

Natural gas will underpin Ireland's electricity generation to 2030 and beyond

Ireland's energy use is high

Ireland uses a lot of energy; equivalent to every person in Ireland using 22 barrels (3,500 litres) of oil a year. This is despite our moderate climate and few power-intensive industries. Our energy use has grown over time (Fig. 1) - demand for energy in Ireland has risen by 45% since 1990 - and it is not expected to fall significantly in the short term.

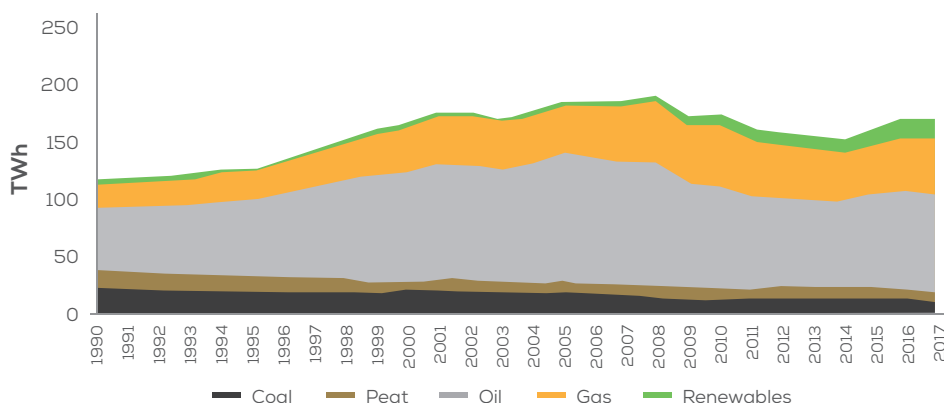


Figure 1: Primary energy demand in Ireland, 1990-2017
[TWh = terawatt hours]

Source: SEAI

What do we use energy for?

Ireland uses almost equal amounts of energy for generating electricity, for heating, and for transport (Fig. 2).

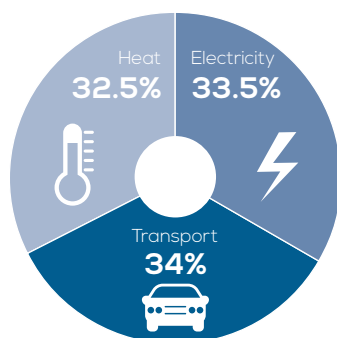


Figure 2: Energy used by sector, 2016

Source: SEAI Energy in Ireland 1990 - 2016

What types of energy do we use?

In 2017, natural gas accounted for almost half of the electricity produced, with 25% of electricity being generated from coal, peat, and oil, and another 25% from renewables, with wind being the most important renewable.

For heating, 82% of the energy used came from a combination of oil and natural gas with 11% from peat and coal, and 7% from renewables and waste.

Not surprisingly, over 97% of transport's energy needs came from oil with less than 3% from renewables such as biofuels.

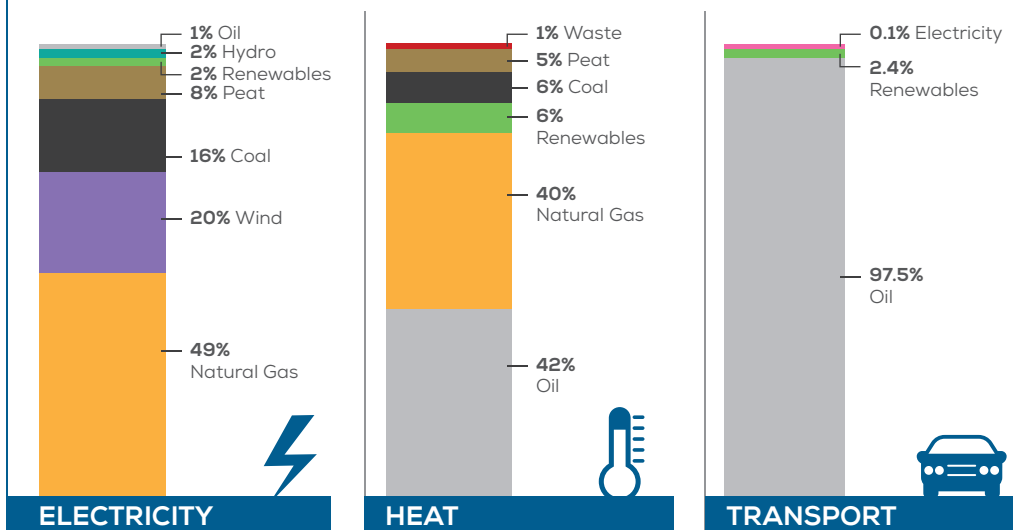


Figure 3: Sources of energy for electricity*, transport and heating

* Excludes losses of converting energy inputs into electricity

Source: SEAI Energy in Ireland 1990 - 2016

Future electricity demand

Demand for electricity is expected to grow by between 8% and 36% in the coming decade as both heat and transport become more electrified (Fig. 4). This is mainly due to an expected move away from oil-fired boilers for heat and the projected growth in electric vehicles. Oil-fired boilers currently account for 42% of all heating but could be converted to natural gas and electric heat pumps in residential and commercial markets.

