Rialtas na hÉireann
Government of Ireland

CLIMATE ACTION PLAN
Progress Report

Q4 2023

Prepared by the Department of the Taoiseach
March 2024
gov.ie/climateaction

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1 Executive Summary

This is the fourth and final Progress Report on Climate Action Plan (CAP) 2023. It details progress on the 161 new actions due for completion in Q4 2023. A **delivery rate of 60%** is reported (96 actions completed on time).

The progress of actions delayed from Q1, Q2 and Q3 2023 is also included in this report, with just 12% of overdue actions completing in 2023 (5 of 42 actions). Combining delivery from Q1 to Q4 2023 results in a final implementation rate of **65% for CAP23** (188 of 290 actions completed)**.**

This report is organised into sectoral chapters in order of emissions impact (Agriculture, Transport, Electricity, Buildings, Land Use, Land-use Change and Forestry (LULUCF), and Industry). Attention is given to Key Performance Indicators (KPIs) in each sector, emissions estimates and projections[1], new detail from the draft CAP24 that was published this quarter and action case studies.

Building on progress made in CAP23, an effort was made in drafting CAP24 to further limit reportable actions, eg those to be included in quarterly progress reports by the Department of the Taoiseach, to actions that introduce new initiatives or are significant steps towards achieving the Government's climate ambitions. The continued implementation of lower impact and already established activities ('non-reportable' actions from the CAP23 Annex of Actions) do not fall for centralised reporting. High-impact activity is detailed in this Q4 2023 Progress Report, with information on every reportable action due contained at **Appendix 1**.

A legacy exercise on actions that were not completed during 2023 (approx.100) was also undertaken this quarter and is at **Appendix 2**. In keeping with the high impact principles established in the draft Annex of Actions for CAP24, the legacy exercise removes, with explanation from Departments, any low impact, delayed actions from centralised progress reporting. Delayed actions considered to be of higher impact will be retained for progress reporting in Q1 2024 and beyond until they are completed, alongside any new CAP24 actions. This ensures departmental accountability for delayed actions with successive iterations of the Climate Action Plan.

[1] This includes the Q2 published EPA emissions projections under WEM (with existing measures) and WAM (with additional measures) scenarios. The WEM scenario includes policies and measures committed to and being implemented by the end of 2021. WAM assumes implementation of planned policies and models their predicted impact on GHGs (e.g. some ambitious measures from CAP23).

1.1 Climate change news and activity in Q4 2023

Quarter 4 2023 continued the proliferation of climate-related news and activity across international, national, and local levels. Internationally, the 28th United Nations Climate Change Conference took place in Dubai, from 30 November until 12 December. A milestone event, COP28 concluded the first 'global stocktake' of the world's efforts to address climate change and emphasised the pressing need for a rapid global shift in emission trends.

Despite increased emission cut pledges, credibility remains a challenge. Lifetime emissions from existing oil, gas, and coal projects exceed carbon budgets, with countries calling on governments to speed up the transition away from fossil fuels to renewables. For some, this Q4 agreement signals the "beginning of the end" of the fossil fuel era.

Urgency of Emission Reductions

To meet the Paris Agreement, global greenhouse gas emissions need to be cut by 43% by 2030, compared to 2019 levels according to a new report from the United Nation's Intergovernmental Panel on Climate Change released this quarter. Current pledges indicate a mere 2% reduction. The imminent breach of the Paris Agreement's 1.5-degree target added further urgency to COP28, with the United Nations (UN) also warning of a potential 3°C warming based on countries' current reduction pledges.

Developing countries require $1 trillion annually in external financing for climate action by 2030. However, financial support from richer nations has fallen short so far, hindering global climate mitigation and adaptation efforts. In contrast, fossil fuel subsidies reached a record $7 trillion in 2022, exacerbating the challenge of transitioning to cleaner energy sources.

In Ireland, a report by the Irish Fiscal Advisory Council in Q4 estimates that the costs of climate change to the Government will rise to billions of euro a year by 2030 – including compliance costs, transition costs and costs associated with extreme weather events.

Health Risks

The latest Lancet Countdown report highlights the severe health threats posed by climate change. It reveals that rising temperatures and increasing energy emissions are already causing fatalities, with projections indicating a fourfold increase in heat-related deaths by

2050. The expansion of bacteria-friendly seas, the spread of infectious diseases by mosquitoes, a surge in food insecurity, and the strain on health systems pose further risks.

Rising Sea Levels and Flooding

Scientists warned in Q4 that the world could approach the 1.5-degree threshold within seven years. With an annual sea level rise of 4.4mm between 2013 and 2021, melting ice sheets and glaciers will further accelerate the rise experienced, threatening coastal communities.

This quarter Ireland experienced the damage and personal devastation that flooding can bring to affected communities. Towns such as Midleton in East Cork were badly impacted by severe flooding during Storm Babet in mid-October. Adaptation to the risks of climate change including flooding has become an increasing focus.

Sectoral Climate Action Developments in Q4 2023

The International Renewable Energy Agency estimates that the shift from fossil fuels to renewables requires an annual growth of 1,000 gigawatts in renewable power capacity every year through 2030. The transition is currently deemed too slow, necessitating urgent action.

From an Irish energy perspective, this quarter saw the announcement of €1 million offshore wind fund for Irish environmental research groups to increase resources for offshore wind research and engagement. As part of the European Wind Charter, Ireland also signed a voluntary 'wind pledge' committing to the delivery of sequential wind energy targets.

Plans to intensify efforts to curb global methane emissions were outlined this quarter. China, the world's largest emitter of methane, particularly from coal power, released a long-awaited action plan including enhanced monitoring and emissions limits for coal mines. The United States Environmental Protection Agency (EPA) also unveiled new regulations targeting methane emissions from the oil and gas sector.

In the land use sector, despite commitments to halt deforestation by 2030, the annual Forest Declaration Assessment released in October states that the world lost 66,000 square kilometers of forest in 2022, impacting carbon emissions and storage capacity.

Two billion tonnes of carbon dioxide are being removed from the atmosphere annually. This is nearly all down to forests and it is calculated that about double the current sequestration levels will be needed from trees and soils by 2050 to limit global heating to well below 2C.

There is a growing emphasis on Carbon Capture and Storage technology to bridge gaps to targets. The Commission is set to include fourteen cross-border carbon capture, transport, and storage projects in the EU's list of projects of common interest, offering accelerated approvals and funding.

Finally, in Ireland in Q4, the Government approved the Climate Action Plan 2024 (CAP24) on 20 December 2023, subject to Strategic Environmental Assessment and Appropriate Assessment. CAP24 builds upon CAP23 by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings. A public consultation will launch on it shortly.

1.2 Overview of delivery in Q4 2023

In total, 161 actions were scheduled for delivery and reporting in Q4 2023. An implementation rate of 60% was achieved, with 96 actions completed on time. Delivery rates by responsible Department for actions due this quarter are detailed in Table 1. Table 2 outlines delivery rates by sector to date (combining delivery from Q1, Q2, Q3 and Q4 of CAP23), reflective of the whole-of-government effort required to reduce emissions across our economy and society.

