US LNG was shipped to the EU because of the price premium being paid on the European market. Now and in the future, US LNG goes to the highest bidder and that is not necessarily Europe. Other actions of the US also seems to suggest that the EU is on its own. The Biden Administration retracted its support for the EastMed pipeline project from Israel, Cyprus and Greece, as a liquification terminal is constructed quicker, yet more LNG would also help increase the EU's dependency on LNG. The US Inflation Reduction Act, that provides a tax break for US clean energy technology, has the EU worried that its own clean industry will suffer at a critical time. Also, a possible re-election of Trump in 2024 might negatively impact LNG exports, as increased energy prices inside the US might trigger an "America first" discourse in the energy domain. The EU should thus not count on the US to fulfil its energy needs.

Can LNG help with the energy transition?

Natural gas is the cleanest fossil fuel when it comes to CO₂ emissions and it is therefore promoted as a transition or bridge fuel. Yet, there is more to the story. Methane (CH₄) emissions often leak from gas production sites and transmission pipelines. Methane is a far more potent greenhouse gas than CO₂. In the first 20 years after emission, methane contributes 80 (!) times more to global warming than CO₂. This means that the short term implications of natural gas for climate change are enormous.

Is LNG better than piped gas? Research suggests that US LNG might be cleaner than Russian piped gas.¹⁴² These studies compare the Russian gas production and gas infrastructure, which is associated with massive methane leakages, to the cleanest production region of the US. However, within the US there are major differences in methane emissions across different production regions. Permian shale gas, for example, has higher emissions than fields in the Appalachian region.¹⁴³ So, when making comparisons, a lot depends on how the gas is produced as well as the state of the transmission pipelines. All things equal, the conversion process (gas-liquid-gas) and the shipping of LNG has more emissions than piped natural gas.

However, the story does not stop at emissions. The newly constructed LNG terminals and signed contracts can have some unwanted implications for our climate ambitions. These LNG terminals are diverting billions of euros which could have been spent on zero-emissions technologies or improving energy efficiency. The lifespan of these LNG terminals – at least 30 years - exceeds the EU's ambition to reach net zero by 2050. Germany has rented floating storage and regassification unit (FSRU) LNG terminals for a period of 15 years and is also expected to build onshore LNG. These terminals were a lot more expensive than initially projected (6.5 billion euros instead of 3 billion euros).¹⁴⁴ At the end of November, a 15 year LNG deal was signed ensuring Qatari gas supply to Germany until 2041. Minister Habeck welcomed the deal and "would not mind 20-year or

¹⁴¹ "Biden's Commitment For US LNG To Supply Europe Faces Strong Headwinds," Forbes, 2022, <https://www.forbes.com/sites/davidblackmon/2022/03/27/bidens-commitment-for-us-lng-to-supply-europe-faces-strong-headwinds/?sh=4e7f9227247a>.

¹⁴² Leslie S Abrahams et al., "Life cycle greenhouse gas emissions from US liquefied natural gas exports: implications for end uses," *Environmental science & technology* 49, no. 5 (2015); Selina Roman-White et al., *Life cycle greenhouse gas perspective on exporting liquefied natural gas from the United States: 2019 update*, National Energy Technology Laboratory (2019).

¹⁴³ Julian Wettengel, *Unravelling the climate footprint of U.S. liquefied natural gas*, Clean Energy Wire (2020), <https://www.cleanenergywire.org/news/unravelling-climate-footprint-us-liquefied-natural-gas>.

¹⁴⁴ Nikolaus J. Kurmayer, "Twice as expensive: The high cost of Germany's floating LNG terminals," *Euractiv*, 21 November 2022.

longer contracts".¹⁴⁵ Producers are also pushing for long-term contracts.¹⁴⁶ This risks locking-in carbon in the mid- and long term and would be a bad development for European and global climate ambitions.

Additionally, EU countries are sending mixed messages to developing countries about natural gas potential. Research has highlighted the need to keep fossil fuels in the ground in order to reach the goals of the Paris Agreement. Over the past years, the EU has been pushing this message. Now, EU governments are saying the opposite and the EU and EU governments have signed 39 new gas deals with traditional and non-traditional gas producers, such as Congo, Israel and Egypt. The investments of these countries should not be taken lightly by the EU, especially if the EU decides 10 years from now that they do not want this gas anymore. The development of these gas fields will have a long lasting impact on developing countries.

The international impact of Europe's scramble for gas

As if the geopolitical and climate impacts were not bad enough, the scramble for gas by Europe has severe implications for other LNG consumers. Pakistan, Bangladesh, and India have struggled with high LNG prices, as most shipments head to the EU. A Pakistani tender for LNG supplies to be delivered in 2023 has resulted in zero bids. The lack of LNG has resulted in black-outs and a shrinking economy, on top of climate change-induced floods. Bangladesh also experienced the knock-on effect of the European energy crisis, as more than 100 million people were left without power for multiple hours this year.¹⁴⁷ European companies are purchasing LNG at the expense of

these countries and therefore energy poverty is increasing. There seems to be no regard for the impact their actions have. Unaffordable energy can have a destabilizing impact on the already fragile region. The EU's hunger for LNG is unsatisfiable, and is called ruthless by some.¹⁴⁸

In 2022, the EU has been fortunate that Chinese COVID-19 measures have limited LNG demand from China. The additional 40 billion cubic meters of LNG delivered to Europe are almost equal to the drop in LNG to China, but questions can be raised about what the LNG market will look like after China's LNG demand returns.¹⁴⁹ This year the EU might have to compete against China for LNG, while also mitigating an expected 30 billion cubic meters gas shortage.¹⁵⁰

A slippery slope

The EU is replacing Russian gas with LNG, but LNG might prove to be a false saviour. The energy source is not bereft of geopolitics, as is evident from the Qatari threats to withhold LNG and UAE demands for reduced visa requirements. Even US LNG might not be as stable as assumed. Additionally, there are valid climate concerns regarding natural gas, the additional emissions from the liquefaction-regassification process, and the investments in LNG terminals that lock-in carbon. Further, Europe's global scramble for gas is impacting third countries and the redirection to LNG is threatening to expose Europe to increased competition with China.

The EU needs to tread carefully when it comes to LNG, as LNG is proving to be a slippery slope. Europe should strive for more independence and less emissions. This can only be done through increasing energy efficiency, energy demand

¹⁴⁵ Nikolaus J. Kurmayer, "Germany inks first major gas deal with Qatar," *EURACTIV*, 29 November 2022, <https://www.euractiv.com/section/energy/news/germany-inks-first-major-gas-deal-with-qatar/>.

¹⁴⁶ Marwa Rashad, "Explainer: Should Europe use more long term LNG contracts?," *Reuters*, 7 February 2022, <https://www.reuters.com/business/energy/should-europe-use-more-long-term-lng-contracts-2022-02-07/>.

¹⁴⁷ "Europe's Liquefied Natural Gas demand surge hits Asia," *DW*, 2022, <https://www.dw.com/en/lng-european-thirst-for-natural-gas-puts-bangladesh-and-pakistan-in-the-dark/a-63401354>.

¹⁴⁸ Jeroen Van Horenbeek, "'Meedogenloos' is het juiste woord: hoe de Europese jacht op gas het licht uitdoet in ontwikkelingslanden," *De Morgen*, 16 November 2022.

¹⁴⁹ "Data 31 October 2022," 2022.

¹⁵⁰ *IEA, How to Avoid Gas Shortages in the European Union in 2023: A practical set of actions to close a potential supply-demand gap (2022)*.

reduction, and maximizing renewables (other measures of the REPowerEU plan). Russian gas should only be replaced with LNG to fill-in the gaps left by other measures. Large scale investments in LNG put Europe on a path of new

dependency, , a scenario that Europe should try to avoid at all costs.

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GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

HYDROGEN: A DEUS EX MACHINA FOR TODAY'S ENERGY CRISIS?

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Hydrogen is considered essential for mitigating the negative effects of the current European gas crisis.¹⁵¹ Yet, the interest in this carbon-free molecule goes back before Russia's brutal invasion of Ukraine. The "hydrogen story" has been regaining momentum since 2017, when Japan announced its first national hydrogen strategy aiming to become a so-called hydrogen economy. Many believe that hydrogen is a key ingredient for achieving national climate ambitions and decarbonizing industrial sectors. Since 2017, national hydrogen strategies have been popping up like mushrooms, with some countries positioning themselves as exporters (e.g. Oman, Chile, Morocco and Namibia) while others are gearing up to become importers (e.g. Japan, Germany, the Netherlands, Belgium and South Korea).¹⁵² The EU published its hydrogen strategy in 2020.¹⁵³ Since the Russian invasion of Ukraine, the announcements of new hydrogen projects and ambitions seem to accelerate. At the recent COP27 in Sharm-el-Sheikh, hydrogen was once again the *buzzword* and, little

by little, the contours of the market are being shaped.

However, a global liquid hydrogen market, as we know today for fossil fuels like oil or natural gas, is still absent. The majority of today's hydrogen consumption is produced and consumed on-site, and almost 95% of that hydrogen is still produced by using fossil fuels without capturing the emitted CO₂.¹⁵⁴ In addition, regulations regarding hydrogen production and trade are lagging. Moreover, there is no consensus among policymakers and industrial sectors on whether a global hydrogen market will evolve and, if so, how? Therefore, the question remains *how* hydrogen is essential to end Europe's dependence on Russian gas today. And, if there is a transition towards hydrogen, what would this mean for Europe's import dependence in the long term?

No relief from hydrogen in the short term

Hydrogen plays a key role in decarbonizing heavy industries and transitioning away from fossil fuels but its role in mitigating the effects of the current

¹⁵¹ Ursula Von der Leyen, "Opening Speech by President von Der Leyen at the 'H2Poland' Central European Hydrogen Technology Forum," *European Commission*, May 17, 2022, https://ec.europa.eu/commission/presscorner/detail/en/speech_22_3123.

¹⁵² World Energy Council, "National Hydrogen Strategies," *World Energy Council*, September, 2021, https://www.worldenergy.org/assets/downloads/Working_Paper_-_National_Hydrogen_Strategies_-_September_2021.pdf.

¹⁵³ European Commission, "A Hydrogen Strategy for a Climate-Neutral Europe," July 8, 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0301>.

¹⁵⁴ IEA, "Global Hydrogen Review 2022," *International Energy Association*, September, 2022, <https://www.iea.org/reports/global-hydrogen-review-2022>.

energy crisis might be limited. Hydrogen and natural gas are two different gases that differ completely in terms of energy density, both gravimetric and volumetric, as in terms of freezing or liquefaction temperature. Therefore, different types of tanks, ships, and metals are necessary to deal with the different molecules. In addition, natural gas is an energy source, which means the fossil fuel is extracted, while hydrogen is an energy carrier, which means that the molecule has to be produced. The latter can either be done by the electrolysis of water or through the steam reforming of natural gas.^{155,156} In consequence, natural gas cannot be simply substituted with hydrogen. There is one way in which hydrogen can directly replace natural gas: in the form of synthetically produced methane. This molecule is produced from hydrogen combined with CO₂. However, this process is still very much in an experimental phase and not yet commercially available.

In addition, the consumption patterns of hydrogen and natural gas are completely different. This means that the consumption of hydrogen instead of natural gas would not make any difference to, for example, the high natural gas prices that households are paying today. Almost half of the hydrogen consumption in 2021 is accounted for by the industry as a feedstock (for example for the production of ammonia to produce fertilizer) and the other half by the refining sector. Today, in most OECD countries, natural gas is consumed by households, the power generation sector, and industry. The consumption pattern of both gases is thus dominating different sectors. Because hydrogen is an energy carrier, it can also be used in the future as a fuel for power generation, heating purposes, or road and air transport. However, according to most experts, the use of hydrogen as a

fuel will be limited to only a handful of so-called hard-to-abate sectors, namely heavy transport, shipping, and long-haul aviation.¹⁵⁷

In the short term, the role of hydrogen as a solution for today's energy crisis is thus rather small. Nevertheless, hydrogen is an important part of the energy transition, which will play a role in transferring away from natural gas, whether it is directly in the form of hydrogen production by renewables instead of natural gas, or indirectly in reshaping the fundamental features of the current fossil fuel centred energy market.

(Re)shaping import dependencies

While hydrogen may not solve today's energy crisis in the short term, it does serve as a good candidate for (re)shaping the current energy market and its vulnerabilities. Considering their insufficient renewable energy potential, European countries expect imports of hydrogen. However, the vulnerabilities related to hydrogen imports may not be as strong as with natural gas. This is because hydrogen has an important feature that natural gas does not have: it is an energy carrier. In theory, all countries are capable of producing hydrogen molecules. In consequence, hydrogen production may be less concentrated with a handful of suppliers, as is the case for oil and natural gas. Hydrogen supply could therefore be more decentralized and diversified.¹⁵⁸

Several studies expect the hydrogen market to evolve in a similar way as the natural gas market in terms of transport. Hydrogen is expected to be transported through pipelines in gaseous form and via shipping in a liquid form, similar to natural gas and LNG.¹⁵⁹ This implies that similar

¹⁵⁵ Hydrogen can be produced from the gasification of coal as well, but steam reforming is the most commonly used method to produce hydrogen today.

¹⁵⁶ IRENA, "Geopolitics of the Energy Transformation: The Hydrogen Factor," *International Renewable Energy Agency*, 2022, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Geopolitics_Hydrogen_2022.pdf.

¹⁵⁷ Gniewomir Fils and Matthias Deutsch, "12 Insights on Hydrogen," *Agora Energywende and Agora Industry*, 2021, https://static.agora-energiwende.de/fileadmin/Projekte/2021/2021_11_H2_Insights/A-EW_245_H2_Insights_WEB.pdf.

¹⁵⁸ IRENA, *Geopolitics of the Energy Transformation: The Hydrogen Factor*

¹⁵⁹ *Ibid.*

geopolitical risks related to pipelines may develop.¹⁶⁰ Hydrogen importers could be locked into dependence on hydrogen export countries via pipelines. Hereby, hydrogen importers are not only dependent on the supply of hydrogen molecules from export countries, but they are also vulnerable to conflicts with transit countries. This may raise similar problems as Europe experienced with Russian natural gas and its transit through Ukraine. Similar as with LNG, hydrogen in liquid form may offer more flexibility and, therefore, resilience in terms of hydrogen supply. Yet, when hydrogen is transported via a liquid hydrogen carrier, for example ammonia, it still needs to be reconverted into hydrogen. This remains a very costly and energy-intensive process.

