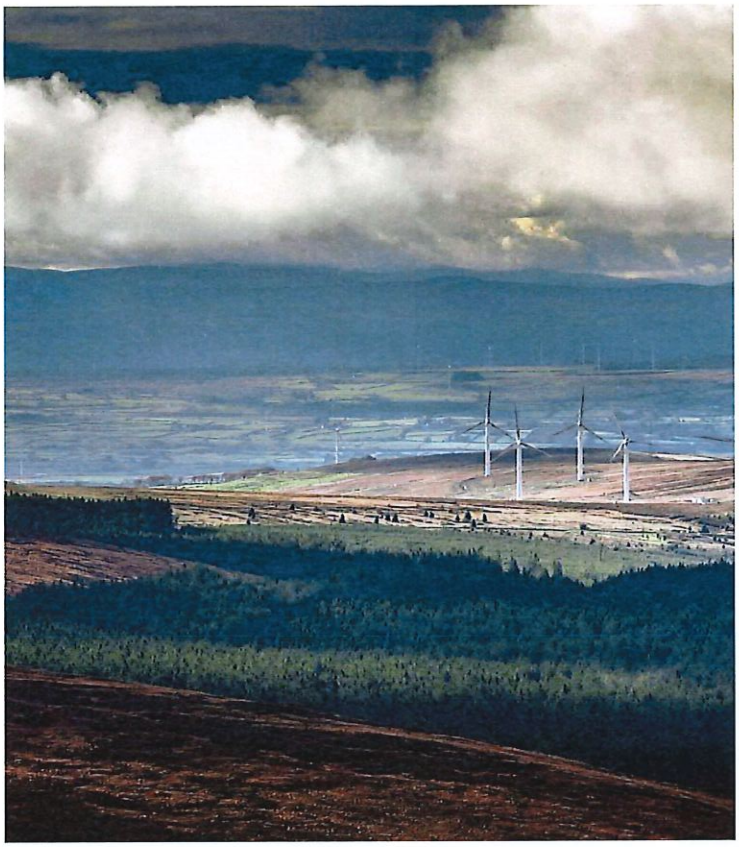
Engineers warn of Ireland's urgent need to remove barriers to net zero targets

Tim Corcoran of the Irish Academy of Engineering says Ireland needs to accelerate the provision of infrastructure to support the delivery of renewable energy projects. Q&A interview with **Rita de Brún**



In his role as chair of the infrastructure committee at the Irish Academy of Engineering (IAE) and his wealth of experience in the field, Tim Corcoran is a recognised expert in engineering solutions.

In this Q&A interview, he shares his insights on how engineering is helping Ireland's efforts to shape a more sustainable future.

The Irish Academy of Engineering (IAE) has contributed to Ireland's net zero transition by publishing reports, advising government and promoting sustainable planning strategies. It has formed dedicated committees and actively engaged with stakeholders through events and publications. Is the IAE being heard?

Our Academy independent evidence-based reports play an important role in shaping policy. Our Academy was invited to participate in DPER Structured Discussion on accelerating infrastructure delivery June 2025, at which the Academy input was well received. In recent weeks, the Academy presented to the Houses of Oireachtas Joint Committee on Infrastructure and National Development Plan Delivery.

In June of last year, the Academy published a report on Small Modular Reactors (SMRs). While neither for nor against nuclear energy, we believed the option should be discussed as part of getting to net zero by 2050. We were very interested to see recent media reports citing EirGrid as also now saying that this small nuclear reactor option should be technically assessed.

What has been the impact of IAE's copious endeavours to date?

The Academy paper 'Strategic Infrastructure Major Project Delivery,' published in November of last year, made a considerable number of recommendations on how to deliver major infrastructure urgently and efficiently - recommendations that have since become mainstream.

Key recommendations made in that report include the provision of a new focus on the delivery of public infrastructure - one that would implement an independent, high-level body or commission to provide advice directly to the Department of the Taoiseach.

All major projects should have annually reviewed cost and delivery plans, with full cost estimates using standard cost templates for all project phases, this to include estimating the impact of inflation on project cost to the end of the construction phase and the inclusion of a statement of the public benefit of the project.