Table 1 Delivery rate by Department on Q4 2023 measures

Department	Q4 Complete actions	Q4 Delayed actions	No. of Q4 actions due	Delivery Rate
Dept. of the Environment, Climate and Communications (DECC)	32	33	65	**49%**
Dept. of Agriculture, Food and the Marine (DAFM)	21	5	26	**81%**
Dept. of Housing, Local Government and Heritage (DHLGH)	14	8	22	**64%**
Dept. of Transport	11	8	19	**58%**
Dept. of Public Expenditure, NDP Delivery and Reform (DPENDR)	3	3	6	**50%**
Dept. of Further and Higher Education, Research, Innovation and Science (DFHERIS)	6	0	6	**100%**

Dept. of Enterprise, Trade and Employment (DETE)	0	4	4	**0%**
Dept. of Education (D/Education)	3	1	4	**75%**
Dept. of Finance (DFIN)	3	0	3	**100%**
Dept. of Health (D/Health)	2	1	3	**67%**
Dept. of the Taoiseach (D/Taoiseach)	0	1	1	**0%**
Dept. of Foreign Affairs (DFA)	0	1	1	**0%**
Dept. of Social Protection (DSP)	1	0	1	**100%**
TOTAL	**96**	**65**	**161**	**60%**

Table 2 Sectoral Delivery to date under CAP23 (combining Q1, Q2, Q3 and Q4 delivery)

CAP23 Sector	No. of actions due	Complete	Delayed	Delivery Rate
Agriculture	30	24	6	80%
Transport	25	14	11	56%
Electricity	27	16	11	59%
LULUCF	21	18	3	86%
Buildings	51	35	16	69%
Industry	10	2	8	20%
Cross-Cutting	126	79	47	63%
TOTAL	**290**	**188**	**102**	**65%**

Overall CAP23 implementation stands at 65% to date (188 of 290 actions completed by year end). The breakdown of delivery by quarter is contained in Table 3.

Table 3 CAP23 Implementation to end of Q4 2023

	Measures Completed in the Quarter	Measures Subsequently Delivered	Total Measures Delivered to Date	Measures still Delayed	Delivery Rate
Q1 2023	27	8	35	1	**97%**
Q2 2023	32	11	43	8	**84%**
Q3 2023	12	2	14	28	**33%**
Q4 2023	96	N/A	96	65	**60%**
TOTAL	**167**	**21**	**188**	**102**	**65%**

1.2.1 Sectoral actions completed and delayed in Q4 2023

Examples of high impact sectoral actions completed and delayed in Q4 2023 are detailed in Tables 4 and 5. With significant potential for direct emissions reduction, they are further expanded upon in sectoral chapters throughout this progress report. Information on every reportable action is detailed at Appendix 1.

Table 4 Examples of high impact sectoral actions and sub-actions completed in Q4 2023

Sector	Action / sub-action completed in Q4 2023
Agriculture	RE/23/1/A: Establish Teagasc Signpost Advisory Service
Transport	TR/23/41: Accelerate delivery of National Transport Authority (NTA) Connecting Ireland (rural public transport services)
	TR/23/7: Progress targeted campaign to support uptake of EVs
Electricity	EL/23/15: Publish public consultation on private wires
Buildings	BE/23/5: Provide a record budget allocation for Sustainable Energy Authority of Ireland (SEAI) retrofit schemes
	BE/23/11: Deliver retrofits to c.2,400 Local Authority homes
LULUCF	LU/23/15: Continue to rehabilitate former peatland production land

Table 5 Examples of high impact sectoral actions and sub-actions delayed in Q4 2023

Sector	Action / sub-action delayed in Q4 2023
Agriculture	AG/23/10: Develop proposal for a cow reduction or an exit scheme
	AG/23/13: Deliver National Biomethane Strategy (delayed from Q3)
Transport	TR/23/19: Publish National Transport Demand Management Strategy
Electricity	EL/23/2: Publish the Renewable Electricity Spatial Policy Framework (delayed from Q3)
	EL/23/13/B: Launch Small Scale Generation Scheme
	EL/23/24: Publish Electricity Demand Side Strategy
Buildings	BE/23/26: Publish National Heat Policy Statement (delayed from Q3)
	BE/23/31: Publish roadmap on the retrofit of commercial buildings (delayed from Q3)

LULUCF	LU/23/20/A: Interim reporting to Government on Land Use Review Phase 2
Industry	EN/23/3: Prepare a decarbonisation roadmap for industrial heat
	EN/23/6: Conduct feasibility assessment on carbon capture & storage

1.2.2 Cross-cutting actions completed and delayed in Q4 2023

High impact cross-cutting actions support the delivery of sectoral climate action through improvements in governance, finance, planning, research, engagement, resilience, and leadership. Diverse Departments and Agencies contribute to their completion, providing a whole-of-Government enabling framework for national climate action.

Examples of high impact cross-cutting actions completed and delayed in Q4 2023 are detailed in Tables 6 and 7. Information on all cross-cutting actions due for reporting are contained in Appendix 1.

Table 6 Examples of high impact cross-cutting actions and sub-actions completed in Q4 2023

Cross-Cutting Policy Area	Action / sub-action completed in Q4 2023
Carbon Pricing	CP/23/4: Update Appraisal Guidance (Infrastructure Guidelines)
Just Transition	BE/23/17: Accelerate delivery of green skills apprenticeships
Public Sector Lead	PS/23/4: Deliver Health Service Executive (HSE) Climate Action & Sustainability Strategy to 2050
	BE/23/34/D: Commence Solar for Schools Programme
Adaptation	AD/23/20: Complete first draft of new National Adaptation Framework
Circular Economy	CE/23/8/B: Introduce a new Waste Recovery levy

Table 7 Examples of high impact cross-cutting actions and sub-actions delayed in Q4 2023

Cross-Cutting Policy Area	Action / sub-action delayed in Q4 2023
Governance	CN/23/1: Finalise Ireland's Long-term Climate Strategy
Carbon Pricing	GV/23/4: Develop proposals on how individual sectors could bear European Union (EU) compliance costs
	CP/23/4/A: Update shadow price of carbon (delayed from Q1)
Just Transition	JT/23/1: Establish a Just Transition Commission (delayed from Q2)
Research & Innovation	RE/23/1: National Agricultural Soil Carbon Observatory to be fully operational (delayed from Q2)
Planning	CP/23/11: Publish Land Development Agency (LDA) Sustainable Design Strategy and design approach for key schemes supporting modal shift (delayed from Q3)
Public Sector Lead	PS/23/1/B: Public sector bodies to update Climate Action Roadmaps (delayed from Q3)
	PS/23/8/A: Publish report on capacity of public sector to deliver climate action identifying action areas (delayed from Q2)
	PS/23/11: Publish new Green Public procurement Strategy & Action Plan (delayed from Q3)
Circular Economy	CE/23/1: Publish a 2nd whole- of-Government Circular Economy Strategy

