The energy crisis in the EU:

an updated outlook on underway actions and proposals to limit the impact on Citizens

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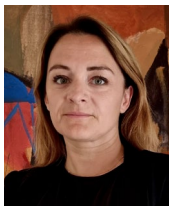
Building a better working world

Introduction



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In brief:

- The economic crisis in the EU **needs short-term solutions**; one of the most discussed is the gas price cap, on which Member States have recently found a common agreement.
- **Medium-term solutions** should consist of **market regulation measures.**
- **Long-term actions** will rely on **new technologies** and **investments** included in the **REpowerEU plan.**

The recent energy crisis has brought back an old challenge for the EU to tackle: inflation. The increase in prices is causing great economic distress to Member States, particularly to those characterized by a strong reliance on Russian gas exports. This paper aims at providing an updated outlook on the underway actions and proposals made by the EU, or other stakeholders (e.g., Member States, institutional players), to limit the economic impact on citizens, in a continuum with the other papers

published by the EY organization in the second half of 2022 (i.e., "Gas price cap, An EY assessment and PoV on feasibility, impacts and consequences expected from the implementation of this mechanism at EU level", October 2022 and "International energy crisis: impacts on decarbonization strategies", August 2022). The different measures suggested in the EU have been analyzed to assess the expected value of each by taking into consideration the time frame in which they will be implemented.

Chapter 1

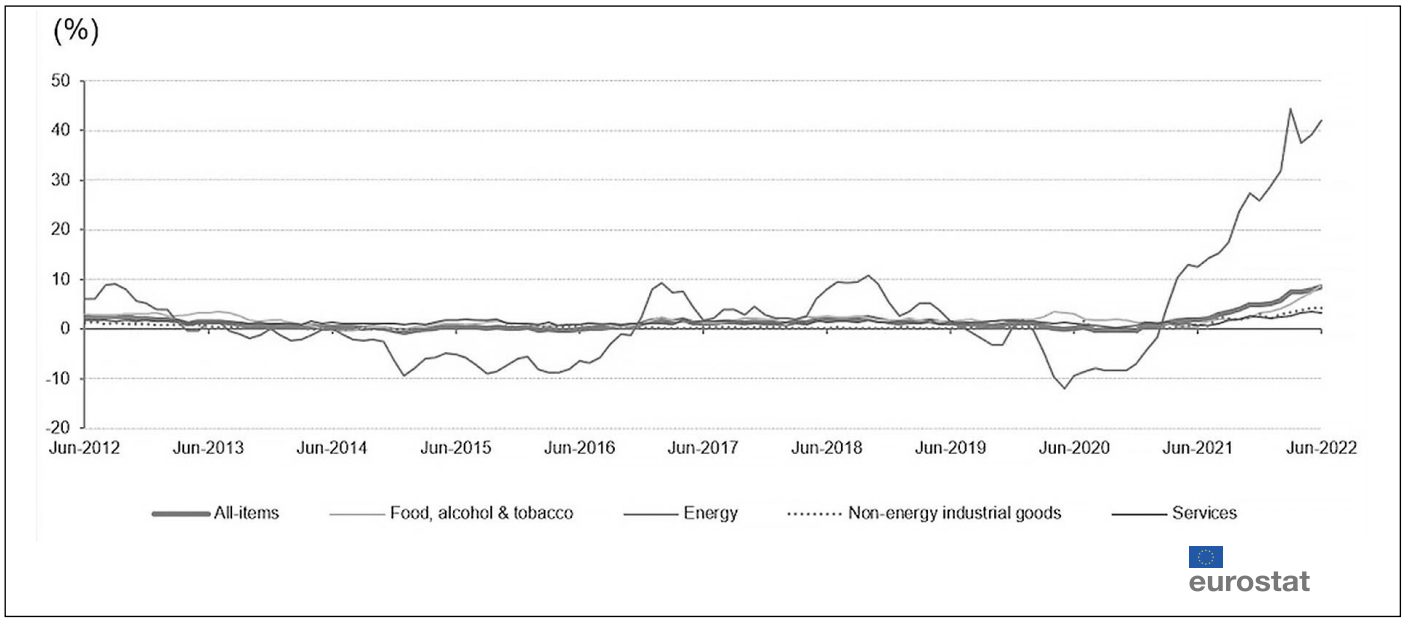
European energy crisis: the short term actions

In the short term, one of the most discussed solutions is the implementation of a gas price cap. On 22 November, the EU Commission proposed a cap which, however, did not follow the direction desired by many EU countries. On 19 December, the European Council of the Energy ministers finally found a common agreement.

