

# The European energy crisis: Shock therapy for the EU's clean energy transition

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## INTRODUCTION

In 2022, Russia's invasion of Ukraine and its weaponisation of the gas supply to Europe triggered an unprecedented energy crisis in the EU. The abrupt cut-off of Russian gas supplies to several member states in May and June 2022, further compounded by a partial shutdown of the French nuclear fleet<sup>1</sup> and severe summer droughts that hampered EU hydropower generation<sup>2</sup>, induced a perfect storm on European energy markets. The objective of this Policy Brief is to assess how effectively the EU and its member states have aligned their actions in addressing the energy crisis with the strategic goals of the European Green Deal, reflect on the outlook and the main challenges for the EU's clean energy transition, and offer recommendations for the way forward.

## EUROPE'S RESPONSE TO THE ENERGY CRISIS: ALIGNED WITH GREEN DEAL OBJECTIVES?

### The Good

Various elements point to the success of the EU in advancing the transition towards clean energy in response to the energy crisis. The roll-out of renewable energy sources significantly accelerated across Europe, playing a vital role in absorbing the Russian supply shock. Solar generation saw spectacular increases in the EU, growing by a record 24% in 2022.<sup>3</sup> This "solar surge" was supported by resolute policies at the the EU and member state level.

Launched by the European Commission in May 2022 as the EU's post-invasion energy strategy, REPowerEU heralded renewable energy as a crucial pillar to end dependence on Russian fossil fuels.<sup>4</sup> REPowerEU raised the EU's overall renewables target to 42.5% by 2030 "with an additional 2.5% indicative top up that would allow

to reach 45%".<sup>5</sup> It also focused on speeding up permit-granting procedures for green energy by declaring certain types of renewable projects as being in the overriding public interest and by creating so-called "acceleration areas" for renewable deployment.<sup>6</sup> These measures have proven significant in tackling slow administrative processes, a major obstacle to the clean energy transition in the EU.<sup>7</sup>

Member states further bolstered these efforts at the European level by similarly revising their renewable aspirations upwards. Germany, Portugal, and several others increased their 2030 targets<sup>8</sup> – even Poland, with a 70% share of coal in its power mix, now hopes to produce 47% of its electricity from renewables by 2030.<sup>9</sup>

These renewed national ambitions were not paid lip service but instigated tangible action. In parallel to European activity in this domain, Greece took determined measures to modernise and simplify national permitting processes, leading to a quick rise to second place on the EU's solar leaderboard in 2022.<sup>10</sup> Through the introduction of effective measures such as net-metering – obligating power companies to fairly compensate households for rooftop solar generation – the Netherlands took the top spot with a 14% share for solar in its electricity mix, surpassing substantially sunnier Mediterranean countries such as Spain, Greece and Italy.<sup>11</sup>

Positively, Europe's "renewable revolution" coincided with a structural decline in European gas demand. Substantial energy-saving efforts by citizens and companies were at the basis of this reduction, with demand cuts equivalent to those seen during the most severe COVID-19 lockdowns.<sup>12</sup> Energy efficiency measures also played a pivotal role. Member states introduced various financial incentives for energy-efficient home upgrades, such as retrofits

and insulation, installation of heat pumps, replacing old domestic appliances with newer models, and more. This was not without success – 2.8 million heat pumps were installed across Europe throughout 2022, leading to a drop in natural gas use in the building sector that will carry over into the coming years.<sup>15</sup>

It is worth highlighting that the lasting decline in EU gas consumption has not occurred in tandem with a similarly structural increase in European coal demand. EU coal power generation did grow by 6.7% in 2022, but this was predominantly due to the shortfalls in nuclear and hydro generation during the summer months, not to fill the gap in Russian gas supplies.<sup>14</sup> In any case, this increase was merely a temporary measure in extraordinary circumstances; the last four months of 2022 already saw coal generation below 2021 levels.<sup>15</sup>

### **The Bad and the Ugly**

There is no doubt that the EU has made progress in its move to clean energy since Russia invaded Ukraine, but depicting an all too positive picture would be wrong. While energy savings, energy efficiency measures and new renewable capacity have all been crucial in weathering the storm, the diversification of energy imports has also played a major part. EU imports of (mainly US) LNG drastically increased in 2022 – rising by as much as 60% – and compensated for the lion's share of the shortfall in Russian gas supplies.<sup>16</sup>

The EU's "dash for gas" has not been without consequences. Developing countries such as India, Bangladesh, and Pakistan were priced out of the global LNG market, turning them to other dirtier forms of fuel to satisfy their growing energy needs.<sup>17</sup> This risks derailing the energy transition of these fast-growing economies, previously counting on LNG as a transition fuel away from coal-fired power.

