Input assumptions for National Energy Projections and associated GHG emissions 2024-2055

1. Introduction

The Environmental Protection Agency (EPA) is the national body with responsibility to develop, prepare and publish projections of greenhouse gas emissions for Ireland. The EPA produces national greenhouse gas emission projections on an annual basis. The latest EPA Greenhouse Gas Emissions Projections Report provides an assessment of Ireland's total projected greenhouse gas (GHG) emissions from 2024 to 2055.

This document was produced to supplement the above report and provides information on the input assumptions that support the development of the scenarios used to forecast Irelands emissions 2024-2055.

Two policy scenarios are modelled, using EU recommended harmonised fuel price trajectories, the scenarios are:

- *Projections With Existing Measures* **(WEM)**
- *Projections With Additional Measures* **(WAM)**

Both scenarios include a varying carbon tax that increases by €7.50 per annum and reaches €100 per tonne by 2030. Post 2030 the carbon tax remains constant at €100 per tonne to 2055. Both scenarios also include a varying Emissions Trading Scheme (ETS) price that increases to €95 per tonne by 2030 and €220 per tonne by 2055. Energy Projections for WEM transport activity are based on projections of private car and goods vehicle activity from The National Transport Authority's (NTA) Reference Case scenario for 2030. Fuel price assumptions are implicit in the NTA Reference Case scenario modelling. For the WAM scenario these projections align with the NTA CAP23 scenario and do not assume any reduction in transport activity due to fuel price changes.

2. Input Assumptions

Policy Input Assumptions for each sector are set out in Table 1 below.

The first scenario, **With Existing Measures** (WEM), forecasts Ireland's future emissions based on the measures currently implemented and actions committed to by Government. To become part of the WEM scenario a policy or measure must be in place by the end of 2023 (the latest inventory year) and, in parallel, the resources and/or legislation must be in place or committed to by Government Departments or Agencies. Many Climate Action Plan policies and measures are not in the WEM scenario as they are still considered to be planned rather than implemented.

The **With Additional Measures** (WAM) scenario has a higher level of ambition and includes government policies and measures to reduce emissions that are under discussion (as per plans, programmes or other policy documents) and have a realistic chance of implementation in the future (e.g. by 2030). The WAM scenario is based on the measures in the latest Government plans (such as the Climate Action Plan 2024) which have a realistic pathway in place for implementation.

Table 1: Policy Input Assumptions

Electricity	With Existing Measures (WEM)	With Additional Measures (WAM)
Coal (Moneypoint)	**Modelling Assumptions:** Moneypoint shut down by March 2029 with primary fuel switching from coal to Heavy Fuel Oil (HFO) by June 2025, as per 'last resort' Services Agreement, see Commission for Regulation of Utilities (CRU) *Security of Electricity Supply – Retention of Moneypoint Units information* paper.	**Measure:** "Phase out and end the use of coal and peat in electricity generation". **Modelling assumptions**: As per WEM.
Peat (Edenderry)	**Modelling Assumptions:** Edenderry ED1 100% biomass 2024-2030 and close thereafter.	**Measure:** "Phase out and end the use of coal and peat in electricity generation". **Modelling assumptions**: As per WEM.
Oil (Heavy Fuel Oil): Tarbert	**Modelling Assumptions:** Tarbert all 592 MW capacity shut down by 2023 (Source: EirGrid and SONI, Generation Capacity Statement (GCS) 2023-2032).	**Measure:** No additional defined target. **Modelling assumptions**: As per WEM.
Oil (Distillate Oil)	**Modelling Assumptions:** All 324 MW capacity assumed to shut down by 2035 due to reaching end of life.	**Measure:** No additional defined target. **Modelling assumptions**: As per WEM.
Hydrotreated Vegetable Oil (HVO)	**Modelling Assumptions:** See Distillate Oil section regarding Edenderry peaking units switching from distillate oil to HVO 2025-2028 inclusive.	**Modelling assumptions:** As per WEM.
Natural Gas	**Modelling Assumptions:** 1.4 GW of new gas capacity assumed by 2030, as per 'risk adjusted capacity' in GCS2023.	**Measure:** "Delivery of at least 2 GW of new flexible gas-fired generation". **Modelling assumptions:** As per WEM.