From the outset of the last autumn, a decrease in the price of gas has been observed in the EU market based on the peaks reached during the summer. The current price, which is not far from 150 €/MWh (140 €/MWh on 12 December),[1] is indeed lower if compared to the overblown levels reached last summer, especially in August, when prices reached 340 €/MWh. Despite this reduction, the recorded levels still represent a critical challenge for the EU economy, as the price level is still far superior to those recorded before the beginning of the crisis. For instance, to highlight the difference, it is useful to remember how, at the beginning of 2021, the Title Transfer Facility (TTF) spot price was around 20 €/MWh. These exceptionally high levels of gas prices are causing direct and indirect damages to EU citizens and companies. The direct damages are due to the growing cost of utilities for both domestic and business use, which could lead to temporary shutdowns or even bankruptcy. For instance, Uniper, the German gas giant, found itself in an uncomfortable situation, having to find gas at market prices, due to the shortage of Russian supplies, and then resell it at lower prices to honor the existing contracts. To solve this crisis, the German government intervened by launching the nationalization of Uniper, an operation which was harshly criticized by the governments of the other Member States. On the other hand, the indirect damages on EU citizens and companies are due to the inflationary effects on the economy. According to Eurostat, the rate of increase on an annual basis of the Harmonised Index of Consumer Products (HICP) reached 10.6% last

October and 10%[2] in November, causing a major loss in purchasing power among EU citizens. As shown in the chart below, such variations in the HICP had never reached these levels in the last 10 years, mainly driven by the price of energy.

Euro area annual inflation and its main components, November 2012 – November 2022[3].



To limit the direct and indirect effects on the EU economy, different solutions have been discussed inside and outside the EU and by the various Member States institutions. One of these is the adoption of a gas price cap, a mechanism previously discussed by the EY organization in the paper published in October, ''Gas Price Cap: Feasibility, Impacts, and Consequences'' (link available here). The adoption will result in the establishment of a binding price limit to EU energy providers. According to this, on 22 November, the EU Commission proposed a safety ceiling on gas prices, equal to 275 €/MWh on the month-ahead TTF derivatives. To get this cap operational, two conditions had to be satisfied: the front-month TTF derivative settlement price had to exceed 275 €/MWh for two weeks and TTF prices had to be 58 €/MWh higher than the Liquified Natural Gas (LNG) reference price for 10 successive trading days within the two weeks.

Once both conditions were met, the price correction mechanism ordered the cut of the exceeding quota beyond the safety price ceiling for front-month TTF derivatives. This measure had still been criticized by most of the EU Member States. The common opinion was based on the fact that the ceiling price level had been set too high, near to the peaks reached in August '22. This, along with the second condition on

LNG, made the correction mechanism too hard to be activated. Just the critical contingencies, such as the ones represented by the TTF derivate settlement price exceeding 275 €/MWh for two weeks, would have allowed the enabling of the ceiling.

Without having identified a suitable solution for most of the Member States on 24 November, the decision was postponed to the European Council of the Energy ministers meeting of last 19 December. On this day, EU member states finally agreed on the level and on the conditions for the cap. Starting from 15 February 2023, a price cap will be activated when, for three successive working days, both the following conditions will be satisfied:

- The gas price exceeds 180 €/MWh.
- At the same time, it results to be € 35 higher than a reference price for LNG on global markets.[6]

This Market Correction Mechanism will not allow transactions concerning the natural gas futures above the "dynamic bidding limit" while it is in active status. The reference price for LNG on global markets, that is based on an international basket of LNG transaction hubs, plus 35 €/MWh is the so called "dynamic bidding limit". When the LNG reference price results to be below € 145, the dynamic bidding limit is kept at the sum of € 145 and € 35.

