



February 2024

Climate Action Roadmap

National Standards
Authority of Ireland
(NSAI)



NSAI

Innovating to shape a safer, better and sustainable future

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Approved 20 February 2024

1. Context and Introduction

1.1 The National Standards Authority of Ireland (NSAI) – organisational context

The NSAI is Ireland's official standards body. NSAI improves the performance of Irish business and protects consumers through the setting of standards and issuing of certification in the quality and safety of goods and services.

NSAI is a business support agency under the remit of the government Department of Enterprise, Trade and Employment. NSAI aims to inspire consumer confidence and create the infrastructure for products and services to be recognised and relied upon, all over the world.



The NSAI Strategic Plan 2022-2026, sets out our commitment to contribute to, and take a leadership role in core national policies such as climate action. NSAI will provide critical support to the public and private sector to achieve sustainable development goals.

Within the NSAI's Strategic Plan 2022-2026, climate action and sustainability form a key focus within Goal 2 which set out the NSAI's commitment to innovatively create new service lines to embrace change.

Strategic Project 3 'Climate Action and Sustainability' under the NSAI's Strategic Plan 2022-2026 sets out NSAI's commitment to structuring its services to support the Green Transition, provide an infrastructure to support that transition, and establish NSAI as an exemplar organisation in terms of internal environmental targets (Figure 2 below).

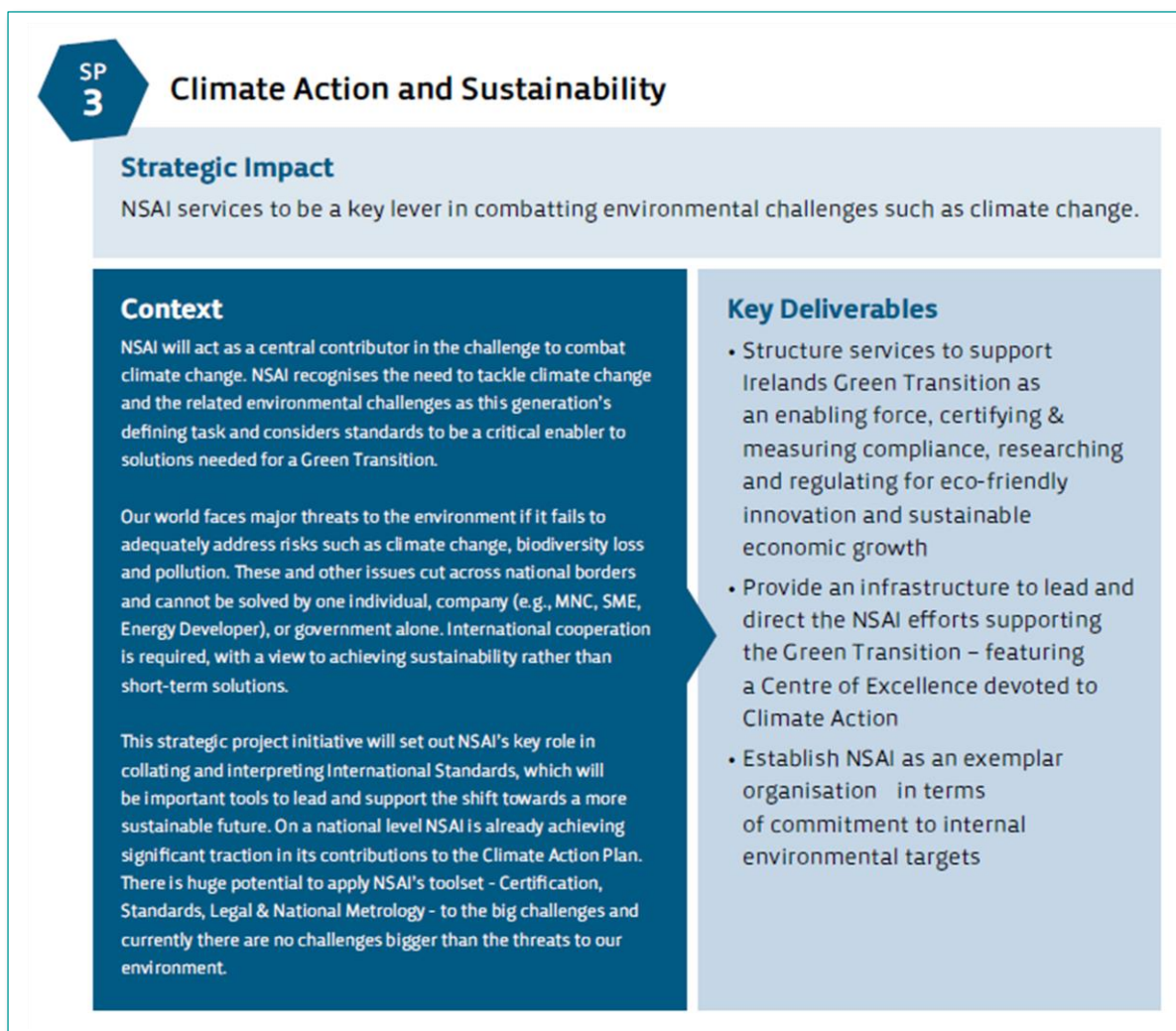


Figure 2: Strategic Project 3 covering Climate Action and Sustainability

1.2 The Government of Ireland's Climate Action Commitments and NSAI's role

The Government's Climate Action Plan and the Climate Action and Low Carbon Development (Amendment) Act 2021 are aligned with the European Green Deal, which sets out European Commission policy initiatives with the overarching aim of making the European Union (EU) climate neutral by 2050. The Climate Action and Low Carbon Development (Amendment) Act 2021 sets Ireland on a legally binding path to net-zero emissions by 2050. NSAI is among Ireland's government agencies with responsibility for supporting the Act through the development of standards across a range of related subject areas.

Harnessing the power of standards, NSAI is committed to supporting and facilitating stakeholders in setting the tone for how green measures, such as home retro-fitting, energy innovation and the circular economy can be utilised in Ireland. The Authority, in partnership with policymakers, researchers, and industry professionals, continues to identify new areas in which to utilise standardisation initiatives in response to the global climate imperative.

