# Energy Journal

Issue 24 / December 2022

## The energy puzzle: possible solutions to the rising cost


*A magazine about energy and more by* CESI

**Energy Journal**
CESI's house organ
Editorial coordination
Paolo Chighine / CESI
Luana Facciolo / CESI

**Project, design and translations**
Cultur-e
www.cultur-e.it

CESI
Shaping a Better Energy Future

via Rubattino, 54
I-20134 Milan – Italy
info@cesi.It
www.cesi.It

## Editorial

# Impact of the Energy Crisis on Final Clients and possible solutions

**Guido Bortoni**
***Chairman, CESI***

**Domenico VIllani**
***CEO, CESI***

Since the creation of our Energy Journal, this is the first time that our editorial will not be signed by Matteo Codazzi. After thirteen years Matteo has left our company to pursue new professional horizons.

CESI shareholders have selected Domenico Villani, an internal manager, as new CESI CEO. From now on, he will sign our editorials together with CESI Chairman Guido Bortoni.

Villani's appointment is an important sign of the shareholders' trust in CESI capabilities. CESI is a solid group with significant prospects for further development. A centre for technological excellence, a multinational company providing services for the energy transition, with offices and labs around the world.

Domenico Villani – at CESI since 2006 – is also in charge of the Group Sustainability affairs Function, President of the CESI USA Inc. Board of Directors, CEO of IPH GmbH Berlin and FGH E&T Mannheim Germany, Vice President of CIGRE Italy and Board Member of CEI Italy (IEC Italian mirror). Previously, he has been the Testing, Inspection and Certification Division – KEMA Labs Executive Vice President at CESI. Moreover, he worked for international groups like Siemens, VA-Tech, Schneider Electric. The new CEO is called for taking the Group through the energy transition to the next step.

Coming to this issue of Energy Journal, we begin by looking at the World Energy Outlook 2022 Report, published by the International Energy Agency at the end of October. The report states that the global energy

crisis unleashed by the Russian invasion of Ukraine is causing profound and long-lasting change, which may potentially accelerate the transition towards a safer and more sustainable energy system. Moreover, the report also points out that, beyond the short-term measures fielded to protect consumers from the impact of the crisis, many governments are now seeking to adopt long-term measures, too. EU member states are trying to increase and diversify their oil and gas supplies, and many are committed to accelerating structural change. In this issue of EJ, dedicated to solutions to the energy crisis and its impact on final clients, we address how the winds of war have caused the situation to precipitate and have affected the rising cost of energy bills, a phenomenon that had already begun in 2021.

Keisuke Sadamori, Director of Energy Markets and Security at IEA, explains how the Russian invasion of Ukraine and the marked decrease in gas supplies to Europe have caused significant damage to consumers, enterprises, and entire economies, and not only in Europe, but also in emerging and developing economies. And all these elements point to a scenario of strong market instability throughout 2023 too. Our "Top Story" (page 16) focuses on European institutions and the measures enacted to defend consumers and enterprises from the rising cost of utility bills. "Our priority is to protect families from the impact of this energy crisis," declared Kadri Simons, EU Commissioner for Energy. One particularly significant point made in the World Energy Outlook 2022 Report is that the use of gas in developing economies is slowing down, especially in South and Southeast Asia, changing the role of this historical energetic resource as a transitional fuel. Families and enterprises are carefully observing the policies fielded by governments to limit the rising cost of energy bills. In the "Industries & Countries" section (page 22), we analyze the various measures implemented by individual countries, starting with Berlin's "Defensive Shield Against the Energy War," a €200 billion fund created by the German Government to help companies and citizens resist the rising cost of energy. France has introduced an €800 million "Plan for Energy Sobriety" and a series of measures to reduce the consumption of energy during the winter by 10%. Spain and Portugal moved quickly. In August, they introduced measures to limit both energy prices and consumption. Moreover, the so-called "Iberian Exception" caps the price of gas used for energy production at €40/MWh for the first six months and then at a maximum of €50/MWh for the last six months of the year (a measure that should reduce gas bills by 40%). The situation is far more complicated in the United Kingdom, where according to a study published by the University of York, 45 million people might have extreme difficulty paying their utility bills and two thirds of families might slip into "energetic poverty" with costs exceeding 10% of their income.

The study also focuses on Italy. According to data confirmed by the European Union, in 2022, Italy spent a significant percentage of its GDP to fight the rising cost of energy. Indeed, the initial measures presented by Prime Minister Draghi were supplemented by a further €9.1 billion with the *Aiuti quater* decree presented by the new Prime Minister Giorgia Meloni. Moreover, the draft Budget Law 2023 presented at the beginning of December 2022 increased bonuses for the purchase of electric energy and gas. In total, Italy has allocated over €21 billion in measures to counter the high cost of energy. These measures include: the elimination of fees for system charges; refinancing of tax credits through March 30, 2023, for SMEs (from 30% to 35%) and energy- and gas-intensive enterprises (40% to 45%). Further measures include the go-ahead for drilling projects in the Adriatic Sea. The government is set to review the Pitesai Plan (Plan for the Sustainable Energy Transition of Suitable Areas) extending extraction areas, providing new ten-year licenses (9-12 miles off-coast in Southern Italy, and in the mid Adriatic Sea). The new "gas release" measures should enable the production of 2 bcm of domestic gas at a controlled price.

The "Opinions" section presents the point of view of three experts, either with an institutional role or responsible for international policy analysis. The German Economy Minister Robert Habeck explains how, unlike the Spanish model, Germany has introduced an incentive for savings that establishes – for both citizens and enterprises – a level of basic consumption of gas and electricity below which the price is subsidized. European Commissioner for Economy Paolo Gentiloni is particularly worried about the fact that European families are spending 20% of their income for food and 15% for energy, a total of 35%. "Obviously, this is an average," Gentiloni points out. "Many families spend nearly 50% of their income on food and energy. We need to help them, but we must also avoid that support measures undermine our efforts in terms of money policy, as it is in our common interest to reduce inflation. So, we need to coordinate national policies with the action of the ECB." "A lot will also depend on how cold January and February are," explains Matteo Villa, Research Fellow at the Institute for International Policy Studies. "If the winter months were to be particularly cold, we would probably have to turn to our strategic reserves by March, which are always very difficult to extract from storage." Energy reserves, renewables, and technology that can help reduce the cost of energy are reviewed in the "Future & Technology" section. We look at innovative systems for energy storage in batteries (BESS) and CESI's activities to guarantee sustainable and interconnected energy systems. Microgrids rely on batteries for the storage of energy (usually photovoltaic) and produce energy on location, whilst remaining connected to the grid. This is an innovative technology that allows consumers to save (shifting consumption to low-cost periods), pursue sustainable objectives and circular business models (integration with renewables), reinforce competitiveness, drive enterprise resilience for potential energy supply issues, and benefit from new income generated by demand response and capacity market programs. Our final article addresses how, in general, language and communication are evolving in parallel with the new energy scenarios and how we can help consumers understand the current energetic panorama. The big changes that have taken place in the energy sector in recent years have strongly influenced enterprise communication. And environmental information pursues new objectives, styles, and registers, too, addressing an increasingly informed and interested audience. While communicating about energy is not easy because the subject includes heavily technological and complex issues, it is also true that consumers are increasingly more attentive and interested in these issues. Companies have understood this and abandoned the old top-down unidirectional communication of the past.

Enjoy the reading.

***Guido Bortoni*** ***Domenico Villani***

**Issue 24 / December 2022**

# Contents


**8**

News

**Latest from CESI**

**10**

Scenario

**Outlooks and Causes of the Energy Crisis - The Rising Cost of Utility Bills in Europe**

**16**

Top Story

**European Institutions: Measures to Defend Consumers**

**22**

Industries & Countries

**The European Puzzle: Measures and Solutions to the Rising Cost of Energy**

*Energy Journal can be browsed and downloaded at www.cesi.it*

"Ensure access to affordable, reliable, sustainable and modern energy for all".

***Seventh Sustainable Development Goal**, Agenda 2030*

**30**

Future & Technology

**Storage and renewables: technology to reduce the rising cost of energy**

**36**

One on One

**New Languages for a New Scenario**

**42**

Opinions

**Our Priority? Safeguarding the Final Consumer**

**46**

News & Events

**Upcoming Energy Events**

News

# Latest from CESI

## CESI

### Domenico Villani the new CESI CEO

On October 28th, The Board of Directors of CESI SpA, chaired by Guido Bortoni, appointed Domenico Villani as the new CEO of the company. Villani takes over from Matteo Codazzi, who leaves the company to pursue new professional opportunities. «I wish to thank the shareholders for the trust they have placed in me. After many years, it was decided to directly select a CESI manager for this role; this is an important signal of consideration for the capabilities of CESI, a solid company with interesting development prospects. The energy sector is changing rapidly and is offering us several opportunities. The skills and dedication of our people put us in the best conditions to achieve these goals», commented the new CEO.

> **I wish to thank the shareholders for the trust they have placed in me.**

## Renewable

### Renewables and power in the Mediterranean Sea: CESI and Techfem important offshore projects

CESI and Techfem work together for two offshore high voltage transmission projects by signing separate engineering contracts and associated services with Agnes srl and Interconnect Malta Ltd. These projects demonstrate the key role played by CESI and Techfem in supporting the adoption and dissemination of renewable energy resources in the Mediterranean Sea to provide, in an effective and safe way, clean energy to Italy and the island of Malta. The first project consists of the design of onshore electrical facilities of the Agnes Romagna project, a renewable offshore wind and photovoltaic project off the coasts of Ravenna with an installed capacity of up to 1,100 MW. The second project is the development of the FEED and the preparation of the EPC tender for the second HVAC electrical interconnection system between Sicily and the island of Malta with a power capacity of 200 MW.

> **Clean energy to Italy and the island of Malta.**

## Testing

### Bas Verhoeven as the news Executive Vice President of TIC Division

Bas Verhoeven was appointed as the new Executive Vice President of Testing, Inspection & Certification Division of CESI. His career started in 1991 in KEMA as R&D engineer for the introduction of digital protection replays in high voltage substations. From 2011, he had several senior management positions for HVL, HPL, and in sales department. In 2019, after KEMA acquisition, he become responsible for the high voltage laboratories.

**“After KEMA acquisition, he become responsible for the high voltage laboratories.”**

## KEMA Labs

### Failure Investigations

KEMA Labs has performed its first failure investigation on a three-core submarine cable connecting an offshore installation. In this type of activity, a step-by-step approach is necessary by reorienting the work on the basis of the outcome of each previous stage. In the failure investigation, the faulted specimens have first been dissected in our laboratories. Even if the damage was supposed to be an internal dielectric breakdown, the laboratory analysis readdressed the investigation toward mechanical damage which was therefore identified as the root cause of the failure. The result has been considered very useful for updating the installation procedure and avoiding such mechanical issues in future. The whole cable did not have to be replaced.

