

Annual Review 2025



Electricity

Annual Review 2025: Electricity

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Summary for All

Key observations

In this Review, the Climate Change Advisory Council outlines observations and recommendations for the Electricity sector. Recent storms such as Darragh and Éowyn have exposed how vulnerable Ireland's electricity infrastructure is to extreme weather events and how issues with electricity can have knock-on impacts on other critical services such as water supply, telecommunications, transport, health and agriculture.

To meet the carbon budgets, emissions from the Electricity sector will need to reach zero by the end of the 2030s. In 2024, electricity emissions fell by approximately 7% relative to 2023, reaching the lowest level since record-keeping began in 1990. This was driven by a continued decline in the use of coal for electricity generation, coupled with a notable rise in imported electricity for the second consecutive year.^a Renewable energy is still not being rolled out fast enough, and insufficient investment in the electricity grid means that some of the renewable energy we currently generate cannot be used. Emissions are currently projected to exceed the sectoral emissions ceiling, even in the most optimistic scenario.

Key recommendations

1. Resilience

It is vital that the Government undertakes urgent work with its agencies to ensure that the electricity network can withstand and rapidly recover from the impacts of extreme weather events and move towards a more systemic approach of adapting to climate change. Close inter-agency coordination, additional manpower and the latest technologies should be available to ensure that systems and services are climate resilient and restored as quickly as possible. More regular and detailed reporting of power system outages by location will improve accountability and highlight where the grid most needs upgrades and investment.

2. Planning

Many onshore wind projects will need to renew their existing planning permission by 2030 and are likely to upgrade their wind turbines to more efficient models. As these projects already have grid connections, it is important that local authorities and other decision-makers constructively consider their retention while taking account of legal constraints. It will be vital to have sufficient resources across the planning system to ensure that decisions can be taken without delay.

3. Reducing costs

To help lower electricity bills and reduce peak demand, the Government must make the legal and regulatory changes needed so customers can easily access their smart meter data. Customers should be encouraged to download their data from the ESB Networks online portal and be supported with the necessary insights to interpret and act on this. Despite legislation passed in 2022 entitling customers to dynamic electricity pricing, these contracts have now been delayed to June 2026. The Council urges electricity suppliers and the regulator to make these available sooner, along with real-time tools to help customers save money by shifting their usage to times when more renewable energy is available.

a Imported electricity is not included in the Electricity sector emissions in the Irish greenhouse gas emissions inventory.



ABP	An Bord Pleanála
CRU	Commission for Regulation of Utilities
DECC	Department of the Environment, Climate and Communications
EED	Energy Efficiency Directive
ETS	Emissions Trading System
EV	electric vehicle
IEA	International Energy Agency
IROPI	imperative reasons of overriding public interest
LDES	long-duration energy storage
LNG	liquefied natural gas
MARA	Maritime Area Regulatory Authority
ORE	offshore renewable energy
PCW	price comparison website
PR	Price Review
PV	photovoltaic
RED	Renewable Energy Directive

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Key observations

Electricity sector emissions and main trends

- Electricity emissions were reported to be 6.3 Mt CO₂ in 2024^[1] a decrease of 7.3% from 2023 levels, with imports representing 14.8% of electricity supplied in 2024^[2]
- Ireland's carbon intensity of electricity generation is higher than the EU average^b due to continued reliance on coal and oil, which are estimated to have contributed 13.4% and 3.1% of total electricity emissions for 2024, while accounting for only 3.2% and 0.7% of indigenous generation, respectively.^[2]

Electricity sector resilience

- Storm Éowyn exposed Ireland's vulnerability and lack of resilience across a range of critical infrastructure, including in the Electricity sector. It also demonstrated cascading impacts across the Electricity, Water, Transport, Health and Agriculture sectors, and highlighted the interdependencies between these systems.
- Decarbonising Ireland's energy system requires electrifying heating and transport; however, unless electricity resilience is ensured, homes and businesses could be left exposed during power cuts, and public confidence in electrification could be eroded.

Renewable electricity

- While 1.6 GW of onshore wind (0.7 GW)^[3] and solar (ca 0.9 GW)^[4] renewable projects received planning permission during 2024, only an additional 0.5 GW (0.2 GW onshore wind and 0.3 GW solar) of new utility-scale renewable capacity was connected,^[5] which is significantly below the 1.8 GW annual average increase in capacity that is required to meet 2030 targets.
- Dispatch-down is the practice of deliberately reducing renewable generation due to grid limitations. In 2024, the dispatch-down energy from wind resources was 1,266 GWh (10.1% of the total available wind energy) and 39 GWh from solar resources (5.3% of the total available solar energy).^[5]
- In addition to the 0.3 GW of grid-scale solar capacity connected in 2024, there has been a significant increase in small-scale renewable generation, comprising mainly domestic rooftop solar photovoltaic panels, with a total of 0.5 GW connected by the end of 2024 (ESB Networks, personal communication, February 2025).
 - **b** Ireland's carbon intensity of electricity generation in 2023 was 254 g CO₂ eq/kWh compared with an EU average of 210 g CO₂ eq/kWh.^[1]



Key recommendations

Prioritising the delivery of a resilient electricity system

- The Government must urgently prioritise a more systemic approach to the delivery
 of a resilient electricity system that can withstand and recover quickly from
 disruptions such as extreme weather, economic shocks and cyberattacks. This
 requires significant additional capital investments beyond business as usual –
 close inter-agency coordination, robust resilience metrics and maximising innovative
 technology use.
- 2. The Government should require all energy infrastructure developers to further assess and update plans to manage the risks associated with the range of climate scenarios and time frames outlined in the National Climate Change Risk Assessment.
- 3. The long-term development of multiple maritime ports to facilitate the construction, operation and maintenance of offshore renewable energy infrastructure should be prioritised through a systemic approach. The forthcoming (revised) National Ports Policy provides an opportunity for the Department of Transport to set the imperative strategic directions to ensure the necessary investment in multiple port infrastructure projects to support offshore renewable energy deployment at scale.

Increasing Ireland's sustainable electricity supply

- 4. The Government should immediately align the legal mandate and strategy for all public bodies to act in conformity with the Climate Act 2021, particularly those operating in the energy sphere, such as An Bord Pleanála, the Maritime Area Regulatory Authority, the Commission for Regulation of Utilities (CRU), EirGrid, ESB Networks and Gas Networks Ireland, and ensure full depreciation of fossil fuel regulatory assets by 2050 as an integral part of the energy transition plan.
- 5. A fifth of the existing onshore wind fleet (> 850 MW) will reach the end of its planning permission or require decommissioning by 2030.^[6] In the context of maximising current grid infrastructure through modernising and increasing the efficiency of the existing wind fleet, the Council is calling on planners at local and national levels to adopt a constructive approach to repowering projects, including the appropriate use of the Habitats Directive derogation for imperative reasons of overriding public interest, while ensuring biodiversity benefits and risk mitigation. Sufficient resourcing and prioritisation within planning authorities will be critical to ensure that statutory timelines are adhered to for the significant volume of renewable planning decisions that need to be made in order to meet national targets, with the Council also calling on industry to accelerate construction of the 2 GW of onshore wind projects that have already received planning permission.
- 6. Significant investment and political support at national, regional and local levels for upgrading the electricity grid infrastructure is vital for achieving the renewable energy



targets and ensuring a sustainable, reliable and resilient electricity supply to all parts of the country. The Council is calling for the swift implementation of all solutions identified in EirGrid's Shaping Our Electricity Future Roadmap and ESB Networks' Networks for Net Zero strategy, with full transparency and monthly public reporting on the progress of each project.

