APPENDIX 11-1

CLIMATE LEGISLATION AND POLICY

1. CLIMATE CHANGE AND GREENHOUSE GASES

Although variation in climate is thought to be a natural process, the rate at which the climate is changing has been accelerated rapidly by human activities. Climate change is one of the most challenging global issues facing the world today and is primarily the result of increased levels of greenhouse gases in the atmosphere. Increasing human emissions of carbon dioxide and other greenhouse gases cause a positive radiative imbalance at the top of the atmosphere, meaning energy is being trapped within the climate system. The imbalance leads to an accumulation of energy in the Earth system in the form of heat that is driving global warming.[1,2] Greenhouse gases come primarily from the combustion of fossil fuels in energy use.

In March 2024 the European Environment Agency (EEA) published the European Climate Risk Assessment.[3] This assessment states that Europe is the fastest warming continent on the planet and is warming at about twice the global rate. The average global temperature in the 12-month period between February 2023 and January 2024 exceeding pre-industrial levels by 1.5°C. 2023 was the warmest year on record over more than 100,000 years globally, at 1.48°C above pre-industrial levels, with the world's ocean temperature also reaching new heights.

The Intergovernmental Panel on Climate Change (IPCC), in its AR6 Synthesis Report: Climate Change 2023[4], states that widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. This has led to widespread adverse impacts and related losses and damages to people and nature due to the pressures of climate change and the inability to adapt to a rapidly changing environment. Moving away from our reliance on coal, oil and other fossil fuel-driven power plants is essential to reduce emissions of greenhouse gases and mitigate the human activity catalysing climate change.

1.1.1 International Greenhouse Gas Emission and Climate Targets

Globally, governance relating to climate change has changed significantly since 1994 when the United Nations Framework Convention on Climate Change (UNFCCC) entered into force. Greenhouse gas emissions have been a primary focus of climate-related international agreements for almost two decades.

International greenhouse gas emission and climate targets play an important role in stimulating and enabling action for developed and developing nations. The following sections provide an overview of the international agreements that have played key roles in establishing climate governance.

1.1.1.1 Kyoto Protocol

The Kyoto Protocol was adopted on 11 December 1997; this Protocol operationalised the UNFCCC and was the first international agreement that committed countries to reduce their greenhouse gas emissions. It set limitations and reduction targets for greenhouse gases for developed countries (Annex I countries) and set a special obligation for certain countries to provide financial resources and facilitate

[1] *Hansen, J.; Sato, M.; Kharecha, P. et al. Earth's Energy Imbalance and Implications. Atmospheric Chemistry and Physics 2011, 11 (24), 13421–13449. https://doi.org/10.5194/acp-11-13421-2011*
[2] *von Schuckmann, K.; Palmer, M. D.; Trenberth, K. E. et al. An Imperative to Monitor Earth's Energy Imbalance. Nature Clim Change 2016, 6 (2), 138–144. https://doi.org/10.1038/nclimate2876.*
[3] *European Environment Agency (2023) European Climate Risk Assessment <https://climate-adapt.eea.europa.eu/en/eu-adaptation-policy/key-eu-actions/climate_risk_assessment/index_html/>*
[4] *IPCC AR6 Synthesis Report: Climate Change 2023. https://www.ipcc.ch/report/sixth-assessment-report-cycle/*

technology transfer to developing countries (Annex II countries). The EU, and therefore Ireland, was both an Annex I and Annex II country.

The Kyoto Protocol came into effect in 2005, as a result of which, emission reduction targets agreed by developed countries, including Ireland, became binding for the first time.

Under the Kyoto Protocol, the EU agreed to achieve a significant reduction in total greenhouse gas emissions in the period 2008 to 2012. These EU emission targets are legally binding in Ireland. Ireland's contribution to the EU commitment for the period 2008 – 2012 (the first commitment period) was to limit its greenhouse gas emissions to no more than 13% above 1990 levels. Ireland achieved its Kyoto Protocol targets under the EU burden-sharing agreement.

1.1.1.1.1 *Doha Amendment to the Kyoto Protocol*

In Doha, Qatar, on 8th December 2012, the "Doha Amendment to the Kyoto Protocol" was adopted. The amendment includes:

- New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020;
  - The amendment entered into force on 31 December 2020
- A revised list of greenhouse gases to be reported on by Parties in the second commitment period; and
- Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

During the first commitment period, 37 industrialised countries and the European Community committed to reduce greenhouse gases emissions to an average of 5% below 1990 levels. During the second commitment period, Parties committed to reduce greenhouse gases emissions by at least 18% below 1990 levels in the eight-year period from 2013 to 2020. The composition of Parties in the second commitment period is different from the first; however, Ireland and the EU signed up to both the first and second commitment periods. Under the protocol, countries must meet their targets primarily through national measures, although market-based mechanisms (such as international emissions trading) can also be utilised.

Although the 1997 Kyoto Protocol and 2012 Doha Amendment were in force in 2020, the 2015 Paris Agreement superseded the Kyoto Protocol as the principal regulatory instrument governing the global response to climate change.

1.1.1.2 Conference of the Parties

Every year since 1995, the Conference of the Parties (COP) which is the supreme decision-making body of the UNFCCC, has gathered the 196 Parties (195 countries and the European Union) that have ratified the Convention in a different country, to evaluate its implementation and negotiate new commitments.

The following details the most significant COPs in terms of impact on climate action as well as a summary of the most recent COP, COP30, which took place in Belém, Brazil.

1.1.1.2.1 *COP21 Paris Agreement*

COP21 was the 21st session of the COP to the UNFCCC. COP21 was organised by the United Nations in Paris and held from 30th November to 12th December 2015.

COP21 closed on 12th December 2015 with the adoption of the first international climate agreement (concluded by 195 countries and applicable to all). The twelve-page text, made up of a preamble and 29 articles, provides for a limitation of the temperature rise to below 2°C above pre-industrial levels and even to tend towards 1.5°C. It is flexible and takes into account the needs and capacities of each country. It is balanced as regards adaptation and mitigation, and durable, with a periodical ratcheting-up of ambitions.

1.1.1.2.2 COP25 Climate Change Conference- Madrid

The 25th United Nations Climate Change conference COP25 was held in Madrid and ran from December 2nd to December 13th, 2019. While largely regarded as an unsuccessful conference, the European Union launched its most ambitious plan, 'The European Green New Deal' which aims to lower CO_2 emissions to zero by 2050. The deal includes proposals to reduce emissions from the transport, agriculture and energy sectors and will affect the technology, chemicals, textiles, cement, and steel industries. Measures such as fines and pay-outs by member states who rely on coal power will be in place to encourage the switch to renewable clean energies such as wind. On the 4th of March 2020, the European Commission put forward the proposal for a European climate law. This aims to establish the framework for achieving EU climate neutrality. It aims to provide a direction by setting a pathway to climate neutrality and to this end, aims to set in legislation the EU's 2050 climate-neutrality objective.

1.1.1.2.3 COP28 Climate Change Conference – Dubai

The 28th COP for the UNFCCC (COP28) took place in Dubai from the 30th of November 2023 to the 13th of December 2023.

COP28 resulted in a landmark deal to 'transition away' from fossil fuels, the UAE Consensus. The agreement calls for 'transitioning away from fossil fuels in energy systems, in a just, orderly, and equitable manner.' This is the first time in 28 years that fossil fuels have been mentioned in a COP outcome. However, it is noted that the text of 'phase out as soon as possible inefficient fossil fuel subsidies' does not address energy poverty or the just transition. The UAE Consensus also calls for more explicit near-term goals in the lead up to 2050, calling for the world to cut greenhouse gas emissions by 43% by 2030 as compared to 2019 levels. However, many island states have criticised that despite the text being an improvement over previous agreements, there is a litany of loopholes that will enable destructive environmental practices to continue and do not assuage their concerns over rising sea levels and other climate change impacts.

COP28 concluded the first ever Global Stocktake under the Paris Agreement. The Global Stocktake recognises that the world is not on track to meet 1.5°C and will require Parties to align their national targets and measures with the Paris Agreement. Parties have two years to submit their Nationally Determined Contributions for 2035, these need to be aligned with the best available science and the outcomes of the Global Stocktake.