Public sector bodies are required to put in place a Climate Action Roadmap to reduce greenhouse gas emissions (GHG) emissions by 51% by 2030 and increase the improvement in energy efficiency from the 33% target in 2020 to 50% by 2030.

1.3 NSAI Climate Action Roadmap

The Climate Action Plan sets out the energy efficiency and energy-related greenhouse gas (GHG) emissions reduction targets which public sector bodies in Ireland are legally obliged to meet, and mandates the National Standard Authority of Ireland (NSAI) as a public body to develop a roadmap setting out how it will deliver these targets.

This initial iteration of the NSAI Climate Action Roadmap has been developed by the NSAI in response to this obligation. It outlines the work undertaken by the NSAI to date and our approach to continuing to reduce carbon emissions and energy usage from our buildings, as a result of our operations and activities. This Climate Action Roadmap has been written to demonstrate how the NSAI will meet the requirements of the Public Sector Climate Action Mandate 2023 (the Mandate) and reach its 2030 carbon and energy efficiency targets through reducing carbon emissions and energy consumption from our buildings and operations.

The Climate Action Plan 2023 envisages the public sector leading by example on climate action to reach the target of reducing Ireland's greenhouse gas emissions by 51% by 2030 and becoming climate neutral no later than 2050. Climate action should be embedded into how each public body plans, organises and mobilises to deliver its functions and services.

This initial NSAI Climate Action Roadmap will be a framework 'living document' and will be developed in future iterations.

1.4 United Nations Sustainable Development Goals

The NSAI is committed to supporting the Government and businesses align with and deliver on the ambitions of the United Nations Sustainable Development Goals (UN SDGs). The NSAI is in the process of focusing on a number of priority UN SDGs, whilst being supportive of all of them.



Figure 3: The United Nations Sustainable Development Goals (UN SDGs)

2. Our People – Leadership and Governance, Engaging Our Staff

This Climate Action Roadmap builds upon several work-streams and initiatives progressed by the NSAI with the objective of reducing resource use, enabling behavioural change, and achieving certification on complementary energy and environmental standards.

Actions initiated and implemented to date include:

1. The NSAI's CEO and board have committed to the NSAI's role in supporting government's implementation of the climate action plan, through the NSAI Strategic Plan 2022-26.
2. Defined sustainability and energy usage reduction as being a key deliverable as part of the NSAI's Strategic Plan 2022-2026.
3. NSAI has nominated Mr Enda McDonnell, its Director of Standards, as its Climate and Sustainability Champion.
4. NSAI has also nominated an Energy Performance Officer (Mr Frank Collins).
5. Recruited a dedicated Facilities and Sustainability Officer to drive and support sustainability and carbon reduction initiatives across the organisation (Ms Wendy Nolan).
6. Established a Green Team, under our Strategic Project 3.3, with members representing all departments across the organisation with the objective of supporting targets through staff engagement, information-sharing and behavioural change. Strategic Project 3.3, focused on the Green Team, is

designed to become an integrated driver of sustainability. Green Team activities and achievements to date are dispersed throughout this document, including commencement of engagement with My Green Labs.

7. Enrolled for participation in a sustainability certification programme for laboratories at the National Metrology Laboratory (NML), resulting in My Green Lab certification (valid until 2025).
8. Engaged with the SEAI Public Sector Partnership Programme.
9. Began development in 2022-23 of a Climate Action and Sustainability Centre of Excellence to embed and drive climate action across the organisation through the engagement and involvement of all NSAI teams, and in the service provision to business. In 2023, appointed the first personnel to lead the establishment of the NSAI's Climate Action and Sustainability Centre of Excellence (Pádraic Ó hUiginn appointed as Lead).
10. NSAI will, led by the new Climate Action and Sustainability Centre of Excellence and in collaboration with other functions of the organisation, develop climate action and sustainability workshops and identify senior leadership training opportunities.
11. Given the international aspects of its role in supporting Irish business, NSAI must use air travel to meet some of its commitments worldwide. NSAI uses hybrid meetings and audits where possible to reduce its air travel footprint in fulfilling its international role. Since 2020, NSAI off-sets its official air travel emissions through a carbon tax-linked payment to the statutory Climate Action Fund each year.
NSAI records, monitors and values the greenhouse gas emissions associated with official air travel usage, in line with the provisions of Circular 01/2020 issued by the Department of Public Expenditure, National Development Plan Delivery and Reform in January 2020. Moreover, NSAI makes a payment to the Fund Manager of the statutory Climate Action Fund related to those emissions for the previous year:
 - for 2022, NSAI's year-end carbon emissions liability for official air travel was €1,171.21.
 - for 2021, NSAI's year-end carbon emissions liability for official air travel was €51.79, reflecting the level of public health restrictions in place due to the global COVID-19 pandemic during that time.
 - for 2020, NSAI's year-end carbon emissions liability for official air travel was €456.90, reflecting the spread of the COVID-19 pandemic in the first quarter of that year.

3. Our Targets

This Climate Action Roadmap focuses on meeting or going beyond the requirements of the Climate Action Mandate 2023.

NSAI's core climate action targets are:

1. Reduce GHG emissions by 51% in 2030.
2. Increase the improvement in energy efficiency (as part of the public sector) from the 33% target in 2020 to 50% by 2030.
3. Update this climate action roadmap annually in line with the updated Public Sector Climate Action Mandate.

4. The Journey to Our Targets

4.1 Highlights

Some highlights of key actions initiated by NSAI on its journey to the 2030 and 2050 targets include:

1. Monitored energy usage data and defined significant energy users (SEUs) that account for over 80% of the carbon emissions across the built environment.
2. Completed several energy reduction projects across the estate, including lighting upgrades, BMS upgrades and boiler replacements.
3. Commenced an I.S. EN ISO 50001:2018 accelerator programme, supported by the SEAI with an objective to achieve certification by Q1 2024.
4. NSAI has upgraded the building management system in the National Metrology Lab.
5. NSAI has installed solar photovoltaic (PV) panels at the Limerick regional office, with the objective of reducing reliance on fossil fuels and moreover, sending any surplus electricity generated to the national grid.

