HSE Water Conservation Framework

HSE Climate and Sustainability Programme

An Overview of the United Nations Global Goals

Executive Summary

Climate change presents a fundamental threat to human health. It affects the physical environment as well as all aspects of both natural and human systems; including social and economic conditions and the functioning of health systems. As climatic conditions change, more frequent and intensifying weather and climate events are observed, including storms, extreme heat, floods, droughts and wildfires. These weather and climate hazards affect health both directly and indirectly, increasing the risk of deaths, non-communicable diseases, the emergence and spread of infectious diseases, and health emergencies.

The Health Service Executive (HSE) is committed to reforming and improving the delivery of care to help reduce greenhouse gas (GHG) emissions. It is aligned with the Sláintecare Reform Programme, which prioritises digital healthcare, promotes social prescribing and facilitates service users care closer to home. The impact of COVID-19 has led to a large increase in the use of digital services, not just for provision of healthcare services, but also enabling people to work from home as far as is reasonably possible.

The HSE published its Climate Action Strategy 2023-2050. It sets out the HSE's commitment to achieve net-zero emissions no later than 2050, delivering healthcare which is environmentally and socially sustainable. To support the delivery of the strategy, seven framework documents are being published to reflect each of the areas of focus.

This water conservation framework and implementation plan aims to provide recommendations on how to manage water consumption and conservation measures to reduce water wastage in our health service. It is intended this will be a live document which will be updated and expanded, as required, to reflect emerging best practices and any mandated requirements outlined in the Climate Action Public Sector Mandate which is updated annually.

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1. Introduction

The climate crisis is a health crisis. The link between climate change and various health challenges, including respiratory illnesses, water-borne diseases, vector-borne diseases, malnutrition, non-communicable diseases, mental health, injury and mortality from climate hazards and extreme weather events will put significant additional pressure on healthcare facilities and have a lasting effect on our health systems. At the same time, current models of care and service delivery can make a significant contribution to damaging the environment.

The global healthcare sector is responsible for approximately 4.4% of global emissions. If it was a country, the global health sector would be the fifth biggest emitter on earth and unless the carbon footprint of healthcare sector is cut, its emissions could triple between now and 2050, with the unintended consequence of a drastic impact on people's health.[1] The Irish health service is a high emitter of GHG when compared with similar health systems and it is estimated that it contributes between 5 and 8% of Ireland's GHG emissions.

There has been an acceleration of global efforts to 'reverse the tide' on environmental damage, particularly since the signing of the Paris Agreement[2] in 2015. The EU Green Deal provides a package of policy initiatives launched by the Commission in 2019 to set the path to a green transition with the ultimate goal of reaching climate neutrality by 2050. At national level, the Government's Climate Action Plan provides a roadmap for halving Ireland's emissions by 2030 and reaching net zero by 2050, as committed to in the Climate Action and Low Carbon Development Act 2021.[3]

As a result, the HSE has drafted its Climate Action Strategy 2023 – 2050 which sets out the HSE's commitment to achieve net-zero emissions no later than 2050, delivering healthcare which is environmentally and socially sustainable. The strategy outlines how the HSE will contribute to putting Ireland on a more sustainable path by cutting emissions, creating a healthier, cleaner, and greener society, and helping to protect and prepare the population for the health consequences of climate change and biodiversity loss. It comprises six priority areas, ten strategic objectives and two enabling functions, summarised in Table 1. This framework concentrates on strategic objective 09.

Develop a data driven water consumption framework and implementation plan to report and manage water consumption and conservation measures to reduce wastage.

1 Health Policy Partnership, The nexus between climate change and healthcare, 2022.

2 The Paris Agreement is the first legally binding international Treaty on climate change, adopted by 196 parties at the UN Climate Change Conference of the (COP21) in Paris in 2015. Its overarching goal is to hold *"the increase in the global average temperature to well below 2℃ above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5℃ above pre-industrial levels."* The signing of the Paris Agreement was the trigger for governments around the globe to develop and enhance the strategies and policies needed to reduce global warming.

3 Chapter 10 of the Climate Action Plan and the related Climate Action Mandates and Public Sector Climate Action Strategy are focused on the responsibility of the public sector to lead by example by fast-tracking the changes that are needed.

Table 1. Overview of HSE Climate Action Priority Areas and Corresponding Strategic Objectives