The cap would last 20 days from its activation, and it would be deactivated if the dynamic bidding limit results are lower than 180 €/MWh for three consecutive days. It can also be suspended if concerns about supply issues rise. At any time indeed, the Commission can suspend the market correction mechanism. The Commission has also identified some specific cases in which the suspension mechanism of the gas price cap takes place, such as: an eventual growth in the gas demand by 15% in a month or by 10% in two months, a relevant decrease in the LNG imports, a significant drop of traded volume on the TTF in comparison to the previous year.[7]

This decision has been reached with a qualified majority. This means, for the EU rules, the approval of at least 55% of member countries, representing at least 65% of the EU population. Not all the countries indeed approved the proposal: Hungary rejected it, while Austria and the Netherlands abstained. However, it should also be noted that the European Commission may propose amendments to the gas price cap regulation to include derivatives traded on unregulated markets (over-the-counter, OTC), or to review the elements taken into consideration for the reference price of the gas. This leaves room for maneuver to the Commission, in order to intervene also on the approximately two-thirds of the contracts traded outside the regulated market.

A maneuver aimed at rejecting the criticisms that will inevitably be leveled at the bold moves of the Commission.[8]

The measure on the gas price cap was also accompanied by an important step forward in protecting the competitiveness of European companies against large international competitors. After a negotiation that lasted almost two days, the European Institutions have reached an agreement on including a great innovation within the Emissions Trading System (ETS), which is the reference market for the CO_2: the Carbon Tax at borders. With this new system, the European price of CO_2 will have to be paid for imported products from some specific sectors from non-EU countries before entering Europe. A form of protection in favor of European companies, to try to make them compete on equal terms with those of countries where climate policies are less stringent.[9]

According to the think tank Bruegel's opinion shared by EY professionals, in the short term, a possible different solution to the gas price cap could also be the adoption of an EU energy crisis fund. If properly designed and implemented, this could be more efficient than a price ceiling as it would foster energy savings, providing a minimum level of support to all EU countries while accelerating the rollout of clean tech.[10] Despite having encountered some favorable opinions expressed by some of the EU Commission members, this measure is not yet taken into consideration by the one who was then the European Commission President.

While EU leaders work to find short-term containment measures against the energy crisis, it is important to highlight that the supply of energy will remain a critical issue for the global economy and environment in the medium and long term as well. The EY energy market trends analysis underlines that the energy demand will only grow in the future even if, according to the latest market reports by International Energy Agency (IEA), the global electricity demand growth at this moment is slowing down, weighed down by economic weakness and energy high prices. The 2008 economic crisis and the recent COVID-19 pandemic restrained the EU gross domestic product (GDP), but the trend for energy consumption increase is clear. The current energy production struggles to keep up and the boost in energy savings is not enough to meet the demand. The hijacking of ships carrying LNG to Europe has deprived some EU countries of their main source of energy supply, causing, in some cases, serious energy emergencies.

Apart from the Russian crisis, it is necessary to consider how climate change has shown even renewable sources to have major limits. This year's

drought which hit multiple EU countries, combined with the wind crisis that hit the large offshore wind farms of the North Sea in Germany, are undeniable symptoms of an ongoing change that must be immediately addressed.

Chapter 2

Market regulation measures: solutions to be implemented in the medium-term

It is now clear that the structure of the energy market must change and that it is no longer sustainable to support the current structure. Renewable sources, characterized by their intrinsic nature of not being programmable, lead to imbalances and the market must adopt new structures to adapt, intercepting the opex and capex that distinguish this type of energy production.

Together with the policies undertaken for the gas price cap and the measures that can be activated in the short term, the EU is questioning the need to change the structure of the energy market. Removing the link between the price of energy and gas, and thus decoupling the market, could represent a solution to create separate energy markets based on the sources used for energy production. In a hypothetical new decoupled system, the possibility for producers, for example of wind and solar energy, to offer lower prices to final consumers could favor the growth of renewables, which until now has been largely driven by higher profit margins, compared with other sources, and determined by the lower or zero direct production cost. Therefore, energy supply contracts based on renewable sources would become much more attractive to the public. Still, it is necessary to consider that the effectiveness of the regulatory reform would be highly dependent on the structure and regulation of the market, and the drafting and development of a new structure would require the completion of a complex and lengthy process.

