



Rialtas na hÉireann
Government of Ireland

Climate Action Plan 2021

Progress Report

Q3 2022



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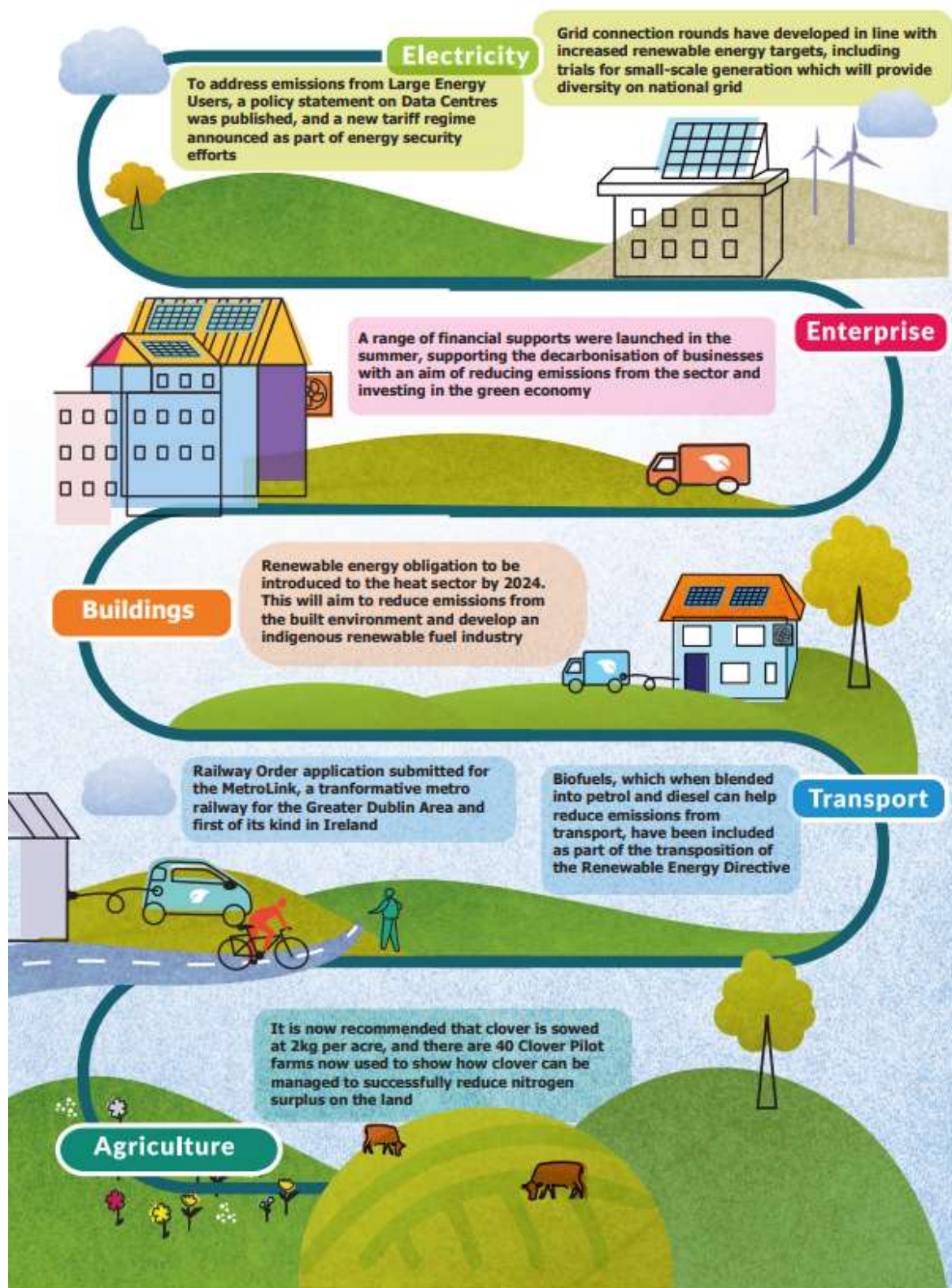
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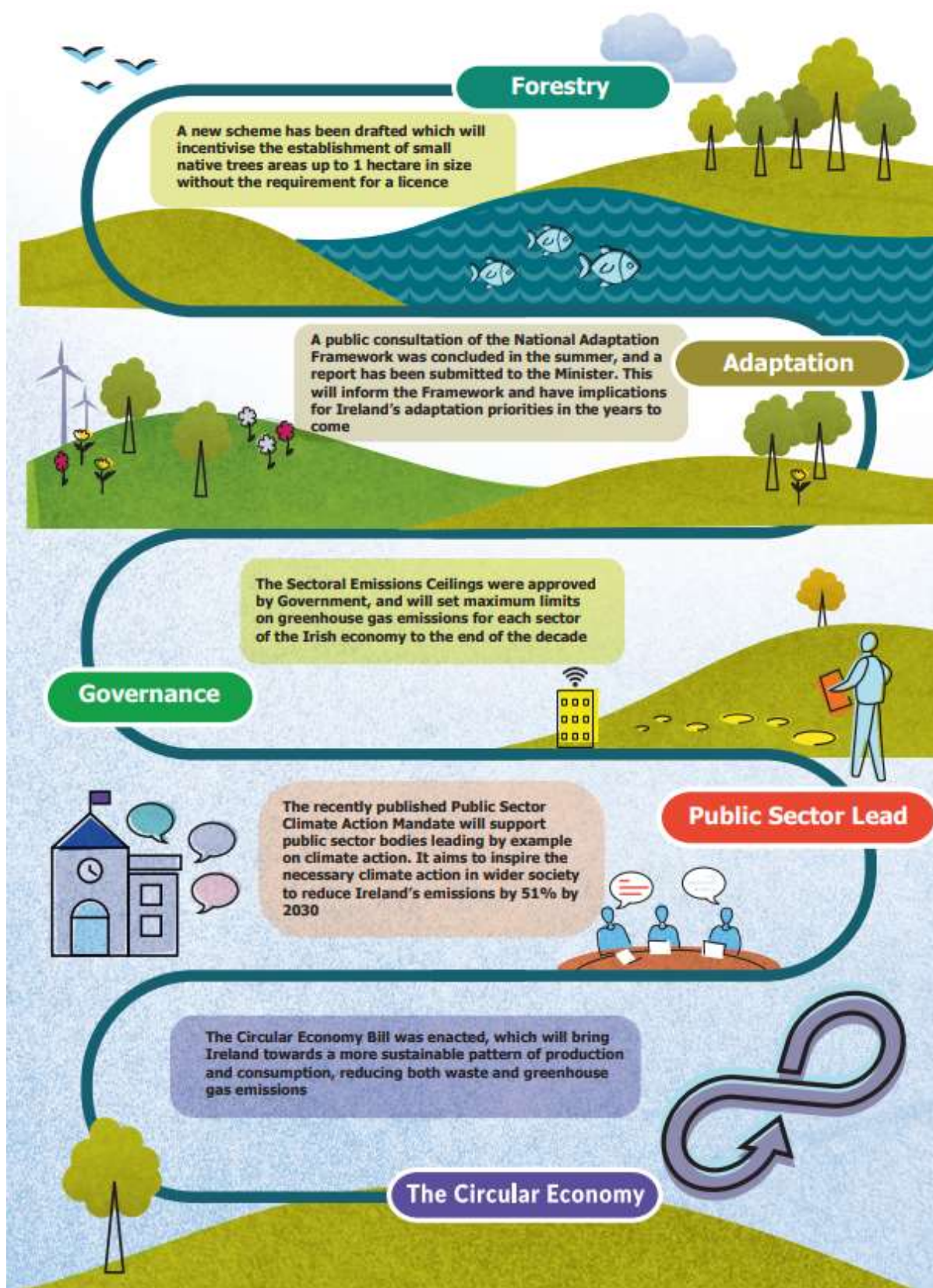
Glossary of Acronyms

CADB	Climate Action Delivery Board
CAP	Climate Action Plan
CCAC	Climate Change Advisory Council
CO₂	Carbon Dioxide
COP	Conference of Parties
CRU	Commission for Regulation of Utilities
DAFM	Department of Agriculture, Food and the Marine
DCEDIY	Department of Children, Equality, Disability, Integration and Youth
DECC	Department of the Environment, Climate and Communications
D/Education	Department of Education
DETE	Department of Enterprise, Trade and Employment
DFA	Department of Foreign Affairs
DFHERIS	Department of Further and Higher Education, Research, Innovation and Science
DFIN	Department of Finance
D/Health	Department of Health
DHLGH	Department of Housing, Local Government and Heritage
DPER	Department of Public Expenditure and Reform
DRCD	Department of Rural and Community Development
DSP	Department of Social Protection
D/Taoiseach	Department of the Taoiseach
DTCAGSM	Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
D/Transport	Department of Transport
EPA	Environmental Protection Agency
EU	European Union
EV	Electric Vehicle
EXEED	Excellence in Energy Efficiency Design
GHG	Greenhouse Gases
GW	Gigawatt
IDA	Industrial Development Agency
IPCC	Intergovernmental Panel on Climate Change
LED	Light-Emitting Diode
LULLUCF	Land Use, Land-use Change and Forestry
NAF	National Adaptation Framework
NPF	National Planning Framework
RES-E	Renewable Energy Share – Electricity
SEAI	Sustainable Energy Authority of Ireland
SEC	Sectoral Emissions Ceilings
SME	Small and Medium-sized Enterprises
US	United States

Q3 2022 Infographic

Q3 2022 Highlights - Delivery Rate: 60%





Overall Climate Action Plan 2021 delivery to date: 77%

Executive Summary

This Progress Report details progress on the implementation of measures under the Climate Action Plan (CAP) 2021 across Government Departments and Agencies in Q3 2022. The report is organised into sectoral chapters, in order of emissions impact, with detail given on key emissions trends in each sector and high impact sectoral measures completed and delayed this quarter. The progress of all measures is in **Appendix 1**, providing transparency and accountability on all measures due for reporting this quarter.

Overall, a **delivery rate of 60% is reported for Q3 2022**, with 74 of 124 measures completed on time. The progress of measures delayed from previous quarters is also tracked in this report. Delivery of these carry-over measures was slow in Q3, with just 32% of the 171 delayed measures completing this quarter. The overall implementation rate of the CAP 2021 to date (combining delivery from Q4 2021 to Q3 2022) stands at 77%, with 542 of 708 measures completed.

The need to overcome delays in climate action implementation is clear, not least against the backdrop of severe climate change impacts witnessed in Q3 2022.

Climate change and extreme weather in Q3 2022

The summer of 2022 brought many extreme weather events across the world, as temperatures [broke records](#) across Europe, North Africa, the Middle East and Asia. Wildfires and drought [wreaked havoc on broad sectors of the economy](#) and further strained supply chains which had already been impacted by the war in Ukraine. For example, water levels in key trade routes, such as the Rhine and Danube, were too low to allow shipments of grain, coal and diesel to navigate to their markets.

In July, a heatwave swept across Europe, breaking all-time records for heat. In Ireland, the highest temperature since the early 1800s was also recorded, reaching 33.0°C. Meanwhile in the United Kingdom, an [official reading of 40 degrees Celsius](#) was recorded for the first time ever, resulting in the Government declaring a national emergency. [Research by the Weather Attribution Service](#) revealed that human-induced climate change made the heatwave at least “10-times more likely”.

In August, a record-breaking monsoon season brought [significant flooding to Pakistan](#), killing more than 1,500 people and impacting 33 million more. In September, one of the most [dangerous storms in years](#) hit Cuba, Florida and the east coast of the United States. It killed at least 100 people and caused infrastructural damage that made it the [costliest storm in US history](#).

Regrettably, Q3 [heatwaves also drove up excess deaths by 53,000 in the EU](#), with Spain and Cyprus experiencing the worst increases in mortality rates. The overall increase was 16% above average. This compares to a 3% excess mortality value for the same time in 2020, the first year of the Covid-19 pandemic, and 6% in 2021.

The need for climate action against this devastating global backdrop is clear, both from mitigation and adaptation perspectives. While every effort needs to be made to reduce emissions to mitigate any

further escalation of global warming, the [global goal of Adaptation was one of the key outcomes of COP26](#) and is critical to prevent loss and damage from the effects of warming already built into the system from human activities. Adaptation will feature as an important topic in the upcoming COP27.

Energy Security

The issue of energy security also continued to dominate throughout Q3 both internationally and in Ireland. The Department of the Environment, Climate and Communications (DECC) [launched](#) a consultation on the review of the security of energy supply for Ireland's gas and electricity systems for 2030. This was carried out in the context of a sustainable transition to net zero emissions by 2050. The nation's high dependence on fossil fuels and increased demand on existing energy generation is a key cause for concern, as highlighted in the [Annual Review of the Climate Change Advisory Council \(CCAC\)](#) also released this quarter.

However, there are opportunities. European Commission president Ursula von der Leyen stated in an [interview](#) how “Ireland has the potential to become the success story of the clean energy transition”, and a “renewable superpower” due to the country's geography and natural resources.

International and domestic climate action

Further, the largest investment in combatting climate action in US history [was passed](#) this quarter, with the Inflation Reduction Act, which sets out \$369bn to address the issue. This includes tax credits for citizens to buy electric vehicles (EVs), investment in speeding up the deployment of renewables, and adaptation funding for the country's most vulnerable communities.

Domestically, a number of key climate actions were also achieved in Q3 as reported in this Third Progress Report on Climate Action Plan 2021. This includes the launch of a [€65m National Challenge Fund for research and innovation](#) to address climate and technology challenges, the publication of a [Climate Action Mandate](#) for enhanced emissions reductions from the public sector, Government approval of a [Climate Action Framework for the Commercial Semi-State Sector](#), and the [launch](#) of new solar Photovoltaics (PV) grants for businesses, public organisations and community groups.

Most significantly, the Sectoral Emissions Ceilings (SECs) [were agreed by Government and published in July](#). The SECs set maximum limits on greenhouse gas emissions for each sector of the economy to the end of the decade, aligning with the [carbon budgets](#) previously agreed by Government. The SECs will inform the next iteration of the CAP, due by year end, establishing a clear roadmap for each sector to achieve legally binding emission reduction targets.

Overview of delivery in Q3 2022

295 measures were scheduled for delivery in Q3 2022, comprising 171 delayed measures from previous quarters, and 124 'new' Q3 measures. An **implementation rate of 60% was achieved** on the new Q3 measures, with 74 of the 124 measures delivered by the end of the quarter (Table 1).

Progress on the delivery of measures delayed from previous quarters was slow in Q3, with just 32% of the 171 delayed measures completing in Q3 (55 measures in total). The overall implementation rate of the CAP 2021 to date (combining delivery from Q4 2021, Q1 2022, Q2 2022 and Q3 2022) stands at 77%, with 542 of 708 measures completed.

Delivery rates by Department for Q3 are detailed in Table 1, while overall implementation rates to date of the CAP 2021 are detailed in Tables 2 and 3.

