

Soaring fossil gas costs drive up Italian electricity prices

Key findings

- Italian wholesale electricity prices have almost tripled in the last year, and the majority of this increase can be attributed to soaring gas prices.
- Italy relies on fossil gas for 50% of its electricity production, and gas prices have more than quadrupled since January.
- Accelerating the transition to clean electricity can avoid the volatility of fossil gas.

Soaring fossil gas costs

Italian fossil gas prices have skyrocketed since the start of 2021, with the day ahead price more than quadrupling (+€55/MWh) from €17/MWh on 1 January to €72/MWh on 22 September.

Italian fossil gas prices have soared by over 300% since January

Daily Italian spot gas prices (€/MWh)



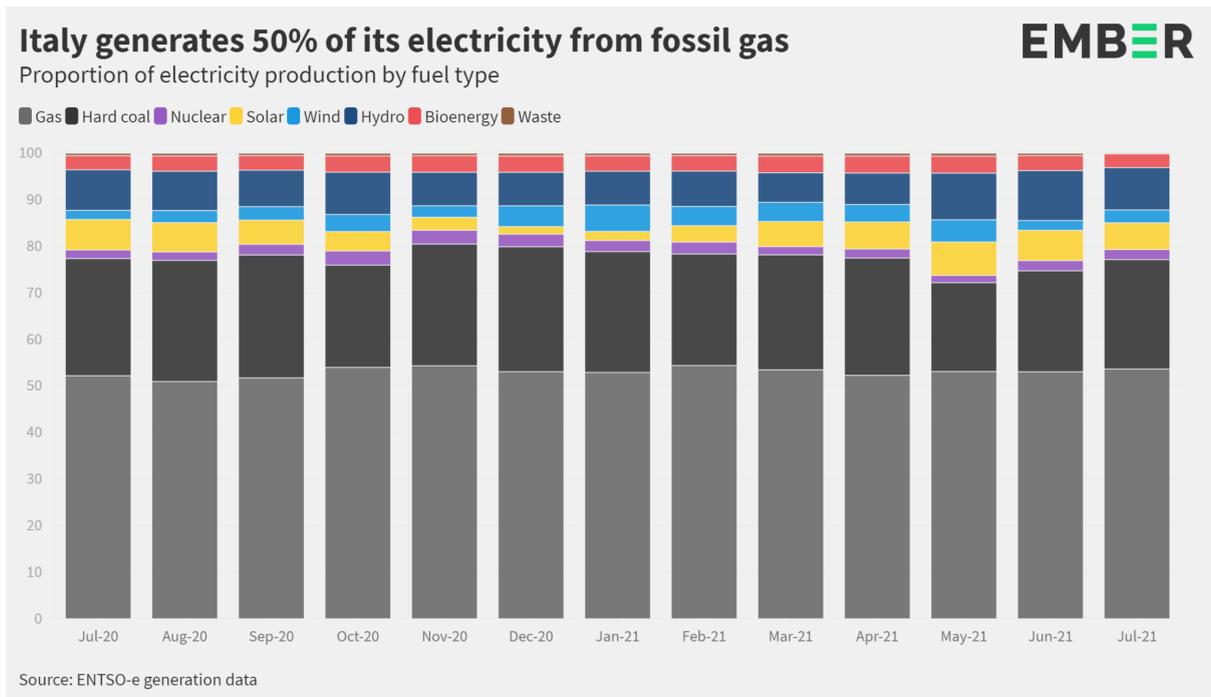
Source: PSV Gas Day Ahead price

The soaring prices are due to a combination of factors: a cold northern hemisphere winter depleted fossil gas storage levels; increased demand and prices in Asia resulted in liquefied natural gas (LNG) shipments being delivered there rather than to Europe; global demand has risen as Covid-19 restrictions have been lifted; fossil gas imports from Russia

via Ukraine have not stepped up to meet the increase in European demand. This highlights the risks associated with continued dependence on volatile fossil gas that is highly susceptible to geopolitics and global events.

Fossil gas pushes up Italian electricity prices

Italy relies on fossil gas for 50% of its electricity production.