'Strategic infrastructure Plans' should be prepared for transport, energy, wastewater, housing, flooding and other key sectors. They should be prioritised 'across' government departments rather than 'within' individual departments. The plans would complement and support delivery of the National Development Plan.

A committed pipeline of projects should be provided, so as to encourage domestic and international organisations to gear up to deliver.

Multi-annual funding to be adopted, to reassure the infrastructure delivery industry that there is a consistent volume of work available to price and deliver. Also, to avoid the stop/go phases in priority projects which continue to cause inefficiencies in spending, delays and acceleration in a sub-optimal way.

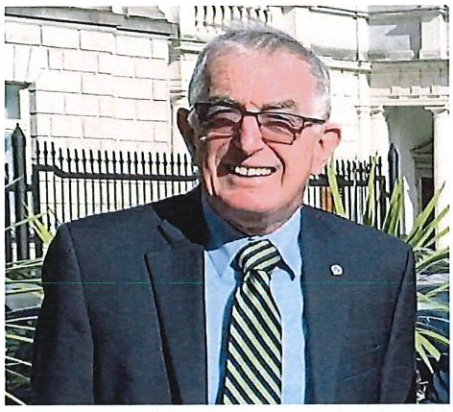
The IAE report 'Climate Change Won't Wait,' was published in July of last year. In your opinion, do the conclusions of that report still stand and why?

The conclusions still apply. Our central conclusion - as detailed in the Executive Summary of that report - is that greater political commitment at the heart of Government is essential. Seven key recommendations were made: The Climate Action Plan needs to be driven by the Department of the Taoiseach. The Government as a whole needs to explain to the public why improving the national grid is essential if more than 80 per cent of our electricity is to be generated from renewable sources by 2030.

The number and complexity of projects that An Bord Pleanála has to assess mean that the range of skills required will need to be appraised by the Government on an ongoing basis. A regular and formal monitoring programme should be established to ensure the necessary resources are always in place. A similar process is required for the Planning and Environmental Division of the High Court.

As the target of 5GW of offshore wind generation by 2030 is unlikely, if not impossible, an increased focus is necessary to achieve the maximum capacity possible in onshore renewables. To facilitate this, updated guidelines for onshore wind are urgently required from the Department of Housing, Local Government and Heritage.

Guidelines for solar energy projects must be provided. The Irish Solar Energy Association recently issued guidelines for good practice which provide a good basis on which to work.



Tim Corcoran, chair of the infrastructure committee of the Irish Academy of Engineering (IAE).

As for the Commission for Regulation of Utilities' (CRU) Electricity Connections Policy (ECP) process for assessing and awarding grid connections, this must be expedited and made less costly. EU Directive 2023/2413 on the promotion of the use of energy from renewable sources should be transposed fully into Irish law as soon as possible, to facilitate the achievement of the 2030 targets.

Finally, irrespective of our progress on renewable energy generation, the success of our renewable energy programmes will depend entirely on the proposed transformation of the National Electricity Grid. The Government, with the support of opposition parties, must drive the grid upgrade programme to ensure it is completed as a matter of urgency.

Succinctly, what are the main barriers to Ireland meeting its net zero target by 2050?

The challenges of the judicial review process to expedite planning decisions has greatly impeded the delivery of critical national infrastructure, including renewable energy. This point has been repeatedly made by the Academy in its reports. Recently, it has been gaining traction at government level, including in a speech by Rossa Fanning, the Attorney General. Legislation by Statutory Instrument will be needed to remedy the issue, especially by reiterating the importance of the common good, which is the basis of the entire planning system.

While the Planning and Development Act 2024 - which will reform the planning system - was passed in October of last year, the relevant sections of that Act have not yet been commenced. The current planning system and the judicial review process take far too much time. Net zero will not be achieved without an efficient process for consenting major infrastructure projects.