Today, several European countries have concluded agreements with hydrogen exporters to secure their future hydrogen supply. For example, Belgium concluded a memorandum of understanding with Oman regarding cooperation on green hydrogen production in Duqm.¹⁶¹ Similarly, Germany has agreed with Namibia to kick off cooperation on future hydrogen imports from Namibia.¹⁶² Yet, these early agreements on hydrogen imports have not been isolated from geopolitical tensions. A deal on green hydrogen cooperation between Germany and Morocco concluded

in 2020 was halted in 2021 because of rising tensions around the sovereignty of the Western Sahara and Berlin's support for the contested region.¹⁶³ This shows how hydrogen trade does not take place in a geopolitical vacuum, even if there are technically more partners available to import hydrogen from. Moreover, the early years of hydrogen trade may be characterized by mostly bilateral trade and long-term contracts¹⁶⁴, making early hydrogen trade still vulnerable to supply disruptions, since a liquid market is still absent.

Furthermore, in its External Energy Strategy, the EU aims to conclude hydrogen partnerships with "reliable" countries and with "social, economic and environmental needs in mind".¹⁶⁵ However, recent studies have shown that the current hydrogen agreements with for example Morocco, Namibia and Mauritania risk reproducing and enforcing today's inequalities, rather than including the Global South in a just and sustainable energy transition.¹⁶⁶ Besides those inequalities, questions are also being raised around agreements that are being concluded with countries that are violating human, women, and labour rights.¹⁶⁷ The Belgian Minister of Energy Tinne Van der Straeten claimed at COP27 that social norms should be taken into consideration when setting up partnerships with hydrogen-producing

¹⁶⁰ Michael J. Bradshaw and Tim Boersma, *Natural Gas* (Newark, United Kingdom: Polity Press, 2020), <http://ebookcentral.proquest.com/lib/unigent-ebooks/detail.action?docID=6183922>.

¹⁶¹ DEME, "DEME and Partners Present HYPOR®DUQM, a Large-Scale Green Hydrogen Project in Oman." *DEME-Group.com*, 2022, <https://www.deme-group.com/news/deme-and-partners-present-hyporlarge-scale-green-hydrogen-project-oman-1>.

¹⁶² Bernd Radowitz, "Germany Eyes World's Cheapest Green Hydrogen from Namibia amid Global 'Race for Best Sites'," *Recharge*, 2021. <https://www.rechargenews.com/energy-transition/germany-eyes-worlds-cheapest-green-hydrogen-from-namibia-amid-global-race-for-best-sites/2-1-1057335>.

¹⁶³ Alba Sanz, "Morocco Halts Green Hydrogen Agreement with Germany," *Atalayar*. 2021, <https://atalayar.com/en/content/morocco-halts-green-hydrogen-agreement-germany>.

¹⁶⁴ Thijs Van de Graaf, Indra Overland, Daniel Scholten, and Kirsten Westphal, "The New Oil? The Geopolitics and International Governance of Hydrogen." *Energy Research and Social Science* 70 (December 2020). <https://doi.org/10.1016/j.erss.2020.101667>.

¹⁶⁵ European Commission, "EU External Energy Engagement in a Changing World," May 18, 2022, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=JOIN%3A2022%3A23%3AFIN&qid=1653033264976>.

¹⁶⁶ Franziska Müller, Johanna Tunn, and Tobias Kalt, "Hydrogen Justice," *Environmental Research Letters* 17, no. 11, (2022): <https://doi.org/10.1088/1748-9326/ac991a>; Robert Lindner, "Green Hydrogen Partnerships with the Global South. Advancing an Energy Justice Perspective on 'Tomorrow's Oil'," *Sustainable Development*, (November 9, 2022): <https://doi.org/10.1002/sd.2439>.

¹⁶⁷ Kiki Berkens, "Kiest Ons Land Voor Waterstofdiplomatie Zonder Rechtvaardige Strategie?" *MO**, November 25, 2022, <https://www.mo.be/column/kiest-ons-land-voor-waterstofdiplomatie-zonder-rechtvaardige-strategie>.

countries. This stands in contradiction with the recently concluded hydrogen cooperation agreement between Belgium and Egypt, a country that repeatedly violates human rights according to a recent report by Amnesty International.¹⁶⁸

However, political friction may have a less significant impact on Europe's energy security since the import dependency rate may be lower than with natural gas. According to the REPowerEU plan published in May 2022, the European Commission foresees a hydrogen demand of 20 million tons of hydrogen by 2030, with half of it produced locally and the other half imported.¹⁶⁹ This stands in contrast with Europe's current import dependency of natural gas of 84% in 2021.¹⁷⁰ In addition, since hydrogen is an energy carrier and not an energy source, hydrogen can technically be produced anywhere (also by importers) and countries will be more resilient to supply disruption because they can produce their own hydrogen in case of shortages.

A deus ex machina?

Hydrogen plays a key role in decarbonizing large industries that today still rely predominantly on fossil fuels. Switching to renewable-based hydrogen instead of natural gas based hydrogen would directly reduce the dependence on (Russian) natural gas. Yet, the impact of hydrogen on today's energy crisis may be limited because producing hydrogen at home with renewable energy, or importing hydrogen from countries that have abundant renewable energy resources, still faces a lot of challenges. Only 4% of all hydrogen projects that are being planned have reached the final investment decision. This means that the bulk of the currently proposed hydrogen projects are still in an early stage. In addition, there are a lot of uncertainties regarding hydrogen demand, trade

regulation, certification, and available infrastructure. Therefore, the role of hydrogen in solving the current energy crisis is rather small.

Nonetheless, hydrogen may offer more relief in the mid-term in terms of import dependencies and energy security in general. It remains therefore crucial to start setting up a future hydrogen market today. National governments play a key role in de-risking hydrogen investments and establishing subsidy schemes to facilitate investment, R&D, and demand creation.¹⁷¹ Further, there is a strong need for international cooperation to set international hydrogen standards that include all parts of the value chain, and to create hydrogen partnerships to secure future supplies.

To conclude, setting up hydrogen trade and related import dependencies may reintroduce old uncertainties and vulnerabilities. However, the latter might be less far-reaching as with natural gas today. Hydrogen is a conversion and not an extraction business, more countries can produce the molecule and this inherently brings more security of supply. Considering the planned imports, it remains important to choose future hydrogen partners wisely. This means taking geopolitical and sustainability factors into account, rather than solely importing hydrogen from the cheapest producer. This will not only improve the European countries' security of hydrogen supply, but also make a more inclusive and sustainable energy transition possible.

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¹⁶⁸ Amnesty International, "Egypt: Human Rights Crisis Deepens One Year after National Human Rights Strategy Launched," September 21, 2022, <https://www.amnesty.org/en/latest/news/2022/09/egypt-human-rights-crisis-deepens-one-year-after-national-human-rights-strategy-launched/>.

¹⁶⁹ European Commission, "REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition*," *European Commission*, May 18, 2022 https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131.

¹⁷⁰ Eurostat, "EU Natural Gas Import Dependency down to 83% in 2021," April 19, 2022. <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220419-1>.

¹⁷¹ IEA, "Global Hydrogen Review 2022"; IEA, "Northwest European Hydrogen Monitor," *International Energy Association*, November 2022, <https://www.iea.org/reports/northwest-european-hydrogen-monitor>.

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

A PLACE OF GREATER SAFETY?

The EU's Energy Security During the Clean Tech Race

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A Change of Climate

At last week's World Economic Forum, the head of the International Energy Agency (IEA), Fatih Birol, said that the main driver for the energy transition was now 'energy security', rather than climate change.¹⁷² Energy security, indeed, has risen to the top of political agendas since the war in Ukraine and Russia directing its 'gas weapon' to the EU. One lesson learned from the conflict is how exposed the EU was to Russian energy sabotage in any shape or form.¹⁷³

As a consequence, one of the main pillars of the REPowerEU plan is now to accelerate the clean energy transition. The plan is thus squarely embedded within a logic of optimising energy security. For example, the word 'security' is mentioned 23 times in the REPowerEU communication of May 2022, while the word 'climate' is only mentioned 11 times.¹⁷⁴

This, of course, begs the question to what extent an EU energy system dominated by renewables and low-carbon technologies is that much more 'secure' than a fossil fuels-based one. Sure, we

would be less exposed to geopolitical adversaries for our oil and gas supplies (because we would simply need less of them) yet the transition could, for example, just as easily create new dependencies for so-called *critical minerals*¹⁷⁵. These rare earth elements and metals, such as lithium, cobalt, and copper, are crucial to manufacturing the low-carbon technologies that form the backbone of the transition.

And it is not just about the extraction of those minerals. They are part of global clean tech supply chains that also include refinement, processing, as well as eventual technology manufacturing. In all steps along these supply chains, a handful of countries may become dominant—and in some that is already the case. The impending competition for control over these supply chains is fast turning into a global clean tech race, where old geopolitical allies are pitted against each other.

This paper therefore takes a deep dive into the question of EU (clean) energy security while it seeks to accelerate the energy transition. The goal is not only to look at potential 'upstream'

¹⁷² World Economic Forum, "Mastering New Energy Economics," January 17, 2023, <https://www.weforum.org/events/world-economic-forum-annual-meeting-2023/sessions/mastering-new-energy-economics>.

¹⁷³ Thijs Van de Graaf, "Europe's Energy Crunch: No Time for Complacency," December, 2022, https://www.ugent.be/ps/politiekewetenschappen/gies/en/research/publications/gies_papers/2023-global-energy-crisis/europes-energy-crunch-no-time-for-complacency.

¹⁷⁴ European Commission, "REPowerEU Plan," May 18, 2022, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>.

¹⁷⁵ Often also referred to as 'critical (raw) materials', especially in EU institutions terminology. These terms will be used interchangeably.

issues around control over mining minerals, but to take a holistic approach to understand the dynamics of clean energy supply chains as a whole and how clean energy security issues compare to fossil fuel security.

China's Clean Supply Chain Dominance

The first time the issue of critical minerals came to the broader public's attention was probably in the early 2010s.¹⁷⁶ In the aftermath of a collision between a Chinese trawler and the Japanese coast guard in the East China Sea in September 2010, China purportedly issued an embargo on the exports to Japan of rare earth elements (REEs); a group of 17 minerals primarily used in magnets that are essential for the production of, amongst others, wind turbines. In reality, however, China had already decided to scale back overall REE export prior to the incident in 2009, due to increased domestic demand. Immediately after export reductions, prices spiked by more than 10 times for many REEs.¹⁷⁷ At the time of the incident, China mined practically *all* REEs on the planet (97%). It prompted concern about these global supplies and led to efforts to reopen or

develop new mines and to scale up REE recycling. By 2021 China's share of global REE production had dropped to 60%.¹⁷⁸

Two things stand out in this story, both of which are important to better grasp the clean energy security challenges the EU is facing. First, China had quietly but rapidly become the main producer of REEs, when, until the mid-1990s, the United States, was the world's major producer. Figure 1 shows that, by now, China has come to dominate a number of these minerals' supply chains, not just REEs.

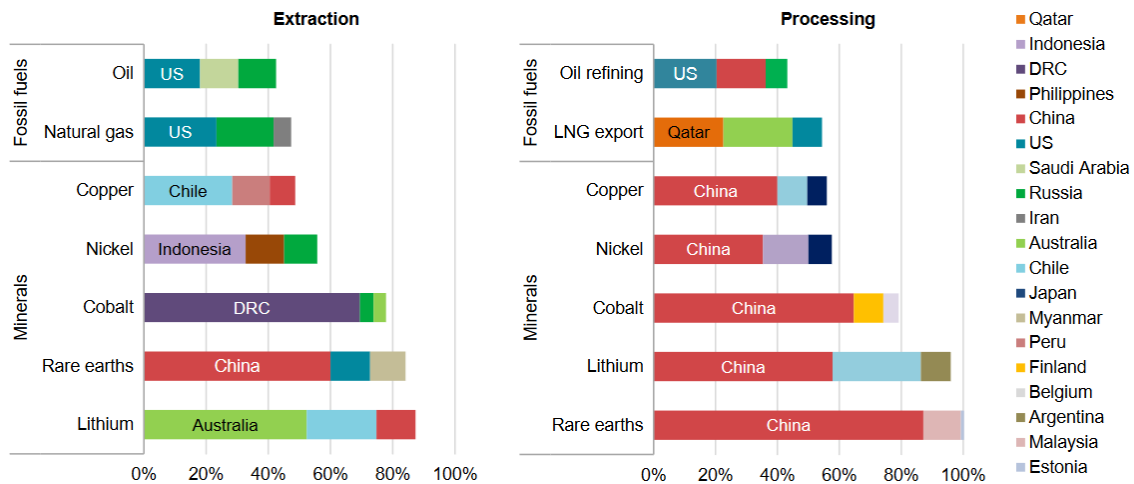
Second, China's dominance of mineral supply chains is not necessarily situated 'upstream' (at the extraction/mining level). Therefore, it is not just a matter of dumb geological luck but rather the result of effective industrial policy and careful planning. Consider China's share of global REE production. As noted, it dropped from 97% to 60% over the years, yet its presence in the downstream operations—from processing to metals production to magnet-making—has continued apace, with the country holding some 90% market share across the value chain in 2019.

¹⁷⁶ Gabriel Dominguez, "The complex road to ending the dependence on Chinese rare earths," *Japan Times*, February 8, 2022, <https://www.japantimes.co.jp/news/2022/02/08/world/china-rare-earth-dependence/>.

¹⁷⁷ IEA, *The Role of Critical Minerals in Clean Energy Transitions* (Paris: IEA/OECD, May 2021).

¹⁷⁸ USGS, *Mineral Commodities Summaries 2022- Rare Earths* (Reston: United States Geological Survey, 2022).