		Strategic Objectives
A.	**Sustainable Buildings and the green environment**	**SO1** Achieve a 50% reduction in energy usage, and a 51% reduction in energy-related GHG emissions by 2030 and a net-zero emission target by 2050 (at latest) under the requirement set out for public sector bodies in the Climate Action Plan 2021.
		SO2 Develop a HSE Green Space Framework and supporting implementation plan to optimise the use of green space for the promotion of the health and wellbeing of service users, staff and the local communities.
B.	**Transport and Mobility**	**SO3** Develop a HSE Transport Framework and supporting implementation plan to eliminate, reduce and substitute transport emission sources associated with delivering and accessing healthcare.
		SO4 Develop a mobility framework and implementation plan to promote travel initiatives to avoid unnecessary service user and staff journeys. Where journeys are required, support and encourage active travel, low carbon or public transport alternatives.
C.	**Sustainable Procurement**	**SO5** Develop procured goods and services waste reduction framework and supporting implementation plan to reduce waste and related emissions, strengthen supply chain resilience and support the transition towards a circular economy.
		SO6 Develop a baseline for all HSE supply chain emissions and work in consultation with key supply chain product partners to include sustainability criteria in all tender procurement processes and establish a credible decarbonisation trajectory (no later than 2025).
D.	**Greener Models of Healthcare**	**SO7** Develop a framework for greener models of healthcare delivery and supporting implementation plan to reduce the environmental impact of the delivery of models of care, pharmaceutical products / services used while continuing to prioritise service user safety, prevention and population health.
E.	**Water and Waste Management**	**SO8** Develop a HSE Waste Management Framework and supporting Implementation plan to minimise food waste generation, increase recycling and reduce the amount of clinical waste generated.
		SO9 Develop a data driven water consumption framework and implementation plan to report and manage water consumption and conservation measures to reduce wastage.
F.	**Adaptation and Resilience**	**SO10** Ongoing implementation of the measures set out in the Department of Health Adaptation plan 2019 -24 and all subsequent plans.
	Enabling Function	**Description**
1	**Measurement and Assurance**	The Measurement and Assurance Work stream will coordinate the collection, collation and calculation of the relevant sustainability data across the ten work programmes, including climate (Scope 1, 2 and 3 emissions), water usage, waste disposal and relevant biodiversity data. Identification of metrics and key performance indicators, target setting and tracking implementation of the Strategy will be enabled. The methodologies used will be in line with international standards.
2	**Collaboration, Communication, Awareness and Training**	In recognition of the need to inspire and upskill the workforce to embrace sustainability and adapt dynamically, the HSE recognises the need to educate and upskill a large workforce to act as climate activists and to equip staff with the knowledge to promote an overall culture of sustainability awareness.

The Government's Climate Action Plan 2021 and the Climate Action and Low Carbon Development (Amendment) Bill 2021 sets out the energy efficiency and energy related GHG emissions reduction targets which public sector bodies are legally obliged to meet. The HSE Infrastructure Decarbonisation Roadmap has been developed in response to this obligation. It outlines the work undertaken by the HSE to date and approach to continuing to reduce carbon emissions from our buildings and their operation by reducing energy usage and shifting the HSE's energy sources from fossil fuels towards renewable and carbon zero energy sources.

Nationally, the HSE is the biggest customer of Uisce Éireann, the Irish state-owned water utility company. Operating in a unique water using environment, where water is typically used 24 hours a day and 365 days a year, the HSE must play a major role in water conservation measures.

The HSE's Infrastructure Decarbonisation Roadmap forms an integral part of the HSE Capital and Estates Property Strategy and Implementation Plan and the HSE's Climate Action Strategy.

The strategy identifies the following key objectives for water:

- Establish a baseline for current water usage across the HSE and benchmark local healthcare facilities.
- Develop a water conservation framework and corresponding implementation plan to report and manage water consumption and conservation measures to reduce wastage. The framework will:
  - » Identify measures to promote water conservation and reduce water wastage to include best practice conservation and reduction measures.
  - » Include details of a standardised data-driven function for intelligent water conservation planning, benchmarking, and annual reporting.
  - » Develop an HSE wide campaign amongst staff to encourage practice change in water reduction.

In addition, it acknowledges the importance of local engagement and collaboration and aims to:

- Mobilise feedback from staff and service users groups to discuss options to reduce water usage and identify conservation measures.
- Collaborate with regional and local Green Teams, Infection Prevention and Control to improve water management and conservation.

Therefore, in response to the HSE Climate Action Strategy, this water conservation framework has been prepared to support these commitments. This framework, which is a living document that will evolve, sets out the strategic direction and the actions that must be implemented to ensure that the highest level of service will be provided to staff and service users while meeting the HSE's water efficiency goals.

2. Context

While this framework provides specific and strategic information to support the HSE's Climate Action Strategy, it is important to note that it needs to be considered within a wider policy context. This section sets out some of the key policy areas relevant to the design, development and implementation of a sustainable water conservation programme focused on minimising water consumption, the energy associated with treating and heating water and, in turn, reducing wastewater volumes.

2.1 International Context

Below are the international relevant key policy areas.

2.1.1 United Nations Development Programme – Sustainable Development Goals

The HSE is also committed to supporting the 17 UN (United Nations) Sustainable Development Goals (SDGs) to promote prosperity while protecting the planet. Although the HSE contributes to most SDGs in one form or another, as they directly relate to health or contribute to health indirectly, health has a central place in SDG Goal 3:"Ensure healthy lives and promoting wellbeing for all ages". The relevant UN SDGs to this framework are:

Figure 1. An Overview of Sustainable Development Goals Related to Water

Goal 3:
Good health and well-being

Goal 6:
Clean Water and Sanitation

Goal 12:
Responsible consumption and production

Goal 6 of the Sustainable Development Goals (Clean Water and Sanitation) refers to fresh water efficiency and scarcity, and Goal 6.4 specifically notes that by 2030, there needs to be a substantial increase in water-use efficiency across all sectors and to ensure sustainable withdrawals and supply of freshwater. Through this, the issue of water scarcity will be addressed and help reduce the number of people suffering from water scarcity.