Reducing costs and emissions with demand flexibility

- 7. In order to help customers save money and move their electricity consumption away from peak times, the Government must implement the legislative changes and licence modifications required to facilitate access to smart metering data as an immediate priority. A campaign to encourage more customers to download their smart metering data from the ESB Networks online portal along with an expansion of the education and insights provided is required. The CRU has regrettably extended the deadline to 1 June 2026 for the introduction of standard dynamic price contracts to the retail electricity market, despite legislation enacted in 2022 entitling customers to dynamic electricity price contracts. The Council is calling on the CRU and electricity suppliers to offer a standard dynamic price contract to customers as soon as possible, in line with their legislated requirements. ICT solutions to inform customers to reduce costs.
- 8. The Council asserts that an enhanced emissions reporting scheme for large energy users must be operational by the end of 2025. The Council expresses its deep disappointment at Ireland's failure to transpose the recast Energy Efficiency Directive on time, including the failure to establish a publicly accessible reporting mechanism on the sustainability of data centres operating in Ireland.



1. Introduction

Electricity sector emissions come from a total of 15 fossil fuel-fired generating stations, two waste-to-energy facilities, one natural gas production platform and one natural gas refinery. It is the third largest sector by emissions in Ireland. Electricity sector emissions decreased by 21.6% in 2023, the largest annual change in emissions ever recorded for the sector, to an all-time low across the 1990–2023 time series at 7.8 Mt CO_2 eq,^[7] mainly due to imports of electricity from the UK.

EU Emissions Trading System (ETS) data indicate a 7.3% reduction in CO_2 emissions from electricity generation in 2024^[8] due to a 22% reduction in the use of coal for electricity generation,^[2] paired with a 55% increase in imported electricity in 2024 relative to 2023.

Storm Éowyn exposed Ireland's vulnerability and lack of resilience across a range of critical infrastructure and demonstrated cascading impacts across the Electricity, Water, Transport and Health sectors, highlighting the interdependencies between these systems. A sustainable, resilient and secure supply of electricity is essential for the economy and society, especially as, to meet emissions targets in other sectors, dependency on electrification for heat, transport and other vital systems will increase.

To decarbonise electricity generation and facilitate economic growth, Ireland must significantly increase renewable generation capacity, transform the flexibility of the electricity system with system services and storage capacity, balance intermittent renewable resources with the demand profile and phase out reliance on costly imported fossil fuels. 2025 is a critical year for the Electricity sector.

2. Sectoral emissions ceilings and Climate Action Plan targets

The Electricity sector has an emission ceiling of 40 Mt CO₂ eq for the first carbon budget period (CB1: 2021–2025),^[9] with the EPA's 2023 provisional greenhouse gas inventory^[7] reporting that 67.9% of the sectoral emissions ceiling has been used in the first 3 years of the first carbon budget (**Table 1**). Using the EPA's reported 2023 provisional greenhouse gas inventory combined with the latest emissions data from the EU ETS for 2024,^[1] it is estimated that at least 83.6% of the sectoral emissions ceiling has been used in the first 4 years of CB1.^[1] EU ETS data suggest that electricity emissions reduced by about 33% in 2024 compared with 2018 levels, against a CAP sectoral target of a 75% reduction by 2030.

Table 1: Reported emissions for 2021–2023 in the context of the sectoral emissions ceiling (SEC) for carbon budget 1 (2021–2025).

(Source: Ireland's Provisional Greenhouse Gas Emissions 1990–2023.^[7])

Carbon budget period	SEC	2021-2023	SEC used, 2021-2023
2021-2025	40 Mt CO ₂ eq	27.1 Mt CO ₂ eq	67.9%

Progress towards achieving the 50% Climate Action Plan target for renewable electricity share of demand by 2025 has been restrained by an overall increase in electricity demand coupled with limited growth in installed renewable capacity (see *Section 3.3*), with both onshore wind and solar certain to miss their respective 2025 targets. 2024 saw further progress in developing micro- and



small-scale generation, with microgeneration on track to meet a target of 1.6 GW of installed capacity by 2030 (Table 2). The less than 7% target for dispatch-down was met in 2021 but has not been maintained, and, while significant grid improvements have been made to increase the system non-synchronous penetration (SNSP) limit to 75%, it is still set to miss its 85% target for 2025.

Table 2: Progress on key Climate Action Plan targets as at the end of 2024.

(Sources: 1, EirGrid System and Renewable Data Summary Report – 2025.^[5] 2, ESB Networks, personal communication, February 2025. 3, Climate Action Plan 2025.^[10]) *Cumulative installed capacities for solar includes non-utility solar, i.e. microgeneration and small-scale generation, which predominantly comprises domestic rooftop solar photovoltaic panels.

	Cumulative installed capacity (GW)			Micro-	Renewable		
Year	Onshore wind ^{1,3}	Offshore wind ^{1,3}	Solar* 1,2,3	generation ≤ 50 kW (GW) ^{2,3}	electricity share of demand ^{1,3}	SNSP limit ^{1,3}	Dispatch- down ^{1,3}
2021	4.3	< 0.1	0.1	< 0.1	35%	70%	6%
2022	4.5	< 0.1	0.2	0.2	39%	75%	7%
2023	4.7	< 0.1	0.7	0.3	41%	75%	8%
2024	4.9	< 0.1	1.3	0.5	40%	75%	9%
2025 target	6	No target	Up to 5	No target	50%	85%	<7%
2030 target	9	At least 5	8	1.6	80%	95-100%	<7%

3. Indicators

3.1. Electricity emissions and main trends

Ireland's electricity demand rose by $3.8\%^{[5]}$ in 2024, outpacing an annual European increase of $1.4\%.^{[11]}$ Renewables accounted for 40% of electricity generation, with total wind generation at 11.1 TWh in 2024, constituting 33% of electricity generated in Ireland, a 0.3 TWh or 2% decrease from 2023.^[2] However, solar saw the largest year-on-year percentage increase of any generation source, increasing by 74% in 2024 or 0.3 TWh, now accounting for 0.7 TWh or 2.1% of national electricity generation.^[2] The EPA's latest greenhouse gas emissions inventory^[7] and projections^[12] reports estimate a cumulative overshoot of 5 Mt CO₂ eq (9%) of Electricity's sectoral emission ceiling by 2030, achieving a 65% reduction on 2018 levels against the target of 75% (Figure 1, with additional measures scenario). This points to expensive compliance costs, as outlined in the Council's joint paper with the Irish Fiscal Advisory Council.^[13]

Electricity generation emissions as reported by the EU ETS were 6.3 Mt CO_2 in 2024, marking a 7.3% reduction from 2023 levels.^[1] This reduction was largely driven by the substantial increase in net electricity imports from the UK and the reduction in coal-fired power generation, which was down to 3% of generation but still contributing 13% of the Electricity sector's CO_2 emissions.^[2] Imports of electricity contributed to the overall generation mix, with recent import levels running significantly



higher than the long-term average (Figure 2). The recent operationalisation of the Greenlink interconnector has further increased the overall potential for imports and may prove crucial in determining how close the sector gets to reaching its sectoral emissions ceilings.^[14]



Figure 1: Inventory and projected greenhouse gas emissions for the Electricity sector, 2018–2030, with annualised sectoral emissions ceilings.