Table 1 - Delivery rate by Department on Q3 2022 measures

Department	New Q3 Actions	Complete	Delayed	Q3 Delivery Rate
D/Taoiseach	7	6	1	86%
DAFM	19	15	4	79%
DECC	44	18	26	41%
D/Education	2	2	0	100%
DETE	9	6	3	67%
DFA	1	1	0	100%
DFHERIS	2	2	0	100%
DFIN	12	11	1	92%
DHLGH	12	5	7	42%
DPER	2	0	2	0%
DTCAGSM	4	3	1	75%
D/Transport	8	4	4	50%
DCEDIY	2	1	1	50%
TOTAL	124	74	50	60%

Table 2 - Implementation to end of Q3 2022 of all measures due under CAP 2021

	Measures Completed in the Quarter	Measures Subsequently Delivered	Total Measures Delivered to date	Measures still delayed	Overall Delivery Rate
Q4 2021	194	22	216	15	94%
Q1 2022	113	37	151	40	79%
Q2 2022	73	28	101	61	62%
Q3 2022	74	N/A	74	50	60%
Total CAP 2021 Delivery to date	454	88	542	166	77%

Table 3 - Implementation by Department to end of Q3 of all measures due under CAP 2021

Department	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Total Measures Complete	Total Measures Due	Delivery Rate to Date
D/Taoiseach	5	9	5	6	25	31	81%
DAFM	43	37	20	15	115	142	81%
DECC	55	27	39	18	139	204	68%
D/Education	2	3	3	2	10	10	100%
DETE	23	16	10	6	55	59	93%
DFA	2	1	2	1	6	6	100%
DFHERIS	1	4	1	2	8	8	100%
DFIN	9	3	1	11	24	25	96%
D/Health	10	2	1	0	13	16	81%
DHLGH	24	18	5	5	52	77	68%
DPER	7	1	1	0	9	16	56%
DRCD	5	1	0	0	6	6	100%
DTCAGSM	6	8	2	3	19	24	79%
D/Transport	22	21	10	4	57	79	72%
DSP	2	0	0	0	2	2	100%
DCEDIY	0	0	1	1	2	3	67%
TOTAL	216	151	101	74	542	708	77%

'High Impact' measures completed in Q3 2022

With significant potential for direct or indirect emissions reduction and/or building adaptation resilience to climate change, a number of 'high impact' measures were completed in Q3 2022. This includes the delivery of some 'high impact' measures delayed from previous quarters, as well as some new measures from Q3 2022 with high mitigation and/or adaptation potential.

Examples of 'high impact' completed measures are outlined in Tables 4 and 5. Further sectoral highlights can be found within each chapter of this Progress Report, with detail on every measure due for reporting contained in **Appendix 1**.

Table 4 - 'High Impact' measures rolled over from previous quarters that completed in Q3 2022

Sector	Action / Measure
Agriculture	<i>Action 362a:</i> Develop and roll-out a Training of Farm Advisors Programme to 400 public and private advisors
Transport	<i>Action 247a:</i> Submit railway order application for MetroLink
	<i>Action 283a:</i> Transpose biofuel elements of the Renewable Energy Directive
Electricity	<i>Action 107a:</i> Introduce interim regulations amending solar panel planning exemptions, with defined exclusion zones around airports
Buildings	<i>Action 172b:</i> Determine if renewable energy obligation should be introduced in the heat sector

Enterprise	<i>Action 99b:</i> Review the Government Statement on the role of Data Centres in Enterprise Policy, ensuring alignment with renewable electricity targets and SECs
Public Sector Lead	<i>Action 55b:</i> Issue a policy direction to all public bodies requiring a public body to adopt a Climate Action Mandate
	<i>Action 264b:</i> Issue tenders to retrofit the remaining public lighting network of 202,000 lights to energy efficient LED lights
	<i>Action 268b:</i> Introduce 219 hybrid buses into full service
Circular Economy	<i>Action 428a:</i> Enact the Circular Economy Bill 2021
Governance	<i>Action 6b:</i> Finalise carbon budgets and sectoral emissions ceilings

Table 5 - New 'High Impact' measures completed in Q3 2022

Sector	Action / Measure
Agriculture	<i>Action 324c:</i> Increase use of clover in reseeded swards
Transport	<i>Action 231e:</i> Develop Cycle Network Plans for each Local Authority
	<i>Action 248a:</i> Introduce National Youth Travel Card
Electricity	<i>Action 99c:</i> Consider further regulatory levers to manage demand from large energy users
	<i>Action 114a:</i> Continue to deliver regular rounds of grid connection offers in line with RES-E targets
LULUCF	<i>Action 371a:</i> Design an agri-environment scheme that incorporates the afforestation of small areas of native tree species
Buildings	<i>Action 185b:</i> Launch an SME energy efficiency loan guarantee scheme
Enterprise	<i>Action 164b:</i> Support industry investment in decarbonised processes through the Carbon Reduction Fund, the Environmental Aid programme, EXEED and other enabling supports
Public Sector Lead	<i>Action 61b:</i> Progress implementation of the Energy Efficiency and Decarbonisation Pathfinder Programme
Just Transition	<i>Action 197b:</i> Provide training to the construction sector in the use and installation of low carbon technologies and materials
Engagement	<i>Action 34d:</i> Commence roll-out of centralised climate action communications
Carbon Pricing	<i>Action 67a(i):</i> Consider a number of reforms to the taxation system under relevant tax heads from an environmental perspective
Adaptation	<i>Action 455b:</i> Report to Minister the results of the National Adaptation Framework review process

'High Impact' measures not delivered in Q3 2022

Similar to tracking the completion of high impact measures, it is just as important to highlight measures that were not completed on time in Q3 2022 that hold significant emissions reduction and/or adaptation potential.

There is a pressing need to overcome all delays in implementation to meet legally binding emissions reduction targets at EU and national levels. Accelerated action is needed across all sectors.

Examples of 'high impact' delayed measures can be found in Tables 6 and 7. As before, this includes 'high impact' measures delayed from previous quarters that continued to be delayed, as well as new

Q3 measures that failed to complete on time. Further elaborations are contained within each Progress Report chapter, with detail on all delayed measures contained in **Appendix 1**.

Table 6 - 'High Impact' measures from previous quarters that continued to be delayed in Q3

Sector	Action / Measure
Agriculture	<i>Action 321a:</i> Produce detailed plans to manage the sustainable environmental footprint of the dairy and the beef sectors
Transport	<i>Action 275a:</i> Roll out an engagement strategy to drive EV uptake
	<i>Action 288a:</i> Publish the 10-year Strategy for the Haulage Sector
Electricity	<i>Action 105c:</i> Publish High-Level Design for a Microgeneration Support Scheme
LULUCF	<i>Action 364d:</i> Launch the new Forest Strategy
	<i>Action 366c:</i> Increase participation of existing forestry schemes
	<i>Action 406a:</i> Publish restoration plan for 60ha of blanket bog
Buildings	<i>Action 197a:</i> Develop a roadmap to promote greater use of lower-carbon building material in construction
	<i>Action 225a:</i> Publish new guidance for the retrofitting of traditional buildings
Enterprise	<i>Action 167a:</i> Agree high level decarbonisation plan with the alumina manufacturing sector
Public Sector Lead	<i>Action 53b:</i> Publish new Public Sector Strategy for delivery
Governance	<i>Action 1a:</i> Finalise Ireland's long-term climate strategy
Carbon Pricing	<i>Action 69b:</i> Revise shadow price of carbon in light of enhanced climate ambition in the Climate Act 2021

Table 7 - New 'High Impact' measures delayed in Q3 2022

Sector	Action / Measure
Agriculture	<i>Action 315a:</i> Explore pathways for earlier finishing of beef animals
LULUCF	<i>Action 393a:</i> Complete Phase 1 Evidential Review of the Land Use Review in line with the Programme for Government 2020
Buildings	<i>Action 185a:</i> Develop an approach to retrofit of commercial buildings
	<i>Action 189e:</i> Determine the appropriate model for the development and ownership of district heating
	<i>Action 218a:</i> Introduce a residential retrofit loan guarantee scheme, including access for landlords to help address the split incentive issue
Public Sector Lead	<i>Action 9b:</i> Develop options to enhance climate action delivery and tackle key implementation challenges
Circular Economy	<i>Action 434b:</i> Agree and set out a Bioeconomy Action Plan
Adaptation	<i>Action 492b:</i> Refurbish / upgrade energy assets to adapt to climate change impacts on vulnerable infrastructure

Overcoming challenges to climate action implementation

Delays in climate action implementation must be overcome to meet national and EU emissions reduction obligations. Even with full implementation of all CAP 2021 measures, the EPA (2022) estimate that emissions would only fall by 28% by 2030, not the required 51%. The Agency stresses the need for urgent implementation of all climate plans and policies, plus further new measures, to meet 2030 targets and put Ireland on track for climate neutrality by 2050.

In this context, any failures or delays in implementation experienced in CAP 2021 are stark, and increase the likelihood of not meeting legally-binding carbon budgets and SECs.

The key reasons cited by Departments for delayed implementation Q3 echo those seen in previous quarters and include lengthy stakeholder consultation processes; capacity and capability constraints across the public sector; and desires for alignment with other measures to enhance impact. Legislative delays remained prominent in Q3, along with issues arising from the layers of administrative clearance often required for measures to complete.

The issue of continuous, rollover delays in action delivery must be particularly addressed, where actions delayed from previous quarters remain uncompleted despite additional time gained. While the Q2 2022 Progress Report predicted that half of the 171 delayed measures rolling over would complete in Q3, only 32% of them were delivered (55 of the 171 measures).

Combined with 50 new delays from Q3 2022, all 166 delayed measures will carry forward for delivery and reporting in Q4 2022 to maintain transparency and commitment to their implementation.

Further detail on the high impact measures due for delivery in this reporting period is provided next, structured into sectoral chapters. Full detail on all completed and delayed measures due for reporting in Q3 2022 is contained at **Appendix 1**.

Agriculture

Progress in Q3 2022

Context:

Agriculture is the largest GHG emitting sector in Ireland, accounting for 37.5% of national emissions in 2021 (not including additional agriculture related land use emissions considered in the LULUCF chapter). According to the EPA, agricultural emissions increased by 3% in 2021 and are overall up 19.3% in the last ten years (2011-2021). Emissions from the sector are going in the wrong direction, and in 2021, were 15% above 1990 levels.

Increases in nitrogen fertiliser use (+5.2%), liming (+49.5%), dairy cow numbers (+2.8%) and milk production (+5.5%) are attributed as the key reasons for increases in this sector's emissions in 2021 compared to 2020. While enhanced levels of liming improves soil fertility and therefore may reduce fertiliser use in future years, emissions from agriculture are projected to further increase with continued expansion of animal numbers. An upward trend in animal numbers has dominated agricultural emissions since the abolition of milk quotas in 2015 and reflects national plans to expand milk production under Food Wise 2025.

The Climate Action Plan (CAP) 2021 identified abatement potential in agriculture in areas of fertiliser use and composition, income diversification, low emissions slurry spreading, reduced slaughter ages, animal breeding and feed management. The quantifiable impact of these actions on methane emissions in particular however remained unclear for the EPA when determining future emissions projections for the sector. More specific actions and planned implementation pathways will be required to resolve this in CAP 2023, particularly given that methane associated with ruminant livestock production accounts for 68% of Irish agricultural GHG emissions (Teagasc 2022).

Overall, in 2021, enteric fermentation (associated with the digestive process of cattle and sheep) was responsible for 60.7% of emissions in agriculture, followed by emissions from agricultural soils (21.8%) and manure management (11.7%). Emissions from fuel combustion, liming and urea application make up the remainder (5.8% combined).

In its Annual Review 2022, released in Q3, the Climate Change Advisory Council (CCAC) similarly attest that Agriculture and Land Use in Ireland are not, as yet, on a sustainable path. They call for accelerated action to not only pursue low-emissions agriculture and land use, but reverse the decline also seen in water quality and biodiversity as a result of existing activities. Significant and immediate reductions in both methane and nitrous oxide emissions are required according to the CCAC.

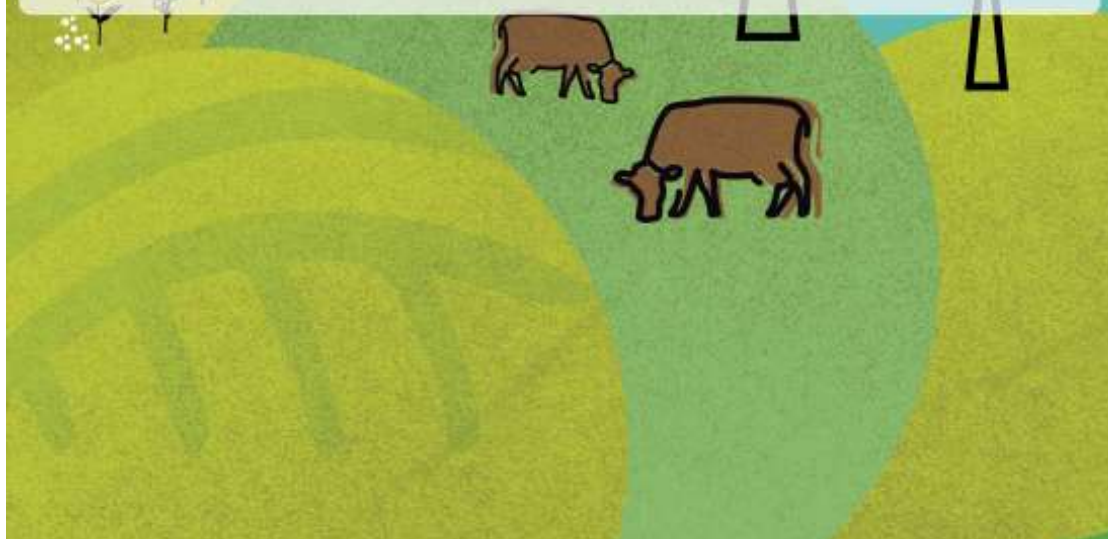
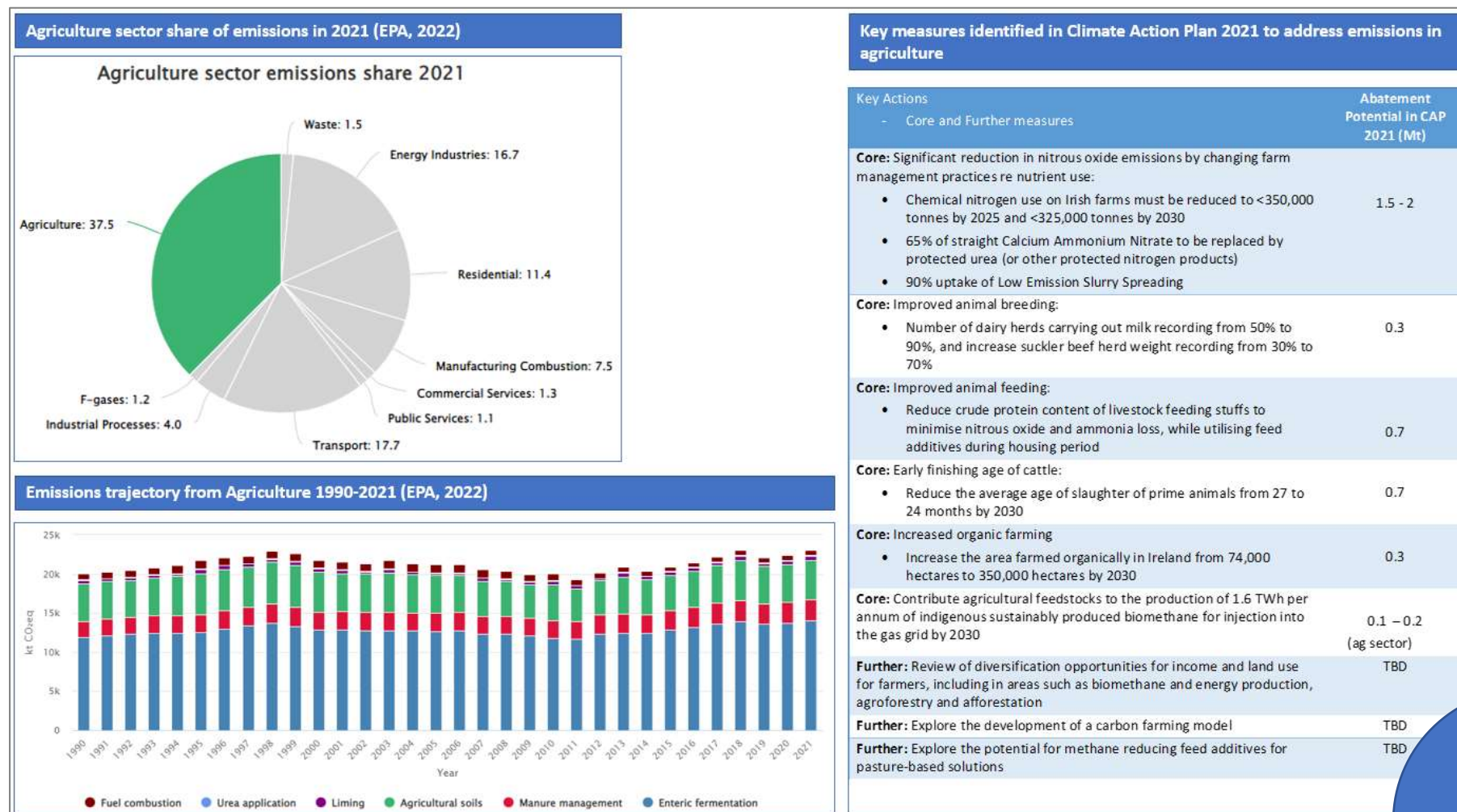