An unusual aspect that came out of COP28 in the final hours of discussion was the number of decisions and documents which remain unfinished and not signed off. Notably, discussions on carbon markets collapsed in the final days of COP28 as no consensus could be reached on the country-to-country trading regimes or rules for the market in relation to Article 6 of the Paris Agreement. Negotiations will be continued at COP29 in Azerbaijan.

1.1.1.2.4 COP29 Climate Change Conference – Baku

The 29th COP of the UNFCCC, (COP29), held in Baku, Azerbaijan, from November 11th, 2024, to November 22nd, 2024.

COP29 focused on accelerating global efforts to address climate change, in particular global efforts related to climate finance. The New Collective Quantified Goal on Climate Finance (NCQG) was

agreed in the final days of COP; while developing countries advocated for at least USD 1 trillion annually by 2035, developed nations agreed to triples finance to developing countries, with commitments increasing from USD 100 billion annually to USD 300 billion annually by 2035. The NCQG has already drawn criticism for being inadequate given the global financial need of developing nations to mitigate and adapt to climate change effects and due to its lack of strong terminology in relation to the requirements of developed nations and detailed implementation strategies.

At COP29, significant progress was made in the discussions surrounding carbon markets, with nearly 200 nations agreeing on critical rules under Article 6 of the Paris Agreement. These rules aim to establish an UN-backed international carbon market. The adoption of these rules is seen as a crucial step towards operationalising a robust and credible carbon market. Despite the advances, concerns were expressed about the potential for weak governance and risks of exploitation in the system; these issues must be addressed to ensure the market's full functionality.

Energy transition discussions focused on accelerating the global shift toward sustainable energy systems, aligned with the Paris Agreement goals of limiting warming to 1.5°C. The conference emphasized the need for robust policies to phase out coal, expand renewable energy infrastructure, and develop green hydrogen as a low-carbon alternative for hard-to-electrify sectors.

COP29 operationalized the Fund for responding to Loss and Damage ('the Fund') with USD 50 billion in initial pledges aimed at assisting vulnerable countries. The Fund is expected to begin financing initiatives by 2025, focusing on the most vulnerable populations facing extreme weather events and slow-onset climate impacts. Despite these advancements, ongoing discussions are required to define the Fund's vision, scope, and integration with existing climate finance mechanisms.

1.1.1.2.5 *COP30 Climate Change Conference – Belém, Brazil*

The 30th COP of the UNFCCC, (COP30), held in Belém, Brazil, from November 10th, 2025, to November 21st, 2025.

At COP30 Parties adopted a comprehensive Belém Package, comprising 29 decisions by consensus, which underscored an emphasis on implementation and equity. A key achievement was the commitment to triple adaptation finance by 2035, to approximately USD 120 billion per annum, aimed at bolstering resilience in the world's most vulnerable nations. To monitor this, Parties agreed a set of 59 voluntary indicators under the Global Goal on Adaptation, covering cross-sectoral dimensions such as water, health, ecosystems, infrastructure, and livelihoods. In parallel, actions were initiated to scale adaptation in practice; among these, the:

- FINI (Fostering Investible National Implementation): seeking to mobilise private and public capital into national adaptation plans;
- Belém Health Action Plan, backed by the World Health Organisation and philanthropies, seeks to strengthen climate-resilient health systems.

COP30 remained in line with preceding COPs and did not yield a binding phase-out commitment for fossil fuels, despite more than 80 countries pushing for explicit fossil fuel phase-down language. Instead, the Brazilian Presidency announced two voluntary roadmaps outside the formal treaty text: one to transition away from fossil-fuel-dependent economies in a "just, orderly and equitable" manner, and another to halt and reverse deforestation. Civil society groups have characterised this omission as a significant shortfall, noting that without time-bound fossil fuel targets, the package lacks credibility in meeting scientific thresholds.

Nature-based solutions and deforestation were also a critical focus. COP30 launched the Tropical Forests Forever Facility (TFFF), a landmark payment mechanism to reward tropical-forest countries for conserving standing forests. The first phase of the TFFF has mobilised over USD 6.7 billion, endorsed by more than 60 countries. Nonetheless, the conference did not embed a binding global deforestation-end roadmap in its formal decisions.

With respect to the 1.5°C temperature goal, COP30 reaffirmed the urgency of limiting warming in line with the Paris Agreement, but many observers argued that the summit's final package lacked the ambition and enforceable mechanisms required to close the emissions-gap. In response, Parties established a Global Implementation Accelerator, intended to scale high-impact climate actions (such as renewable energy, methane reductions, and nature-based carbon removal) that can deliver rapid, systemic transformation.

1.1.1.3 United Nations Sustainable Development Goals Report

Transforming our World: the 2030 Agenda for Sustainable Development which includes 17 Sustainable Development Goals (SDGs), and 169 targets was adopted by all UN Member States at a UN summit held in New York in 2015. The agenda is universally applicable with all countries having a shared responsibility to achieve the goals and targets which came into effect on January 1st, 2016. The goals and targets are to be actions over the 15-year period, are integrated and indivisible i.e., all must be implemented together by each Member State.

In June 2025 the Dublin University Press published the *'Sustainable Development Report 2025.*[5] The report highlights the following key messages:

- Global commitment to the SDGs is strong: 190 out of 193 countries have presented national action plans for advancing sustainable development.
- On average globally, the SDGs are far off-track. At the global level, none of the 17 goals are currently on course to be achieved by 2030.
  - While only 17% of the targets are on track to be achieved worldwide, most UN member states have made strong progress on targets related to access to basic services and infrastructure.
  - At the global level, SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 14 (Life Below Water), SDG 15 (Life on Land) and SDG 16 (Peace, Justice and Strong Institutions) are particularly off track, facing major challenges (indicated in red on the dashboards) and showing no or very limited progress since 2015.
- European countries continue to top the SDG Index. Finland ranks first this year and 19 of the top 20 countries are in Europe.

Figure 1-1 Ireland SDG Dashboard and Trends. Source: Sustainable Development Report 2025 pg. 224

In October 2022 the Department of Communications, Climate Action & Environment in partnerships with all Government Departments, key stakeholders, and based on input from two public consultation processes published the Sustainable Development Goals National Implementation Plan 2022-2024 ('the

[5] *Dublin University Press (2025) Sustainable Development Report 2024 The SDGs and the UN Summit of the Future Includes the SDG Index and Dashboards. <https://dashboards.sdgindex.org/chapters>*

SDG Plan').[6] The SDG Plan identifies that, overall, the world is not on track to achieve the global Goals by 2030. The SDG Plan sets out how Ireland will work to achieve the goals and targets of the Agenda for Sustainable Development both domestically and internationally. Ireland's first National Implementation Plan provided a framework for Ireland to work towards the implementation of the SDGs; the SDG Plan aims to build on the structures and mechanisms from the first National Implementation Plan and to develop and integrate additional approaches in areas identified as requiring further action.

In September 2023, the UN Summit on the SDGs took place in New York and was co-facilitated by Ireland and Qatar. Representing the halfway mark to achieving the SDGs by 2030, it marked the beginning of a new phase of accelerated progress towards the SDGs with high-level political guidance on transformative and accelerated actions. The Global Sustainable Development Report 2023[7] was published in September 2023. The previous Global Sustainable Development Report (2019[8]) found that for some targets the global community was on track, but for many others the world would need to quicken the pace. In 2023, the situation is much more worrisome owing to slow implementation and a confluence of crises. The 2023 Report goes on to highlight the current standing of each SDG and its relevant indicators. A 2023 UN Special Report[9] found that over 30% of the SDGs have seen either no improvement or reverse trends in progress. The push for transformation to achieve the SDGs will come through shifts in six key entry points:

1. *Human Well Being and Capabilities*
2. *Sustainable and Just Economies*
3. *Food Systems and Healthy Nutrition*
4. *Energy Decarbonisation with Universal Access*
5. *Urban and Peri-Urban Development*
6. *Global Environmental Commons*

On the 14th of July 2025, the United Nations published '*The Sustainable Development Goals Report 2025*'[10] (hereafter referred to as the UN SDG 2025 Report) highlighting how the ongoing and escalating geopolitical conflicts, and the increasing consequences of the climate crisis have hindered the achievement of the SDGs. The UN SDG 2025 Report finds that, following an assessment of all 169 targets, for which trend data is available, only 17% of the SDG targets are on track, 18% of SDG targets are showing minimum or moderate progress, 47% having stalled in progress and 18% having regressed from 2023. The UN SDG 2025 Report highlights the urgent need for stronger and more effective international cooperation to maximize progress, with immediate effect.

