

Ireland's Natural Gas

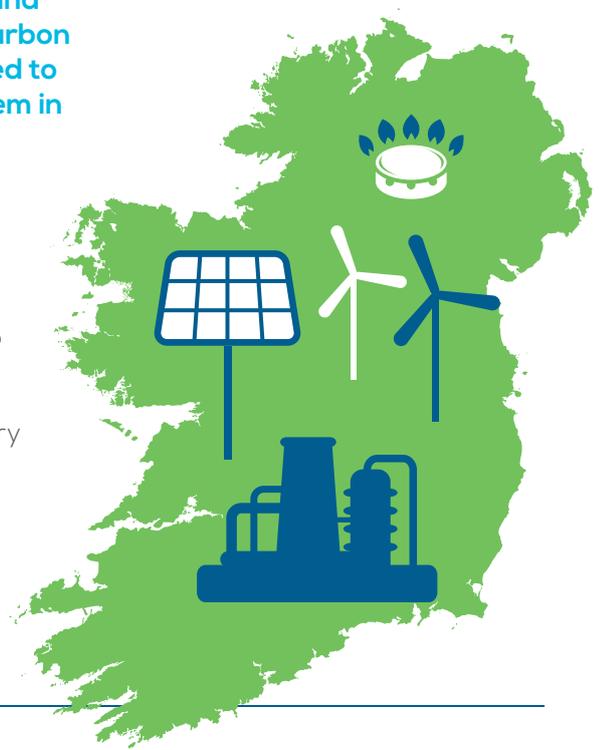
"In the period to 2030, gas fired generation will continue to be an important energy source for electricity generation in Ireland as it provides flexible capacity essential to support the growth of non-synchronous and intermittent renewable generation. In the longer term, CCS [Carbon Capture and Storage] technology with gas is likely to be required to enable the further decarbonisation of Ireland's electricity system in line with our overall greenhouse gas emission targets".

Peter O'Shea, Head of Corporate and Regulatory Affairs, ESB

The Importance of Natural Gas in Future Electricity Generation

Ireland is committed to increasing renewable energy's contribution to electricity generation as a key component in the transition to a lower carbon energy future. However, in order to maintain stability in the national electric grid and until such time as reliable, large-scale battery storage is developed, intermittent renewable sources such as wind or solar need to be paired with a predictable and reliable energy source such as natural gas¹.

Ireland therefore needs to secure reliable and affordable sources of natural gas as a critical element in the country's electricity generation for the coming decades.



Sources of Ireland's Natural Gas

Figure 1 shows the historical sources of natural gas in Ireland. In the early 1990s, the Kinsale Gas Field supplied all our demand but, with the natural decline in production from the field, imports increased to meet 95% of demand in 2010.

The Corrib Gas Field was discovered in 1996 but did not come on stream until December 2015. As soon as the field was in production, Irish gas imports dropped significantly. Today, the Corrib Gas Field could supply enough natural gas to power all our natural gas electricity generating stations².

In 2017, Corrib gas supplies provided 67% of national gas demand but this is expected to fall to 50% in 2018. The natural decline in production will continue over the next decade and by 2025 Corrib will only supply about 20% of Ireland's demand. Imports would again provide about 75% of Irish gas demand, with the remaining 5% coming from biogas.

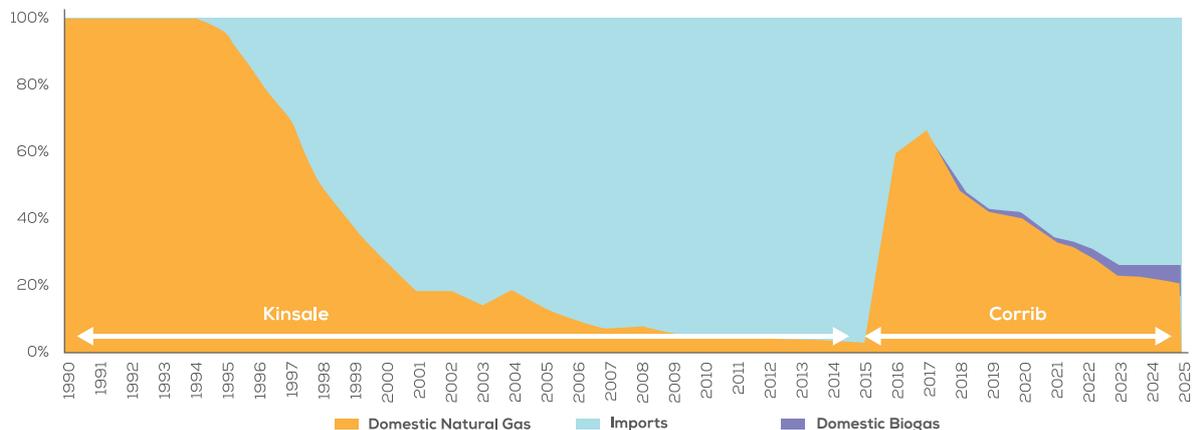


Figure 1: Sources of Natural Gas used Ireland, 1990–2025

Source: SEAI (actuals 1990–2017) and GNI (forecasts 2018–2025).

Sources of Imported Natural Gas

Ireland currently has no liquefied natural gas (LNG) terminals, therefore all of our imports come via pipeline from the United Kingdom. In 2017, the UK market (and hence Irish imports from the UK) was supplied primarily by UK production (44%) and imports from Norway (42%), which have increased steadily since 2003.