Figure 1 – Agriculture: emissions context (excluding agriculture-related LULUCF emissions) and key actions from CAP 2021



Gap to 2030
Target
Agriculture
5.85Mt*

*Gap comprising the 2021 EPA emissions figure for agriculture (23.1Mt) minus the agriculture SECs target for 2030 (17.25Mt)

Table 8 - 'High Impact' completed agriculture measures in Q3 2022

Agriculture Action / Measure Achieved	Why is this important?
<i>Action 324c:</i> Increase use of clover in reseeded swards (2kgs/ac)	Including clover in grassland on farms can improve profitability and reduce GHGs. Clover fixes nitrogen from the atmosphere into the soil, thereby reducing the need for chemical nitrogen fertiliser and associated nitrous oxide emissions. Teagasc developed methods and recommendations for the incorporation of clover on-farm in Q3, and additionally run 40 Clover Pilot farms and 12 Clover farm walks to raise awareness and demonstrate success.
<i>Action 362a:</i> Develop and roll-out a Training of Farm Advisors Programme to 400 public and private advisors to upskill in key areas such as climate change, health and safety, biodiversity, and soil and water challenges	Delayed since Q4 2021, the training and upskilling of farm advisors has now been rolled out successfully. A Continuing Professional Development Programme was launched in September 2022 for advisors, including training modules on climate change mitigation and adaptation. This advisory training is important to, in turn, support farmers to upskill and implement climate mitigation practices at farm level. The training is compulsory and is a requirement for at least 900 public and private agricultural advisors.

Table 9 - 'High Impact' delayed agriculture measures in Q3 2022

Agriculture Action / Measure Delayed	Why is this important?
<i>Action 313b:</i> Examine the effects of feed ingredients/ additives (seaweeds, seaweed extracts, oils, and halides) in sheep and cattle	New feed additives hold the potential to reduce methane emissions from animals, particularly during animal housing periods. Important research concluded on the use of seaweed, oil, and halide additives for sheep in Q2. However, some delays continued in concluding the parallel beef cattle trials due to initial equipment supply delays during Covid-19. Two out of three cattle trials nevertheless completed in Q3, with early data showing potential methane reductions between 4.5% and 20.5% depending on the type and quantity of feed additive used (e.g. brown seaweed versus linseed respectively).
<i>Action 315b:</i> Explore pathways to encourage earlier finishing of beef animals	Under correct feeding conditions, reducing the age of animal slaughter from 27 to 24 months can reduce GHGs by c.250kg / head or c.3.6% per animal per month. This is a key target under CAP 21 for agricultural emissions reduction by 2030. Delays were encountered however in progressing this measure in Q3, with a multi-agency approach required to examine options and facilitate implementation.
<i>Action 321a:</i> Produce detailed plans to manage the sustainable environmental footprint of the dairy and the beef sectors	Detailed plans to manage the sustainable environmental footprint of the dairy and the beef sectors are crucial to map credible, quantifiable and implementable pathways in the areas of farming most responsible for agricultural emissions. Delayed since Q2 2022, the final report of the Food Vision Dairy Group is expected early in Q4. Meanwhile, the Beef and Sheep Group will produce their final report later in Q4 2022.

Transport

Progress in Q3 2022

Context:

Partially rebounding from Covid-19 travel restrictions, transport emissions increased by 6.1% in 2021 in the latest EPA GHG inventory. Overall, the transport sector accounted for 17.7% of Ireland's total GHGs in 2021. Although some travel restrictions remained in place in 2021 which may have allowed figures to remain below pre-Covid 2019 levels, the EPA estimate that transport emissions may actually rise by 18-19% between 2020 and 2022.

Emissions increases in 2021 were driven largely by a rebound in road transport, which accounts for 94% of all transport emissions. While electric vehicle (EV) numbers nearly doubled in 2021 compared to 2020, the rebound in emissions shows that we have not yet effectively decoupled transport emissions from economic activity through sustainable planning or electrification according to the EPA.

CAP 2021 identified abatement potential in transport through the electrification of passenger and light goods vehicles, increased biofuel blend rates and enhanced modal shift to public and active transport. There are now c. 47,000 EVs on Irish roads which is ahead of the linear uptake trajectory towards the 2025 target, and representing c.5% of the 2030 target established in CAP 2021.

However, given the persistent coupling of transport emissions to economic activity as well as anticipated future demand due to population growth, the EPA attest that challenges remain within the sector to reach emissions reduction targets, including a sectoral emissions ceiling of a 50% reduction by 2030 compared to 2018. Indeed, transport emissions overall have increased by 112.2% between 1990 and 2021, the greatest increase of all sectors.

Similarly, in its Annual Review, while the CCAC praised positive initiatives of late in transport (e.g. the reduction in public transport fares), they underscore the need for longer term, sustainable transport planning. For the CCAC, this could include enhanced public transport provision, more targeted EV supports for high-kilometre drivers, low cost finance options for EV purchase, vehicle tax reforms, congestion charging and a phase out of subsidies for diesel use in haulage.

The CCAC also caution an over-reliance on biofuel blending, recommending a pause on the roll-out of such measures to allow for a review of their long-term sustainability, rebound effects and supply chain concerns.

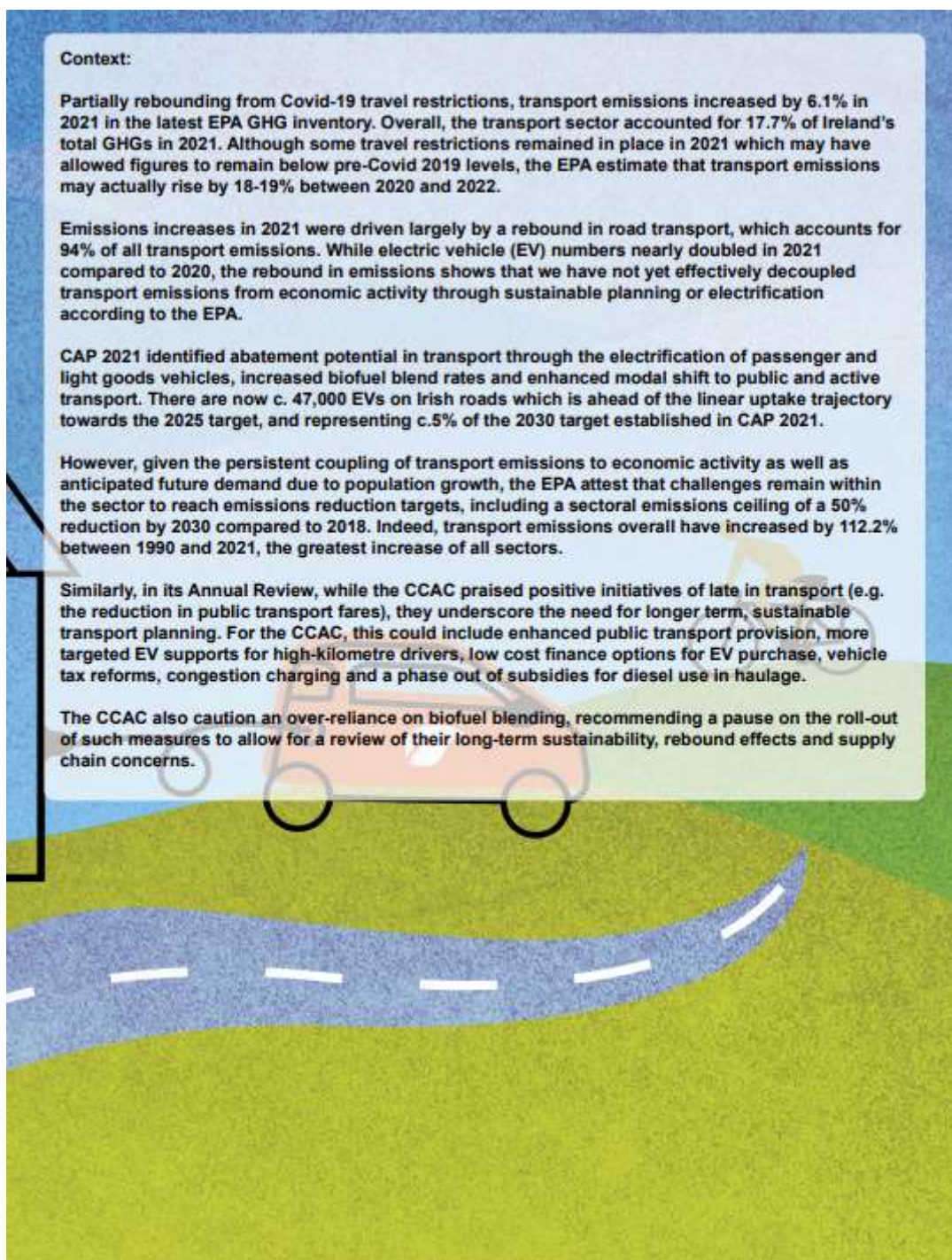
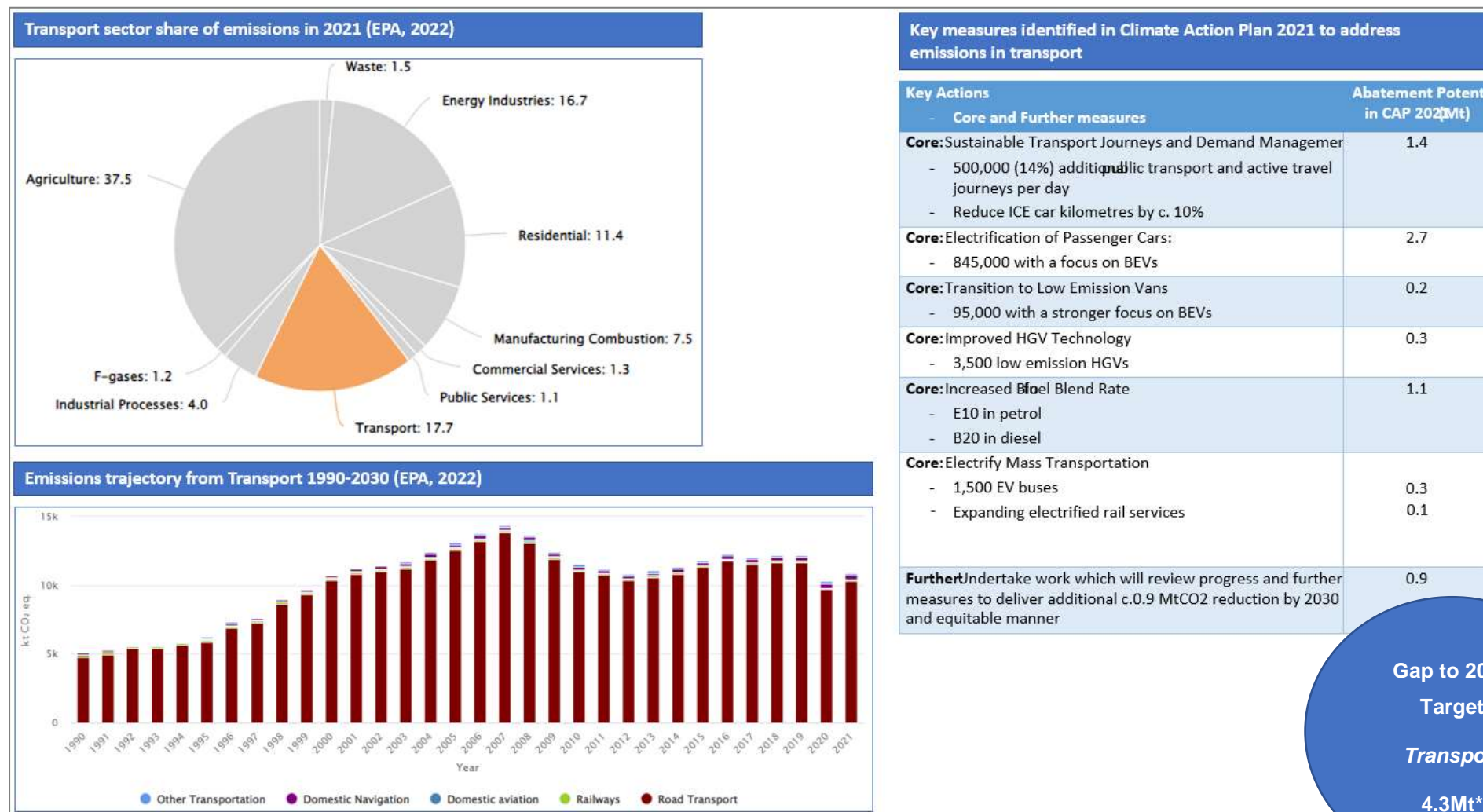


Figure 2 – Transport: emissions context and key actions from CAP 2021



*Gap comprising the 2021 EPA emissions figure for transport (10.3Mt) minus the transport SECs target for 2030 (6Mt).

Table 10 - 'High Impact' completed transport measures in Q3 2022

Transport Action / Measure Achieved	Why is this important?
<i>Action 231e:</i> Develop Cycle Network Plans for each Local Authority	Encouraging cycling will help reduce emissions and provide well-being and health benefits. Providing safe, segregated cycle lanes to engage in such activity is crucial. Proposals for 'CycleConnects', Ireland's Cycle Network in key cities, towns and villages across 22 counties, were published on the NTA's consultation platform in September.
<i>Action 247a:</i> Submit railway order application for MetroLink	Enhancing public transport options is essential to reduce reliance on private cars and provide alternative, sustainable transport modes to citizens. The MetroLink is an ambitious rail "megaproject", mostly underground, that will connect North and South Dublin. The planning application to An Bord Pleanála for the rail route was submitted in Q3, representing a significant step forward in the project's development.
<i>Action 248a:</i> Introduce National Youth Travel Card on a phased basis	A National Youth Travel Card was announced as part of the budget in October 2021, with the card officially launching in May 2022. This is an important measure to encourage modal shift to public transport and also reduce fares as part of a Just Transition.
<i>Action 281a:</i> Identify measures to support the transition to electric Light Good Vehicles (LGVs)	The CAP 2021 aims to have 95,000 to low emissions vans on Irish roads by 2030, with a focus on Battery Electric Vehicles. Measures have been identified in Q3 to support this transition, including a planned increase in the existing grant value of small vans in Q4 and a new grant for large panel vans to open in 2023.
<i>Action 283a:</i> Transpose the biofuel elements of the Renewable Energy Directive	Biofuel blending into petrol and diesel can help reduce emissions by replacing their fossil fuel content with fuel made from renewable, biological sources (e.g. crops like corn, wheat or rapeseed or wastes such as used cooking oil). Statutory Instrument (SI) 350 of 2022 transposed the biofuel elements of the Renewable Energy Directive II in July 2022, paving the way for increased biofuel use in Ireland.