It must be considered that, currently, two aspects of the energy market have been formed. One looks at the renewable energy sources market, characterized by capex intensity and low

and almost stable opex technologies. The other one is represented by lower capex but higher and variable operating costs, depending on the resource used to produce energy. This approach decouples the requirements of a single electricity market and generates price flexibility. Therefore, there could be some scenarios of excessive generation of renewable sources, creating time frames of price reductions. At the same time, there could also be periods in which generation from renewable sources will be insufficient, creating a shortage in energy offerings, and producing a subsequent increase in energy prices. The market must be accompanied by a system that can remunerate production capacity, according to the vision of EY professionals in the industry, to foster efficient and correctly sized plants to respond to the growing energy demand. The current situation has accelerated the debate and led to questions about the functioning mechanisms of the market. In the short term, joint initiatives could be carried out to achieve a balance between the renewable energy component and the marginal one. But in the long term, it is necessary to think about developing an ecosystem in which different technologies can operate freely to pursue the objectives of decarbonization, maintaining the balance between security and competitiveness, all in a reasoned and shared perspective at the EU level.[11]

Decarbonization and the broader use of renewable sources also involve an adaptation of the energy grid with a view to demand response and demand flexibility. The paradigm shift toward distributed generation is now clear. The energy system must be made adaptable by involving energy producers and proposing shared strategies. Power systems must be increasingly flexible to meet the growing shares of solar and wind energy. One way to achieve this target is to adjust electricity demand to better match solar and wind power generation over the course of each hour, day, week or longer timeframes. On the demand side, the flexibility can be achieved by permitting the system operator to control price signals to various sources of electricity demand, including power-to-heat, power-to-hydrogen, electric vehicle charging, smart appliances and industrial demand response.

Chapter 3

New technologies to adopt as long-term solutions

In the long term, the adoption of new technologies suggests a European infrastructural adjustment to push the interconnection of national energy grids, combined with securing raw materials for energy storage, and creating favorable ground to the green hydrogen trend, while keeping an eye on nuclear power revamping.

Adapting the infrastructures to foster the interconnection of the EU energy grids

The elements related to new forms of energy and energy transport bring with them the complexity of infrastructure adaptation and the need for increasing interconnection within the EU network. Several EU countries, especially Germany, suffer from a lack of modern, remotely controlled, energy equipment, such as smart meters, that allow the management of demand peaks through remote interventions. On the contrary, other countries such as Italy, whose energy transport network has always been in distress, adopted this technology early to overcome production drops and demand peaks. What concerns the EU energy transport structure are the multiple limits in its interconnections. For example, Spain and Portugal have always been essential docking points for foreign LNG, on which they have always relied heavily. But the Iberian Peninsula has few points of contact with the French network and the rest of the EU. The transportation network for power and gas finds one of its greatest developments in Italy, both in terms of infrastructure and technology. Greece can also rely on the new infrastructures built with Chinese investments in the port of Piraeus, which is strategically located near the European entry points of the gas pipelines arriving from Central Asia. The peninsular countries of Europe must also become hubs for the release of LNG in the rest of the EU if fossil fuels are to remain the primary energy source. To counterbalance the impact produced by conventional polluting power plants,

carbon capture and storage (CCS) mechanisms could be implemented to enable the capture of the CO_2 produced in underground deposits such as oil or exhaust gas basins. Still, issues that arise related to this solution are:

1) It is a very energy-intensive mechanism, currently little in use.
2) Cases of leakage of stored CO_2 occurred in the past, demonstrating its unstable reliability so far.

An additional challenge the EU faces concerns the orientation toward distributed generation to solve the impacts produced by the electricity transport system. In particular, the electricity grid is not ready to manage constant inputs of energy with many small, widespread plants, leading to problems with system balancing. If advanced storage systems are not implemented in the electricity transport network, the imbalance between energy supply and demand will not be levelled. The optimization of the network is also a pivotal point from the perspective of EU energy solidarity. If physical and technological gaps persist between European countries, a common transport network implementation is unthinkable. It is important to remember that each country has its peculiarities, which makes full interconnection very complicated. Perhaps, following the intention of the EU Commission to create a common energy market at the European level could also lead to possible paths to solve the transport system issues.[12]

Storage mechanisms and the EU strategy to secure the supply chain of raw materials

An important support to the interconnection of the electricity and gas transportation system, is the power-to-gas technology. This is an element that plays a very important role in the development and spreading of renewables. The ability to store excess electricity produced by solar, wind or hydraulic power plants in the form of methane (synthetic natural gas) or hydrogen represents a very promising technology for a sustainable energy supply.