WEM, with existing measures; WAM, with additional measures. 2024 ETS emissions are for CO_2 emitted from electricity generation stations only, and therefore they do not fully capture all greenhouse gas emissions reported under the Electricity sector as defined in the Climate Action Plan.

(Sources: Ireland's Provisional Greenhouse Gas Emissions inventory, 1990–2023,^[7] Ireland's Greenhouse Gas Emissions Projections, 2023–2050^[12] and EU Emissions Trading System emissions for 2024.^[1])





The emissions intensity of electricity produced in the UK is significantly lower than in Ireland.^[15] Additionally, the difference in the ETS prices between the EU and UK (€65 per tonne versus just over €37 per tonne)^[16] contributes to the extent of Irish imports from the UK. This price gap may close later in the decade, when the EU's Carbon Border Adjustment Mechanism is applied to east–west flows of electricity.^a Electricity imports are included as zero emissions in national greenhouse gas inventories, but it should be noted that imports can in some instances displace renewable energy from the grid.^[17]

3.2. Electricity resilience

There are no specific indicators in the Electricity and Gas Networks Sectoral Adaptation Plan or Climate Action Plans to measure the climate resilience of electricity supply and distribution. However, the Commission for Regulation of Utilities (CRU) has put in place incentives and reporting requirements through its price review mechanism relating to unplanned power outages. Targets on unplanned power outages have not been achieved during each year of the Price Review 5 (PR5) period so far and have resulted in penalties of €37.1 million imposed on ESB Networks for failure to achieve these targets. The 2024 reports from EirGrid and ESB Networks have yet to be published.

3.3. Renewable electricity

By the end of 2024, the total utility-scale renewable capacity in Ireland was 5.7 GW, with wind power contributing the majority at 4.9 GW^[5] (Table 2). During 2024, an additional 0.5 GW (0.2 GW wind and 0.3 GW solar) of new utility-scale renewable capacity was connected, representing a decrease compared with the 0.6 GW connected in $2023^{[5]}$ and significantly below the 1.8 GW annual average increase in capacity that is required to meet 2030 targets. The additional offshore wind target of 5 GW by 2030 can only start to be achieved with the construction of phase 1 wind farms after 2025.

In addition to the 0.3 GW of utility-scale solar capacity connected in 2024, there has been a significant increase in small-scale renewable generation, mainly comprising domestic rooftop solar photovoltaic (PV) panels, with a total of 0.5 GW connected by the end of 2024 (ESB Networks, personal communication, February 2025). This includes 0.2 GW of small-scale generation connected in 2024 alone. ESB Networks received approximately 43,800 applications (0.2 GW of generation) for microgeneration^b installations in 2024, representing a 35% increase in applications from 2023 and an average of 950 applications per week.

Approximately 1.6 GW of onshore wind (0.7 GW)^[3] and solar (about 0.9 GW)^[4] electricity projects received planning permission during 2024 (**Table 3**). If all these projects progress through to development, they could deliver 15% of the increase in onshore renewable capacity required to achieve the 2030 targets. While delays remain prevalent in the planning process, 2024 saw 22 decisions made on onshore wind farm projects by An Bord Pleanála (ABP), a welcome 16% annual increase on 2023.^[3] While currently Ireland has only 0.03 GW of offshore wind capacity installed, four offshore wind farm applications were submitted to ABP in 2024 and are waiting for approval, amounting to approximately 3 GW of the 5 GW need to hit Climate Action Plan targets for 2030.^[4,18]

a As the Electricity sector in Northern Ireland is part of the EU ETS, this issue applies only to east–west flows and not to north–south flows of electricity.

b Microgeneration is the small-scale generation of electricity from renewable sources from installations of up to 6 or 11 kW, typically domestic rooftop solar PV.



Table 3: Number and capacity of wind and solar projects in the planning processfor 2024.

(Sources: 1, Wind Energy Ireland news release.^[3] 2, EirGrid Renewable Electricity Support Scheme ORESS 1 Final Auction Results.^[18] 3, Construction Information Services database, 2025.^[4]) *Many solar projects do not state capacity on planning submissions to allow design flexibility. Therefore, reported capacity is a Council Secretariat estimate, based on a combination of solar projects that do state their capacity and an estimate based on the reported project costs for those that do not state capacity, and is subject to change.

	Onshore wind ¹		Offshore wind ^{2,3}		Solar³	
Status	Number of projects	Capacity (GW)	Number of projects	Capacity (GW)	Number of projects	Capacity (GW)
Awaiting decision	30	1.6	4	3	27	1.6*
Plans granted permission	10	0.7	0	0	32	0.9*
Plans refused permission	12	0.6	0	0	3	0.1*

4. Progress on previous Climate Change Advisory Council recommendations

4.1. Accelerating renewables

The Council has repeatedly urged accelerated deployment of renewable electricity infrastructure. Key barriers include slow permit processing, delays in publishing critical policy frameworks, insufficient grid infrastructure and inadequate staffing and administrative support for agencies. For example, by the end of 2024, 1.6 GW of onshore wind energy projects in Ireland were still awaiting a decision.^[3]

The publication of the Renewable Electricity Spatial Policy Framework and associated wind energy guidelines have been repeatedly delayed, hindering investment certainty and appetite for onshore wind development. Additionally, the urgent need to designate 'renewables acceleration areas' under Article 15c of the recast Renewable Energy Directive (RED III) and remove barriers to repowering older wind farms in line with REPowerEU timelines have been repeatedly stressed by the Council.

Grid infrastructure has remained a major challenge, with the publication of the final National Planning Framework Review having faced continued delays, preventing alignment between national renewable targets and local development plans.^[19] Hybrid grid connections and private wire networks were identified as crucial measures to maximise existing infrastructure efficiency, but the rate of implementation of these measures has been too slow. Offshore wind development, essential for long-term decarbonisation, will be affected by limited port infrastructure, with Belfast being the only port on the island of Ireland currently capable of supporting offshore construction. Thus, the publication of the updated National Port Policy in 2025 is a crucial opportunity to accelerate the development of port infrastructure to meet the required 5 GW of offshore wind set out in the Climate Action Plan by 2030.



While coal- and peat-fired power plant closures have been prioritised and welcomed by the Council, concerns persist regarding the conversion of peat-fired plants to gas rather than renewable alternatives. Burning of coal at Moneypoint power station is to be phased out in 2025, but it will continue to burn heavy fuel oil for electricity generation as an out-of-market generator of last resort. The Government is urged to adhere to planned closure deadlines and establish a clear roadmap for transitioning to zero-carbon generation.