**“In this type of activity, a step-by-step approach is necessary by reorienting the work.”**

Scenario

# Outlooks and Causes of the Energy Crisis - The Rising Cost of Utility Bills in Europe

**Rising costs, already recorded before the outbreak of the Russian-Ukrainian conflict, have amplified the mismatch, albeit also generated by other factors, between demand and supply that is currently driving the increase in utility expenses.**

The warning cry had already been launched by *Le Monde* at the end of August in an article aptly entitled "The Energy Crisis is the Greatest Systemic Risk for Europe" referring to the domino effect caused by gas supply issues, the unsustainable increase in the price of energy, and the cost of primary goods. A few months later, the fears expounded by the French newspaper have been confirmed by the **IEA Quarterly Gas Market Report**: the current market situation will persist throughout 2023.

Analysts at the International Energy Agency have identified the cause of this situation in the reduced supply of natural gas to Europe from Russia, a trend that has driven prices to new records, interrupted commercial agreements, and led to fuel emergencies in both emerging and developing economies. Although the problem exists at a global level, it has particularly affected certain areas; in particular, Europe, which was heavily dependent on Russian energy supplies. Indeed, until 2021, the **EU imported 40% of its gas from Russia** and, according to Eurostat data, 26% of its oil supplies, too, clearly revealing Europe's dependence on Russian raw material supplies.

The war has made things worse. "The Russian invasion of the Ukraine and the marked reduction in natural gas supplies to Europe are causing significant damage to consumers, enterprises, and entire economies, not only in Europe, but also in emerging and developing economies," explains Keisuke Sadamori, IEA Director of Energy Markets and Security. "The outlook for gas markets is bleak, even because of Russia's inconsiderate and unpredictable behavior that has seriously damaged its reputation as a reliable supplier. However, all signals point to the fact that **markets will remain highly unstable** and limited throughout 2023."

**For further information on this topic, please contact:**

*Marco Stabile (Project Manager & Power Market Operation Expert)*
marco.stabile@cesi.it

As the IEA analysts point out, **Europe has enacted various measures** to counteract the current crisis, compensating the significant decrease in Russian gas supplies with LNG imports, especially from the United States. Moreover, supplies have been diversified and are now purchased via alternative pipelines from Norway, North Africa, and Azerbaijan. EU member states have adopted measures to increase the safety of gas reserves, defining minimum reserve obligations, and the implementation of energy savings measures for the winter. The results of these efforts were already evident by the end of September with EU deposits at 90% capacity. However, the IEA has already warned of a future danger: the **absence of Russian supplies represents a greater challenge, in terms of reserves, for the winter of 2023-24**.

And what about this winter? According to IEA analysis, if Russian supplies were to be fully suspended on November 1, 2022, and the demand were to remain unaltered, EU gas reserves would decrease to 20% capacity by February, as long as LNG supplies remain high. If, however, the latter were to decrease, EU reserves could drop as low as 5%. Clearly, low reserves could lead to **supply issues if there were to be a late winter cold front**.

The strategy recommended by analysts at the Paris agency is to **reduce the EU demand for gas during the winter period** by 9% (compared to the average level of the past five years) to allow gas reserves to remain above 25% (should LNG supplies decrease). The study also indicates that a 13% decrease over the average level of the past five years would be optimal and allow gas reserves to remain above 33% (should LNG supplies decrease). Thus, the IEA believes that **savings measures are fundamental to limit the depletion of gas reserves and ensure adequate stocks** to the end of the cold season.

In the meantime, during the first eight months of 2022, gas consumption in Europe has decreased by over 10% compared to the same period in 2021, driven by a 15% decrease in demand from industry. Gas consumption has also decreased in India and South Korea, while it has remained virtually unvaried in China and Japan.

## A Trend from Afar: The Origin of the High Cost of Energy

Having analyzed the forecasts for the coming months and the strategies recommended by IEA, let's review all the elements necessary to understand when and why the current energy crisis that is driving up the cost of energy and utility bills began. We need to take a step back to view the entire picture. Indeed, the Russian-Ukrainian conflict worsened a situation in which prices had already been rising for several months before the Russian invasion of Ukraine on February 24, 2022.

**Energy sector issues began with the recovery period that followed the Covid-19 lockdown.** The cost of energy increased globally with a nearly simultaneous reopening of

working, industrial, and commercial activities. After months of hardly any activity, the demand for energy suddenly soared. This caused the global system to crash. While, on the one hand, the demand for energy rose significantly, on the other, raw materials remained insufficient to satisfy the high demand. In particular, the demand of gas from industry was too high and supply too low. And this led to the application of a fundamental market rule: **a marked increase in demand, with a low supply, drives prices up**.

And there's more. The marked increase in the demand for energy in the global post-Covid economy also contributed to **increasing the demand of gas by the developing countries that had decided to shut down coal plants and replace them with gas**, considered not only more sustainable, but also necessary to implement the energy transition.

Examining deeper into the analysis of the causes that led to the increase in the wholesale cost of energy in European hubs during 2021, we should also point out the **low levels of gas reserves**. According to ARERA data, deposits were at 50% capacity **at the end of the year**, especially because the high cost of gas during the summer of 2021 had already driven operators to dally in stocking the reserves. The situation was made even worse by the **weather conditions**. Indeed, in some areas of Northern Europe, this caused a **decrease in the production of renewable energy** just as the cost of heating gas increased due to a **winter with**

**temperatures below the seasonal average**. This series of events further amplified the central role played by gas in the production of the electric energy necessary to satisfy global needs and replace renewable energy on given days or periods of the year.

Last, but not least, this analysis must address a further fact: the **increase in the price of carbon dioxide on the European market**, or the cost companies incur to compensate atmospheric $CO_2$ emissions by purchasing environmental credits. The price of $CO_2$ leaped from €26/ton in January 2020 to €90-95/ton in February 2022.

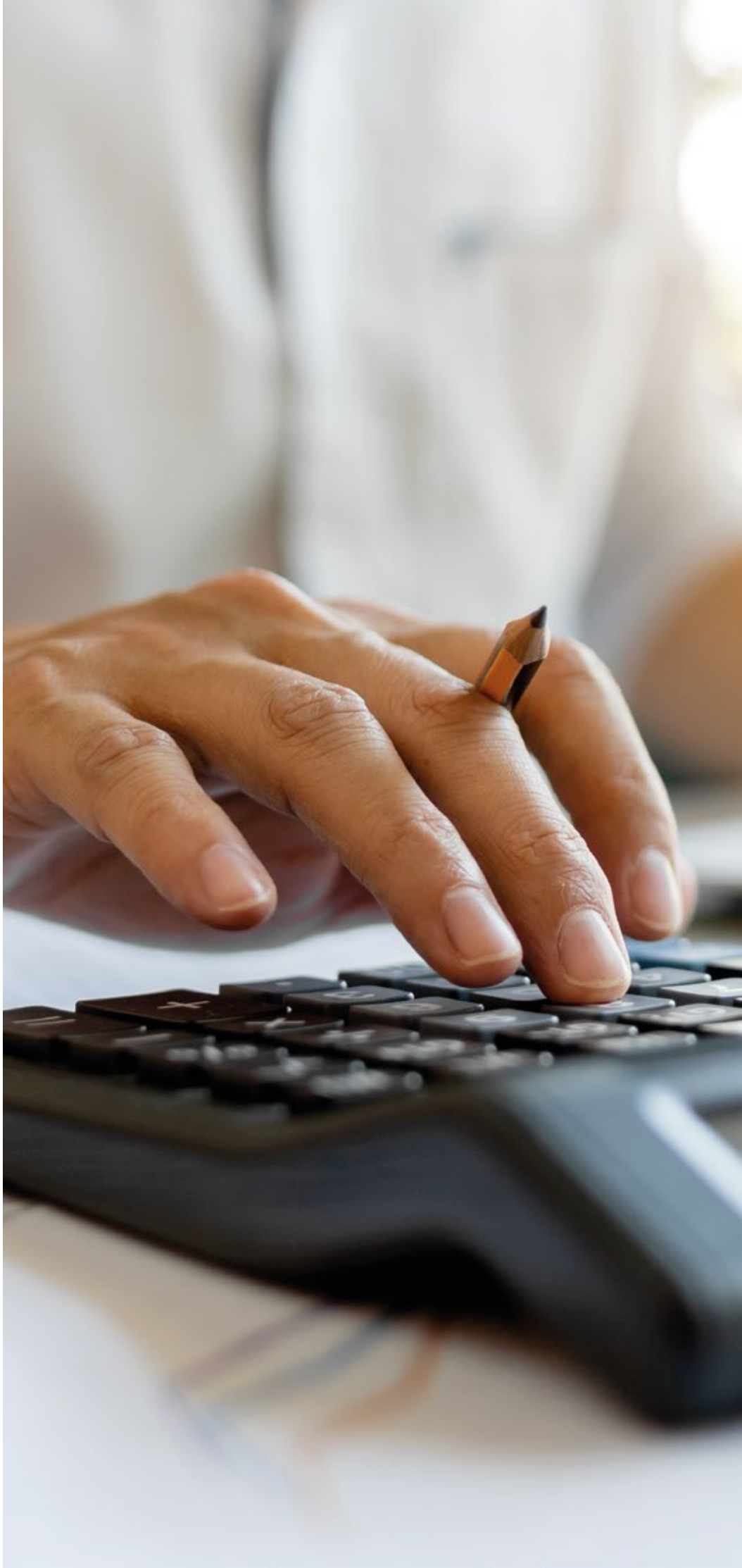
## The Rising Cost of Gas and Utility Bills

The last useful element to understand how energy has come to cost so much concerns the **fixing of the price of gas** for which there is no single global price, and this affects the cost of our utility bills. Gas determines the prices of our electricity bills; indeed, more than half of Italian electric energy is produced with gas. So, if the cost of gas rises sharply, so does that of electricity, in general.

More precisely, the costs of wholesale gas are fixed daily on a **range of international markets**. In the United Kingdom, the spot price of gas is calculated using the British National Balancing Point. In the United States, there is the Henry Hub Natural Gas Index. The European Union bases its prices on the **TTF** (Title Transfer Facility), a **virtual wholesale market based in Amsterdam**.

Wholesale prices are determined not only by the cost energy suppliers pay to national and international producers, but also by financial mechanisms, such as fear of sudden supply interruptions, which can cause gas prices to rise on the international markets.