Electricity	With Existing Measures (WEM)	With Additional Measures (WAM)
Variable Renewable Energy technology capacities	**Modelling assumptions**: Information provided by the Department of the Environment, Climate and Communications resulted in a WEM of 60.0% RES-E by 2030 modelled with the following capacities: | Onshore wind	6.8 GW
Offshore wind	1.4 GW
Solar PV	5.7 GW		**Measure:** **2025:** 50% RES-E (% of electricity demand from renewable energy). **2030:** 80% RES E (% of electricity demand from renewable energy). **Modelling assumptions**: Information provided by DECC resulted in a WAM of 68.3% RES-E by 2030 modelled with the following capacities: | Onshore wind	7.1 GW
Offshore wind	2.7 GW
Solar PV	6.3 GW	
Onshore Wind	**Measure:** The Renewable Electricity Support Scheme (RESS) mechanism, other supports for smaller-scale installations, e.g. small-scale RESS. **Modelling assumptions:** **2025:** 5.2 GW. **2030:** 6.8 GW.	**Measure:** **2025** 6 GW. **2030** 9 GW. **Modelling assumptions:** **2025:** 5.4 GW. **2030:** 7.1 GW.
Solar Photovoltaic (PV)	**Measure:** The Renewable Electricity Support Scheme (RESS) mechanism, and other supports for smaller-scale installations, e.g. micro-generation support scheme and small-scale RESS. **Modelling assumptions**: **2025:** 2.2 GW. **2030:** 5.7 GW.	**Measure:** **2025:** up to 5GW. **2030:** 8 GW. **Modelling assumptions**: **2025:** 2.5 GW. **2030:** 6.3 GW.
Offshore Wind	**Measure:** The Offshore Renewable Electricity Support Scheme (ORESS) mechanism. **Modelling assumptions**: **2025:** 0.03 GW. **2030:** 1.4 GW.	**Measure:** **2025:** no target. **2030:** "at least" **5** GW. Plus 2 GW for green hydrogen post-2030. **Modelling assumptions**: **2025:** 0.03 GW. **2030:** 2.7 GW.

Electricity	With Existing Measures (WEM)	With Additional Measures (WAM)
Zero-Carbon Gas as Primary Fuel Source for Power Generation Allocated to Electricity Sector	**Measure:** N/A **Modelling Assumptions:** *Hydrogen*: 0 TWh (No assumption meeting the WEM criteria at this time). *Biomethane*: 0 TWh for electricity generation (see biomethane section below for other biomethane assumption).	**Measure:** As per WEM. **Modelling Assumptions:** *Hydrogen*: As per WEM. *Biomethane*: 0 TWh for electricity generation (see biomethane section below for other biomethane assumptions).
Other	**Measure:** N/A **Modelling Assumptions:** *Interconnection* - Greenlink (IE-GB), 500 MW; Jan 2025. - North-South (IE-NI), increase from 400 MW to 1350 MW, Jan. 2027. - Celtic (IE-France), 700MW; Jan. 2027. *Demand-Side Units* 745 MW by 2030, as per GCS2023. *Energy Storage* 1 GW of battery energy storage, with fleet weighted-average duration of 1.7 hours by 2030, as per GCS2023. No ocean energy until after 2040. No growth in biomass CHP (combined heat and power), hydro, waste to energy, or pumped hydro energy storage.	**Measure:** N/A **Modelling assumptions:** As per WEM, except for battery energy storage (see below). *Energy Storage* 1.8 GW by 2030 with 3.3-hour fleet average. 400 MW 8-h included by 2030 as proxy for successful transmission system operator long-duration energy storage (LDES) scheme.
Large Energy Users (Data centres)	**Measure:** N/A **Modelling Assumptions:** *Electricity*: EirGrid Median scenario from 10-year median forecast (EirGrid's best estimate) taken for both WEM and WAM, with data extrapolated for remaining projections horizon.	**Measure:** *CAP2023*: "Growth from large energy users, such as data centres, will have to be moderated to protect security of supply and ensure consistency with the carbon budget programme". *CAP2024*: "Managing energy demand in the commercial sector, with a potential focus on data centre power demand.".