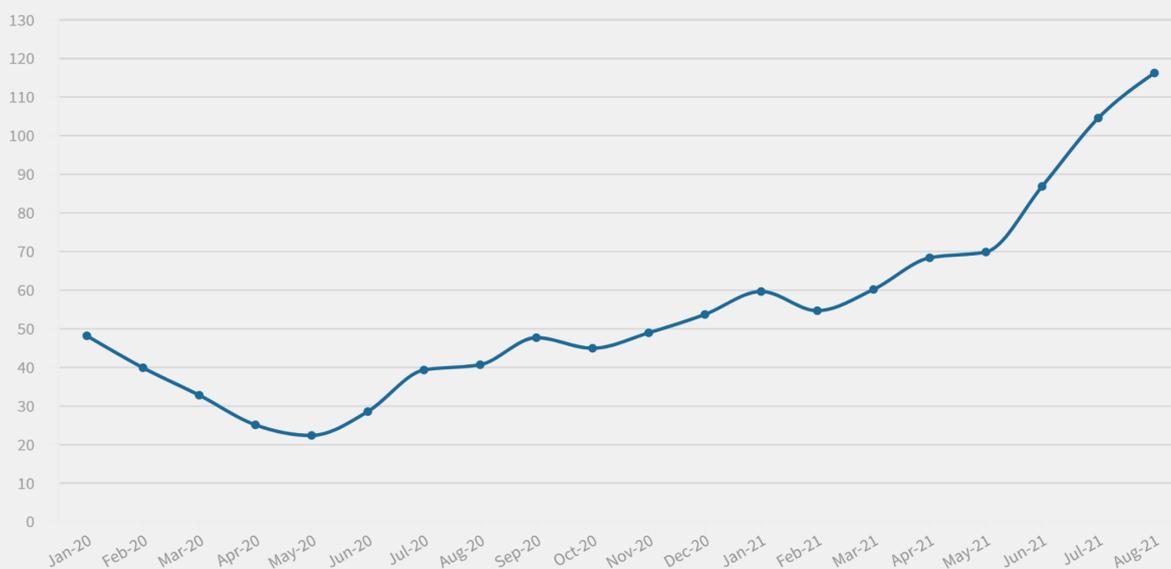


It is, therefore, unsurprising that the exponential rise in fossil gas prices has resulted in substantial increases in Italian electricity prices. Average monthly wholesale electricity prices have almost tripled from August 2020 to August 2021 - increasing by €75/MWh from €41/MWh to €116/MWh.

Italian electricity prices have almost tripled since August 2020

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Monthly average of Italian day ahead electricity prices (€/MWh)



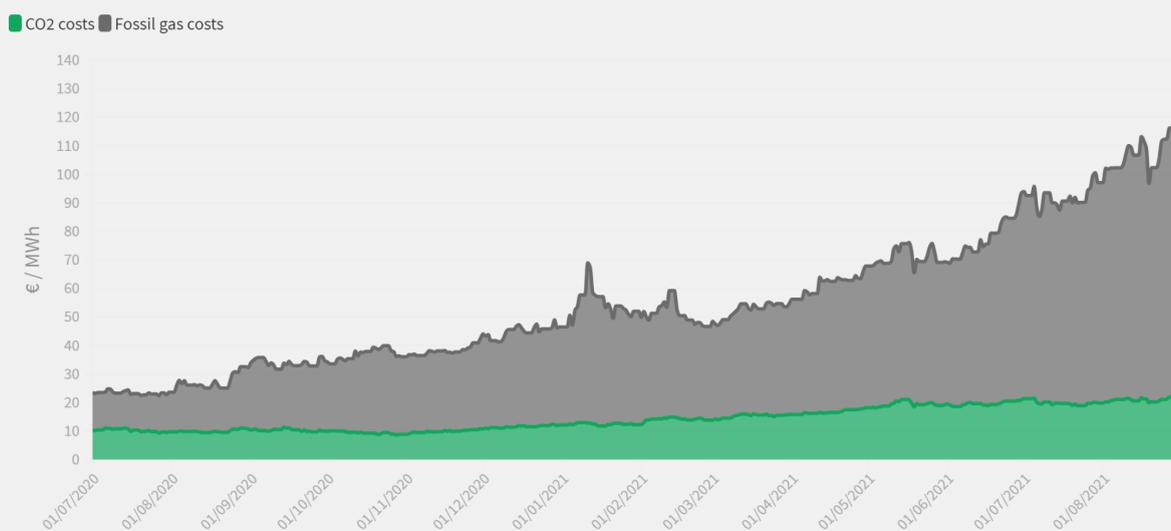
Source: ENTSO-e day ahead electricity prices

