Gas-reliant Italy is lagging behind in Europe's race to renewables

Analysis by energy think tanks Ember and ECCO finds that Italy is lagging far behind other major European economies in decarbonising its electricity sector.

Key findings

- Italy is aiming for just 55% renewables in its electricity mix by 2030, compared to targets over 75% in Germany, Spain, Portugal, the Netherlands and the UK. Unless plans are updated, Italy risks being one of the EU's largest producers of electricity from fossil gas by 2030.
- Enel, Italy's largest power utility has recently announced a total fossil gas phase-out by 2040. However, the Italian capacity mechanism is enabling utilities to invest in new CCGT baseload plants from 2024 to 2040.
- Italian wholesale electricity prices have almost tripled in the last year, and the majority of this increase can be attributed to soaring gas prices. It is now three times cheaper to generate electricity from new onshore wind and solar PV.

Sarah Brown, Ember's Senior Analyst, said:
"Italy is being left behind in Europe's race to renewables. The surge in gas prices this year has confirmed the substantial economic and political risks associated with a continued reliance on imported gas. Italy needs to step up its deployment of renewables to reduce its gas dependency and play a more significant role in accelerating the decarbonisation of the EU electricity sector."

Michele Governatori, ECCO's Energy Programme Lead, said:
"Relying on power security solely from thermal plants is putting affordability and decarbonisation of the Italian energy system at risk. Unlocking new RES, integrating demand response in the balancing services, and activating dynamic power pricing are urgent tools for transition."

Contents

Clean power is a hallmark of a credible Net Zero plan

There is an emerging consensus that the rapid and early decarbonisation of electricity is an essential feature of any credible net zero plan.

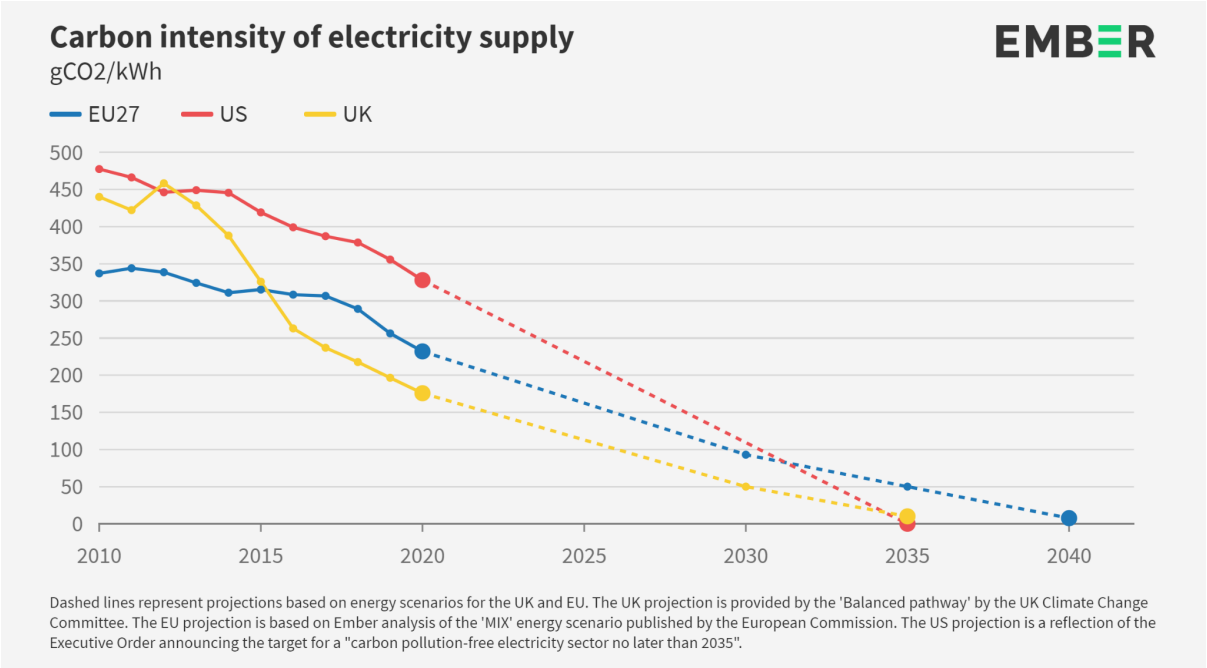
Clean power delivers a positive feedback loop of emissions reductions through electrification of sectors like transport, heating and industry. Without it, economy-wide decarbonisation is impossible.