Electricity	With Existing Measures (WEM)	With Additional Measures (WAM)
	Gas: Projected increase in gas use by data centres aligned to the Low scenario of "Annual large new industrial & commercial loads demand forecasts" from GNI's latest Network Development Plan (Network-Development-Plan-2023) This scenario "is limited to Data Centre customers with connection agreements already in place."	**Modelling Assumptions**: As per WEM.

Transport	With Existing Measures (WEM)	With Additional Measures (WAM)
Energy Projections for transport activity are based on projections of private car and goods vehicle activity from the National Transport Authority (NTA). This ensures broad alignment between the National Energy Projections of transport energy use and Department of Transport projections of transport activity and the impact of demand reduction measures. The NTA projections were carried out on behalf of the Department of Transport to demonstrate a pathway to meeting the 2023 Climate Action Plan (CAP 23) targets for the sector.		
Biofuels	**Measure:** Renewable Transport Fuel obligation. **Modelling assumptions:** Based on 2023 Renewable Transport Fuel Policy statement, CAP24, and consultation with Dept. of Transport, assume the following blend rates for road transport fuels. <table><tr><td>**2025**</td><td>**2030**</td></tr><tr><td>E10, B12</td><td>E10, B20</td></tr></table>	**Measure:** Renewable Transport Fuel obligation. **Modelling assumptions:** As per WEM.

Transport	With Existing Measures (WEM)	With Additional Measures (WAM)
Electric Vehicles (EVs)	Electric Vehicles increase to the following levels (BEV = Battery Electric Vehicle, PHEV = Plug-in Electric Vehicle):	Electric Vehicles increase to the following levels:

Left table (WEM):

	2025	2030
Private cars BEV	98,415	270,142 (11% of car stock)
Private cars PHEV	88,430	279,410
Total	186,845	549,552
LGV BEV	4,800	10,500
LGV PHEV	1,200	4,500
HGV BEV	10	150
Total	6,010	15,150
Total EVs	192,855	564,702

No new ICE car or LGV sales post 2035.
Import of used ICE vehicles continues post 2035.

Right table (WAM):

	2025	2030
Private cars BEV	101,505	330,740 (13% of total car stock) (90% new cars:10% imports approx.)
Private cars PHEV	88,430	279,410
Total	189,935	610,150
LGV BEV	4,800	24,000
LGV PHEV	1,200	6,000
HGV BEV	10	600
Total	6,010	30,600
Total EVs	195,945	640,750

No new ICE car or LGV sales post 2035.
Import of used ICE vehicles continues post 2035.

'Avoid' (Reduction in internal combustion engine (ICE) Vehicle kilometres)

&

'Shift' (behavioural and sustainable transport)

Modelling Assumptions:
Activity of private cars and goods vehicles based on the NTA's REF case scenario (CAP 2023).

The WEM scenario does not include the impact of the basket of demand reduction measures that the NTA modelled to illustrate a pathway to achieving the 20% reduction in road-transport activity targeted in CAP23.

Measure:
2030:
'Avoid' measures:
- 20% reduction in total vehicle kms.
- 20% reduction in total car kms.
- 20% reduction in commuting car kms.
- 50 % reduction in fuel usage.

'Shift' measures:
- 50% increase in daily active travel journeys.
- 130% increase in daily public transport journeys.
- 25% reduction in daily car journeys. Shift in Daily Mode Share:
  - 2018: 72% (car), 8% (Public Transport), 20% (Active Travel).
  - 2030: 53% (car), 19% (PT), 28% (Active Travel).