The cost of generating electricity from fossil gas, including the associated carbon allowance costs, has quadrupled from €27/MWh (August 2020) to €107/MWh (August 2021). And while the price of carbon allowances has also risen over the same period from €27/tonne to €56/tonne, its contribution to the increased cost of electricity generation is minimal when compared to the fossil gas price. Analysing the fossil gas cost component alone, it has soared by €50/MWh (from €17/MWh to €87/MWh).¹

Skyrocketing fossil gas prices push up cost of Italian electricity

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Fossil gas costs vs. carbon costs for Italian electricity generation from combined cycle gas turbines

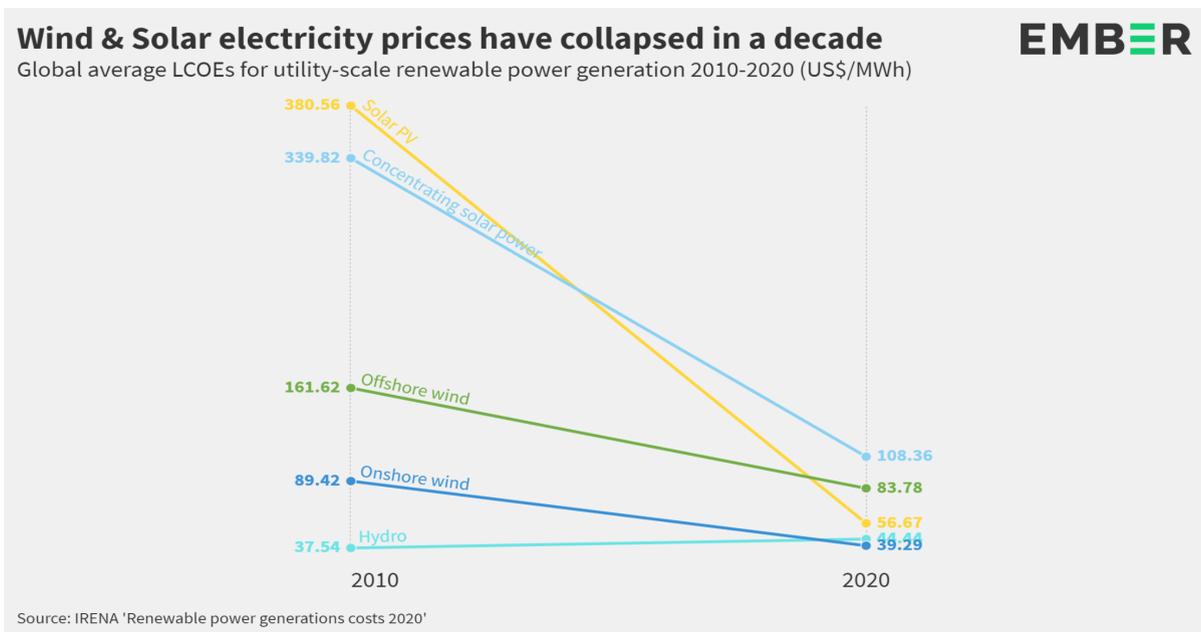


Source: PSV fossil gas prices (day ahead), EEX for EU-ETS carbon prices (December contract)
Costs calculated using emissions intensity of 0.37 tCO₂eq / MWh and plant efficiency rate of 55%