Table 11 - 'High Impact' delayed transport measures in Q3 2022

Transport Action / Measure Delayed	Why is this important?
<i>Action 275a:</i> Roll out a communication and engagement strategy to drive Electric Vehicle (EV) uptake	Extensive communication and engagement will drive the uptake of EVs by empowering consumers with the correct information to facilitate EV purchases. A decision was made in Q3 to further delay this campaign due to availability constraints of EVs on the market. A campaign will be deployed once market availability returns, likely early in 2023.
<i>Action 288a:</i> Publish the 10-year Strategy for the Haulage Sector	Next to private cars, freight is the second largest use of transport energy at 19% (SEAI 2022), highlighting the importance of decarbonising the haulage sector. The 10-year Haulage Strategy will provide clear direction to industry to plan future vehicle purchases and infrastructure investments. A summary of the public consultation on the Strategy published in Q3, with the final Strategy anticipated in Q4.

Electricity

Progress in Q3 2022

Context:

Rising energy demand, increased energy prices, and impacts from the war in Ukraine continued to dominate energy discussions this quarter, keeping energy security, costs and domestic supplies top of the agenda in Q3. Reducing consumption, enhancing storage and accelerating renewable energy generation from wind and solar are stressed in this context to reduce reliance on imported fossil fuels.

According to the latest EPA projections, sectoral emissions from Energy Industries increased by 17.6% in 2021. This increase is attributed to a tripling of coal and fuel oil use in electricity generation, less renewables and a reduction in natural gas use by 8.9% as plants were offline in 2021. This is the first year of energy GHG increases since 2016. Such developments threaten to undo achievements over recent years to decarbonise the electricity sector. They move the emissions dial in the wrong direction, and particularly threaten targets in the first carbon budget period.

Overall, energy industries were responsible for 16.7% of total Irish emissions in 2021. Renewable generation was down in 2021, with lower wind and hydro contributions reported. Renewables overall accounted for 34.7% of electricity generated in 2021, down from a high of 42.3% in 2020. Ireland also imported c.1,600 GWh of electricity in 2021 which, if generated here, would have resulted in additional emissions of over 500kt of CO₂.

The outlook for emissions from energy industries is uncertain according to the EPA, particularly given the return to coal use (despite commitments to phase it out) due to the unavailability of gas-fired generation and renewables. On a positive note, 2021 was the lowest year in the 32-year time series for peat fired electricity generation, standing at 68% less than in 2020 and reflecting recent market and policy decisions in this space.

CAP 21 aims to increase renewable electricity generation to 80% by 2030 as a key abatement measure, alongside actions focused on interconnectivity, demand management and storage. This quarter, the CCAC Annual Review echoed EPA concerns regarding increased coal and oil-fired generation, while also stressing the need to protect people from escalated energy prices and insecurity. Addressing Ireland's dependence on harmful fossil fuels by accelerating national renewable resources is fundamental to this effort according to the CCAC, who attribute our fossil fuel dependence as a root cause of recent high energy costs, supply instability and increased emissions.

Both demand and supply side measures are needed to address emissions in this sector according to the CCAC. This goes beyond the acceleration of renewables to also include energy efficiency efforts, demand side strategies (including for large energy users like Data Centres) and, ultimately, developing a pathway for energy post-2030 with attention to green hydrogen and fugitive emissions.

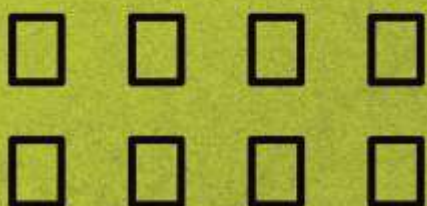
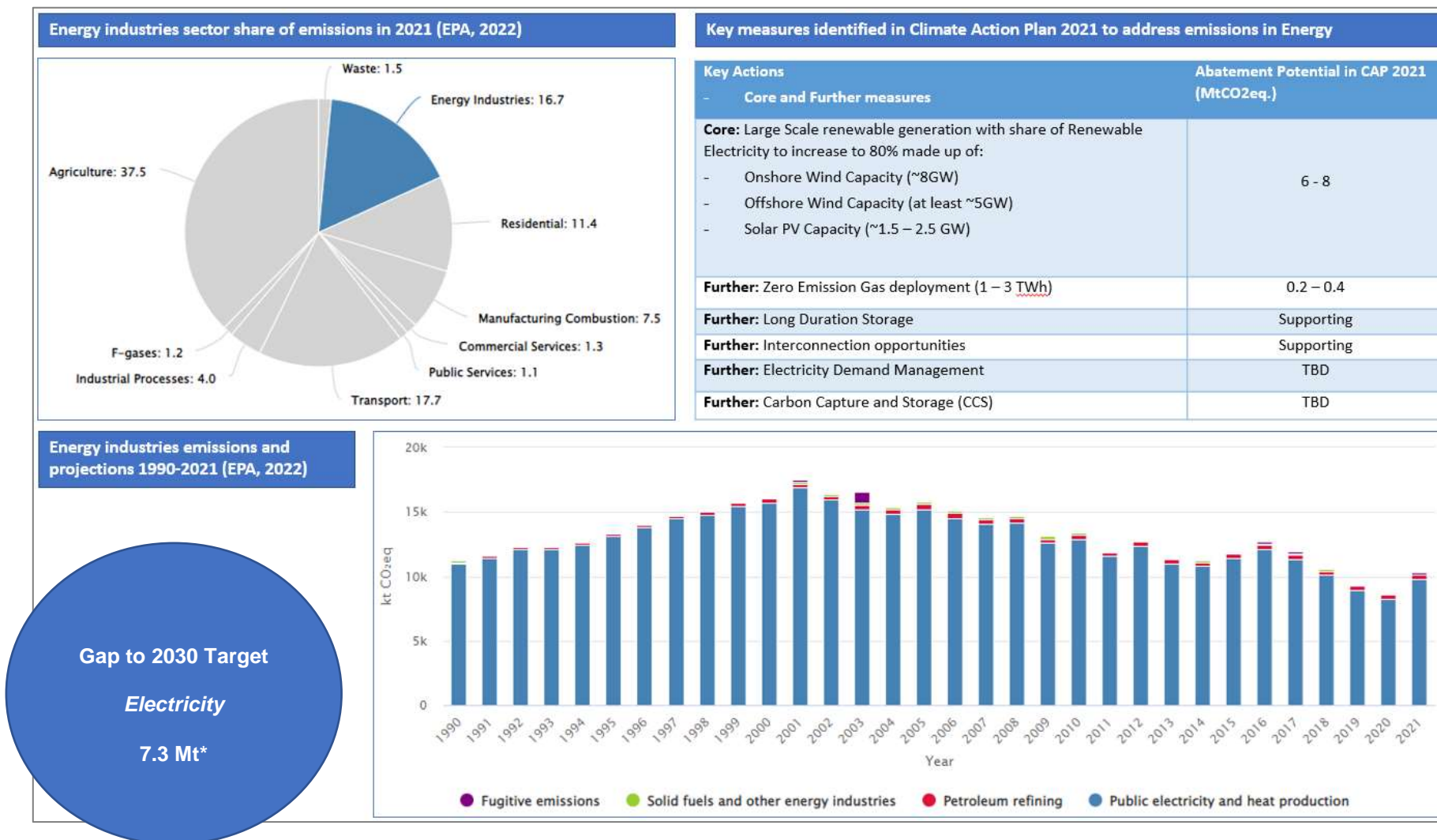


Figure 3 - Electricity: emissions context and key actions from CAP 2021



*Gap comprising the 2021 EPA emissions figure for electricity (10.3Mt) minus the electricity SECs target for 2030 (3Mt)

Table 12 - 'High Impact' completed electricity measures in Q3 2022

Electricity Action / Measure Achieved	Why is this important?
<i>Action 99c:</i> Consider further regulatory levers to manage demand from large energy users in the context of emissions, future network needs and evolving national climate and enterprise policies	Reducing the consumption of energy can have a significant impact on emissions. This is particularly the case for large energy users such as, for example, data centres and cement production. Large users accounted for 23% of electricity consumption in 2021 , a figure that has increased by 80% between 2015 and 2021. Having levers to manage their demand is thus crucial, which is why this measure is important as part of ongoing work on security of supply. Key activities in Q3 include a new policy statement on data centres published in July and the announcement of a new tariff regime in September.
<i>Action 107a:</i> Introduce interim regulations amending solar panel planning exemptions, with defined exclusion zones around airports and aerodromes for solar installations	Delayed since Q1 2022, changes to regulations have now come into effect that make it easier households, schools, farms, apartments, businesses and community buildings to install solar panels without needing to seek planning permission. This removes an important administrative barrier to the erection of solar panels nationwide, allowing all members of the community to be strong champions of climate action. 43 safeguarding zones around airports and aerodromes have been introduced as part of the regulations, ensuring the safety of this measure in preventing unnecessary glint and glare for aircraft.
<i>Action 114a:</i> Continue to deliver regular rounds of grid connection offers in line with RES-E targets (from Electricity Supply Board Networks (ESBN) and Eirgrid)	Providing robust and regular rounds of grid connection offers is essential to connect new renewable electricity generation for use in the network. An enduring connections programme is in operation, with the current Enduring Connection Policy (ECP-2) policy concluding in Q3 and 115 connection offers available. Further, the CRU approved a new trial for small scale mini-generation (11-50kW), with over 500 offers available, and a further trial for small scale generation (51-200kW) with provision for 100 offers.

Table 13 - 'High Impact' delayed electricity measures in Q3 2022

Electricity Action / Measure Delayed	Why is this important?
<i>Action 102c:</i> Review and publish a revised Methodology for Local Authority Renewable Energy Strategies	Local Authorities play an important role in the implementation of local renewable energy projects, including ensuring supportive spatial planning for onshore renewables. A consistent approach is needed across all 31 Local Authorities as this measure facilitates. Some delays were experienced in Q3 in procuring consultants to progress the methodology revision and associated training for Local Authorities. Swift progress is expected now consultant contract is in place.
<i>Action 105c:</i> Publish the final High-Level Design for a Microgeneration Support Scheme (MSS)	Delayed since Q1 2022, the Final Scheme Design for a Microgeneration Support Scheme was delayed again in Q3 due to resourcing issues. DECC is working with CRU to finalise the Scheme, including now to ensure alignment with the upcoming Clean Export Premium Feed-in-Tariff implementation plan to be delivered under the National Energy Security Framework. The Final Scheme Design is now expected in Q4, for CRU to implement in 2023.

LULUCF & the Marine

Progress in Q3 2022

Context:

Land management plays a critical role in the response to climate change, both from mitigation and adaptation perspectives. Land Use, Land Use Change and Forestry (LULUCF) is a challenging emissions source in Ireland, and has been since 1990. A decision on a Sectoral Emissions Ceiling for LULUCF was deferred by 18 months last July, pending the outcome of an ongoing Land Use Review and assessment of evolving scientific data.

According to the EPA, the LULUCF sector has been a net source of emissions in all years since 1990. This is largely attributed to CO₂ emissions from Grassland and Wetlands, mainly due to the drainage of organic soils for agriculture and forestry uses. This source is offset somewhat by Forest Land on mineral soils which can act as a significant carbon sink. Tree planting must increase in this vein, and on the correct soils, if we are to counter deforestation trends and reach climate neutrality targets. Harvested Wood Products also sequester carbon, highlighting the continued potential of bio-based resources to displace fossil fuel products as part of the wider bioeconomy.

Similarly, wet boglands can act as substantial carbon sinks, with several CAP 21 efforts focused on restoring and rehabilitating bogs that have been damaged by peat extraction. Overall, the complex dynamics of land-use change must be re-balanced to revert all sources to net GHG sinks.

Altered practices across diverse land uses will help to eliminate emissions from the sector, boost sequestration, increase adaptation resilience and further yield benefits for biodiversity and ecosystem services (e.g. water quality, drought management, and flood attenuation).

However, according to the CCAC Annual Review 2022, 7.8Mt CO₂ eq were emitted from land use in 2021, representing 11% of national emissions. Emissions from the sector are 25% higher than in 1990, indicating increasing imbalances in net source and sink functions.

The CCAC recommend enhanced rewetting and restoration of peatlands as a cost-effective emissions reduction measure in the near term, alongside changes in land management to reduce emissions from grasslands on drained organic soils in particular. Potential is also flagged to enhance the sequestration potential of mineral soils through appropriate management interventions, including partial re-wetting. An acceleration of afforestation is also emphasised by the CCAC, including through altered reward schemes and urgent reforms to forestry licencing and regulation.

Mitigation, sequestration and adaptation opportunities in the marine sector are also explored in this chapter as per the sector's enhanced focus in CAP 2021.

