

NATURAL GAS: LOWER EMISSIONS FUEL FOR THE FUTURE



LOWER EMISSIONS IN AUSTRALIA

Gas has an essential role to play in reducing emissions in Australia and around the world.

When burned or used for electricity generation, natural gas releases up to 50% less carbon dioxide than coal¹. When compared to the National Energy Market (NEM) average - the average emissions released by the interconnected network connecting the east coast of Australia to the electricity grid - natural gas is much cleaner, with lower emissions.

The use of natural gas has other benefits, when compared to other fuel sources. These include reduced emissions of fine particulates, reduced emissions of Sulphur dioxide (which contributes to acid rain and smog) and nitrogen oxides, and a much lower demand for water for power station cooling.

GLOBAL EMISSIONS REDUCTIONS

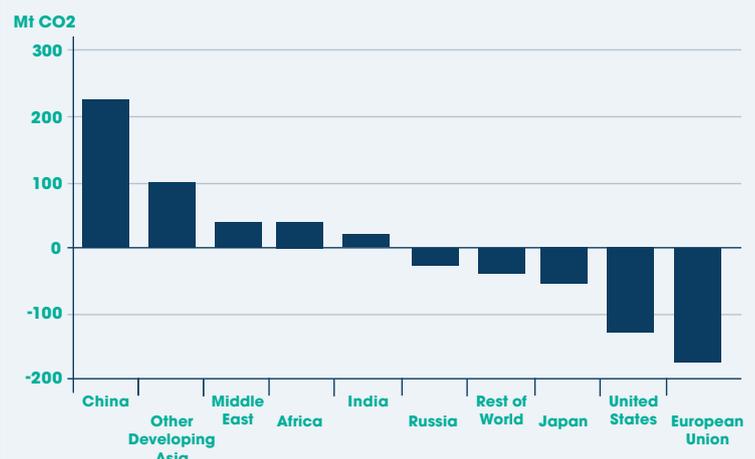
The increased use of natural gas is necessary to reduce emissions at a global scale. The evidence for this can be found in the advanced economies of Europe and the United States.

In the last decade, coal-to-gas switching has saved around 500 million tonnes of CO₂, an effect equivalent to putting 200 million zero carbon electric vehicles on the road over the same period². In the same decade, in the UK, coal-to-gas switching has reduced emissions from power generation by 50%. In 2019, US emissions fell by 2.9% due to increased gas-fired generation.

In theory, 1.2 gigatonnes (over twice that saved in the last decade) of CO₂ could be avoided in coal-to-gas switching using existing infrastructure, reducing global power emissions by almost 10%³.

Change in energy-related CO₂ emissions in selected regions, 2018 compared to 2019

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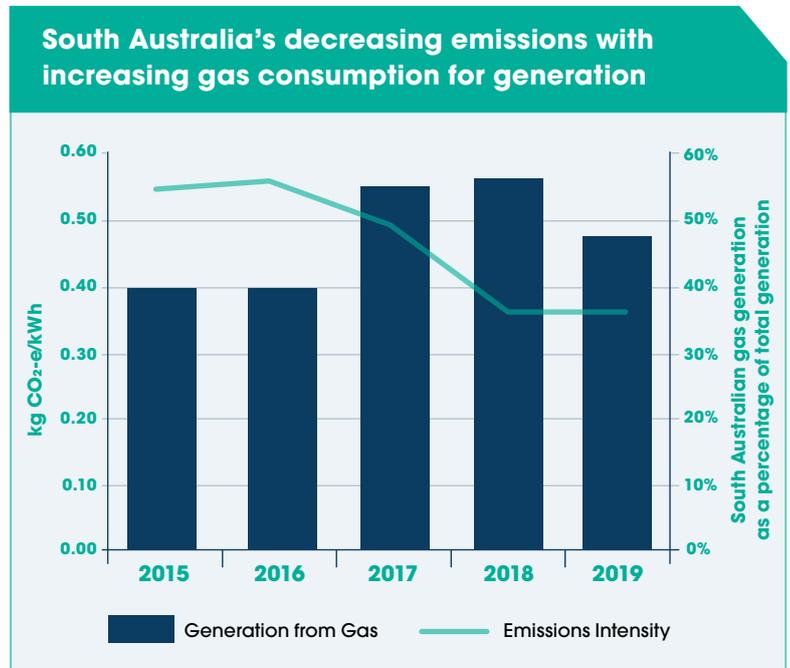