2.1.2 EU Water Framework Directive

The EU Water Framework Directive (WFD) establishes a legal framework to protect and restore clean water and to ensure its long-term sustainable use. Legislated in 2000, the WFD requires EU member states to achieve water quality of at least good status in rivers, lakes, groundwater, estuaries and coastal waters, by 2027 at the latest.

2.1.3 EU 'Fit for 55' Legislative Package

The 'Fit for 55' legislative package writes into law the goals set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050. The law also sets the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030.

Climate neutrality by 2050 means achieving net zero greenhouse gas emissions for EU countries, mainly by cutting emissions, investing in green technologies, and protecting the natural environment.

The law aims to ensure that all EU policies contribute to this goal and that all sectors of the economy and society play their part.

EU climate legislation legally enshrines the EU's target of reaching climate neutrality by 2050 and includes provisions for increasing the EU's climate ambition for 2030 and establish a European Scientific Advisory Board on Climate Change.

2.2 National Context

Below are the national relevant key policy areas.

2.2.1 Water Framework Directive

One of the key regulatory instruments for water in Ireland is the Water Framework Directive (WFD), which reflects the need to conserve adequate supplies of water, along with protecting and preserving water quality. The WFD has been enacted in Ireland through various statutory instruments including S.I. No. 166/2022 - European Union (Water Policy) (Amendment) Regulations 2022.

Section 32A of the Water Services (No. 2) Act 2013, as inserted by section 18 of the Water Services Act 2017, requires that a policy statement be prepared that will set out, "the policy objectives and priorities of the Government regarding the provision of water services in the State".

The three key objectives of Ireland's Water Services Policy Statement are:

- **Availability and Reliability**
  - » Water services will support regionally balanced economic and social development through accessible, dependable and reliable water services.
  - » The priorities under this objective are focused on improving public and private water services through continued investment in infrastructure, both through Uisce Éireann and the Group Water sector.
- **Safety and Quality**
  - » Water services will be safe and protect human health.
  - » Prioritising the protection of drinking water sources, minimising contamination, and providing for robust, effective oversight by regulatory authorities will help to deliver on this objective.
- **Sustainability**
  - » Water services will be efficient, resilient and sustainable in the long term.
  - » Under this objective, priorities are to ensure that public water services are sustainable, that climate targets are met for the sector, and that water conservation forms a cornerstone of water policy.

2.2.2 Climate Action Plan and Public Sector Climate Action Mandate

The current Climate Action Plan, otherwise known as CAP 24, stipulates the necessary measures and actions to meet carbon budgets and sectoral emissions ceilings. This plan outlines a strategic approach for reducing Ireland's emissions by half by 2030 and achieving net zero by 2050, as pledged in the Climate Action and Low Carbon Development (Amendment) Act 2021.

The relevant national targets for water are:

- Improve the climate resilience of Ireland's water infrastructure, adapting to climate change, through implementation of a Nature Based Solutions (NBS) programme. This programme implements a NBS approach for storm water and surface water run-off, sludge and protection of water sources.
- Undertake catchment-based quantitative groundwater assessments to highlight zones that are more likely to provide sustainable water supplies in the future.
- Improve the resilience of Ireland's water infrastructure by progressing implementation and delivery of the four regional plans under Uisce Éireann National Water Resources Framework Plan.
- Establish three new groundwater monitoring stations.
- Develop an updated methodology for groundwater recharge estimation and produce new maps for different future climate scenarios.
- Increase awareness of water conservation and the importance of protecting Ireland's water resources among students through the Green-Schools Partnership programme.
- Develop business continuity measures to ensure continuity of service provision during severe weather events.

The Public Sector Climate Action Mandate, which is under annual review, is applicable to all organisations covered by decarbonisation targets set out in the Climate Action Plan. The mandate highlights the main climate action objectives for public bodies. The targets in the Public Sector Climate Action Plan 2024 are:

- Reduce energy related GHG emissions by 51% in 2030.
- Improve energy efficiency in the public sector by 50% by 2030.

As the provision of water, and hot and high quality water in particular, have a significant associated carbon impact, water conservation measures will indirectly help address these targets.

3. Scope

The following outlines what activities are considered “in” or “out” of scope for the water conservation framework as shown below.

Table 2. Overview of Activities

	In-Scope **What does the HSE Water Conservation Framework cover?**	**Out-of-Scope** **What does the HSE Water Conservation Framework not cover?**
Water aspects	• All aspects of water conservation/ efficiency to include: » Site based monitoring. » National benchmarking. » Asset inventory. » Best practice actions – identification and implementation. » Collaboration with Uisce Éireann. » Leak detection.	• Capital & Estates (design, procurement and construction- new build and deep retrofit). • Water resilience. • Water quality. • Wastewater discharges (including fats, oils and grease). • Storm water discharges (contamination). • Local untreated wastewater discharge (discharge licence compliance). • Infrastructural repair.
Policy, actions and initiatives	• The assignment of responsibility at national and local level. • Updates of water-related HSE policies. • National and site-based monitoring and measurement – leading to national benchmarks. • Setting short-term and long-term water reduction targets. • Water conservation training, education and behavioural change measures and initiatives. • Development of case studies, guidance and best practice procedures regarding day to day activities. • National inventory of healthcare facilities to formulate a Significant Water Users list. • Input into design considerations in relation to water conservation on future Healthcare Capital Project works.	• Day to day maintenance and operational issues. • Legionella policy. • Compliance with statutory requirements.