The growing push toward renewables comes with accumulation issues and, inevitably, leads to the problem of storage systems. If on the one hand, hydrogen is a form of energy that lends itself to storage (through compression in cylinders or storage in large underground basins), on the other hand, with renewable energy sources, such as photovoltaic and wind power, one must invest in chemical storage and batteries. The ability to go and store significant quantities of energy, to be able to exploit them later, is a force factor that will surely push decarbonization. Still, the problem of storage systems clashes with the high cost of technology, despite the production of batteries influencing production curves toward cost reduction.

Another major issue related to this technology is the shortage of raw materials in the EU, especially lithium, on which the development of storage systems and batteries is built. In order to resolve the shortage and secure a sufficient supply of raw materials, the EU must develop and implement a series of commercial agreements and reach a competitive position against Eastern countries, especially China. For the EU energy market to be fully mature, environmentally sustainable, and effective, security of supply must be a priority issue. In addition, to secure the supply, the EU should also invest in the creation of a knowledge-sharing platform in the energy field, to favour know-how and resource retention (e.g., financial, technical) within its territories. Access to knowledge, data and information networks, in addition to the implementation of regulatory simplifications, incentives to manufacturing companies, and training programs (i.e., reskilling, upskilling) to local communities, will lead to the creation of specialized industrial districts. These districts will assume a relevant role in the lifecycle of renewables, from raw materials procurement, recycling of exhausted equipment, to the design of new and innovative solutions for the energy sector. Partnerships with private sector players will be a key element in building up these productive and innovative districts, to regain a competitive role against competitors from Far East countries. This set of actions could easily lead to powerful effects on the GDP of the EU countries, producing a value cycle between EU institutions and

Member States governments, citizens, companies, and workers.[13]

Towards the full development of green hydrogen

The technological power of the EU is now moving in parallel in various aspects. Hydrogen, in its sustainable ''green'' form, is generating more and more interest from the private sector. As technology advances and costs come down, green hydrogen has the potential to play a much bigger role in reaching the global goal of a sustainable, green society and economy. Still, some factors must be considered in the full adoption of green hydrogen. A big component of the full cost of hydrogen is the complexity of connecting large production points with decentralized consumption. Countries with natural gas pipelines can accelerate the blending result with methane to start adding consumption volumes, driving demand and production. On the other hand, there is strong complexity behind this solution. A short-term alternative is to develop H2 districts to connect a bundle of consumption points with one or more production points, limiting the related complexity. As has been done for renewable sources, one of the best tools to facilitate their development and adoption is to create incentive schemes to attract operators toward green hydrogen. In addition, big energy players becoming early adopters of green hydrogen will have the potential to accelerate generation, storage and distribution capabilities.

The same concept could be extended to biofuels. However, in a landscape of shortage of food stocks and as more and more foreign countries experience crisis, it is also necessary to evaluate the impacts.[14]

A nuclear revamping trend in the EU

Other long-ranged solutions to solve the energy crisis can be through innovative types of energy resources and by the development of infrastructures. Although some of the long-term strategies might not be very appreciated, such as the rebirth of nuclear energy in Europe, it should be emphasized that research in this area has never stopped. In a historical moment in which energy security is more than ever in the balance, relying on a reliable source from the point of view of production continuity seems to be the most effective solution, by combining it with an energy transition that abandons fossil fuels. Renewable energy sources have their limits, as they must be combined with conventional plants (e.g., gas-combined cycles) to cover momentary peaks in demand or insufficient availability of environmental factors (e.g., sun, wind). To pursue a consistent energy transition, the EU must rely on a form of energy that can entirely replace fossil fuels, but the unstable production of electricity from renewables must be mitigated through an additional clean and continuous source, such as nuclear power.[15] Renewables are an essential part of our foreseeable future. Still,

they face security challenges of their own. China, which Brussels has linked as a collaborator, a profitable contender and a systemic rival, currently controls at least 75% of every crucial stage of solar photovoltaic panel manufacturing and processing. Reducing dependency on one authoritarian state only to consolidate this position on another one, would result in a strategic inefficiency, which Brussels could avoid by investing in nuclear energy.[16] Indeed, nuclear power is highly reliable as conventional sources (e.g., gas, coal), even mitigating the current issues the EU is experiencing with gas and LNG supplier countries, and reducing the pollution produced by coal. To provide an overview of this source of energy:

- Canada, Australia, Kazakhstan, along with the most reliable partners of African states are among the largest uranium extractors, contributing to about 65% of the global production.
- The new, fourth-generation reactors are safer and smaller.
- The widespread adoption of mini reactors are currently being studied to power up districts and participate in a distributed generation of energy (e.g., as energy communities).
- The issues related to waste management and the identification of storage sites remain, but increasingly better containment measures are being developed.