4.2 Background and context

The Climate Action Plan 2021 was preceded by the National Energy Efficiency Action Plan which set out an energy reduction performance target of 33% for the Public Sector by 2020, against a 2009 baseline year.

To support this, all public sector bodies have been required to report and track progress on energy reduction to the Sustainable Energy Authority of Ireland in accordance with S.I. 426/2014 (and S.I. 542/2009).

The 2022 Annual Report on Public Sector Energy Performance indicates a 31.5% saving across all governments departments and public bodies, compared to 2009, a slight decrease from previously exceeding the 33% 2020 energy efficiency target. The report indicates that this can be linked to a return to more office-based working following the lifting of COVID-19 pandemic public health restrictions.

In comparison, by the end of 2022, NSAI had reduced its total consumption (non-adjusted) by 49.9%, as against the 2009 baseline.

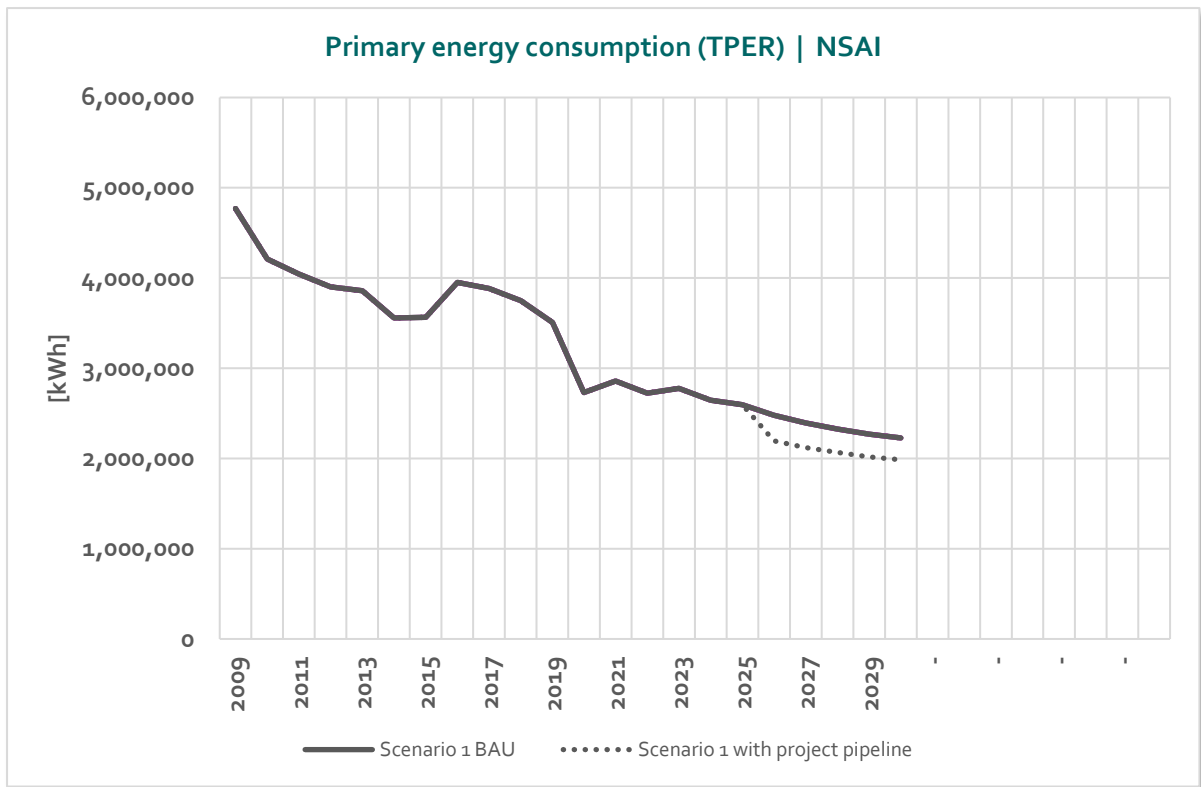


Figure 3: Total Primary Energy Requirement at 2022 (Baseline 2009 to 2022) – Source: SEAI M&R & NSAI

Energy Performance Indicators - 2022

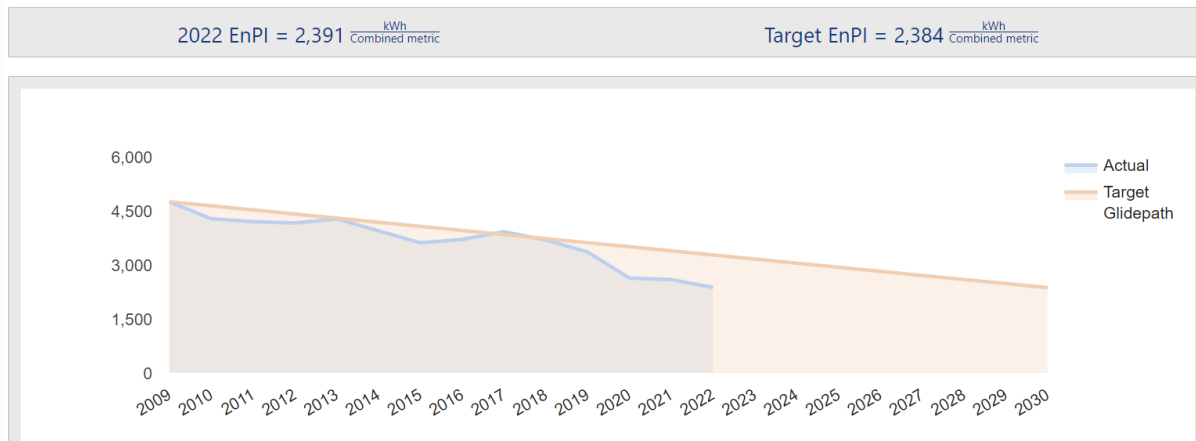


Figure 4: Energy Performance Indicators (Baseline 2009 to 2022) – Source: SEAI M&R

4.3 Our progress to date on our emissions (carbon) and energy efficiency targets

For the purposes of the Public Sector Mandate, greenhouse gas emissions are taken to be energy-related carbon dioxide equivalent emissions. NSAI's baseline energy-related carbon dioxide emissions for 2016-2018 were 786,742.5 kgCO₂, with a gap to target at the end of 2022 of 230,906 kg CO₂. This gap to target does not take into consideration supply side reductions as a result of 'greening' of the electricity grid. Taking into account grid/supply side de-carbonisation out to 2030, the gap to target for 2030 is 4,754.8 kg CO₂.