Moreover, the rush for gas has resulted in a frenzy of new LNG import terminals being announced by member states, with minimal cross-border coordination. This lack of coordination risks resulting in a huge LNG import overcapacity, far exceeding future LNG demand projections in the EU and thus becoming "the world's most expensive and unnecessary insurance policy".<sup>18</sup> Equally concerning are the recent LNG deals pursued in parallel to this infrastructure build-out. In October last year, European majors Total, Shell and ENI all signed 27-year agreements to import LNG from Qatar into the EU, with deliveries starting in 2026.<sup>19</sup> Not only do these contracts, therefore, run beyond the EU's mid-century goal of climate neutrality, but soon they might also make little economic sense. According to the International Energy Agency (IEA), an "unprecedented surge" in new LNG export capacity from 2025 onwards is likely to create a serious supply glut in the global LNG market.<sup>20</sup> In other words, European buyers might soon face much more favourable prices on spot markets than they currently do under these long-term agreements.<sup>21</sup>

In addition to the EU's dash for gas, the Russian invasion of Ukraine and the ensuing energy crisis have also

prompted an unsettling upsurge in fossil fuel subsidies across Europe. To shield households and companies from soaring energy prices, member states put a wide range of financial benefits and compensation mechanisms in place. Apart from being poorly targeted and costly – an estimated \$350 billion was spent by EU governments in 2022 alone<sup>22</sup> – these often amounted to direct or indirect subsidies to fossil fuel consumption. By keeping gas, electricity and petrol prices artificially low, these measures distorted price signals to consumers, thus reducing incentives to save energy or switch to cleaner alternatives.<sup>23</sup> A notorious example is the so-called "Iberian exception", the cap on wholesale gas prices in Portugal and Spain approved by the Commission under EU state aid rules in June 2022.<sup>24</sup> Not only did the price cap induce a truly massive spike in gas demand in the Spanish power sector (a +50% year-on-year increase in 2022) – arguably the absolute opposite of what emergency interventions in response to the Russian supply shock had to achieve – it also led to booming electricity exports from Spain to France, effectively resulting in Spanish subsidies for cheaper electricity in France.<sup>25</sup>

### **OUTLOOK FOR THE EU'S CLEAN ENERGY TRANSITION**

It is safe to say that Europe is currently in a relatively comfortable position, far away from the extreme turbulence, predictions of gas shortages and doomsday scenarios of the previous winter. While still above pre-war levels, European gas and electricity prices are now significantly below the peak of August 2022. Meanwhile, EU gas storages are at record levels,<sup>26</sup> and the share of Russian gas in total EU gas demand has declined from over 40% before the war to less than 10% now.<sup>27</sup> As such, the energy crisis has entered a less acute phase, with the risk for similar price shocks as those seen last year markedly lower.<sup>28</sup>

However, new issues have begun to emerge as Europe has accelerated the clean energy transition over the past 1.5 years. The swift deployment of solar and wind energy has triggered a corresponding surge in the EU's reliance on China for critical raw materials and clean tech products. The Chinese dominance in these supply chains is both daunting and unmatched. An illustrative example is the solar supply chain; China produces 88% of the global supply of polysilicon (the main raw material for solar), 97% of the silicon wafers (the core component of solar cells), and 85% of the world's solar cells.<sup>29</sup> Consequently, the rise in European solar generation has led to a concomitant increase in the dependence on China for these products; in 2022, an astonishing 96% of the EU's solar panel imports came from China.<sup>30</sup>

This is not the only issue. The uptake of technology like EVs and heat pumps and the growing penetration of renewables are producing grid congestion in many parts of Europe, increasingly turning grids into a major bottleneck for the green transition.<sup>31</sup> There are also financing difficulties for renewable energy developers in the face of rising interest rates and supply chain inflation

coupled with subsidy auctions that have not kept pace.<sup>32</sup> Furthermore, there are skills shortages for net-zero industries, mounting tensions between the deployment of renewables and other EU objectives such as nature protection and maintaining public support for the Green Deal, and the overarching competitiveness dimension to it all: how can the EU economy carry the costs of the green transition while remaining competitive with other parts of the world with less ambitious climate policies?<sup>35</sup>

In short, the main question in Europe is no longer how to compensate for the sudden shortfall in Russian gas supplies but how to ensure that the shift away from fossil fuels is as smooth and swift as possible, in line with the strategic objectives of the Green Deal and without creating any new unwanted dependencies on third countries like China.

