

Opinion & Analysis

Answer to our energy needs is blowing in the wind



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Developing the renewable sector would end Ireland's dependence on fuel imports and create thousands of jobs

TO SEE ahead, sometimes you have to look back. Ireland today is one of the world's most energy-dependent countries, importing some €6 billion of fuels and at the mercy of increasingly volatile global energy markets.

Yet it wasn't always so. Eighty years ago this July, the fledgling Free State declared its energy independence with the opening in 1929 of a plant capable of generating more than twice our electricity requirement from an entirely clean, renewable source. This was the mighty Ardnacrusha power station in Co Clare. Built at a cost of £5.2 million (one-fifth of the State's entire budget when commissioned in 1925), Ardnacrusha was for a time the world's largest hydroelectric plant.

This 86-megawatt station has down the decades continued to produce huge amounts of zero-carbon energy. Its pivotal role was, however, in leading Ireland, quite literally, out of the dark ages. Its electrical output was so massive for the time that the London *Morning Post* opined that "the Irish people, with such an excess of power . . . may all be electrocuted in their beds".

Though it is unlikely that environmental issues were high on the agenda of the Free State government, a more pressing concern

when embarking so early on such an ambitious scheme was the strategic goal of securing energy independence. It was important then. Today, it has never been more critical.

Over the last 80 years, energy consumption in Ireland has increased more than 50-fold; the combined contribution of all our hydrostations is now barely 5 per cent of the total generating capacity of the Electricity Supply Board, and there is little scope for adding more hydroelectric plants. Almost 90 per cent of our national electrical supply is still produced by burning pollution-intensive coal, oil, peat and gas.

Ireland's typical daily electricity demand ranges from 1.5 to 2.5 gigawatts. Only one-tenth of this is being met by renewables, yet the EU has mandated us to deliver 33 per cent renewable power by 2020. It's a big ask, yet one technology that is admired and mistrusted in equal amounts seems the most likely key to success. And that is wind.

Already, we have just over one gigawatt of installed wind power. Averaged over a year, this delivers enough electricity to power 500,000 homes. Yes, the wind doesn't blow every day but, when it does, you have bona fide free clean energy, and lots of it. The trick

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is smoothing out the peaks and troughs. Wind is variable, but predictable in the shorter term. One-fifth of all Denmark's electricity comes from wind, and the lights stay on.

The ESB's Turlough Hill station in Co Wicklow is a pumped storage hydroelectricity plant using off-peak electricity to pump water uphill to a reservoir. When demand peaks, this can be released instantly to return electricity to the grid. Though not designed with renewables in mind, this approach may yet turn up trumps.

While technically challenging to build, a number of such reservoirs could hold massive quantities of wind energy in the form of pumped water, to be released when the wind

drops, so levelling out supply. A Trinity College Dublin research group recently claims to have identified 30 possible sites along our western seaboard. It suggested that four large wind farms could, using pumped storage back-up, supply our entire national electricity needs.

Michael Walsh of the Irish Wind Energy Association cautions that pumped storage may struggle to become economic. However, with a combination of increased capacity (our installed wind power will more than double in the next couple of years) and better interconnections with Britain and Europe, he is confident that Ireland can achieve a bullish 40 per cent renewables target by 2020.

This view appears to be supported by a recent all-Ireland grid study, which examined a range of options for energy up to 2020.

Network improvements, such as smart meters that automatically cut the power to non-critical devices to reduce peak loads, would also smooth the path to using more renewable power. Likewise, a national fleet of electric vehicles could double up as a giant "virtual battery", storing and returning power to the grid as demand ebbs and flows.

Minister for Energy Eamon Ryan goes one further. "Ireland can be an energy exporting

nation; our wind speeds are twice those of continental Europe," he told me.

A major bugbear for the wind sector is securing access to the grid, as well as widespread resistance to pylon construction.

The Minister outlined yesterday to the Oireachtas Joint Committee on Climate Change and Energy Security a draft Bill to streamline the planning process for offshore renewables. The jagged western seaboard is visible testimony to the titanic natural wind and wave resources at our disposal, if we have the wit and will to harness them.

A major renewables sector in Ireland would slash our fuel imports and emissions while creating thousands of jobs, many of them in rural areas. A new Government scheme is also encouraging people to install microgenerators, such as domestic wind turbines, and sell surplus electricity back to the network.

Within Europe, wind is the fastest-growing energy sector. The EU expects to have more than 200 gigawatts of wind power installed in the coming decade – that's 50 times Ireland's current electricity needs. In these challenging times, surely it's better to light our own path once more to energy independence than to curse the coming darkness.