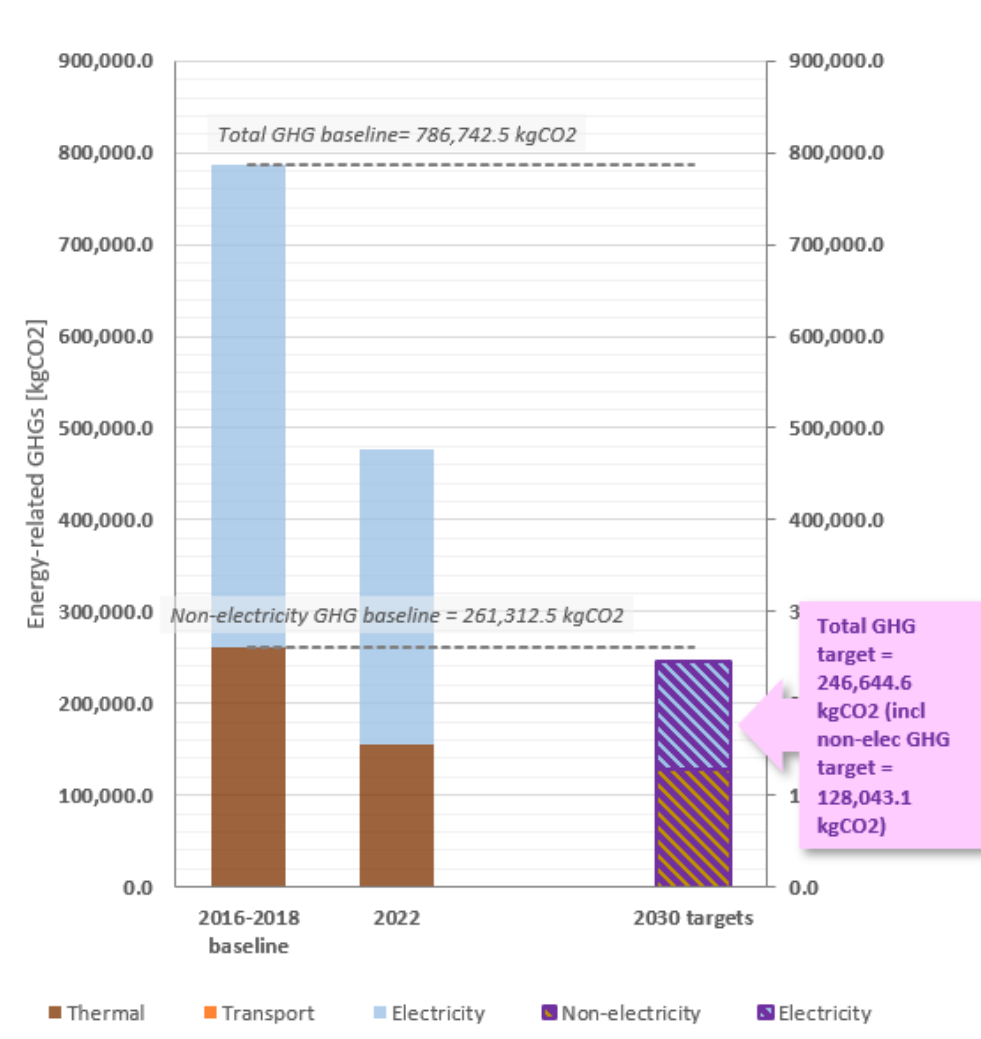


Figure 5: NSAI Total GHGs emissions Gap-to-Target (Baseline 2016 – 2018) – Source: SEAI M&R and NSAI