4. Best Practice and Current Status

Summary of best practice initiatives within healthcare settings and others across various case study locations are below.

4.1 International Review of Best Practice

Water consumption and conservation measures to reduce wastage were reviewed from a number of international best practice documents and sustainability reports from UK, USA, Germany, South Africa, Australia, New Zealand, and Canada, and summarised in the following table.

Table 3. Summary of International Best Practice Documents and Sustainability Reports

<table>
<tr><th>Best Practice Location</th><th>Programmes and Reports - Key Points and Links</th></tr>
<tr><td>UK,
NHS</td><td>Health Technical Memorandum 07-04: Water management and water efficiency – best practice advice for the healthcare sector (2013)
3.10 The Government target of 25% reduction in water use in its office and non-office estates by 2020, relative to 2004/2005 levels (Defra, 1999).
3.11 Defra's (2008) current water strategy cites water efficiency as playing a prominent role in achieving a sustainable supply-demand balance, and encourages industrial and commercial sectors to lead by example through initiatives such as voluntary agreements.</td></tr>
<tr><td>Germany,
Sonic
Healthcare</td><td>Sonic Healthcare Limited, Sustainability Report 2023
Procurement teams consider water usage data as part of the total value proposition when comparing new equipment for purchase. Water purification systems are installed in all large laboratories to provide purified water required by analysers. Water discharged from facilities is tested and meets water quality regulations.
The last three years' global water consumption for locations greater than 1,000 square meters, for which Sonic Healthcare has operational control of water usage, as shown below, demonstrating that water consumption per square meter has remained relatively stable over the past three years.
<table>
<tr><th colspan="4">Water consumption</th></tr>
<tr><th></th><th>FY 2023</th><th>FY 2022</th><th>FY 2021</th></tr>
<tr><td>Total water consumption</td><td>333,582</td><td>319,812</td><td>345,409</td></tr>
<tr><td>Water consumption intensity kL per square metre</td><td>1.20</td><td>1.14</td><td>1.29</td></tr>
</table></td></tr>
</table>

Best Practice Location	Programmes and Reports - Key Points and Links
USA, HCA Healthcare	**HCA Healthcare, Annual Sustainability Report, 2023** • Working to reduce consumption through improvements in energy efficiencies that decrease water used for cooling operations, installing water-efficient fixtures in facilities, exploring opportunities through pilot programs and working with local stakeholders to identify opportunities. • Facilities and engineering teams began a standardisation initiative in their water treatment program in 2021 to use fewer chemicals and reduce water system losses through quality management. Continuing this effort as a part of their overall water consumption reduction plan.
South Africa, Life Healthcare	**Life Healthcare, Annual Sustainability Report, 2023** • Developing systems to measure, monitor and manage energy, water and waste in order to comprehensively understand our carbon footprint. • Introducing water usage improvement initiatives at all viable facilities. • Many of the facilities have back-up water storage tanks that can sustain our operations for between 24 to 48 hours. • In some parts of the country, they have introduced borehole supply to their hospitals to improve the consistency of supply. • Increased on-site water storage and borehole installations can mitigate short-term supply disruptions. Environmental impact studies are conducted to identify further initiatives. • Successfully rolled out a smart monitoring system for electricity and water at all of our southern Africa facilities.
Australia, Australian Commission on Safety and Quality in Health Care	**A Review of Sustainable Healthcare Policy, Practice, and Research with a Focus on Safety and Quality, 2022** • Examples of initiatives that have reduced water consumption in health care services include on-site recycling of water, the installation of water tanks, and various water saving measures. A notable example is the reuse of dialysis wastewater as grey water.
New Zealand, Health New Zealand	**Sustainability and the Health Sector: A guide to getting started** • Reduce water consumption by improving technologies and policies, and encouraging staff, contractors, patients and visitors to get involved. Water reduction strategies include using efficient faucets, toilets, washing machines and shower heads, and switching from water-intensive film-based radiological imaging equipment to digital imaging. Also considers collecting rainwater to use as greywater in toilets, washing machines and other water- intensive systems in your facility.
Canada, Jones Healthcare Group	**Areas of Focus Environment: Climate, Water, Waste, 2022 Sustainability Report** • 100% of Facilities Assessed for water risk. • Recognising the evolving nature of climate change, we have committed to annual assessment of water risk at all facilities.

4.2 National Review

Water conservation is a key element within the HSE's Climate Action Strategy, and is addressed within one of the six priority areas. This reflects the importance of water as a vital resource for the day to day functioning of healthcare facilities as well as the direct and indirect impacts the provision of water has in terms of climate. The HSE Sustainable Infrastructure Office (SIO) has been working on water since 2016 via the Green Healthcare Programme and regional Sustainability Officers. Currently, the Green Healthcare Programme is funded by SIO to support work in this space.

In terms of carbon reporting, water management is considered scope 3 (i.e. value chain emissions). However, due to the carbon impact of heating, pumping and treating water there are scope 1 and 2 implications. Water management therefore forms an important element of the HSE Climate Action.