The Proposed Project will contribute to Entry Point 4 due to the clean and renewable energy it will provide over its operational life. The phase out of fossil fuels in a manner that is globally and domestically just, while strengthening the transition to renewables by increasing energy efficiency and encouraging behavioural change will be key to achieving the relevant SDGs to the Proposed Project.

Relevant SDGs to the Proposed Project and how they are implemented into Irish National plans and policies can be found in Table 1 below.

[6] *National Implementation Plan for the Sustainable Development Goals 2022-2024. Available at: <https://www.gov.ie/en/publication/e950f-national-implementation-plan-for-the-sustainable-development-goals-2022-2024/>*
[7] *Global Sustainable Development Report 2023 <https://sdgs.un.org/sites/default/files/2023-09/FINAL%20GSDR%202023-Digital%20-110923_1.pdf>*
[8] *Global Sustainable Development Report 2019 <https://sdgs.un.org/sites/default/files/2020-07/24797GSDR_report_2019.pdf>*
[9] *The Sustainable Development Goals Report 2023: Special Edition <https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf>*
[10] *The Sustainable Development Goals Report (2025). Available at: https://unstats.un.org/sdgs/report/2025/*

Table 1 Sustainable Development Goals Report 2023, Relevant SDGs to the Proposed Project, and Implementation into Irish National Plans

SDG	Targets	International Progress/Downfalls to Date (2025)[11]	National Relevant Policy
SDG 7 Affordable and Clean Energy: *Ensure access to affordable, reliable, sustainable and modern energy for all*	› By 2030, ensure universal access to affordable, reliable and modern energy services › By 2030, increase substantially the share of renewable energy in the global energy mix › By 2030, double the global rate of improvement in energy efficiency › By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology › By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Progress towards Goal 7 has been notable: from 2015 to 2023, global electricity access rose from 87 to 92 per cent, access to clean cooking fuels increased by 16 per cent, and renewable electricity continued to grow. However, progress is slowing –renewables lag in the transport and heating sectors, and energy efficiency gains have stalled. Moreover, only a small portion of global energy investment reaches the area's most in need. Achieving Goal 7 will require a significant boost in investment in emerging and developing economies, in particular in sub-Saharan Africa, to expand access to electricity and clean cooking, scale up renewable energy, improve energy efficiency and strengthen policy and regulatory frameworks. In 2023, the global electricity access rate reached 92%, reducing the number of people without access to 666 million – 18.8 million fewer than in 2022. Despite 73 million new connections annually, population growth is outpacing progress, and 645 million may remain unserved by 2030. Achieving universal access requires increasing the annual access rate to 1.2%. In 2022, renewable energy accounted for 17.9% of total final energy consumption. Excluding traditional biomass, modern renewables grew from 10 per cent in 2015 to 13% in 2022. The electricity sector leads, with renewables at 30 per cent of total final electricity consumption in 2022. While biofuels dominate renewable transport energy, making up for almost 90% of the total, overall progress in the heat and transport sectors remains limited. Global renewable energy capacity per capita hit a record 478 watts in 2023, up 13% from 2022, with developed countries reaching 1,162 watts and developing countries reaching 341 watts. While developing countries showed stronger growth at 17%, compared with 8.1% in developed countries, significant expansion of modern energy infrastructure and technology remains necessary in developing countries.	*Ireland's Transition to a Low Carbon Energy Future 2015-2030;* *Energy Poverty Action Plan;* *Ireland's Transition to a Low Carbon Energy Future 2015- 2030;* *National Mitigation Plan;* *National Energy Efficiency Action Plan;* *One World, One Future;* *The Global Island* *Economic Recovery Plan* *Project Ireland 2040: National Planning Framework;* *Project 2040;* *National Development Plan 2021-2030;* *Climate Action Plan 2025*

[11] *United Nations, the 17 Goals – Sustainable Development* <https://sdgs.un.org/goals>

SDG	Targets	International Progress/Downfalls to Date (2025)[11]	National Relevant Policy
SDG 9: Industry, Innovation, and Infrastructure *Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation*	› Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. › Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries. › Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.	Since 2015, notable progress has been made in expanding infrastructure, fostering industrial growth and boosting innovation. However, stark regional disparities persist, and many developing countries continue to face systemic barriers to inclusive and sustainable industrialization. Global manufacturing annual growth rebounded sharply by 9.2 per cent in 2021, stabilized at 2.2% in 2022, then lowered to 1.7% in 2023 owing to geopolitical and economic volatility. In 2024, growth rose to 2.7%, Global manufacturing value added per capita increased by 17.3%, from USD 1,649 in 2015 to USD 1,934 in 2024. The global manufacturing employment share held steady at 14.3% from 2015 until 2020, dipping to 14.1% in 2023, owing to pandemic disruptions, geopolitical tensions and sanctions In 2024, global CO_2 emissions from fuel combustion and industrial processes reached a record 37.6 gigatons, a 0.8% increase from 2023. Rising natural gas and coal consumption drove emissions, while record temperatures increased electricity demand for cooling. However, the expansion of clean energy technologies such as solar, wind and nuclear power mitigated what could have been a threefold larger emissions increase.	*National Development Plan 2021-2030;* *National Economic Recovery Plan;* *Climate Action Plan 2025;* *National Implementation Plan on Persistent Organic Pollutants;* *Waste Action Plan for a Circular Economy;* *National Waste Prevention Programme;* *A Better World;* *Impact 2030: Ireland's Research and Innovation Strategy*
SDG 11: Sustainable Cities and Communities *Make cities and human settlements inclusive, safe, resilient and sustainable*	› By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums. › By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons. › Strengthen efforts to protect and safeguard the world's cultural and natural heritage. › By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	Urbanization continues to accelerate, with more than half the global population now living in cities, projected to be nearly 70% by 2050. However, cities face mounting challenges, including rising urban poverty, growing slum populations, inadequate public transport and threats to infrastructure from disasters. Housing affordability is a pressing issue, affecting 1.6 billion to 3 billion people globally, encompassing challenges from homelessness to overcrowding and lack of basic services. In 2023, the national urban policies of 68 countries addressed key development issues as follows: › Respond to population dynamics (59 countries, up from 54 in 2021); › Ensure balanced territorial development (55 countries, unchanged since 2021); and › Increase local fiscal space (33 countries, up from 26 in 2021).	*Rebuilding Ireland Action Plan for Housing and Homelessness;* *Housing for All;* *EU Regulation 1370/2007 on Public Passenger Transport Services by Rail and by Road;* *Project Ireland 2040* *National Planning Framework;* *National Clean Air Strategy;* *Rural Development Programme 2014-2022;* *National Implementation Plan on Persistent Organic Pollutants;* *Waste Action Plan for a Circular Economy;*