1.3 Overcoming delays to climate action delivery

In total, 102 actions were delayed under CAP23 (c.35% of actions due by the end of Q4 2023). The most common reasons reported by Departments for delivery delays in Q4 include:

- **Capacity and capability constraints**, most notably related to resourcing (e.g. staffing, funding, ownership and recruitment) as well as procurement delays arising from a reliance on external expertise for climate policy ideation and development;
- **Unexpected complexity**, often leading to the need for extra time for additional research or review before an action can be completed;

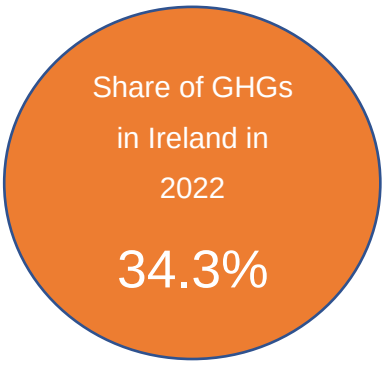
- **Awaiting final approval or publication**, whereby actions are significantly advanced and expect completion early in 2024;
- **Issues of sequencing and alignment**, whereby completion of some actions is reliant on the completion of other activity, negotiations or policy before they can progress;
- **Additional time required for further stakeholder engagement**, including public consultation and clearance with interdepartmental working groups; and
- **Change of approach**, whereby an alternative method or pathway has been decided for an action since the publication of CAP23 with more time required to build consensus, achieve buy-in or establish new structures.

Delays in climate action delivery must be urgently overcome to meet legally binding emissions reduction targets at international, EU and national levels. Failure to complete climate actions now will result in steeper trajectories and decarbonisation pathways to bring sectors, society and the economy back on track.

The legacy exercise accompanying this progress report (**Appendix 2)** identifies 49 high impact delayed actions that will carry forward for delivery and reporting in Q1 2024 (and beyond, as required) to maintain commitment to their completion. The other 53 lower impact delayed actions from CAP23 are closed off from continued centralised reporting in Appendix 2, with explanation as to how continued progress will be ensured (e.g. by Agency, Department or by Taskforce), any changes in approach necessary and/or how CAP24 subsumes or overrides the action but maintains ambition.

Further detail on high impact actions due in Q4 is provided next through sectoral chapters. Detail on all reportable actions completed and delayed this quarter is at **Appendix 1**.

2 Agriculture



Agriculture is the largest greenhouse gas (GHG) emitting sector in Ireland, responsible for 34.3% of national emissions in 2022. Methane, largely from producing beef and dairy, is the biggest sectoral source, accounting for c.68% of Irish agricultural GHGs. When combined with additional agriculture-related emissions from organic soils drained for farming uses (grasslands) currently accounted for in LULUCF, agricultural activity accounts for c.42% of total Irish emissions.

In the EPA projections, agriculture emissions are projected to decrease by 4 - 20% between 2021 and 2030 (Figure 1) depending on the level of policies and interventions implemented. Emissions reductions are projected from fertiliser switching, limits on fertiliser use and bovine feed additives. Sectoral targets for 2030 and the agriculture SEC are nevertheless expected to be breached, even with full implementation of current planned measures.

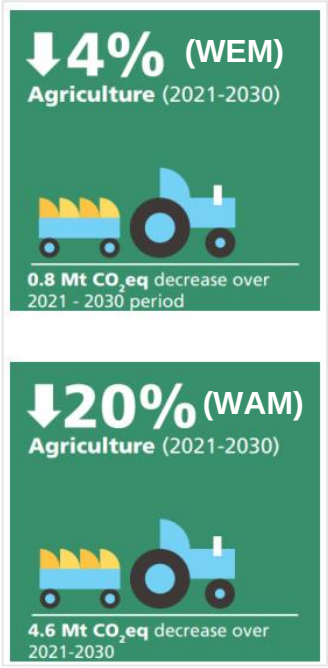


Figure 1 Projected Agriculture emissions to 2030 (EPA, 2023)

Livestock diversification measures proposed in CAP23 were not included in the EPA projections due to a lack of a clear implementation pathway, signalling an urgency for policy elaboration in this area. There is also a need, as with all sectors, to move measures from currently 'planned' (WAM) to 'being implemented' (WEM) to ensure their impact as quickly as possible as part of cumulative carbon budgets. This can be achieved by firming up policy delivery pathways and providing relevant support and clarity to farmers on action to be taken (e.g. timelines, resourcing, incentives, disincentives etc).

In the stocktake of abatement progress published as part of the draft CAP24, although agricultural emissions decreased by 1.4% between 2021 and 2022, they are still reported to have been higher than the proposed pathway outlined in CAP23. The sector now needs to reduce emissions by, on average, 8.3% annually for 2023, 2024 and 2025 to remain within the first carbon budget allocation.

CAP24 commits to implement specific and targeted actions to drive the delivery of abatement KPIs in the sector. It also commits to devise new required actions, in collaboration with stakeholders, drawing on insights from the Teagasc Marginal Abatement Cost Curve (MACC) that published in July 2023 as well as innovations from Climate-KIC's "Deep Demonstration" on the Irish agri-food and biobased value chain.

Making Family Farms More Sustainable

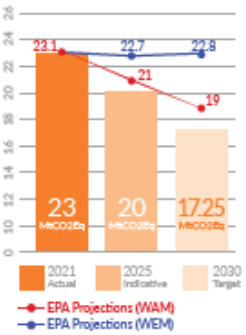
Key Performance Indicators / 2030 Targets

400,000ha for tillage by 2030

450,000ha for organic farming by 2030

Fertiliser use reduced to max 300,000 tonnes by 2030

Gap to Target



Q1

- Open Agri-Climate Rural Environment Scheme (ACRES)
- TAMS II Scheme for Low Emissions Slurry Spreading
- Launch grant scheme for on-farm solar panels

Q2

- Publish information to increase adoption of protected urea
- Introduce a national fertiliser database

Q3

- Build national soils database – encourage farmers to take soil samples
- Deliver National Biomethane Strategy
- Establish implementation group for NESC recommendations on Just Transition in Agriculture

Q4

- Support production of legumes through Protein Aid Scheme
- Provide funding for multispecies and clover swards
- Launch Suckler Carbon Efficiency Programme
- Launch research call focused on slurry additives to reduce manure methane
- Launch research call on feed additives to reduce methane emissions
- €10m Tillage Incentive Scheme
- Establish Anaerobic Digestion pilot plant
- Financial support for farmers who convert to Organic Farming
- Encourage extensive livestock farming practices through eco-schemes
- Proposal for a cow reduction or an exit scheme

High Impact Action Completed in Q4 2023: Agriculture

Did You Know? Climate action advisory services to farmers are essential to transfer knowledge and skills from national research and policy to action on the ground. Supporting farmers with the right information, demonstration farms, data and online tools can help to build capacity for the implementation of climate action in the sector.