Among the EU territories, multiple powerplants are now ending their lifecycle. In France, a large control and maintenance plan for the plants has been recently issued. In Germany, some powerplants are about to reach decommissioning and the German government is prudently evaluating the building up of new powerplants. Italy launched preliminary studies on the potential comebacks of nuclear power production, and the minister of the infrastructures of the two-month-old government has shown real interest in this opportunity. Still, nuclear powerplants rely on a capex-intensive framework for development, building, implementation and running, in addition to requiring constant maintenance. Another effect to be considered is the negative impact that nuclear powerplants produce at a cultural level on the local populations. The incidents that occurred in the past fostered strong anti-nuclear protests and not-in-my-backyard (NIMB) demonstrations that will require intensive communication campaigns by those administrations evaluating or re-evaluating the nuclear energy source.[17]

Chapter 4

European Policy: an updated view on the REPowerEU long-term plan investments

The REPowerEU plan represented a significant and decisive step forward by the European Union, intending to speed up the energy transition and free European countries from Russian energy dependence. The plan represents a cornerstone of the European path toward decarbonization, and it is no coincidence that the investment plan budgeted by the EU has been remarkable. However, as often happens in democratic processes, bureaucratic constraints, such as Member States amendments, can partially slow down initial proposals and targets.

The EU's long-term strategy is depicted in the REPowerEU plan, presented on 18 May by the European Commission, to assume an independent position from Russian fossil fuels much earlier than 2030. This strategy must necessarily be accompanied by a solid investment program and a strict timeline to monitor the proper management of the funds.

The green energy connection and network integrations must be implemented through a combination of grants, procurement and financial instruments. A program should be defined based on multiple financial instruments to support different co-financing rates, depending on the type of the project and the infrastructure needed for transport (i.e., road, naval, air and rail), energy, and digital sectors. Priority must be given to those projects that aim to fill up missing cross-border links, remove bottlenecks or implement EU-widened systems.

For the transportation sector, projects relating to the completion of the trans-European network and its modernization, through the creation of new infrastructures and the update of existing ones, must be prioritized.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New technologies are expected to be implemented (e.g., online applications, and alternative fuels such as hydrogen and biofuels). New strategies must also be considered for increasing widespread and sustainable mobility, with incentives for European citizens to obtain low-polluted means of transportation that favour energy savings and ecological transition while fostering interoperability, safety, resilience, and accessibility of transport infrastructures.

In the energy sector, the enabling role of energy infrastructures for the transition to climate neutrality, the integration of EU energy markets and the interoperability of networks should be set as a top priority. Making EU countries increasingly aware that these levers can facilitate the path to net zero within 2050 is a good way to push change. As defined within the REPowerEU plan, a new category of cross-border projects is underway to achieve favorable economic conditions to increase the diffusion of renewables.

Concerning the digital network, the EU must ensure extensive coverage of 5G connectivity through the main communication routes, in addition to the implementation of significant updates to the backbone network infrastructure.

The EU estimated that € 210 billion of additional investments, between national and cross-border public and private sectors, are needed by 2027 to achieve the objectives of the REPowerEU plan, with a view to future energy independence and security. Cutting fossil fuel imports from Russia could save nearly € 100 billion a year at the EU level, although in the short term these funds will be diverted to gas supplies from other supplier countries. In addition, € 225 billion are already available in the form of loans under the Recovery and Resilience Facility (RRF), resulting in an excellent initiative to integrate legal acts and guidelines to help Member States in modifying and integrating plans for recovery and resilience, and achieve the energy transition goals.[18]

The current multi-annual financial framework already provides an investment of up to € 100 billion for cohesion policy to support decarbonization and green transition projects in renewables, hydrogen, and sustainable infrastructures. Through voluntary transfers to the RRF by individual Member States, an additional € 26.9 billion could be made available from the cohesion funds and € 7.5 billion from the common agricultural policy. The EU will double the funding allocated to the large-scale call for proposals of the Innovation Fund scheduled for autumn 2022, bringing it to around € 3 billion.

