

A large, colorful graphic composed of various geometric shapes and icons representing energy and technology. The central focus is the text 'WE MO' in large, bold, white letters on a dark purple background. Surrounding this are icons for a power line tower, solar panels, a car, a wind turbine, and batteries. The background is a mix of blue, purple, and green tones with various patterns like dots and lines.

WE
MO

World Energy
Markets Observatory

Key Takeaways

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Creating a better normal

As the world emerges from the first wave of COVID-19, there is much talk about our return to a so-called “new normal”—one where millions of people work from home, global travel is severely reduced and entire industries operate at limited capacity.

At first glance, these shifts proved beneficial to the environment. Mobility restrictions and a sharp industrial downturn led to an 8.5 percent reduction in emissions, the largest since World War II. The world celebrated as dolphins were spotted in the waters surrounding Hong Kong and the air quality in cities like Punjab was high enough to eke out views of the mountains in the distance for the first time in years, or even decades.

But as time goes on, we see that even this “new normal” isn’t good enough from a climate change perspective. In spite of these significant changes, scientists predict that we will not meet the 1.5-2° scenario needed to meet the Paris accord objectives. Further, as the world continues to recover, most regions are experiencing a rebound in emissions, underscoring the idea that our progress was temporary.

As the world continues to respond to the COVID crisis, we must ask ourselves difficult questions about how we use this moment of severe disruption: Will we emerge from this pandemic and revert to the status quo or will we use this event to create a substantially different way of living and working? Will we focus solely on the recovery of what was lost over the past several months, or will we restructure our economic priorities to improve long-term viability, or even survival itself? Do we, as a society, need to adjust to the new normal, or create a better one?

These are the issues that we explore in this year’s **World Energy Markets Observatory (WEMO)**, Capgemini’s annual thought leadership and research report that tracks the development and transformation of energy markets around the world. As in years past, the research highlights how far the world is from reaching its climate change goals. But unlike our previous issues, which called for drastic action, we now see that our efforts must not just be significant, but also sustained, comprehensive and universal.

Our research underscores the role that utilities must play in this area, serving as an orchestrator to improve cross-industry transformation and public-private partnerships to address the issue of climate change. Here I explore some of the opportunities highlighted in this year’s WEMO as it relates to energy transition, climate change and sustainability:

1. Identify high-impact initiatives.

Every country is at a different stage in their energy transition and climate change agenda, which means that there is no single path forward.

For example, in Europe, energy use for thermal applications, which accounts for about half of all final energy use in Europe, represents a large and complex part of the region’s overall energy consumption and emissions strategy. Decarbonization is a difficult but necessary step to take to achieve 2030 and 2050 climate change goals. Our research indicates that biomethane can be injected in low pressure gas networks to enable a circular economy system.

Another priority area in Europe is transportation, as it is the only major economic sector in which GHG emissions have increased in recent years, now accounting for around one-quarter of the EU’s total emissions.



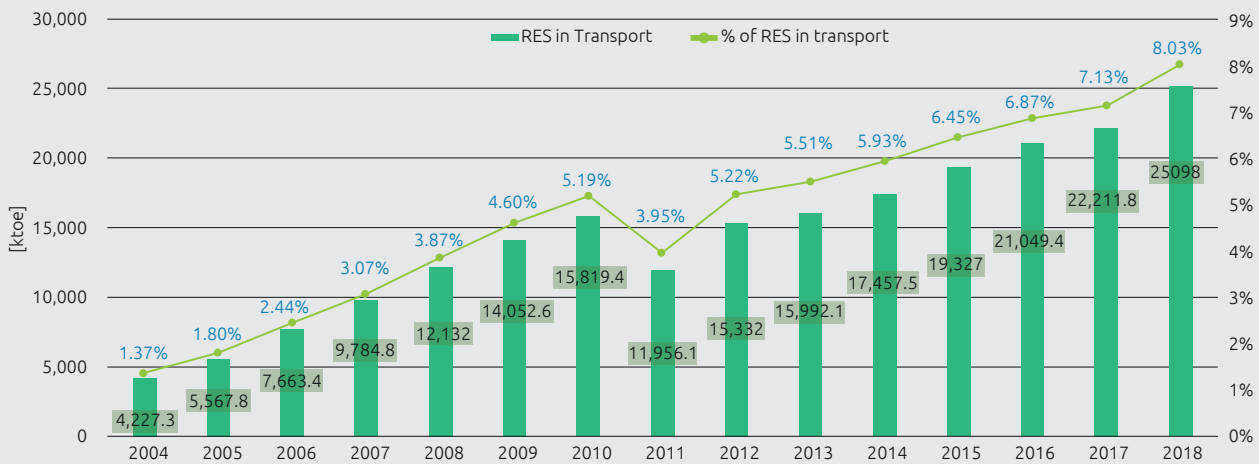
Climate change is an issue that must be considered by every industry, every company, every individual. The agenda will not be measured in months or years, but as a lifetime commitment.





FIGURE 1

EVOLUTION OF RENEWABLE ENERGY CONSUMPTION IN THE TRANSPORT SECTOR IN EU28 (KTOE AND %)



Biofuels and bioliquids are instrumental in helping EU countries meet their 10 percent renewables target in transport. Trams, buses and passenger vehicles powered by renewable electricity need to become the predominant forms of city transport. In sectors such as aviation, shipping and long-haul road transport, biofuels and electric-fuels derived from renewable hydrogen will play a central role.