Taking a closer look at the EU, TTF operators buy and sell futures. They negotiate the purchase and sales prices of natural gas at different points, daily determining the price that natural gas could have in one or two months, or even a year. Naturally, these **prices are highly volatile**. They vary continuously based on **current sales and global conditions**. And this is the fundamental problem. The **prices fixed at the TFF do not seem hinged to reality** as they are determined by futures and short- to medium-term expectations. Indeed, Ursula von der Leyen, speaking at a plenary reunion of the European Parliament, admitted that "the TTF, our main parameter of reference for prices, is no longer representative of the



market, which now includes LNG." One of the proposed alternatives is the weighted average of the main global oil markets, including not only TTFs, but also larger and more stable markets such as the Far Eastern JKM (used by Japan, Korea, China, and Taiwan), the American Henry Hub, and the London Brent Market for the Northern Sea.

This series of forecasts contributes to defining the cost of gas and of our utility bills. **Utility bill increases are the result of the price of gas on international market transactions and the operative costs of national energy suppliers, including network maintenance and taxes.** What happens in Italy? In Italy, the free-market utility bill prices are established by different suppliers. The so-called "maggior tutela" service (protected electric energy service for domestic use and micro-enterprises) and "tutela" (protected domestic gas) are regulated by ARERA which establishes the price of gas and electricity every three months, using formulas that take into consideration the cost of energy (59.2%), transport and meter management (17.5%), taxes (12.6%), and system onuses (10.7%). Recently, ARERA has updated the cost of energy for "tutela" gas clients every month to better adjust to wholesale cost trends.

In addition to the volatility of raw material prices, utility costs are also determined by the **internal dynamics of national markets**. In Italy, a significant percentage of the total cost is fixed and established by ARERA both on the free market and protected markets. For example, taking the first trimester 2022 as a reference, **on the protected market, the main drivers of electricity and gas utility bill increases** were: a 3.3% increase in the dispatch cost of electric energy, the management and balancing of electric energy across the transmission network that guarantees a correct equilibrium between demand and supply, a 15% increase in **power equalization costs** to guarantee that the total paid each trimester by clients in the protected regime covers the effective purchase and dispatch costs, and a 0.6% **increase in transport and meter management costs** for gas bills to cover the costs of delivering natural gas or electric energy to final clients, which amounts to ca. 20% of the total utility bill.

This analysis provides further elements to understand what has taken place over the past 12 months in Europe. The European reference gas price increased by 550% (14 times its ten-year average), while that of electricity increased tenfold, also compared to the last ten years. In 2022, the cost of gas for European families was greater than that paid by families in the United States, a first in over forty years, according to IEA, as over the past four decades gas was on average more expensive in the United States.

Looking at a wider interval, from the 1950s to the 1980s, the production of gas in America barely sufficed for domestic use. Indeed, it was not sufficient for the next thirty years, when the United States became one of the greatest importers of methane. What changed the story was fracking, a drilling technology for the extraction of shale oil and gas from porous rock deep underground. Thanks to fracking, between 2010 and 2020, the United States nearly doubled its gas production: from 575 to 907 bcm/year (oil fared even better, increasing from 7.7 to 16.6 million barrels/day). And when in 2019 the United States became independent of foreign gas suppliers, they also became competitors of the other great hydrocarbon exporters like Saudi Arabia and Russia.

Top Story

# European Institutions: Measures to Defend Consumers

**European institutions in Brussels are fielding measures to help enterprises and citizens face the rising cost of energy. "Our priority is to protect families from the impact of the energy crisis," declared Kadri Simson, EU Commissioner for Energy. According to the World Energy Outlook, published by the IEA, the era of gas as a transitional fuel is beginning to come to an end.**

The results of a public survey published at the beginning of November by the European Commission confirm that nearly **half of consumers (48%) in Europe are worried about utility bill payments** over the next six months. The survey also indicates that the majority (71%) has changed their habits to save energy at home.

In this context, the EU Commission organized a round table at the beginning of November to consult with the main stakeholders on the protection of European consumers during the current energy crisis. In view of the high cost of energy and the overall impact of the crisis on the cost of life, both the **EU and member states have adopted measures to help citizens**, especially the most vulnerable, pay their utility bills and guarantee access to energy supplies. Energy market regulators, suppliers, consumer associations, and representatives of the EU and its member states met to evaluate the situation and discuss further measures to be adopted.

"The global increase in the cost of energy is a source of great concern for the European Union," declared **Kadri Simson**, Commissioner for Energy. "Over the past year, consumers and the high cost of energy have been at the center of our attention. Our absolute priority is to protect them from the impact of the energy

crisis, guarantee that they receive all of the necessary support and ensure that no one is left without energy. Thanks to recent proposals, the Commission has provided member states with **supplementary funding to help consumers, families, and vulnerable enterprises**. The current crisis is exceptional. Indeed, the energy market has operated satisfactorily for over twenty years. However, now we need to ensure that this continues, so that we can implement the European Green Deal, strengthen our energy independence, and achieve the climactic objectives that we have set."

On this issue, EU Commissioner for Justice **Didier Reynders** explained that "most European consumers **have adopted their own models to save energy**. Nonetheless, many are worried about utility bill payments. Consumers could grow more vulnerable in difficult times and suffer unfair commercial practices. So, the European Commission is determined to identify alternative solutions to help consumers. Therefore, We have organized a round table amongst energy suppliers and authorities to allow everyone to benefit from best practices."

## A Proposal for Reducing the Demand for Energy

As a first measure against rising costs, in September 2022, the EU Council advanced a proposal to **reduce the demand for electricity** and, in general, to reduce market volatility. To intervene on the most expensive periods of the day, when electricity produced with gas has a significant impact on its price, the Council proposed to reduce the consumption of electricity by **at least 5% during peak price hours, as selected by member states** for 10% of the total time.

**For further information on this topic, please contact:**
*Bruno Cova (Advisory Services & Studies Director – CESI)*
bruno.cova@cesi.it

Moreover, the Council also suggested that member states aim to reduce the overall demand for electricity by no less than 10% through March 2023. Member states may select the best measures to achieve this objective, including financial compensation. While the reduction of demand during peak hours would allow a saving of over 1.2 bcm of gas, an **increase in energetic efficiency** is a further essential element to respect the climate commitments established by the European Green Deal.

## A Package of Measures to Limit Price Increases

In mid-October 2022, the Commission presented member states with a package of tools to reduce the cost of energy, including **guidelines on immediate measures to protect consumers**. These include emergency income support, deferral of payments, specific temporary tax benefits, and measures to avoid disconnection from the grid. Moreover, the Commission will also promote investments in **renewables** and **energy efficiency**, evaluate measures concerning energy storage and gas reserve purchases, and assess the current state of the electricity market. The crisis has also revealed the **importance of storage** for the correct operation of the EU gas market. At present, the EU manages to stock over 20% of the

gas it consumes every year, but not all member states have the necessary infrastructure. And, in any case, the use of storage and reserve obligations vary.

Amongst the many measures currently under study, one aims to **strengthen the role of consumers on the energy market**, simplifying the selection of suppliers, the production of electricity and participation in energy communities. The greatest impulse to **transform citizens into prosumers** came in May 2022 with the REPowerEU Plan and the relative initiative on rooftop solar. The proposal would require new buildings to be fitted with solar panels and encourages member states to reduce bureaucracy, implement tax incentives, and provide citizens with information on how to become prosumers.

## The European Council Demands a Structural Reform of the Market

Prior to the round table – scheduled for November 7 to consult the main stakeholders for the protection of EU consumers during the energy crisis – a **meeting of the European Council** took place on October 20-21 to reaffirm the EU's condemnation of the Russian aggression of Ukraine and identify Russia as the sole responsible party for the current economic and energetic crisis. The meeting conclusions indicate that "the European Union will unite to protect its citizens and enterprises, urgently adopting all necessary measures. In view of the current crisis, the European Council agreed that it is necessary to accelerate and intensify efforts to reduce energy demand, guarantee supplies, avoid rationing, and **lower the cost of energy for families and enterprises throughout the EU**, preserving the integrity of the single market."

The European Council also invited member states and the Commission to **urgently present concrete decisions** concerning additional measures such as the voluntary joint purchase of gas, fast-tracking negotiations with reliable partners to identify reciprocally advantageous partnerships, a temporary dynamic price corridor for natural gas transactions, a temporary EU framework to cap the price of gas used to produce electricity, improved operation of energy markets and increased transparency, quicker authorization procedures for the implementation of renewables and networks, and **new energy solidarity measures in case of supply interruptions at the regional, national, and EU-level**.

The European Council also confirmed the need to increase investments in energy efficiency, adequate infrastructure for future energy requirements – including

**interconnections** and **storage** – and innovative technology for renewable sources. During the same meeting, the Commission was also invited to accelerate work on the structural reform of the electricity market (including an impact evaluation) and make progress towards the **development of a complete energy union** for energy independence and climate neutrality at a European level.

## Winter: A Difficult Test for European Solidarity

At the end of October, the **International Energy Agency** published the 2022 edition of the **World Energy Outlook**, indicating that the global energy crisis caused by the Russian invasion of Ukraine has caused profound and long-lasting changes that will accelerate our transition towards a more secure and sustainable energy system.

The report states out that in addition to **short-term measures aiming to protect consumers from the impact of the crisis**, many governments are now adopting longer term measures. Some states are seeking to increase or diversify their oil and gas supplies, while many others have committed to accelerating structural changes. The most important measures include America's **Inflation Reduction Act**, the EU **Fit for 55** package and **REPowerEU**, the Japanese **Green Transformation** (GX) Program, South Korea's objective to increase the percentage of energy produced by nuclear and renewables in its energy mix, and ambitious clean energy objectives in China and India.

In parallel, the IEA has pointed out that winter in the northern hemisphere is a critical period that could stress EU solidarity for gas consumers. And next winter (2023-24) may be even more difficult. However, in the long term, one of the effects of Russia's recent actions is that the **era characterized by an increased demand for gas is coming to an end**. In a scenario that forecasts the highest consumption of gas, global demand will be less than 5% between 2021 and 2030, and then remain unvaried until 2050. **The adoption of gas in developing economies has also slowed down**, especially in South and Southeast Asia, affecting its role as a transition fuel.

Finally, IEA Executive Director **Fatih Birol** has emphasized how, amongst the great transformations underway, a new energy security paradigm is necessary to guarantee reliability and convenience, whilst also reducing emissions. "This is why this year's World Energy Outlook **lists 10 principles that can help guide policy makers** in this period that witnesses both the decline of fossil fuels and the rise of green energy systems. Both systems must function optimally during an energy transition to provide the services necessary to consumers. And while the world distances itself from the current energy crisis, we need to avoid new vulnerabilities deriving from the high and volatile prices of critical minerals or highly concentrated green energy supply chains."