Through the SIO, the Green Healthcare Programme team have been working with Uisce Éireann to validate the water meters (WPRN's) for over 60 HSE and HSE funded significant water users. Through this process, these top users will be assessed and benchmarked annually (water consumption measured in m3 per in-patient bed day or WTE's) with the Uisce Éireann billing data also continually feeding into HSE Capital and Estates' National Estates Information System (NEIS).

This information along with technical training allows hospital green teams to identify hospital specific actions and to quantify HSE Capital and Estates funding requests for water conservation infrastructure, plant and equipment such as water audits, sub-meters, leak detection. The HSE Capital and Estates Regional Sustainability Officers support these water conservation infrastructure upgrades to completion, and share the best practice learnings via the monthly online training and best practice water conservation case studies produced by Green Healthcare. A number of these case studies include:

- Sligo University Hospital initiated a retrofit water efficient mixer tap project and saved 5,000m3 water per year. With costs for heating hot water included this amounted to annual savings of €48,000 in expenditure and carbon savings of 60 tonnes of CO2 per year.
- Cork University Hospital changed their existing high flow rate shower heads to more efficient showers and saved 26,000m3 water per year. This amounted to an annual saving of €164,000 in expenditure, including water and hot waters costs, and carbon savings of 222 tonnes of CO2 per year.

4.2.1 Training

Supporting water conservation actions, increasing awareness and promoting best practices underpin the approach supported to date through the HSE SIO. A crucial element to this process is the provision of training to both technical and non-technical staff through both online and in-person training.

HSE in-conjunction with Green Healthcare develop and deliver healthcare specific water efficiency online training on a monthly basis. This training follows the HSE's first water efficiency guide for Irish healthcare facilities previously produced by the Green Healthcare team based on benchmarking water consumption in acute and community hospitals. This water conservation training is the only healthcare specific training available to healthcare managers with over 200 Healthcare Managers, both online and in-person, trained up to the end of 2024.

The HSE SIO actively support hospital managers and technical staff to register for Uisce Éireann's Certified Water Steward training, set over eight weeks online but not healthcare specific. Given that the HSE is Uisce Éireann's largest customer, this training aims to create hospital specific water stewardship charters, addressing both water quality risks and conservation. To date ten acute HSE hospitals have participated in Uisce Éireann's Water Stewardship programme which includes resilience of supply, pressure management as well as water efficiency and conservation.

The HSE Capital and Estates Regional Sustainability Officers provide support to hospital green teams to complete online water efficiency and water conservation audits, as requested.

4.2.2 Uisce Éireann

Strengthening links with Uisce Éireann and their key account manager has facilitated the national benchmarking process. Most importantly, annual water consumption of healthcare facilities on the Significant Water Users list to be provided each year.

Uisce Éireann review the billing bands for all commercial customer sites between the end of October and December each year. Annual bills for the current year are analysed to determine if billing bands needs to be reviewed. This process will be used to give annual benchmark data but also feed into the HSE Capital and Estates National Estates Information System (NEIS). Currently significant work is ongoing aligning the HSE and Uisce Éireann systems due to historical inconsistencies in the data sets and updating HSE site and building referencing.

4.2.3 Water Conversation Working Group

An interim water working group was convened to produce this framework as a basis for formation of the full water conservation working group in the future. The interim group included representatives from HSE Capital and Estates, Uisce Éireann and other external stakeholders.

A formalised water conservation working group will be stood up to provide clarification on implementation direction and general oversight on a strategic level. The main function of this group will be to focus on water conservation, while water quality remains the responsibility of local facility management. It is envisaged that this group will coordinate and liaise with the National Water Safety group once established. Additionally, it is intended that it will collaborate with external bodies listed in Appendix 3.

The water conservation working group will include a mix of personnel that will bring experience and knowledge to reflect the necessary areas of collaboration required to ensure the strategic objectives of the HSE Climate Action Strategy are implemented. Consisting of representatives of the various stakeholders - HSE Capital and Estates, HSE Maintenance, HSE services and externals such Uisce Éireann as outlined in Appendix 2. This group will meet quarterly.

4.2.4 Communications

Communication strategies play a crucial role in promoting water conservation by raising awareness, fostering behaviour change, and facilitating informed decision-making among staff and service users. Effective communication campaigns can educate staff and service users about the environmental, and financial benefits of water conservation. By highlighting the simple steps personnel and service users can take to reduce water consumption real reductions can be realised for relatively little outlay to the organisation.

New initiatives and innovations will be communicated and coordinated with the HSE Climate and Sustainability Programme and disseminated through the regional green committees via the agreed structures as illustrated in Appendix 1.

5. Approach

This section outlines the terms on which the framework operates – design principles and current approach.

5.1 Design Principles

The principles of the water conservation work programme are:

- **Carbon reduction impact:** There is a direct link with water conservation and decarbonisation – in terms of the supply and treatment of water but also the energy used to heat water, either for daily services (taps, showers) or essential services (sterilisation). With hot water accounting for an estimated 43% of all water used in hospitals, any conservation of water will have a carbon reduction impact.
- **Proportionality:** The principle is to focus the majority of water conservation efforts on the top water consuming healthcare facilities. These hospitals currently on the list represent 85% of the volume by bed days which is in turn directly linked to patient bed days, the factor used to calculate national water benchmarks.
- **Data-based decision making:** Target setting, performance monitoring and reporting of water benchmarks are reliant on the availability of accurate water data and estimations of the carbon impact of water conservation measures.
- **Assisting healthcare facilities to have basic water documentation:** Access to up-to-date water network drawings, sub-metering information, best practice guidance (including case studies, guidance, communication materials).
- **Provide training for staff:** Both technical and user to help build a culture of water conservation within hospitals and amplify the activities already taking place.