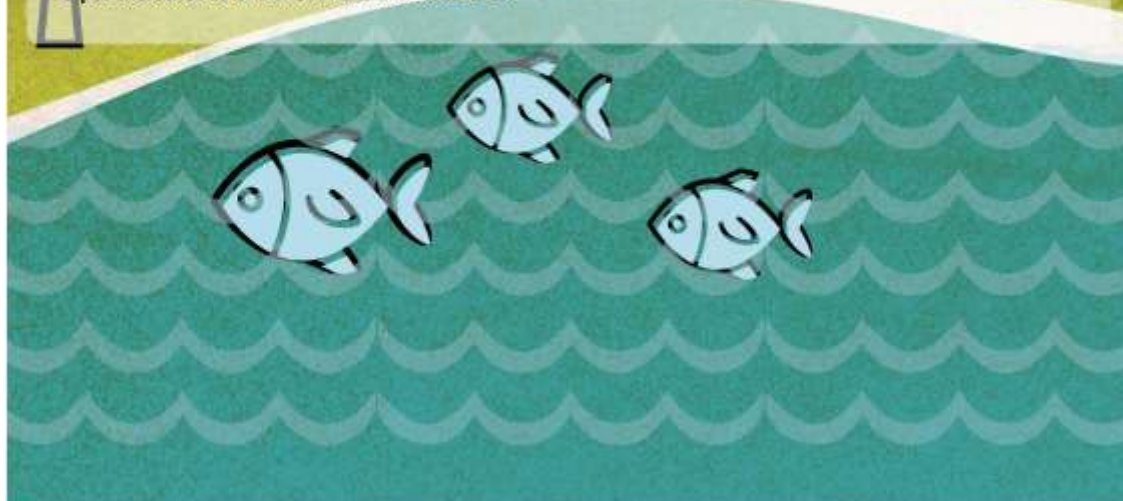
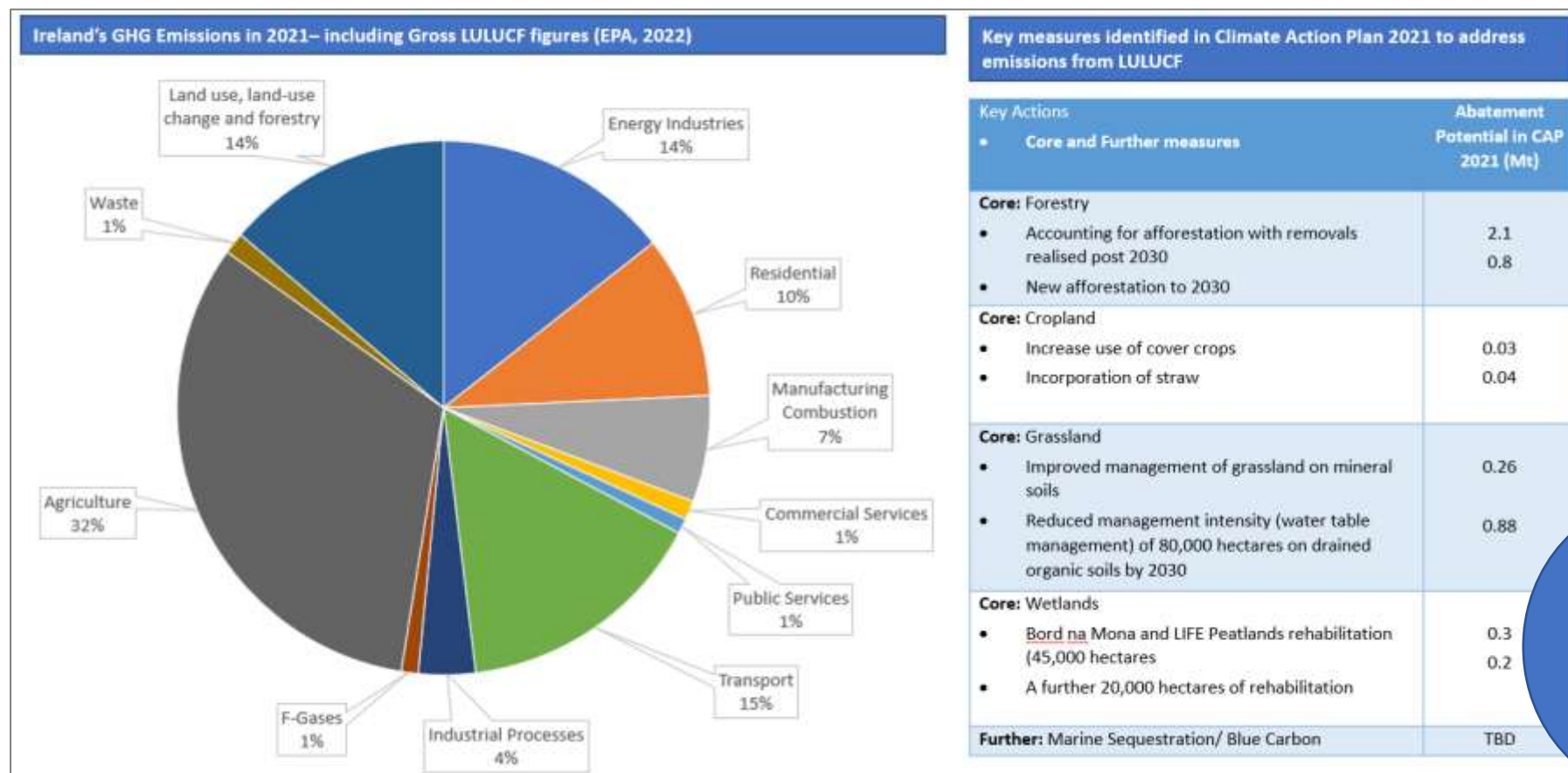


Figure 4 - LULUCF: emissions context and key actions from CAP 2021



Gap to 2030
Target
LULUCF
9Mt*

* From LULLUCF discussion in Climate Action Plan 2021, p168 – “The 4.8 MtCO₂eq. net emissions in 2018 represents non-forest land as a source of emissions with our forest sink netted off. This forest sink is reducing, and current EPA projections forecast that by 2030 Ireland’s net emissions will reach 7.1 MtCO₂eq. Furthermore, this projected net total is expected to increase further with emerging science to a range between 7-11 MtCO₂eq. in 2030, with the level of carbon removals from forests on organic soils being less than previously understood.” **Maximum gap to target thus calculated from 11Mt projected top estimate in 2030 to the 2Mt target identified in the CAP 2021.**

Table 14 - 'High Impact' completed LULUCF and marine measures in Q3 2022

LULUCF or Marine Action / Measure Achieved	Why is this important?
<i>Action 371a:</i> Design an agri-environment scheme that incorporates the afforestation of small areas of native tree species	Encouraging the planting of small woodlands as part of DAFM agrienvironment and afforestation schemes is critical to increase planting rates and maximise carbon sequestration opportunities on mineral soil farms. DAFM have prepared a draft of new scheme which will incentivise the establishment of small native trees areas up to 1 hectare in size without the requirement for a licence. A number of tree planting measures have also been included in the new Agri-Climate Rural Environment Scheme (ACRES) scheme .

Table 15 - 'High Impact' delayed LULUCF and marine measures in Q3 2022

LULUCF or Marine Action / Measure Delayed	Why is this important?
<i>Action 406a:</i> Restoration plan published for 60ha of blanket bog in the Wicklow Mountains National Park	Delays continued in the development of a restoration plan for 60 hectares of blanket bog in Q3. Re-wetted boglands can act as key carbon sinks, with scientifically grounded plans essential to progress such land management works. Restoration plan and management contract is currently advertised, with works expected to commence in Q4.
<i>Action 364d:</i> Launch the new Forest Strategy	Delayed since Q2, the new Forestry Strategy is expected to publish in Q4. This Strategy is critical to address declining tree planting rates nationwide and to ensure that the correct planting occurs on the correct soils to prevent further carbon loss. The Forestry Vision to 2050 has now been finalised and a summary of consultations undertaken was published in September, indicating further progress in Q3.
<i>Action 366c:</i> Increase participation of existing schemes and measures	Afforestation applications remained low in Q3, in keeping with longer term declines in tree planting. This decline is due to a range of factors including the lack of land available for planting, competing interests from other farming enterprises and the reluctance of landowners to a commit to a permanent land use change. Proposed new forestry programmes will seek to increase participation in schemes. This is critical to achieving climate neutrality.
<i>Action 393a:</i> Complete Phase 1 Evidential Review of the Land Use Review in line with the Programme for Government 2020	A national land use review, including farmland, forests, and peatlands, is essential so that optimal land use options inform all relevant government decisions. The review aims to balance environmental, social, and economic considerations and first involve an evaluation of the ecological characteristics of the land. Completion of this Phase 1 evidential review experienced minor delays in Q3 and will publish in Q4. This will allow for Phase 2 to work to develop more comprehensive land use strategies and decision-making frameworks for Ireland.

Action 413b: Ensure that the successor to the National Marine Research & Innovation Strategy 2017- 2021 will have the key objective of “advancing towards a climate neutral ocean economy”

Delayed since Q2, the Marine Institute aims to have an advanced draft of the new [National Marine Research & Innovation Strategy](#) prepared by the end of 2022. A consultancy has been engaged to assist in the review and drafting of the strategy with stakeholders and agencies being consulted in relation to Research & Innovation activities under their remit. The new strategy, Ocean Knowledge 2030, will set out key Research, Knowledge and Innovation actions necessary to enable the marine sector to play its role in addressing the climate crisis and to explore mitigation and economic opportunities presented by the blue economy.

Buildings

Progress in Q3 2022

Context:

Fuel combustion for space and water heating in homes, businesses and public buildings account for the majority of emissions from Buildings. Residential emissions accounted for 11.4% of national emissions in 2021, while commercial and public services combined represented 2.4%.

Emissions in the residential sector decreased by 4.9% in 2021, attributed to reduced home working as Covid-19 restrictions eased. A milder winter also resulted in less heating days in 2021 (down 2.5%) further assisting a reduction in emissions, while increased fuel prices in 2021 and possible stockpiling from 2020 are also reported to have resulted in fewer fuel purchases. Combined, these trends resulted in a reduction in all fuel use in buildings, with the exception of natural gas.

Emissions also decreased in commercial and public buildings in 2021, down 3% and 3.8% respectively. This is attributed to decreases in natural gas use across these sectors.

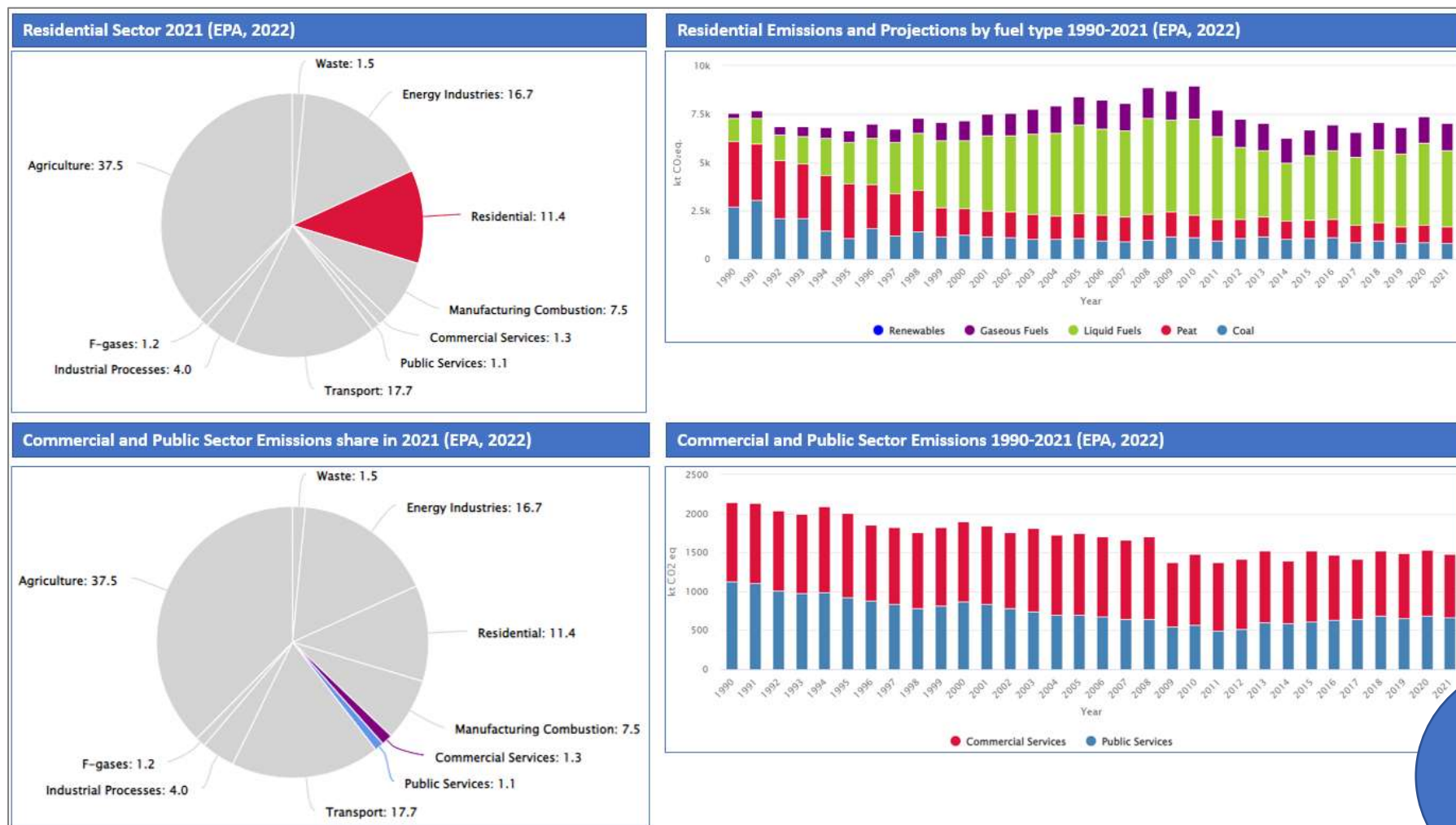
Planned measures for further, long term emissions reduction from buildings include a focus on enhancing home heating efficiencies through retrofit (e.g. better insulation to reduce heat loss) and investing in renewable heat sourcing (e.g. installation of electric heat pumps). The CAP 2021 targets the retrofit of 500,000 homes to higher energy standards, as well as the installation of 680,000 heat-pumps by 2030, to reduce buildings emissions this decade.

In their 2022 Annual Review, the CCAC cautioned against higher energy prices this year creating financial and health risks for vulnerable households. Reducing dependence on fossil fuels in all buildings is underscored by the CCAC, alongside prioritising the upgrade of the worst performing buildings, households in receipt of fuel allowances as well as social housing stock.

The potential for zero carbon district heating is also raised by the CCAC, citing potential to supply up to 50% of residential heat demand across Ireland including in urban and some suburban areas. Accelerated deployment of heat pumps and the need to increase the use of timber frame construction are also noted in the context of reducing emissions associated with the built environment.



Figure 5 – Buildings: emissions context



**Gap to 2030
Target
Buildings
3.52Mt***

*Gap comprising the 2021 EPA emissions figure for residential (7.04Mt) + commercial services (0.82Mt) + public services (0.66Mt) (total = 8.52Mt) minus the built environment SEC for 2030 (i.e. 5Mt)

Figure 6 – Buildings: emissions context and key actions from CAP 2021

Key Actions - Core and Further measures	Abatement Potential in CAP 2021 (MtCO ₂ eq.)
Core: Complete 500,000 residential retrofits to achieve a B2 BER/cost optimal equivalent or carbon equivalent	CAP 2019 measure
Core: Install 600,000 heat pumps in residential buildings (of which 400,000 to be installed in existing buildings)	CAP 2019 measure
Core: Strengthen NZEB to effectively ban fossil fuels in new homes (+280k new homes without fossil heat)	0.2
Core: Ramp-up zero emissions heat in commercial buildings (50,000 buildings)	0.3 – 0.4
Core: Increase targets for roll-out of district heating (up to 2.7 TWh of district heat)	0.3
Core: Planning for the full phase out of fossil fuels in buildings by 2050	CAP 2019 measure
Further: Promoting behavioural change in how households use energy to reduce heat demand	TBD
Further: Blend in zero-emission gas for fuel use in buildings	TBD

Table 16 - 'High Impact' completed buildings measures in Q3 2022

Buildings Action / Measure Achieved	Why is this important?
<i>Action 172b:</i> Determine if renewable energy obligation should be introduced in the heat sector	Delayed since Q1, the Government Decision on the Proposed Sectoral Emissions Ceilings this quarter agreed to the introduction of an obligation on the heat sector to include renewable heat by 2024. This obligation will incentivise the use of all renewable heating fuels in Ireland, and is also considered important to the development of an indigenous anaerobic digestion. This industry in the context of increased biomethane targets.
<i>Action 185b:</i> Assess potential options for an SME energy efficiency loan guarantee scheme to provide proof of concept and demonstrate market appetite	Developing viable loan options for businesses to undertake energy upgrades is essential to achieving retrofit and renewable heating targets in commercial buildings. Discounted loans and hire purchase options were launched by the Strategic Banking Corporation of Ireland this quarter to this effect. The scheme will offer discounted term loans, asset finance and hire purchase to SMEs and farmers planning investments in a range of energy saving equipment including solar panels, heat pumps, insulation and LED lighting, helping to reduce both business energy bills and emissions.