# IEA's 7 Recommendations for Saving Energy

- The IEA has divulged a series of recommendations to help consumers save energy.

- Turning down the **thermostat** in your home by just 1°C can save about 7% of the energy you use for heating and cut €50-70 off an average energy bill.

- Default settings on **boilers** are often higher than necessary. Set your hot water temperature to 50°C to reduce your energy bill by up to 8% and save about €100 per year.

- Close windows and doors, insulate pipes and make sure there are no drafts coming from windows, fireplaces, and other openings, so that **warm air** stays inside.

- Replace your old **lightbulbs** with new LED ones and only keep lights on when they are needed.

- Walking or **cycling** are excellent alternatives for short journeys and help to save money, reduce emissions, and decrease traffic.

- For distances too long to walk or cycle, **public transport** also reduces energy consumption, traffic, and pollution.

- Optimize your **driving style** to reduce your consumption of fuel. Drive calmly and slowly on highways, close your windows at higher speeds, and make sure that your tires are correctly inflated.

## Industries & Countries

# The European Puzzle: Measures and Solutions to the Rising Cost of Energy

**EU and national-level decisions: families and enterprises are carefully following government policies to limit the rising cost of utility bills.**

The wait for EU member states to agree on shared measures to face the rising cost of energy has been long, and it is not quite over yet. Nonetheless, an important step was taken at the end of October with the development of a **new EU roadmap for the energy sector** to reach a **compromise between the various positions of member states**. The agreement should not be underestimated, as energy, although an area of shared control between European institutions and member states, has been managed independently, based on the different interests, and needs of each state.

Now, the **shared political stance of the 27 EU member states** will allow a more homogeneous management of gas, a key fuel for European energy and industry. In fact, the EU Council has established a series of actions to be implemented immediately: accelerate and intensify efforts to reduce energy demand, guarantee supplies, avoid rationing, and lower the cost of energy for families and enterprises throughout the EU, preserving the integrity of the single market.

In greater detail, the strategy designed to achieve these objectives includes **nine measures**. **Joint EU gas purchases** will be voluntary but based on a mandatory 15% minimum threshold. And **negotiations with reliable producers** such as Norway and the United States will be fast-tracked to exploit the economic weight of the EU rather than competing as individual states on a global market.

A further measure calls for a **new reference market for LNG transactions**, which are currently conducted on the Amsterdam TTF together with pipeline gas supplies. The objective is to keep price negotiations separate so that any reduction in pipeline gas will not directly condition the cost of energy.

Then, there is the issue concerning a price cap, which has been firmly demanded by Italy and blocked by Germany and the Netherlands. The solution has been a generic "**temporary dynamic price corridor**" on natural gas transactions to limit excessive prices. Dutch perplexities were motivated by Prime Minister Mark Rutte, who pointed out that a low cap could disincentivize suppliers, further hindering gas imports.

The second cap is temporary too. It will **only limit the price of gas used to produce electricity**, based on a model already implemented in Spain and Portugal, the so-called "Iberian exception." Germany finally accepted this point, notwithstanding the certainty expressed by German Chancellor

>

**For further information on this topic, please contact:**
*Andrea Venturini (Market Analyses & Grid Codes Product Leader – CESI)*
andrea.venturini@cesi.it

Olaf Scholz: "on a global market, I don't believe we can unilaterally determine the price of gas. The only thing we can do is fight speculation on the market that is moving away from realistic prices. We can address these excesses.

> **There also is a call to expedite and simplify authorization procedures that will accelerate the diffusion of renewables and networks, even via emergency measures.**

The other points of the EU agreement establish a series of commitments. These include improving the operation of energy markets to increase transparency, alleviate liquidity stress, and eliminate the factors that drive the volatility of gas prices, thereby also ensuring financial stability. There also is a call to **expedite and simplify authorization procedures** that will **accelerate the diffusion of renewables and networks**, even via emergency measures. Another point calls for the establishment **of solidarity measures** in the energy sector in case of interruptions to regional, national, and EU-level supplies where there are no bilateral solidarity agreements in place. And there also is an **invitation for further gas saving efforts**.

The final measure in the agreement concerns "national and European-level" operations to address the crisis, whose impact was explained by the President of the European Commission, Ursula von der Leyen: "We aim to

**mobilize up to €40 billion in cohesion funds** to help those most heavily impacted by the increase in the cost of energy. These funds will allow member states to help vulnerable families, SMEs, and large enterprises."

## Measures Adopted by Individual Member States

While the EU has been pursuing common action, many European member states acted timely to implement a series of internal measures against the rising cost of utility bills and to promote energy savings. One of the most common measures has been the **reduction of VAT on gas**. The lowest rate in Europe is currently the 5% applied in Italy, Spain, Croatia, Lithuania, Malta, Cyprus, Romania, Slovenia, and Hungary, while in France the rate is 5.5% (down from 20%). The rate is 6% in Sweden, Portugal, Greece, and Belgium. The highest VAT rate on gas is 12% in Latvia.

Our analysis of the different measures fielded by member states begins with **Germany's "shield to protect the economy against the consequences of Russia's war of aggression."** This measure allocates €200 billion to help citizens and enterprises face the increasing cost of energy. The plan will provide incentives for the diversification of energy supplies by promoting renewables, LNG terminals, collaboration with countries with potential new gas deposits, and investments in hydrogen-compatible infrastructure. Moreover, the price of electricity will be capped for consumers and SMEs with subsidies for basic consumption, while additional consumption will be priced at current market costs. Also, the price of gas will be capped as a temporary measure to benefit families and enterprises and control prices. The German Government will finance these measures by reactivating the Fund for Economic Stabilization (FSE). The government also plans to tax windfall profits made by energy companies during the crisis. In addition, VAT on gas will be reduced from 19% to 7% through the spring of 2024, extending fiscal incentives to heat networks, too.

France has introduced a "**plan for energy sobriety**" that aims to reduce the consumption of energy during the winter by 10%. The €800 million measure includes turning off advertising signs between 1:00 am and 6:00 am, limiting heating in houses, companies, and public buildings to 19 degrees Celsius, financing the installation of more efficient boilers, improving thermal insulation, and the purchase of LED lightbulbs, a bonus for carpooling, and limiting highway speeds for service vehicles to 110 km/hour. Moreover, hot water will no longer be mandatory in public buildings, and smart working systems will be organized to allow the buildings to be

closed some days. In terms of the cost of energy, the French Government has announced that EDF (Électricité de France, the national energy supplier) will limit wholesale price increases to no more than 4% for one year. These measures compound those announced last year, including a one-off €100 energy coupon bonus for 5.8 million families.

**Spain** also acted rapidly. In August, it ratified a series of measures to limit consumption and costs. Together with Portugal, Spain has enacted the so-called "Iberian Exception" to cap the price of gas used to produce electricity at €40/MWh for the first six months and at a maximum of €50/MWh for the rest of the year. This measure should reduce gas bills by 40%. Heating in buildings must not exceed 19 degrees Celsius in the winter; while, in the summer, air-conditioning in offices, shops, bars, and restaurants will be limited to 27 degrees Celsius. Shop signs and window lights will have to be turned off at 10 pm and shop doors will have to be kept closed. In September, further measures were enacted with the **Shock Plan**: the 7% tax on generation companies (IVPEE) was eliminated, VAT on electricity was reduced from 21% to 5% for consumers with contracts up to 10kW, and the IEE special tax on electricity was reduced from 5.1% to 0.5% (the minimum permitted by EU regulations). Moreover, windfall profits have been reduced for six months for "plants not producing $CO_2$ emissions" (nuclear, hydropower, and some wind farms) that are benefitting from the increase in the cost of electricity.

The **Netherlands** has allocated €2.7 billion to protect families and enterprises. The Dutch are also enjoying a 21% tax cut on petrol and diesel (that will last to the end of the year), while €150 million will be set aside for the most vulnerable families. **Norway** has fielded a different strategy by setting a maximum price for the cost of energy, above which the government will pay 80% of utility bills, a measure that will cost €2 billion.

The situation is far more complicated in the **United Kingdom**, where, according to a study published by the University of York, 45 million people could face extreme difficulty in paying

their utility bills, while two-thirds of families may slip into "energetic poverty" with costs exceeding 10% of their income. The energy crisis has also strongly influenced the political situation with the resignation of Liz Truss after just 45 days as Prime Minster. She has been succeeded by Rishi Sunak, the fifth Conservative Prime Minister since 2016. Various measures have been enacted to mitigate the impact of energy cost increases on consumers; however, price caps were abandoned in favor of a two-year price guarantee on prices that was subsequently reduced to six months.

**Italy** has spent an significant percentage of its GDP (3.3%) to reduce the cost of energy for families and enterprises in 2022, according to data confirmed by the analysis of the European Commission. The first package of measures, which was introduced by the Draghi government, included the reduction of VAT on gas to 5%, as well as measures to fight the increasing cost of utility bills and petrol for families (with a one-off €200 bonus for families with income up to €35,000 per year) and enterprises (with a 20% tax credit for all energy-intensive enterprises affected by 30% increase in price). The second package, presented by the new government headed by Prime Minister Giorgia Meloni, includes €9.1 billion in additional resources allocated by the *Aiuti quater* decree that will guarantee a protected market service for electricity and gas for families. In fact, the Government has determined that prices will be established by ARERA, the Italian energy authority, rather than the free market, to ensure a 20-30% reduction of the cost of utility bills.

The Budget Law 2023 has increased the bonus for the purchase of electric energy and gas. The bill includes a special fund that will cover 45% of expenses on effectively used energy by energy-intensive enterprises during the first trimester of 2023, 45% for gas purchased by gas-intensive enterprises over the same period, for uses other than thermo-electric, and 35% of the energy costs for non-energy-intensive enterprises during the same period. Moreover, general electric sector system charges will not be waived for the first trimester of 2023. As established by Art. 3, ARERA will cancel general electric system charges to domestic users and low-voltage non-domestic users up to a maximum of 16.5 kW, also for the first trimester 2023.

Moreover, Italy will issue new drilling permits for the Adriatic sea. Currently, the Pitesai Plan (Plan for the Sustainable Energy Transition of Suitable Areas) allows

prospecting, research, and drilling activities in large areas of the Po Valley, the Adriatic Sea (with the exception of the northern area), the Ionian Sea, and the sea west of Sicily; however, authorization procedures are currently on hold. The government will review the Pitesai Plan to extend extraction areas, issuing new ten-year licenses for drilling 9-12 miles off-coast in Southern Italy and in the Middle Adriatic. The new "gas release" measures should enable the production of 2 bcm of domestic gas at a controlled price. Once in full operation, this should allow for an annual production of 5-6 bcm of gas to be auctioned by GSE.