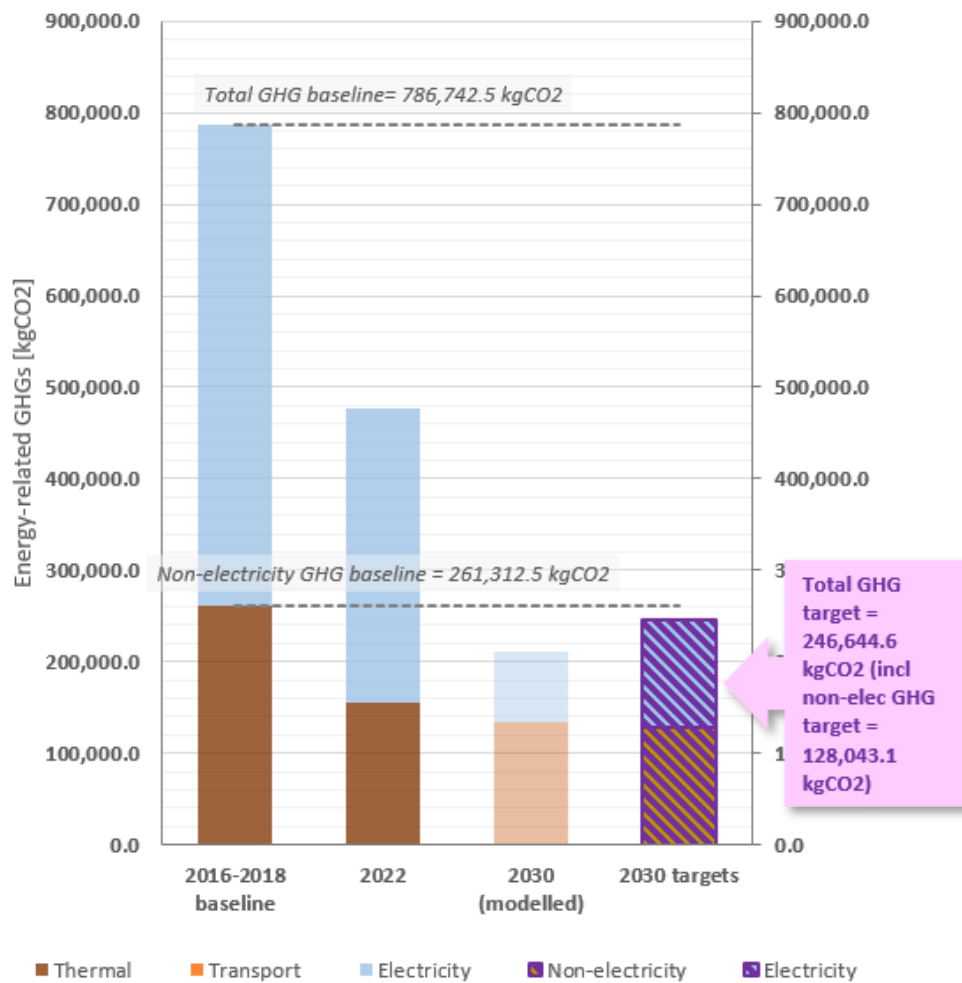


Figure 6: NSAI Total GHGs emissions Gap-to-Target (Baseline 2016 – 2018), with 2030 modelled scenario when project pipeline is included) – Source: SEAI M&R and NSAI

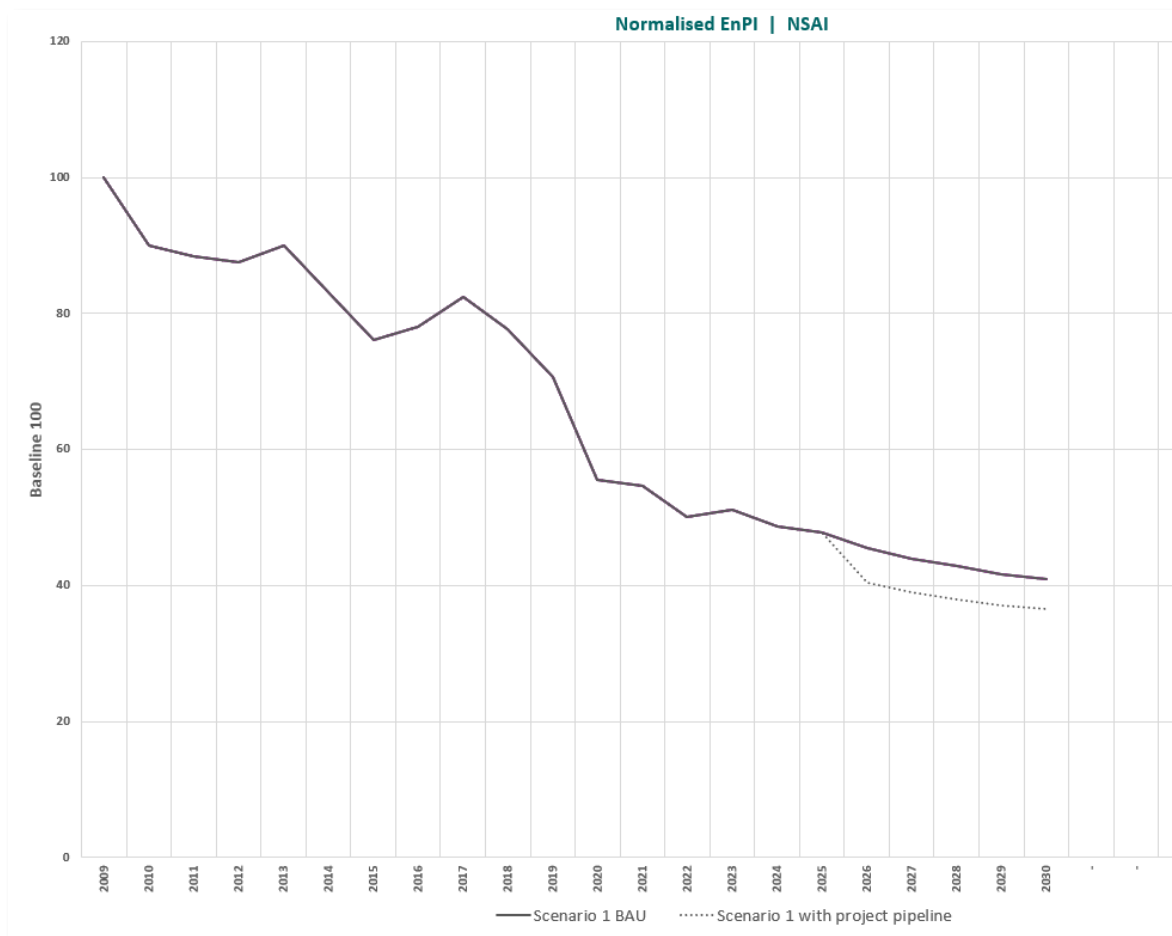


Figure 7: NSAI improvements in energy efficiency since baseline 2009 shown using normalised Energy Performance Indicator (EnPI), and impact when project pipeline is included Source: SEAI M&R and NSAI

Figure 7 above using the normalised EnPI model illustrates that by the end of 2022, NSAI has come very close to reaching its 2030 energy efficiency target, that of a reduction of 50%. From the 2009 baseline normalised EnPI of 100, NSAI has reached a normalised EnPI 50.1 at the end of 2022.

4.4 Our progress to 2030 targets

NSAI's composite table below (Table 1) shows that NSAI's gap to target on total carbon emissions by 2030, when 'greening of the grid' is included is 4,754.8 kg CO₂. Table 1 also shows that NSAI has reached a point very close to its 2030 energy efficiency target, that of a 50% reduction.