However, to unlock these benefits, zero-carbon power must be achieved well in advance of mid-century net zero targets. The International Energy Agency's Net Zero Roadmap sees advanced economies like the EU decarbonising their electricity by 2035. The EU's own modelling puts this milestone soon after.

The big players are already starting to take note. The UK, US and Canada have all made commitments to achieve emissions-free electricity by 2035. A number of European countries, including Germany, Spain, Portugal, the UK and the Netherlands, are targeting a renewables-dominated electricity system in the 2030s, while France, Sweden and Denmark already burn minimal fossil fuels.

This year, G7 countries agreed to 'overwhelmingly' decarbonise their electricity in the 2030s. However, despite signing the G7 agreement, Italy has yet to make commitments that fully align with this ambition.

Official energy scenarios of the EU, US and UK



Source: Ember 2021, Zero-Carbon Power

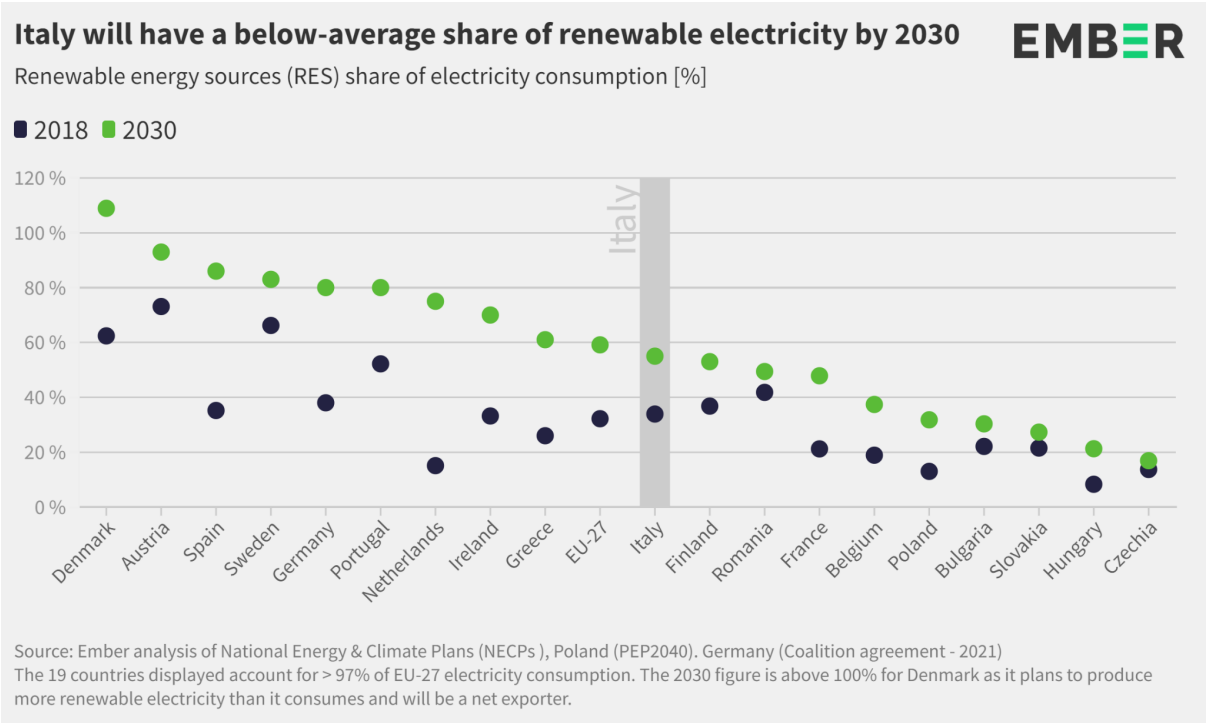
Italy lagging behind in decarbonising its electricity

Italy is lagging far behind other major EU economies when it comes to taking action to fully decarbonise the EU electricity system by 2035 and align with 1.5°C.