This new mechanism will come with a caveat: for the first two years, the companies that win the drilling permits will have to provide 75% of their gas to enterprises, up to a maximum of 2 bcm. This will allow energy-intensive enterprises to receive the necessary gas at a controlled price. Indeed, in addition to the lack of an adequate energy mix, one of the main reasons driving Italy's high spending to limit the increase in utility bills is to allow the manufacturing industry to keep operating. According to ISTAT, the national statistical institute, the manufacturing sector, which has been defined as both energy-intensive and gas-intensive, significantly suffered the increase in the cost of energy, registering setbacks of 9.4% in the chemical sector, 6% in the paper industry, 14% for metallurgy, and 10% for foundries. Based on this "gas release" agreement, following the first two years, the companies, to which the permits are assigned, will have to provide 55% of extracted gas to off taker companies for the remaining eight years of their permits. This will ensure a satisfactory level of self-sufficiency for energy-intensive companies. Other measures include the possibility for companies to delay the payment of gas and electricity suppliers through installments (maximum 36 monthly installments) for the energy purchased between October 1, 2022, and March 31, 2023, and invoiced before September 30, 2023.

## New Agreements for Supply Diversification

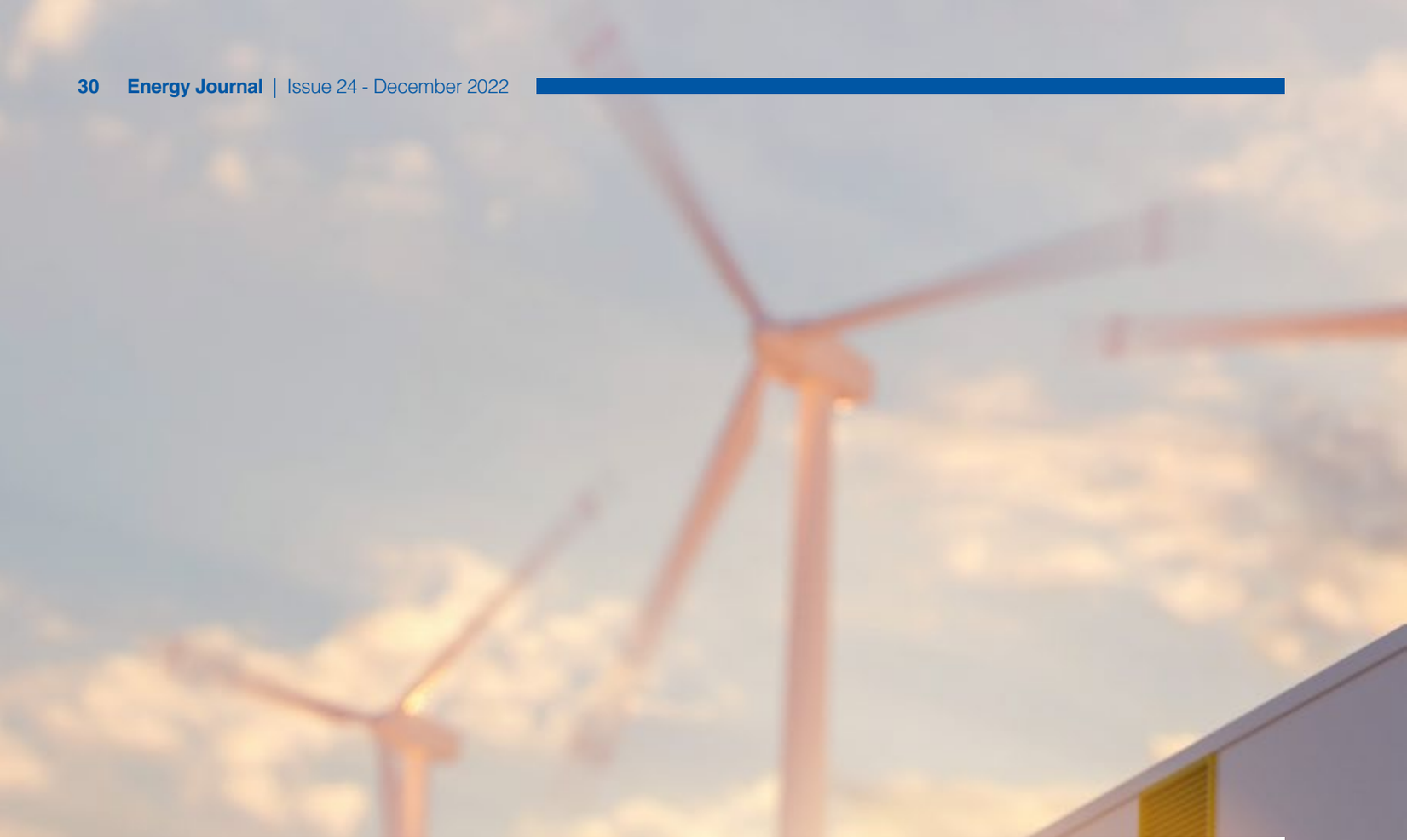
In addition to these individual measures, some states have also begun to diversify their supplies. In this new scenario, **Norway** has become the main supplier of gas to the European Union, replacing **Russia** whose gas supplies to Europe have dropped to 10% from 40-45%. Moreover, the United States is also fundamental in this context for its LNG supplies. However, the reduction of the EU's energy

dependence on Russia has become possible not only thanks to its common efforts, but also on account of the commitment fielded by individual member states in finding new alternative agreements: not only with the United States and Norway, but with Israel and Egypt, too.

More specifically, Italy has signed several agreements with **Qatar, Algeria, Egypt, Angola, Mozambique, Congo,** and **Azerbaijan**. As an example, gas supplies from Algeria will increase from the 22.6 bcm/year in 2021 to 31 bcm/year in 2024. While in some cases, agreements build on supplies from existing pipelines and natural deposits (i.e., Algeria), in other cases, production will have to be initiated (i.e., Mozambique). It is important to emphasize Italy's strategic position on the European scenario. Indeed, beside TAG pipeline connecting Italy to Austria and further on to Russia, it hosts three intercontinental pipelines: two connecting it to African countries (Greenstream and Transmed), and one to Asian countries (TAP). A further aspect concerns regassification plants to exploit LNG supplies. Italy has purchased the Golar Tundra vessel, a 170,000-cubic-meter floating storage and regasification unit (FSRU), and is also building new offshore regassification plants in Piombino and Ravenna.

**LNG** imports from the **United States** are crucial and the USA is set to become the main supplier of the European Union, notwithstanding the persistence of a few technical issues. While, on the one hand, it is not clear to what extent the United States can increase its production of natural gas (to guarantee growing exports to Europe), on the other, the question is whether EU regassification plants will be able to convert an additional 50-60 bcm of natural gas per year. The only country with an enormous and unexploited regassification potential (ca. 40 bcm/year) is Spain. However, the problem is that Spain is not well connected to the network of European pipelines, making it hard to transfer gas to other member states. A further critical aspect concerns the price of LNG. In fact, liquified natural gas is more expensive than its gaseous counterpart conveyed through pipelines and costs ca. 20% more.

There is a final contradiction concerning energy. While natural gas supplies from Russia have now been almost completely interrupted, during the first nine months of 2022, the European Union increased imports of **liquified natural gas from Russia** by 46%. In fact, between January and September 2022, EU member states imported 16.5 bcm of LNG from Russia, as compared to the 11.3 bcm imported over the same period in 2021. The main importers include France and Spain, and then the Netherlands and Belgium. In Europe, only two countries have effectively stopped importing LNG from Russia: Lithuania and the United Kingdom. Thus, the game remains complicated. It's a European energy puzzle that still appears to have no solution.



Future & Technology

# Storage and renewables: technology to reduce the rising cost of energy

**BESS – innovative battery energy storage systems – and more: CESI continues to pursue activities that will guarantee interconnected and sustainable energy systems.**


By 2040, the global demand for electricity will increase 60% and by 2050 nearly 50% of the global installed capacity will be based on renewables. Looking at the future roadmap of the energy transition, one element appears clear. With the increase in renewable energy, electric networks will have to become more flexible and resilient. As our electric systems turn digital, we are experiencing a rapid and radical transformation of the energy market. Indeed, it is turning into a decentralized system in which consumers generate the energy they need and share any surplus on the grid.

Driven by these trends, energy storage promises to be a key technology for the energy transition. It will be essential both to shift from fossil fuels to renewables and fundamental for green energy supplies and electricity demand. In fact, storage systems will play an increasingly central role in guaranteeing a supply of green energy to buildings and companies, even when the weather is not very good.

## Efficiency, Savings, and Sustainability

An electric system must guarantee stability (ensuring the quality of energy and rapidly addressing imbalances), flexibility (satisfying demand in the short and medium term) and continuity of supply (both in the short and long term). In addressing the impact of the energy crisis on final clients and possible solutions to counter its impact, we must focus on energy storage systems and especially the so-called BESS (Battery Energy Storage Systems), innovative energy management systems that allow the full exploitation of non-programmable renewable energy sources such as wind and photovoltaic.

A BESS system is a technological solution that stores energy for future use. The advantages of storing energy in batteries include efficiency, savings, and sustainability.

**For further information on this topic, please contact:**

*Stefano Malgarotti (Engineering Consulting Director – CESI)*
stefano.malgarotti@cesi.it

*Massimo Gori (Project Manager - CESI)*
massimo.gori@cesi.it

In view of the non-programmable (or intermittent) nature of most renewable energy sources – and the consequent generation of electricity that is not aligned, either timewise or geographically with demand – when energy supplies fluctuate due to weather conditions, battery systems are fundamental to provide companies and residences with a steady flow of energy. In fact, battery storage systems provide electricity to thousands of houses, companies, plants, and communities around the world, every year. And, in turn, this electricity is stored in batteries during periods of the day in which there is a surplus in renewable production.

To date, the unpredictable and instable nature of renewables has prevalently been managed via generation corrections (by varying the production levels of conventional thermal generation units like gas plants). But, in the near future, the progressive phase down of thermal generation will create a gap that will have to be filled by new generation technology, one capable of satisfying more complex needs. The constant evolution of energy storage batteries and the industrialization of the supply chain (the price of lithium ion batteries has decreased by nearly 90% in 10 years and continues to drop) will allow us to overcome what only a few years ago was still viewed as a true obstacle to the energy transition.