Figure 11: Concentration of selected critical mineral supply chains and fossil fuels by share of the top three producing countries in 2019¹⁷⁹



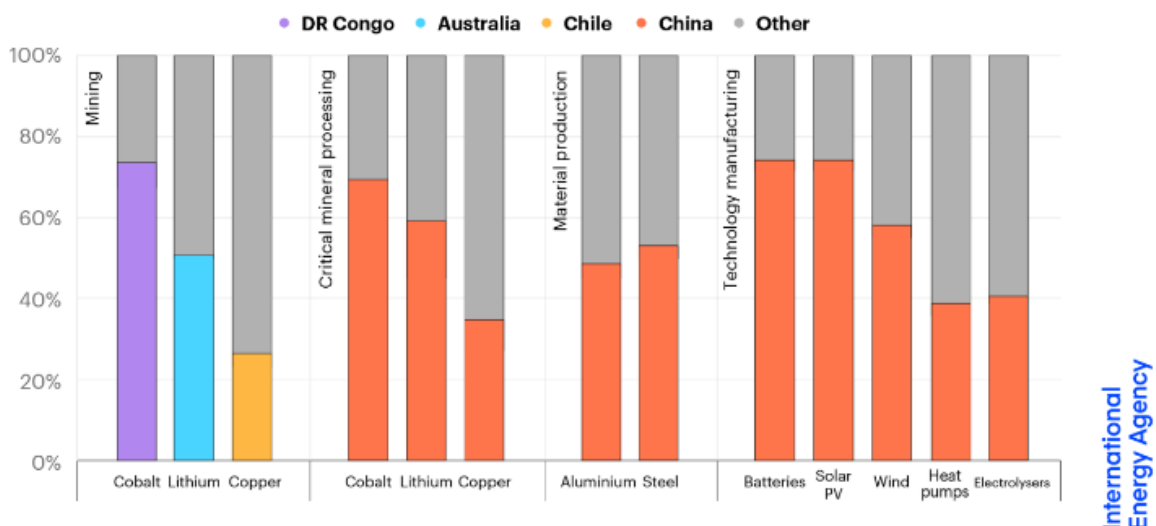
Perhaps most shockingly, **figure 1** shows that the control over the extraction and processing of some of these critical minerals is actually much more concentrated than for fossil fuels.

Moreover, the list of EU member states in figure 1 is limited, which highlights their exposure to emerging clean energy security challenges. Between now and 2040, overall demand for these minerals could go up at least sixfold in the IEA's Net Zero by 2050 Scenario, with lithium demand

multiplying by a factor of 42, followed by cobalt (x21), nickel (x19), and REEs (x7).¹⁸⁰

Figure 2 shows that further downstream, in wind, batteries, solar, electrolyzers and heat pumps, the three largest producer countries account for close to three-quarters or more of manufacturing capacity for each technology – with China dominant in all of them. In electric vehicle (EV) batteries alone, China currently holds 75% of global production capacity.

Figure 12: Share of global production concentration of selected minerals and technologies¹⁸¹



¹⁷⁹ IEA, *The Role of Critical Minerals in Clean Energy Transitions* (Paris: IEA/OECD, May 2021).

¹⁸⁰ *Ibid.*

¹⁸¹ IEA, *Energy Technology Perspectives 2023* (Paris: IEA/OECD, January 2023).

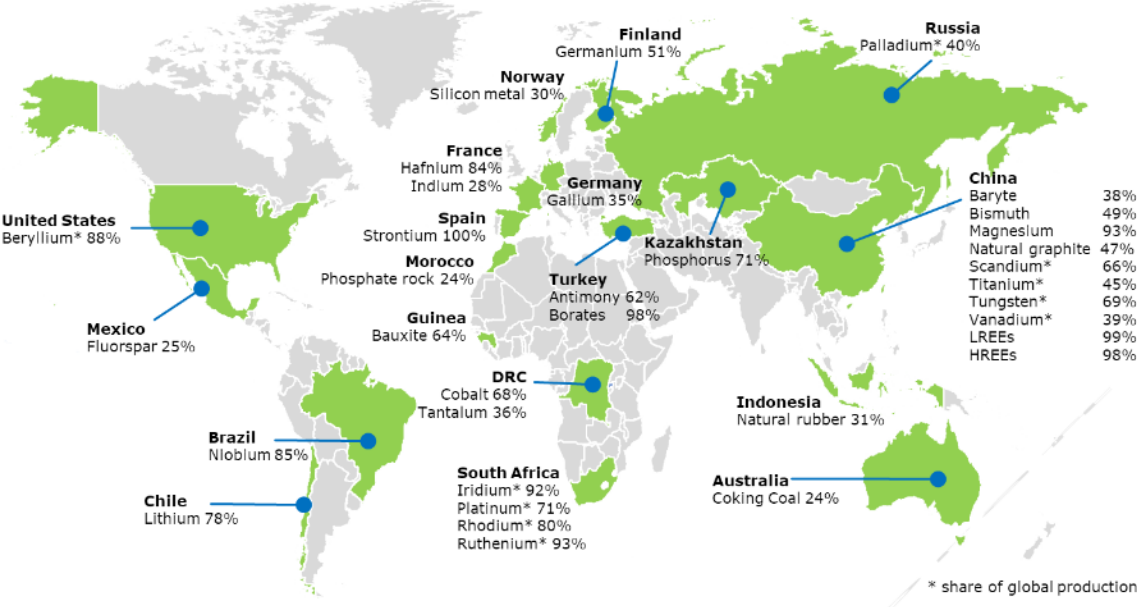
Recent history has taught the EU not to put all eggs in one basket, may it be for fossil fuels or critical minerals. After all, in the case of (in)voluntary disruptions, one risks paying a hefty price. Fortunately for the EU and China's other major geopolitical competitor, the United States, this supply chain dominance is not given and can be reversed. But how will the EU succeed in reversing these trends its facing?

How the EU wants to ensure clean energy security

The EU had been working on the issue of clean energy security prior to the war in Ukraine. For

example, since 2011, as part of its *Raw Materials Initiative*, the European Commission publishes a list, every three years of critical raw materials (primarily) used in clean technologies. The first list only contained 14 such materials, by 2020 the list had grown to 30.¹⁸² Figure 3 shows the biggest minerals suppliers to the EU. Simultaneously with the launch of the 2020 list, the EU launched a European Raw Materials Alliance (ERMA) that includes industry stakeholders, trade unions, and civil society.¹⁸³ The goal is to secure access to critical and strategic minerals, advanced materials, and processing know-how for clean industries.

Figure 13: Share of mineral supplies to the EU¹⁸⁴



In 2017, the EU also established a European Battery Alliance (EBA) including EU countries, industry, and the scientific community. The aim of the alliance is to develop an innovative, competitive and sustainable battery supply chain in Europe. For example, the EBA should enable up to 80% of Europe's lithium demand being supplied from European sources by 2025.¹⁸⁵ A daunting task given

that in 2020, 78% of its lithium was imported from Chile.

Under the REPowerEU plan, the Commission is preparing to secure (diversity of) critical mineral suppliers. The objective is to strengthen the European supply chain through the identification of mineral resources and of critical raw materials

¹⁸² European Commission, "Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability," September 3, 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0474>.
¹⁸³ European Raw Materials Alliance, "About us," n.d., <https://erma.eu/about-us/>.
¹⁸⁴ European Commission, "Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability," September 3, 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0474>.
¹⁸⁵ European Battery Alliance, "Building a European battery industry," <https://www.eba250.com/about-eba250/>.

projects in the European strategic interest, all the while ensuring high levels of environmental protection. Indeed, in the past, the EU has been all too eager to outsource mineral mining to third countries where environmental and labour legislation is far less strict and there is less opportunity for the public to oppose mining projects.¹⁸⁶

The key will be to integrate these, and other, separate packages into a comprehensive European green industrial strategy. The necessity of which has grown exponentially due to unprecedented policy decisions by what were previously considered geopolitical allies.

New Geopolitical Realities

The United States' USD 370 billion Inflation Reduction Act (IRA), President Biden's signature climate legislation package that was signed into law last year, offers massive subsidies and tax credits to companies investing in clean energy technologies such as batteries, EVs, solar panels and wind turbines – as long as the products and parts they manufacture are made domestically.¹⁸⁷

The IRA should not only be seen as a climate package but as integral to the country's national security strategy, primarily to minimise its exposure to China in certain strategic sectors. It has thus opened up a new era in geopolitics, one of a global clean tech race, in which old allies are rapidly becoming, if not foes, then at least competitors. Indeed, the United States risk luring EU-based companies away from a continent that is

actively seeking to re-position itself in global clean tech supply chains.

In response, the Commission has already proposed a targeted and temporary relaxation of state aid rules and a common fund to protect the bloc's clean tech industry.¹⁸⁸ It has also floated the idea of a 'European Clean tech Act' to provide funds to the industry. Member states are now due to discuss the IRA at a European Council in February. Our very own Belgian Prime Minister, Alexander De Croo, has also said that, "They are calling firms, in a very aggressive way, to say don't invest in Europe, we have something better."¹⁸⁹ Although consensus is growing that action is needed, the bloc remains divided on the exact response.

The EU also needs to consider that other countries are now emerging as frontrunners in this clean tech race, and they are not afraid of asserting their new-found geopolitical self-confidence. In October 2022, it was reported that Indonesia, the world's largest nickel producer¹⁹⁰, was considering the establishment of an OPEC-like cartel for nickel and other key battery metals. The 'lithium triangle' of Chile, Argentina and Bolivia has previously floated the idea of a similar group to manage global supply and pricing of the (EV) battery metal.¹⁹¹ In such a geopolitical context, re-shoring lithium mining under the EBA could be an important step to increase the EU's clean energy security.

¹⁸⁶ France24, "Europe joins the 'white gold' rush for lithium and faces an energy transition challenge," October 19, 2022, <https://www.france24.com/en/europe/20221019-europe-joins-the-white-gold-rush-for-lithium-and-faces-an-energy-transition-challenge>.

¹⁸⁷ Sarah Jackson and Mary Hellmich, "The Inflation Reduction Act & The EU. The Need to Strengthen the Transatlantic Trade Relationship," *E3G*, December 2022, <https://e3g.wpenginepowered.com/wp-content/uploads/IRA-briefing.pdf>.

¹⁸⁸ Politico, "Letter from European Commissioner Margrethe Vestager," *Politico*, January 13, 2023, https://www.politico.eu/wp-content/uploads/2023/01/16/Letter_EVP_Vestager_to_Ministers_Economic_and_Financial_Affairs_Council_Competitiveness_Council_aressv398731.pdf

¹⁸⁹ John Henley and Jennifer Rankin, "Can EU anger at Biden's 'protectionist' green deal translate into effective action?," *The Guardian*, January 18, 2023, <https://www.theguardian.com/world/2023/jan/18/eu-anger-biden-green-370bn-deal-action-industrial-policy>

¹⁹⁰ Nickel is primarily used for corrosion resistance in industrial alloys and in lithium-ion batteries for EVs. Indonesia is responsible for 38% of refined nickel supply and holds a quarter of the world's reserves.

¹⁹¹ Harry Dempsey and Mercedes Ruehl, "Indonesia considers Opec-style cartel for battery metals," *Financial Times*, October 31, 2022, <https://www.ft.com/content/0990f663-19ae-4744-828f-1bd659697468>.

The differences between mineral and fossil fuel security

All in all, despite the important risks associated with an increased dependence on critical minerals as well as the many similarities with fossil fuel (primarily oil and gas) security concerns, it is crucial to consider their differences. The security concerns over the impact of, for example, oil and gas supply disruptions, import dependence, and price hikes are different when discussing the security of minerals. The brief comparison below between oil and mineral security highlights these important differences.

A first difference is the impact of supply disruptions, both in terms of magnitude and the affected actors. In energy, minerals are used as input for devices and infrastructure, while oil is mostly combusted on a continuous basis (an exception would be the oil that is used as petrochemical feedstock). When a supply crisis hits, consumers and households driving gasoline cars and diesel trucks are immediately faced with price increases and affected for as long as prices remain high.

By contrast, EV drivers' daily lives are not affected at all. Electric vehicle *manufacturers* on the other hand do feel the consequences as they need lithium, cobalt and nickel to build EVs, while prospective buyers might also face higher prices. This could indeed slow EV uptake and extend dependence on conventional ICE (Internal Combustion Engine) vehicles but it can just as easily spark further technological innovation that help decrease materials intensity of battery packs, and thus costs.

Second, and this is a very simple one, oil can only be burned once. At the end of the infrastructure or device life cycle, minerals that form part of an EV battery can be recycled and re-used, thereby increasing the security of availability of these

materials. The Commission's March 2020 *Circular Economy Action Plan* is one of the main building blocks of the *European Green Deal* and should support efforts by the EBA to increase battery recycling. Promoting re-use and the circular economy, under the EU Green Deal, can be a means of creating greater resilience in supply chains.

Third, oil is difficult to replace rapidly when sudden price hikes or supply disruptions occur. Minerals, on the contrary, are easier and faster to substitute. For example, although copper has the highest conductivity, when prices rose in the past, manufacturers sought to replace it with aluminium to curb rising costs. Moreover, continuous technological developments, will also reduce reliance on and demand for scarce minerals. For example, cobalt-free batteries are being developed, while copper, used in electric cabling because of its unparalleled conductivity¹⁹², could be replaced by much lighter (yet less conductive) aluminium.¹⁹³

Fourth, oil is a single commodity (notwithstanding its different grades), traded in a large and liquid global market. By contrast, many minerals are needed in the energy transition with each its own complexities and supply dynamics. They also have long and opaque supply chains. As opposed to oil, stockpiling minerals is simply insufficient to address the resulting more complex security challenges. Supply chains in their entirety should therefore be considered when designing security-minded supply strategies.

Concluding remarks

Driven by a realisation that its energy security was at stake, and even the political and economic stability of the bloc as a whole, the EU has been moving fast to become independent from Russian fossil fuels and to accelerate the energy transition. This paper has highlighted, however, that the

¹⁹² Conductivity refers to a material's ability to conduct an electric current.