Renewables: Austria, Denmark, Germany, Portugal, Spain, Sweden and the Netherlands all now have targets to cover 75% or above of their electricity consumption with renewables by 2030. According to its National Energy and Climate Plan (NECP), Italy is only aiming for 55%.

And Italy's 2030 wind and solar target is only 34% of consumption. This is significantly less than other countries such as Denmark (94%), the Netherlands (72%), Spain (72%), Portugal (54%), Germany (54%*) and Greece (47%).

*based on previous NECP, now likely to be higher

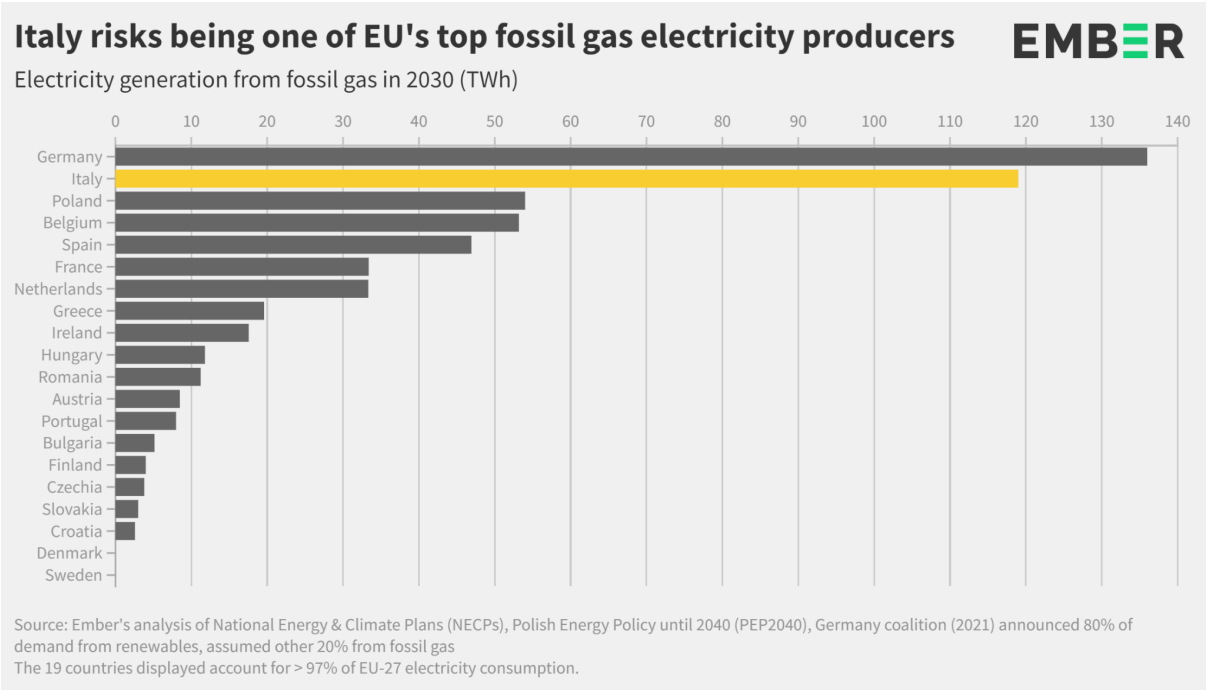


The new German coalition government recently announced a target of 80% of electricity from renewables, a significant rise from 65% in its NECP. Germany intends to increase installed solar PV and offshore wind capacity to 200 GW and 30 GW respectively by 2030. This is a step up from current levels of 58 GW (+142 GW) and 8 GW (+22 GW). The government did not specify new targets for onshore wind capacity, but said 2% of Germany's land area is to be designated to these installations.