For domestic clients, the advantages of battery storage include self-consumption (residential users produce solar energy during the day and then use it to run their appliances at night), emergency backups in case of blackouts and disconnection from the grid (complete interruption of service from an electric company or energy supply service). Moreover, in addition to providing simple backups during emergencies, BESS systems also allow commercial users to benefit from "peak shaving" (the ability to manage energy demand and avoid sudden consumption peaks over the short term) and "load shifting" (which allows companies to shift the consumption of energy from one period to another and use stored energy when electricity is more expensive). In fact, microgrids employ BESS as a key component for the accumulation of energy (mainly from photovoltaic) and local self-production, even though they are connected to the grid.

BESS is an innovative technology that allows consumers to save (by shifting consumption to less expensive periods), pursue sustainable objectives and circular business models (integration with renewables), reinforce company competitiveness and resilience by addressing potential energy supply issues, and benefit from new sources of income with demand response and capacity market programs.

## CESI Activities to Develop Interconnected and Sustainable Energy Systems

In terms of storage infrastructure, there are various consolidated technological options (pumped-storage hydroelectricity, compressed-air energy storage) as well as some that are still under development (flywheels, super capacitators, hydrogen). Electrochemical energy storage, or BESS, is a long-standing form of technology that has been available for years but is now being developed further to guarantee the necessary flexibility to electric systems with a high penetration of non-programmable renewable production. Specific applications are based on storage to counter the unpredictable and variable nature

of generation from renewables. CESI has been promoting the sustainable evolution of storage technology for energy systems by providing blueprints and projects to optimize the integration of storage infrastructure, regulatory studies, and studies on participation in electric markets. And, especially service dispatchment, as well as feasibility and economic studies, to identify the best solution for BESS-based balancing services. **In 2021, ENEL asked CESI for help in the development of BESS systems.** These activities include site inspections (assessment of potential environmental issues), a general technical report on the BESS system to be installed, and a check list for site inspection to underline specific issues concerning local constraints, including a landscape overview and a report on electromagnetic fields.

In the context of green technology, in North Africa and the Middle East, CESI is providing support to companies and

state enterprises to promote the energy transition and share its know-how locally. For the Libyan-based Arabian Gulf Oil Company (AGOCO), CESI is participating in a project for the development of concentrated solar energy plants to provide energy to the loads connected to the local electric system. This activity also includes the development of off-grid solar photovoltaic specifications to drive low-voltage wells in remote locations.

In the Gulf Area, in Oman, CESI has conducted consulting services for the integration of renewables to guarantee that the solar photovoltaic systems connected to the distribution network endanger neither the security and reliability of the electric infrastructure, nor the supply quality. With the update of the masterplan for the transmission system of the Oman Electricity Transmission Company (OETC) to 2040, CESI has developed a plan that is aligned with the United Nations' SDGs. In fact, the development plan calls for an increase in the production of emission-free energy from wind and photovoltaic plants thanks to a flexible network capable of countering intermittent generation. It is also providing a reliable supply throughout the

country, the integration of rural areas and the development of transmission assets based on non-conventional technology to mitigate environmental impact.

Created as a private company, Sharjah Electricity Water & Gas Authority currently generates and distributes electricity, water, and natural gas to consumers in the Emirate of Sharjah, the third most populous city in the United Arab Emirates. In January 2022, SEWA published a call for consulting services for small-scale solar photovoltaic systems connected to the grid. Because of its competences and vast R&D experience on generation from renewables, CESI was selected to develop the project to connect these small-scale solar photovoltaic plants to the distribution network, along with guidelines for consumers, consultants and bidders, and safety documents for the installation of the photovoltaic systems. CESI also fielded its experience in the definition of connection standards for solar photovoltaic systems to the distribution network in Bahrain, an archipelago in the Persian Gulf that is very interested in developing a sustainable energy policy by promoting renewables and energy efficiency policy. Assisting the local government in the development of the necessary technical and strategic parameters, CESI contributed to the connection and distribution of renewable energy resources to the country's electric grid, owned by the Bahrain Electric and Water Authority.

> **"The progressive increase in the cost of electricity will contribute to making the use of renewables , including the storage of the generated energy, more advantageous."**

These actions confirm that even countries in the Gulf area (like many western nations) are allowing (small and large) consumers to produce their own electricity from renewables as, in the long term, this will benefit the environment. Moreover, the progressive increase in the cost of electricity will contribute to making the use of renewables, including the storage of the generated energy, more advantageous.

## One on One

# New Languages for a New Scenario

**The big changes underway in the energy sector have strongly conditioned corporate communication. Information on environmental issues pursues new objectives, styles, and registers to address an increasingly informed and committed audience.**

Communication on issues concerning energy and the environment have changed profoundly over the course of the years. Renewable sources, $CO_2$ emissions, and energy savings are no longer niche discussions, and everything is converging towards the issue of sustainability. Unexpected disruption – first the pandemic, then the Russia-Ukraine conflict – has profoundly impacted the reference values of people and their lifestyles, generating **greater attention to aspects that are fundamental to the energy sector**. This is how terms such as resilience, transition, and diversification of energy supplies have become familiar to all of us. The ability to adapt, the evolution of technology driving sustainability, and independence from countries that can influence the cost of energy through their actions are issues that have become part of our everyday experience. And climate change is also uppermost in our attention due to increasingly frequent extreme phenomena with tragic consequences, for everyone.

Communicating about energy is not a simple task as it requires **information on complex issues that are often highly technical, but it is also true that citizens are now more aware, involved, and interested** about these problems. And companies have changed the style in which they address people, **abandoning old-fashioned, unidirectional, and top-down communications**. For a long time, communication in the energy sector was based on information that generically transmitted complex data that was often only comprehensible to sector experts. Information appeared static, bureaucratic, and basically disconnected from news concerning other sectors, such as the economy, politics, and local news.

**For further information on this topic, please contact:**

*Paolo Chighine (Group External Relations Executive Vice President)*
paolo.chighine@cesi.it

Now, everything has changed. Communicating about energy involves interconnections between a range of different issues and this **gives it a value and socio-economic consistence that interests all of us**. Current communication strategies are based on the interconnection of skills and require a multidisciplinary approach amongst different scenarios with the use of new styles and languages. **Writing about energy supplies today means speaking not only about energy, but also politics, economics, foreign affairs, and local news.**

The transformation of the paradigm has been radical. Today, communication plays an essential role in promoting the acceptance of new ways of using energy. So, what is being done to drive the development of an **energy culture amongst the audience at large?** Professionals in charge of information and communication on these issues must pursue a **balance between different needs**. They must explain the complexity of phenomena, but also simplify them without appearing banal, so that they may be understood by different target audiences. They must narrate interesting and exciting stories to drive positive behavior by focusing on all interconnected aspects (economics, politics, social issues) and provide data without boring their readers. They must propose important changes that can be implemented through reasonable, non-revolutionary solutions and use an easily comprehensible language to present scientific data in an interesting manner.

## The New Communications Register of Energy Companies

Company macro trends in communication have changed after the pandemic. Above all, what emerges is the need to **place people at**

**the center and pay particular attention to the needs of consumers, who require more control and awareness of their choices**. This new normal has introduced a greater understanding of the impact of consumers both on personal lifestyles and on collective health. Companies must now interact with **users, who, in the end, are more interested in companies that can provide well-timed information to help them make informed decisions**. In brief, this calls for **transparent, clear, and timely information**.

> **Companies must now interact with users, who, in the end, are more interested in companies that can provide well-timed information to help them make informed decisions.**

However, this alone is not sufficient. We are still facing a **period of great challenges in the energy sector**, and not only. These objectives require companies to play another important role. They must **help and reassure people** through **positive communication**, avoiding any form of protagonism (promoting a brand is perceived as wrong at present) or alarmistic tone. Consumers should feel like "travel companions" facing the same challenges. And this means companies must **communicate empathically** and appear connected to their stakeholders, understanding difficulties and **being able to provide concrete solutions, practical information, and useful advice** on how to face new emergencies such as the rising cost of utility bills.

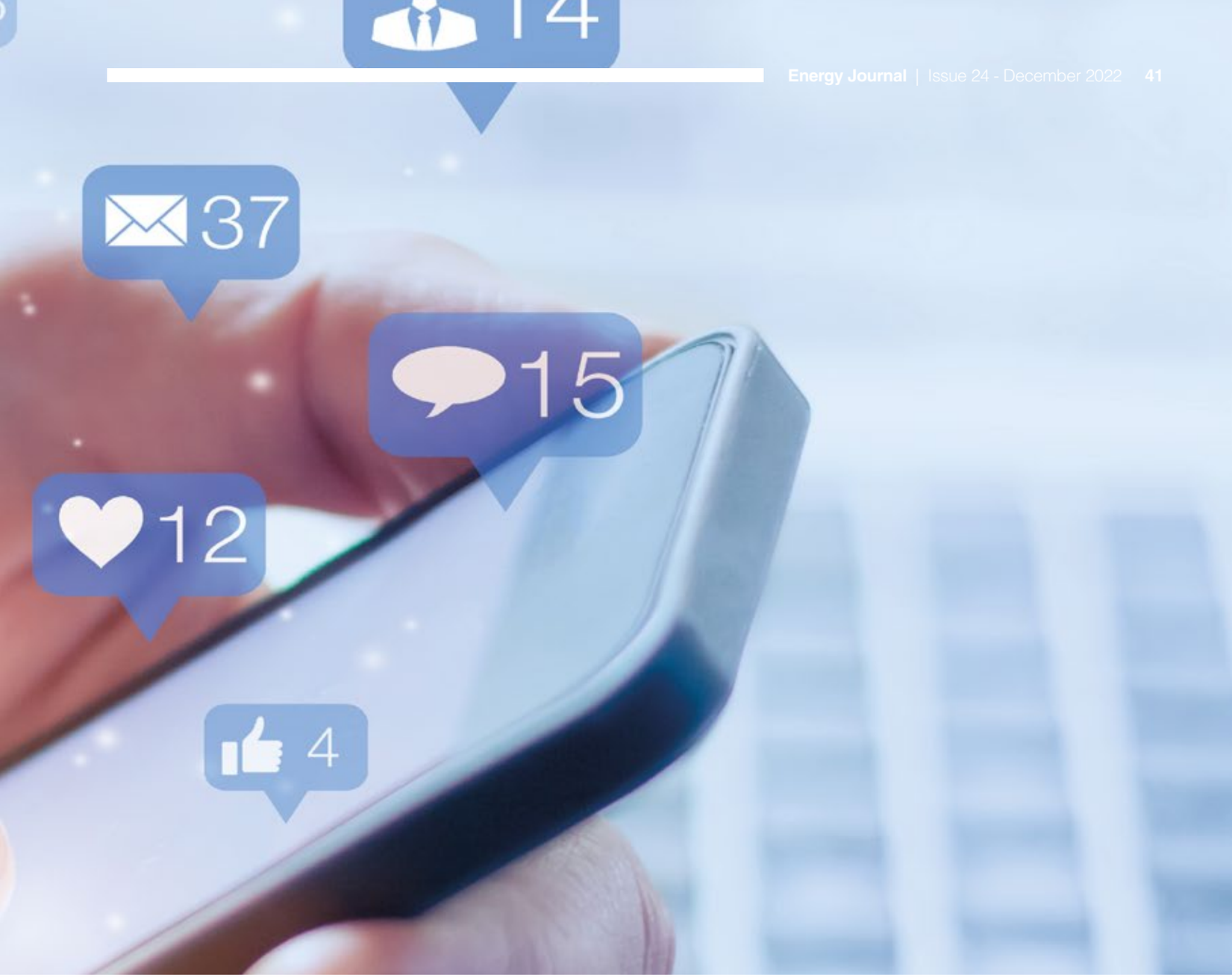
Today, companies need to communicate their ability to help stakeholders face the challenges posed by the energy transition through their **competences and ability to innovate**. Unlike in the past, it is no longer sufficient to be perceived as experts in a sector. Slogans and big numbers are no longer enough. Users seek trust.