4.2. Demand management and flexibility

The Council has routinely stressed the urgency of improving demand-side flexibility to reduce costs for consumers. Regrettably, the publication of the National Energy Demand Strategy was delayed, eventually being published in July 2024.^[20] Data centres remain a primary driver of increasing electricity demand, accounting for 21% of Ireland's total usage of metered electricity in 2023,^[21] up from just 5% in 2015.^[21] The Council has made repeated calls for a legislative mechanism to ensure that new connections align with renewable capacity expansion and to restrict new gas-powered 'islanded' data centres.

Over 1.9 million smart meters have been installed to date, yet the actual uptake of time-of-use tariffs since their introduction in February 2021 remains relatively low, at approximately 20%.^[22,23] The publication of the Smart Meter Data Access Code has been repeatedly delayed, thus limiting consumer participation in demand flexibility programmes that could save them money. Additionally, CRU-accredited price comparison websites (PCWs) still do not allow for the upload of customer-specific consumption data in the form of ESB Network's 'harmonised downloadable files' (HDFs), which would encourage uptake of time-of-use tariffs nationally. The 'Beat the Peak' pilot scheme and 'Reduce Your Use' campaign were introduced to encourage demand response. A review of their effectiveness has been recommended but had not yet been carried out as at early 2025.

The Council has repeatedly called for the facilitation of long-duration energy storage (LDES), a critical element for managing the often intermittent supply of renewables, with Ireland having previously lacked the necessary market structures and support schemes for energy storage development. The Electricity Storage Policy Framework, published in July 2024, is a welcome development, and it is critical that LDES procurement is initiated by 2028 at the latest.

4.3. Climate resilience

Flooding, extreme winds and saturated soils pose significant risks, particularly for the overhead electricity network, most recently highlighted by Storm Éowyn. Future energy project planning and appraisal must integrate climate projections to ensure long-term resilience. EirGrid has undertaken a climate change risk assessment of the transmission system, with flooding (fluvial, coastal and pluvial) identified as the biggest risk. Five priority transmission sites were identified for adaptive measures to mitigate the risks of flooding; however, implementation of these measures is not expected until 2028, subject to planning approval.^[24]

The role of microgeneration and community-led energy projects has been emphasised, with particular reference to rural areas, as a measure to create a more decentralised, resilient Irish electricity supply. Further expansion of rooftop solar PV grant support schemes for non-domestic consumers as a resilience-enhancing measure has been encouraged, and progress in achieving microgeneration targets is discussed in more detail in *Section 3.3*. The ESB Networks business plan for Price Review 6 (PR6) commits to supporting 30% annual growth in mini-generation, microgeneration and small-scale generation to the low-voltage network.^[25]



The Future Framework for Offshore Renewable Energy policy statement was published in May 2024 and outlines 29 key actions to develop Ireland's long-term, plan-led approach to offshore wind to 2050.^[26] It includes protection of environment and biodiversity as a guiding principle and further recognises the potential for marine multipurpose sites and offshore renewable energy (ORE) technological co-location, and the emerging opportunity for minimisation of environmental impacts. ESB Networks has adopted a biodiversity strategy for 2024–2029 and it contains commitments to deliver biodiversity net gain for projects at sites within ESB Networks' ownership and inclusion of biodiversity considerations within design and ownership.^[27] EirGrid requires the implementation of nature-inclusive design proposals for work on grid projects^[28] to connect offshore energy to the grid and is in the process of developing designs for offshore cables and substations to attract marine life to infrastructure.

5. Analysis and discussion

5.1. Prioritising the delivery of a resilient electricity system

5.1.1. Provision of a reliable and resilient electricity network

The provision of a reliable and resilient electricity supply for both businesses and communities is critical to achieving Ireland's decarbonisation and resilience-building goals. Decarbonising the energy system requires electrifying heating and transport, but, unless electricity resilience is ensured, homes and businesses could be left exposed during power cuts, and public confidence in electrification could be eroded. The compounding impacts of storms and cold weather events experienced in December 2024 and January 2025 exposed the vulnerability of Ireland's electricity distribution network and led to cascading consequences for a range of other sectors, including communications, water, health and education. This has amplified the urgent need to prioritise the delivery of a resilient electricity system that can withstand and recover quickly from disruptions such as extreme weather events, economic shocks and cyberattacks.

The Council has previously emphasised the need for increased investment in climate proofing energy infrastructure, and there is a timely opportunity to do so now, with several key plans being finalised over the course of 2025. These include ESB Networks' Winter 2025 Resilience Plan^[29] (which was published in April 2025), PR6 (2026–2030)^[25] and the forthcoming Electricity and Gas Networks Sectoral Adaptation Plan (2025–2030). The plans need to present ambitious targets for climate resilience, adequate funding and resourcing, and use of innovative technologies to ensure improved resilience to climate-related events.

The Council notes the increased budget planned under PR6 for making the transmission and distribution network more resilient.^[25] However, in the light of recent experience and a number of reports, it is estimated that additional resources for grid investment of up to €7 billion by 2030 are required.^[13,30,31] It is recommended that all relevant agencies re-examine their PR6 submissions and explore options to mobilise increased capital investment, matched by increased operational expenditure and the development of human resource capacity within system operators, strategic partnerships with contractors and use of smart technologies, so that the increased investment is effectively absorbed and deployed.

The Council recommends that the Department of the Environment, Climate and Communications (DECC), CRU, ESB Networks and EirGrid develop ambitious and measurable targets based on indicators relating to power outages (customer interruptions and customer minutes lost) due to weather-related events. These targets should be included in the Electricity and Gas Networks Sectoral Adaptation Plan and price review mechanism, and performance towards their achievement should



be regularly tracked and reported on. This information is difficult to access currently and should be made available in the public domain on a monthly basis.

Increased emphasis is also required in the forthcoming Electricity and Gas Networks Sectoral Adaptation Plan on initiatives to increase the resilience of homes, business and community centres to extreme weather events through greater self-generation of electricity and backup based on sustainable and diversified energy sources. Areas for targeted initiatives include:

- enabling the utilisation of electricity through solar panels during power outages through battery storage and isolator switches,
- using bi-directional charging to power homes and businesses from electric vehicle (EV) batteries (improved guidance and information provision is needed in this area, along with appropriate standards and regulations for both installers and customers to enable greater adoption),
- retrofitting the homes of vulnerable electricity customers,
- ▶ updating existing winter-ready guidelines^[32] with recommendations for EV owners and renewable energy microgenerators.

5.1.2. Towards reducing vulnerability of existing and future infrastructure

The Government is recommended to require all energy infrastructure developers to assess the risks associated with a range of climate scenarios and time frames and plan to manage these risks for vulnerable infrastructure and assets by taking a socio-economic systems approach^[33-35] within the risk assessments and resilience and adaptation planning. This approach focuses on transformability or the capacity of a system to reorganise or innovate in response to significant challenges, and often highlights connectivity, encouraging collaboration and coordination across systems, sectors, levels of governance and regions.^[34]

Risk assessments should be aligned with the framework of the National Climate Change Risk Assessment (NCCRA), which assesses risk under both representative concentration pathway (RCP 4.5 and RCP 8.5) scenarios across three time horizons (2030, 2050 and 2100).^[36] The climate projections of Met Éireann's TRANSLATE programme are integrated in the NCCRA, and this offers potential for a standardised approach to undertaking climate risk assessments to be used by Government departments, semi-state agencies and private companies. Risk assessments should also consider extremes in climate more robustly, as current multi-model ensembles have the potential to downplay variability and underestimate risks from extremes. With regard to wind energy, there is a need to consider modelling of wind and wave strength and direction as climate change advances beyond 2100.