In comparison, Ember's Global Electricity Review 2020 revealed that Italy's installation of new wind and solar capacity has stagnated and that Italy's retired coal generation is instead being replaced by fossil gas. From 2015 to 2020, Italy installed less than 2 GW of wind

capacity and 3 GW of solar capacity. In 2020, wind and solar only accounted for 16.5% of Italy's electricity production.

Fossil gas: According to its National Energy and Climate Plan (NECP), Italy intends to generate 119 TWh of electricity from fossil gas in 2030 - one of the largest amounts planned in the EU-27. Italy will also have one of the highest shares of fossil gas in its generation mix, accounting for 38% of its electricity production in 2030.

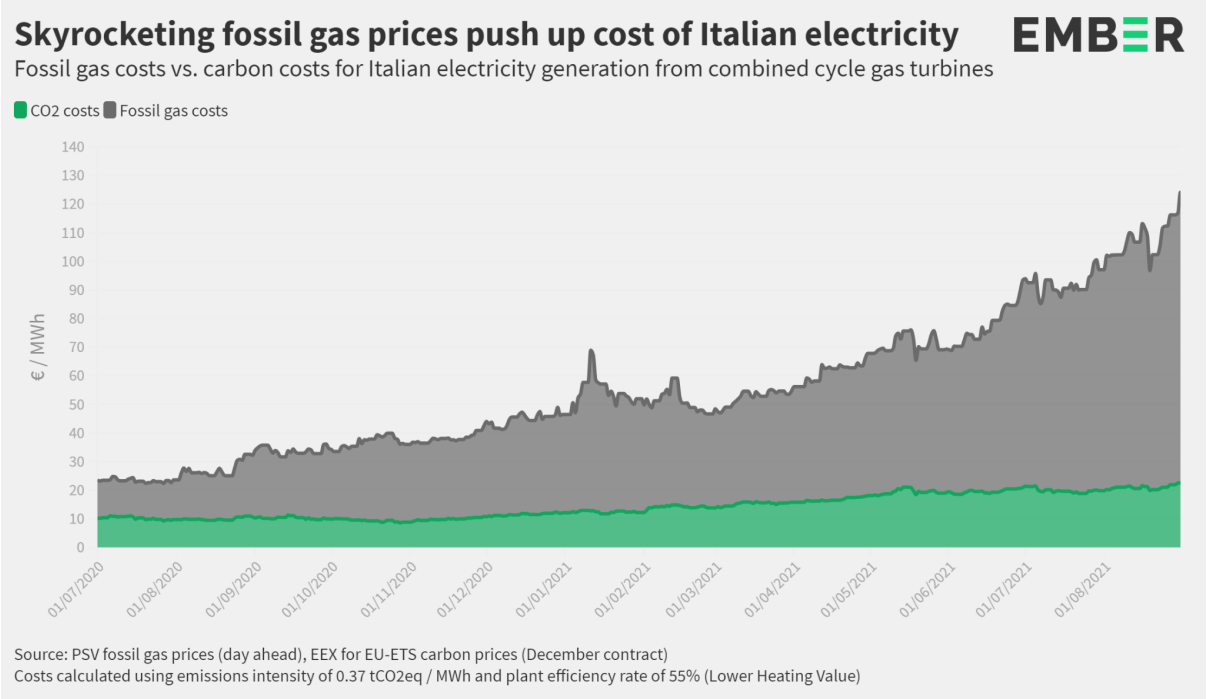


Enel, Italy's largest power utility (and the world's second largest), recently announced a 2040 fossil gas phase-out, ten years ahead of schedule. This is a clear signal that it recognises the future lies in greater electrification powered by renewables.