Energy-related carbon emissions reduction target (51% reduction by 2030)	2016-2018 baseline	2030 Total in-target emissions	2022 Total (unadjusted)	Gap to Target (incl. 'greening' of grid)
Total GHGs (kg CO ₂)	786,742	246,644	477,550.2	4,754.8
% Reduction vs. baseline	-	69%	39.3	0.6
Energy efficiency target (50% reduction in consumption by 2030)	2009 baseline - normalised Energy Performance Indicator (EnPI)	2030 Target	2022 Total	Gap to Target (Using normalised EnPI)
	100	50	50.1	0.1

Table 1 – Our progress to 2030 targets: energy-related carbon emissions and energy efficiency targets progress to 2030 Source: NSAI based on SEAI M&R and NSAI data

To achieve 'deeper' de-carbonisation and greater energy efficiency beyond the current business as usual trajectory, NSAI is in the process of a number of initiatives, including for example the installation of solar panels across a number of its sites, which opens up the potential to be a net exporter of renewable electricity to the grid at those locations.

NSAI has installed solar PV panels at the Limerick Regional Office, with Galway in progress, NML planned, and two other buildings being considered also for 2024.

Since the NML boiler and Building Management System (BMS) have been upgraded, upgrading the NML chiller system will significantly reduce NSAI's carbon emissions and energy consumption.

The difference between business as usual and the improvements NSAI has included in its de-carbonisation and energy efficiency projects is captured in the graphs at Figures 8 and 9 below. Figure 8 shows NSAI's decarbonisation gap to target without its projects' pipeline included. Figure 9 below shows NSAI's decarbonisation gap to target when its projects pipeline is factored in.

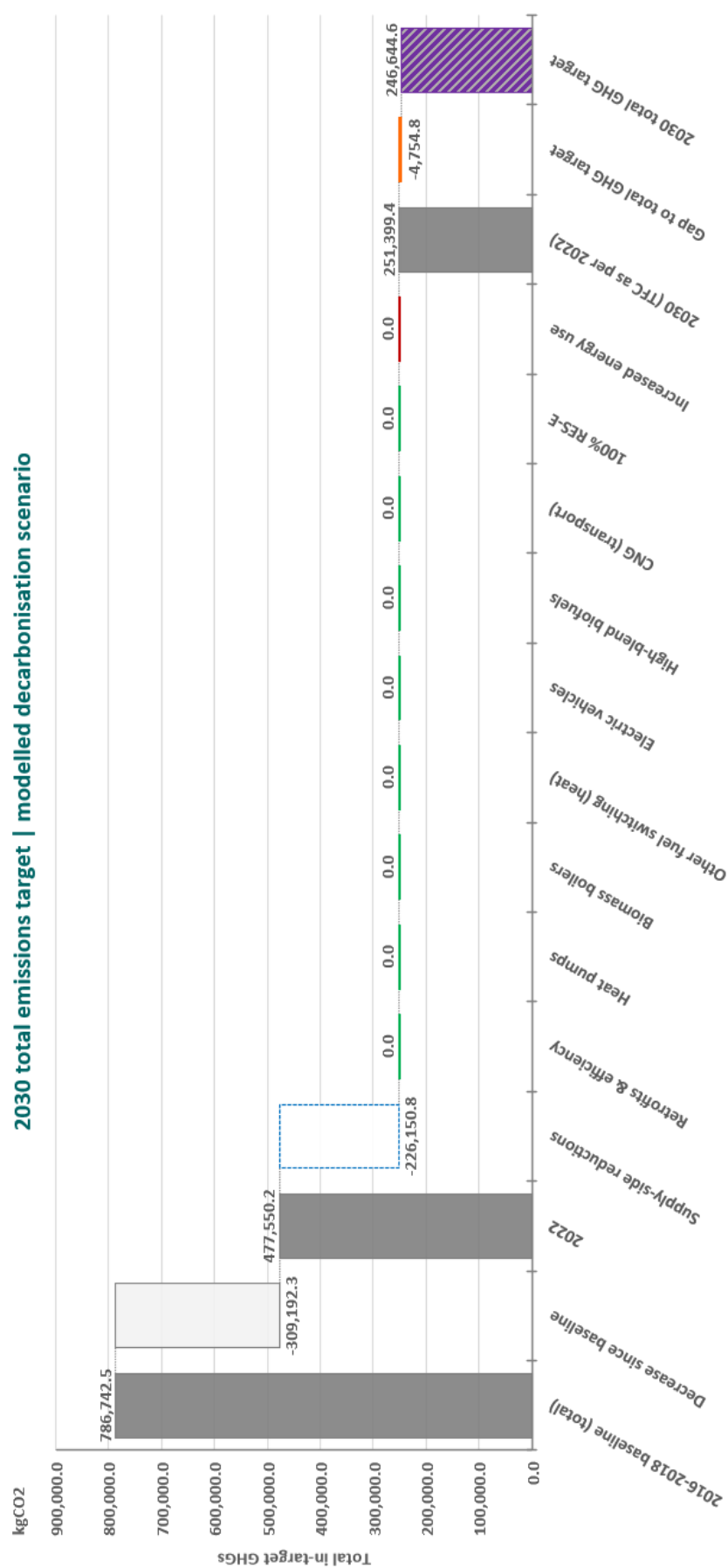


Figure 8: NSAI de-carbonisation gap to 2030 target before NSAI projects pipeline included (baseline 2016 -2018)