Finally, increasing buildings renovations—which includes thermal insulation refecton and heating, cooling and lighting equipment replacement by more energy efficient systems—is another critical component of Europe’s energy efficiency strategy. Our research shows that the majority of renovations projects focus on non-energy upgrades in both the residential and non-residential sectors. Our analysis reveals that in order to reach 2030 EU-energy efficiency and climate targets, the region must significantly increase energy-related projects from the present level of 36 percent.

By 2030, 70% of transport fuel will still be petroleum based despite ambitious e-mobility goals.

2. Embrace a combination of digital and sector technologies to accelerate energy transition goals and maintain reliability.

A dip in consumption coupled with ideal weather conditions during the lockdown period led to an unexpected jump in the renewable share in the electric mix. As green energy sources, such as wind and solar, exceeded 40 percent of the total mix in Europe the industry recognized two conflicting takeaways: It is possible to accelerate the adoption of renewable sources; and the use of intermittent power sources could affect reliability.

This year’s WEMO, as well another recent piece of research from Capgemini—[Fit for Net Zero: 55 Tech Quests to accelerate Europe’s recovery and pave the way to climate neutrality](#)—confirm that more needs to be done to improve predictability, reliability and security of supply. Addressing the core challenges on the transformation roadmap, including renewable-related intermittency, progressive electrification and decentralization, requires a combination of digital and sector technologies.

At-scale deployment of AI/ML, robotics, Internet of Things (IoT) and communications technologies will be instrumental in lowering costs for clean energy sources, improving system reliability and ensuring adequate supply. At the same time, sector technologies are needed to manage solutions related to demand response, local generation and renewable advancement.

3. Recovery packages should be seen as a way to preserve regional economies and accelerate energy transition.

Many countries have announced financial aid packages in response to COVID-19. For example, the United States has announced a massive stimulus plan to develop renewables energies and improve energy efficiency. With the GREEN Act, which is part of \$1.5T Moving Forward Act, the federal government attempts to stimulate the economy through green energy investments. It will also provide financial incentives and tax credits to households that commit to low-carbon mobility and energy efficiency measures.

The European Union is also delivering stimulus plans in order to preserve its economy and promote a sustainable recovery. Next Generation EU is a \$890B recovery instrument to kickstart the European economy while establishing a greener pedestal. As part of this plan, the EU is planning to boost the development of renewable energies, including low-carbon electricity and hydrogen, which are considered as future greening vectors.

While this legislation is a start, it represents only one piece of the total recovery plan. More needs to be done to ensure that all recovery efforts incorporate sustainability requirements and that recovery funds are exclusively dedicated to the climate change agenda.

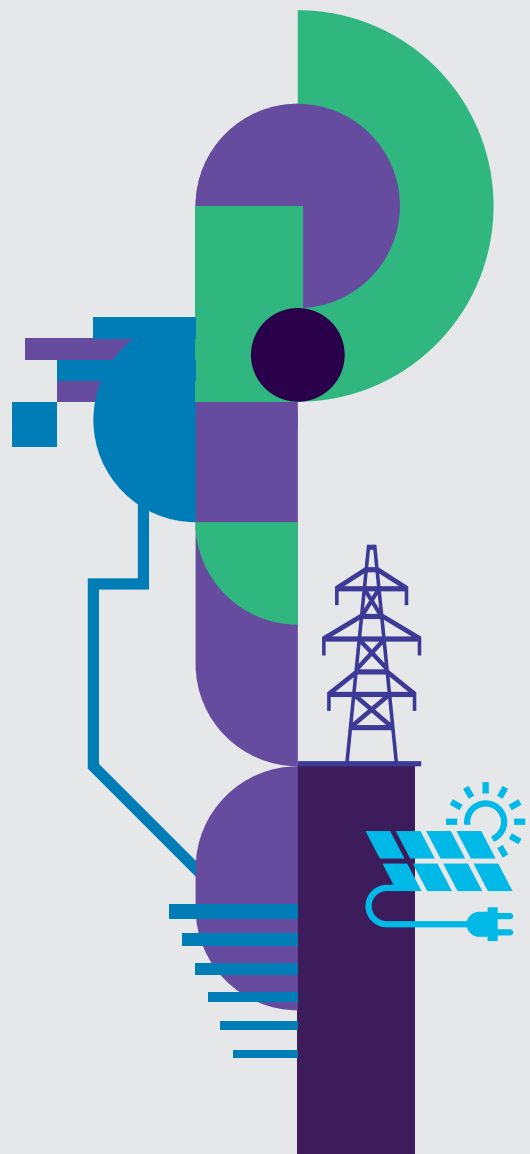
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4. Increasing nuclear energy generation is part of the overall emissions reduction strategy.

Global economic growth necessitates affordable, reliable and abundant energy. While renewables are an important part of the energy mix, they are unlikely to account for 100 percent of the world's energy needs. Nuclear energy—which emits only 6g CO₂/kwh (less than wind or solar sources though it produces more emissions during asset building)—will be instrumental in addressing the sector's dual priorities of lowering CO₂ emissions and maintaining system reliability. Nuclear. This will become more important as EVs become more ubiquitous, which will in turn increase demand and potentially strain the system.

The safe and effective use of nuclear energy as part of the generation mix will be explored in future WEMOs—and one of particular interest to me as I help my clients in their pursuit of a “better normal.”





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