Companies have also come to understand that **sustainability has become a central issue** and consumers are increasingly careful about their choices. **Communication** addressing company sustainability must

be **transparent and documented, as the ability to uncover greenwashing has increased significantly. Communication about energy, climate, and the environment are fundamentally based on three points: clarity, empathy, and positivity**. Companies understand they must abandon acronyms and professional jargon, as these hinder involvement, understanding, and motivation.

## Environmental Communication on Social Media

In general, one of the main changes that has taken in place in communications, and in the energy sector, too, has been the rise of **social media networks**. They currently are the most common tools used by companies to implement **direct and unmediated communication with clients**, especially when the issues addressed concern everyday life, like the increasing cost of energy, utility bills, and energy savings. The **speed** at which social media messages reach users is of great impact with valid content, which must, however, be care-



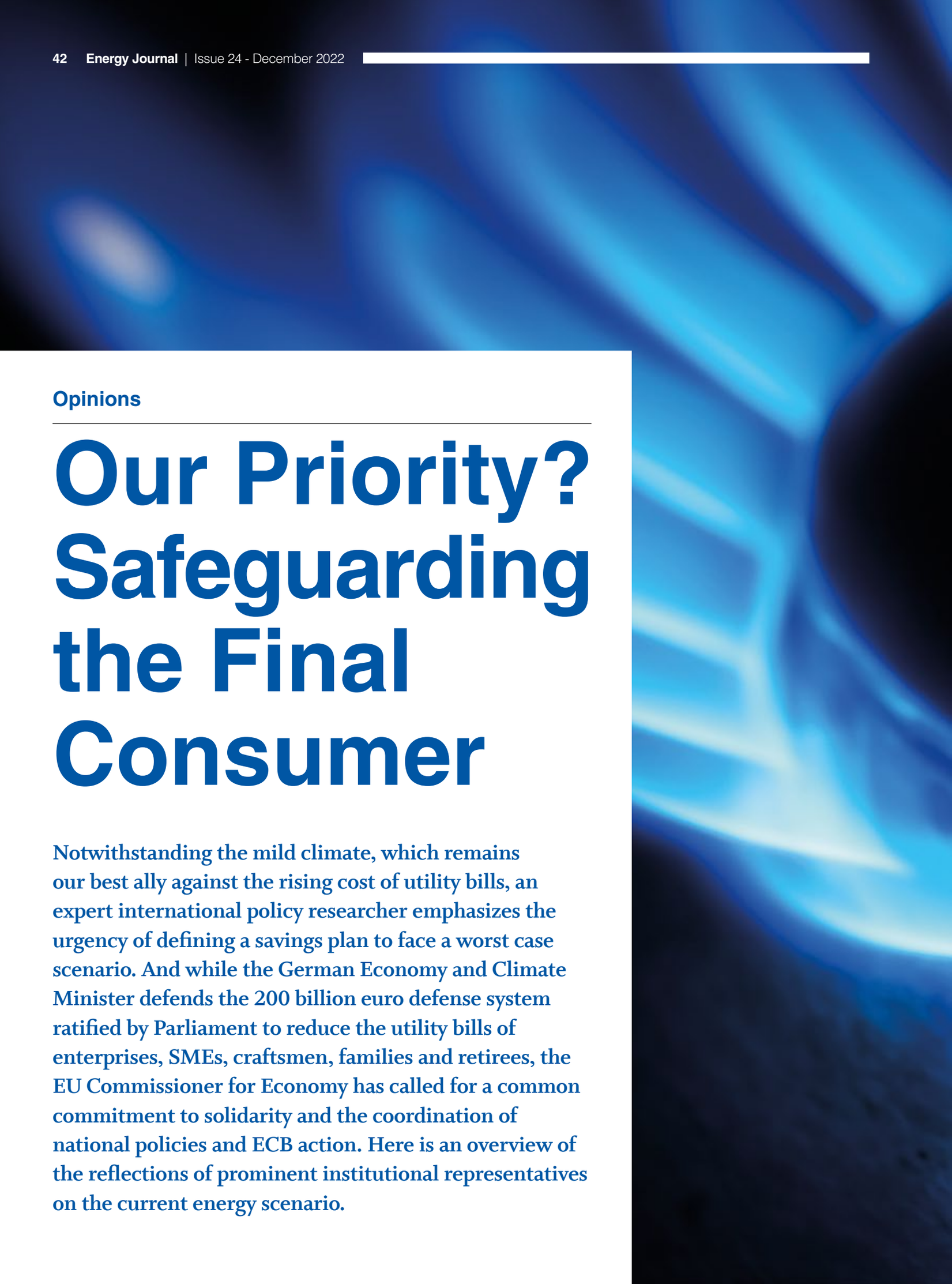

fully calibrated to the specific type of social media platform. Companies are increasingly aware that social media requires **targeted communications**. They must understand their specific target audience per each channel, employ the right language for that target, and cadence publication of content so to increase user interest. Thus, companies need not be omnipresent on social media, but they must make a fundamental choice and select the platforms that are best suited to the type of message they wish to provide.

**Openness and timing** are the key words for communication by the energy sector on social media. It is fundamental for all published content to be true and **documented**, as the audience is very reactive and will immediately uncover and refute errors. Furthermore, companies must also **fight the diffusion of fake news and disinformation**, especially on a delicate and central issue such as energy. Discussions on issues as complex and divisive as the environment require honesty, openness, and pertinence, with short, but clear messages.

## The EU Commitment Against Environmental Misinformation

In this phase, with the great changes underway in the global energy scenario, communications play an essential role to promote the acceptance and diffusion of new ways of using energy. This requires the development of an "energy culture" amongst users at large, a context that must be based on objective information and data. The European Union has promoted a series of initiatives to fight fake news on environmental issues. The challenge is based on **task forces, codes, support to independent media, and media literacy**. In short, these are a series of measures that will orient users through the information overload available on issues such as energy and the environment and point to reliable sources. For example, amongst the EU bodies providing timely, specific, pertinent, and reliable information on environmental issues, the **EEA - European Environment Agency** is working to promote sustainable development in Europe and quantify its progressive improvement. Moreover, the EEA oversees the collection, management, and analysis of data, operating as an information center on the environment and providing updates from the EU Commission and individual member states. In order to provide timely and verified information, the agency is constantly updated on the environmental conditions of member states via the European Environment Information and Observation Network (Eionet).

Further significant action taken by the European Union includes the recent review of the **Code of Practice on Environmental Disinformation** with new on-line operators and the use of social media platforms – such as **Twitter** and **Facebook** – to promote experts and reliable sources on climate change. Further preventive action will be taken by **Google** that has decided to prohibit "advertising and profits from content that contradicts the scientific consensus on the existence and causes of climate change."



Opinions

# Our Priority? Safeguarding the Final Consumer

**Notwithstanding the mild climate, which remains our best ally against the rising cost of utility bills, an expert international policy researcher emphasizes the urgency of defining a savings plan to face a worst case scenario. And while the German Economy and Climate Minister defends the 200 billion euro defense system ratified by Parliament to reduce the utility bills of enterprises, SMEs, craftsmen, families and retirees, the EU Commissioner for Economy has called for a common commitment to solidarity and the coordination of national policies and ECB action. Here is an overview of the reflections of prominent institutional representatives on the current energy scenario.**

# Robert Habeck

## German Economy and Climate Minister

To safeguard enterprises and consumers against rising costs, the German Parliament reactivated the Fund for the Stabilization of the Economy (*Wirtschaftsstabilisierungsfonds*, WSF) that was created in March 2020 to address the consequences of the pandemic and remained active through June 2022. In its new version, the WSF Fund, which provides a "defensive shield against the energy war" through March-April 2024 for a total value of €200 billion, or roughly 5% of the GDP, will allow the federal government to contain a large part of the increase in utility bills, lowering the high cost of gas for enterprises, SMEs, craftsmen, families, and retirees by directly compensating producers/distributors and reducing the gap between the cost on the market and the price for finals users.

"We are aware," Minister Habeck explained, "that a gas market crash and the collapse of our national economy would have serious consequences for our European partners. The shield aims to stabilize the utilities that are suffering due to the lack of Russian gas, and it should only last through 2024. It will help not only industry, but also consumers, to overcome the crisis. A significant percentage of the funds will be used to consolidate the gas market and prevent its collapse."

This €200 billion fund provides an efficient defense against the consequences of the Russian-Ukrainian War. Unlike the Spanish Model, Germany has introduced an incentive to savings, establishing a ceiling for the consumption of gas by enterprises and citizens: below this level, expenses will be subsidized; above it, clients will have to face the high costs of the free market.

In mid-October, the German Government stated that it would keep its last three nuclear plants operative through April 15. "In difficult times," explained the German Minister, "we need to make unpopular decisions. We are reopening our electric coal plants, even though this is harmful to the climate. And although we must abandon all fossil fuels, we are also building LNG terminals. We are doing everything necessary to guarantee secure supplies. Indeed, the true solution to our problems is a greater reliance on renewables, which have become the key to energetic security. We will obtain sustainable energy supplies only by increasing our independence, throughout Europe."