Transport	With Existing Measures (WEM)	With Additional Measures (WAM)
		• 30% shift of all E-to-E car journeys to sustainable modes. **Modelling assumptions:** Activity of private cars and goods vehicles based on the NTA's reference case scenario plus the impacts of the basket of demand reduction measures that the NTA modelled to illustrate a pathway to achieving the 20% reduction in road-transport activity targeted in CAP23. One of these modelled measures relating to price increases in petrol and diesel out to 2030 has no supporting policy and is not included in the EPA projections.
Alternative Fuel Vehicles	**Modelling Assumptions:** 150 compressed natural gas (CNG) vehicles by 2030 from the National Policy Framework.	**Modelling assumptions:** WEM Plus 100% of CNG assumed to be from Biomethane i.e. direct use of anaerobic digestion (AD) biomethane.
Sustainable Aviation Fuel	**Modelling Assumptions:** Not in WEM.	**Sustainable Aviation Fuel (SAF)** EU targets as per ReFuelEU Aviation Regulation[1]. |	2025	2030	2050
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SAF (ix B)	2%	6%	70%	
Energy Efficiency in Transport	**Modelling assumptions:** Real world data has shown that improvements in technical energy efficiency of ICE vehicles have largely been cancelled out by a shift to larger and heavier vehicles over the past 10 years. Based on this observation we have not assumed any improvement in ICE engine efficiency, apart from the effects of switching to more efficient PHEV and BEV vehicles.	**Modelling assumptions:** As per WEM.

Enterprise, Built Environment and Public Sector	With Existing Measures (WEM)	With Additional Measures (WAM)
Projected Demand	Underlying growth in energy demand is based on the ESRI I3E macroeconomic projection for Industry, Services & Agriculture sectors. For Residential sector, the demand is based on a bottom-up estimate using the baseline demand of existing stock from the Sustainable Energy Authority of Ireland National Emissions Modelling Framework archetype model with additional demand allowed for new dwellings. **WEM** New dwelling projections are as follows: *2024-2026*: Central Bank forecast 2024 Q3 bulletin. *2027-2030*: increasing incrementally from 2026 figure to 40,500 in 2030 (40,500 is the Housing for All target). *2031 onwards*: 39,700, which is the average annual housing demand over all scenarios for 2030-2040 per latest ESRI research (paper linked below). **WAM** New dwelling projections are as follows: *2024*: Central Bank forecast. *2025-2030*: increasing incrementally from 41,000 in 2025 to 60,000 in 2030 based on Nov 2024 DHLGH press release Draft revision of National Planning Framework and ambitious new housing targets; *2031-2040*: decreasing incrementally from 2030 level to 39,700 in 2040 (39,700 is the average annual housing demand over all scenarios for 2030-2040 in the ESRI research paper "Population Projections, the Flow of New Households and Structural Housing Demand"). This level of annual demand for new dwellings is assumed to continue until 2055. WEM and WAM new dwelling projections are reduced to allow for an obsolescence rate of 0.25% per annum (per ESRI paper linked above) of the occupied household stock. The starting point for the stock is the Census 2022 results.	
Support Scheme for Renewable Heat (SSRH – Business Grant)	**Modelling Assumptions:** Current SSRH tariffs to be simulated to 2045 (modelling supports to newcomers until 2030 to assist with meeting CAP targets).	**Measure:** Overall target is 70-75% share in renewable heating. **Modelling assumptions:** Current SSRH tariffs simulated to 2054 (modelling supports to newcomers until 2039. Assume an effective ban on the installation of fossil fuel boilers from 2040 based on changes to building regulations.
District Heating	**Modelling assumptions:** Tallaght District Heating Network (TDHN): Based on discussions with CODEMA: assume 4.5 GWh delivered in 2022, increasing to 10.0 GWh by end 2026, 29.0 GWh by 2030. Dublin District Heating Scheme (DDHS): Planned to complete by 2030. Assume linear increase from 0 GWh in 2025 to 45.0 GWh in 2030. Total: 74 GWh (0.074 TWh) in 2030.	**Measure:** **2025**: Up to 0.8 TWh of district heating installed capacity (Residential 0.7 and Commercial/Public Services 0.1). **2030**: Up to 2.7 TWh District Heating (2.5 Residential/0.2 Commercial). **Modelling assumptions:** Additional capacity based on planned project pipeline out to 2030. Total: 214 GWh (0.214 TWh) in 2030.