¹⁹³ Neil Hume and Henry Sanderson, "Copper boom: how clean energy is driving a commodities supercycle," *Financial Times*, June 8, 2021, <https://www.ft.com/content/40907aa6-354e-42f8-8d51-8cc01f0e9687>.

transition to a renewables-based energy system does not automatically ensure energy security.

The EU is well aware that it needs to avoid the same mistakes that, in the past, have left it exposed to various forms of supply disruption from chokepoints, cartels, natural disasters, and geopolitics. It has launched a number of important legislative and policy initiatives (even prior to the war in Ukraine) to counter others becoming dominant and to improve its own strategic position in clean energy supply chains. Yet, as a clean tech race seems to be shaping up, the EU should be conscious that its clean energy interests do not necessarily align with those of its old allies.

A truly energy independent EU is impossible. It is simply not realistic to try to compete across all parts of clean energy supply chains. But with the right strategy and incentives for re-shoring of critical parts of these supply chains, the EU, through the energy transition could become a place of greater safety.

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GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022 – February 2023

THE ARCTIC: DOES THE NORTH HOLD THE SOLUTION FOR THE ENERGY CRISIS?

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The current energy crisis led to extraordinarily high price spikes for both natural gas and oil. As a result, many markets also saw spikes in electricity prices.¹⁹⁴ The crisis affected households all over the world, with families being pushed into poverty, factories closing and economies slowing.¹⁹⁵ To top it all off, whilst governments and households in the European Union (EU) were still facing the unforgiving negative effects of the global energy crisis, an Arctic blast was adding insult to injury.

Arctic air mass brought the coldest air of the season to continental Europe resulting in extreme, and sometimes prolonged, freezing conditions, which put a lot of stress on existing energy infrastructure.¹⁹⁶ Despite this, however, the northernmost area of our world can also be a place of opportunity. This paper will cover how the Arctic is

currently put to use in the global energy crisis and how it can be of service in future crises.

First, it is important to take into account the operational context of the Arctic. The Arctic is not an area that can be claimed by a first-come-first-serve rule. Popular culture sometimes refers to an upcoming 'Arctic scramble', but this would be a false representation of the current situation. The Arctic is one of the world's oceans and thus falls under the United Nations Convention on the Laws of the Sea (UNCLOS). Even though Russia and the United States, both Arctic littoral states, are not a party to this convention, all Arctic states agreed to conform to the rules of the UNCLOS for the Arctic Ocean in the 2008 Ilulissat Declaration.¹⁹⁷ This is deemed successful, though small-scale disputes are still at play.¹⁹⁸

¹⁹⁴ International Energy Agency, "Global Energy Crisis," n.d., <https://www.iea.org/topics/global-energy-crisis>.

¹⁹⁵ International Energy Agency, "World Energy Outlook 2022 Shows the Global Energy Crisis Can Be a Historic Turning Point towards a Cleaner and More Secure Future," 27 October 2022, <https://www.iea.org/news/world-energy-outlook-2022-shows-the-global-energy-crisis-can-be-a-historic-turning-point-towards-a-cleaner-and-more-secure-future>.

¹⁹⁶ Sam Meredith, "Europe's Energy Grids Face First Major Winter Stress Test as Arctic Blast Takes Hold," 8 December 2022, <https://www.cnbc.com/2022/12/08/winter-cold-temperatures-pose-first-test-for-europes-energy-grids.html>.

¹⁹⁷ "The Ilulissat Declaration," (Arctic Ocean Conference, Greenland, 2008), <https://arcticportal.org/images/stories/pdf/Ilulissat-declaration.pdf>.

¹⁹⁸ Marie-Anne Coninx, 17 March 2022; Martin Breum, "Canada Extends Its Arctic Ocean Seabed Claim All the Way to Russian Waters," *Arctic Today*, n.d., <https://www.arctictoday.com/canada-extends-its-arctic-ocean-seabed-claim-all-the-the-way-to-russian-waters/>.

The Arctic's current role: Fossil fuels

The share of fossil fuels in the EU energy mix was at 70% in 2020.¹⁹⁹ Fossil fuels thus play a significant role in EU economies and the day-to-day lives of their inhabitants. Furthermore, the importance of fossil fuels will stay for the next decades to come, despite global efforts to reduce consumption in response to climate change.

Policymakers thus need to keep the incoming flow of fossil fuels, for the EU is unprepared for a sudden reduction. Due to already existing infrastructure and large amounts of fossil fuel reserves, the Arctic played a role in tempering the current energy crisis by keeping up with the EU's demand, which it is more than capable of. Research by the U.S. Geological Survey in 2009 estimates that the Arctic is home to roughly 13%, or 160 billion barrels, of the world's undiscovered oil, and even 30% of undiscovered natural gas.²⁰⁰

However, the Arctic was already key in supplying large amounts of the EU's energy demand, only it was the Russian Arctic. Before the invasion of Ukraine, Russia was the largest gas supplier to Europe which led to a connection via several pipelines, which had its origin in the Russian Arctic.²⁰¹ Today, this number has been brought down significantly, due to the, long overdue, realisation that Moscow utilises these pipelines for malign purposes.

A key player in the EU's diversification policy was Norway, which has stepped up as one of the EU's main sources of fuel, which is no small way owing to their Arctic resources.²⁰² In light of their rising demand, Oslo was able to extend the life of one of their Arctic coal mines and has licensed new projects to drill for oil and gas in the Arctic to increase production and provide sufficient supplies now, and also in the future.²⁰³ The license for Equinor's project in the northernmost oilfield, Wisting field, is valid until May 2049. Additionally on the 23rd of December, as an early Christmas present, the ENI-owned company Vår Energy discovered the largest gas field in the Barents Sea on the Norwegian Shelf.²⁰⁴ Norway's, and additionally the Arctic resources of other EU partners fuel the EU and help fill up storage levels of member-states.

Last, as a result of the EU's efforts to divert from Russian energy sources, LNG became more important. The liquified natural gas dismisses the use of fixed pipelines, which tend to create a lock-in effect in favour of the supplier. As has been the case in the Russia-EU partnership. Paradoxically, most of the imported LNG has also been from Russia. Nevertheless, the melting Arctic ice, in combination with the impressive icebreaking capacity of Russia, has made it increasingly possible for LNG carriers to transit through the much shorter Arctic routes.

¹⁹⁹ Eurostat, "Fossil Fuels in Gross Available Energy: 70% in 2020," 16 February 2022, <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220216-1>.

²⁰⁰ United States Energy Information Administration, "Arctic Oil and Natural Gas Potential," 19 October 2009, <https://www.eia.gov/analysis/studies/archive/2009/arctic/index.html>.

²⁰¹ Georg Riekeles and Philipp Lausberg, "Tackling the Energy Crisis: 8 Considerations on How Europe Can Get through This Winter," Commentary (European Policy Centre, 8 September 2022), <https://www.epc.eu/en/Publications/Tackling-the-energy-crisis-8-considerations-on-how-Europe-can-get-through-4a95c0>.

²⁰² Lisa Jucca, "Norway Gas Lifeline for Europe Is the Smart Move," n.d., <https://www.reuters.com/breakingviews/norway-gas-lifeline-europe-is-smart-move-2022-09-09/>; Richard Milne, "Norway Prolongs Life of Arctic Coal Mine as Energy Crisis Bites," *Financial Times*, 2 September 2022, <https://www.ft.com/content/2f84b922-6d8a-4cc9-9440-f697c7c40103>.

²⁰³ Terje Solsvik, "Norway Plans to Expand Arctic Oil and Gas Drilling in New Licensing Round," 17 March 2022, <https://www.reuters.com/business/energy/norway-plans-expand-arctic-oil-gas-drilling-new-licensing-round-2022-03-17/>; Tsvetana Paraskova, "Equinor To Develop Arctic Gas Project To Boost Exports To Europe," 22 November 2022, <https://oilprice.com/Energy/Energy-General/Equinor-To-Develop-Arctic-Gas-Project-To-Boost-Exports-To-Europe.html>.

²⁰⁴ Thomas Nilsen, "This Year's Biggest Barents Sea Gas Discovery," 23 December 2022, <https://thebarentsobserver.com/en/industry-and-energy/2022/12/big-barents-sea-gas-discovery>.

The Arctic's future role: Renewable Energy

Focusing on fossil fuels, however, is only a temporary solution. In addition, it is not the best solution, which is why the plea of this paper is centred around the transition to renewable energy, for which the Arctic can play a defining part. Renewable energy is not a recent phenomenon in the Arctic, but there has been a stark rise in projects in the last few years, and when looking at the benefits, it is easy to see why.

First, from an environmental point of view, the argument is clear. Renewable energy sources are more sustainable than fossil fuels and dismiss the greenhouse gas emissions which caused detrimental effects on our climate. The Arctic has been especially vulnerable to climate change as it warms three times faster than elsewhere, heavily affecting local biodiversity.²⁰⁵ Furthermore, the melting ice and permafrost are releasing greenhouse gas emissions such as methane which are adding to global warming. The Arctic is also uniquely vulnerable to accidental spills or destruction of infrastructure since operators historically have difficulty responding to disasters in this remote area, with the Norilsk oil spill of 2020 serving as a great example.

Strategically, renewable energy sources are less prone to cause certain dependencies between countries, which proved to be a defining factor of the European energy crisis. Fossil fuels are stocks which are scattered around the world, meaning that most countries have to continuously buy them from other countries, which is not the case with renewables. Renewables come in the forms of flows, such as wind and solar power, which cannot be exhausted and are harder to disrupt.²⁰⁶ Even though most of the necessary natural

resources to make renewable energy technologies are scattered around the world, once the hardware is made it can be used over and over again until it eventually breaks of course. In addition, technological innovation has been able to generate some products without minerals, such as lithium-free batteries.²⁰⁷ Relieving the EU from fossil fuel dependencies and moving on to renewable energy would thus be very beneficial as independence was a strong factor in this energy crisis.

But also after a closer look at the economics, it is best to phase out fossil fuel production in the Arctic. The EU suddenly needed more Norwegian oil and gas, but in this ongoing energy transition, it is not sure whether this need will stay and what the requested amounts will be. In light of the energy transition, it is believed that fossil fuels demand will reach a plateau and even drop, in all likelihood resulting in stranded assets.²⁰⁸ From the point of discovery, it takes an average of 15-20 years until these resources can enter production. Calculating from now it is rather likely the energy transition will be well underway by then. This is especially of concern for the Russians as they are seeing one of their biggest customers, the EU, turn away from them. Keeping up with current fossil-fuel exploration will most definitely lead to sunk costs.

All of these aspects have created a willingness among countries and non-state actors to invest in renewable energy in the Arctic. Even though the current scale of investments is substantially lower, the potential for renewable energy should not be underestimated. Which in large part is because of the melting ice. Take, for example, the energy that comes from windmills. The rise in temperatures has made it more feasible for

²⁰⁵ Christina Larson, "Starving Seabirds on Alaska Coast Show Climate Change Peril," 13 December 2022, <https://apnews.com/article/science-arctic-sheffield-bering-strait-climate-and-environment-e4111a9c3ced963f63f9d33e9f366490>; The Arctic Council, "THE ARCTIC IN A CHANGING CLIMATE," 2022, <https://www.arctic-council.org/explore/topics/climate/>.

²⁰⁶ Thijs Van De Graaf and Benjamin Sovacool, *Global Energy Politics* (Cambridge, UK ; Medford, MA: Polity, 2020).

²⁰⁷ Maurizio Die Paolo Emilio, "Lithium- and Cobalt-Free Batteries? Alsym Energy Bets on Sustainability," 8 July 2022, <https://www.powerelectronicsnews.com/lithium-and-cobalt-free-batteries-alsym-energy-bets-on-sustainability/>.

²⁰⁸ Olivia Rosane, "Wind and Solar Are Proving Themselves: Renewables Met Rise in Electricity Demand During First Half of 2022," 17 October 2022, <https://www.weforum.org/agenda/2022/10/wind-and-solar-proving-themselves-renewables-rise-in-electricity-demand-2022/>.

windmills to operate because their rotors are not prone to icing anymore. Still, in most places, the used material must withstand temperatures below -40°C, but this share is reducing. Furthermore, there are opportunities for geothermal, solar energy, and large-scale hydropower projects.²⁰⁹

This does not at all mean that the energy transition in the Arctic is exempt from any challenges. For some, Norway and Russia in particular, much of their national wealth stems from revenues made from oil and gas resources. Thus, giving up these resources by phasing out production is a hard sell. Norway has also become more of an important energy supplier to Europe and wants to keep it that way in the name of energy security. In addition, most of the technologies still need to be adapted to Arctic conditions which can significantly drive up costs and can come with environmental risks. Hydropower plants, for example, need a powerhouse, which in some cases is a large lake, where the environmental risk is more severe. Lastly, most indigenous communities rely heavily on fossil fuels to power their villages. Bringing the energy transition to them will prove difficult since their remote conditions pose a challenge.

A future with, not without Russia

One of the biggest changes the invasion brought forth was a sudden stop in scientific and part of commercial relations with Russia. Keeping in mind the horrifying actions of the Russian government it is difficult to continue cooperation, so any halt in the relationship was seen as a logical response. European states, companies and people who continued their relations with Russia were heavily criticized as supporters of a terrorist state.

However, to round up my plea for a transition to renewable energy it seems essential to involve the Russian scientific community in our Arctic endeavours. Russia is and will remain the biggest Arctic state. The EU can capitalize on their knowledge, capabilities, and geographical reach Russia takes up the lion's share of the Arctic. To exclude them from any kind of cooperation seems irrational in the long run. Besides, it contradicts the EU's preferred end-state of an Arctic where cooperation is the norm. Simultaneously, however, it is evenly essential to not step down from strong critiques of the Russian invasion of Ukraine.

Conclusion

As already mentioned in the introduction, at the time of writing this paper, an Arctic blast has been testing the resilience of households in the European Union. It is in these times, that next to the mesmerising beauty, the brutality of winter becomes clear. The EU can surely be criticised today for choosing to push forward on fossil fuels, but it is more appropriate to disapprove of what the EU didn't do in the past, which led to this situation in the first place.