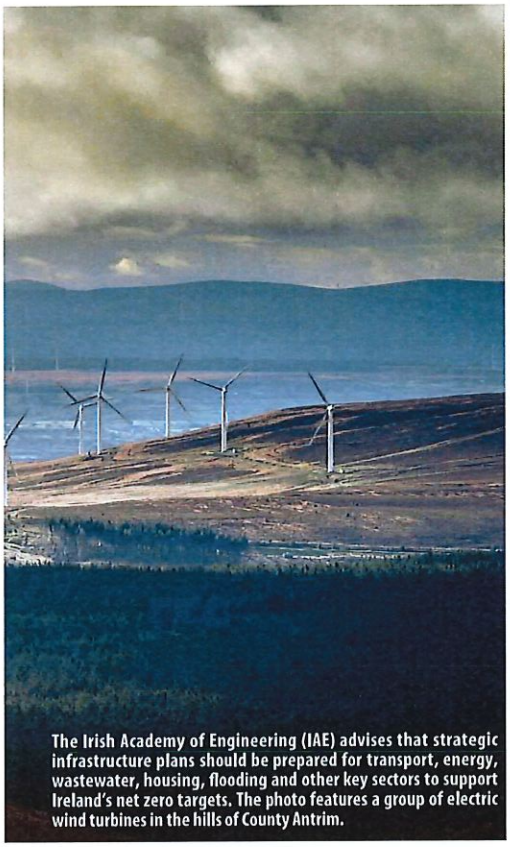
Published in October, 2022, the Climate Change Advisory Council (CCAC) report 'Climate Change Won't Wait: Delivery of Renewable Energy is Urgent,' emphasises the urgency of accelerating the transition to renewable energy to meet Ireland's climate targets and the critical need for streamlined planning and consent processes to support this transition.

Are those barriers surmountable and what will it take to get them over the line on time?

Yes, they are. However, this will require active government and political ownership — including at the local level. Also, the adequate resourcing of government agencies in terms of their technical, environmental and legal capacity. Additionally, the project delivery and upgrade of the national electricity grid must be driven by the government.

What are the main policy or institutional factors contributing to Ireland's slow progress toward its net zero targets?

Not enough progress has been made to date and there is too much to be achieved by 2050 - now only 25 years away. Inability to consider the use of nuclear power is



The Irish Academy of Engineering (IAE) advises that strategic infrastructure plans should be prepared for transport, energy, wastewater, housing, flooding and other key sectors to support Ireland's net zero targets. The photo features a group of electric wind turbines in the hills of County Antrim.

another factor. I refer here to the Academy paper on Small Modular Reactors (SMRs) which was published in June 2024. Ireland has not developed any expertise in this area and will be a very late starter when SMRs take off over the next decade. There is very little public awareness on this and nuclear projects are expressly forbidden by the major update of the planning legislation [Planning and Development Act 2024, S 182 which states: 'Nothing in this Act shall be construed as enabling the authorisation of development consisting of an installation for the generation of electricity by nuclear fission.'] and this despite the fact that nuclear is considered a 'green' energy source by the EU.

If we are to go anywhere close to meeting our climate change obligations in a reasonable timeframe, the balance between individual rights and the common good needs major guidance from government. The difficulty in achieving planning permission for onshore renewables (wind and solar) is very obvious, given the pace at which decisions are made and the number of refusals. This makes it very difficult for the country to reach its potential.

In relation to offshore renewable energy, we have been very slow in establishing a marine planning and approval regime. Yet, this is not yet proven, as no project has yet received permission to proceed. If we are to improve our rate of progress, it is essential that government is proactive in ensuring that all necessary resources are available to the bodies responsible for processing permissions and licences.

This will require close supervision and monitoring. The same approach will be required in relation to the courts that have responsibility for matters of judicial review.

Do you believe Ireland will reach its net zero target by 2050 and why?

Ireland is falling behind in meeting its 2030 sustainable energy targets. Onshore wind and solar energy projects are progressing and being developed, but the offshore wind energy target of 5GW is unlikely to be met by 2030.

Ireland can reach its net zero target by 2050, but will need a substantial step change in government approach to delivery and the actual cost of the essential infrastructure needs to be quantified. For example, policy needs to be aligned across all government departments and multi-annual funding is required. 'Approval gates' (approval process) within government departments and agencies need to be simplified.

Let agencies get on with delivery. Adopt the concept of the 'common good', balancing the right of individuals with the common good – as is used throughout Europe.