Enterprise, Built Environment and Public Sector	With Existing Measures (WEM)	With Additional Measures (WAM)
Residential heat pumps	**Modelling assumptions:** | Existing Homes	SEAI heat pump grants and Local Authority retrofits continue at their current level to achieve 81,400 by 2030 (compared to 2018).
New Homes	Housing for All (02/09/2021*) targets. 40,500 new homes per annum by 2030. Assume heat pump in all new homes from 2025.
Total installed Residential Heat Pumps (includes heat pumps installed before 2019 i.e. pre-CAP targets)	435,000 by 2030. | *gov.ie - Housing for All - a New Housing Plan for Ireland	**Measure:** **2025**: 45,000 heat pumps in existing homes. 170,000 heat pumps in new builds. **2030**: 400,000 heat pumps in existing homes. 280,000 heat pumps in new builds. **Modelling assumptions:** | Existing Homes	SEAI heat pump grants and Local Authority retrofits to achieve 143,000 by 2030 (compared to 2018). Assume an effective ban on the installation of fossil fuel boilers from 2040 based on changes to building regulations
New Homes	New Government Housing targets (05/11/2024**) to achieve 60,000 new homes per annum by 2030. Assume heat pumps will be installed in all new homes from 2025, in line with building regulations.
Total installed Residential Heat Pumps (includes heat pumps installed before 2019 i.e. pre-CAP targets)	571,000 by 2030.	 ** gov.ie - Government agrees to progress amendments to Draft Revision of National Planning Framework & ambitious new housing targets

Enterprise, Built Environment and Public Sector	With Existing Measures (WEM)	With Additional Measures (WAM)
Biomethane	**Modelling assumptions:** 1 TWh delivered by 2030 based on consultation with the Department of. Agriculture and the Department of the Environment Climate and Communications.	**Measure:** **2025:** Agriculture-based supply chain where target is 'up to' 1 TWh biomethane production. **2030:** Agriculture-based supply chain where target is **'up to' 5.7** TWh biomethane production. **Modelling Assumptions:** 4.3 TWh delivered by 2030 to align with Gas Network Ireland's best estimate biomethane production scenario from the 2023 Network Development Plan (Network-Development-Plan-2023).
Residential energy efficiency programmes	**Modelling assumptions:** SEAI energy efficiency grants continue at their current level until 2030 and that the Home Energy Upgrade Loan Scheme continues to be available until end of 2026.	**Measure:** **2025:** Equivalent of 120,000 dwellings retrofitted to BER B2 'or cost optimal equivalent'. **2030:** Reaching 500,000 dwellings. **Modelling assumptions:** Energy efficiency grants increase, and the Home Energy Upgrade Loan Scheme is extended to support the installation of 143,000 heat pumps in existing dwellings by 2030 (includes SEAI scheme retrofits and Local Authority housing retrofits). Assume that SEAI energy efficiency grants remain at the higher level until 2039.
Public sector energy efficiency programmes	**Modelling assumptions:** Current levels of Community Energy and EXEED grants assumed to continue until 2030. Mandatory energy audits for large organisations.	**Modelling assumptions:** Current levels of Community Energy and EXEED grants assumed to continue until 2039. Assume an effective ban on the installation of fossil fuel boilers from 2040 based on changes to building regulations Mandatory energy audits for large organisations. See District Heating measure. See Heat Pump Measure. See Biomethane Measure. See Carbon-Neutral Heating measure.