Moving forward, the EU needs to keep itself in line with the commitments made in the 2021 Arctic strategy, where the EU does not "allow any further hydrocarbon development in the Arctic" and push for renewable energy sources in the Arctic.²¹⁰ This is for the better of our environment, but also our energy security.

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²⁰⁹ Magnus De Witt, Hlyner Stefánsson, and Ágúst Valfells, "Energy Security in the Arctic: Policies and Technologies for Integration of Renewable Energy," (Arctic Yearbook, 2019), <https://arcticyearbook.com/arctic-yearbook/2019/2019-briefing-notes/329-energy-security-in-the-arctic-policies-and-technologies-for-integration-of-renewable-energy>.

²¹⁰ High Representative of the Union for Foreign Affairs and Security Policy, "A Stronger EU Engagement for a Peaceful, Sustainable and Prosperous Arctic," (European Commission, 13 October 2021), https://www.eeas.europa.eu/eeas/joint-communication-stronger-eu-engagement-peaceful-sustainable-and-prosperous-arctic_en.

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022 – February 2023

THE RETURN OF INDUSTRIAL POLICY IN THE EUROPEAN UNION

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Industrial policy is making a surprising comeback in the European Union. This return is a response to industrial policies of others, the Union's increased climate ambitions, and reinforced geopolitical tensions. While the EU for some time has tried in vain to create the world economy in its own image, has more recently started to assertively protect its model against the policies of others, it is now embracing industrial policy itself. A new European industrial policy could democratize, accelerate, and render more just the green and digital transitions. To achieve these benefits, it requires funding from the European rather than national level, needs to boost additional investment rather than the profits of established firms, and needs to happen in a transparent, conditional, and inclusive way.

Staff of the International Monetary Fund have called it “the return of the policy that shall not be named”.²¹¹ For four decades, industrial policy – an umbrella term for policy measures with which governments aim to stimulate specific economic activities within their territory – had a bad reputation among western pundits and policymakers. It had become associated with politicians wasting taxpayers' money, either in fruitless attempts to save inefficient firms in old sectors from inevitable closure, or in making wrong bets when trying to pick winners in new fields. After the economic

crisis of the 1970s and the neoliberal revolution in economic thinking, politicians were advised to take a backseat and to let market forces spontaneously discover the comparative advantages of their country through the process of creative destruction, and almost all of them across the political spectrum acquiesced to that credo.

Nowhere was the renouncing of industrial policy done with more conviction than in the European Union. In addition to ideological conversion to neoliberalism and learning from perceived policy failures of the 1970s, in the EU also the integration logic militates against industrial policy. The EU Single Market, the core project of European unification, is seen as incompatible with national industrial policies as these would create an unlevel playing field between firms located in different member states. To ensure free and fair competition on the Single Market, the European Commission therefore received the competence over competition policy from the very start of the integration project. After the 1970s it would start using this power with fervour to get tough on national state aid. Given the limited size of the EU budget, this was not compensated by the introduction of EU industrial funds.

Today, industrial policy is making an unexpected comeback in the European Union. In a recent

²¹¹ Reda Cherif & Fuad Hasanov, The return of the policy that shall not be named: Principles of industrial policy, International Monetary Fund, 2019.

speech²¹², European Commission President Ursula Von der Leyen called for a “common European industrial policy [with] common European funding”. This rehabilitation of industrial policy in the EU is being driven by three trends: the intensification of industrial policies by third countries; the increase in the EU’s climate ambitions, which requires abundant additional investment and risks putting EU firms at a competitive disadvantage; and the rise of geopolitical tensions and a new way of thinking about the relationship between economic interdependence and security. Recent events, not least the energy crisis following the Russian war of aggression in Ukraine, have given these drivers much higher urgency.

The failure of exporting the EU model

The European Union believed for some time that it could create the world economy in its own image, as a free and fair market undistorted by state aid or other forms of anti-competitive behaviour. Within the World Trade Organization (WTO), agreements indeed allow states to apply remedies to address dumped or subsidized imports from other states. When countries like China or Russia joined the WTO in 2001 and 2011 respectively, the EU hoped that their membership would quickly turn them into liberal market economies. But this has not happened. The rulebook of the WTO that was written in the “end of history” days of the early 1990s is now widely seen as insufficient to rein in the market-distorting behaviour of the likes of China and Russia. However, reforming the rulebook within the WTO has proven impossible given the diversity of the membership and the principle that agreements are concluded by consensus.

Since the United States’ failure to ratify the 1997 Kyoto Protocol, the EU has set itself up as the global leader in the fight against climate change. Starting in 2005, a cap-and-trade system called emissions trading scheme (ETS) has been the cornerstone of its climate policies. In 2020, the EU ramped up its climate ambitions with the

European Green Deal, which was translated a year later in a package of legislative proposals under the “Fit for 55” banner. With this package, the EU aims to become the first major climate neutral economy by the middle of the century and has set an intermediate target of reducing net greenhouse gas emissions by at least 55% in 2030. The EU’s reinforced climate ambitions have led to a significant increase in the price of emission allowances within the ETS from less than 10 euros per metric ton of CO₂ until the beginning of 2018 to around 85 euros in December 2022. This in turn heightens the risk of and concern for “carbon leakage”, whereby energy-intensive firms would shift production from the EU to third countries where they do not have to buy emission permits or equivalent carbon taxes, which would undermine the objective of reducing global carbon emissions and would lead to deindustrialization in the Union.

Finally, the EU’s old way of thinking about the economy has been thrown out of balance by a series of economic and geopolitical upheavals, including the covid-19 pandemic, the Sino-American trade war, and the Russian invasion of Ukraine. The pandemic and its economic fallout raised questions about the security risks of being overdependent for critical equipment on a limited number of suppliers. The trade war between the US and China reinforced concerns about European dependencies on critical raw materials from China and microchips from Taiwan, where tensions with mainland China are boiling up. The reconceptualization in the EU of the relationship between economy and security was given an extra push by the Russian invasion of Ukraine, and the weaponization by Russia of the EU’s dependence on its gas exports, leading to a major spike in energy prices. In this more geopolitical way of thinking, it matters what you produce and where you get your imports from, and politicians have become less inclined to leave such decisions completely to markets.

²¹² Ursula Von der Leyen, “Speech by President von der Leyen at the College of Europe in Bruges (speech, Bruges, December 4, 2022),” European Commission, https://ec.europa.eu/commission/presscorner/detail/en/speech_22_7487.

Protecting the EU model

While each of these upheavals individually deal a severe blow to the EU's existing economic policies and paradigm, especially their combined impact presents a major earthquake. European (energy-intensive) industrial firms must now deal with an unlevel playing field in terms of subsidies, climate policies and energy prices. Subsidies by third countries, especially if they are seen as systemic rivals, are no longer just a commercial nuisance but also a climate and security challenge. The EU's hope that trade integration and summity (the recipes of the EU's own integration process) would turn other countries into liberal market economies, ambitious custodians of the planet, and responsible stakeholders of a multilateral order has not come true. The EU itself now regularly calls this previous way of thinking "naïve".

Having failed to create a world in its own image, the EU has recently reinforced an arsenal of trade defence instruments to protect itself from the threats posed by the policies of third countries.²¹³ The foreign subsidies regulation and the international procurement instrument should protect the EU market against subsidized public bids and investments and improve the access of EU firms to foreign procurement markets. The carbon border adjustment mechanism (CBAM), which will equalize carbon pricing for imports and EU-made products, should help protect the integrity of the EU's climate policy as well as the competitiveness of EU industry. The framework on foreign investment screening mechanisms and the anti-coercion instrument need to safeguard the security and strategic autonomy of the EU from unacceptable foreign interference.

Adapting the EU model

However, a growing chorus of voices in the EU argue that it is not enough to ramp up the trade defence instruments to protect EU policies against the industrial, sustainability and geopolitical (non-)policies of third countries. They claim that the EU should develop a stronger industrial policy itself to promote the triple goal of accelerating

the green and digital transition and fortifying the EU's strategic autonomy. Although the new unilateral trade defence instruments help protect the integrity of EU policies and level the playing field, they indeed suffer from several weaknesses.

While these instruments help restore equal competition on the EU market in the face of different policies between the EU and third countries, they do not guarantee a level playing field on export markets outside of the Union, which become more important every year as growth outside exceeds growth within the Union. Moreover, the EU's new unilateral instruments are administratively challenging to implement and require EU authorities to gather and verify a daunting amount of information from third-country producers, related to *inter alia* CO2 emitted and CO2 costs paid, the geolocation of harvested wood or soya and the fate of forests abroad, or the amount and nature of subsidies received. Providing subsidies on a conditional basis is comparatively much easier to administer. Finally, trade defence instruments are reactive in nature. They try to restore a competitive balance in response to some action by a third country government, but this may come too late after the damage is already done.

As a result, the EU has, cautiously at first, started to revive its industrial policy. The European Commission is now actively promoting the instrument of "Important Projects of Common European Interest" (IPCEI). European competition rules allow member states under certain conditions to give subsidies to EU companies (and other actors) to undertake joint large-scale projects with significant benefits to the Union that would otherwise not be executed. In the meantime, IPCEI on micro-electronics, batteries, hydrogen, and cloud computing have been launched, in each instance combining billions of public and private funding to promote the EU's leadership in these areas. A bolder industrial policy initiative is the European Chips Act proposed by the European Commission

²¹³ See Ferdi De Ville, "The European Union's unilateral turn in trade policy," Paper presented at the ECPR Joint Sessions, April 19-20, 2022.

in February 2022. This was a direct response to the global semiconductor shortages that emerged in the wake of the outbreak of the covid pandemic. The EU's chips dependency on a very few manufacturing firms in East Asia has been identified as a geopolitical vulnerability, especially in the context of heightened geopolitical tensions around Taiwan. The European Chips Act will, among other things, mobilize more than 43 billion euros of public and private funding to strengthen the EU's capacities in the different parts of the semiconductor supply chain, including design and manufacturing.

The final push of the IRA

But calls for a more assertive EU industrial policy have grown much louder after the United States passed its Inflation Reduction Act in August 2022. The bill pursues several objectives, but its main feature is a 369 billion dollars investment plan in energy security and climate. While the EU initially welcomed this most ambitious US climate initiative ever, it quickly took issue with the fact that many of the subsidies for green technology come with local content requirements. For example, the IRA provides thousands of dollars of subsidies to US' consumers that buy an electric car, but conditional upon the car and its battery being primarily made inside the US or a country with which it has a trade agreement. This would currently exclude electric vehicles made in Europe from the IRA's subsidies and disadvantage EU-made cars on the American market.

In combination with the much higher energy prices in Europe compared to the US, the IRA threatens to lure firms into relocating to or making new investments in the US rather than in the EU. Therefore, the EU has asked the US to reconsider these domestic content provisions, or to at least extend the subsidies to EU producers, and

has alluded to launching a trade dispute or countermeasures if its desiderata are not considered. But this response is naïve about the political economy context of the IRA inside the US: without sufficient guarantees that a more ambitious climate policy would directly lead to domestic green job creation, a desperately needed climate bill would not have passed Congress.

As a significant reversal of the IRA's domestic content requirements seemed increasingly unlikely, some European decision-makers started calling for the EU to develop its own IRA-like industrial policy. French President Macron was quick to propose a "Buy European" response to the IRA, copying the US' policy.²¹⁴ The French Commissioner Thierry Breton called the IRA (together with the Buy American Act, the US Chips Act and Defense Production Act) "examples of determination and audacity" and called for a more assertive EU industrial policy.²¹⁵ With her reference to a new European Sovereignty Fund in her State of the European Union speech in mid-September, Commission President Ursula von der Leyen seemed to endorse that idea.²¹⁶ However, while a consensus has grown within Europe that an industrial policy answer is necessary to avoid the deindustrialization of the EU, there remain different views on how this should be done.

The national or European route?

Some advocate further changes to the EU's state aid rules that should make it easier for member states to subsidize industries investing in the green and digital transition. In response to covid and the Russian invasion of Ukraine, the Commission adopted broad temporal crisis exemptions to state aid control. Some, including Competition Commissioner Margrethe Vestager, now propose an even broader and longer-term "Temporary Crisis and Transition Framework", which would

²¹⁴ Giorgio Leali, "Macron calls for Buy European measures for cars," *Politico*, October 17, 2022, <https://www.politico.eu/article/emmanuel-macron-buy-european-act-cars-united-states-china/>.

²¹⁵ Thierry Breton, "A European Sovereignty Fund for an industry "Made in Europe," *Statement, European Commission*, September 15, 2022, https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_5543.

²¹⁶ Ursula Von der Leyen, "State of the Union address by President von der Leyen (speech, Strasbourg, September 14, 2022)," *European Commission*, https://ec.europa.eu/commission/presscorner/detail/en/speech_22_5493.

simplify state aid for renewable energy technologies and in support of new investments in facilities that are at risk of relocation. However, this would risk fragmenting the Single Market. Some member states have deeper pockets than others to dole out green subsidies to firms. Larger member states and those with more fiscal space can more easily provide state aid than smaller member states and those with already overburdened public finances. Since the entry into force of exemptions to state aid control after the Russian invasion of Ukraine, 53% of the total of 672 billion euros of approved state aid in the Union comes from Germany, while 24% comes from France.

If further relaxing state aid control becomes the EU's main industrial policy tool, this risks tilting the playing field on the Single Market even more to the advantage of member states with ample resources and fiscal space. Therefore, a better solution would be to finance green industrial subsidies at the EU level so that all member states can share in the benefits. A European industrial policy fund could be designed analogous to the Union's revolutionary post-covid recovery and resilience fund or support to mitigate unemployment risks in an emergency (SURE) instrument.²¹⁷ If relaxation of state aid rules is adopted before agreement on new EU funding for industrial policy, the risk is that larger Member states will lose interest in common funding.

Opportunities and threats

A new European industrial policy could bring significant opportunities. It could strengthen public

control over the green and digital transition. By visibly creating new jobs in green sectors, it could give a more positive connotation to these transitions than current public discourses about higher prices, prohibited consumption and disappearing jobs. A carrots-based approach might produce more public support for the green transition than the current sticks-based schemes. Public authorities could make the receipt of state aid conditional upon respect for the highest standards of labour and social rights (as in the IRA), thereby promoting the "just" character of these transitions.