Industrial leaders need to treat thermal decarbonisation as a core business decision rather than a technical exercise, writes **Barry Bowen** of Climeaction

Becoming a renewable island needs more than grid investment and renewable generation. It needs transforming the single most stubborn part of the energy system: the heat used inside factories.

(SPONSORED)

Why industrial heat will make or break Ireland's climate targets

Ireland has no credible path to becoming a renewable island unless we confront the reality of industrial heat.

It is the hardest part of the energy system to decarbonise, and the one area where delay carries the highest cost. The latest warnings from the Climate Change Advisory Council make this clear. Ireland will overshoot its first carbon budget and is far off the statutory 51% emissions reduction target for 2030.

This is not due to a lack of ambition or planning. It is because the sectors that rely heavily on thermal energy have not yet made the transition at the speed required.

For manufacturers, food and dairy processors, pharmaceutical sites, and high energy users across the country, industrial heat is the backbone of production. It drives sterilisation, drying, pasteurisation, evaporation, space heating, hot water and dozens of other core processes. In most cases these systems were built around fossil fuels. The outcome is predictable. Thermal energy accounts for a large share of industrial emissions and it is precisely the part of the system that has changed the least over the past decade.

Ireland's national conversation is still dominated by renewable electricity, grid reform and planning. These matter, but they are only half the challenge. A renewable island is not simply powered by clean electrons. It is powered by low carbon heat. Until industry electrifies or replaces the fossil heat systems that run day and night in factories across the country, Ireland will continue to miss carbon budgets.

The difficulty is that thermal systems are technically complex, capital intensive and deeply embedded in production workflows. You cannot simply swap a boiler the way you install rooftop solar. You cannot electrify heat loads without checking capacity, redesigning processes and rethinking how energy flows through a facility. That is why the industrial sector is still behind the curve and why the Council has warned that current actions will not be enough.

But this is also where the opportunity sits. The data coming from Ireland's industrial sites shows something important. There is more carbon reduction potential in heat systems than almost any other part of the energy footprint. A well executed thermal decarbonisation plan can unlock significant energy savings, major cost reductions and a step change in emissions. Heat pumps, heat recovery, thermal storage, biomass, refrigerant upgrades, distribution redesign, insulation improvements, and process optimisation are not speculative ideas. They are proven, commercially viable technologies that manufacturers across Europe are already implementing at scale. Irish industry is capable of the same shift. The bottleneck is not technology. It is execution. Most businesses are not starting from a clean slate.

They are starting with legacy infrastructure, outdated metering, insufficient data and systems that were never designed with efficiency in mind. This is where thermal audits, EXEED aligned design, and structured engineering analysis are essential.

This is not theoretical. We see it every week across food, dairy, pharma, and manufacturing facilities. A plant may believe electrification is impossible because of peak loads, only to discover that process sequencing can flatten demand. A site may assume a heat pump cannot meet temperature requirements, only to find that the real requirement is much lower than the rated equipment. Many sites are running distribution losses of twenty to thirty percent simply because insulation or controls were never upgraded. In almost all cases, these inefficiencies inflate energy bills and delay their own transition.

Industrial leaders need to treat thermal decarbonisation as a core business decision rather than a technical exercise. Energy costs are volatile. Regulatory pressure will increase as Ireland works to recover overshoots from the first carbon budget. The EU's policy direction is also clear. Industries that fail to reduce emissions will face greater scrutiny, higher compliance costs and reduced competitiveness. Those that act will not only reduce emissions but also improve resilience, cost predictability and operational performance.

Becoming a renewable island requires more than grid investment and renewable generation. It requires transforming the single most stubborn part of the energy system: the heat used inside factories. The Government will need to accelerate planning reform, grid upgrades, renewable heat incentives and industrial decarbonisation supports. But businesses cannot wait for perfect conditions. They need to take ownership of their transition and build credible thermal roadmaps now.

At Climeaction we've seen firsthand when companies combine rigorous engineering, a structured audit process and a clear capital plan, they can cut thermal emissions significantly without disrupting production. Ireland cannot afford another missed carbon budget period. Industry cannot afford rising energy costs, supply chain pressure and tightening regulations.

The truth is simple. Industrial heat will make or break Ireland's climate targets, if we get it right we can build a competitive, resilient and genuinely renewable industrial base.

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