5.2 Current Approach

Significant work has been carried out over the past five years to establish a support network through which water conservation measures can be promoted nationally, regionally and locally across the HSE. This has resulted in staff led green and energy teams in place across the majority of healthcare facilities. This frameworks builds on staff engagement infrastructure, working with all HSE locations to implement best practices and support innovation in this important area.

Currently, water conservation is happening through the following mechanisms in collaboration and conjunction with the HSE SIO.

National level:	**The HSE SIO:** • Links with energy officers and other stakeholders of influence through the national water committee. • Builds national annual data gathering procedure with assistance for Uisce Éireann. • Provides water conservation training. • Manages water stewardship in partnership with Uisce Éireann.
Regional and local level:	**The HSE SIO:** • Coordinates supports to implement water conservation. • Interacts with on-site maintenance teams. • Help develop actions and business plans based on the process such as initial meetings, onsite survey, prepare sub-metering and action plan, developing business case (cost and carbon). • Secure funding for costed actions. • Assist with implementation and post completing dissemination. • Assist with outreach and communications.

5.3 Recommendations

The HSE SIO will work with the regional Green Teams, strategic partners, representatives of infection prevention and control, and technical roles within HSE Capital and estates and services to assist with improved water conservation and water quality management. The focus will be to deliver in partnership on the below priorities for implementation. The HSE SIO will assist in prioritisation of works and the table below can be used to inform regional green plans.

Table 4. An Overview of Water Conservation Recommendations

Initiative	Description	Timeframe
Proven Approaches		
Establish best practice	Identify measures to promote water conservation and reduce water wastage to include best practice conservation and reduction measures.	Short term – 1 to 2 years
Measurement		
Verify water consumption data	Collaborate with Uisce Éireann to overcome obstacles currently identified in correlating and verifying water consumption data.	Short term – 1 to 2 years

Initiative	Description	Timeframe
Data collection	Assist and coordinate the uploading of Uisce Éireann billing data to the NEIS online platform.	Short term – 1 to 2 years
Baseline consumption	Establish a baseline for current water usage across the HSE and benchmark local healthcare facilities.	Short term – 1 to 2 years
Annual water benchmarking based on Uisce Éireann figures:	• Develop a comprehensive knowledge of all mains water supply points for hospitals with input from Uisce Éireann. • Align the HSE and Uisce Éireann systems to allow annual consumption reports to be easily generated for the top water consuming healthcare facilities. • Annually using Uisce Éireann data generate benchmarks and issue annual report to relevant hospitals. • Use benchmarking to identify highest users and target projects based on common issues, high use rates, hospital types and services supported.	Short term – 1 to 2 years
Online metering for the top water consuming healthcare facilities	• Where feasible the top water consuming healthcare facilities to have online access to mains supply data in conjunction with a wider energy metering project. • Annual review of the available water consumption information with the list of the top water consuming healthcare facilities updated.	Short term – 1 to 2 years
Key metric standardisation	Include details of a standardised data-driven function for intelligent water conservation planning, benchmarking, target driven and annual reporting.	Short term – 1 to 2 years
Water consumption reporting	Produce regional annual water report incorporating sites that form the established Significant Energy User list and issue via the Regional Executive Officer.	Medium term – 3 to 4 years
Climate targets	Ensure that water conservation initiatives effectively contribute to HSE climate targets.	Short term – 1 to 2 years
Water metering	Automatic water consumption metering of mains supply to the top sites in alignment with the Significant Energy User list.	Medium term – 3 to 4 years
Training and Communications		
Staff training	Continue to support the ongoing programme to develop advice, guidance and training programmes for water conservation initiatives.	Short term – 1 to 2 years
Online training platform	Assist with the conversion of water conservation guidance into online and blended training programmes provided on HSE e-learning platforms.	Medium term – 3 to 4 years
Online assessment tool	Assist with the roll out of Sustainability Training and online assessment tool for medium and smaller healthcare facilities an aspect of which incorporates identifying and implementing best practice water conservation opportunities.	Medium term – 3 to 4 years
Communications	Concerted and continued communication around water conservation to encourage positive behavioural change from both staff and service users.	Medium term – 3 to 4 years
Case studies	Create case studies from funded actions including the link between water conservation and carbon saving.	Short term – 1 to 2 years