The Critical Entities Resilience Regulations^[37] requires a national risk assessment of all potential risks to be conducted every 3 years and requires EU Member States to develop a national strategy for the resilience of critical entities by Q1 of 2026.^c It requires climate adaptation measures, including physical protection of premises and critical infrastructure, to be undertaken. Climate change adaptation should be a required consideration in environmental assessment and licensing processes in Ireland for critical infrastructure-related sites and assets.

c Sectors included in the Critical Entities Resilience Regulations: Energy, Transport, Banking, Financial Market Infrastructure, Health, Water (drinking water, wastewater), Digital Infrastructure, Public Administration, Space, and large-scale Food Production, Processing and Distribution.





5.2.1. Phasing out imported fossil fuels

Ireland needs to urgently phase out harmful and expensive imported fossil fuels and use sustainable electricity in all sectors, including heat and transport. Ireland spends approximately €1 million per hour importing fossil fuels.^[38] Reducing and rapidly eliminating the importation of fossil fuels is imperative to protect citizens from the volatility in cost of living due to fossil fuel prices, ensure energy security and reduce greenhouse gas emissions. The most ambitious energy scenarios informing the Council's 2024 carbon budget proposal involved an effective phasing out of fossil fuel use by 2039 within the Electricity, Industry, Buildings and Transport sectors, with limited to no opportunity for new investments in fossil fuel systems.^[39]

Priority must be given to achieving Ireland's climate commitments through the decarbonisation of the electricity system and investment in indigenous and renewable sources of electricity. In order to deliver a decarbonised electricity system as part of the broader energy transition, the Government and its agencies must work together on the urgent development and generation of renewable electricity and improve consistency and coherence between national, regional and local climate action policies, in line with all other planning, environmental and community considerations. The Government must urgently approve the National Planning Framework Review so that regional renewable electricity strategies can be finalised by each Regional Assembly to allow local authorities to consistently plan for the delivery of target power capacity (MW) allocations through local development plans and county development plans. The repeated delays to this pivotal policy framework, which is crucial for the alignment of national targets and local development plans, are regrettable. The Government needs to ensure that at least 1.8 GW of new utility-scale renewable electricity generation capacity is connected to the national grid annually. The Council also calls upon industry to accelerate the construction of the approximately 2 GW of onshore wind farm projects that have already received planning permission.^[40] In addition, the rapid implementation of RED III and the mapping of renewables acceleration areas (see Section 5.2.2) is key to supporting investment in and delivery of onshore wind and solar renewable electricity necessary to meet national and regional targets and EU legal requirements.

As highlighted by the Central Bank of Ireland, the share of renewables has become stagnant since 2020, with growth failing to keep pace with the rising electricity demand.^[41] In 2024, the number of planning decisions being made for onshore wind projects increased by 16% compared with the number of decisions made in 2023, with 10 new wind farms granted permission by ABP. However, 12 projects were rejected, largely due to inconsistencies with county development plans, and 30 projects remain in the planning system without verdict.^[3] RED III^[42] requires Member States to carry out coordinated spatial mapping for the deployment of renewable energy by 21 May 2025. This is to identify available land surface, subsurface, sea or inland water areas that are necessary for the installation of renewable energy plants and their related infrastructure, such as grid and storage facilities, including thermal storage, to meet the national contribution towards the overall EU renewable energy target for 2030. The Council is calling for this spatial mapping to be carried out on time, as significant delays in granting permits to build wind developments continue to hinder Ireland's progress towards meeting its renewable energy share targets.

The projected decline in demand for traditional gas networks means it is necessary to align the assets' lives with the energy transition to optimise resource allocation and mitigate financial and environmental risks. In this context, a recent Ofgem decision to implement accelerated depreciation for gas distribution networks in the UK, aiming to fully depreciate the regulatory asset value by 2050, is of note. Ofgem has highlighted the longer term risk of gas network asset stranding if gas demand



falls before assets are fully depreciated.^[43] However, this approach may not apply to gas transmission networks that could be retained or repurposed to transport hydrogen or support carbon capture, utilisation and storage initiatives to aid industrial decarbonisation. The CRU did not address the need for accelerated depreciation of relevant gas assets in its decision on the revenues that Gas Networks Ireland will be allowed to collect for its gas distribution activities from 2022 to 2027 under Price Control 5.^[44] However, the CRU committed to undertaking a further review of elements of its gas network price control policies, including depreciation policy and connection charges, to inform future evolutions of the regulatory framework.

The Council reaffirms its 2024 recommendation that the Government ensures that the electricity demand of new data centres is entirely met with new renewable generation and that new data centre connections are permitted only when the developer can guarantee that sufficient new renewable capacity in excess of the maximum electricity demand of the data centre will be connected to the grid in advance of commissioning.^[45] A March 2025 report by EirGrid^[46] estimates that Ireland's electricity consumption will increase by 45% by 2034, one-third of which will be used by data centres. However, a recent proposed policy decision by the CRU on large energy users connection policy^[47] noted that it does not have a statutory basis to require emissions reduction and offsetting measures as a condition to grid connection, despite the impact of data centres on electricity demand, thus leaving an open door for industry to ramp up its use of fossil fuels without capacity limitations. These developments highlight the need for strengthened legal criteria to ensure that public bodies act in a manner that favours Ireland's climate objectives. In light of this issue and the need for significantly accelerated action on the decarbonisation of the electricity system, the Council again reiterates its call for the Government to immediately align the legal mandate and strategy for all public bodies to act in conformity with the Climate Act 2021, particularly those operating in the energy sphere, such as ABP, the Maritime Area Regulatory Authority (MARA), CRU, EirGrid, ESB Networks and Gas Networks Ireland, and ensure full depreciation of fossil fuel regulatory assets by 2050 at the latest, specifically the gas distribution network in the context of a gas network transition plan.

5.2.2. Resourcing and prioritisation within the planning system

The Irish planning process remains one of the most significant barriers to decarbonising the Electricity sector and achieving energy independence.^[48] While the uptick in planning decisions by ABP in late 2024 is a welcome development, only 0.7 GW of onshore wind and approximately 0.9 GW^d of grid-scale solar received planning approval (see *Section 3.3*) – well below the volume required to meet Climate Action Plan targets. Wind Energy Ireland estimates that 1.72 GW of onshore wind would have needed approval in 2024 alone.^[3] Notably, the increased planning refusal rate in 2024, due to misalignment between the national objectives and county development plans, has constrained progress.

The International Energy Agency (IEA) has called for swift implementation of reforms currently under review as part of the revised National Planning Framework and the Planning and Development Bill.^[48] Proposed reforms such as greater consistency and alignment across the planning system, the reform of ABP and the introduction of statutory decision-making timelines, are seen as steps in the right direction. The IEA has also stressed the need for adequately resourced planning authorities with appropriately trained staff to process applications efficiently (including in the recently established

d Many solar projects do not state capacity on planning submissions to allow design flexibility. Therefore, reported capacity is a Council Secretariat estimate, based on a combination of solar projects that do state their capacity and an estimate based on the reported project costs for those that do not state capacity, and is subject to change.