Enterprise, Built Environment and Public Sector	With Existing Measures (WEM)	With Additional Measures (WAM)
Commercial sector energy efficiency programmes	**Modelling assumptions:** Current levels of Community Energy and EXEED grants until 2030. Mandatory energy audits for large organisations.	**Measure:** See Biomethane Measure. See Carbon-Neutral Heating measure. **Modelling Assumptions**: Current levels of Community Energy and EXEED grants assumed to continue until 2039. Assume an effective ban on the installation of fossil fuel boilers from 2040 based on changes to building regulations Mandatory energy audits for large organisations (see https://www.seai.ie/business-and-public-sector/energy-auditing/).
Energy Efficiency Obligation Scheme (EEOS)	**Modelling assumptions:** Assume 2023 level of savings (that are uniquely attributable to EEOS) continues until 2030.	**Modelling assumptions:** Assume 60% of EED Article 8 target will be met through EEOS (See CAP21 Section 14.2.8 EEOS).
Building Regulations (Res and Commercial)	**Modelling assumptions:** All new buildings are Nearly Zero Energy Building (NZEB).	**Measure:** **2025:** All new buildings NZEB. **2030**: All new buildings ZEB. (ZEB =new standard which does not cause any on-site carbon emissions from fossil fuels). **Modelling Assumptions:** As per CAP24.
Decrease embodied carbon in construction materials	**Modelling assumptions:** Not in WEM.	**Measure:** **2025:** Decrease by 10% for materials produced and used in Ireland. **2030**: Decrease by 30% for materials produced and used in Ireland. **Modelling Assumptions:** Not in WAM.
Accelerate uptake of carbon neutral heating in industry	**Modelling assumptions:** Not modelled explicitly - the growth in RES-H is an outcome of the model depending on demand growth and the assumptions on individual renewable heat sources.	**Measure:** **2025:** 50-55% share in carbon neutral heating. **2030:** 70-75% share of carbon neutral heating in total fuel demand. **Modelling Assumptions:** Uptake of renewable heating technologies based on SEAI's uptake modelling rather than hard coding the targets until there is a direct measure to apply in input assumptions.

Enterprise, Built Environment and Public Sector	With Existing Measures (WEM)	With Additional Measures (WAM)
Construction Materials and CCS	Modelling assumptions: Not in WEM.	Measure: **2025:** Decrease by 10% for materials produced and used in Ireland. Products substitution and reduction of clinker content in cement. **2030:** Decrease by at least 30% for materials produced and used in Ireland. Products substitution and reduction of clinker content in cement. **Modelling Assumptions:** Not in WAM as no agreed method for measuring.

IPPU	With Existing Measures (WEM)	With Additional Measures (WAM)
Cement Industry	Modelling assumptions: Process Emissions from clinker production based on an Industry-provided cement growth rate of 1.4% per annum with a cap of 4.7 Mt cement per annum (max capacity). 4.7MT cement (4.07 Mt clinker) is reached by 2035 and flatlined thereafter.	Modelling assumptions: As per WEM.

Waste	With Existing Measures (WEM)	With Additional Measures (WAM)
Waste	Modelling assumptions: Based on projected reduction of waste going to landfill and the age of existing waste in landfill.	Modelling assumptions: As per WEM.

Agriculture	With Existing Measures (WEM)	With Additional Measures (WAM)
Projected activity data	Modelling assumptions: Activity data (animal numbers, crop areas and fertiliser use) projected from Teagasc Base Case Scenario.	Modelling assumptions: As per WEM.
Low Emission Slurry Spreading - Bovines	Modelling assumptions: Indirect nitrous oxide savings from Ammonia abatement measures: Target of 60% of all slurry spread by low emissions slurry spreading by 2022; 80% by 2025; and 90% by 2027.	Modelling assumptions: As per WEM.

