

Boosting the Irish economy with 70% renewable electricity by 2030

Background

Ireland is a world leader in renewable electricity and now has the highest share of onshore wind power in Europe. Wind energy currently provides around 33 per cent of Ireland's electricity¹ and in 2018 avoided just over 3.1 million tonnes of CO₂ and cut €432 million off our fuel import bill.²

Provisional SEAI figures published in May 2020 identified the largest annual drop in CO₂ emissions since 2011 and identified wind energy pushing coal out of the generation mix as a key contributor.

All of this has been accomplished at an annual cost of less than a euro per person, as low-cost wind energy replaces expensive fossil fuels in the electricity market, delivering a 20 per cent reduction in the wholesale electricity prices in 2018 alone.³

70% Renewable Electricity by 2030 (70by30)

The Climate Action Plan (CAP) set a target of 70 per cent renewable electricity by 2030 to build on the previous 40% renewable electricity target. To deliver this the Climate Action Plan identified that Ireland needs to develop 4,000 MW of onshore wind, 3,500 MW of offshore wind and 1,500 MW of solar.

Benefits to Irish Society of 70by30

The table on the next page gives an overview of the benefits that the 70 per cent renewable electricity target will bring to the Irish economy if implemented in line with the CAP.

Firstly, it will reduce CO₂ emissions in electricity generation by 66 per cent by 2030, from approximately 12 Mt per year to 4-5 Mt per year.

This is mainly driven by the replacement of fossil fuels with clean electricity, which will save the Irish economy an additional €1 billion on imported fossil fuels each year by 2030.

Delivering the renewable generation infrastructure will require approximately €12 billion of investment and will create ~6,000 direct jobs in Ireland, which is estimated here to create an additional ~9,000 indirect jobs.

However, there is an opportunity to significantly increase this. Research recently completed by the Carbon Trust examining the potential for Ireland's offshore wind energy supply chain found that currently – at best – Irish firms would be able to attract only 22 per cent of the lifetime multi-billion euro investment. The report set out how this could quickly grow to 31-36 per cent and eventually as much as half of the estimated €17.9 billion of investment associated with the 3.5 GW target.

Critical to this will be identifying a port on the east coast to facilitate the construction of offshore wind farms, creating an enterprise zone around this port (which has proven effective in the UK) and simultaneously supporting training in the sector via the Skillnets or Future Jobs programmes.

¹ EirGrid data for 2019.

² <https://www.seai.ie/publications/Energy-in-Ireland-2019-.pdf>

³ <https://www.iwea.com/images/files/baringa-wind-for-a-euro-report-january-2019.pdf>

Metric to Achieve 70by30	Onshore Wind	Offshore Wind	Solar	Notes
Installed Capacity by end of 2020 (MW)	4,200 MW	25 MW	0 MW	Initial data for 2020 is promising to meet the 40% RES-E target for 2020 ⁴
Additional Capacity in 2030* (MW)	4,000 MW	3,500 MW	1,500 MW	Capacities identified in the Climate Action Plan (CAP)
Total Investment (Billion euro by 2030)	€5 Billion (very accurate)	€6-7 Billion (very accurate)	€500 Million (very accurate)	Based on typical investment costs ⁵ . Excludes investment in supporting technologies such as batteries and interconnectors.
Carbon Savings (Mt/year by 2030)	~3.5 Mt (very accurate)	~4 Mt (very accurate)	~0.5 Mt (very accurate)	CAP found that 70% RES-E will save 7-8 Mt/year out of a total ambition in the CAP of ~16 Mt ⁶
Avoided Natural Gas Imports (Million euro per year by 2030)	~€500 Million (very accurate)	~€600 Million (very accurate)	~€75 Million (very accurate)	Assuming all natural gas for electricity generation is imported and a forecasted gas price of 63 p/therm in 2030
Additional Direct Jobs (for new capacity only)	2,000 ⁷ (very accurate)	2,500 (very accurate)	1,500 ⁸ (estimate)	Onshore & offshore numbers are based on bespoke research in these areas. Solar is an estimate based on international experiences.
Indirect Jobs (for new capacity only)	4,000 ⁹ (accurate)	3,500 (estimate) ¹⁰	1,500 ⁸ (estimate)	Onshore wind numbers are based on a study from 2010, so it needs to be updated, but provides a guide. Offshore numbers assume the same rate as onshore and solar is an estimate based on international experiences.

⁴ <http://www.eirgrid.ie/newsroom/record-wind-levels-feb-20/index.xml>

⁵ https://ens.dk/sites/ens.dk/files/Statistik/technology_data_catalogue_for_el_and_dh_-_0009.pdf

⁶ <https://www.dccae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf>

⁷ Based on economic research on the number of jobs created per MW of installed capacity contained in the Siemens 2014 report *An Enterprising Wind: An economic analysis of the job creation potential of the wind sector in Ireland*. The ratio of 0.5 jobs per MW installed is the **most conservative** of the predictions made.

⁸ Assuming 1 job per MW based on Figure 11 here for both direct and indirect jobs: <https://www.solarpowereurope.org/wp-content/uploads/2018/08/Solar-PV-Jobs-Value-Added-in-Europe-November-2017.pdf>

⁹ Based on a study from 2010 which concluded that Ireland creates 1.5 jobs per MW in total in Ireland from wind energy, so assumed here that 0.5 per MW are direct and 1 per MW are indirect: <https://www.iwea.com/images/files/9660bd5e72bcac538f47d1b02cc6658c97d41f.pdf>

¹⁰ Assuming the same indirect benefits as for onshore wind