Initiative	Description	Timeframe
Capital Projects		
Capital projects water efficiency	Assist and support the development of water efficiency guidance for new builds to ensure that current policies and documents reflect best practice.	Medium term – 3 to 4 years
Capital projects scope of services	Review of current scope of services for design teams that are commissioned for capital projects to ensure water conservation is considered at all stages and factors influencing water quality are fully reviewed for best practice.	Medium term – 3 to 4 years
Business case	Develop a comprehensive business case for the appropriate funding mechanism for the implementation of the water conservation strategy.	Medium term – 3 to 4 years
Other Recommendations		
Routine flushing	Assist and support the creation and implementation of a standardised water hygiene flushing methodology to minimise water wastage.	Medium term – 3 to 4 years
Widening the remit	Expand the ongoing water conservation supports to sites not originally targeted via the existing Significant Energy Users list. Support with water conservation is available to all healthcare facilities via the Online Sustainability tool.	Medium term – 3 to 4 years
Accounting for water conservation	Ensure that other sustainability actions take account and, were possible, quantify water savings.	Medium term – 3 to 4 years
New technological solutions	Piloting of new and emerging water conservation technologies and actions, ensuring they are fully costed and identifying the cost benefits. Championing and enabling wider adaptation of successful innovation where application.	Medium term – 3 to 4 years
Water network drawings	Provision of updated, as live, water network drawings for all top water users. This could include water mapping projects and ensuring existing knowledge from contractors and existing HSE staff is captured and reflected.	Medium term – 3 to 4 years
Corrective actions	Addressing failures to achieve water conservation targets both at a local, regional and HSE wide levels and issuing and managing the implementation of any required corrective actions issued.	Long term – 5 years plus
Water efficiency management system	Attain and sustain the ISO 46001 Water Efficiency Management System accreditation.	Long term – 5 years plus

6. Support for Implementation and Next Steps

The Climate and Sustainability Programme and the HSE SIO will continue to support and enable regional green teams, regional climate and sustainability leads and local green teams in whatever way required to ensure that together real tangible progress on this critical issue is made and the HSE continues on our path to sustainability as a whole. This will include guidelines, training, tools and templates to assist with implementation of the Climate Action Strategy.

Moreover, in the immediate term, each region should focus on the below implementation enablers to build and sustain momentum.

Implementation Enabler 1

Governance: Water sub-committee

- As part of your regional green committee, establish a water sub-committee as per Regional Climate Action Implementation Structures guidance. This was issued by the Climate and Sustainability Programme.
- Members of the committee should include, but not limited to:
  - » Clinical staff with responsibilities (in portfolio).
  - » Facilities management.
  - » Capital and Estates staff.
  - » Healthcare staff.
  - » Representative from Infection Prevention and Control.
- As per regional implementation plan mentioned, regional green teams should develop a regional sustainable water action plan.

Implementation Enabler 2

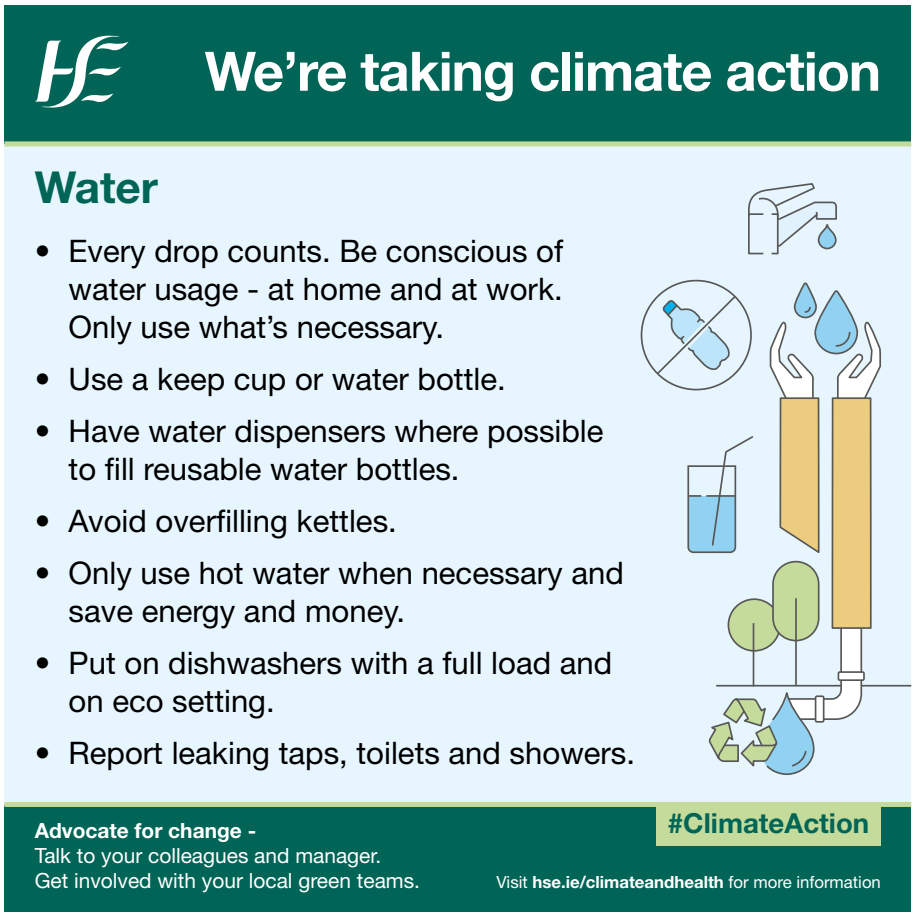
Measurement and assurance

- The Climate Action and Sustainability Programme and HSE SIO will:
  - » Guide a measurement plan initially to focus on 2030 target as minimum targets and all other CAP 24 requirements. The programme will assist regions with guidance and materials on this shortly.
  - » Develop a suite of KPIs for regional reporting.
  - » Keep abreast of relevant CAP reporting.