HOW GAS WORKS WITH RENEWABLES

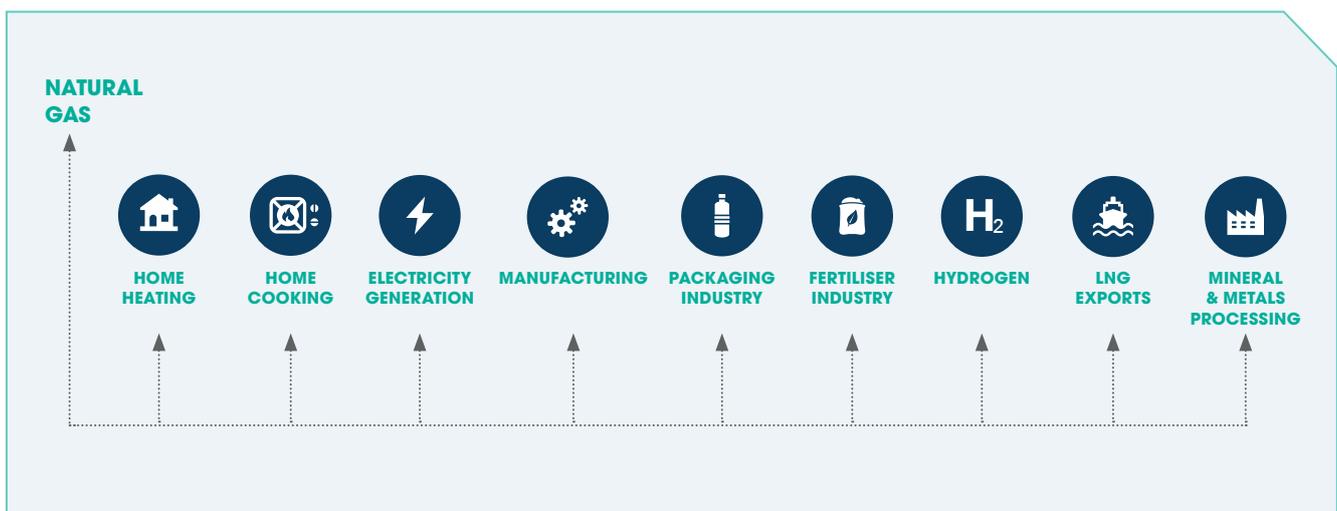
Natural gas generators are flexible technologies which can be easily ramped up and down to meet demand, making them natural counterparts for variable energy sources like wind and solar ⁴.

As more electricity generation comes from renewable sources and coal is gradually phased out, gas has a vital baseload role to play alongside improved energy storage, demand management and grid innovations ⁵.

The Australian Government's Technology Investment Roadmap discussion paper highlights the increasingly important role gas is playing in South Australia to complement variable renewable energy. Gas generation is increasing significantly, as the emissions intensity of the South Australian grid continues to decline.



THE DIVERSE USES OF NATURAL GAS



- <https://www.igu.org/natural-gas-cleanest-fossil-fuel>
- <https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions>
- <https://www.iea.org/reports/world-energy-outlook-2019/gas#abstract>
- <https://www.energy.gov.au/publications/independent-review-future-security-national-electricity-market-blueprint-future>
- <https://consult.industry.gov.au/climate-change/technology-investment-roadmap/>