SDG	Targets	International Progress/Downfalls to Date (2025)[11]	National Relevant Policy
	› By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement holistic disaster risk management at all levels.	In 2024, local-level disaster risk reduction governance improved, with 110 countries reporting local disaster risk reduction strategies and approximately 73% of local governments having such strategies in place.	*National Waste Prevention Programme;* *A Better World*
SDG 12 Responsible Consumption and production: *Ensure sustainable consumption and production patterns.*	› By 2030, achieve the sustainable management and efficient use of natural resources. › By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment. › Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle. › Promote public procurement practices that are sustainable, in accordance with national policies and priorities. › Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	Globally, sustainability efforts are advancing, with an increasing number of policies supporting sustainable consumption and production. Environmental agreement compliance remains strong. However, challenges persist, including low sustainable e-waste management and high fossil fuel subsidies. Corporate sustainability reporting has expanded dramatically, with most large companies now disclosing environmental performance through standardized mechanisms. As of 2025, 530 policy instruments related to sustainable consumption and production have been recorded, with 71 countries participating, a 6% increase from the previous reporting cycle. There were 1.05 billion tons of food wasted in 2022, with 60% of waste from households, equating to more than 1 billion meals discarded daily. There are growing global efforts to reduce food waste, with countries such as Japan and the United Kingdom of Great Britain and Northern Ireland cutting waste by 31% and 18%, respectively, showing that large-scale action is possible. In 2022, global e-waste reached a record 7.8 kg per capita, with only 22.3% properly managed, a figure declining since 2010. Significant uncontrolled transboundary movement continues. Sustainability reporting has become standard for large companies, with 96% of the world's 250 largest companies by revenue and 79% of the top 100 companies in each country surveyed now reporting on sustainability, up from 64% in 2015. In 2023, fossil fuel subsidies fell by 34.47% to USD 1.10 trillion, down from a record USD 1.68 trillion in 2022, owing mainly to lower energy prices and the	*National Implementation Plan on Persistent Organic Pollutants;* *Waste Action Plan for a Circular Economy;* *National Waste Prevention Programme;* *Climate Action Plan 2025;* *Tourism Action Plan;* *National Clean Air Strategy;* *Towards Responsible Business: Sustainable, Inclusive and Empowered Communities 2019-2024;*

SDG	Targets	International Progress/Downfalls to Date (2025)[11]	National Relevant Policy
		end of COVID-19 support measures. However, subsidies are still approximately three times higher than they were before the COVID-19 pandemic, showing no sustained reversal of recent trends.	
SDG 13 Climate Action: *Take urgent action to combat climate change and its impacts** **Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.*	› Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. › Integrate climate change measures into national policies, strategies and planning. › Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.	Human-induced climate change reached alarming new levels in 2024, with some impacts already irreversible for centuries. Global temperatures broke records and temporarily exceeded the 1.5°C threshold, highlighting the urgent need to curb greenhouse gas emissions. Extreme weather events – including tropical cyclones, floods and droughts – led to the highest number of new displacements in 16 years, worsening food crises and bringing massive economic losses and social instability. Nonetheless, with bold action, limiting long-term global warming to 1.5°C is still possible. Every fraction of a degree matters in reducing risks, lowering costs and preventing catastrophic and irreversible damage to people and the planet. At the twenty-ninth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP29), States set a new collective quantified goal on climate finance and completed guidance to fully operationalize article 6 of the Paris Agreement on carbon markets, along with making additional commitments on mitigation, adaptation and the operationalization of the Fund for Responding to Loss and Damage. Disaster-related deaths and missing persons dropped from 1.61 per 100,000 population in the period 2005–2014 to 0.79 in the period 2014–2023. Nonetheless, disasters claimed 41,647 lives annually over the past decade. The number of people affected by disasters surged by more than two thirds, from 1,158 per 100,000 population in the period 2005–2014 to 2,028 in the period 2014–2023, with an average of 124 million people affected every year over the past decade. By 2024, 131 countries reported the adoption and implementation of national disaster risk reduction strategies, up from 57 in 2015. 2024 likely marked the first year when global temperatures surpassed the 1.5°C threshold, reaching 1.55°C above the pre-industrial level – making it the hottest year in 175 years. This was driven by rising greenhouse gas emissions, El Niño and other factors. In 2023, atmospheric concentrations of CO_2 levels remained at their highest in more than 2 million years and were 151 per cent above pre-industrial levels.	*National Adaptation Framework;* *Building on Recovery: Infrastructure and Capital Investment 2016-2021;* *National Development Plan Review 2025* *National Mitigation Plan;* *National Biodiversity Action Plan 2023-2030* *National Policy Position on Climate Action and Low Carbon Development;* *Project 2040: National Development Plan 2021-2030;* *Climate Action and Low Carbon Development (Amendment) Act (2021);* *Climate Action Plan 2025;* *National Dialogue on Climate Action;* *Agriculture, Forest, and Seafood Climate Change Sectoral Adaptation Plan;* *The National Strategy on Education for Sustainable Development in Ireland*

1.1.1.4 Climate Change Performance Index

Established in 2005, the Climate Change Performance Index (CCPI)[12] is an independent monitoring tool which tracks countries climate protection performance. It assesses individual countries based on climate policies, energy usage per capita, renewable energy implementation and greenhouse gas emissions and ranks their performance in each category and overall. The 2025 CCPI was published in December 2024. While the CCPI 2025 indicates signs of potential reductions in global emissions, no country achieved its Paris Climate targets and therefore the first three places of the ranking system remain unoccupied.

Ireland, ranked 29th in 2025, has fallen 4 places to 33rd in 2026, and remains a 'medium' performer in international performance. The CCPI states that Ireland's policies are missing a long-term strategy for phasing out fossil fuel infrastructure and shifting investments from natural gas towards an emissions-neutral energy supply. Coupled with low levels of battery storage and ongoing gas connections, the state is set to remain greatly dependent on fossil fuel generation. Ireland remained in the 'low' category in 2025 on the Greenhouse Gas Emissions ratings.

In 2022, Ireland's government introduced legally binding five-year carbon budgets and sectoral emissions ceilings. It also resolved a legislative framework with annually revised Climate Action Plans to align with the country's 2030 net emissions reduction target of 51% (compared with 2018 levels) and net zero by 2050. In 2025, the CCPI national experts note that, despite these legal requirements, progress on climate action is slowing and actions in Ireland are nowhere near sufficient for ensuring compliance with national and EU commitments. The latest projections (July 2025) from the EPA[13] highlight that the greenhouse gas emissions decline rate has slowed to 2% compared with last year's 6.8%. This lack of substantial progress has resulted in Ireland missing its first carbon budget for 2021–2025 and satisfy the second carbon budget period in 2026-3030. The data from the EPA projections indicates that, in 2021–2024, Ireland used 82.5% of the first carbon budget period budget. Resulting in a required 10.3% reduction is required in 2025; EPA projections are published annually in May 2025. At the time of writing there has been no published update from the EPA.

Ireland's policies are missing a long-term strategy for phasing out fossil fuel infrastructure and shifting investments from natural gas towards an emissions-neutral energy supply. Coupled with low levels of battery storage and ongoing gas connections, the state is set to remain greatly dependent on fossil fuel generation.[14]

Ireland has remained in the 'low' category in 2025 on the Greenhouse Gas Emissions ratings and remains in 40th in in 2026. Ireland remains in the 'Medium' category in the Renewable Energy rating table and has risen from 21st in 2025 to 19th in 2026.

1.1.1.5 State of the Global Climate 2024

In March 2025, the World Meteorological Organisation (WMO) published the *State of the Global Climate 2024 Report*[15]; an update for the United Nations Framework Convention on Climate Change (UNFCCC) 30th Conference of the Parties was published in November 2025.[16] The 2024 Report provides a summary on the state of the climate indicators in 2024 and with sections on key climate indicators, extreme events and impacts. The key messages in the report include:

- Greenhouse gases reached record observed levels in 2024. Real time data indicate that the levels continued to rise in 2024.

[12] *Climate Change Performance Index 2024* <https://ccpi.org/>
[13] *EPA (2025) Ireland's Greenhouse Gas Emissions Projections* <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/07875-EPA-GHG-Projections-Report-FINAL.pdf>
[14] *CCPI (2025)* https://ccpi.org/country/irl/
[15] *World Meteorological Organisation (2025) State of the Global Climate 2024* <https://library.wmo.int/records/item/69455-state-of-the-global-climate-2024>
[16] *World Meteorological Organisation (2025) State of the Global Climate Update for COP30* <https://wmo.int/publication-series/state-of-climate-update-cop30>

- January – September 2024 global mean surface air temperature was 1.54 ± 0.13°C above the pre-industrial average.
- Glacier mass loss from 2021/2022 to 2023/2024 represents the most negative three-year glacier mass balance on record, and seven of the ten most negative annual glacier mass balances since 1950 have occurred since 2016.
- The strong 2023/2024 El Niño followed three consecutive years of La Niña from late 2020 to early 2023.
    - El Niño conditions were established by mid-2023, became strong by the end of 2023 and dissipated by the second quarter of 2024.
- Extreme weather continued to lead to severe socio-economic impacts. Extreme heat affected many parts of the world.
- Food security, population displacement and impacts on vulnerable populations continue to be of mounting concern in 2024, with weather and climate hazards exacerbating the situation in many parts of the world.