2030 total emissions target | modelled decarbonisation scenario

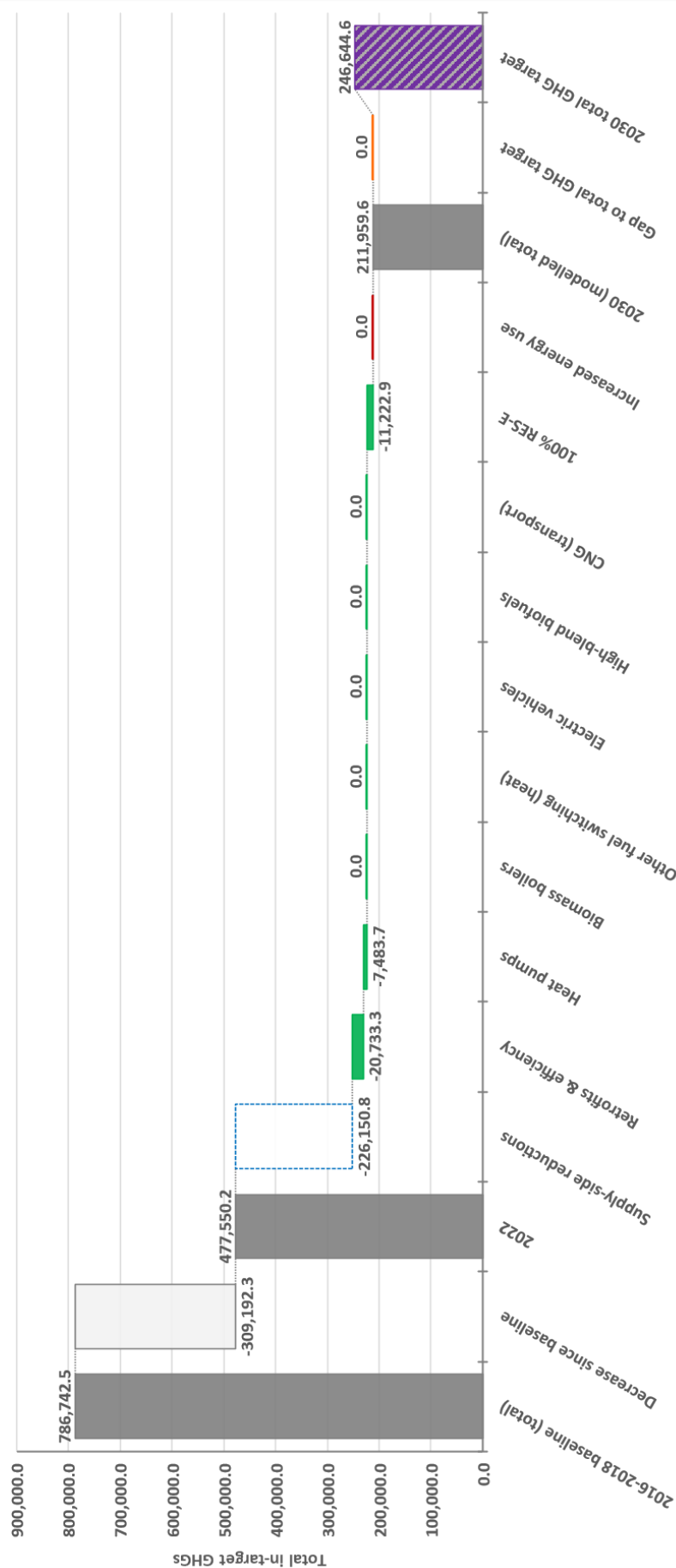


Figure 9: Impact of NSAI's projects pipeline of de-carbonisation initiatives on total emissions beyond 2022 (Baseline 2016 – 2018)

4.5 Energy and Environmental Management Systems

NSAI is a participant in the SEAI Accelerator programme to I.S. EN ISO 50001:2018.

It is the intention of the NSAI to implement an I.S. EN ISO 50001:2018 accredited Energy Management System (EnMS) in 2023. NSAI has upgraded the building management system in the National Metrology Lab.

5. Greening Our Procurement

NSAI is committed to greening its public procurement across all aspects of the organisation and will develop this aspect of its Climate Action Roadmap further.

Some of NSAI's procurement is tied into panel arrangements in place for a number of public bodies collectively, which reflect existing green public sector procurement requirements.

NSAI will in future commit to including sustainability as one of its criteria in its public procurement competitions, allocating a scoring of between 5 and 10% for a sustainability criterion.

At its head office in Santry, NSAI has contracted a restaurant operator with a commitment to sustainability, including sourcing its food produce as locally as possible and ceasing the use of single-use plastic cups and single-use coffee cups.

In the area of plastics, NSAI will examine the use of plastic materials across the organisation.

This commitment aligns with UN SDG 12 Responsible Consumption and Production.

6. Improving Our Buildings and Vehicles

6.1 Buildings

NSAI manages nine buildings including a head office, the National Metrology Lab (NML) and regional offices amongst them. NSAI shares a heating system in its head office in Santry, Dublin. The heating system in the NML has been replaced with a newer, more efficient system.

NSAI occupies premises at a number of locations. The head office is located at 1 Swift Square, Santry, Dublin 9, in a shared, leased premises.

The NSAI has a number of Regional Centres located at Cork, Dublin, Dundalk, Galway, Limerick, Sligo and Waterford. The NML is located at Glasnevin, Dublin 9. All of these premises are owned by NSAI.

NSAI has placed a Display Energy Certificate (DEC) in every building 'frequently visited by the public'.



Figure 10: An example of a Display Energy Certificate (DEC), as displayed in the foyer of NSAI headquarters, Santry, Dublin

The US subsidiary office is located at 20 Trafalgar Square, Nashua, NH 03063, USA; these premises are leased. The UK subsidiary office is located at 6-9 The Square, Stockley Park, Heathrow, UB11 1FW, UK, on a short-term rental agreement.

NSAI has replaced heating boilers in the NML with more modern and efficient replacements, which has contributed to reducing our energy usage there. NSAI is replacing the cooling system in the NML during 2023, with a newer, more energy efficient system.

The NML has achieved My Green Lab certification in 2023 and will also look to seek I.S. EN ISO 14001 certification (environmental management).

The NML will undertake a building survey in 2024 with a view to improving the energy efficiency of the building. This survey will include review of insulation (external walls and roofing), windows, efficiency of radiators and efficiency of the various pumps and motors that are installed in NML's plant.

The NML has installed electricity loggers in the building which monitors the various areas of NML in order to identify areas of greatest electricity use which can be targeted for efficiency and improvements.

NSAI is examining its buildings (mainly administrative office buildings, other than those at Glasnevin and Poppintree), for opportunities to install solar photovoltaic (PV) panels. Solar PV panels have been installed in the Limerick Regional Office, with a view to reducing the use of fossil fuel there, and moreover, supplying surplus renewable electricity into the grid. The Galway Regional Office is expected to be the next to have solar PV panels installed.

NSAI has begun planning for the creation of bicycle-friendly buildings for employees and visitors, including by putting bicycle parking in place, with for example, secure, sheltered parking available at its head office in Santry.