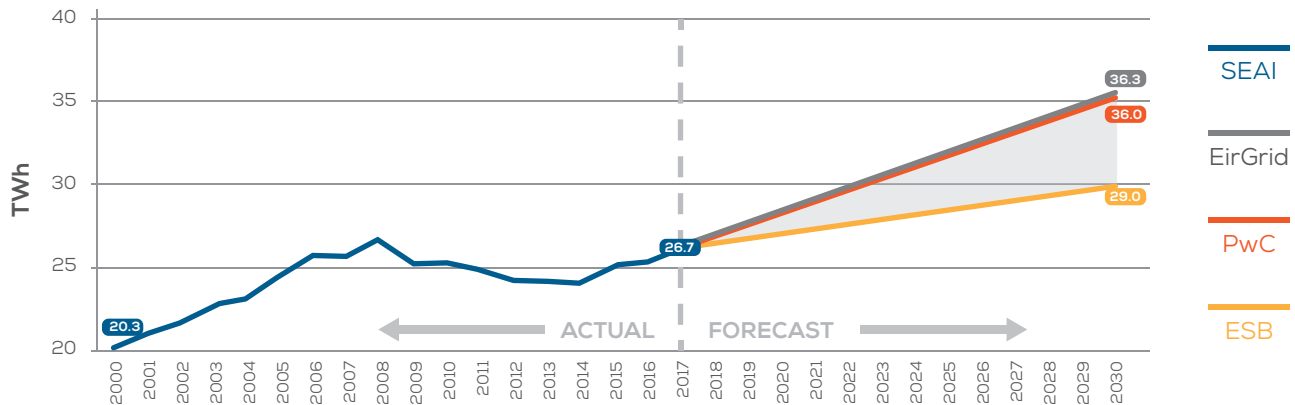


Figure 4: Electricity demand, 2000–2030

Sources: The graph shows actual demand from Sustainable Energy Authority of Ireland (SEAI), and forecasts from PwC Ireland, EirGrid, and ESB.

Future energy sources for electricity

Ireland is committed to transitioning to more renewable energy in order to meet greenhouse gas emissions targets. Under current agreements, by 2020, renewable sources should provide at least 40% of all electricity consumed in the country, with further ambitious targets being developed for 2030 and 2050.

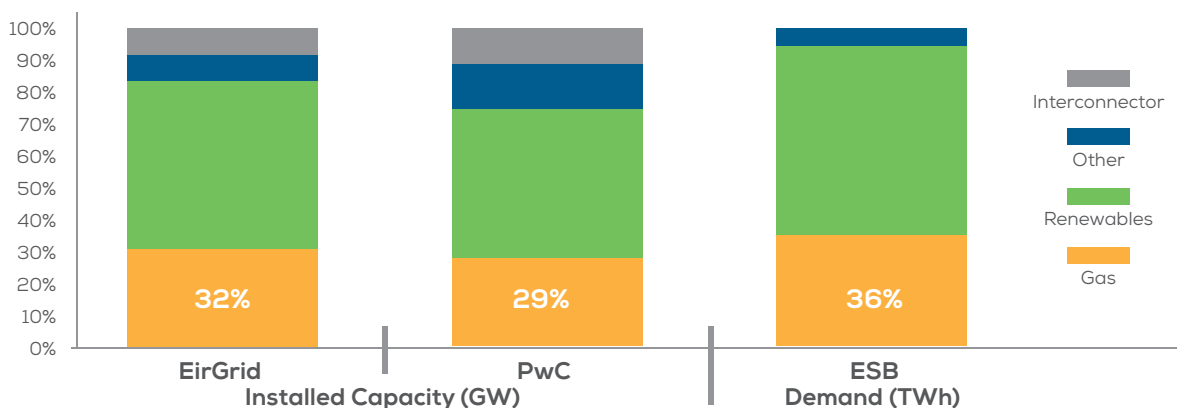


Figure 5: Forecasts for electricity generation by energy sources (percentage), 2030

Note that these forecasts are for electricity generation only, and do not include non-electric heating and transportation. Also note that the interconnector allows for both import and export of electricity to aid in system balancing. It is assumed that the interconnector capacity will increase by 2030 to meet planned EU targets of 15% of installed capacity.

Source: PwC Ireland, EirGrid, and Electricity Supply Board. GW: gigawatts, TWh: terawatt hours

In order to meet the demands of greater electricity generation with a lower carbon footprint, it is important that Ireland makes wise decisions about the sources of energy used for electricity. The decisions will need to balance the reliability of our energy supply, levels of greenhouse gas emissions, and affordability. Forecasts show that natural gas, which is a flexible source for electricity generation and is the lowest emitting fossil fuel, is likely to be essential in Ireland’s energy mix, through 2030 and beyond.

Even with a clear move towards renewable energy in the growing electricity sector, Ireland is likely to rely on natural gas for about one-third of electricity generation in 2030.

Sources:

- SEAI: [Energy in Ireland 1990–2016 report and Energy Balance 2017](#)
- EirGrid: [Tomorrow’s Energy Scenarios 2017](#)
- PwC: [Transitioning to a low carbon energy system, 2017](#)
- ESB: [Ireland’s low carbon future, 2017](#)