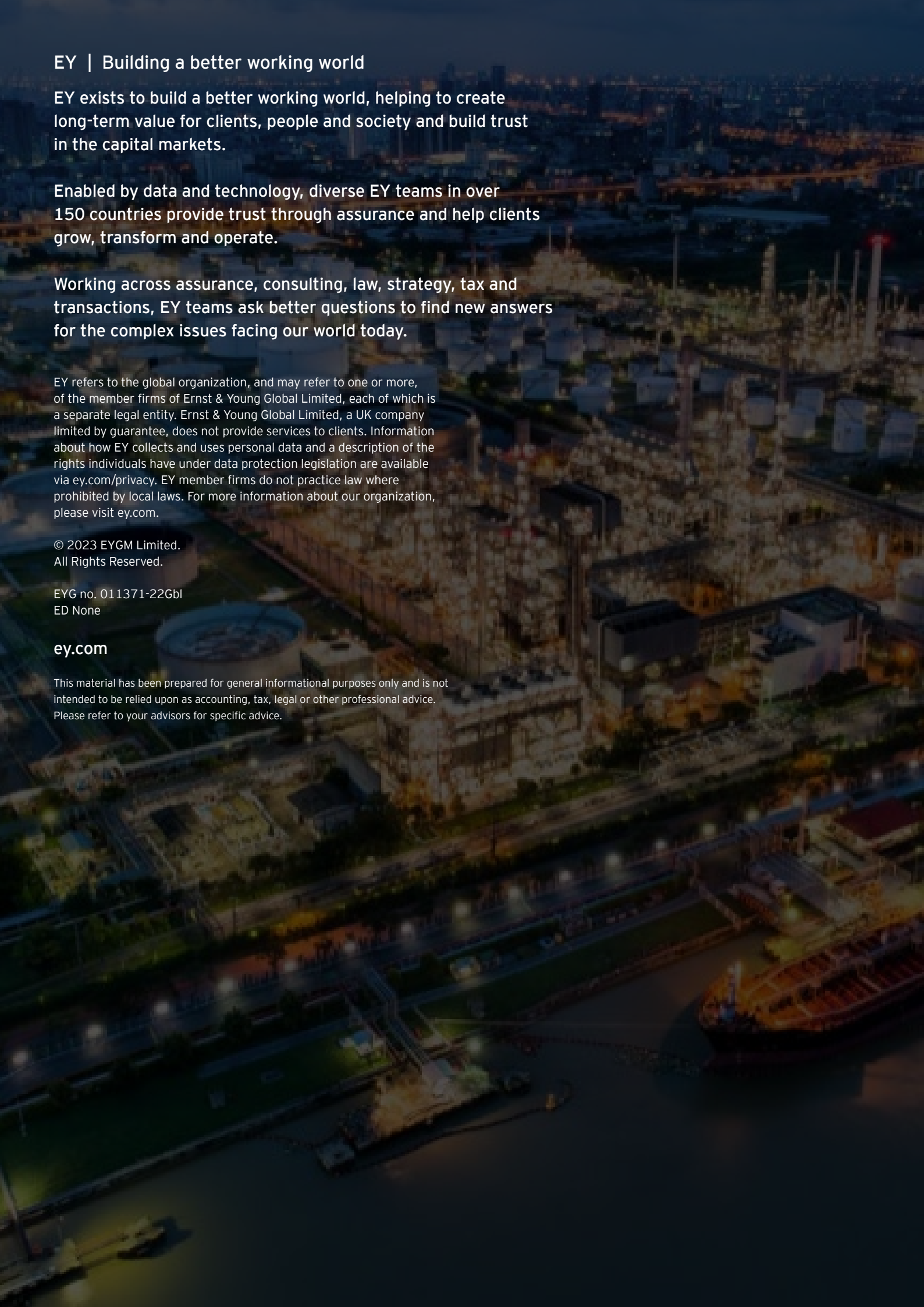
At the heart of Europe's energy

interconnection networks, additional gas infrastructures are required to fully compensate for the loss of Russian gas imports, which is estimated to require around € 10 billion in investment.