Agriculture	With Existing Measures (WEM)	With Additional Measures (WAM)
Low Emission Slurry Spreading – Pigs	**Modelling assumptions:** 100% use of low emission slurry spreading as per Nitrates Action Plan.	**Modelling assumptions:** As per WEM.
Further reduction in Crude protein for Dairy cows	Not in WEM.	**Modelling assumptions:** Further 1% reduction in the crude protein content of Dairy cow concentrates during grazing season (National Air Pollution Control Programme - NAPCP and 5th Nitrates Action Programme).
Increased Liming	**Modelling assumptions:** Reduced N fertiliser use due to improved nutrient use efficiency from liming (target liming usage of 2 Mt per annum). Increase in direct CO_2 emissions from lime application to soils.	**Modelling assumptions:** As per WEM. Based on AgClimatise and Teagasc MACC.
Reduction in Crude protein of pig feed	Not in WEM.	**Modelling assumptions:** Reduced crude protein in finishing pig diets as per Teagasc GHG MACC AgClimatise and CAP24.
Manure management measures	Not in WEM.	**Modelling assumptions:** Manure additives to reduce NH_3 (and thus indirect N_2O) and CH_4 emissions. Covering of uncovered manure stores as per AgClimatise for both cattle and pigs. Drying of poultry manure.
Fertiliser use measures	Reduced use due to increased liming.	**Modelling assumptions:** Reduce fertiliser nitrogen use to 330,000 t by 2025 and 300,000 t by 2030.
Increased adoption protected urea	Not in WEM.	**Modelling assumptions:** 80-90% uptake of protected urea on grassland farms by 2025 and 90-100% uptake by 2030. Includes increased direct emissions of CO_2 from urea application to soils.
Earlier finishing of Beef Cattle (26 to 22-23 months)	Not in WEM.	**Modelling assumptions:** Target 24-25 months by 2025 and 22-23 months by 2030 as per CAP24.
Reduced age at first calving of suckler beef cows	Not in WEM.	**Modelling assumptions:** Reduce age of first calving by 2 months by 2025 and 3.9 months by 2030 as per CAP24.
Dairy economic breeding index improvements	Not in WEM.	**Modelling assumptions:** Continuation of trend in increasing Economic Breeding Index (EBI) by €10 per annum leading to decreased CH_4 emissions. Improved animal breeding by focusing on low methane traits.
Use of Methane inhibitors	Not in WEM.	**Modelling assumptions:** Initial focus on winter milk systems fed total mixed rations, progressing to spring calving cohort of herd and in later years development of a slow-release bolus.

Agriculture	With Existing Measures (WEM)	With Additional Measures (WAM)
		Addition of a slow-release bolus pasture-based feed additive.
Limit Straight Urea sales	Not in WEM.	**Modelling assumptions:** Limit sales of straight Urea to 20,000 t per annum from 2025 onwards as per NAPCP.
Water table management of grasslands on organic/peat soil	Not in WEM.	**Modelling assumptions:** Water Table Management (Peat soils) Pathway 2 of Teagasc MACC and CAP24 – 80,000 ha of water table manipulation.
Diversification	Not in WEM.	Not in WAM.

Land Use, Land-Use Change and Forestry (LULUCF)	With Additional Measures (WAM)	With Additional Measures (WAM)
Forestry	**Modelling assumptions:** Afforestation rates of 2,000 ha/year.	**Modelling assumptions:** Afforestation rates of 8,000 ha/year for 2026-2030. Prevent deforestation on 495 ha/year. Afforestation: 2,000 ha agroforestry by 2030. Extended rotation on 31% of managed forests.
Grasslands	Not in WEM.	**Modelling assumptions:** Optimal management of 750,000 ha grassland on mineral soils by 2030. Water Table Management (Peat soils) Pathway 2 of Teagasc MACC and CAP24 – 80,000 ha of water table manipulation.
Wetlands	**Modelling assumptions:** 33,500 ha of peatlands rewetting/restoration/ rehabilitation as part of Bord na Móna EDRRS and LIFE People and Peatlands.	**Modelling assumptions:** 35,900 ha of peatlands rehabilitated as part of Bord na Móna EDRRS and LIFE People and Peatlands. Additional 30,000 ha exploited peat rewetted.

3. Policy Input Assumptions not included in the WAM Scenario

Policies and measures up to 2030

- The target of 80% share from renewable electricity (RES-E) by 2030 is not assumed. Instead, WEM and WAM scenarios for variable renewable energy technology capacities for onshore wind, offshore wind and solar photovoltaic (PV) technologies were updated with latest information and used in the modelling. The RES-E share is projected to be 68.3 % for WAM by 2030.