There has been a substantial worldwide energy transition, with renewable capacity additions increasing by nearly 60% from 2022, totalling 565 gigawatts (GW). This growth represents the highest rate observed in the past two decades, signalling a significant momentum toward achieving the clean energy goal set at the UNFCCC 28th Conference of the Parties (COP28) meeting in Dubai in 2023, and reiterated at the 30th Conference of the Parties (COP30) in Belém in 2025, to triple renewable energy capacity globally to 11,000 GW by 2030. Electricity generation from renewables is expected to increase 60% – from 9,900 TWh in 2024 to 16,200 TWh in 2030 with renewables expected to surpass coal by mid-2026 at the latest to become the largest source of electricity generation globally. Solar PV and wind together account for 96% of all renewable capacity growth through the end of this decade due their growing economic attractiveness in almost all countries.

The November 2025 update for COP30 identifies that 2025 is set to either be the second or third warmest year on record, with the global mean temperature for January 2025 to August 2025 being 1.42 ± 0.12 °C above pre-industrial levels, underscoring the accelerating pace of climate change.

Alterations in the physical climate can trigger a series of repercussions on national advancement and the pursuit of SDGs (Section 1.1.1.3 above). The interconnections between the climate emergency and development pathways can foster synergistic endeavours, resulting in positive benefits for communities and human well-being (refer to Chapter 5: population and Human Health, of this EIAR for more details). This synergy serves as a potent driver for adapt to climate change and lay the groundwork for the global energy transition. Emphasizing wind energy and other renewable sources enables the global energy transition towards sustainability.

1.1.1.6 Renewable Energy Directive

The Renewable Energy Directive (RED) is the legal framework for the development of clean energy across all sectors of the EU economy, supporting cooperation between EU countries towards this goal.

The first RED[17] is legislation that influenced the growth of renewable energy in the EU and Ireland for the decade ending in 2020. The directive set and confirmed mandatory national targets consistent with the EU's overall goal. It also required EU countries to develop indicative trajectories for achieving their targets, submit national renewable energy action plans and publish national renewable energy progress reports every two years.

In 2018, as part of the 'Clean Energy for all Europeans' package, the first revision of RED entered into force (the second Renewable Energy Directive (REDII)[18]) which continued to promote the growth of renewable energy out to 2030. REDII introduced a binding EU-wide target for overall RES of 32% in 2030 and requires Member States to set their national contributions to the EU-wide target. As per the National Energy and Climate Plan (NECP) 2021-2030, Ireland's overall RES target is 34.1% in 2030. This directive, which had to be transposed into

[17] *Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Available from: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF*
[18] *Directive (EU) 2018/2001 on the promotion of the use of energy from renewable resources (recast). Available from: https://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L2001*

national law by EU countries by June 2021, established a new binding renewable energy target for the EU of at least 32% of gross final energy consumption by 2030, along with an increased target of 14% for the share of renewable fuels in transport by 2030.

Under REDII, Ireland's National Energy and Climate Plan 2021-2030 included a planned renewable energy share in electricity (RES-E) of 70% in 2030, which has been replaced by the 80% by 2030 RES-E target as detailed in the Climate Action Plan (2025).

Given the need to ratchet up the EU's clean energy transition, RED was revised in 2023, and the amending Directive EU/2023/2413 (REDIII)[19] entered into force on 20 November 2023. REDIII amended the EU-wide overall 2030 RES target from 32% to at least 42.5%, and it is assumed that Ireland's 2030 RES target will increase accordingly. REDIII establishes the following sectoral and innovation targets for EU countries:

- In the industry sector, a binding target of 42% for renewable hydrogen in total hydrogen consumption by 2030 and 60% by 2035, with an indicative target of an annual average increase of 1.6 percentage points in renewable sources.
- In the buildings sector, an indicative target of 49% for the share of renewable energy by 2030, with heating and cooling targets to increase by 0.8 percentage points per year until 2025 and by 1.1 percentage points from 2026 to 2030.
- In the transport sector, either a 29% target for the share of renewable energy by 2030, or a 14.5% reduction of greenhouse gas emissions, through greater use of advanced biofuels and renewable fuels of non-biological origin (RFNBO), such as hydrogen.
- In research and innovation, an indicative target of 5% of newly installed renewable energy capacity from innovative technologies by 2030.

Under RED III, EU member states must identify areas for the acceleration of renewables where projects will undergo a simplified and fast-track procedure. The deployment of renewables will also be of ***"overriding public interest"*** in order to limit the number of legal challenges on new renewable energy installations. These measures came in response to the European Commission's REPowerEU project which found that permitting is the biggest bottleneck for deploying wind at scale, with approximately 80 GW of wind power capacity stuck in permitting procedures across Europe.

1.1.1.7 European Green Deal

The European Green Deal was introduced by the European Commission in December 2019 as the EU's response to the Paris Agreement ambitions (COP21 (please see Section 1.1.1.2.1 above). The European Green Deal is a comprehensive package of policy initiatives aimed at achieving climate neutrality across the EU by 2050. It features a wide range of actions and targets in different sectors such as energy, transport, industry, environment and agriculture. The goal is to transform the EU into a resource-efficient, competitive circular economy that is fair and inclusive for every individual and region.

Key aspects of the European Green Deal include the adoption of the European Climate Law, which legally binds the EU to achieve net-zero emissions by 2050, and the establishment of a Carbon Border Adjustment Mechanism to prevent carbon leakage. Additionally, the Deal focuses on boosting green technologies, fostering clean energy, improving energy efficiency, and promoting biodiversity and sustainable agriculture. The European Climate Law was formally amended in March 2026, introducing a binding intermediate climate target, for 2040, of a 90% reduction in net greenhouse gas (GHG) emissions compared to 1990 levels.

To finance these ambitious goals, the European Green Deal is supported by the EU's Green Deal Investment Plan, also known as the "Just Transition Mechanism", which aims to mobilize at least €1 trillion in investments over the next decade. This funding will be used to help EU regions and industries transition to greener alternatives while mitigating social and economic impacts on communities and workers. The European Green

[19] *Directive (EU) 2023/2413 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources and repealing Council Directive (EU) 2015/652. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302413*

Deal also emphasizes the importance of international collaboration in tackling climate change and aims to align European policies with the global agenda of the Paris Agreement.

In its approach to decarbonisation, the EU has split greenhouse gas emissions into two categories, the Emissions Trading System (ETS) and the non-ETS. Under the European Green Deal, the targets for the ETS and non-ETS sectors will be revised upwards in order to achieve the commitment, at EU level, to reach an economy-wide 2030 reduction in emissions of at least 55%, compared to 1990 levels.

1.1.1.8 Council Regulation (EU) 2022/2577 and 2024/223

Arising from REPowerEU, the Council Regulation (EU) 2022/2577 established a framework to accelerate the deployment of renewable energy which was adopted on the 22 December 2022. Regulation 2022/2577 came into effect on the 23 December 2022 and had effect until the 30 June 2024. The Regulation made provision for a review by the commission within 12 months. Following this review the Council introduced Regulation 2024/223 on the 22 December 2023 amending Regulation 2022/2577. Regulation 2022/2577 and 2024/223 recognises the relative importance of renewable energy deployment in the current difficult energy context and provides significant policy and legislative support to enabling renewable energy projects.

Article 2(2) of Regulation EU 2022/2577 requires priority to be given to projects that are recognised as being of overriding public interest whenever the balancing of legal interests is required in individual cases and where those projects introduce additional compensation requirements for species protection. An analogous provision is not present in Directive (EU) 2018/2001. The first sentence of Article 3(2) of Regulation (EU) 2022/2577 has the potential, in the current urgent and still unstable energy situation on the energy market which the Union is facing, to further accelerate renewable energy projects since it requires Member States to promote those renewable energy projects by giving them priority when dealing with different conflicting interests beyond environmental matters in the context of Member States' planning and the permit-granting process. The Commission's report demonstrated the value of the first sentence of Article 3(2) of Regulation (EU) 2022/2577 which beyond the specific objectives of the derogations foreseen in the Directives referred to in Article 3(1) of Regulation (EU) 2022/2577. (emphasis added).