MARA) and a streamlined system for repowering renewables, upgrading grids and facilitating hybrid connections (i.e. wind-solar power systems with battery storage).

More than 850 MW, or one-fifth, of Ireland's installed onshore wind capacity is expected to reach the end of its planning permission or require decommissioning by 2030.^[6] The slow rate of approval for new projects risks a net reduction in operational capacity by the late 2020s. Unlike most infrastructure, wind farm projects are typically granted planning permission for a limited duration (20–30 years), despite many turbines being technically capable of operating beyond the estimated 25-year lifespan. For example, Ireland's first commercial wind farm, in Bellacorrick, Co. Mayo, built in 1992, remains operational. Repowering – replacing older turbines with modern, higher capacity units – allows reuse of existing grid infrastructure, and a single modern turbine can now match the combined output of all 21 turbines at Bellacorrick. The Council welcomes the inclusion of a new action in the Climate Action Plan 2025^[10] to develop a framework of supporting policies for the repowering and extension of life of existing renewable electricity generation capacity. As previously recommended by the Council, updated wind energy guidelines are now urgently needed to support repowering, lifetime extension and the delivery of regional renewable targets.^[49,50] These should incorporate a flexible and pragmatic approach to noise, visual amenity setback and shadow flicker, and, given their importance in meeting 2030 targets, should include provisions for a constructive approach to repowering projects, including the appropriate use of the Habitats Directive derogation for imperative reasons of overriding public interest (IROPI) while ensuring biodiversity benefits and risk mitigation.

Article 16f of RED III provides for the presumption of overriding public interest in renewable projects under specific conditions, limiting the application of Article 6(4) of the Habitats Directive. Several EU Member States have already implemented IROPI derogations. For example, Germany enshrined overriding public interest in law via the Renewable Energy Sources Act in 2022, resulting in a significant increase in the granting of permits for renewable energy projects. France introduced similar legislation in 2023 to reduce legal challenges. RED III also requires Member States to designate renewables acceleration areas (Article 15c) - areas deemed particularly suitable for developing renewable energy projects - where permit-granting should not exceed 12 months for onshore projects and 24 months for offshore projects (Article 16a). Permit-granting outside these areas should not exceed 2 years for onshore or 3 years for offshore projects (Article 16b). The European Commission has provided guidance on implementation^[51] and several EU countries have established frameworks to designate and prioritise renewables acceleration areas. Germany aims to allocate 2% of its territory for onshore wind by 2032, with interim goals for federal states by 2027, while Portugal has identified renewables acceleration areas covering 12% of the country. To meet Climate Action Plan targets, planning authorities must accelerate and simplify permit-granting procedures for building, repowering, extending and/or operating renewable energy projects. The Council calls for engagement by national and local planners, e.g. ABP, local authority planning departments and MARA, to take a constructive approach to repowering projects, including the appropriate use of the Habitats Directive IROPI derogation, while ensuring biodiversity benefits and risk mitigation. Sufficient resourcing and prioritisation within planning authorities will be critical to meeting statutory timelines and enabling timely delivery of investments critical to Ireland's energy transition.

5.2.3. Investment in upgrading grid infrastructure

The IEA has stressed that grid development is at risk of becoming a significant bottleneck for Ireland in achieving its renewable targets.^[48] The Networks for Net Zero strategy^[52] sets out how ESB Networks will achieve a net-zero-ready distribution network by 2040, while Shaping Our Electricity Future Roadmap^[53] outlines EirGrid's pathway for upgrading the grid to facilitate 80% of Ireland's and Northern Ireland's electricity coming from renewable sources by 2030 and provides a foundation to support the broader transition to net zero by 2050. The Council welcomes EirGrid's



and ESB Networks' development of renewable hub pilots to make it easier, safer and faster to connect renewables, and in particular, the benefits provided to smaller generators such as community energy projects by reducing upfront costs associated with network capacity reinforcement.^[25]

One of the major medium-term costs facing Ireland in terms of its transition is the need to expand the electricity grid and make it much more resilient. Ireland's electricity infrastructure net capital stock per person is 26% below the high-income European average.^[54] The estimated grid investment required for both the transmission and the distribution systems out to 2030, along with the backup capacity upgrades set out in the Climate Action Plan 2025, in addition to a baseline level of investment, is estimated at around €7 billion by 2030.^[30] A recent report by the Irish Fiscal Advisory Council and the Climate Change Advisory Council noted that investment in Ireland's energy grid would benefit compliance with the RED.^[13] In its PR6 strategy paper^[25] the CRU outlined its continued support of the transition to a low-carbon energy system by 2030, with further acceleration in the roll-out of new grid infrastructure to support connection of renewable energy, network innovations and advancements in smart technologies. The CRU noted that the scale of the potential grid transformation and associated investment required over PR6 is likely to be significantly greater than during PR5 and earlier price review periods, and has the potential to place significant upward pressures on network tariffs in PR6 and future price review periods. The €750 million allocated in Budget 2025 to invest in grid infrastructure is extremely welcome, and, along with increased funding, must come with vocal political support at every level to ensure delivery of sustainable electricity to all parts of the country.

A major step towards a more secure, sustainable and interconnected energy future for Ireland and the UK was achieved when the Greenlink interconnector initiated full operation on 29 January 2025.^[55] Greenlink is now the third interconnector between Ireland and Great Britain, alongside the existing East–West interconnector and the Moyle interconnector. The landmark Celtic Interconnector project, which will enable the exchange of electricity between Ireland and France, is on track for construction to be complete in 2026,^[56] allowing for the exchange of up to 700 MW of electricity between the two countries. Once fully operational, the project will enhance energy security, facilitate renewable energy integration, and serve as Ireland's only direct energy connection to an EU Member State. The Council welcomes the National Policy Statement on Electricity Interconnection,^[57] which supports a further connection to Great Britain by 2030, a second connection to France by the mid-2030s and consideration of the potential for connection to Spain, Belgium and/or the Netherlands. Electricity interconnectors are a critical part of the infrastructure that are at risk of both deliberate damage and negligence and are difficult to repair. The State must also consider the vulnerability of electricity interconnectors and actions that can be taken to mitigate these risks in the context of the current geopolitical climate and the severe shortage of repair vessels.

Ensuring that sufficient grid capacity is available to accommodate the planned renewable generation requires dealing with the protracted planning and approval processes (see *Section 5.2.2*) along with changes to the current regulations, for example to enable hybrid grid connections and introduce local flexibility markets. The Council regrets the repeated delays to the implementation of the Hybrid Connection Roadmap as promised in successive Climate Action Plans. The IEA has also highlighted that the development of electricity grid infrastructure is key to enabling the large-scale deployment of renewable electricity generation, demand growth due to electrification and Ireland's success in attracting data centres to the country.^[49] The IEA has recommended a plan-led approach to allow for the timely expansion of the electricity grid. Transparent and meaningful stakeholder engagement can raise community awareness of the role of infrastructure development and enhance the acceptance and support of the local community. Political support at national, regional and local levels is required to ensure urgent delivery of a sustainable, reliable and resilient electricity supply to all parts of the country.