What's new? Under Action RE/23/1/A in CAP23, Teagasc has established a Signpost Advisory Programme, with 21 Climate Advisors now actively engaging with farmers throughout the country. By the end of October, over 7,000 farmers had signed up to participate in this new advisory programme through 420 workshops. A new sustainability digital platform (AgNav) has also launched and is operating as a closed pilot for Bord Bia Quality Assured beef and dairy farmers. This tool will help individual farmers engage with the emissions profile for their farm and plan necessary actions to reduce them.

High Impact Action Delayed in Q4 2023: Agriculture

Did You Know? Under Action AG/23/13, DAFM were due to deliver Ireland's first National Biomethane Strategy in Q3 2023. This action remained delayed in Q4 2023. It was published for public consultation at the end of January, ahead of consideration of the Plan by Government to allow for its finalisation.

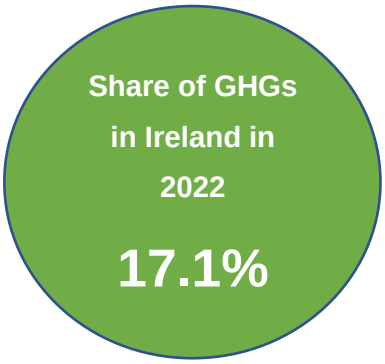
Why is it needed? Biomethane provides an income and land use diversification opportunity for farmers by using grass and other farm wastes (e.g. slurry) to produce renewable gas. A national strategy will help to identify actionable recommendations to stimulate a biomethane industry in Ireland and mobilise the 5.7 TWh target established in CAP23. With the aim of leading to voluntary reductions in livestock numbers on farm, biomethane, in turn, will also provide for emissions reductions in the transport and industry sectors as fossil fuels are displaced.

High Impact Action Delayed in Q4 2023: Agriculture

Did You Know? Under Action AG/23/10, DAFM were due to publish a proposal for a cow reduction or an exit scheme. It did not complete in Q4 2023 and will carry forward for delivery and reporting under CAP24 as a high impact action for the sector.

Why is it needed? The need for diversification options for livestock farmers to achieve required emissions reductions in agriculture was recognised in CAP23. The Plan also recognised that, to have an impact, any voluntary herd reduction must be structured in a way that ensures that reductions in breeding ruminants on one farm are not offset by increases in overall breeding ruminant numbers (i.e. more cows on other farms). The careful design of any cow reduction or exit scheme would be key to achieving this objective. The completion of this action is also among the recommendations of the Food Vision sectoral groupings to provide a further emissions reduction option to farmers.

3 Transport



At 17.1%, transport was the second biggest greenhouse gas emitting sector in Ireland in 2022, experiencing the largest increase of all sectors since 1990. In its projections, the EPA estimates that emissions from transport will reduce by 1 - 35% between 2021 and 2030 depending on the speed and scale of measures implemented (Figure 2).

The upper level of achievement includes almost 1 million electric vehicles, biofuel blends of 10% for petrol and 20% for diesel, as well as a 20% reduction in total kilometres travelled through better land use planning and a shift from private fossil-fuelled cars to public transport, walking and cycling.

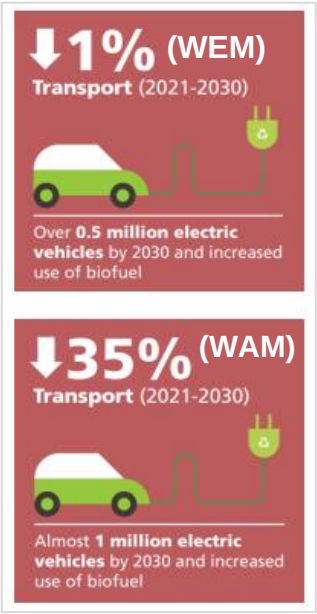


Figure 2 Projected transport emissions to 2030 (EPA, 2023)

Reducing transport emissions sufficiently to 2030 and 2050 will be challenging, with increased pressures from a growing population and economy as well as the potential for fluctuating fossil fuel prices. Effective policies and actions are needed now to realise benefits in the longer term.

The focus remains on the rapid implementation of high-impact actions to bank emissions savings as early as possible in cumulative carbon budgets. Otherwise, sectoral targets and the transport SEC will be breached.

CAP24, published in Q4 2023 and awaiting public consultation, maintains a focus on the "Avoid Shift Improve" framework established in CAP23, with no change to the key performance indicators established for the sector. This framework emphasises the crucial role of spatial and land-use planning in designing transport systems that can support our net-zero ambition and seek to "avoid" unnecessary emissions by reducing journey times and travel demand in the first instance.

Shifting journeys to public and active transport also remains key in CAP24, with an acceleration of supporting infrastructure required to provide attractive alternatives to the fossil-fuelled car. Finally, transport journeys can be improved through the electrification of passenger and commercial fleets, as well as the increased use of biofuels to lessen the fossil fuel content of petrol and diesel used.

Addressing emerging challenges and risks to abatement delivery is also central to the new Transport chapter in CAP24. For example, this includes the impact of inflation on infrastructure construction costs, planning and consenting issues, public and political acceptance of required changes and ensuring market capacity and skills development.

Transforming How We Travel

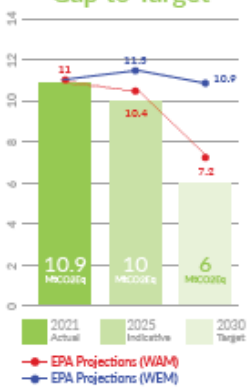
Key Performance Indicators / 2030 Targets

110,342 Currently
940,000 EVs by 2030

E10/B7 Currently
E10/B20 biofuel blend rates by 2030

1.84% * Currently
50% reduction in Transport fuel usage

Gap to Target



Q1

No reportable actions for delivery this quarter

Q2

- National Sustainable Mobility Stakeholder Forum
- Publish National Cycle and Greenway Networks
- Continue implementation of biofuel blending

Q3

- Progress Metropolitan Area Transport Strategies; public consultation on draft Galway Strategy
- Publish regulations on safe use of personal powered transporters
- Updated Renewable Fuels for Transport Policy Statement

Q4

- Establish Road Freight Forum and advance Road Haulage Strategy
- National Demand Management Strategy
- Advance rollout of 1,000km walking/cycling infrastructure by 2025
- Accelerate implementation of Safe Routes to School programme
- Advance BusConnects across Irish cities
- New town public transport services through NTA's 'Connecting Ireland' programme
- Advance Destination Charge Point Scheme for EVs
- Advance Local Authority Residential Charging Scheme
- Increase electric bus fleet procurement, including depot charging upgrades

* Based on Fuel Excise Clearances data which provide a proxy for sales and the associated level of consumption

High Impact Action Completed in Q4 2023: Transport

Did You Know? Providing more sustainable transport options for rural communities is key to achieving emissions reductions in the transport sector. Connecting Ireland, a major public transport initiative developed by the National Transport Authority (NTA), prioritises public transport projects that enhance regional and rural connectivity, improving the alternatives to private car use.

