



The Role Of Gas Towards a Cleaner Power Sector: Benefits and Opportunities

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The EU has set a series of ambitious GHG emission reduction targets in the period to 2050

2020

- 20% reduction in GHG emissions against 1990 levels
- 20% share of renewable energy in total energy supply
- 20% efficiency improvement versus projected levels

2030

- 40% reduction in GHG emissions against 1990 levels
- 32% share of renewable energy in total energy supply
- 32.5% efficiency improvement versus projected levels

2050

- 80% to 95% reduction in GHG emissions against 1990 levels



Gas can effectively support the transition to decarbonisation

Emissions: Coal > Oil > Gas

240 mtoe of coal used in EU28 in 2016

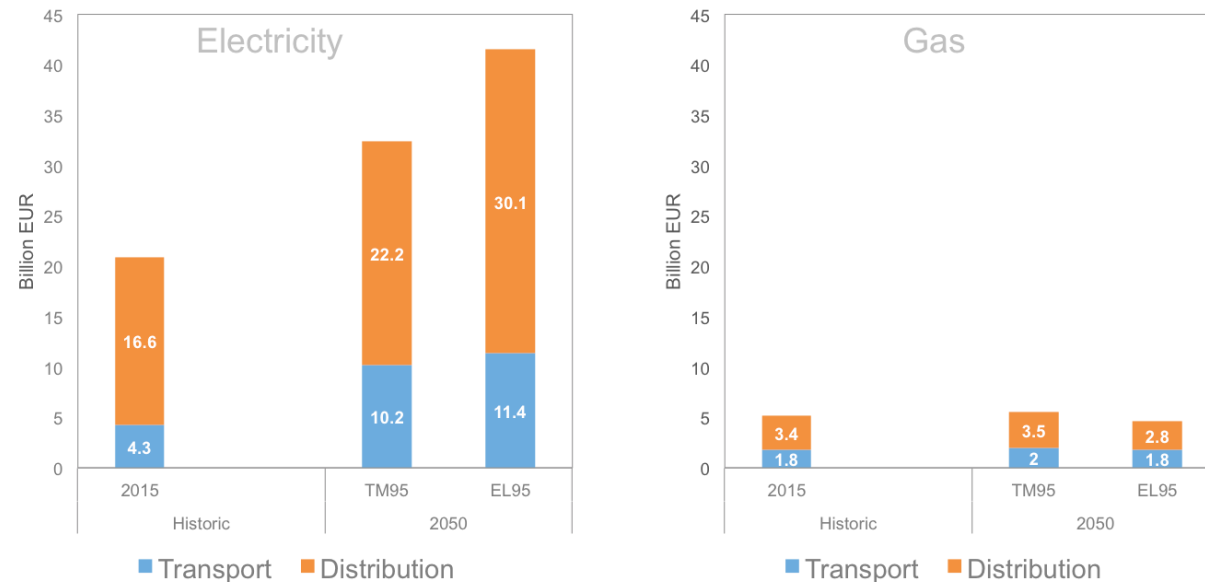
- Equates to around 900 mt CO₂ emissions
- Switching it all to gas will reduce the emissions by 400 mt CO₂ to around 500 mt CO₂
- This is around 10% reduction in overall CO₂ emissions of EU28

Gas complements fluctuating power supply from renewables:

- Gas can be stored
- Gas enables rapid power generation switching from idle to full output

An all electric future comes with high transmission and distribution costs

Comparison of Germany electricity and gas transmission & distribution costs in an all electric (EL) and technologically open (TM) world