1.1.1.9 EU Nature Restoration Law

The Nature Restoration Law is the first continent-wide, comprehensive law of its kind. It is a key element of the EU Biodiversity Strategy, which sets binding targets to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters.

The law aims to restore ecosystems, habitats and species across the EU's land and sea areas in order to

- Enable the long-term and sustained recovery of biodiverse and resilient nature.
- Contribute to achieving the EU's climate mitigation and climate adaptation objectives.
- Meet international commitments.

The EU Nature Restoration Law was approved on June 17th, 2024; EU countries are expected to submit National Restoration Plans to the Commission within two years of the Regulation coming into force (by mid-2026), showing how they will deliver on the targets. They will also be required to monitor and report on their progress.

1.1.1.10 EU Effort Sharing Regulation

The EU Effort Sharing Regulation (ESR[20]) was adopted in 2018 and establishes annual binding greenhouse gas emissions targets from 2020 to 2030 for each Member State. As stated above, the EU has split greenhouse gas

[20] *Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (Text with EEA relevance).*

emissions into two categories, the ETS and the non-ETS. Emissions from electricity generation and large industry in the ETS are subject to EU-wide targets which require that emissions from these sectors be reduced by 43% by 2030, relative to 2005 levels. Within the ETS, participants are required to purchase allowances for every tonne of emissions, with the amount of these allowances declining over time to ensure the required reduction of 43% in greenhouse gas emissions is achieved at EU-level[21]. Emissions from all other sectors, including buildings, agriculture, waste, small industry, and transport, which account for around 60% of EU emission, are covered by the EU ESR.

The EU ESR focus on national accountability helps drive climate action at the local level while maintaining flexibility to account for economic disparities across Member States.

Considerable progress has been made in the decarbonisation of the electricity sector, with emissions falling by 22% in 2023.[22] The decarbonisation of the Electricity Sector has been made possible through the deployment of renewables and their successful integration into the national grid, further facilitating the decarbonisation other sectors, such as transport, heating and industry as they look towards electrification.

1.1.2 National Greenhouse Gas Emission and Climate Targets

1.1.2.1 Programme for Government

The Programme for Government 2025 – Securing Ireland's Future (January 2025) places specific emphasis on climate change, recognising that time is critical in addressing the climate crisis. The Programme states that the Irish Government is committed to taking "decisive action to radically reduce our reliance on fossil fuels and to achieve a 51% reduction in emissions from 2018 to 2030, and to achieving net-zero emissions no later than 2050".

The Programme states that the next ten years are a critical period in addressing the climate crisis, and therefore, a deliberate and swift approach to reducing more than half of Ireland's carbon emissions over the course of the decade (2020-2030) must be implemented. The Programme states that the Government is committed to reducing greenhouse gas emissions by an average 7% per annum over the next decade in a push to achieve a net zero emissions by the year 2050.

With regard to renewable energy generation, the Programme notes that the Government is committed to the rapid decarbonisation of the energy sector. The Programme states the Government's ongoing support and commitment to take "the necessary action to deliver at least 70% renewable electricity by 2030". This target has been updated by Climate Action Plan 2025 (Section 1.1.2.7 below).

1.1.2.2 Climate Action and Low Carbon Development Act 2015

The Climate Action and Low Carbon Development Act 2015 established Ireland's first statutory framework for tackling climate change for the purpose of pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy. The 2015 Act Defined the national climate objective as 'transitioning to a climate-resilient, biodiversity-rich, environmentally sustainable, and climate-neutral economy by 2050'. To achieve this, the 2015 Act requires the Minister to develop and submit for government approval a suite of plans: carbon budgets, sectoral emission ceilings, a climate action plan, a national long-term climate strategy, and a national adaptation framework. It also established the Climate Change Advisory Council (CCAC) to provide independent oversight and annual progress reviews. Local authorities and public bodies were mandated to align policies and plans with these objectives, ensuring climate considerations are integrated throughout national and local governance structures.

[21] *Department of the Environment, Climate and Communications (2023) - Climate Action Plan 2024* https://www.gov.ie/en/publication/79659-climate-action-plan-2024/
[22] *Department of the Environment, Climate and Communications (2025) - Climate Action Plan 2025* https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_updated_cover.pdf

1.1.2.3 Climate Action and Low Carbon Development (Amendment) Act 2021

The Climate Action and Low Carbon (Amendment) Act 2021(the '2021 Act') is a piece of legislation which commits the country to move to a climate resilient and climate neutral economy by 2050. This was passed into law in July 2021.

The Programme for Government has committed to a 7% average yearly reduction in overall greenhouse gas emissions over the next decade, and to achieve net zero emissions by 2050. This Act will manage the implementation of a suite of policies to assist in achieving these annual targets.

The Act includes the following key elements, among others:

- Places on a statutory basis a 'national climate objective', which commits to pursue and achieve no later than 2050, the transition to a climate resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy.
- Embeds the process of carbon budgeting into law, Government are required to adopt a series of economy-wide five-year carbon budgets, including sectoral targets for each relevant sector, on a rolling 15-year basis, starting in 2021.
- Actions for each sector will be detailed in the Climate Action Plan, updated annually.
- A National Long-Term Climate Action Strategy will be prepared every five years.
- Government Ministers will be responsible for achieving the legally binding targets for their own sectoral area with each Minister accounting for their performance towards sectoral targets and actions before an Oireachtas Committee each year.
- Strengthens the role of the CCAC, tasking it with proposing carbon budgets to the Minister.

Provides that the first two five-year carbon budgets proposed by the CCAC should equate to a total reduction of 51% emissions over the period to 2030, in line with the Programme for Government commitment.

1.1.2.4 Climate Change Advisory Council

The CCAC was established on 18th January 2016 under the Climate Action and Low-Carbon Development Act 2015. The CCAC aims to provide independent evidence-based advice and recommendations on policy to support Ireland's Just Transition to a biodiversity-rich, environmentally sustainable, climate-neutral, and resilient society.

In July 2023, the CCAC published the *'Annual Review 2023'*[23], this is the seventh annual review carried out by CCAC and details the CCAC concerns that the necessary national actions are not taking place or being enabled at the required speed, going on to state that 'at the current rate of policy implementation, Ireland will not meet the targets set in the first and second carbon budget periods unless urgent action is taken immediately, and emissions begin to fall much more rapidly.'

In 2024 the CCAC has changed its approach to produce sector specific annual reviews in order to emphasise the requirement for greater effort across all sectors to remain within their sectoral emission ceiling. In a statement released on 9th July 2024 the CCAC stated that while '*the provisional greenhouse gas emissions data published today by the EPA shows some positive results across the sectors but overall, it is increasingly unlikely that the first carbon budget will be achieved. Much more urgent action is required from Government if Ireland is to achieve its climate change objectives.*'[24]

[23] *Climate Change Advisory Council 2023 Review* <https://www.climatecouncil.ie/councilpublications/annualreviewandreport/CCAC-AR-2023-FINAL%20Compressed%20web.pdf>
[24] https://www.climatecouncil.ie/news/chairs-statement-irelands-provisional-greenhouse-gas-emissions-1990-2023.html

The Annual Review 2025: Electricity[25] report has been released by the CCAC and focuses specifically on key findings and recommendations for the Electricity sector. In 2024, emissions from the sector reduced by approximately 7% from 2023 to the lowest level since records 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. 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.

Renewables accounted for 40% of electricity demand in 2024, 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. 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.

1.1.2.5 Carbon Budgets

The first national carbon budget programme proposed by the CCAC, approved by Government and adopted by both Houses of the Oireachtas in April 2022 comprises three successive 5-year carbon budgets. The total emissions allowed under each budget are shown in Table 2 below.