Table 17 - 'High Impact' delayed buildings measures in Q3 2022

Buildings Action / Measure Delayed	Why is this important?
<i>Action 185a:</i> Based on the outcome of the National Heat Study , develop an approach to the retrofit of the commercial building stock	CAP 21 aims to ramp up emissions savings from commercial buildings, including through retrofit and the deployment of renewable heating. With the intention of agreeing an approach for retrofitting the commercial building stock, including Departmental and Agency responsibilities, a paper was developed by the SEAI on a proposed Commercial Retrofit Support Scheme. This paper is with DECC for consideration, with no final approach agreed this quarter.
<i>Action 189e:</i> Determine the appropriate model for the development and ownership of district heating	A number of measures related to district heating were delayed in Q3, pending the outputs of a District Heating Steering Group who are due to report to Government by end 2022. This includes recommendations on a suitable ownership model as per this measure. District heating can help to decarbonise many of our urban and sub-urban areas, and is a well-established technology across Europe. CAP 21 measures aim to ensure that district heating is developed in a structured way and prioritising consumer protection.
<i>Action 197a:</i> Develop a roadmap to promote greater use of lower-carbon building material in construction	A draft roadmap is advancing and consultation with key stakeholders is ongoing. Feedback is currently being incorporated along with editing and graphics and the expected delivery date is Q4 2022. This roadmap is key to provide market signalling to decarbonise the construction industry and promote further afforestation for timber production (a lower-carbon building material).
<i>Action 218a:</i> Introduce a residential retrofit loan guarantee scheme, including access for landlords to help address the split incentive issue	Addressing split incentives for home retrofit is essential to reduce emissions from rental properties. It will also ensure a Just Transition so that landlords upgrade their rental properties and tenants benefit from improved energy efficiencies. Significant progress has been made on this measure including the publication of a pre-qualification call to financial institutions. However, given the complexity of issues to be addressed, the scheme will now launch in Q1 2023.
<i>Action 225:</i> Publish new guidance for the retrofit of traditional buildings	Traditional buildings (i.e. generally pre-1940 construction) make up c.18% of commercial, residential and public sector buildings in Ireland. Different retrofitting guidance is required to protect their integrity. Delayed since Q1, DHLGH are finalising the new guidance and will require agreement from key stakeholders before publication.

Enterprise

Progress in Q3 2022

Context:

Emissions in the EPA inventory for the enterprise sector include GHGs from three key sources: manufacturing combustion (e.g. producing cement, food, aluminium, chemicals) (7.5% of national emissions in 2021), industrial processes (4%) and Fluorinated (F-) gases (1.2%). Combined, emissions from industry accounted for c.12.7% of emissions in Ireland in 2021.

Increases in both combustion and process emissions were reported by the EPA in 2021 compared to 2020, up 0.9% and 16.8% respectively. This is largely attributed to increases in cement production as Covid-19 restrictions eased.

Indeed, combustion emissions from non-metallic minerals (including cement) increased by 10.5% (or 0.12 Mt CO₂eq.) in 2021, indicating the need to rapidly decarbonise heating processes in this section of the economy. By comparison, combustion emissions were down in 2021 in other major sub-sectors, including chemical industries and the food processing, beverages and tobacco sector (down 3.2% and 4.4% respectively).

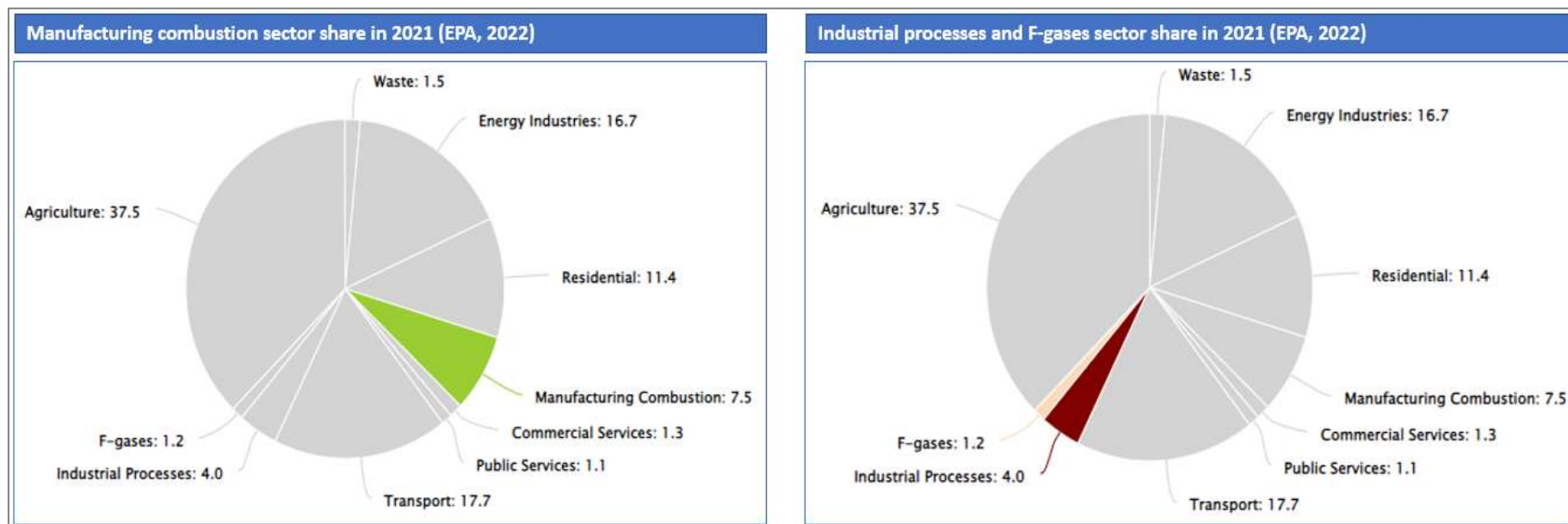
Cement sectoral emissions overall are up 106.2% since the downturn in 2011, while total emissions (combustion and process) from cement production in 2021 amount to 5.1% of national emissions. Further rollout of energy efficiency programmes such as SEAI Large Industry Programmes, Accelerated Capital Allowances and the Excellence in Energy Efficiency Design programme are required to reduce emissions from these industries, as pursued under CAP 2021.

The wider trend of decline in F-gas emissions continued in 2021 (down a further 0.2%). This is largely driven by the F-Gas Regulation 517/2014 which has phased out refrigerant and air conditioning gases with high global warming potentials. Provisions may need to be strengthened in the future given the higher projected F-gas emissions from the uptake of heat pumps.

Overall, developing detailed decarbonisation plans (including the potential for Carbon Capture and Storage) and switching industry heating to renewables is essential in emissions intensive industries like cement, aluminium and food processing. They represent key foci in the CAP 2021 and are similarly called for by the CCAC in their Annual Review 2022.

The CCAC also point to the implementation of findings from the SEAI National Heat Study, including technology changes or fuel switching tailored to investment-decision timeframes for enterprises. Projected increases in cement production emissions are also noted, coupled by calls to maximise clinker replacement, to promote efficient use of cement in construction and/or to replace cement with lower carbon construction materials to offset projected increases.

Figure 7 - Enterprise: emissions context



Gap to 2030 Target

Enterprise

2.79Mt*

Gap comprising the 2021 EPA emissions figure for manufacturing combustion (4.59Mt), industrial processes (2.46Mt) and F-gases (0.74Mt) (total = 7.79Mt) minus the industry SEC for 2030 (5Mt)

Figure 8 - Enterprise: emissions context and key actions from CAP 2021

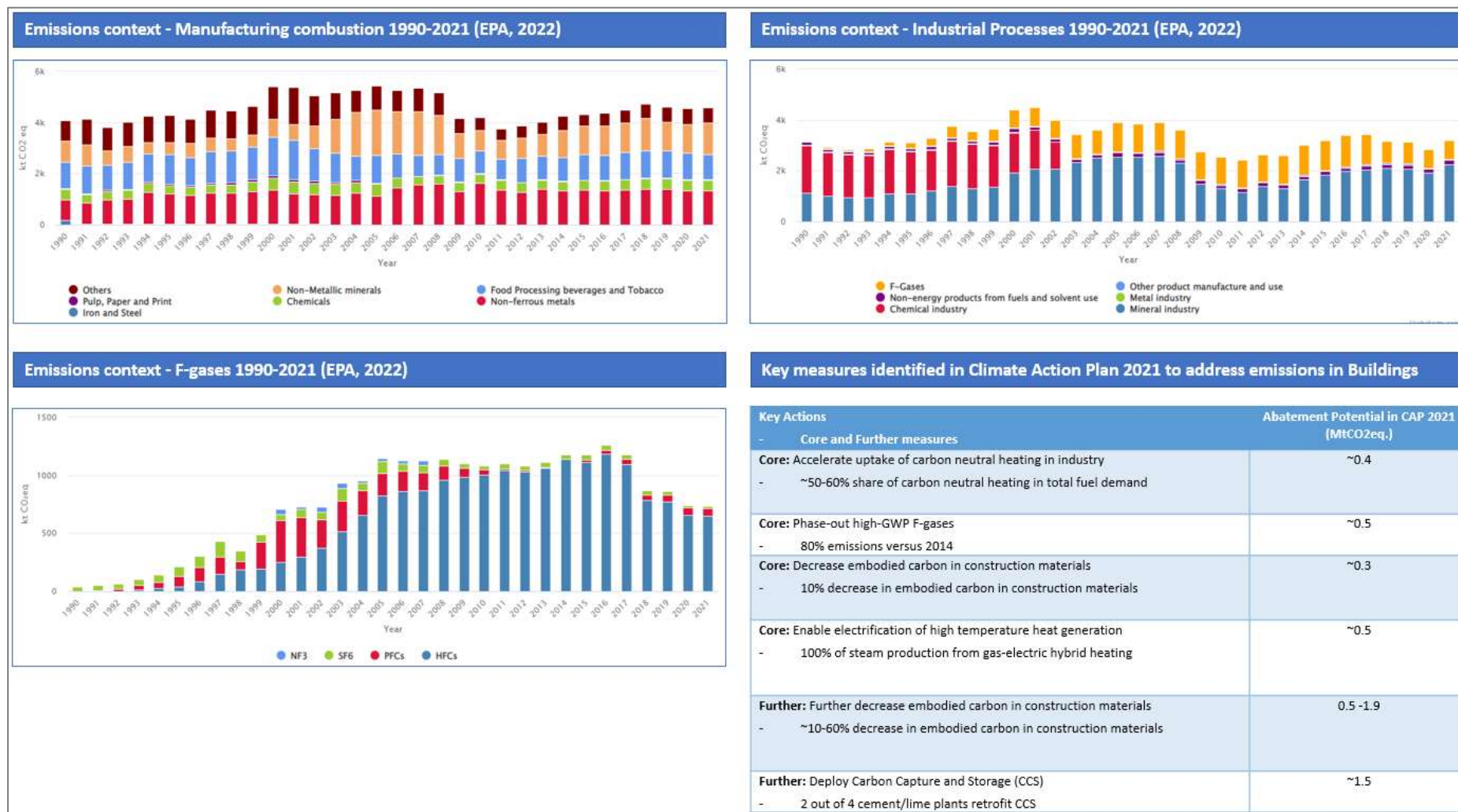


Table 18 - 'High Impact' completed enterprise measures in Q3 2022

Enterprise Action / Measure Achieved	Why is this important?
<i>Action 99b:</i> Review the Government Statement on the role of Data Centres in Enterprise Policy, ensuring alignment with revised renewable electricity targets and sectoral emissions ceilings	As large energy users, data centres place pressure on national energy supplies, grid infrastructure, electricity emissions and renewable energy targets. The review on the Government Statement on the role of Data Centres in Enterprise Policy published in Q3, with the aim of ensuring alignment with renewable electricity targets and sectoral emissions ceilings. The Statement seeks to enable complementary between the 'twin transitions' of digitalisation and decarbonisation, setting out how digital and climate change policies can move in tandem in respect of data centre development.
<i>Action 164b:</i> Support investment in decarbonised processes through the Carbon Reduction Fund , Enterprise Ireland and IDA Environmental Aid programme, SEAI EXEED programme and other enabling supports	Multiple grants are provided by DETE and its agencies to aid industry decarbonisation journeys. For example, 93 Enterprise Ireland companies have been supported in 2022 so far with funding granted under the Green Transition Fund , Environmental Aid and other supports. SEAI meanwhile have supported c.2100 businesses with funding of c.€34.5million in 2022, while the IDA have supported 11 green investments. Finally, the first application under the Enterprise Emissions Reduction Investment Fund (launched in June) has been received, with several others progressing applications.

Table 19 - 'High Impact' delayed enterprise measures in Q3 2022

Enterprise Action / Measure Delayed	Why is this important?
<i>Action 151d:</i> Assess agency grants through the Economic Appraisal Model for their Climate impact	Incorporating the measurement of climate impacts into capital grant decisions by enterprise agencies is important to ensure that agency grants are aligned with emissions reduction efforts. A robust methodology to ensure this alignment is required, as explored in the Pilot Economic Appraisal Model for Climate Impact which has now concluded. DETE and its agencies are examining the pilot results before further roll-out, as this delayed measure aimed to achieve.
<i>Action 167a:</i> Agree high level decarbonisation plan with the alumina manufacturing	As a concentrated energy-intensive industry, agreeing a decarbonisation plan with alumina manufacturers is important to achieve reduced industry emissions nationally. A changing geopolitical situation has resulted in a different operating environment and continued to delay progress on this measure in Q3.

Public Sector Lead

Progress in Q3 2022

Context:

Combining emissions from heating and electricity use in public buildings, transport use, as well as emissions from commercial semi-state bodies, emissions from the public sector in 2018 amounted to c.3.3% of Ireland's GHGs.

Although its share of emissions is relatively small nationally, the public sector plays an important leadership role as a catalyst, advocate and proof-of-concept for ambitious climate action across buildings, transport, waste and energy categories. Further, as a large purchaser of goods and services, embedding green procurement in the public sector is important to incentivise more sustainable supply chains. These roles are provided for in actions under the CAP 2021.

The exemplar role of the public sector is similarly noted by the CCAC in their Annual Review 2022. The CCAC state that accelerated retrofit activity in public buildings can bring more confidence to retrofit suppliers, supporting the expansion of such construction sector capacity in the longer term. The CCAC also note that decarbonised public buildings can help demonstrate to, and familiarise, the public with modern energy solutions and may also be particularly suitable as anchor customers for evolving district heating systems.

Upgrading public buildings, including schools, universities, hospitals and Government Departments, however remains challenging given the size, geographical spread and diversity of the public buildings' portfolio. Actions nevertheless combine in CAP 2021 to support and promote retrofit activity, address emissions from public transport and lighting, and build capacity across all levels of government to deliver on climate action.