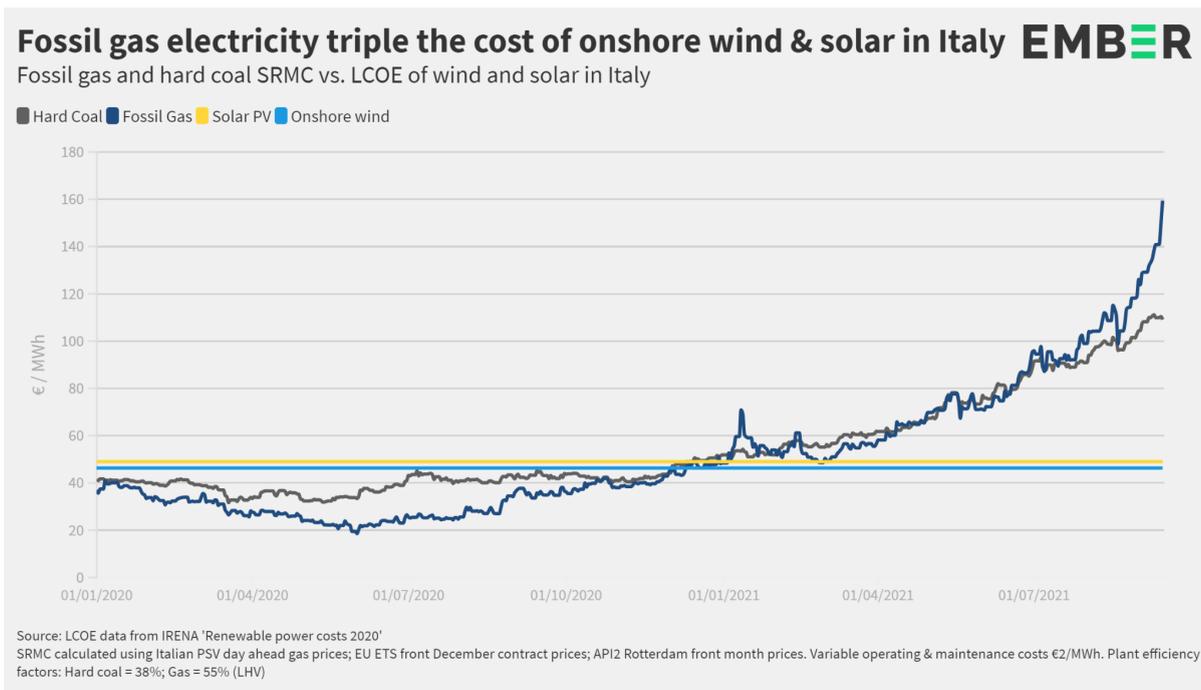
¹ Fossil gas and CO₂ cost calculations based on a carbon intensity factor of 0.37 tCO₂eq / MWh electricity and a fossil gas plant efficiency rate of 55% (Lower Heating Value)

Renewables are key to lower electricity prices

The only way to protect consumers from the volatility of fossil gas is to accelerate the transition to clean electricity. Wind and solar are not exposed to variable fuel prices and the costs of generating electricity from these sources have collapsed in recent years.



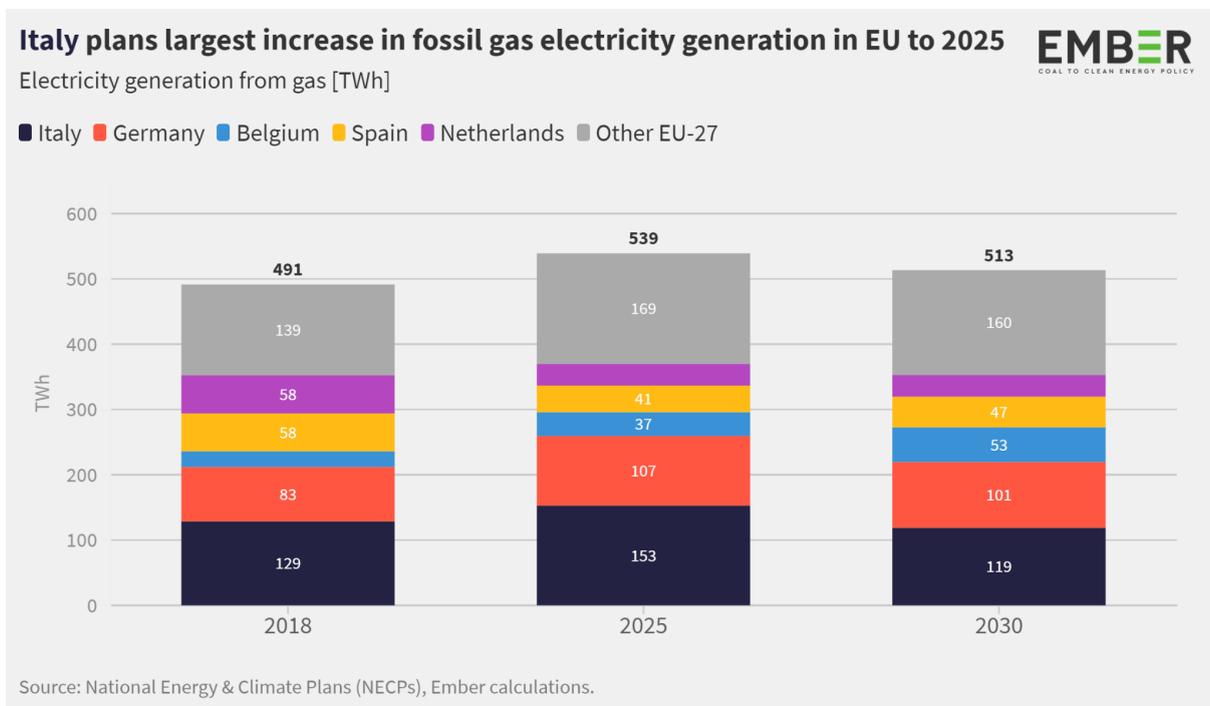
According to the latest [renewable generation costs from IRENA](#), generating electricity from existing Italian fossil gas power plants is three times more expensive than from new onshore wind and solar PV.