However, a new European industrial policy also comes with risks that need to be avoided or mitigated. A global subsidy race between the major powers, which some warn for²¹⁸, is not one of them. The world currently has a multiple trillion investment gap to meet the climate target of net zero emissions by 2050.²¹⁹ A green subsidy race is therefore to be welcomed, on the condition that the net effect on CO2 reduction is positive. That means that subsidies need to fund additional rather than already planned investment. Cooperation between countries (like the EU and the US) on their respective industrial policies can ensure that these are complementary and do not cause inefficient and wasteful overproduction. Considerations of global justice also require the EU (and other large powers) to ensure that subsidies do no significant harm to developing countries, or that they are compensated. Industrial policy should boost green and digital output and not profits of existing champions. Layering industrial

²¹⁷ See Philipp Heimberger & Andreas Lichtenberger, "RRF 2.0: A permanent EU investment fund in the context of the energy crisis, climate change and EU fiscal rules," *The Vienna Institute for International Economic Studies*, Policy Notes and Reports No. 63 (2023).

²¹⁸ Giorgio Leali, "EU's free-trading Vestager warns against subsidy war with America," *Politico*, December 1, 2022, <https://www.politico.eu/article/vestager-warns-against-imitating-us-amid-buy-european-debate/>.

²¹⁹ The Swiss Re Institute puts the global investment gap between 2022 and 2050 at a mind-blowing 270 trillion US dollars, SwissRe (Press Release), "Over USD 270 trillion in climate investments needed to meet 2050 net-zero targets," Zurich, October 7, 2022, <https://www.swissre.com/media/press-release/pr-20221007-USD-270-trillion-in-climate-investment-needed.html#:~:text=Zurich%2C%207%20Octo-ber%202022%20%E2%80%93%20Climate,progress%20on%20decarbonising%20the%20economy>. According to the European Commission, the EU has to fill an investment gap of about 180 billion euros per year, Council of the EU, "Sustainable finance: EU reaches political agreement on a unified EU classification system (Press release)," Brussels, December 18, 2022, <https://www.consilium.europa.eu/en/press/press-releases/2019/12/18/sustainable-finance-eu-reaches-political-agreement-on-a-unified-eu-classification-system/>.

policy on top of the pre-existing economic structure will not automatically produce desired outcomes.²²⁰

Make industrial policy's comeback a success

European industrial policy is back. Its return is a response to the industrial policies by others, the climate challenge, and a more geopolitical perspective on economic integration. The war in Ukraine, the energy crisis and the United States' inflation reduction act has given industrial policy's comeback the final push. While industrial policy carries the potential to democratize and accelerate the green and digital transformation

and ensure that they become "just" transitions, these positive effects are not guaranteed. To ensure a successful comeback of industrial policy, it needs to be funded at the European rather than national level, should target new rather than existing investments, and should ensure transparent, conditional and inclusive allocation of subsidies rather than reinforcing the market power of dominant firms.

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²²⁰ Lenore Pallidino & Isabel Estevez, "The need for corporate guardrails in US industrial policy," Washington: Roosevelt Institute, August 18, 2022, <https://rooseveltinstitute.org/publications/the-need-for-corporate-guardrails-in-us-industrial-policy/>.

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

WHY RAISING INTEREST RATES TO FIGHT OFF ENERGY INFLATION IS COUNTERPRODUCTIVE

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These are challenging times to be a central banker. After more than two decades of stubbornly low inflation, advanced economy (AE) central banks had to abruptly switch from monetary easing to monetary tightening in order to contain newborn inflationary pressures propelled by the pandemic and Ukraine war related supply disruptions and energy price spikes. Whereas in the past, central banks were struggling to bring inflation up to target (2 percent), they are now confronted with the opposite task of trying to curb it. Around the world, inflation-targeting central banks are under pressure to demonstrate their commitment to low inflation and restore their anti-inflationary credentials. To cool inflation, most of them are resorting to aggressive interest rate hikes. During its December meeting, the European Central Bank's (ECB) Governing Council, for example, decided to raise its key interest rates by another 50 basis points, expecting to further raise them significantly in the coming months 'to reach levels that are sufficiently restrictive to ensure a timely return of inflation to the 2% medium-term target'.²²¹

When central banks hike short-term interest rates, they raise the cost of borrowing for households, businesses and states alike. The imagined causal chain of how higher interest rates work to cool inflation is the following: interest rates are

raised, credit becomes more expensive and harder to get, businesses and consumers spend less, reducing demand for goods and services (and ultimately the workers producing these), unemployment rises, economic activity slows, and, over time, prices fall. It is clear from this, however, that raising interest rates comes at a significant cost. Higher interest rates inflict suffering on the economy by reducing employment and investment opportunities and by lowering economic growth. In addition to raising unemployment and stifling growth, the climate policy agenda will be particularly affected. Cumulative interest rate hikes would undermine important European Union (EU) goals such as energy security and decarbonization.

Rate hikes, moreover, are a blunt tool: they do not target the specific and underlying causes of the current inflationary spike directly. Essentially, rate hikes are geared towards diminishing excessive demand in the economy by slowing the entire economy (instead of targeted sectors) and curtailing both public and private expenditures. What is overlooked in all of this is that inflation is a multidimensional and multifaceted phenomenon that often has many other causes than excess demand or an economy 'running hot'. As such, interest rate hikes will not address the root causes of today's inflation.

²²¹ European Central Bank, *Monetary policy decisions*, Press Release, December 15, 2022, <https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.mp221215~f3461d7b6e.en.html>

Different causes of inflation require different responses

Today's inflation is not an excess aggregate demand story, especially in Europe. Most of the Eurozone's inflation comes from volatile energy, food, and core goods components that are largely outside the influence of monetary policy.²²² Most of the drivers of the current inflationary upsurge come from disruptions in the supply of key commodities and inputs such as oil, gas, food, and microchips. Most of these disruptions resulted from the COVID-19 pandemic and its associated lockdowns and shutdowns in many industries. The effects of pandemic shortages were further aggravated by the inherent fragility of most of the global supply chains. Years of 'just-in-time' inventory management, focusing unilaterally on cutting costs while ignoring risks of fragmentation, had left most supply chains intrinsically vulnerable to interruptions and bottleneck problems. Until the pandemic hit, stocking up on raw materials, resources and intermediary products was deemed inefficient and pointless.²²³ Further compounding this inflationary episode was the sharp increase in fuel and food prices stemming from the Russian invasion of Ukraine and the ensuing sanctions and countersanctions by the EU and Russia.

The Euro area's current high inflation rate has therefore less to do with internally generated

demand pressures than with external shocks that have raised food and energy prices in important ways. What we are seeing is inflation due to a succession of negative supply shocks that have raised food and energy prices and simultaneously depressed economic activity.²²⁴ It is estimated that without these increases in food and energy prices, core inflation in the euro area would still be around 2%.²²⁵ Food and energy prices are clearly the main drivers of inflation in Europe. These sectors and prices are therefore 'systemically significant', meaning that negative shocks to these specific sectors have a disproportionate effect on overall price stability.²²⁶ At the same time, however, monetary policy has notoriously little control over these prices. What the ECB and other central banks are currently trying to do is fighting cost-push inflation with an instrument designed to fight demand-pull-inflation. However, when the main causes of inflation are supply-side factors and, especially, those occurring abroad, the potency of interest rate increases to fight inflation is mild at best. The costs, in contrast, will be substantial: more pain will need to be foisted on workers to extract the same gains in terms of lower inflation.²²⁷

Hiking rates will only mean more trouble in the long run

Today's inflation is in essence a problem of 'fossilflation', driven by the 'legacy cost of the

²²² See for example: Philip R. Lane, *Inflation Diagnostics*, The ECB blog, November 25, 2022, <https://www.ecb.europa.eu/press/blog/date/2022/html/ecb.blog221125~d34babdf3e.en.html>; Joseph Politano, "The Eurozone's Unique Inflation Crisis," *Apricitas Economics*, 15 January 2023, <https://www.apricitas.io/p/the-euro-zones-unique-inflation-crisis>.

²²³ Brooke Masters and Andrew Edgecliff-Johnson, "Supply chains: companies shift from 'just in time' to 'just in case'", *Financial Times*, December 20, 2021, <https://www.ft.com/content/8a7cdc0d-99aa-4ef6-ba9a-fd1a1180dc82>

²²⁴ For a useful distinction between 'good', 'bad' and 'ugly' inflation, see: Fabio Panetta, "Patient monetary policy amid a rocky recovery", Speech at Sciences Po Paris, November 24, 2021, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211124~a0bb243dfe.en.html>

²²⁵ Karl Whelan, "Global factors and ECB monetary policy", *European Parliament Monetary Dialogue Papers*, November 2022, [https://www.europarl.europa.eu/Reg-Data/etudes/IDAN/2022/733994/IPOL_IDA\(2022\)733994_EN.pdf](https://www.europarl.europa.eu/Reg-Data/etudes/IDAN/2022/733994/IPOL_IDA(2022)733994_EN.pdf)

²²⁶ Isabelle Weber, Jesus Jauregui, Lucas Teixeira and Luiza Nassif Pires, "Inflation in Times of Overlapping Emergencies: Systemically Significant Prices from an Input-output Perspective", *Economics Department Working Paper Series*. 340. (November 2022), <https://doi.org/10.7275/0c5b-6a92>

²²⁷ Gerald Epstein, Hiking Interest Rates Protects Financial Assets of the 1% at Workers' Expense, *Truthout*, July 7, 2022, <https://truthout.org/articles/hiking-interest-rates-protects-financial-assets-of-the-1-at-workers-expense/>

dependency on fossil energy sources, which has not been reduced forcefully enough over the past decades'.²²⁸ Accelerating the energy transition should be an important part of the answer to today's fossilflation challenge to contribute to longer term price stability. To pre-empt future inflationary shocks, governments, firms and households should be massively investing in clean energy production, energy efficiency and adaptation to increasingly extreme weather events.²²⁹ Current central bank actions, however, work against the goal of rapidly transitioning away from fossil-based energy production by disincentivizing the necessary new green investments.

Monetary tightening raises the cost of capital, and this hits renewable technologies excessively hard.²³⁰ Sustainable technologies are more capital-intensive than fossil-based technologies, requiring larger upfront investments, and, as such, become comparatively more expensive when central banks use monetary policy to raise the cost of financing. The higher capital-intensity of renewables makes them more vulnerable to interest rate hikes. Raising interest rates across the board therefore risks derailing the transition by inflicting a form of 'green collateral damage' on the economy.²³¹ By making credit more costly, central banks risk delaying the necessary investments in energy efficiency by both households,

businesses and governments. Because of central bank actions, private actors are now faced with a higher cost of credit for renovation loans and a higher cost of materials and services (due to supply-induced inflation).²³² Higher interest rates also raise the borrowing costs for governments, constraining the state's fiscal capacity for long-term investments in improved mobility, green technologies and sustainable infrastructure.

Hiking rates in a macroeconomic environment of rising energy prices therefore risks aggravating the economy's carbon lock-in and prolonging its dependence on outdated and polluting carbon technologies.²³³ Interest rate hikes are not only counterproductive in the long run — exacerbating both the climate challenge and undermining central banks' primary objective to secure long-term price stability—, they are also in direct conflict with the 'REPowerEU' plan tabled by the Commission in which it seeks to 'fast forward the green transition' by means of 'an increase in energy savings, a diversification of energy supplies, and an accelerated roll-out of renewable

²²⁸ Isabel Schnabel, *A new age of energy inflation: climateflation, fossilflation and greenflation*, Speech at a panel on "Monetary Policy and Climate Change" at The ECB and its Watchers XXII Conference, Frankfurt am Main, March 17, 2022, https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220317_2~d8b3582f0a.en.html

²²⁹ Katie Kedward, "Forget greenflation, central banks need to tackle fossilflation," *Green Central Banking*, blog-post, May 19, 2022, <https://greencentralbanking.com/2022/05/19/greenflation-central-banks-fossilflation-inflation/>; Jens van 't Klooster, *The European Central Bank's strategy, environmental policy and the new inflation: a case for interest rate differentiation*, Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, (2022), <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/07/The-European-Central-Banks-strategy-environmental-policy-and-the-new-inflation.pdf>

²³⁰ For more on this, see: Hielke Van Doorslaer and Mattias Vermeiren, "Beyond normal central banking? Monetary policy after the pandemic," The European Trade Union Institute, December 2022, <https://www.etui.org/publications/beyond-normal-central-banking-monetary-policy-after-pandemic>

²³¹ Asker Voldsgaard, Florian Egli and Hector Pollit, "Can we avoid green collateral damage from rising interest rates?", UCL IIPP Blog, June 20, 2022: <https://medium.com/iipp-blog/can-we-avoid-green-collateral-damage-from-rising-interest-rates-1259ea94c9ea>

²³² Uuriintuya Batsaikhan, *High interest rates are a threat to the green transition*, Positive Money Europe, Blog-post, Dec 7, 2022, <https://www.positivemoney.eu/2022/12/high-interest-rates-threat-to-green-transition/>

²³³ Lukasz Krebel and Frank van Lerven, "Green credit guidance: a green term funding scheme for a cooler future," *New Economics Foundation*, August 2022, https://neweconomics.org/uploads/files/NEF_GCG.pdf

energy'.²³⁴ Moreover, the ECB risks hiking rates at a time when inflationary pressures seem to be easing.²³⁵ Inflationary tailwinds may then quickly turn into deflationary headwinds. Martin Sandbu has likened this effect to a 'ketchup bottle', where shortages can quickly turn into gluts.²³⁶ This risk is especially real when a sudden ease in price pressures coincides with a zealously overtightening central bank, possibly pushing the Eurozone into a recession. In that case demand will falter just when supply capacity is picking up, driving prices down instead of up.