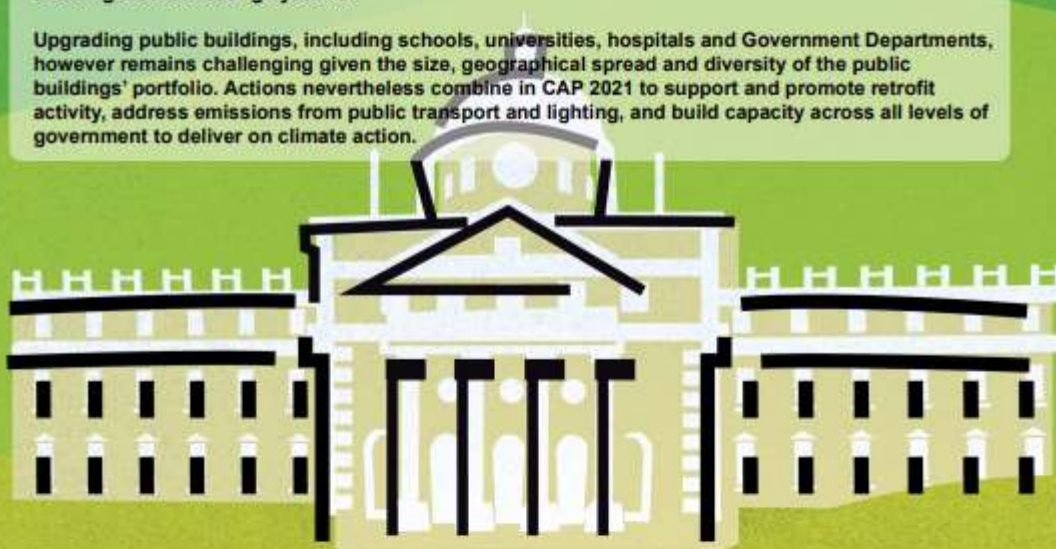


Table 20 - 'High Impact' completed public sector measures in Q3 2022

Public Sector Action / Measure Achieved	Why is this important?
<i>Action 55b:</i> Issue a policy direction to all public bodies requiring a public body to adopt mandate and notify Climate Action Delivery Board (CADB)	A Climate Action Mandate for every public body was approved by Government in Q3 and a Ministerial letter issued to all Departments on 14 July. This is a key step in implementing climate action ambition across the public sector, with specific targets and asks laid out regarding buildings, vehicles, ways of working and governance. Departments must make their agencies aware of the Mandate, with a paper also presented to the CADB on 22 July.
<i>Action 59a:</i> Agree revised mileage rates that reflects changing driving patterns including increased use of EVs and Hybrids	Sustainable transport modes in the public sector will both reduce emissions and help to normalise the use of low- and zero-carbon transport options. Delayed since Q2, revised mileage rates for EVs and hybrids have now been agreed and were published in Circular 16/2022 by DPER in Q3.
<i>Action 61b:</i> Progress implementation of the Energy Efficiency and Decarbonisation Pathfinder Programme	Implementing deep energy retrofit in higher education buildings will reduce emissions from the sector. The 8 successful projects from the 2020 Pathfinder Programme are now on site or completed. A further 8 have been successful at proposal evaluation stage. The Higher Education Authority (HEA), SEAI and DFHERIS hold regular steering group meetings to share programme lessons, with plans to also hold a workshop with Higher Education Institutes as the 2020 projects end.
<i>Action 264:</i> Complete a retrofit of the remaining public lighting network 202,000 lights to energy efficient LED lights	Switching the public lighting network to energy efficient LEDs is important to reduce energy use and associated electricity emissions. All tenders for completing such works have now issued across the SouthWest, Eastern and Northwest regions. Combined, this will result in the replacement of c.280,000 lights with LEDs nationwide.
<i>Action 268b:</i> Introduce 219 hybrid buses into full service	Low-emission fleet procurement is a key element of overall transport decarbonisation. 219 hybrid buses are now in operation in the Dublin Metropolitan area, showing climate leadership, demonstrating the viability of new technologies, and contributing towards the procurement targets mandated by the EU Clean Vehicles Directive.

Table 21 - 'High Impact' delayed public sector measures in Q3 2022

Public Sector Action / Measure Delayed	Why is this important?
<i>Action 9b:</i> Develop options to enhance climate action delivery and tackle key implementation challenges	Identifying common challenges to climate action implementation within the civil service is a first key step to developing options to address any challenges identified. A capacity and capability review of the civil service is now underway, with support from the Institute of Public Administration , but suffered initial delays in such expertise procurement. A results paper, including recommendations to enhance delivery, is now expected in Q1 2023.
<i>Action 53b:</i> Seek Government approval and publish new Public Sector Strategy for delivery	An over-arching public sector strategy to achieve at least a 51% reduction in GHG emissions and a 50% improvement in energy efficiency by 2030 will bolster efforts of the public sector to lead by example and plan and track its progress. A working group established by DECC meets fortnightly to progress drafting of the Strategy, with plans to publish in Q4 2022.

Circular Economy

Progress in Q3 2022

Context:

Emissions from waste decreased by 4.5% in 2021 compared to 2020, and overall accounted for 1.5% of national emissions in 2021. This follows a trend of emissions decline in this sector seen over recent years, with GHG emissions from waste now 45.2% below 1990 levels in 2021.

Long term emissions savings in the sector are attributed to enhanced segregation and recycling rates that have resulted in reduced municipal solid waste (MSW) in landfills, a decrease in organic materials (food and garden waste) in MSW and a better diversion of paper products from landfills. Landfills are the largest source of emissions in the sector, where methane, a potent GHG, is emitted. Improved management of landfill facilities, including increased recovery of landfill gas for electricity generation and flaring, is also noted by the EPA to have reduced emissions of late.

To further reduce waste emissions, the CAP 21 promotes circular economy actions that aim to reduce material consumption and waste in the first instance and keep materials in use for as long as possible. This includes through reuse, upcycling and recycling from product design phases through to industry processing and consumption.

The bioeconomy represents a further important opportunity for fossil fuel displacement and reduced emissions, pollution and waste noted in the CAP 2021. The bioeconomy uses renewable, biological resources from agriculture, forestry, marine and food industries, instead of fossil fuels, to create food, feed, materials, chemicals and fuels. Bioeconomy development can also help to diversify agriculture, industry and land-use practices into higher value and more sustainable uses, providing for more resilient incomes, enterprises and jobs.

In their Annual Review 2022, the CCAC welcome the Circular Economy, Waste Management (Amendment) and Minerals Development (Amendment) Bill 2022 enacted in Q3, but note the existing low circularity rates in Ireland (1.6% in Ireland compared to an EU average of 11.9%). They call for the implementation of measures and targets in respect of re-used and repaired materials in waste management plans, as well as for a wider focus on the importance of the circular economy nationwide.

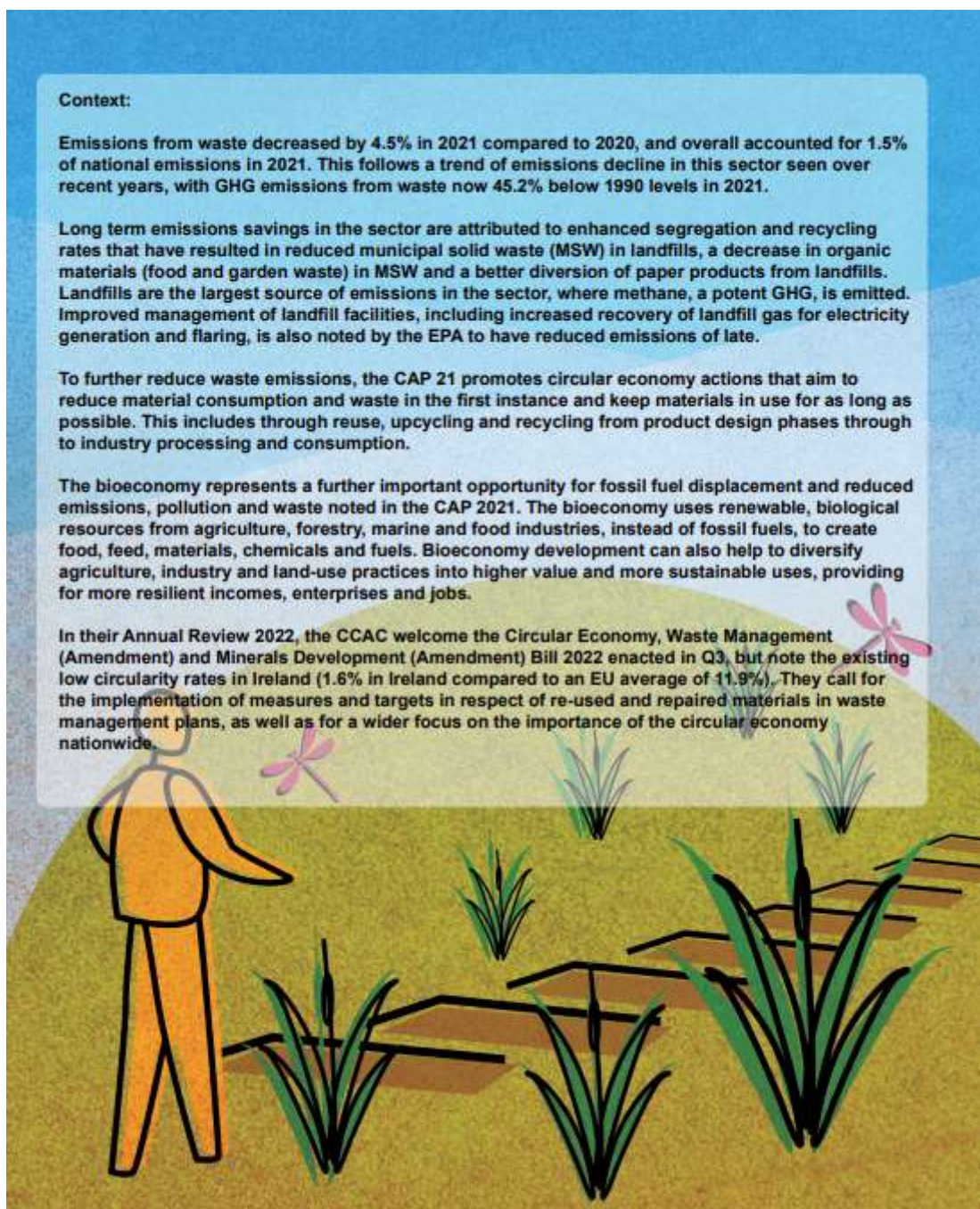


Figure 9 - Waste: emissions context and key actions from CAP 2021

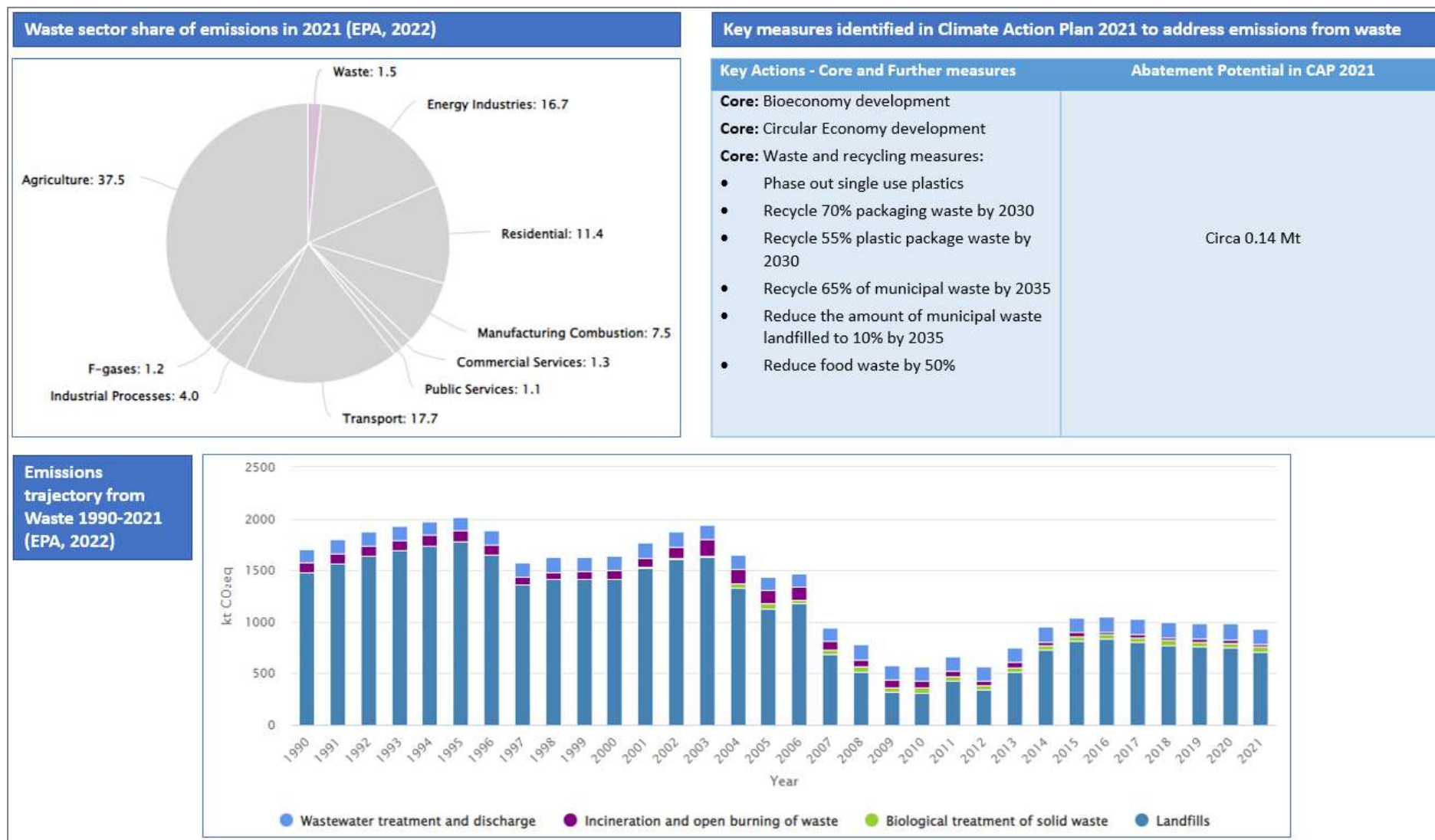


Table 22 - 'High Impact' completed circular economy measures in Q3 2022

Circular Economy Action / Measure Achieved	Why is this important?
<i>Action 428a:</i> Enact the Circular Economy Bill 2021	Delayed since Q4 2021, the Circular Economy Bill is important to put circular practices that reduce waste, pollution and emissions on a statutory footing. The Bill was enacted in July. This will allow for the progression of a number of circular economy-related funds, programmes, licencing and levies. It will also aid the progression of a number of European Directives, requirements on the commercial sector for segregated waste bins and wider targets for re-used and repaired materials in waste management plans.
<i>Action 444a:</i> Finalise policy statement on Petroleum and Gas Exploration & Production Activities as part of Ireland's Transition to a Low Carbon Economy	Delayed since Q4 2021, the Policy Statement on Petroleum Exploration and Production was published in Q3. Its publication meets the Programme for Government commitment to end the issuing of new licences for the exploration and extraction of gas, on the same basis as oil, thus preventing new fossil fuels coming to market. It will also initiate the wind down of the Petroleum Infrastructure programme, which supported hydrocarbon exploration research, and is key to Ireland's role in the transition away from global oil and gas production under the Beyond Oil & Gas Alliance.

Table 23 - 'High Impact' delayed circular economy measures in Q3 2022

Circular Economy Action / Measure Delayed	Why is this important?
<i>Action 434b:</i> Agree and set out a Bioeconomy Action Plan for a three-year period	The inter-departmental National Bioeconomy Implementation Group was due to develop a detailed Bioeconomy Action Plan by Q3 2022. This is important to provide clear signalling and direction to agriculture, industry, waste, energy, marine and land-use sectors on diverse bioeconomy opportunities. It will also put in place necessary actions and supports to realise climate-relevant ambitions of the bioeconomy that reduce fossil fuel use and help diversify sectors. The Action Plan is now expected by year end, led by DECC and DAFM.

Cross-Cutting Policies

Progress in Q3 2022

Context:

Every Department and Agency has a role to play in accelerating climate action. Alongside clear sectoral emissions reduction policies in line with established Sectoral Emissions Ceilings, a range of supporting governance, finance, planning, education, engagement, research and international actions are needed to create the right conditions for climate action to flourish.