The Italian electricity system uses the highest marginal price from power producers to determine the hourly wholesale electricity price. Consequently, if renewable sources were covering the demand for more hours then the electricity price would be significantly cheaper. This can be achieved through increasing the amount of renewable capacity and enabling its connection to the system.

Italy's plans expose it to increased fossil gas risks

The National Energy and Climate Plan (NECP) submitted by Italy reveals it will have the largest rise in fossil gas electricity generation in the EU by 2025 (+24 TWh). Italy also has a capacity mechanism that sees fossil gas plants being awarded up to €75/ kW/per annum. Additional capacity market auctions are planned that will enable new fossil gas plants to receive these state subsidies up until 2040.



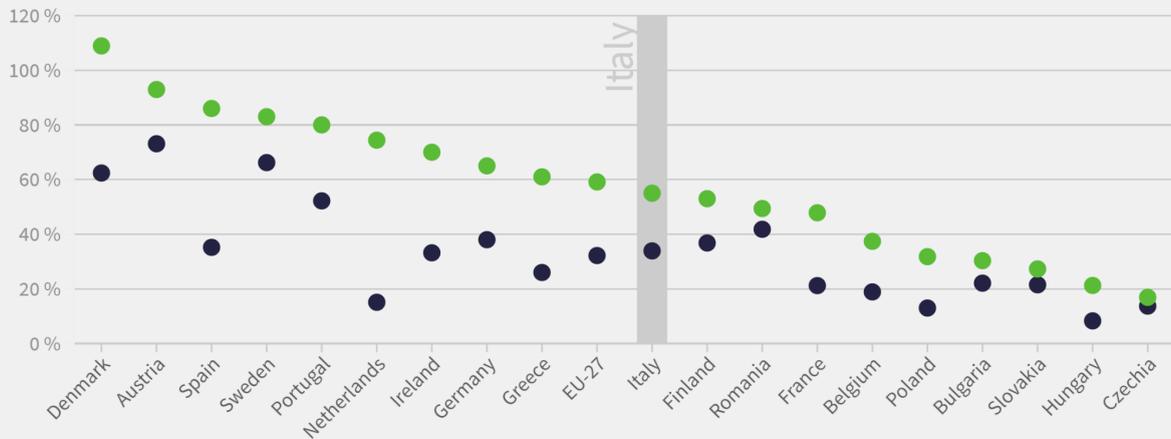
In contrast, Italy's target for increasing the level of renewable electricity generation by 2030 is below the EU average.

Italy will have a below-average share of renewable electricity by 2030



Renewable energy sources (RES) share of electricity consumption [%]

■ 2018 ■ 2030



Source: National Energy & Climate Plans (NECPs), Ember calculations. The 19 countries displayed account for > 97% of EU-27 electricity consumption

Italy needs to reassess its commitment to fossil gas and instead invest in renewable energy sources and the removal of barriers to their integration into Italy's electricity system.

With winter approaching and continued supply issues, the escalation in fossil gas prices looks set to continue. The need to switch from imported fossil gas to domestic renewable generation has never been more apparent or urgent.

About Ember

Ember is an energy think tank that is focused on accelerating the global transition to fossil-free electricity. www.ember-climate.org