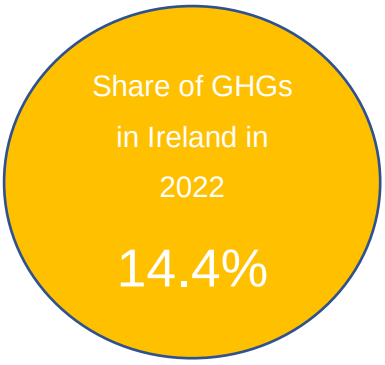
What's new? Under Action TR/23/41(TF) in CAP23, Connecting Ireland Phase 2 introduced 24 new and 41 enhanced public transport services connecting approximately 194 towns nationwide. 94% of Carlow town's population is now within an 800-metre walk of a bus stop on the new town service network. In addition, the new Clonmel town service launched in December 2023 and has supported over 10,000 passenger journeys in its first month of operation. This expansion and increased frequency of public transport services in rural Ireland is an essential step towards the reduction in fossil-fuelled vehicle kilometres travelled by private cars.

High Impact Action Delayed in Q4 2023: Transport

Did You Know? Under Action TR/23/19 in CAP23, a National Demand Management Strategy (DMS) was due to publish in Q4 2023. Strategy development is at an advanced stage, with a draft expected to be submitted to Government for approval to publish for public consultation in Q1 2024.

Why is it needed? Our travel preferences are deeply embedded through settlement patterns, policies, and mindsets, often favouring private car usage over more sustainable transport modes. Accounting for a rising population, the DMS will consider approaches to reducing traffic congestion and improving access to public transport. Encouraging individuals to make a shift in how they travel provides benefits in terms of health, air quality, reduced noise pollution, and improved placemaking, as well as reducing emissions. As per CAP23, the DMS will be a key driver of the reforms needed to meet our 2030 targets of reducing the total distance driven across all car journeys by 20%, and for walking, cycling and public transport to account for 50% of our journeys.

4 Electricity



Energy industries (primarily power generation) accounted for 14.4% of national emissions in 2022. Electricity emissions decreased by 2% in 2022 due to an increase in renewable (e.g. wind and solar) generation, coupled with reductions in coal, oil, and peat use. In 2022, renewables accounted for 38.6% of electricity generation in Ireland, an increase from 35% in 2021. CAP23 committed to achieving 80% of electricity demand from renewable sources by 2030. The proposed pathway to achieve our renewable ambition in the electricity sector is detailed in EirGrid's *Shaping our Electricity Future*.

An Offshore Wind Delivery Taskforce was established in 2022 and has developed a system-wide implementation plan for offshore renewables. An Accelerating Renewable Electricity Taskforce was established in 2023 to identify, coordinate, and prioritise the development and implementation of policies required to meet our 2030 onshore renewable targets.

The EPA projections report showed that increased renewable energy generation from wind and solar, if delivered as rapidly as planned, can reduce energy industry emissions by 50-60% by 2030 and achieve over 80% renewable electricity generation (Figure 3). Sectoral targets and emissions ceilings established for the sector are however projected to be missed, even in the higher ambition scenario.

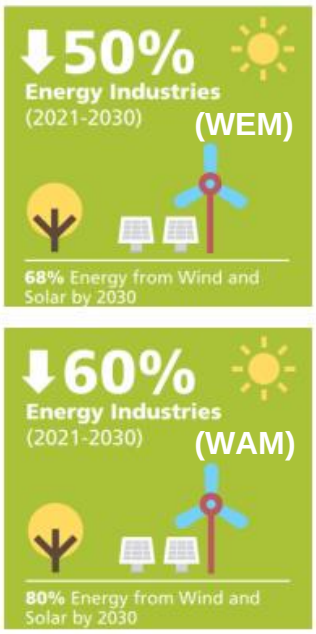


Figure 3 Projected energy industry emissions to 2030 (EPA, 2023)

The draft CAP24 sets out further policies and measure to help meet targets in this sector. This includes methods to enable industrial heating facilities to participate in flexible demand initiatives; and a recommendations paper on market options to incentivise Long Duration Energy Storage. Increased interconnection, hydrogen generation, biomethane and demand side measures are all also envisaged to contribute to reduced sectoral emissions.

The electricity sector continues to face significant challenges, particularly given that the decarbonisation of other sectors, including transport, heating, and industry, relies to a significant degree on enhanced electrification. Continued dependency on coal use due to the unavailability of sufficient gas-fired generation, slow infrastructure delivery and planning delays create risks to established targets.

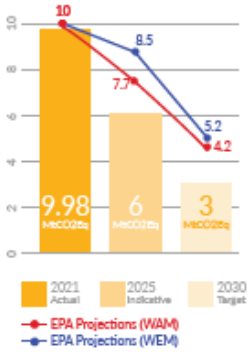
Powering Renewables

Key Performance Indicators / 2030 Targets

80% electricity from renewable sources by 2030

9GW onshore wind by 2030

Gap to Target



Q1

- Publish System Services Future Arrangements Phase III

Q2

- Small-scale generation scheme design
- Plan for the delivery of Offshore Renewable Energy
- Irish Ports ORE Delivery Framework
- Updated interconnection policy
- Supports for community participation in electricity demand flexibility

Q3

- Renewable Electricity Spatial Policy Framework
- MARA start consenting processes
- Policy framework for electricity storage
- Onshore and offshore RESS auctions

Q4

- Clean Export Premium feed-in tariff implementation plan
- New draft onshore wind energy guidelines
- Regional Renewable Electricity Roadmap
- Private wires public consultation
- Regulatory review of storage (licensing/charging/market incentives)
- Electricity Demand Side strategy and action plan
- Enhanced reporting framework for large energy users

High Impact Action Completed in Q4 2023: Electricity

Did You Know? Currently, the Electricity Supply Board (ESB) owns the national grid infrastructure in Ireland. Private wires have the potential to provide off-grid solutions for the generation and supply of electricity. If private wires are enabled, this would allow parties other than ESB to install and own electricity infrastructure, outside the confines of their own property, and to transmit electricity. Off-grid solutions such as private wires may further assist in meeting our climate targets and sectoral emissions ceilings.

What's new? In Q4 2023, DECC, under action EL/23/15, published a public consultation on private wires. The consultation ran from 18 August to 27 October 2023. This year DECC will publish a summary report of the consultation responses and will develop a policy on private wires.

High Impact Action Delayed in Q4 2023: Electricity

Did You Know? In Q4 2023, under action EL/23/2, DECC sought to publish the Renewable Electricity Spatial Policy Framework. The objective of this spatial policy framework is to effectively translate national renewable electricity objectives, including those outlined in CAP23, to the regional level and allocate spatial and generation capacity targets. This action did not complete in Q4 2023 as planned. Regional renewable electricity capacity targets are now proposed to be included in the review of the National Planning Framework which is due to be brought to Government in 2024.

Why is it needed? The Renewable Electricity Spatial Policy Framework will set out the national policy framework for onshore renewable electricity (e.g. wind and solar infrastructure) across the country. The delay to the expansion of onshore renewable capacity, along with the continued use of coal in electricity generation, means that steeper emissions reductions will be required in the future to keep within established carbon budgets and sectoral emissions ceilings.