*Source: La Stampa, October 18, 2022*

# Matteo Villa

## Research Fellow at ISPI, Institute for International Politics Studies



"At present, the best ally of our utility bills is the weather. A warm autumn has already allowed us to save over a billion cubic meters of gas. However, if we wish to have sufficient supplies for a trouble-free winter, we will need to draft a plan to reduce consumption. Will we survive a winter without Russian supplies? The answer is most probably yes, although we will have to deplete some of our strategic reserves. These are emergency deposits amounting to 4.5 bcm out of a total of 17 bcm. Naturally, it will also depend on how cold January and February are. If the winter months were to be particularly cold, we would probably have to turn to our strategic reserves by March, which are always very difficult to extract from the deposits."

"In addition to the weather, supply is another concern. At a certain point, we may no longer receive gas either from Russia or Norway. Norway's decision would be commercial. North Sea Gas is bound by spot contracts and supplies could go to the highest bidder. Germany, Poland, and other Eastern European countries are dependent on Norway and without an EU-level agreement this could lead to competition amongst European member states. In any case, the best way to prepare is to be ready to ration consumption."

"Moreover, anyone who believes we have been fortunate to have such mild weather throughout October and the beginning of November is not correctly interpreting the data. While it is true that, in October, we consumed 22% less gas than in October 2021, improving on September (-14%), total savings only amount to a billion cubic meters of gas. And although we cannot make any forecasts for the winter, heating consumption accounts for two thirds of the total consumption of gas, 55 bcm. Therefore, it is essential to draft a plan that will allow us to reduce consumption in a worst case scenario. And a price cap to the cost of gas in Europe is not the solution, either. The price of gas is a consequence of the crisis. It's not caused by market speculation, but by market uncertainty. At present, Europe is paying LNG 10-15% less than Asia. However, if we were to cap the price, this might lead to greater consumption and drive ships towards other destinations, where the price is higher."

"The International Energy Agency has indicated that next winter will be a greater issue. Indeed, we still have a reduced level of Russian gas reserves but by next winter, if the war were to continue, the reserves would be depleted. Moreover, this year we benefitted from the LNG that did not go to China due to the Covid situation in Asia. This will not be true next year. And there are not many market alternatives given the fact that global production will not be ramped up by new investments until 2024-25. Replenishing our reserves will be an issue next summer. At present, forecasts indicate that we will only be able to satisfy 60% of our requirements and according to a recent forecast by the Oxford Institute for Energy Studies, Germany will only be able to satisfy 55% of its demand. Drilling for new gas sources will not meet the time requirements, either. New national gas production will not be ready to help either this year or next year. Moreover, even if national production were to be doubled, it would amount to an extra 3 bcm, less than 5% of our demand."

*Source: La Repubblica, November 14, 2022*

# Paolo Gentiloni

## European Commissioner for Economy



"European families are spending 20% of their income for food and 15% for energy, a total of 35%. Obviously, this is an average. Many families spend nearly 50% of their income on food and energy. We need to help them, but we must also avoid that support measures undermine our efforts in terms of money policy, as it is in our common interest to reduce inflation. So, we need to coordinate national policies with the action of the ECB."

"The current energy crisis presents us with the same issues we faced during the pandemic, as fiscal space varies amongst member states. We must discuss the possibility of identifying further common financial tools based on loans to avoid any such fragmentation. It is not the moment to point our fingers against one state or another. Now, we need common solidarity. National-level actions have important repercussions on other member states, so a coordinated European-level approach is crucial."

*Source: Milano-Finanza, October 18, 2022*

## News & Events

# Upcoming Energy Events

### Fuels of the Future 2023

**January 23-24**

Berlin

*www.fuels-of-the-future.com*

The 20th International "Fuels of the Future 2023 - Navigator for Sustainable Mobility" Conference will address the outlook of biofuels, biomethane, bioethanol and biodiesel in the transports sector, Power-to-X fuels, and recent developments on the international biofuels market and trade.

### Elecrama

**February 18-22**

India Expo Mart, Greater Noida

*www.elecrama.com*

The 15th edition of Elecrama will focus on the enormous business opportunities available with cables, LV distribution panels, solar photovoltaic, power electronics, electric vehicles, charging infrastructure, components and the value chain of battery and green hydrogen storage. The event is the most important appointment dedicated to the electric industry and electronics in the Indian ecosystem.

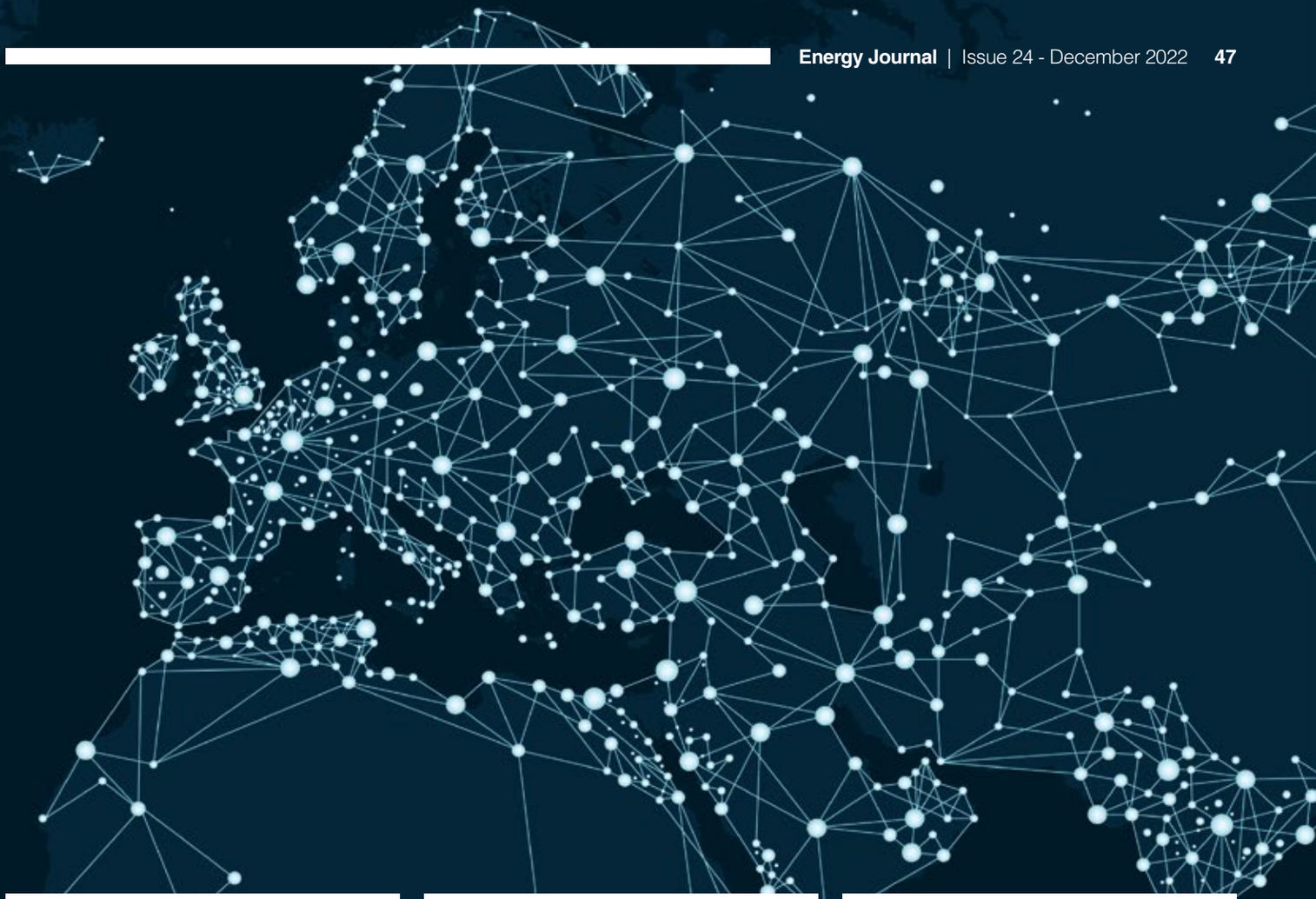
### Powergen

**February 21-23**

Orlando, Florida, USA

*www.powergen.com*

POWERGEN International will provide an overview of new energy generation solutions from sustainable sources to large enterprises in electricity generation and technology supplies. The evolution of clean energy is being designed in a highly innovative environment to meet the Objective 2050.



## Klimahouse

**March 8-11**

Bolzano, Italy

*www.fierabolzano.it/it/klimahouse*

The most innovative solutions in terms of energy efficiency and sustainable construction are presented by Klimahouse, the international fair that organizes a series of collateral events (conferences, seminars, workshops, and guided visits) besides an extensive showcase area. The event program includes 150 appointments over four days to connect and inform all those who believe in better building for better living.

## Offshore Wind 2023

**March 28-30**

Baltimore, USA

*www.offshorewindus.org/2023ipf/*

The first North American conference dedicated to offshore wind energy will bring together thousands of experts from around the world searching for supply chain partners. This event provides will allow participants to grasp the outlook of a blooming offshore wind industry in the United States and collaborate with innovative enterprises to guarantee sustainable development.

## EnergyMed

**March 30 - April 1**

Naples, Italy

*www.energymed.it*

The 14th EnergyMed – International Fair and Exhibition on the Energy Transition and Circular Economy is dedicated to energy transition and technological innovation in the green and circular economy sectors. This international fair brings together on a single platform all the sectors that support the ecological transition: renewables, energy efficiency, sustainable mobility, digitalization, integrated services, and solutions for transforming waste into resources, integrated urban water management, and environmental remediation and regeneration.

# Shaping a Better Energy Future

CESI is a world-leading technical consulting and engineering company in the field of technology and innovation for the electric power sector. In particular, through its Division KEMA Labs, CESI is the world leader for the independent Testing, Inspections and Certification activities in the electricity industry. With a legacy of more than 60 years of experience, CESI operates in 40 countries around the world and supports its global clients in meeting the energy transition challenges. CESI also provides civil and environmental engineering services.

The company's key global clients include major utilities, Transmission System Operators (TSOs), Distribution System Operators (DSOs), power generation companies (GenCos), system integrators, financial investors and global electromechanical and electronic manufacturers, as well as governments and regulatory authorities. In addition, CESI works in close cooperation with international financial institutions such as, among others, the World Bank Group, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank, the Asian Development Bank.

CESI is a fully independent joint-stock company headquartered in Milan and with facilities in Arnhem, Berlin, Prague, Mannheim, Dubai, Rio de Janeiro, Santiago de Chile, Knoxville (USA) and Chalfont (USA).

**www.cesi.it**

CESI
Shaping a Better Energy Future

Get it on Apple Books