5.2.4. Offshore renewable energy development

The publication of the South Coast Designated Maritime Area Plan^[58] in October 2024 was a very significant development for ORE in Ireland, representing the first time the State has prepared a forward-looking spatial plan for renewable energy on land or sea. The plan identifies four maritime areas in the Irish part of the Celtic Sea within which proposed future ORE projects may be located and will deliver real economic opportunities for substantial regional development along the south coast. One of these four maritime areas, known as Tonn Nua or Maritime Area A (up to 900 MW), could reach deployment by 2030, provided the targeted timelines for the energy auction are met.^[59] The Council regrets the delays to date, which include delays to EirGrid's publication of the Offshore Renewable Electricity Support Scheme (ORESS) auction timetable and DECC's publication of the maximum offer price for this ORESS auction in early 2025, and calls on DECC, EirGrid and MARA to prioritise the delivery of key milestones for the Tonn Nua auction in line with the indicative dates set out in the roadmap. For a second, larger site, known as Lí Ban or Maritime Area B (1100 MW to 1500 MW), there is no published roadmap. The Council is calling for an offshore wind energy auction for the Lí Ban site before the end of 2025. The cross-government offshore wind delivery taskforce must provide certainty to Ireland's burgeoning offshore wind industry about the steady pipeline of offshore auctions out to 2030 to ensure the necessary investments. The recent announcement of closer collaboration between Ireland and the UK^[60] on subsea energy infrastructure to harness the full potential of the Irish and Celtic seas is a significant and welcome development.

Ireland's ports have a crucial role to play in facilitating the development of ORE; however, currently no port (with the exception of Belfast) has the required facilities and capabilities to assist in delivering ORE targets. The Department of Transport's policy statement on the facilitation of ORE by commercial ports in Ireland emphasises the need for a multi-port approach to ORE developments.^[61] A number of ports are already progressing plans to provide the facilities and infrastructure required: the Port of Cork secured a €38.4 million grant from the EU's Connecting Europe Facility and €88.5 million through the Ireland Strategic Investment Fund,^[62] and Rosslare Europort is implementing plans to develop the necessary infrastructure to support the construction, operation and maintenance of ORE.^[63] The National Ports Policy Issues Paper identifies challenges around financing the necessary investment in port infrastructure (including prohibitions on State financing) and ensuring that ports are stress-tested and resilient to climate change risks. This is of key importance, and the National Ports Policy must provide clear strategic direction and coordination to ensure the necessary investment for multiple Irish ports to service the ORE sector on a phased basis.

5.3. Reducing costs and emissions with demand flexibility

5.3.1. Utilising the National Smart Metering Programme to realise benefits for customers

The development of wind and solar energy has reduced the cost burden on Irish consumers and insulated consumers from recent spiralling fuel costs.^[64] However, Ireland is one of just eight EU Member States where the carbon intensity of electricity production is higher than the EU average,^[65] and domestic electricity prices in Ireland were the ninth most expensive in Europe.^[66] A fourth electricity credit scheme was announced as part of the most recent budget,^[67] which credited every electricity customer's account with €250 towards their electricity bills between November 2024 and February 2025 due to the inflated wholesale cost of electricity. A report by the Economic and Social Research Institute, *Energy Poverty and Deprivation in Ireland*,^[68] found that high-income households accounted for most of the cost to the exchequer of the measures introduced to address the impact of increased energy costs. Measures like cutting indirect taxes or providing universal subsidies are poorly targeted, given that most of the revenue is spent compensating high-income households that



have proportionately been least affected. Increases to welfare payments are more targeted because they are means-tested, while increasing the pay-related social insurance credit is targeted more at lower earners and renters. Fuel poverty in Ireland continues to be a significant issue faced by 29% of households now deemed to be in energy poverty due to inflation.^[68] The latest figures from the CRU show that 12% of domestic electricity customers were in arrears in December 2024, which is 2% higher than in November 2024.^[69] The three broad approaches for tackling energy poverty are reducing demand for energy by improving energy efficiency through the provision of grants for retrofitting; income supports in the form of transfer payments, such as the fuel allowance, and subsidising energy bills; and consumer protection measures.^[70] The Council recommends that any support measure be targeted to consumers in vulnerable circumstances and fuel poverty and with low incomes, and those in rental properties without the option to avail themselves of grants for retrofitting.

The National Smart Metering Programme targets the nationwide installation of 2.1 million singlephase smart meters to customers across Ireland by the end of 2025 (more than 1.9 million smart meters have already been installed).^[23] Smart meters allow electricity customers to benefit from time-of-use pricing, which charge different rates for electricity depending on the time of day, thus helping customers to save money by using less electricity at the most expensive times and prompting customers to move their electricity consumption away from peak times. Since the introduction of time-of-use tariffs in February 2021, uptake has steadily increased but overall remains relatively low at 20%. The Council welcomes the publication of the Smart Meter Data Access Code in February 2025^[71] as a significant milestone for the National Smart Metering Programme, which will enable opportunities to offer additional services to customers, such as more accurate and personalised price comparisons, better tailored tariffs and analysis of customers' energy consumption, as well as supporting the operation of the electricity network. As an immediate priority, the CRU and DECC must determine whether compliance with the code should be established under new legislation proposed for summer 2025 along with the impact of any legislative changes requiring modifications to the distribution system operator and/or supplier licences. The CRU, ESB Networks and suppliers must ensure the full implementation of the code by no later than mid-2026 and deliver a consent management system to enable a seamless customer journey for sharing smart metering data with PCWs and suppliers. In the interim, customers can currently download their historical smart meter data,^e which can then be uploaded to other sites for price comparison purposes; however, only 100,000 customers have accessed their historical data to date.^f A national campaign to encourage more customers to access their historical smart metering data along with an expansion of the education and insights provided is required. Unfortunately, none of the three CRU-accredited PCWs^g currently allows uploading of historical smart meter data to support a price comparison that is specific to a consumer's energy usage, although some unaccredited price comparison sites^h do offer

- e Customers' historical smart meter data are available from the ESB Networks online portal, available at https://www.esbnetworks.ie/my-account
- **f** ESB Networks' online account portal went live on 16 November 2022, and, as at 10 February 2025, 167,000 customers had signed up to an ESB Networks online account to access all of the services and options of the portal. However, only 102,000 customers had linked their meter point reference number to their ESB Networks online account to access their historical smart meter data.
- **g** The three CRU-accredited PCWs are www.bonkers.ie; www.powertoswitch.ie; and www.switcher.ie
- h For example www.energycostcalculator.ie and www.energypal.ie



users this option. The CRU must urgently amend the PCW accreditation framework with a requirement to provide customers with price comparisons that are specific to their own energy usage by using their historical smart meter data.