It shouldn't be an issue to meet the energy needs of the next decade without sticking to fossil fuels, creating stranded assets or undermining Europe's climate ambitions. The EU recently promoted a new call for proposals with a budget of € 800 million, which will be followed by another at the beginning of 2023, specifically to promote energy interconnection projects.[19]

However, proposals are emerging from European countries to retract some measures included in the REPowerEU plan. In the last few months, some amendments have been formulated by the EU countries to the EU Commission proposal. One of them aims at lowering the 2030 target for renewables in the EU energy mix from 45% to 40%. Another one aims at erasing the "overriding public interest" principle, which is typically effective against legal obstacles regarding the development of renewable projects. Therefore, the initial proposal of the EU Commission contained in the REPowerEU plan would seem to have been partially slowed down by the EU countries.[20]

1. www.tradingeconomics.com, accessed 20 December 2022
2. "Flash estimate - November 2022", Eurostat, https://ec.europa.eu/eurostat/documents/2995521/15265536/2-30112022-AP-EN.pdf/bbfcf655-d7fb-c928-3f54-29b9c808209c?t=1669737725327
3. "Euro area annual inflation and its main components, November 2012 – November 2022", European Commission, https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=532910
4. "Commission proposes a new EU instrument to limit excessive gas price spikes", European Commission, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7065, 22 November 2022
5. "Commission proposes a new EU instrument to limit excessive gas price spikes", https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7065, European commission, 22 November 2022
6. "To cap or not to cap: the deal Europe needs on energy prices", Bruegel, https://www.bruegel.org/blog-post/cap-or-not-cap-deal-europe-needs-energy-prices, 22 November 2022
7. "Action and measures on energy prices", European Commission, https://energy.ec.europa.eu/topics/markets-and-consumers/action-and-measures-energy-prices_en, November 2022
8. "Europe must fully embrace nuclear energy" The Interpreter, https://www.lowyinstitute.org/the-interpreter/europe-must-fully-embrace-nuclear-energy, 22 November 2022
9. "Gas e nucleare nella lista Ue degli investimenti «green». Via libera dell'Europarlamento", Il sole 24 Ore, https://www.ilsole24ore.com/art/gas-e-nucleare-lista-ue-investimenti-green-via-libera-dell-europarlamento-AEyKAdkB, 6 July 2022
10. "RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa", European Parlament, RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa | Attualità | Parlamento europeo (europa.eu), 10 November 2022
11. "EU countries eye scrapping 45% renewables target: document", Euractiv, EU countries eye scrapping 45% renewables target: document – EURACTIV.com, 13 October 2022
12. "Trans-European Networks for Energy", European Commission, https://energy.ec.europa.eu/topics/infrastructure/trans-european-networks-energy_en, accessed 20 December 2022
13. "REPowerEU: Joint European action for more affordable, secure and sustainable energy", European Commission, https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1511, 8 March 2022
14. "Hydrogen", European Commission, https://energy.ec.europa.eu/topics/energy-systems-integration/hydrogen_en, accessed 20 December 2022
15. "Europe must fully embrace nuclear energy" The Interpreter, https://www.lowyinstitute.org/the-interpreter/europe-must-fully-embrace-nuclear-energy, 22 November 2022
16. "Gas e nucleare nella lista Ue degli investimenti «green». Via libera dell'Europarlamento", Il sole 24 Ore, https://www.ilsole24ore.com/art/gas-e-nucleare-lista-ue-investimenti-green-via-libera-dell-europarlamento-AEyKAdkB, 6 July 2022
17. "As Putin Threatens Nuclear Disaster, Europe Learns to Embrace Nuclear Energy Again", Time, https://time.com/6169164/ukraine-nuclear-energy-europe/, 21 April 2022
18. "RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa", European Parlament, RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa | Attualità | Parlamento europeo (europa.eu), 10 November 2022
19. "RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa", European Parlament, RePowerEU: misure per l'indipendenza energetica nei piani nazionali di ripresa | Attualità | Parlamento europeo (europa.eu), 10 November 2022
20. "EU countries eye scrapping 45% renewables target: document", Euractiv, EU countries eye scrapping 45% renewables target: document – EURACTIV.com, 13 October 2022



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