What central banks overlook in all of this is that the biggest risk today might not just be inflation but stagnation. There is a real danger that excessive tightening will leave long-lasting scars on the productive capacity and economic potential of the Eurozone's economy. Aggressively hiking rates now will act as a drag on efforts to decarbonize the economy, rule out any transformative green agenda and put a strain on the necessary investments and innovation. It puts monetary policy at cross-purposes with other policy priorities (such as investing in renewables and energy-efficiency) and risks further entrenching years of public and private underinvestment. In this way prohibitive interest rates will further exacerbate the trend of secular stagnation (defined by low rates of growth, productivity, and investment)

that has plagued advanced economies for at least a decade (with some even dating the onset of the declining trend back to the 1970's).²³⁷

There is an alternative

Raising the interest rate is only one way to combat inflation. Monetary policy used to, and could again, mean more than just interest rates: e.g., qualitative and quantitative credit regulations to manage effective demand and steer investment towards specific sectors.²³⁸ Throughout history central banks have always coordinated with ministries of finance (and other government agencies) to proactively steer credit and support major structural change of the type required by the climate crisis, complementing active fiscal and industrial policy regimes.²³⁹ This broader policy approach is generally referred to as 'credit guidance' (while 'window guidance', 'credit controls' or 'moral suasion' are also used). Credit guidance is a technique in which central banks 'manipulate' and 'shape' the flow of credit in line with pre-established monetary and industrial policy goals. It allows for a selective macro-level direction of credit across the economy, meaning that central banks can proactively direct finance towards supporting certain 'desirable' sectors of the economy

²³⁴ European Commission, 'REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition', May 18, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131

²³⁵ Claire Jones, Central banks should sacrifice ambitions of a perfect economic landing, *Financial Times*, January 7, 2023, <https://www.ft.com/content/5b208707-3cb9-4410-9dee-1ebd8b5e6c3d>

²³⁶ Martin Sandbu, Beware the ketchup-bottle economy, *Financial Times*, May 23, 2021, <https://www.ft.com/content/8daa2740-30de-4817-a687-c69b345095cd>

²³⁷ Jack Copley, "Decarbonizing the downturn: Addressing climate change in an age of stagnation," *Competition & Change*, (2022), <https://doi.org/10.1177/10245294221120986>; see also: Lawrence H Summers, "The Age of Secular Stagnation: What It Is and What to Do About It", *Foreign Affairs*, 95(2),(2016), 2–9. <http://www.jstor.org/stable/43948172>.

²³⁸ Dirk Bezemer, Josh Ryan-Collins, Frank van Lerven and Lu Zhang, "Credit policy and the 'debt shift' in advanced economies," *Socio-Economic Review* mwab041 (2021), <https://doi.org/10.1093/ser/mwab041>

²³⁹ Katie Kedward, Daniela Gabor and Josh Ryan-Collins, "Aligning finance with the green transition: from a risk-based to an allocative green credit policy regime," Working Paper IIPP WP 2022-11, UCL Institute for Innovation and Public Purpose, 2022: <https://www.ucl.ac.uk/bartlett/public-purpose/wp2022-11>; see also: Eric Monnet, "Controlling credit: central banking and the planned economy in postwar France 1948–1973", Cambridge University Press (2018); Olga Mikheeva and Ryan-Collins J., "Governing finance to support the net-zero transition: lessons from successful industrialisations," Working Paper IIPP WP 2022/01, UCL Institute for Innovation and Public Purpose, 2022: <https://www.ucl.ac.uk/bartlett/public-purpose/publications/2022/jan/governing-finance-support-net-zero-transition-lessons-successful>

while simultaneously repressing others.²⁴⁰ This approach would enable central banks to provide a targeted stimulus to the economy by offering preferential discount rates for green lending. In a fairly recent example, both the Japanese and Chinese central bank accorded quantity-based quotas to commercial banks to make them lend to particular sectors (including for sustainability purposes).²⁴¹

Credit guidance policies could inform an alternative policy framework that articulates a more ‘market-shaping’ role for public policy, driven less by financial market incentives and more by mission-oriented economic and industrial policies geared towards structurally transforming energy, food, housing and transport systems in accordance with a rapid green transition.²⁴² It would allow central banks to help expand the capacity frontier of certain critical commodities and technologies, and would help speed up the roll-out of renewable and more energy-efficient technologies. This approach would lead to a double win: it would allow central banks to better safeguard long-term price and financial stability (by preventing new upshots of ‘fossilflation’) and help them curtail short-term inflation (by reducing fossil-based energy demand here and now).

Conclusion

By focusing unilaterally on price stability and ignoring other threats (such as climate change and secular stagnation), central banks are woefully unprepared to face today’s ‘polycrisis’.²⁴³ By refusing to take on board other concerns than protecting price stability, central banks are trapped into a corner where the only option they have is to raise rates in a feeble attempt to restore their credibility as inflation-fighters. As Daniela Gabor notes, their situation can be compared to a particular situation in a game of chess (known in German as ‘Zugzwang’) where a player is forced to make a that can only worsen their initial position.²⁴⁴ The same holds for interest rate hikes in an environment of inflation mostly driven by supply shocks and energy prices: the benefits will be trivial at best, while the costs will be large. Not just for central banks but for all of us.

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²⁴⁰ Naoise McDonagh, “Credit Guidance for a Desired Economy: An Original Institutional Economics Critique of Financialization,” *Review of Radical Political Economics* 53, no. 4 (2021): 675-693. <https://doi.org/10.1177/04866134211018867>

²⁴¹ Richard A. Werner, “Princes of the Yen: Japan’s Central Bankers and the Transformation of the Economy”, *ME Sharpe*, (2003); Simon Dikau and Ulrich Volz, “Out of the window? Green monetary policy in China: window guidance and the promotion of sustainable lending and investment”, *Climate Policy*, 1–16 (2021)

²⁴² Yannis Dafermos, “Climate change, central banking and financial supervision: beyond the risk exposure approach,” SOAS Department of Economics, 2021 <https://www.soas.ac.uk/economics/research/workingpapers/file155297.pdf>; Mariana Mazzucato and Josh Ryan-Collins, “Putting value creation back into ‘public value’: from market-fixing to market-shaping,” *Journal of Economic Policy Reform*, 1–16 (2022)

²⁴³ Adam Tooze, “Welcome to the world of the polycrisis,” *Financial Times*, October 28, 2022: <https://www.ft.com/content/498398e7-11b1-494b-9cd3-6d669dc3de33>

²⁴⁴ Daniela Gabor, “Zugzwang central banking,” (ECB edition), *Financial Times*, September 8, 2022: <https://www.ft.com/content/2d79d153-fffa-4441-b79f-0a808a51108f>

GIES OCCASIONAL PAPER

The Global Energy Crisis | December 2022-February 2023

ANOTHER WAGE PRICE SPIRAL IN THE MAKING?

A comparison between the 2020s and 1970s

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In the wake of pandemic-induced disruptions of global supply chains and skyrocketing energy prices, inflation soared to levels unseen since the 1970s. This caused concern among central bankers and policymakers that advanced economies might get caught in a *wage price spiral* – a vicious cycle of rising wages and prices that many believe was at the centre of the 1970s stagflation crisis. A draconic increase in real interest rates was required to put wage growth and inflation back in check: in 1979, the Volcker Shock, named after then-chairman of the United States' central bank (the Federal Reserve or Fed), eventually pushed up unemployment rates in the United States (US) and Europe to their highest levels since the end of World War II.

More than 40 years later, central bankers are keen to prevent a rerun of these dynamics. On February 4th 2022, the Bank of England (BoE) was the first major advanced central bank to raise its benchmark short-term interest rates since the eruption of the pandemic. A day later in an interview with the BBC, Andrew Bailey, governor of the BoE, urged British workers to show some “restraint in pay bargaining, otherwise it will get out

of control.” In the same interview, Bailey described the labour market in the United Kingdom as “extraordinarily tight”, adding that labour shortages were the “first, second and third thing people want to talk about” when he visits businesses across the country.²⁴⁵ Other central bankers have been similarly worried about the inflationary effects of tight labour markets. When the Fed raised the federal funds rate in March 2022, chairman Jerome Powell claimed that US labour markets had become “tight to an unhealthy level”: the Fed’s planned rate hikes were meant to reduce inflationary pressures by “moving down the number of job openings” in the US economy and creating “less upward pressure on wages, less of a labour shortage.”²⁴⁶ In the Eurozone, Isabel Schnabel of the Executive Board of the European Central Bank (ECB) observed “a shift in the bargaining power of unions and workers”: “Record-high inflation and acute labour shortages seem to have strengthened workers’ resolve to protect their purchasing power.”²⁴⁷ In this context, as its president Christine Lagarde made clear, the ECB would “need to monitor inflation expectations and wage negotiations very carefully to ensure

²⁴⁵ Andrew Bailey quoted in Szu Ping Chan, “Don’t ask for a big pay rise, warns Bank of England boss,” *BBC News*, February 4, 2022, <https://www.bbc.com/news/business-60206564>.

²⁴⁶ Jerome Powell, “Transcript of Chair Powell’s Press Conference,” *Federal Reserve*, March 16, 2022, <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20220316.pdf>.

²⁴⁷ Isabel Schnabel, “Monetary policy in a cost-of-living crisis,” Speech at a panel on the “Fight against inflation” at the IV Edition Foro La Toja, September 30, 2022, <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220930~9dac17b1fe.en.html/>.

that wage growth does not settle persistently at levels that are incompatible with our target.”²⁴⁸

These statements expose an inconvenient truth about the politics of inflation: central banks’ rate hikes are supposed to make borrowing more expensive in ways that make firms less willing to invest and create new vacancies, weakening the bargaining power of workers to bid up their wages to sustain their living standards in the face of rising inflation. By doing so, monetary tightening effectively serves to deflect the burden of adjustment to the rising inflation onto the working classes, whose nominal wages fail to keep up with inflation and productivity growth: real wages –adjusted for inflation– have even been falling in 2022. In this contribution I provide a Kaleckian interpretation of the role of central banks in containing inflation, comparing the current episode with the 1970s stagflation crisis.

A Kaleckian reading of the 1970s stagflation crisis

The commitment of central bankers to raise interest rates and even engineer a recession at the expense of real wage growth nicely fits with a Kaleckian reading of inflation. As the Post-Keynesian/neo-Marxist economist Michal Kalecki argued more than 50 years ago: persistent inflation results from conflicting claims on income made by workers and firms. Furthermore, the bargaining power of workers to increase their income claims critically depends on the level of unemployment and the tightness of the labour market: the lower the number of unemployed people per job opening, the more firms need to compete for workers and the easier it becomes for workers to switch to higher-paying jobs. In short, employers need to offer higher wages to attract workers and stay competitive when the level of unemployment is very low.²⁴⁹

This observation was a key reason for why Kalecki doubted that the post-war Keynesian macroeconomic regime of full employment would be politically sustainable. In a famous 1943 article, Kalecki predicted that the reduction in unemployment and the resulting scarcity of labour would ultimately strengthen the position of workers and labour unions to such an extent that they would become increasingly assertive in their wage claims.²⁵⁰ Real wage growth would exceed productivity growth and erode the profits of firms and their capitalist owners, who would then revolt against the regime of full employment. Growing tensions between capital and labour since the end of the 1960s seemed to confirm Kalecki’s predictions. From a historical perspective, the post-war years stand out as a period during which the position of workers in distributive conflicts was stronger than ever before in the industrialized world. Accordingly, industrial disputes proliferated in the late 1960s. These conflicts greatly intensified after the first oil shock in the beginning of the 1970s, when workers sought to secure their living standards by pushing through higher wages. Faced with falling profit margins, private firms raised prices even further and embarked on investment strikes, postponing their spending on new capital goods to extract concessions from workers and governments.

A common interpretation in the more critical traditions of the comparative and international political economy (CPE and IPE) literature is that higher unemployment rates in the second half of the 1970s at least partly reflected “attempts by business and conservative interests to reshape relations of power and patterns of redistribution prevailing during the full employment era into more favourable ones from their point of

²⁴⁸ Christine Lagarde, “Monetary policy in a high inflation environment: commitment and clarity,” Transcript of lecture delivered at Tallinn, November 4, 2022, https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp221104_1~8be9a4f4c1.en.html.

²⁴⁹ Michal Kalecki, *Selected Essays on the Dynamics of the Capitalist Economy 1933–1970*. (Cambridge: Cambridge University Press, 1971).

²⁵⁰ Michal Kalecki, “Political aspects of full employment,” *The Political Quarterly* 14, no. 4 (1943): 27-31. <https://doi.org/10.1111/j.1467-923X.1943.tb01016.x>.

view.”²⁵¹ Unemployment came to be seen as a solution to what was seen as the most pressing problem: rising inflation. Central banks restricted the supply of money and allowed interest rates to soar to historically high levels, causing the severest recession since the 1930s Great Depression. Rising unemployment increased demands on social security systems and drained state coffers. Surging interest payments fed the perception that the amount of government spending and size of fiscal deficits had become unsustainable. A regime of quasi-permanent austerity and welfare state restructuring took shape in the 1980s and 1990s. Central banks became politically independent from governments to strengthen their inflation-fighting credibility.

This new macroeconomic regime particularly affected low-income workers most dependent on tight labour markets, given that they are the first to be fired during recessions and the last to be hired during recoveries. Across the industrialised world, central banks contributed to the weakening of their bargaining power by prematurely raising interest rates during economic recoveries: monetary policy was “persistently biased so as to depress aggregate demand late in the business cycle, before workers at the bottom of the distribution see a labour market that is tight enough to allow them to bargain for higher wages.”²⁵² There is a broad consensus in the Marxist and post-Keynesian literature that central banks’ strategy of pre-emptive tightening has played a direct role in the secular decline in the bargaining power of workers vis-à-vis the owners of capital and contributed to the fall in the labour share of GDP – a universal trend in the industrialized world.

Wage or profit price spiral?

Are we in the midst of a new wage price spiral? One obvious similarity between the 1970s inflation crisis and the current one is the central role played by soaring energy prices, in turn fuelled by

geopolitical conflicts. Of all the categories of the Consumer Price Index (CPI), energy is the most important for overall price stability, given its key role as production input: firms will usually raise their prices in response to persistent increases in energy prices to protect their profit margins, broadening the inflationary pressures to other sectors of the economy. Just like during the 1970s, core CPI –excluding more volatile energy and food prices– has been way above central banks’ two percent target.

