Soaring fossil gas costs drive up Dutch electricity prices

Key findings

- Dutch wholesale electricity prices have more than tripled in the last year, and the majority of this increase can be attributed to soaring gas prices.
- Fossil gas has provided 60% of electricity in the Netherlands during 2021 so far, and prices have more than quadrupled since January.
- Accelerating the transition to clean electricity can avoid the volatility of fossil gas.

Soaring fossil gas costs

Dutch fossil gas prices have skyrocketed since the start of 2021, with the day ahead price more than quadrupling from €19/MWh on 1 January to €90/MWh on 30 September (+€71/MWh / 374%).
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 and Latin America 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 have not stepped up to meet the increase in European demand. All of these issues highlight the risks associated with continued dependence on volatile imported fossil gas that is highly susceptible to geopolitics and global events.

**Fossil gas pushes up Dutch electricity prices**

In 2020, the Netherlands relied on fossil gas for 55% of its electricity production and so far in 2021 fossil gas has accounted for 60% of the electricity mix.
It is, therefore, unsurprising that the exponential rise in fossil gas prices has resulted in substantial increases in Dutch electricity prices. Average monthly Dutch wholesale electricity prices more than tripled from September 2020 to September 2021 - increasing by €94/MWh from €42/MWh to €136/MWh. From August to September alone the monthly average price soared by €50/MWh, almost 60%.

The cost of generating electricity from fossil gas, including the associated carbon allowance costs, has increased fivefold to €150/MWh (September 2021) from €33/MWh
(September 2020). And while the price of carbon allowances has also risen over the same period from €28/tonne to €61/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 surged by €105/MWh (from €23/MWh to €127/MWh).

These extreme fossil gas prices are not expected to subside in the near future with the first quarter of 2022 currently trading at ~€105/MWh.

Renewables are key to lower electricity prices

The way to avoid 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 cost of generating electricity from these sources has collapsed in recent years.

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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%. They do not include operating and maintenance costs.

2 This equates to a carbon cost increase of €12/MWh for a fossil gas plant with carbon intensity factor of 0.37 tCO2eq / MWh.
The National Energy and Climate Plan (NECP) submitted by the Netherlands reveals it intends to still have 33 TWh of fossil gas generation by 2030 - around 25% of total production. On a more positive note, the Netherlands also plans to cover 60% of electricity demand through wind and solar generation by 2030. However, renewable energy deployment and integration needs to be stepped up now to avoid future fossil gas price volatility.

The recent budget for 2022 has allocated €6.8 billion to be invested in cutting greenhouse gas emissions. Almost half of this is to be spent on subsidies for green energy investments, sustainability and emissions reduction technologies. €1.3 billion will go towards energy infrastructure, hopefully at least some of this will be used to enhance power system flexibility and enable greater integration of renewables.

With winter approaching and supply issues remaining, 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.

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**About Ember**

Ember is an energy think tank that is focused on accelerating the global transition to fossil-free electricity. [www.ember-climate.org](http://www.ember-climate.org)

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3 https://nltimes.nl/2021/09/21/2022-dutch-budget-nutshell