Dynamic tariffs are another form of pricing enabled by the roll-out of smart meters, often referred to as real-time pricing. Legislation enacted in 2022ⁱ entitles customers to enter into a dynamic price contract with any supplier that has more than 200,000 electricity customers; however, no supplier has made such a tariff available to customers to date. The Council welcomed the CRU decision on dynamic electricity price tariffs that requires five suppliers to offer a standard dynamic price contract to electricity customers by 1 October 2025.^[72] However, the CRU has regrettably extended this deadline to 1 June 2026, by which date the obligated suppliers must introduce a standard dynamic price contract, and noted that any supplier can introduce a dynamic price contract to the market at any time before then.^[73] Ireland has been highlighted as one of 10 countries where household consumers do not have access to dynamic-price contracts, despite EU regulations requiring them where smart meters have been rolled out.^[74] The lack of dynamic and hybrid contracts limits consumers' ability to adjust their energy usage to periods of higher renewable generation, and correspondingly lower prices, restricting their participation in the energy transition. The Council is calling on the CRU and electricity suppliers to provide their domestic and business customers with the option to switch to a dynamic tariff and avail themselves of the opportunity to make cost savings on their electricity bills as soon as possible. Customers must have access to tools to compare offerings relating to dynamic price contracts, and PCWs will play an important role in providing customers with accurate, transparent and impartial comparison of dynamic tariff offerings as well as education on how to benefit from transitioning to this type of pricing, including behavioural change in order to match demand with periods of high renewable generation. To capture the greatest benefit from dynamic tariffs, automation and control will be needed using technology like in-home energy management systems, and every effort should be made to make this technology available in a fair way across all customer cohorts. ICT solutions to inform customers about their real-time electricity consumption and pricing are needed to empower customers to reduce costs and must be accompanied by an extensive informational and educational campaign to support consumers in making their choice. ESB Networks and suppliers should provide households with dynamic real-time information to support the implementation of energy-saving practices as part of alternative measures that are permitted to achieve obligations under Article 8 of the recast Energy Efficiency Directive (EED).^[75] In addition, the Council is calling on the Sustainable Energy Authority of Ireland to develop educational material and tools, in conjunction with DECC, to fully enable electricity customers to take control of their tariff. National platforms such as radio and TV should be considered in this regard to communicate dayahead prices to drive awareness of dynamic tariffs' link to the grid and what they mean for electricity costs day to day.

5.3.2. Managing growing demand in line with renewable generation capacity

A major challenge facing Ireland is how to maintain security of supply at reasonable cost while decarbonising electricity generation and facilitating economic growth. Electricity demand in Ireland grew by 24.7% between 2012 and 2022, the second fastest rate in the EU.^[76] Recent and sustained growth in large energy users such as data centres is having an impact on the ability of the electricity system in Ireland to meet its decarbonisation target. The Council has previously called for the urgent implementation of an enhanced emissions-reporting framework for large energy users.^[45]

i S.I. No. 20 of 2022 - European Union (Internal Market in Electricity) Regulations 2022.



The Council is again calling on the Government to act now to implement an enhanced emissions-reporting scheme for large energy users before the end of 2025. By 2027, data centres are projected to use more electricity than all households use today, and, by 2032, 30% of all electricity demand is expected to come from data centres and other new large energy users.^[77] It is increasingly difficult to remain within the carbon budgets when data centres continue to be connected before the country has the renewable capacity to accommodate them. To remain within the carbon budgets and avoid costly fines and the need for steeper sectoral emissions reductions in future, the Government must both increase the roll-out of renewables (see *Section 5.2*) and manage the growth in electricity demand to ensure that it remains in line with renewable generation capacity. The Council is calling on the Government to immediately transpose the recast EED (particularly Article 8) and establish a national reporting scheme to facilitate a publicly accessible reporting mechanism for the sustainability of data centres operating in Ireland.^[78]

The National Energy Demand Strategy^[20] identified 51 actions across a number of stakeholders, with the overarching aim to enhance Ireland's energy demand flexibility. The Council welcomes the CRU's recent update on the implementation of the strategy.^[79] Of note is that the majority of the actions are on track or have already been completed, with three actions delayed. However, the delayed actions include the CRU consultation on the Price Comparison Website Accreditation Framework, the CRU decision on the Smart Meter Data Access Code (see *Section 5.3.1*) and the EirGrid consultation on the procurement options for LDES. The delay to the consultation on the procurement options for LDES is of particular concern in the context of increasing energy demand from data centres. Currently, a significant number of data centres have backup diesel generation instead of grid-connected storage solutions. The Council welcomes the LDES policy framework as contributing a level of certainty and re-affirming service providers' commitments to electricity storage systems, in both the immediate and near future (2030–2040).^[80] It is critical that LDES projects could potentially be mitigated by moving the approval process for strategic infrastructure such as storage from local authorities to ABP under the new Planning and Development Bill.

Significant efforts are required to unlock the behavioural changes, incentives and investment that are essential to meet the 2025 and 2030 targets for demand flexibility. The CRU has highlighted a role for domestic consumers to actively participate in the electricity markets and provide flexibility in the National Energy Demand Strategy. This can be achieved through domestic storage, EV flexibility and aggregation of assets, among other mechanisms. ESB Networks has noted that vehicle-to-everything chargingⁱ (V2X) is a mature technology whereby an EV can act as a battery storage system and participate in grid service activities such as demand time shifting, arbitrage or backup power, if suitable infrastructure and permissions are in place.^[81] In this context, Article 4 of Directive (EU) 2024/1711, aimed at improving the EU's electricity market design^[82] provides for a free choice of supplier, where all customers are free to have more than one electricity supply contract or energy-sharing agreement at the same time, and that, for that purpose, customers are entitled to have more than one metering and billing point covered by the single connection point for their premises. Implementation would provide an emerging market to monetise such flexibility services, whereby a domestic electricity customer could have one contract for a dynamic tariff for their EV charging purposes and a second contract for a time-of-use or standard tariff for the rest of their electricity consumption. The Council is calling for an expansion of the roll-out of the bi-directional (V2G) chargers that were part of ESB

j Vehicle-to-everything charging is a term used to describe bi-directional power flow from an EV to other non-transport applications, such as to a home (V2H), to the grid (V2G) or to external loads (V2L).



Networks' Dingle Project^[83] to offer a role for domestic consumers to actively participate in electricity markets and provide flexibility.

In the wake of the volatility of gas supply in recent years, there has been mounting pressure to secure supply through the development of an offshore liquefied natural gas (LNG) terminal in Ireland. The Council has repeatedly stressed that ensuring security of energy supply through development of renewable resources, demand measures and energy efficiency is a no-regrets policy.^[84,85] The National Biomethane Strategy^[86] commits to supporting delivery of up to 5.7 TWh of indigenously produced biomethane by 2030 and acknowledges the potential immediate role for biomethane in electricity backup or production at large energy users in Ireland. Accelerating the uptake of this indigenously produced biomethane would provide timely and critical support for the biomethane sector. Eighteen projects funded under the €40 million Biomethane Capital Grant Scheme are due for completion in 2025; however, due to the delay in introducing the Renewable Heat Obligation, the market for biomethane and the viability of these projects is unclear.^[87] The further expansion of fossil fuel infrastructure through an LNG terminal will commit Ireland to further fossil fuel lock-in, with serious concerns over the total emissions associated with LNG production, including the upstream release of methane where LNG is sourced via fracking. Additionally, energy systems modelling that informed the Council's 2024 Carbon Budget Proposal highlighted that the most ambitious energy scenarios that are needed for Ireland to meet climate neutrality involve in effect, phasing out fossil fuel use by 2039 within the Electricity, Industry, Buildings and Transport sectors, with limited to no opportunity for new investments in fossil fuel systems.[39]



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