  The renewable energy technology capacities for onshore wind, offshore wind and solar PV in the WAM scenario is projected to be 7.1 GW, 2.7 GW and 6.3 GW respectively by 2030. This compares with 9 GW onshore wind, "at least" 5 GW offshore wind and 8 GW of solar PV by 2030 in CAP 2024.

- Eirgrid data[1] were used to produce an adjusted trajectory yielding new gas fired generation of 1.4 GW by 2030 in the WEM and WAM scenarios, as an implementation pathway to the CAP 2024 target of "at least" 2 GW for new flexible gas fired generation is not available.

Policies and measures post-2030

- 2 GW offshore wind for green hydrogen uses in industry post-2030 (as outlined in Chapter 12 of the Climate Action Plan 2024) is not currently included.
- Zero-emission gas-fired generation from biomethane and green hydrogen (via 2 GW offshore wind) commencing by 2030 is not currently included.

Transport

Policies and measures up to 2030

- Climate Action Plan 2023 introduced an Avoid/Shift policy to achieve an abatement of 2.09 Mt CO_2eq by 2030 including a range of behavioural change and sustainable transport measures. One of these measures relates to price increases in petrol and diesel out to 2030 and has no supporting policy so is not included in the EPA projections.
- The full CAP 2024 ambition of 945,000 electric vehicles on the road by 2030 is not modelled. Instead, a total of 640,750 electric vehicles is modelled in the WAM scenario, based on updated information from the Department of Transport.

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[1] EirGrid SONI Generation Capacity Statement 2023-2032

Enterprise, Built Environment and Public Sector

Policies and measures up to 2030

- Measures aimed at achieving emissions savings from a decrease in embodied carbon in construction materials (1.0 Mt CO_2 abatement by 2030) are not currently modelled as there is no evidence of an implementation pathway.
- The Climate Action Plan 2024 target of a 70-75% share in renewable heat in industry has no pathway to implementation outlined in the Plan and is not specifically modelled. Instead, current Support Scheme for Renewable Heat (SSRH) grant rates are modelled to 2055.
- The full CAP 2024 target for Biomethane of 5.7 TWh is not modelled. Instead, the delivery of 4.3 TWh biomethane is modelled in the WAM scenario, which is aligned with Gas Networks Ireland's best estimate biomethane production scenario from the 2023 Network Development Plan[2].
- The full CAP 2024 target for District Heating of 2.7 TWh is not modelled. Instead, 0.214 TWh district heating in place by 2030 is modelled in the WAM scenario based on latest project pipeline information.
- The CAP 2024 target for residential heat pumps (new homes and retrofits) is 680,000 by 2030. For these projections a total of 571,000 heat pumps installed by 2030 is modelled in the WAM scenario. This is based on the latest information on private and local authority retrofits and the number of new builds by 2030.

Policies and measures post-2030

- Post-2030 emissions reductions associated with Carbon Capture and Storage are not included as there is no pathway to implementation available.

Agriculture

Policies and measures up to 2030

- Diversification measures in Agriculture with savings by 2030 of 1.5 Mt CO_2eq are not included as further information is needed to model an implementation pathway for these measures.

Overall

- Climate Action Plan 2024 identified unallocated emissions savings of up to 26 Mt CO2eq (5.25 Mt CO2eq annually in the second carbon budget period 2026-2030). These savings are not modelled in these projections. It is noted that CAP 2024 addressed the issue of unallocated emissions

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[2] Network-Development-Plan-2023.pdf

savings under five themes (including energy efficiency, sustainable food and agriculture and deployment of carbon capture and storage) and these are further addressed in Climate Action Plan 2025.

- Further Measures post-2030 detailed in the Electricity, Industry, Built Environment, Transport and Agriculture sectors where no specific measures or emissions savings have been identified are not modelled.

These savings combined are estimated to provide a conservative additional abatement of 13 Mt CO_2eq in 2030.