Table 2 Proposed Carbon Budgets of the Climate Change Advisory Council

	2021 – 2025 Carbon Budget 1	2026 – 2030 Carbon Budget 2	2031 – 2035 Provisional Carbon Budget 3
	All Gases		
Carbon Budget (Mt CO_2eq)	295	200	151
Annual Average Percentage Change in Emissions	-4.8%	-8.3%	-3.5%
The figures are consistent with emissions in 2018 of 68.3 Mt CO_2eq (megatonnes (million metric tonnes) of carbon dioxide equivalent) reducing to 33.5 Mt CO_2eq in 2030 thus allowing compliance with the 51% emissions reduction target by 2030			

The EPA has identified that Ireland is projected to achieve a reduction of up to 29% in total greenhouse gas emissions by 2030, compared to a target of 51%, when the impact of the majority of actions outlined in Climate Action Plan 2024 is included.[26]

To achieve a reduction of 29% would require full implementation of a wide range of policies and plans across all sectors and for these to deliver the anticipated carbon savings. Almost all sectors are on a trajectory to exceed their national sectoral emissions ceilings for 2025 and 2030, including Agriculture, Electricity and Transport; therefore, the first two carbon budgets (2021-2030) will not be met, and by a significant margin of between 17 and 2%.[27]

1.1.2.6 Sectoral Emissions Ceilings

The Sectoral Emissions Ceilings (SEC) were launched in September 2022. The objective of the initiative is to inform on the total amount of permitted greenhouse gas emissions that each sector of the Irish economy can produce during a specific time period. The SEC, alongside the annual published Climate Action Plan, provide a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030.

[25] *Climate Change Advisory Council (2025) Annual Report 2025: Electricity* <https://www.climatecouncil.ie/councilpublications/annualreviewandreport/CCAC-AR2025-Electricity-FINAL.pdf>
[26] https://www.epa.ie/news-releases/news-releases-2024/ireland-is-projected-to-exceed-its-national-and-eu-climate-targets.php
[27] *Ibid.*

Section C of the Climate Action and Low Carbon Development (Amendment) Act 2021 provides the minister with a method of preparing the SEC within the bounds of the carbon budget. The SEC for each 5-year carbon budget periods were approved by the government on the 28th of July 2022 and are shown in Table 3 below.

Table 3 Sectoral Emission Ceilings 2022

	Sectoral Emission Ceilings for each 5-year carbon budget period (MtCO2eq.)	
Sector	**2021 – 2025 Carbon Budget 1**	**2026 – 2030 Carbon Budget 2**
Electricity	**40**	**20**
Transport	54	37
Built Environment-Residential	29	23
Built Environment-Commercial	7	5
Industry	30	24
Agriculture	106	96
LULUCF*	Yet to be determined	Yet to be determined
Other (F-Gases, Waste & Petroleum refining)	9	8
Unallocated Savings		*-26*
Total**	Yet to be determined	Yet to be determined
Legally binding Carbon budgets and 2030 Emission Reduction Targets	295	200

**Finalising the Sectoral Emissions Ceiling for the land-use, Land-use Change and Forestry (LULUCF) sector has been deferred for up to 18 months to allow for the completion of the Land-use Strategy.*
***Once LULUCF sector figures are finalised, total figures will be available.*

The electricity sector is the third largest emitting sector in Ireland and the successful decarbonisation of this sector could lead to decarbonisation in other sectors, such as the electrification of transport and heating. The CCAC 2024 Annual Review, detailed above, stated that the electricity sector had been set one of the smallest sectoral emission ceilings and the steepest decline in emissions of all sectors with emission ceilings of 40MtCO$_2$eq for the first carbon budget period (2021–2025) and 20MtCO$_2$eq for the second carbon budget period (2026–2030). This equates to a headline target of a 75% reduction in emissions in the sector from 2018 levels by 2030, which will be achieved by increasing the share of renewable electricity to 80%, encompassing 9GW of onshore wind capacity, at least 5GW of offshore wind capacity, with 2 GW earmarked for green hydrogen production, and 8GW of solar photovoltaic capacity, supported by a range of actions set out in the Climate Action Plan 2024.

The Annual Review 2025: Electricity, detailed above in Section 1.1.2.4 stated that the EPA's latest greenhouse gas emissions inventory and projections reports estimate a cumulative overshoot of 5 MtCO2eq (9%) of Electricity's sectoral emission ceiling by 2030, achieving a 65% reduction on 2018 levels against the target of 75%. This points to expensive compliance costs, as outlined in the Council's joint paper with the Irish Fiscal Advisory Council.[28]

Accelerated deployment of onshore wind and solar electricity generation is crucial if the Electricity sector is to meet its sectoral emissions ceiling for the first carbon budget period, whilst also looking forward to the second carbon budget period. Approximately 2.4 GW of onshore wind (0.4 GW)[29] and solar (about 2GW) [30]electricity

[28] https://www.climatecouncil.ie/news/a-colossal-missed-opportunity--irelands-climate-action-and-the-potential-costs-of-missing-targets.html
[29] *Wind Energy Ireland. Planning Dashboards 2025. Available at: https://windenergyireland.com/about-wind/more-resources/planning-dashboard*
[30] *Solar Ireland (2025) Available at:* https://www.bing.com/ck/a?!&&p=6afef52033e30c5a1f5e7bca6abf99feb13c583b6bfa1c7a906f72692740370f0JmltdHM9MTc2OTEyNjQwMA&ptn=3&ver=2&hsh=4&fclid=218a537d-1790-6233-0229-45e116ec639e&psq=how+many+solar+electricity+projects+recieved+plannign+permission+in+2025+in+irealnd+&u=a1aHR0cHM6Ly9zb2xhc

projects received planning permission during 2025. If all these projects progress through to development, they could deliver 22%% of the increase in onshore renewable capacity required to achieve the 2030 targets. While delays remain prevalent in the planning process, 2024 saw 7 decisions made on onshore wind farm projects by An Coimisiún Pleanála (formerly An Bord Pleanála).

1.1.2.7 Climate Action Plan 2025

The National Climate Action Plan 2025 (CAP 2025)[31] was launched in April 2025. CAP 2025 marks the fourth update to the Climate Action Plan 2019, and the third to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and the introduction of the 2022 Sectoral Emissions Ceilings (SEC) and the establishment of economy-wide carbon budgets.

CAP 2025 seeks to build on the progress made under Climate Action Plan 2024 by delivering policies, measurements and actions that will support the achievement of Ireland's carbon budgets, sectoral emission ceilings, and 2030 and 2050 climate targets; while further enabling the closure of identified emissions gaps and the allocation of unallocated emission savings associated with each carbon budget period.

Building on previous iterations, CAP 2025 offers a detailed sector-by-sector roadmap outlining the key actions required to transition Ireland to a low-carbon society and reaffirms the goals of a 51% reduction in greenhouse gas emissions by 2030 and reaching climate neutrality no later than 2050. Major measures include a significant scale-up of renewable energy, especially wind and solar power, extensive retrofitting of homes to improve energy efficiency, support for nearly one million electric vehicles by 2030, and reforms in agriculture and land use aimed at promoting sustainability. CAP 2025 also emphasises public engagement, a just transition, and effective carbon pricing to ensure that the costs and benefits of climate action are distributed equitably across society. As with Climate Action Plan 2024, CAP 2025 provides an Annex of Actions[32], which only contain new, high-impact actions for delivery in 2025. The full set of measures for CAP 2025 (i.e., proposed new actions and existing actions) are still located within CAP 2025.

Six Vital High Impact Sectors were identified within Climate Action Plan 2023[33] relating to the sectoral emission ceilings. CAP 2025 has reaffirmed the following sectors and targets with no proposed changes:

Powering Renewables – 75% Reduction in emissions by 2030

We will facilitate a large-scale deployment of renewables that will be critical to decarbonising the power sector as well as enabling the electrification of other technologies.

- Accelerate the delivery of onshore wind, offshore wind, and solar.
- Dial up to 9 GW onshore wind, 8 GW solar, and at least 7 GW of offshore wind by 2030 (with 2 GW earmarked for green hydrogen production).
- Support at least 500 MW of local community-based renewable energy projects and increased levels of new micro-generation and small-scale generation.
- Phase out and end the use of coal and peat in electricity generation.

Achievement of the 75% reduction in emissions by 2030 and the decarbonisation of the grid in Ireland would assist in the achievement of the Electricity sectoral emission ceiling.

