

22nd Edition World Energy Markets Observatory: Europe

In pursuit of a "better normal"

Region: **Europe**
Population: **515 million**
GDP: **\$15.6 trillion**



At a Glance

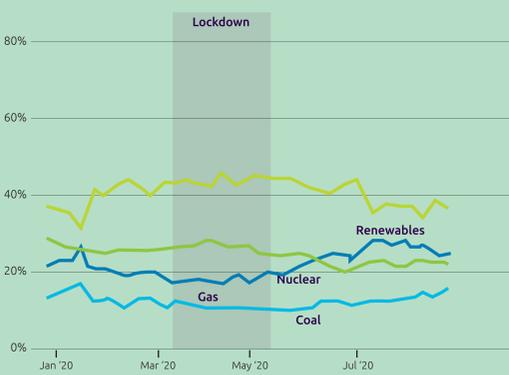
- Total CO2 emissions: **3,330 Mt**
- Investments in clean energy: **\$76.4B**
- Share of renewables in electricity mix: **23%**
- Coal production: **-13%**
- Coal consumption: **-18%**
- Number of EVs: **1.1M**
- Nuclear plants under construction: **4**

European renewable capacity surged by 42% in 2019.

+110%

Solar additions skyrocketed, mainly due to continuous development in Germany and accelerated commissioning in Spain.

EU Electricity mix (2020)



50% projected

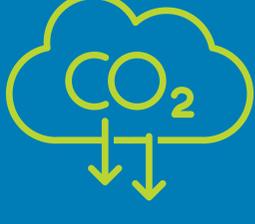
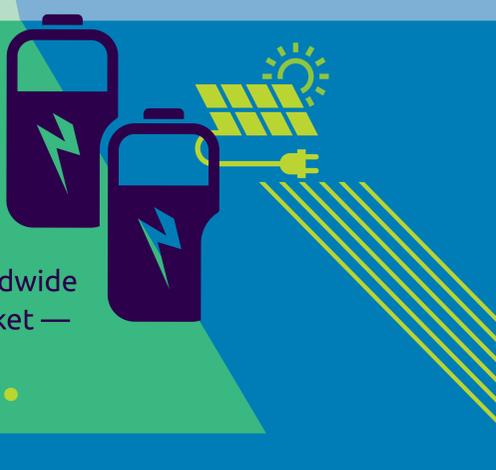
share of renewables in Europe's power generation mix by 2025

The EU's share of renewables in the electricity mix topped 40% during spring 2020.

Higher than usual shares of renewables during the COVID-19 lockdown period caused near blackouts in the UK and Germany — highlighting Europe's grid stability as the use of intermittent renewables grows.

6 number of megafactories in planning or under construction in Europe which will allow the region to take more control of battery production

By 2030 Europe will triple its worldwide footprint in the megafactory market — from **6% to 18%**.



Renewable hydrogen shows promise as a carbon-neutral solution but scaling its use will require lowering the cost of electrolyzers.

The EU has potential to be a global leader in the electrolyser manufacturing industry, owing to the region's expertise in electrolysis-based chlorine production and company capabilities.

According to Hydrogen Europe, by 2030:

40GW of electrolyser capacity could be fully operational

4.4Mt of hydrogen could be produced

Up to **170,000** local jobs could be created through European investments, including:

€9B in Germany

€7B in France



The levelized cost of renewables is falling but at a slower rate.



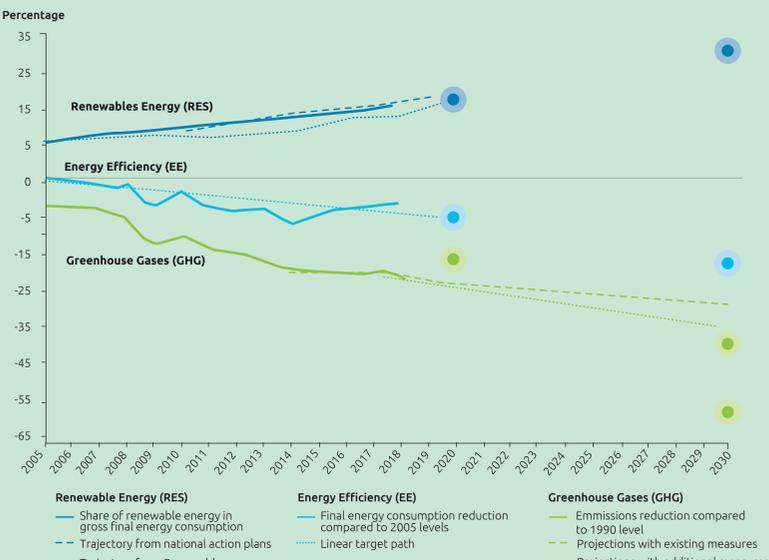
-13% Electricity cost from utility scale PV 2019

€57/MWh Average LCOE utility scale PV 2019

-9% Electricity cost from onshore wind 2019

~€45/MWh Average LCOE onshore wind 2019

Europe achieved 2 out of 3 of its 2020 climate change targets but will fall short of 2030 goals. Buildings renovation is at the heart of the EU strategy but results and commitments remain insufficient



Only European Oil and Gas majors have accelerated the energy transition agenda, though investments need to increase.

50% non-core investments are dedicated to renewables by EU Oil & Gas majors



The European Green Deal commits

€100B per year

over 10 years to help transform the EU's economy for a more sustainable future.

The European Green Deal will be reinforced by the region's COVID-19 recovery package, which totals **€750B** and stipulates that at least **37%** of the projects must be green.

European gas production:

-7.5%

European energy players revenues:

+1.8%

European LNG imports:

+86%

European residential electricity prices:

+3%



Are Utilities' financials endangered by the crisis?

In Europe, H1 2020 results show signs of the effects of COVID-19 — though with hedging, financials in H2 2020 and 2021 may be impacted.

Utilities transformation roadmaps must be reconsidered in a post-COVID world.

Energy Transition, Carbon Neutrality

Priority #1



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Download a copy of our interactive E-book. Access all the 22nd edition highlights, expert perspectives and key recommendations in our interactive WEMO e-book.



"In this year's World Energy Markets Observatory, we see the need to take a more ambitious and concrete plan to address the dire need for climate action—and COVID may be an unlikely impetus for change. As governments pass economic stimulus bills and recovery packages, it is possible to prioritize "green" initiatives, accelerating energy transition and sustainability goals."

Philippe Vié
Vice President and Sector Head for Energy, Utilities and Chemicals, Capgemini



About WEMO

The World Energy Markets Observatory (WEMO) is Capgemini's annual thought leadership and research report that tracks the development and transformation of electricity and gas markets in Europe, North America, Australia, Southeast Asia, India and China. Now in its 22nd edition, WEMO examines the following topics: climate change & regulatory policies; energy transition; infrastructure & adequacy of supply; supply & final customer; transformation; financials; and, for the first time, the oil & gas industry. This edition also includes data and analysis for the first half of 2020 due to the extraordinary events related to COVID-19.

For more information, please visit: www.capgemini.com/WEMO