While hard to quantify their direct emissions reduction potential, cross-cutting actions are essential to further the impact and implementation of sectoral policies and support required behavioural changes across all of the economy and society.

Citizen Engagement and Just Transition are two central pillars in this cross-cutting context. Engagement is necessary to empower citizens in emissions reduction efforts, while Just Transition considerations are key to achieving the transition in a fair manner, ensuring that vulnerable communities are protected and that nobody is left behind. These efforts must be supported by clear governance mechanisms to ensure continued momentum and accountability across all levels of Government, while private finance and public spending must also be mobilised in way that deprioritises emissions intensive practices.

Climate-friendly planning and international supports are also key to Ireland's climate leadership, while Research & Innovation (R&I) can act a critical enabler through the development of mitigation and adaptation solutions with environmental, economic and social benefits.

Combined, the range of cross-cutting, supportive actions in the CAP 2021 provide an important enabling framework for individual, household, community, international, and company-level climate action.



Table 24 - 'High Impact' completed cross-cutting measures in Q3 2022

Cross-Cutting Sector	Action / Measure Achieved	Why is this important?
Governance	<i>Action 6b:</i> Finalise Carbon Budgets and sectoral ceilings	Carbon budgets were approved by Government in April, with sectoral emission ceilings (SECs) approved on 28 July following engagement at senior and Ministerial level. These represent crucial, legal instruments for climate governance and accountability. The carbon budgets set out the maximum GHGs that are permitted across the economy in 5 year periods, with the SECs now splitting emissions reduction ambition across sectors.
Just Transition	<i>Action 197b:</i> Provide training to the construction sector in the use and installation of low carbon technologies and materials	Training, education and upskilling are essential to a Just Transition, ensuring that workers are ready and able to take up new jobs and economic opportunities emerging from climate neutrality. Construction skills are also critical to meet ambitious retrofit targets and efforts to encourage lower carbon building materials. Centres of Excellences have been established, with Near Zero Energy Building (NZEB) courses now running across the country and becoming part of Apprenticeship curricula. In July, the establishment of a new Modern Methods of Construction Demonstration Park was also announced.
Citizen Engagement	<i>Action 34d:</i> Commence roll-out of centralised communications through Government Information Service	Advancing coordinated climate communications from the centre of Government is essential for consistent and coherent messaging to the public. Centralised communication processes have now been rolled out and cross-Government climate communications structures are being coordinated centrally. This includes a shared calendar of climate communications activity, and all of Government engagement in key campaigns & launches.
Carbon Pricing	<i>Action 67a(i):</i> Consider reforms to the taxation system under relevant tax heads from an environmental perspective	Altered taxation regimes represent one important tool to encourage more sustainable behaviours. Environmental taxation measures were examined in the Tax Strategy Group Paper on Climate Action and Tax 22/06 released this quarter, including with respect to fossil fuel, farming and motor vehicle taxation.
Planning	<i>Action 78e:</i> Develop indicators and timelines to achieve NPF targets for residential development on vacant/redevelopment sites to minimise sprawl	As part of the implementation of the National Planning Framework (NPF), a national tracking system is important to monitor development trends of NPF brownfield targets and investment in urban regeneration as part of the transition to compact, lower-carbon development. A 'Housing Delivery Tracker' has launched to enable this tracking, while work has also commenced on a spatial tracker specifically for Urban Regeneration and Development Fund projects.

	<i>Action 92b:</i> Embed sustainability in the planning, design, construction, and operation of all new infrastructure projects at the Sport Ireland Campus	Supporting sports facilities to reduce energy consumption will help to reduce emissions and will also play an important public engagement role to normalise lower carbon behaviours and demonstrate proof-of-concept. The Sport Ireland Sustainability Statement sets out how sustainability will be implemented in all future projects, centred around six sustainability pillars. Sport Ireland further aim to achieve carbon neutrality by 2030, ahead of EU and national targets.
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Table 25 - 'High Impact' delayed cross-cutting measures in Q3 2022

Cross-Cutting Sector	Action / Measure Delayed	Why is this important?
Governance	<i>Action 1a:</i> Finalise Ireland's long-term climate strategy	Delayed from Q1 2022, Ireland's long-term climate strategy continued to be delayed in Q3. Agreed long-term strategies for climate neutrality are required under the Paris Agreement and the EU Regulation on the governance of the energy union and climate action (EU/2018/1999) . They are crucial to achieve sustained economic, societal and environmental transformation. DECC intend to submit Ireland's finalised long-term strategy to the Commission on or before 29 November 2022.
	<i>Action 4a:</i> Enhance Cabinet procedures to ensure that all Government Memoranda are considered against their carbon impact and mitigation potential	Activating a process to ensure that all Government memoranda and major investment decisions are subject to a climate impact evaluation is important to further climate proof all decisions taken. The design of a technical solution for the eCabinet system to include this requirement is now complete and is awaiting implementation by the software developer and Office of the Government Chief Information Officer (OGCIO). Once implemented, guidance will issue to each Department, with a further presentation to the Climate Action Unit Network also planned.
	<i>Action 8a:</i> Develop a consultation paper on potential methodologies for apportioning any cost of compliance across Departments	Determining how individual sectors could bear any compliance costs incurred by the State arising from the failure to reach emissions reduction targets is important to build further accountability for legally-binding targets system-wide. Completion of this measure was delayed due to a reliance on the finalisation of the sectoral emissions ceilings (SECs), with expectation that the paper will now be completed by year end.

Citizen Engagement	<i>Action 38e:</i> Commence Senior Primary Climate Action Resource and accompanying lesson plans	Education is key to raising awareness and understanding of the impacts of climate change and accompanying need for climate action, starting with our primary schools. An Taisce were due to commence a Senior Primary Climate Action Resource and accompanying lesson plans by Q3 but struggled initially to source a provider for this work. This has now been rectified, with expected completion of this measure before end of 2022.
Carbon Pricing	<i>Action 69b:</i> Revise shadow price of carbon in light of enhanced climate ambition in the Climate Act 2021 and informed by updated research	The shadow price of carbon is a critical instrument in public investment projects to value the cost that society will bear in dealing with the GHGs that projects may give rise to. It is a key mechanism for incentivising more climate-friendly investment and disincentivising carbon-intensive activities. The shadow price of carbon values was delayed due to a reliance on the finalisation of the SECs . DPER are now working with DECC to progress modelling now that the SECs are finalised, with new values expected to be implemented by year end.
Planning	<i>Action 90a:</i> Incorporate the guiding principles for sustainable tourism development in business support programmes	Growing awareness and understanding of sustainability in tourism is key to decarbonising this sector. Delayed since Q4 2021, Fáilte Ireland have now developed a substantial volume of resources to educate and support tourism businesses on their climate action journey, including the Fáilte Ireland "Climate Action Roadmap" which will now officially be launched in November.

Adaptation

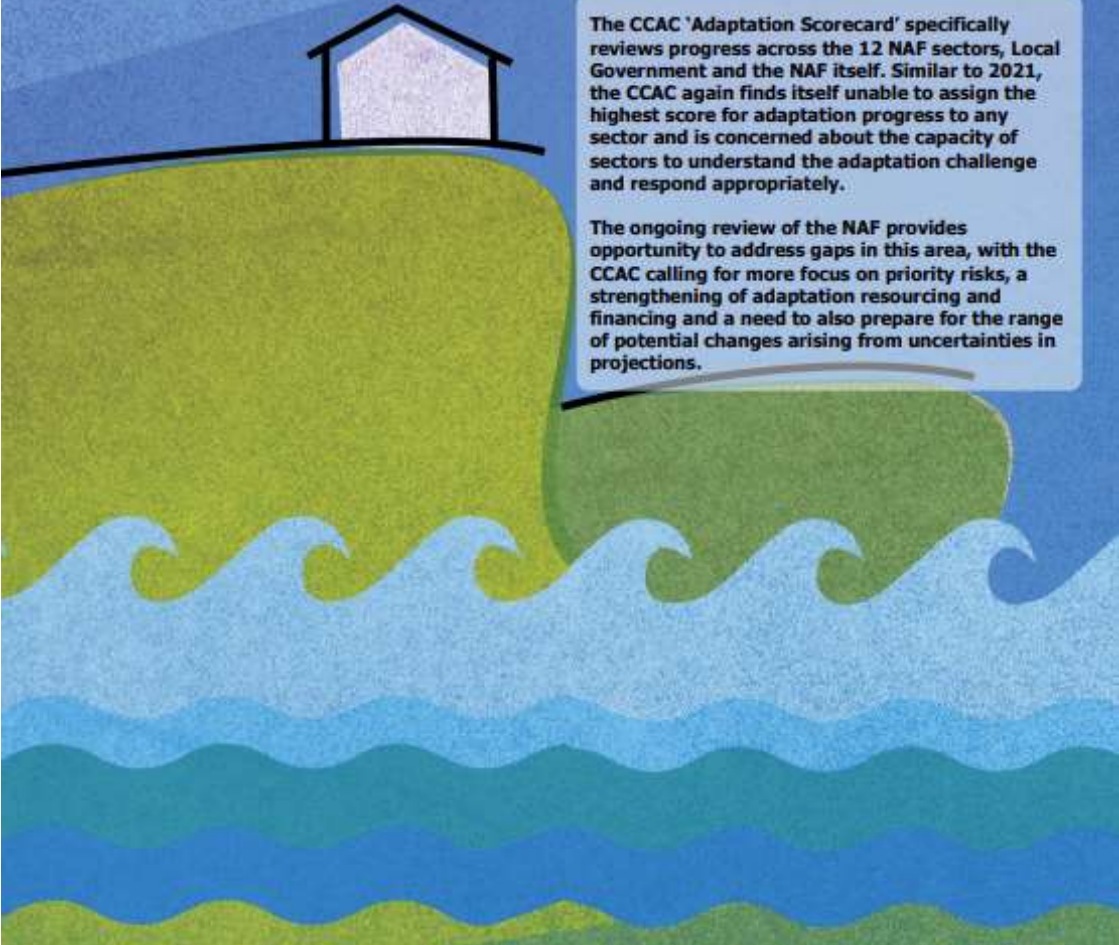
Progress in Q3 2022

Context:

Planning for the negative impacts of climate change (e.g. increased flooding, sea level rise and severe storms) is at the heart of climate adaptation efforts to minimise loss and damage across all sectors. Adapting to human-induced climate changes already built into the system is just as important as reducing emissions to mitigate against further impacts.

Ireland's first statutory National Adaptation Framework (NAF) was published in 2018, with actions in CAP 2021 dedicated to supporting its review and update, as well as the implementation of actions across 12 sectoral adaptation plans (detailed in Figure 10).

In its 2022 Annual Review, the CCAC repeated the need for increased policy attention to climate adaptation in Ireland. They report that while there is increasing clarity regarding future climate impacts, evidence of climate resilience across national sectors is mixed. While there has been some progress at sectoral and local level, the CCAC determine that adaptation is still not adequately considered or represented in a range of Government policies or initiatives.

An illustration of a white house with a black roof sitting on a green cliff. Below the cliff are stylized waves in shades of blue and green. The background is a solid blue color.

The CCAC 'Adaptation Scorecard' specifically reviews progress across the 12 NAF sectors, Local Government and the NAF itself. Similar to 2021, the CCAC again finds itself unable to assign the highest score for adaptation progress to any sector and is concerned about the capacity of sectors to understand the adaptation challenge and respond appropriately.

The ongoing review of the NAF provides opportunity to address gaps in this area, with the CCAC calling for more focus on priority risks, a strengthening of adaptation resourcing and financing and a need to also prepare for the range of potential changes arising from uncertainties in projections.

Figure 10- Sectoral Adaptation Plans and Themes in Ireland

Theme	Sector Level	Lead Department for Sectoral Adaptation Plans
Natural and Cultural Capital	<ul style="list-style-type: none"> - Seafood - Agriculture - Forestry - Biodiversity - Built and Archaeological Heritage 	<ul style="list-style-type: none"> - Department of Agriculture Food and the Marine - Department of Housing, Local Government and Heritage
Critical Infrastructure	<ul style="list-style-type: none"> - Transport Infrastructure - Electricity and Gas Networks - Communications Networks 	<ul style="list-style-type: none"> - Department of Transport - Department of Environment, Climate and Communications
Water Resource and Flood Risk Management	<ul style="list-style-type: none"> - Flood Risk Management - Water Quality - Water Services Infrastructure 	<ul style="list-style-type: none"> - Office of Public Works - Department of Housing, Local Government and Heritage
Public Health	<ul style="list-style-type: none"> - Health 	<ul style="list-style-type: none"> - Department of Health

Table 26 - 'High Impact' completed adaptation measures in Q3 2022

Adaptation Action / Measure Achieved	Why is this important?
<i>Action 453a:</i> Provide support to sectors and Local Authorities tasked with developing and implementing adaptation strategies	Providing adaptation information, data, decision tools and capacity building to Local Authorities is essential to assist the development and implementation of their adaptation strategies and local adaptation efforts. Climate Ireland is a website that acts as a national platform providing such support and tools to Local Authorities and sectors. Information on the website has been updated in line with the IPCC Assessment Report 6 report and will also soon migrate onto a dedicated EPA platform.
<i>Action 455b:</i> Report to Minister results of NAF Review Process	The National Adaptation Framework (NAF) has been Ireland's cornerstone adaptation policy since 2018. Under the Climate Act 2021, the framework must be reviewed not less than once every five years. A public consultation thus completed in July which sought views from stakeholders on the scope of the review of Ireland's existing NAF. A report on the review was submitted to the Minister on 26 September, as per this measure. This is important to decide the future of the NAF and associated adaptation priorities for Ireland in the years ahead.

<i>Action 468a:</i> Continue to develop coastal monitoring in the context of increased flooding risk related to climate change	Sea level rise resulting from increased global warming poses a significant risk to coastal communities worldwide. Monitoring potential impacts in Ireland is prudent from a risk assessment perspective. All wave sensors have now been deployed around the coast of Ireland, with a trial ongoing to observe wave heights in a changing climate.
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Table 27 - 'High Impact' delayed adaptation measures in Q3 2022

Adaptation Action / Measure Delayed	Why is this important?
<i>Action 84b:</i> Initiate the coordination of Ireland's National Framework for Climate Services in consultation with stakeholders	Ensuring coordinated resources and consistent information regarding adaptation is important from planning, infrastructure and policy perspectives. A Memo on the establishment of a National Framework for Climate Services was approved by Government in Q2, though delays continued in Q3 to host a kick off meeting coordinating necessary stakeholders. This meeting is now planned for Q4 2022.
<i>Action 374a:</i> Assess Adaptation/Appropriate tree species selection for climate change	A productive forestry base on the right soils performs important carbon sequestration functions and will be essential to reach climate neutrality. Ensuring that the right species are planted now that account for future climatic changes (e.g. temperature, CO ₂ concentrations, growing season) is critical to the success of future forests. Some species trials are in progress, but recruitment issues continued to cause delays to this measure in Q3. Trials are expected to continue into 2023.
<i>Action 492b:</i> Refurbish / Upgrade energy assets	As part of the need to identify the measures required to adapt vulnerable infrastructure in the electricity and gas networks sector to the impacts of climate change, energy assets were due to be refurbished/upgraded by Q3 2022 and a list of required measures produced. This measure was however delayed due to resourcing issues in DECC, in particular the establishment of an Energy Technical Advisory Division. It is important to ensure the resilience of our electricity supply sector in the face of increasing extreme weather events, flooding and sea level rise.

Detail on the progress of all CAP 2021 actions due for reporting in Q3 2022 can be found in Appendix 1.