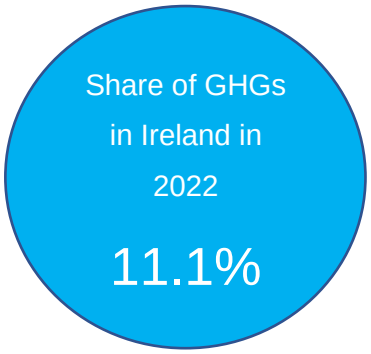
High Impact Action Delayed in Q4 2023: Electricity

Did You Know? The Electricity Demand Side Strategy, mandated in CAP23 under action EL/23/24, will consider the options on how all customer groups can bring greater flexibility to their energy consumption. For example, this can include by changing usage to avoid peak times thereby reducing pressure on the grid and assisting with energy security. The Commission for Regulation of Utilities (CRU) did not complete the action in Q4 as intended, but plan to publish their Energy Demand Strategy Package in Q1 2024.

Why is it needed? The Electricity Demand Side Strategy will help us to better match our power usage to our renewable energy generation. The strategy will set out a Programme of Actions which will establish the next steps towards reducing demand as well as building a foundation for a flexible system. It will also provide guidelines for new Large Energy User connections, such as those for data centres, to the electricity and gas networks. This strategy will assist with decarbonisation, enhance security of supply, and lower system costs. It will be essential in growing our economy in a sustainable manner.

5 Buildings

Emissions from all buildings made up 11.1% of Ireland's emissions in 2022. Most of this (9%) was from residential buildings. Energy prices, yearly temperatures, energy efficiency measures, fuel switching, and remote working have all influenced emissions from buildings of late.



In the EPA projections, emissions from residential buildings are expected to decrease by 36 - 47% between 2021 and 2030 (Figure 4). The higher reduction level assumes, among other actions, a ban on oil and gas boilers in new dwellings, the installation of 680,000 heat pumps, 500,000 B2 home retrofits/cost optimal equivalents, and the implementation of full district heating and biomethane targets to decarbonise heating sources.

With full implementation of ambitious CAP23 measures, residential and commercial buildings are expected to meet 2030 emissions reduction targets. Cumulative emissions however mean that the commercial buildings SEC will be breached, with the residential SEC projected to remain within limits in the second carbon budget period only.

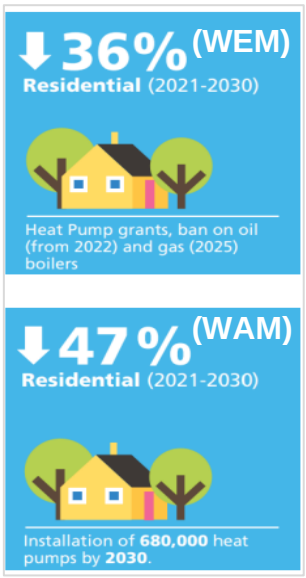


Figure 4 Projected emissions from Residential sector (EPA, 2023)

For Commercial and Public Services, a decrease of 19 - 49% is projected by the EPA (Figure 5). Accelerated retrofitting of private, public, and commercial buildings is required going forward, as re-committed to under the draft CAP24, along with the expansion of renewable heating options such as district heating and electric heat pumps.

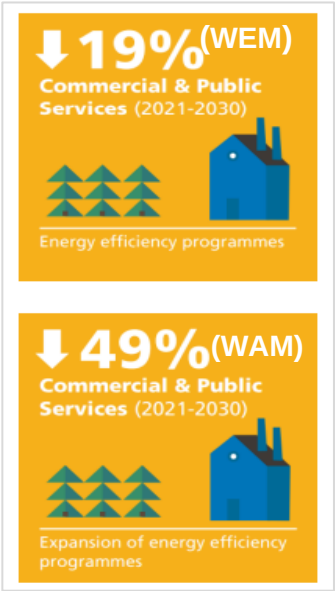


Figure 5 Projected emissions from Commercial and Public Services (EPA, 2023)

Alongside retrofit and renewable heat activity to decarbonise existing buildings, CAP24 re-states the target for all new dwellings to be designed and constructed to Nearly Zero Energy Building standard by 2025, and Zero Emission Building standard by 2030. This will help to prevent new emissions from the sector as building stock grows.

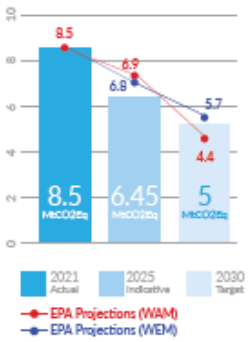
Key measures and actions signposted in the draft CAP24 to reduce emissions from buildings include: continued roll-out of an ambitious National Residential Retrofit Plan; strengthening building regulations; supporting the development of district heating, electrification of heating, and geothermal energy; implementation of the Renewable Heat Obligation and roadmaps and supports to decabonise commerical and public buildings.

Building Better

Key Performance Indicators / 2030 Targets

10,825 Currently	38,679* Currently	0 Currently
400,000 heatpumps in existing homes by 2030	500,000 B2 Retrofits by 2030	2.5TWh of district heating by 2030

Gap to Target



Q1

- Implement Energy Efficiency Obligation Scheme
- Tax incentive for small scale landlords to encourage retrofitting
- District Heating Steering Group recommendations approved by Government

Q2

- Introduce 'net of grant' energy upgrade option for homeowners
- Geothermal Policy Statement
- Heat and Built Environment Delivery Taskforce Implementation Plan
- Launch new retrofit scheme for SMEs

Q3

- Review of cost optimal performance requirements for building regulations
- Low-cost loans available for home retrofit
- Increase number of registered retrofit providers and BER assessors
- National Heat Policy Statement
- Roadmap for retrofit of the commercial building stock
- Develop guidelines on retrofitting traditional/historic buildings

Q4

- Accelerate delivery of green skills apprenticeships
- Roadmap to phase out fossil fuel heating systems in all buildings
- Report on split incentives for rental properties
- Promote statutory requirements for installation of building automation systems
- Enhanced budget for home and community retroht grants and schemes
- Make aggregated retroht project supports available
- Increase budget for SEAI Warmer Homes scheme – 6,000 free upgrades
- Deliver retrohts to approx 2,400 Local Authority Homes
- Accelerate delivery of Dublin District Heating Scheme
- Rollout of solar panels on all schools
- Rollout of Pathhnder Programme for cost effective public sector retrohtting

*The KPI for residential retrofit is the equivalent of 500,000 homes to a BER B2/cost optimal by 2030. This graphic shows the number of B2s delivered but does not include the impact of non-B2 retrofits. For further information please refer to the SEAI Home Energy Upgrades annual report and the National Retrofit Plan.