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[31] *Department of the Environment, Climate and Communications (2025) Climate Action Plan 2025. Available at: https://assets.gov.ie/static/documents/c491032e/DECC_Climate_Action_Plan_2025_Main_Report_-_Final_Web.pdf*

[32] https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_-_Annex_of_Actions.pdf

[33] *Department of the Environment, Climate and Communications (2022) Climate Action Plan 2023 – Summary Document*

Building Better – 45% (Commercial/Public) and 40% (Residential) Reduction in Emissions by 2030

We will increase the energy efficiency of existing buildings, put in place policies to deliver zero-emissions new builds, and continue to ramp up our retrofitting programme.

- Ramp up retrofitting to 120,000 dwellings to BER B2 by 2025, jumping to 500,000 by 2030.
- Generation up to 0.8 TWh of district heating by 2025 and up to 2.5 TWh by 2030.

Achievement of the 45% (Commercial/Public) and 40% (Residential) reduction in emissions by 2030 would assist in the achievement of the Built Environment (Commercial/Residential) sectoral emission ceiling.

Turning Transport Around – 50% Reduction in Emissions by 2030

We will drive policies to reduce transport emissions by improving our town, cities, and rural planning, and by adopting the Avoid-Shift-Improve approach: reducing or avoiding the need for travel, shifting to public transport, walking, and cycling and improving the energy efficiency of vehicles.

- Change the way we use our road space.
- Reduce the total distance driven across all car journeys by 20%.
- Walking, cycling and public transport to account for 50% of our journeys.
- Nearly 1 in 3 private cars will be an Electric Vehicle.
- Increase walking and cycling networks.
- 70% of people in rural Ireland will have buses that provide at least 3 trips to the nearby town daily by 2030.

Achievement of the 50% reduction in emissions relating to transport by 2030 would assist in the achievement of the Transport sectoral emission ceiling.

Making Family Farms More Sustainable – 25% Reduction in Emissions by 2030

We will support farmers to continue to produce world class, safe and nutritious food while also seeking to diversify income through tillage, energy generation and forestry.

- Significantly reduce our use of chemical nitrogen as a fertilizer.
- Increase uptake of protected urea on grassland farms to 90-100%.
- Increase organic farming to up to 450,000 hectares, the area of tillage to up to 400,000 ha.
- Expand the indigenous biomethane sector through anaerobic digestion, reaching up to 5.7TWh of biomethane.
- Contribute to delivery of the land use targets for afforestation and reduced management intensity of organic soils.

Achievement of a 25% reduction in emissions by 2030 in agriculture and farming practices would assist in the achievement of the agriculture sectoral emission ceiling.

Greening Business and Enterprise – 35% Reduction in Emissions by 2030

We're changing how we produce, consume, and design our goods and services by breaking the link between fossil fuels and economic progress. Decarbonising industry and enterprise are key to Ireland's economy and future competitiveness.

- Reduce clinker content in cement and substitute products with lower carbon content for construction materials, ensuring 35% reduction in emissions by 2030 (against 2018).
- Reduce fossil fuel use from 64% of final consumption (2021) to 45% by 2025 and further by 2030.

- Increase total share of heating to carbon neutral to 50-55% by 2025, up to 70-75% by 2030.
- Significantly grow the circular economy and bioeconomy.

Achievement of a 35% reduction in emissions by 2030 in relation to Irish production and consumption would enable a more circular economy and assist in the achievement of the Industry and Other sectoral emission ceilings.

Changing our land use

The first phase of the land use review will tell us how we are using our land now. Then, we can map, with evidence, how it can be used most effectively to capture and store carbon and to produce better, greener food and energy.

- Increase our annual afforestation rates to 8,000 hectares per annum from 2023 onwards.
- Promote forest management initiatives in both public and private forests to increase carbon sinks and stores.
- Improve carbon sequestration of 450,000 ha of grasslands on mineral soils and reduce the management intensity of grasslands on 80,000 ha of drained organic soils.
- Rehabilitate 77,600 hectares of peatlands.

Exact reduction target for this sector is yet to be determined. By improving the manner in which Ireland utilises its land use, Ireland can achieve emission reductions and mitigate the ongoing climate and biodiversity crises. The LULUCF sectoral emission ceiling will be set after completion of the Land-Use Strategy.

Adaptation

CAP 2025 highlights the need for adaptation to climate change. Adaptation is the process of adjustment to actual or expected climate change and its effects. Observations show that Ireland's climate is changing in terms of coastline, sea level rise, seasonal temperatures, and changes in typical weather patterns. Climate change is expected to have diverse and wide-ranging impacts on Ireland's environment, society, and economic development, including managed and natural ecosystems, water resources, agriculture and food security, the built environment, human health, and coastal zones.

Climate Sectoral Adaptation Planning[34] includes for 12 sectoral adaptation plans that describe and assess the extent of the risks presented by climate change to a sector, and present contingency plans to address these risks and ensure climate resilience. They include actions to mainstream adaptation into policy and administration at sectoral level to improve the resilience of existing and planned critical infrastructure, systems, and procedures, to the effects and variability of climate change, as well as to improve cooperation and coherence within and across sectors, as well as on a local and national level.

CAP 2025 acknowledges the current shortfalls towards interim (2025) targets and underscores the need for faster implementation, stronger governance, and more coordinated cross-sectoral action to close the gap between ambition and delivery.

1.1.2.8 Ireland's Climate Change Assessment

In 2023 the EPA published Ireland's Climate Change Assessment (ICCA).[35] This assessment provides a comprehensive overview and breakdown of the state of knowledge around key aspects of climate change with a focus on Ireland. The ICCA report is presented in four volumes.

- Volume 1: Climate Science – Ireland in a Changing World

[34] *Department of the Environment, Climate and Communications (2020) Sectoral Adaptation Planning.* https://www.gov.ie/en/collection/51df3-sectoral-adaptation-planning/
[35] *Environmental Protection Agency (2023) Ireland's Climate Change Assessment* <https://www.epa.ie/our-services/monitoring--assessment/climate-change/irelands-climate-change-assessment-icca/>

- Volume 2: Achieving Climate Neutrality in 2050
- Volume 3: Being Prepared for Ireland's Future
- Volume 3: Realising the Benefits of Transition and Transformation

The ICCA Synthesis Report states that having peaked in 2001, Ireland's greenhouse gas emissions have reduced in all sectors except agriculture. However, Ireland currently emits more greenhouse gases per person than the EU average. The report goes on to state that there has been an identified gap in policy that indicates that Ireland will not meet its statutory greenhouse gas emission targets. Already Ireland has seen significant and ongoing deterioration in environmental quality, including declines in water quality, biodiversity and ecosystem quality. Developing a climate-resilient Ireland will require sufficient public and private investment and financial support in ways that adequately recognise the value of ecosystem services and the importance of societal wellbeing.

There are well-established 'no-regret options' that need to happen now, which can get Ireland most of the way to net zero carbon dioxide emissions. Beyond that, there are 'future energy choices' relating to the scale and magnitude of technologies that will assist in achieving Ireland statutory climate targets. Ireland's no-regret options are demanding reduction (e.g. through energy efficiency and reduced consumption), electrification (e.g. electric vehicles and heat pumps), deployment of market-ready renewables (e.g. wind energy and solar photovoltaics) and low-carbon heating options (e.g. district heating). Ireland's future choices include hydrogen, carbon capture and storage, nuclear energy and electro-fuels.

Achieving net zero carbon dioxide emissions by 2050 requires significant and unprecedented changes to Ireland's energy system. Policies tailored to suit different stages of technology development are critical for achieving a net zero energy system. Established technologies, such as wind energy, solar photovoltaics and bioenergy, will be key in meeting short-term emission reduction targets (i.e. 2030), whereas offshore wind infrastructure is expected to be the backbone of future energy systems (i.e., 2050).

The ICCA serves as a stark warning: Ireland stands to face a myriad of challenges in efforts to mitigate and adapt to climate change at the almost halfway mark to 2030. Further decisive action is imperative to mitigate the escalating impacts of climate change on Ireland's environment, economy, and society that are highlighted throughout the four volumes of the ICCA.