By 2030, as production in their own fields declines, the UK will import 70% of its gas requirement³. At the same time, their traditional supplier, Norway, is also going to see a substantial fall in its production⁴. This will lead to greater competition for the decreasing output of North Sea gas in Europe.

With increasing global demand⁵ and declining North Sea production, Russia and the United States are expected to be major suppliers of natural gas. Russian natural gas reaches Europe by pipeline, and Ireland would be at the end of any pipeline route. The US is expected to become the world's largest LNG exporter⁶ by the mid-2020s. To access US natural gas, Ireland would need to build LNG port facilities or we would have to rely on other countries to import the gas and then pipe it to Ireland.

Domestic Sources of Natural Gas

Assuming that gas demand remains stable⁷ and that any new discoveries mirror the Kinsale and Corrib Gas fields, Ireland would need to discover and develop several Corrib-sized gas fields to meet Irish demand for natural gas through 2030. Given that production from the Corrib Gas Field will decline over the coming decade, and given the time needed to bring a natural gas field into production, the need to find and develop new natural gas fields is urgent if Ireland is to supply its own needs.

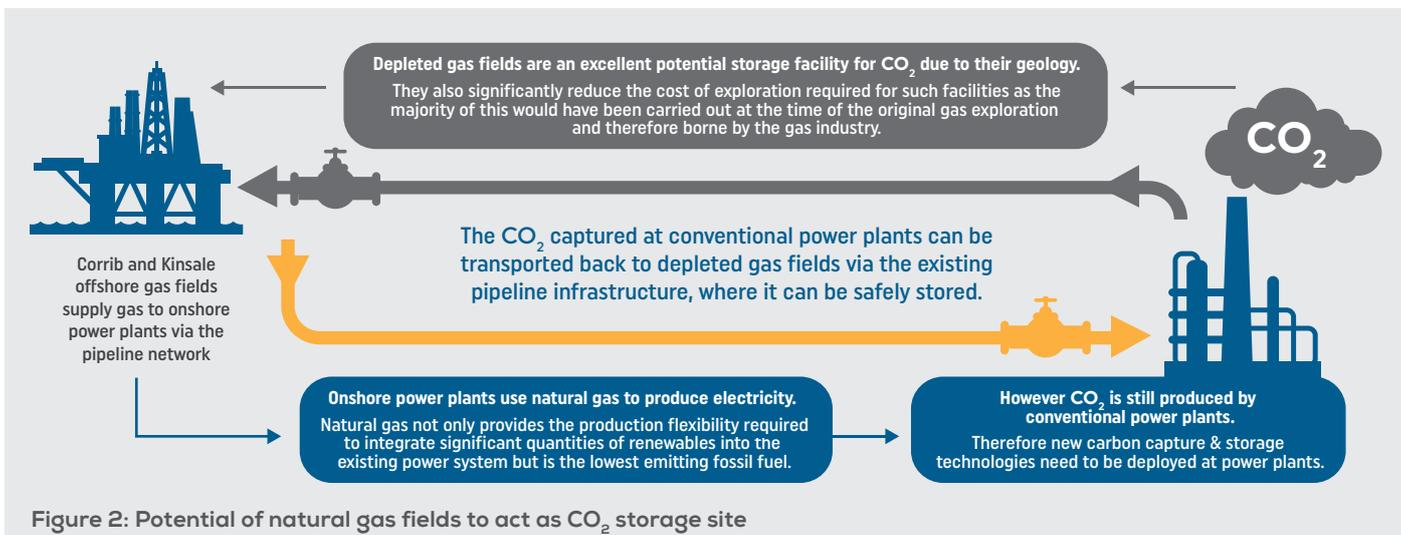
"A number of small gas fields similar to Corrib, coming on stream gradually over the next decade could see Ireland becoming self-sufficient in gas as we transition to a low carbon future.

However, as it takes several years to bring a new field on stream it is essential that the exploration momentum that now exists is enhanced. To ensure that Ireland is not to be reliant again on imports for our future energy needs, we need to continue our offshore exploration.

In addition, utilisation of depleted gas fields could be an important part of the future solution for long term safe storage of Ireland's CO₂ emissions, if action is taken soon".

Pat Shannon, Chair Irish Offshore Operators' Association.

Potential of Natural Gas Fields to be Part of the Solution



The Kinsale gas field, which until April 2017 had also been used as a natural gas storage site, is to be permanently decommissioned when production finishes in 2020–21. However, it may be possible to use the Kinsale gas field, and associated facilities as a carbon storage site⁸. A decision on the potential feasibility of this would need to be made soon if the field is to be repurposed effectively.

References:

1. PwC Ireland, EirGrid, and Electricity Supply Board.
2. The amount of natural gas used in electricity generation is from SEAI, as is the domestic natural gas figures. The breakdown between Corrib and other domestic sources is from GNI.
3. Projections of UK Oil and Gas Production and Expenditure, Sept 2017 from the Oil and Gas Authority, a UK Government body.
4. Norwegian production is estimated to fall by 17% by 2040 (IEA World Energy Outlook 2017).
5. The IEA in their central "New Policies" scenario estimate that global natural gas demand will increase by 46% between 2016 and 2040.
6. IEA World Energy Outlook 2017
7. Differing estimates range from -11% (PwC), to staying stable (ESB), to increasing by 13% (GNI and EirGrid).
8. Envia