High Impact Action Complete in Q4 2023: Buildings

Did You Know? Under action BE/23/5 in CAP23, DECC committed to provide a record budget allocation for SEAI residential and community retrofit schemes in 2023. This was confirmed in Q4, with preliminary data showing significant growth in the delivery of home energy upgrades supported by SEAI grants. Across schemes, over 47,800 property upgrades were supported in 2023 - a 76% increase on 2022. Of which, over 17,400 were upgraded to a Building Energy Rating of B2 or better - a 106% increase on 2022.

What's new? Completion and continuation of this action is important to drive retrofit demand and activity at scale and support homeowners, businesses, and community organisations in the climate neutral transition. This will help to reduce emissions from buildings and create a host of additional benefits for occupants including warmer, more comfortable places to live and work, as well as helping to lower energy bills. 64,300 applications for grant support were received by SEAI in 2023 equating to a 28% increase on 2022 levels. This indicates a strong pipeline of works for 2024.

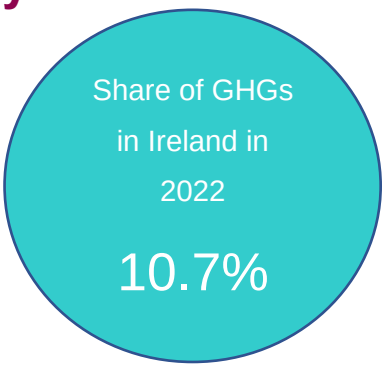
High Impact Action Delayed in Q4 2023: Buildings

Did You Know? A National Heat Policy Statement was due to publish in Q4 2023 under action BE/23/26. This Statement intended to build on findings of the National Heat Study conducted by SEAI that identified the options available to decarbonise Ireland's energy used for heating and cooling homes, businesses and industry. Screening on the Heat Policy Statement completed in Q4, and the outcome identified that a full Strategic Environmental Assessment (SEA) / Appropriate Assessment (AA) is required. Initial statutory consultations are progressing, but this delayed the finalisation of the Statement in Q4 as originally intended.

Why is it needed? A National Heat Policy Statement is essential to provide clarity on planned pathways towards climate neutrality for Irish buildings. This includes, among other elements, decisions on the future use of fossil fuels in buildings, with implications for refurbishments, fuel purchases, renewable heat planning and planned boiler replacements. The publication of the Statement is essential to outline, to all stakeholders, the comprehensive approach to decarbonising the heat sector in Ireland.

High Impact Action Delayed in Q4 2023: **Buildings (Commercial)**
Did You Know? In CAP23, under the action BE/23/31, DETE were to develop a detailed roadmap for long-term decarbonisation of commercial buildings. This action is delayed but is expected to publish shortly once approved by the Commercial Built Environment Working Group and presented to Government for information. This is expected by the end of Q1 2024. **Why is it needed?** The retrofit of Ireland's commercial buildings is central to reaching our 2030 and 2050 national and international decarbonisation targets. The European Green Deal sets our national target for all buildings to be net zero emissions by 2050. The roadmap for long-term decarbonisation of commercial buildings is a key document for Irish businesses that will communicate policy decisions and pathways to decarbonisation. The roadmap will be an important tool for signalling to businesses and generating investment and buy-in.

6 Land Use, Land Use Change and Forestry



Using current estimates, land uses had net emissions of c.7.3Mt CO_2 eq in 2022, more than the emissions from residential buildings. The Land Use, Land Use Change and Forestry (LULUCF) sector has been an emissions source in Ireland since 1990 and has a challenging profile for future emissions creation. Science continues to evolve to better estimate emissions from the sector, which may lead to future inventory changes.

The main emissions source in 2021 in LULUCF was from grasslands on drained organic soil (e.g. used for grazing cattle). Despite currently representing only c.8% of grasslands, they were responsible for over 80% of reported emissions from drained peatlands (excluding forested peatlands). They thus have a disproportionate impact on emissions in the sector.

Forestry on peat soils also creates emissions, as do degraded wetlands (e.g. bogs drained for peat extraction). These sources are offset somewhat by removals of CO_2 through forests on mineral soils, active (wet) bogs and Harvested Wood Products which can act as carbon sinks. An urgency remains to re-balance emissions in the sector in favour of carbon sinks.

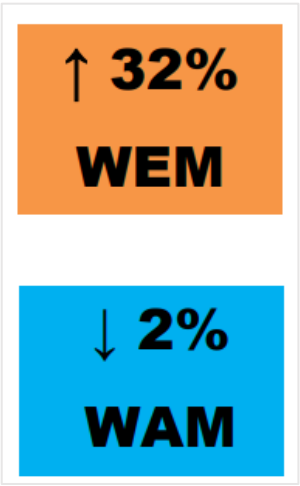


Figure 6 Projected LULUCF emissions to 2030 (EPA, 2023)

The EPA projects that emissions from LULUCF will increase to 2030 as our forestry reaches harvesting age and changes to a carbon source. Planned policies and measures can reduce the extent of the emissions increase, highlighting the importance of rapidly increasing tree planting, managing the water table on agricultural organic soils, and restoring peatland to revert current emissions sources to net sinks.

The draft CAP24 published in December contains detailed discussions on the LULUCF sector and how best to manage emissions from this source going forward. This includes a re-commitment to established activity targets in forestry, peatlands and organic and mineral soils management, and the introduction of some new activity, including in hedgerows. The approach aims to better align with EU targets for the sector and to account for fluctuating baselines as scientific understanding evolves.

CAP24 acknowledges that it will be necessary to review and amend LULUCF activity levels to align with EU LULUCF Regulation targets and the demands on the sector from our national and international commitments, including to provide for the achievement of climate neutrality by no later than 2050.

Changing Our Land Use

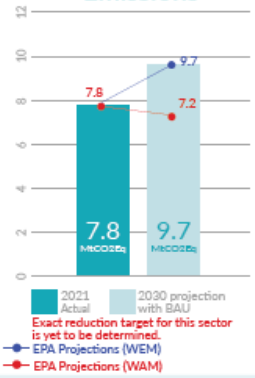
Key Performance Indicators / 2030 Targets

8,000ha per annum afforestation by 2030

80,000 ha reduction in organic grassland intensity by 2030

77,600 ha peatland rehabilitated by 2030

Unabated LULUCF Emissions



Q1

- Provide financial support to farmers to increase the number of hedgerows and trees on farms
- Cover crop measure included in CAP Strategic Plan
- Financial supports to improve carbon sequestration on mineral grasslands
- Impose mandatory carbon sequestration requirements under Nitrates Derogation
- Financial supports to reduce management of grasslands on drained organic soils
- EU Just Transition funding for research and knowledge transfer
- Phase 1 of Land Use Review
- Commencement of Phase 2 of Land Use Review

Q2

- Adoption of tree planting and management measures under new Forestry Programme
- Launch capital supports for tillage equipment
- Capital supports for mineral grassland management equipment

Q3

No high impact reportable actions for delivery this quarter

Q4

- Continued funding of Straw Incorporation Measure
- GHG towers installed on mineral and organic grasslands
- Restoration and rehabilitation of Bord na Móna peatlands
- Establish Peatland Finance Ireland
- Land Use Review Interim Reporting

High Impact Action Completed in Q4 2023: LULUCF

Did You Know? Under Action LU/23/15, CAP23 committed to an on-going programme to restore and rehabilitate former Bord na Móna peatlands. 11,000ha had already been rehabilitated by the end of December 2022, with a remaining 22,000ha scheduled for rehabilitation by end of 2026 in over 80 Bord na Móna bogs. Rehabilitating bogs where turf has been extracted for use is essential to reduce emissions from this source and begin converting these areas back into carbon sinks. Re-wetting is a common practice to achieve this goal.