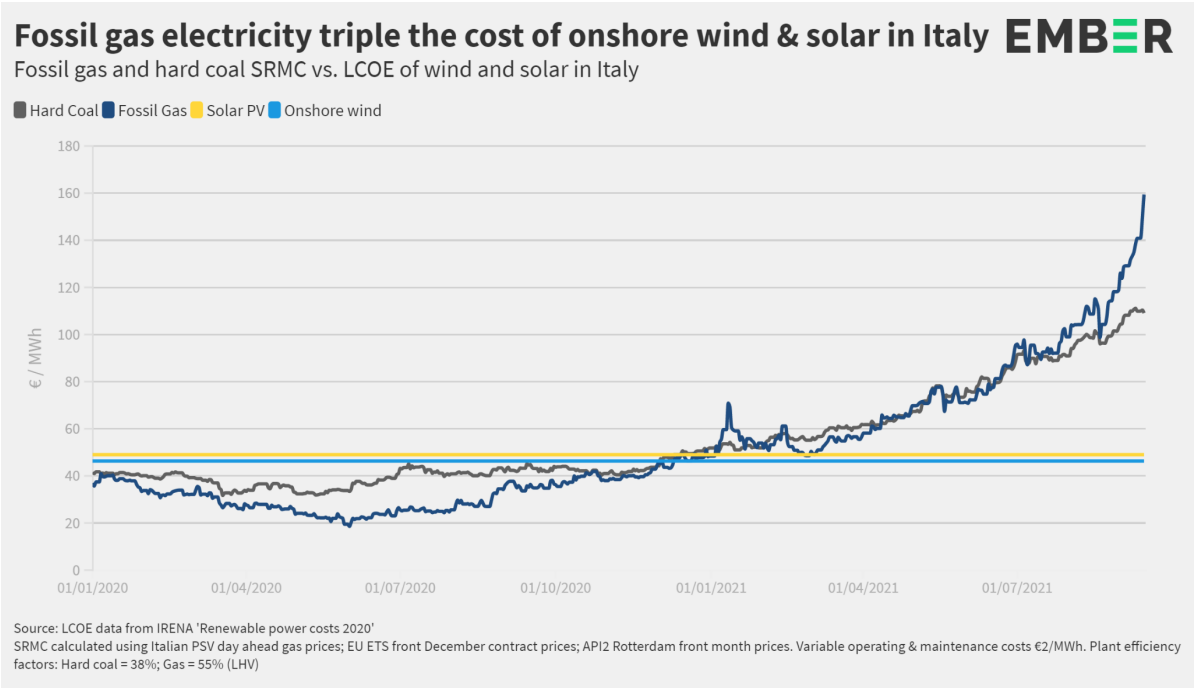
However, the Italian capacity mechanism, funded by public money, is enabling utilities to invest in new CCGT baseload plants from 2024 to 2040 due to payments of up to €70 / kW / per annum. These payments distort the market in favour of potentially uneconomic gas plants to the detriment of renewables and other clean energy solutions such as storage, demand side flexibility etc. The next round of capacity auctions will be held by Terna, the Italian transmission system operator (TSO), on 21 February 2022 for delivery from 2024.

Italy exposed to fossil electricity price shocks

The recent energy crisis, driven by soaring gas prices, has confirmed the substantial economic and political risks associated with a continued reliance on imported fossil gas. Italian wholesale electricity prices have almost tripled in the last year, and the majority of this increase can be attributed to the surge in gas prices.



Generating electricity from existing Italian fossil gas power plants is three times more expensive than from new onshore wind and solar PV.



As the energy crisis shows no signs of abating, there has never been a more urgent time to accelerate the transition to clean power.

Recommendations

Increased deployment of renewables combined with robust energy efficiency policies are the only ways to reduce Italy's dependence on gas.

- Italy could and should be playing a much more significant role in achieving the decarbonisation of the EU power sector through the adoption of a 2035 clean power commitment.
- Italy needs to remove the existing economic and structural barriers to the accelerated deployment of new renewable energy sources, particularly wind and solar.
- There should be much more ambitious renewable electricity generation targets in Italy's revised NECP due in 2023.
- Italy should reduce to zero the amount of new thermal capacity procured in the next capacity market auction.
- The Italian TSO, in coordination with the DSOs and with the regulator's lead, should immediately start a program of dynamic power pricing and effective integration of demand response in the ancillary services market.

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