Approval has been granted for EV charging-points installation.

NSAI's contribution to the overall public sector Reduce Your Use energy efficiency campaign in winter 2022/23 was used by the SEAI as a mini-case study (see Appendix I). NSAI is again running a Reduce Your Use campaign in winter 2023/24 in collaboration with staff across all its facilities in the state.

6.2 Heating and lighting measures

The following measures have been implemented in all buildings:

- Turned off heating and utilities outside of building operating hours, e.g. outside office hours in administrative buildings.
- Set internal space heating temperatures to 19 degrees Celsius.
- Shut down heat in office buildings at least 1 – 2 hours before buildings closed.
- Optimised water heating to save energy.
- Reduced unnecessary use of lighting in key buildings.
- Turned off display lighting/window/feature display lighting between 5pm and 7pm in most buildings.
- Run energy efficiency campaigns in advance of holiday periods, including 'switch off' campaigns ahead of annual Christmas closure.

6.3 Control and scheduling measures

The following measures were implemented in all buildings:

- Ensured that operational control is appropriate to the hours of work and services delivered.
- Reduced electricity use at peak times (5pm – 7pm).
- Corresponding with a reduction in occupancy, minimised the space occupied and heated.
- Challenged the core and extended hours, e.g. to eliminate heating of buildings before staff are in attendance.

6.4 Facilities assessment measures

The following measures were implemented in most buildings:

- Out of hours walk-through carried out in various buildings.
- Energy efficiency assessment or audit of buildings.
- Operations and maintenance audit.
- Development of an operational control and measurement process.

6.5 Improving Our Vehicles

NSAI has a relatively small fleet of four commercial vehicles. Nonetheless, NSAI has developed a roadmap for the improvement of its vehicle fleet. As vehicles fall due to be replaced between now and 2030, NSAI will move to replace firstly the lighter fleet vehicles, e.g. vans, with electric vehicles.

It is recognised generally that there is more of a challenge at present in the market in replacing heavy goods vehicles (HGVs), such as trucks, with fully renewable alternatives to diesel-powered engines. In the interim, as part of the green transition, increased bio-diesel blending rates or the roll-out of bio-CNG may reduce the levels of emissions from HGVs, pending fully-renewable alternatives. NSAI will continue to monitor developments in the market-place in that regard, in terms of the larger vehicles.

6.6 Water footprint

Given that water treatment and waste water treatment have their own carbon footprints, NSAI will examine how it can track and manage its water footprint across all locations, with a view to improving its use of water. NSAI will examine how it can reduce its own water footprint.

7. Our Wider Climate Action Plans

Beyond the Public Sector Climate Action Mandate requirements, NSAI has in 2022-23, begun the development of a Climate Action and Sustainability Centre of Excellence to embed and drive climate action across all business directorates in the organisation and to support business and enterprise in Ireland in the journey to net zero emissions.

It is part of NSAI's Strategic Plan 2022-2026 to become an exemplar organisation in climate action and sustainability, in particular in its technical support to Irish business and enterprise. The first personnel in the Climate Action and Sustainability Centre of Excellence was appointed in mid-2023.

8. Supporting Business in Ireland on the Journey to Net Zero By 2050

The NSAI's role is ultimately to support business in Ireland through the dissemination of the best available information on technical standards for processes and products, the development of standards, and also to provide critically important certification to business and enterprise. Standards, certification and metrology (including both the NML and Legal Metrology Services) all have a role in supporting businesses on their own journeys to net zero by 2050.

The NSAI is committed to raising awareness amongst businesses of the standards that are already available to help in de-carbonising the economy and to also supporting enterprise in the development of new standards that may be required. The NSAI will continue to adapt its approach to supporting businesses in accessing information on best practices, new knowledge, state of the art and compliance in the areas of climate action, sustainability and environment.

APPENDIX I

SEAI Mini-case study on NSAI's contribution to Winter 2022/23 Reduce Your Use Campaign



NSAI

The National Standards Authority of Ireland is Ireland's official standards body. NSAI improves the performance of Irish business and protects consumers through the setting of standards and issuing of certification in the quality and safety of goods and services.

NSAI is a business support agency under the remit of the Department of Enterprise, Trade and Employment. NSAI aims to inspire consumer confidence and create the infrastructure for products and services to be recognised and relied upon, all over the world.

NSAI has a key focus on climate action and sustainability in its Strategic Plan 2022-2026. The Reduce Your Use campaign is one of several workstreams progressed by the NSAI with the objective of reducing resource use, enabling behavioural change, and ensuring that NSAI acts as an environmental exemplar in achieving public sector 2030 targets.

NSAI sustainability teams, drawn from across the organisation, completed several initiatives to engage staff, improve operational control of plant, measure effectiveness and improve efficiency.



30% energy savings
(Winter 2022/23 compared with Winter 2020/21. Includes thermal savings of 53% plus.)



9 buildings



seai
Sustainable Energy Authority of Ireland



NSAI services are a key lever in combating environmental challenges such as climate change

Control and scheduling measures

The following measures were implemented in all buildings:

- Ensured that operational control is appropriate to hours of work and services delivered.
- Reduced electricity use at peak times (5pm–7pm).
- Corresponding with a reduction in occupancy, minimised the space occupied and heated.
- Challenged the core and extended hours, e.g. to eliminate heating of buildings before staff are in attendance.

Heating and lighting measures

The following measures were implemented in all buildings:

- Turned off heating and utilities outside of building operating hours, e.g. outside office hours in administrative buildings.
- Set internal space heating temperature to 19 degrees Celsius.
- Shut down heat in office buildings at least 1–2 hours before buildings closed.
- Optimised water heating to save energy.
- Reduced unnecessary use of lighting in key buildings.
- Turned off display lighting/window/feature display lighting between 5pm and 7pm every day in most buildings.





Conferences and events are an important activity and are held in hybrid and online formats

Facilities assessment measures

The following measures were implemented in most buildings:

- Out of hours walk-through carried out in various buildings.
- Energy efficiency assessment or audit of buildings.
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Regional Office

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