What's new? 16,090 hectares (TBC) of former Bord na Móna lands have been rehabilitated by the end of Q4 2023 under their 'Enhanced Decommissioning, Rehabilitation and Restoration Scheme'. Monitoring and data collection for the scheme is ongoing and the first Monitoring and Verification Report is now available online. As well as helping to reduce and store emissions, this activity will also benefit biodiversity, water quality, catchment management and provide space for local communities and people to enjoy the outdoors.

High Impact Action Delayed in Q4 2023: LULUCF

Did You Know? Completing a Land Use Review was a key commitment in the Programme for Government 2020. Phase 1 of the Review published in Q1 2023 (LU/23/19) and provided a scientific assessment of the environmental, ecological and economic characteristics of land types across Ireland. Phase 2 thereafter commenced with interim reporting due to Government in Q4 2023. This did not complete on time, though a status report issued to relevant Ministers on 20 December.

Why is it needed? Phase 2 of the Land Use Review needs to translate the scientific results from Phase 1 into the policies, measures and actions necessary to achieve our economic, social and climate objectives from land. The purpose of the initially planned Interim Report was superseded by the publication of CAP24 and its new approach to LULUCF. A detailed implementation plan will be delivered on this aspect in mid-2024. Periodic status reports on the Land Use Review will continue in 2024, with a Final Report to Ministers now expected in Spring 2025.

7 Industry

Industrial emissions accounted for 9.7% of Ireland's total emissions in 2022, with manufacturing combustion and industrial processes as the key emissions sources. These emissions are largely affected by cement production in Ireland, with emissions increasing, for example, in times of economic boom and when Covid-19 restrictions relaxed.

The EPA projections report notes that manufacturing combustion emissions will reduce by 6-22% from 2021 to 2030 with the implementation of efficiency measures and renewable heat generation in Irish industries. The full implementation of biomethane targets (with use split across heating in buildings as well as meeting industry needs) is also required to meet the upper end of this range.

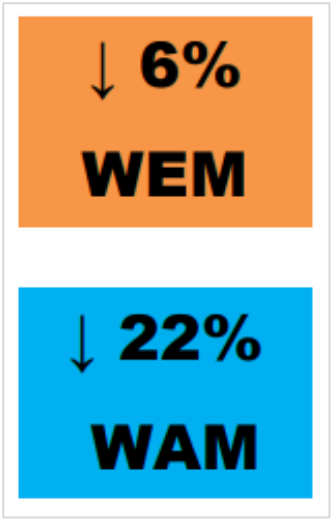


Figure 7 Projected manufacturing combustion emissions to 2030 (EPA, 2023)

Meanwhile, process emissions are projected to increase by 5% in the same time period under the EPA's WEM scenario due to anticipated increased cement production. There is no WAM scenario for process emissions as no additional measures are yet identified in annual CAPs, or otherwise, to address them.

The EPA were unable to model the full CAP23 targets for renewable heating in industry nor measures aimed at decreasing embodied carbon in construction materials due to unclear implementation pathways. The use of Carbon Capture, Utilisation and Storage (CCUS) in industry post-2030 was also not included for the same reason. The industry SEC is thus expected to be breached by quite a significant margin according to the EPA, without better defined emissions reducing pathways.

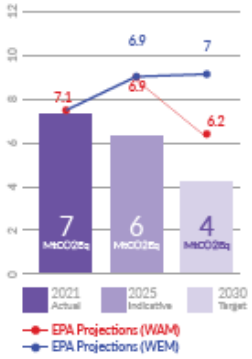
The draft CAP24 notes the key measures to decarbonise the industry sector include increasing carbon-neutral heating in industrial manufacturing processes; decreasing embodied carbon in construction materials; and reducing fossil fuel demand through enhanced energy efficiency measures across industry. Actions highlighted for this sector in CAP24 include expanding and enhancing supports from the SEAI, IDA Ireland, and Enterprise Ireland to achieve energy demand reduction, enhanced electrification, and biomass adoption in industry. The development of a CCUS strategy to provide a clear policy framework to guide long-term investment decisions is also committed to by Q3 2024.

Greening Industry

Key Performance Indicators / 2025 Targets

A reduction in fossil fuel share of overall industry energy demand to 45% by 2025 compared to 2018 baseline (64%)

Gap to Target



Q1

No reportable actions for delivery this quarter

Q2

- Develop roadmap for green hydrogen

Q3

- Industry inputs to National Biomethane Strategy
- Technical guidelines on low carbon construction methods for public bodies

Q4

- Annual Review of Support Scheme for Renewable Heat
- Decarbonisation roadmap for industrial heat
- Feasibility assessment of carbon capture storage
- Public procurement policy re low carbon construction
- Report on actions to decrease embodied carbon in construction

High Impact Action Delayed in Q4 2023: **Industry**

Did You Know? Under action EN/23/3, DETE sought to prepare a decarbonisation roadmap for industrial heat in Q4 2023. This roadmap was delayed in Q4 but is now being reviewed in advance of publication, which is expected shortly. This work will be based on the recommendations of the SEAI National Heat Study which provides a comprehensive assessment of the options available to decarbonise Ireland's energy used for heating and cooling homes, businesses, and industry.

Why is it needed? Carbon abatement in industry requires improvements in energy efficiency; greater electrification of low-to-medium temperature heating; and increased supply and use of biomethane and green hydrogen for higher temperature purposes. The National Heat Study notes that a clear signal is required for fuel switching in industry, which this action EN/23/3 could provide. A timetable for the phase out of fossil fuels, a switch to green hydrogen or biomethane use on the gas grid and a combination of the use of district heating and heat pumps will play a vital role in fast decarbonisation of industry in Ireland. This needs to be clearly mapped out to promote the required behavioural changes and investment.

High Impact Action Delayed in Q4 2023: **Industry**

Did You Know? Under action EN/23/6, DECC were to conduct a feasibility assessment on carbon capture and storage (CCS). CCS involves capturing the carbon dioxide produced by power generation or industrial activity and then storing it through sequestering it in geological formations or within materials.

Why is it needed? CCS is particularly suited to capturing the emissions from sources such as in industry and energy production. A strategy in this space is essential to provide a clear policy framework to guide long-term investment decisions. CCS will play a key role in the industry decarbonisation pathway, particularly in difficult-to-abate areas. The National Heat Study also recognises the importance of carbon capture and storage. A Carbon Capture, Utilisation and Storage (CCUS) Strategy is now committed to by Q3 2024 under the draft CAP24.