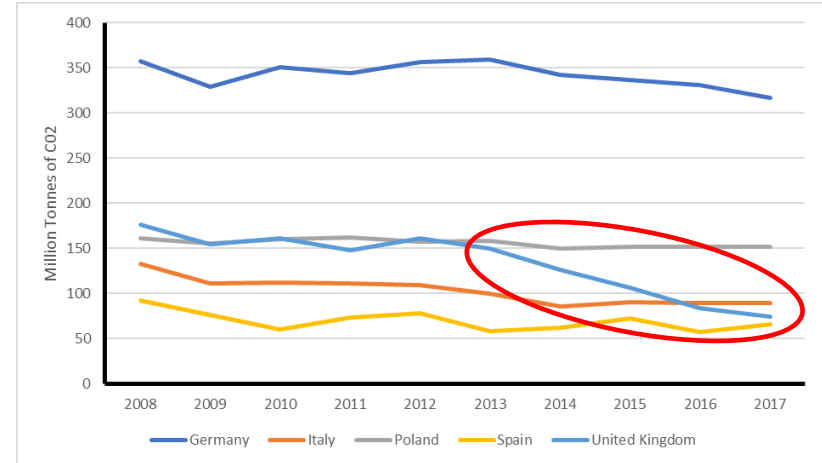
Source: The underrated long-term relevance of gas in the decarbonizing German energy space, ewi ER&S, The Gas Value Chain Company October 2018



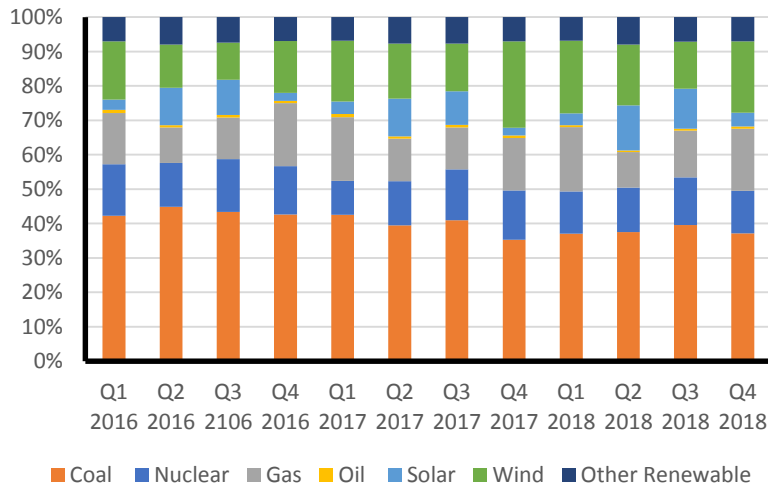
Natural gas switching has not made as much of an impact across the EU in CO₂ reduction as was possible

- Since 2008 CO₂ emissions from power generation in some countries have been relatively stable – even rising although at the EU level emissions have been falling gradually
- UK has seen dramatic falls resulting from coal to gas switching:
 - Coal provided 30% of power in 2013/14; on June 4 2019, coal-fired generation resumed after 16 coal-free days
 - Coal scheduled to close completely by 2025 by government mandate but economics mean coal may not survive that long
- Coal in Germany on the other hand remains a key source of generation with over 38% of power generated from coal in 2018 down from 43% in 2016 – reductions mainly in hard coal with lignite remaining a fuel for generation

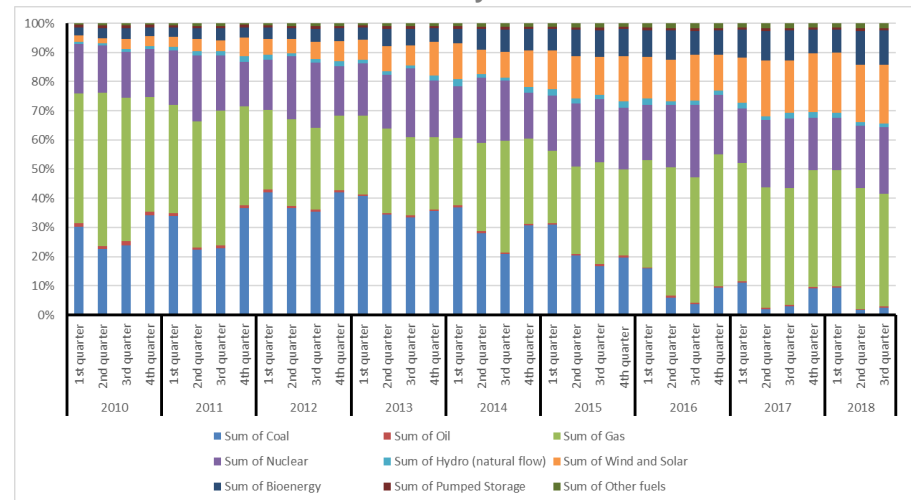
EU CO₂ emissions from power generation by country from 2008 to 2017