This is reflected in the recent initiatives at the European level. For example, the Green Deal Industrial Plan (GDIP), launched by Commission President Von der Leyen in February 2023 as a direct reaction to the US Inflation Reduction Act (IRA), President Biden's venture into green industrial policy featuring \$370 billion to decarbonise the American economy with billions of dollars in new tax credits for clean energy technologies.<sup>34</sup> The GDIP consists of two main proposals: 1) the Critical Raw Materials Act (CRM Act), and 2) the Net-Zero Industry Act (NZIA). The CRM Act aims to secure sufficient access to raw materials crucial for the clean energy transition (e.g. rare earth minerals like neodymium, essential for the permanent magnets used in wind turbine generators and EVs) by establishing targets and support measures for domestic extraction, processing and recycling.<sup>35</sup> On the other hand, the NZIA's goal is to build a strong manufacturing base in the EU for a select few net-zero technologies. It does this by improving the conditions for setting up and investing in net-zero projects in Europe, with the aim that the EU's clean tech manufacturing capacity reaches at least 40% of the EU's deployment needs by 2030.<sup>36</sup>

It is still to be seen how or whether the GDIP can provide a credible response to the US IRA. With fiscal competencies remaining an almost exclusively national prerogative in the EU, it cannot provide the financial firepower of its American counterpart. Therefore, out of sheer necessity, the proposals focus on fast-tracking permitting. It has been argued that this is misplaced; skills and access to funding, not slow permitting procedures, are the main barriers to the development and expansion of the EU's clean tech industry.<sup>37</sup> Hence, in its current form, the GDIP may set targets, but lacks viable pathways to achieve them.

At the end of October 2023, the Commission released the European Wind Power Action Plan, which seeks to revive Europe's ailing wind power industry through faster permitting, improved auction design, facilitating access to financing, measures to address skills gaps, and more.<sup>38</sup> In addition, it announced a dedicated Action Plan on grids, which was, in turn, unveiled at the end of November.<sup>39</sup> The Grids Action Plan is a laudable initiative in that it rightly puts grid development on the European policy agenda, although it mainly revisits the familiar recipes of earlier initiatives, such as speeding up

permit granting. Worth mentioning, however, is that the measures regarding permitting are now also accompanied by an initiative to improve stakeholder engagement – a so-called “Pact for Engagement”.<sup>40</sup> The explicit acknowledgement of the importance and the need for a better dialogue with broader society in building out grids, albeit in the form of a non-binding pledge (like the rest of the plan), is unequivocally a step forward, echoing the IEA's recent report on networks which equally underscores that “societal support is critical to timely grid deployment”.<sup>41</sup>

Notwithstanding much more work remains to be done for an adequate response to the challenges looming over Europe's clean energy transition, the least that can be said is that EU policy is cognisant of those challenges and seeks to deal with them while observing a balance between the right objectives. The following section will offer recommendations for EU and national policymakers to accelerate Europe's way out of the energy crisis and into a clean energy future.

## RECOMMENDATIONS

- The EU must continue its work on accelerating national permitting procedures for renewable energy projects and grids. These efforts should not be focused on allowing national authorities to bypass the requirements of other European (e.g. environmental) legislation but rather on the modernisation, digitalisation and cross-border harmonisation of procedures, *inter alia* through capacity-building and the exchange of best practices between national administrations. The acceleration of permitting procedures should not come at the expense of other EU objectives, such as biodiversity and nature protection.
- The (almost) singular focus on fast-tracking permitting must be complemented by measures at both the European and national level to more actively involve EU citizens, on whose support the success of the Green Deal crucially hinges, in the transformation of our energy systems. The Pact for Engagement included with the Grids Action Plan is a commendable step, but this now needs to be expanded beyond grids and result in more tangible action.
- A coordinated, European approach needs to be developed towards new LNG import infrastructure so that the cost-effectiveness of these investments can be maximised and the risk for carbon lock-in, conversely, minimised. The EU and its member states should not support LNG supply agreements that stretch beyond 2035, especially in light of the expected supply glut from 2025 onwards, which may allow for much cheaper LNG purchases on spot markets than are currently offered under long-term contracts.
- The EU must strengthen climate and energy cooperation with the third countries affected by its dash for gas by supporting them financially and through other means in deploying renewable energy sources and a just transition away from coal. This cooperation can also include the resale or re-renting

of floating LNG import capacity to these countries at favourable conditions to reduce the share of coal in their power mix.