Implementation Enabler 3

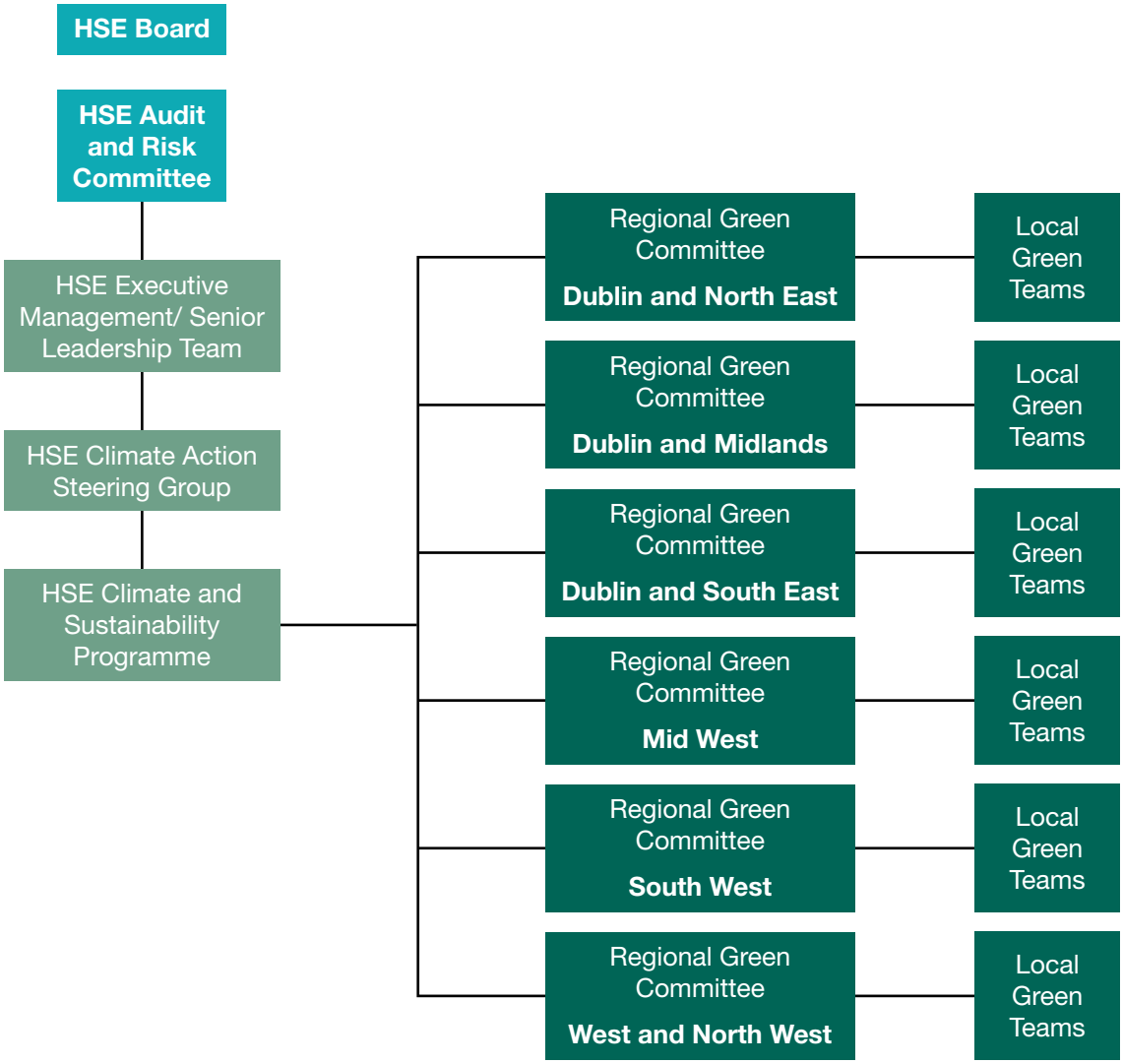
Communications and training

- The Climate Action and Sustainability Programme and HSE SIO will be supporting regions and services with:
  - » Ongoing communications materials to support action, enable shared learning and awareness in this space.
  - » Various training opportunities such as health sector specific training provided via HSELanD and other e-learning platforms, Senior Leadership Sustainability training and Green Team training.
  - » See below a tile developed as part of an internal staff campaign providing staff simple actions that they can take.



Appendix 1:

Regional Implementation Structures



Appendix 2:

Working Group Membership

Once established the membership of the Water Conservation Work Programme will consist of:

- Chair from HSE Sustainable Infrastructure Office
- Further Office Representative from HSE Sustainable Infrastructure Office
- Sustainability Manager
- Green Healthcare Programme representative
- Maintenance representative
- Infrastructural Risk Office Representative
- Uisce Éireann representative
- Community care representative
- Acute services representative

Appendix 3:

List of External Collaborative Bodies

- Uisce Éireann
- Local government
- Environmental Protection Agency
- Engineers Ireland
- The Irish Green Building Council
- Health Protection Surveillance Centre
- Chartered Institution of Building Services Engineers
- Health and Safety Authority