German Power Generation by Fuel Source



UK Power Generation by Fuel Source

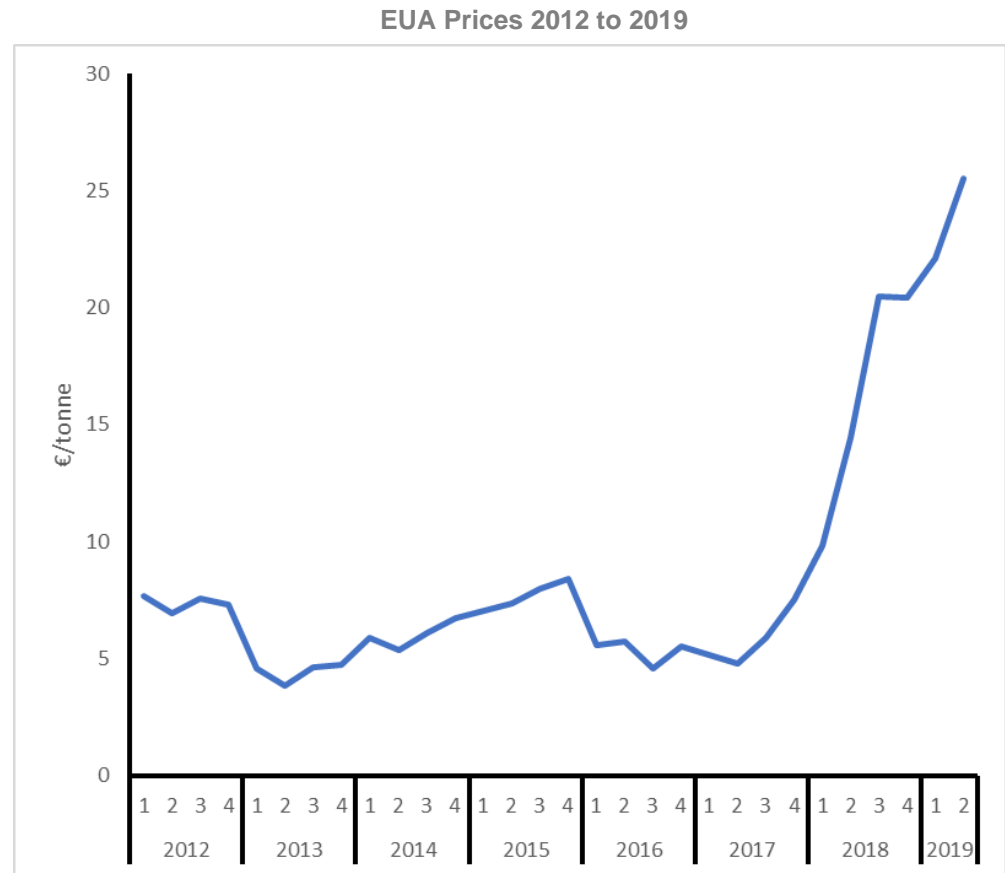


Source: Eurostat; Department for Business, Energy & Industrial Strategy



There is huge opportunity for coal to gas switching in some European countries and price incentives may be coming

- Coal has continued to be burned across Europe in preference to gas as the carbon price has been too low
- 2008-18: Germany and Poland made no progress in exiting from coal
- 2008-18: Netherlands and Bulgaria increased coal usage
- Due to reforms of the ETS (through the Market Reserve Mechanism) EUA prices are now rising five fold since 2016
- Prices are potentially within €10 of driving significant coal to gas switching in markets with spare gas generation capacity
- This could make a very significant and immediate contribution to European GHG emission reductions



Source: <https://sandbag.org.uk/>



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