- Financial support by member states must be targeted towards vulnerable households and the worst affected businesses. It must also be smart, i.e. provide relief without undercutting incentives to reduce energy consumption or switch to cleaner alternatives. Subsidies that encourage energy savings, improvements to energy efficiency, or support the development of critical skills for net-zero technologies and industries among disadvantaged groups can be win-wins, tackling the energy crisis as well as the climate emergency by propelling the shift away from fossil fuels while simultaneously enhancing the just transition.
- Rather than attempting to emulate the US IRA, the EU must recentre the GDIP around its competitive advantage; creating and regulating competitive markets – for critical raw materials, clean tech

products and skills for the net-zero economy. Considering access to financing remains a major hurdle to clean tech projects, the next Commission must make ambitious reforms such as creating a banking and capital markets union part of the agenda. In the absence of (political willingness to create) an EU-level funding instrument, supranational oversight of state aid expenditure should again be tightened to prevent further fragmentation of the single market.

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<sup>1</sup> De Beaupuy, Francois; Celia Bergin and Todd Gillespie, “[French Nuclear Revival Hits Trouble as New Reactor Defects Found](#)”, *Bloomberg*, 11 March 2023.

<sup>2</sup> *S&P Global*, “[Droughts rattle Europe’s hydropower market, intensifying energy crisis](#)”, 5 August 2022.

<sup>3</sup> Ember (2023), “[European Electricity Review](#)”, p. 23.

<sup>4</sup> *European Commission*, “[REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition](#)” (accessed 7 December 2023); NB: the Commission originally proposed a binding EU-wide target of 45%.

<sup>5</sup> *Council of the European Union*, “[Council and Parliament reach provisional deal on renewable energy directive](#)” (accessed 7 December 2023).

<sup>6</sup> *Ibid.*

<sup>7</sup> *WindEurope*, “[Revised EU Renewables Directive set to speed up wind permitting](#)” (accessed 7 December 2023).

<sup>8</sup> Goldthau, Andreas C. and Richard Youngs (2023), “[The EU Energy Crisis and a New Geopolitics of Climate Transition](#)”, *Journal of Common Market Studies*, Volume 61, pp. 116-117.

<sup>9</sup> *Notes from Poland*, “[Poland aims to produce three quarters of power from renewables and nuclear by 2040](#)” (accessed 7 December 2023).

<sup>10</sup> *EY*, “[Law 4951/2022 – Modernization of the Licensing Process for RES Projects & Licensing of Energy Storage](#)” (accessed 7 December 2023).

<sup>11</sup> Ember (2023), *op. cit.*, pp. 24-26.

<sup>12</sup> *Ibid.*, p. 20.

<sup>13</sup> Zeniewski, Peter; Gergely Molnar and Paul Hugues, “[Europe’s energy crisis: What factors drove the record fall in natural gas demand in 2022?](#)”, *International Energy Agency* (accessed 7 December 2023).

<sup>14</sup> Ember (2023), *op. cit.*, p. 56.

<sup>15</sup> *Ibid.*

<sup>16</sup> *International Energy Agency* (2022), “[How to Avoid Gas Shortages in the European Union in 2023](#)”, Paris, p. 6.

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<sup>20</sup> *International Energy Agency* (2023a), “[World Energy Outlook 2023](#)”, Paris, pp. 20-21.

<sup>21</sup> Van de Graaf, Thijs (2023), “[Gulliver Unchained? Europe’s Changing Relations with Oil and Gas Producers](#)”, Brussels: Egmont Institute, pp. 4-5.

<sup>22</sup> *International Energy Agency*, “[Fossil Fuels Consumption Subsidies 2022](#)” (accessed 7 December 2023).

<sup>23</sup> See also: Gros, Daniel (2022), “[Why gas price caps and consumer subsidies are both extremely costly and ultimately futile](#)”, Brussels: CEPS; McWilliams, Ben; Giovanni Sgaravatti; Simone Tagliapietra and Georg Zachmann (2022), “[A grand bargain to steer through the European Union’s energy crisis](#)”, Brussels: Bruegel, pp. 12-13.

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<sup>27</sup> Zeniewski, Peter; Gergely Molnar and Paul Hugues, *op. cit.*

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<sup>31</sup> *International Energy Agency* (2023b), “[Electricity Grids and Secure Energy Transitions](#)”, Paris.

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<sup>33</sup> See also: Foy, Henry and Ian Johnston, “[The EU’s plan to regain its competitive edge](#)”, *Financial Times*, 5 November 2023.

<sup>34</sup> *The White House* (2023), “[Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act’s Investments in Clean Energy and Climate Action](#)”, Washington D.C.

<sup>35</sup> *European Commission*, “[Critical Raw Materials: ensuring secure and sustainable supply chains for EU’s green and digital future](#)” (accessed 7 December 2023).

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<sup>40</sup> *European Commission* (2023), *Grids, the missing link: An EU Action Plan for Grids – Annex II: A Pact for Engagement*, COM(2023) 757 final, Brussels, pp. 21-22.

<sup>41</sup> *International Energy Agency* (2023b), *op. cit.*, pp. 73-74.