But that does not necessarily mean another wage price spiral is around the corner. In the current moment, a key missing ingredient is the bargaining strength of the labour movement, which is structurally weakened by the disinflation policies of the 1980s and the ensuing liberalization of labour markets. In the Anglo-Saxon economies, liberalization took the form of outright labour market deregulation and a frontal assault on labour unions. In the Eurozone economies with stronger traditions in collective bargaining, union density declined almost as sharply. Even if collective bargaining coverage remains relatively high, agreements have increasingly moved to the firm level where workers have less bargaining power. Deindustrialization also pushed governments to flexibilize jobs in the service sectors of the economy, where a growing number of workers are employed in precarious jobs unprotected by social legislation and/or collective bargaining agreements. In manufacturing sectors most exposed to international trade and investment, unions became more responsive to the needs of employers to remain competitive in globalized markets and restrained their wage demands to contain unit labour costs.²⁵³

Central bankers are aware of these developments. At the Federal Reserve, economists and policymakers have noted how the decline in workers bargaining power and the fall in the

²⁵¹ Walter Korpi, “The great trough in unemployment: a long-term view of unemployment, inflation, strikes, and the profit/wage ratio,” *Politics & Society* 30, no. 3 (2002): 365-426.

²⁵² Joe Seydl and Malcolm Spittler, “Did globalization flatten the Phillips curve? US consumer price inflation at the sectoral level,” *Journal of post keynesian economics* 39, no. 3 (2016): 387-410.

²⁵³ Lucio Baccaro and Chris Howell. *Trajectories of neoliberal transformation: European industrial relations since the 1970s*. (Cambridge: Cambridge University Press, 2017).

labour share of GDP have made it easier to pursue expansionary monetary policy without fuelling inflation: both trends contributed to the flattening of the Phillips curve – the inverse relationship between unemployment and inflation that has informed their strategy of pre-emptively raising interest rates to prevent unemployment from falling below a supposedly inflationary threshold.²⁵⁴ At the ECB, both Lagarde and Schnabel have similarly observed how “structural changes in labour markets”²⁵⁵ and “the secular erosion of workers’ bargaining power”²⁵⁶ implied that “receding slack fed more slowly into wage growth”²⁵⁷: “Despite a historically tight labour market, a substantial decline in real consumer wages is weighing on the labour share of income” – a situation “fundamentally different from the experience of the 1970s when real wages and the labour share of income increased measurably in response to rising energy prices.”²⁵⁸ ECB economists have attributed this difference to changes in labour market institutions, such as less wage indexation and a lower degree of unionisation).²⁵⁹

Central bankers have also acknowledged that rising profit margins have played a role in fuelling inflation. At the Fed, Governor Lael Brainard has noted how “reductions in markups could make an important contribution to reduced pricing pressures”, given that “measures of profits in the non-financial sector relative to GDP remained near the post-war peak reached [in 2021].”²⁶⁰ At the ECB, Schnabel recognised that “firms have so far been

able to increase their prices beyond the increase in nominal wages, and in many cases even beyond the increase in energy costs.”²⁶¹ Lagarde has similarly observed that “when inflation is high everywhere and supply is constrained, firms can more easily pass on cost increases to customers without losing market share to their competitors.”²⁶²

Labour shortages: curse or blessing?

Given these observations, why are both central banks still concerned about a return of a 1970s wage price spiral? The most likely explanation is that they fear that persistent labour shortages will unleash a new regime of de-anchoring inflation expectations. As economists of the Bank of International Settlements have noted, “one trigger for [this] could be nominal wage increases beyond price increases and productivity gains,” which is much more likely “if labour markets continue to tighten, raising workers’ bargaining power.”²⁶³ There is a common apprehension among central bankers that labour markets are “overheating” and could *eventually* lead to “excessive wage growth”, making high inflation more persistent by de-anchoring expectations about the future path of the general price level. Thus, raising interest rates is deemed necessary to prevent this from happening.

A signpost for these risks, in their view, is the broadening of inflation to the labour-intensive services sector. Since the 1970s stagflation crisis the share of workers employed in services has

²⁵⁴ Tim Baker, “Preferred shares: Inflation, wages, and the fifty-year crisis,” *Phenomenal World*, June 24, 2021. <https://www.phenomenalworld.org/analysis/preferred-shares/>.

²⁵⁵ Christine Lagarde, “Monetary policy during an atypical recovery,” Transcript of speech delivered at ECB Forum on Central Banking in Frankfurt Am Main, September 28, 2021. <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210928~4cc57f558d.en.html>.

²⁵⁶ Schnabel, “Monetary policy in a cost-of-living crisis”

²⁵⁷ Lagarde, “Monetary policy during an atypical recovery”

²⁵⁸ Schnabel, “Monetary policy in a cost-of-living crisis”

²⁵⁹ Niccolò Battistini, Helen Grapow, Elke Hahn, and Michel Soudan, “Wage share dynamics and second-round effects on inflation after energy price surges in the 1970s and today,” *Economic Bulletin* No. 5 (2022).

²⁶⁰ Lael Brainard, “Bringing Inflation Down,” Transcript of speech delivered at the Clearing House and Bank Policy Institute 2022 Annual Conference, New York, September 7, 2022. <https://www.federalreserve.gov/newsevents/speech/brainard20220907a.htm>.

²⁶¹ Schnabel, “Monetary policy in a cost-of-living crisis”

²⁶² Lagarde, “Monetary policy during an atypical recovery”.

²⁶³ Frederic Boissay, Fiorella De Fiore, Deniz Igan, Albert Pierres Tejada, and Daniel Rees. “Are major advanced economies on the verge of a wage-price spiral?,” *Bank for International Settlements* No. 53, (2022).

increased exponentially in the advanced economies, reaching more than 70 percent, and in some countries such as the United States even 80 percent of the workforce. At the Fed, Jerome Powell has been concerned about inflation “moving sideways” to the core (non-housing) services where “wages make up the largest cost” and “the labour market holds the key to understanding inflation.” These core services are usually the most de-unionsed sector of the economy where tight labour markets and labour shortages are the last vestiges of workers’ bargaining power.

Raising rates is particularly important, central bankers believe, to restore their credibility as inflation fighters. Monetary policy has been extraordinarily supportive during the pandemic years and central bankers have been criticized for responding too slow to escalating inflation. Persistent undershooting of their inflation target since the global financial crisis of 2008 led both central banks to believe that too-low inflation had become a greater risk than too-high inflation: to avoid a downward de-anchoring of inflation expectations, both central banks have recently revised their monetary policy frameworks. In the Summer of 2020, the Fed announced that it would from now on allow inflation to temporarily run above its 2 percent target to “makeup” for inflation having been persistently too low since 2008. One year later, the ECB raised its target to 2 percent – instead of “below, but close to, two percent” – and announced it would undertake “forceful or persistent monetary policy measures to avoid negative deviations from the inflation target becoming entrenched”, even if it would lead to “a transitory period in which inflation is moderately above target.”²⁶⁴

These revisions suggested that the Fed and ECB had become more lenient toward higher inflation. At the Fed, this newfound leniency was matched by a much stronger commitment to pursue “maximum employment” – the second pillar of its dual mandate. Under its new framework, the Fed committed to no longer pre-emptively tighten monetary policy to prevent unemployment falling below its estimates of the “natural rate” – the level supposedly consistent with stable inflation. As such, the Fed would be more willing to actively chase hot labour markets and promote a “high-pressure economy.” Empirical research has highlighted a variety of benefits of such a strategy.²⁶⁵ Tight labour markets enable involuntarily part-time workers to find full-time jobs and draws back discouraged workers who detached from the labour market during previous recessions but are still looking for jobs. They also reduce labour market inequalities by (a) improving job opportunities for disadvantaged (especially non-white and older workers), (b) boosting wages of low-skilled workers, and (c) allowing workers more generally to experience greater upward mobility and better job matches. Finally, labour shortages can even induce firms to invest in labour-saving technologies, lifting the longer-term growth potential of the economy by raising labour productivity.

The Fed’s new framework facilitated the incoming Biden administration’s spending programmes. The American Rescue Plan, which offered US workers and businesses fiscal support to the tune of 1.9 trillion dollars, sought to return as fast as possible to the extraordinary tight labour markets of 2019.²⁶⁶ A central objective of Biden’s more general economic policy programme was to create an inclusive wage-led growth model based on strong labour markets and a strengthened

²⁶⁴ European Central Bank, “The ECB’s monetary policy strategy statement,” *ECB Europa*, 2021. https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html

²⁶⁵ For an overview of this literature, see Jared Bernstein and Keith Bentele, “The Increasing Benefits and Diminished Costs of Running a High-Pressure Labor Market,” Washington DC: Center on Budget and Policy Priorities 15 (2019): <https://www.cbpp.org/sites/default/files/atoms/files/5-15-19fe.pdf>.

²⁶⁶ Cecilia Rouse, “Looking back, moving forward: year one of President Biden’s economic agenda,” *The White House Blog*, January 20, 2022. <https://www.whitehouse.gov/cea/written-materials/2022/01/20/looking-back-moving-forward-year-one-of-president-bidens-economic-agenda/>.

working class. Even reputable left-wing scholars believed a new era of macroeconomic expansionism was in the air. Josh Mason called Biden's agenda "a big break with prevailing orthodoxy."²⁶⁷ Cédric Durand even identified it as "1979 in reverse" – "an unambiguous departure from the fiscal moderation of the Obama Administration and the dogmatic austerity of the EU" whose "ideological significance should not be underestimated."²⁶⁸

Restoring credibility at all costs?

Despite the potential benefits of hot labour markets, the goal to create a high-pressure economy became increasingly contested by prominent elite economists who believed the inflation surge confirmed their concerns that Biden's and the Fed's stimulus measures had been "excessive" and would lead to an "overheating economy."²⁶⁹ The Fed's new framework was seen as complicit in facilitating this overheating and in fuelling an upward de-anchoring of inflation expectations. By the end of 2021 the Fed began to share some of these concerns. Given that "strong demand and a very tight labour market have also contributed to inflation pressures", it was agreed that the Fed "can help alleviate those pressures by removing the extraordinary monetary policy accommodation that is no longer needed."²⁷⁰

Raising interest rates is a blunt mechanism to contain contemporary inflationary pressures, however, especially if they are primarily linked to supply-side shortages rather than demand-side excesses.²⁷¹ It seeks to cool down labour markets that have relatively been most beneficial for low wage workers. A recent study has shown that lowest-paid have enjoyed the sharpest real wage growth in the United States since the start of the pandemic (and the only group that experienced positive real wage growth in 2022), partly reversing decades of rising wage inequality.²⁷² To the extent that it results from workers switching to higher-paying jobs at more productive firms, real wage growth is not necessarily inflationary. Rate hikes can actually "lock-in" current supply side problems: higher credit costs discourage producers from investing further in additional capacity. As Josh Mason and Lauren Melodia have put it, it amounts to "a decision to keep society poor enough that we can only afford what businesses are currently able to produce" by reducing demand "to the temporarily lower level of supply."²⁷³ Maintaining a high-pressure economy, in contrast, is based on the idea that inflation is a temporary cost of adjustment to a new higher level of capacity.

This does not necessarily mean that nothing should be done to curb inflation in the short term.

²⁶⁷ Josh W. Mason, "The American Rescue Plan as Economic Theory," *J. W. Mason Blog*, March 15, 2021, <https://jwmason.org/slackwire/the-american-rescue-plan-as-economic-theory/>.

²⁶⁸ Cédric Durand, "1979 in Reverse," *Sidecar*, June 1, 2021, <https://newleftreview.org/sidecar/posts/1979-in-reverse>.

²⁶⁹ Olivier Blanchard, "In defense of concerns over the \$1.9 trillion relief plan," Peterson Institute Blog, February 18, 2021. <https://www.piie.com/blogs/realtime-economic-issues-watch/defense-concerns-over-19-trillion-relief-plan>; Larry Summers, "The Biden stimulus is admirably ambitious: but it brings some big risks, too," Washington Post, February 4, 2021, <https://www.washingtonpost.com/opinions/2021/02/04/larry-summers-biden-covid-stimulus/>.

²⁷⁰ Michelle W. Bowman, "High Inflation and the Outlook for Monetary Policy," Transcript of speech at the American Bankers Association Community Banking Conference, Palm Desert, California, February 21, 2022. <https://www.federalreserve.gov/newsevents/speech/bowman20220221a.htm>.

²⁷¹ Jens van 't Klooster and Hielke Van Doorslaer, "Inflation: raising rates is not the answer," *Social Europe*, January 27, 2022. <https://socialeurope.eu/inflation-raising-rates-is-not-the-answer>.

²⁷² David Autor, Arindrajit Dube and Annie McGrew, "The Unexpected Compression: Competition at Work in the Low Wage Economy," Presentation of lecture at Princeton University, December 8, 2022 HYPERLINK "<https://bcf.princeton.edu/wp-content/uploads/2022/10/Combined-Slides.pdf>" <https://bcf.princeton.edu/wp-content/uploads/2022/10/Combined-Slides.pdf>.

²⁷³ Josh W. Mason and Lauren Melodia, "Rethinking Inflation Policy: A Toolkit for Economic Recovery," *Roosevelt Institute Issue Brief* (October 2021) 13-14 https://rooseveltinstitute.org/wp-content/uploads/2021/10/RI_Rethinking-Inflation-Policy_Brief_202110.pdf.

But if inflation is seen mainly as a distributional conflict, it makes more sense to entrust solutions to governments and legislators who have more democratic legitimacy to identify winners and losers in this conflict than unelected central bankers. They have the capacity to subsidize energy costs – partly funded perhaps by taxing windfall profits – and limit the erosion of workers’ purchasing power and the pressure on nominal wages. They can also fight inflation through targeted price controls and regulatory action to contain monopoly power and financial speculation. To alleviate long-term inflationary pressures, they could also take more decisive measures to boost

investments in sustainable technologies and renewable energies.

From a Kaleckian perspective, one thing is clear: relying on central bank rate hikes to fight inflation will especially harm low wage workers most dependent on tight labour markets. If governments and legislators are serious about their desire to minimize the effects of the energy and inflation crisis on the most vulnerable members of their society, other solutions ought to be considered.

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