

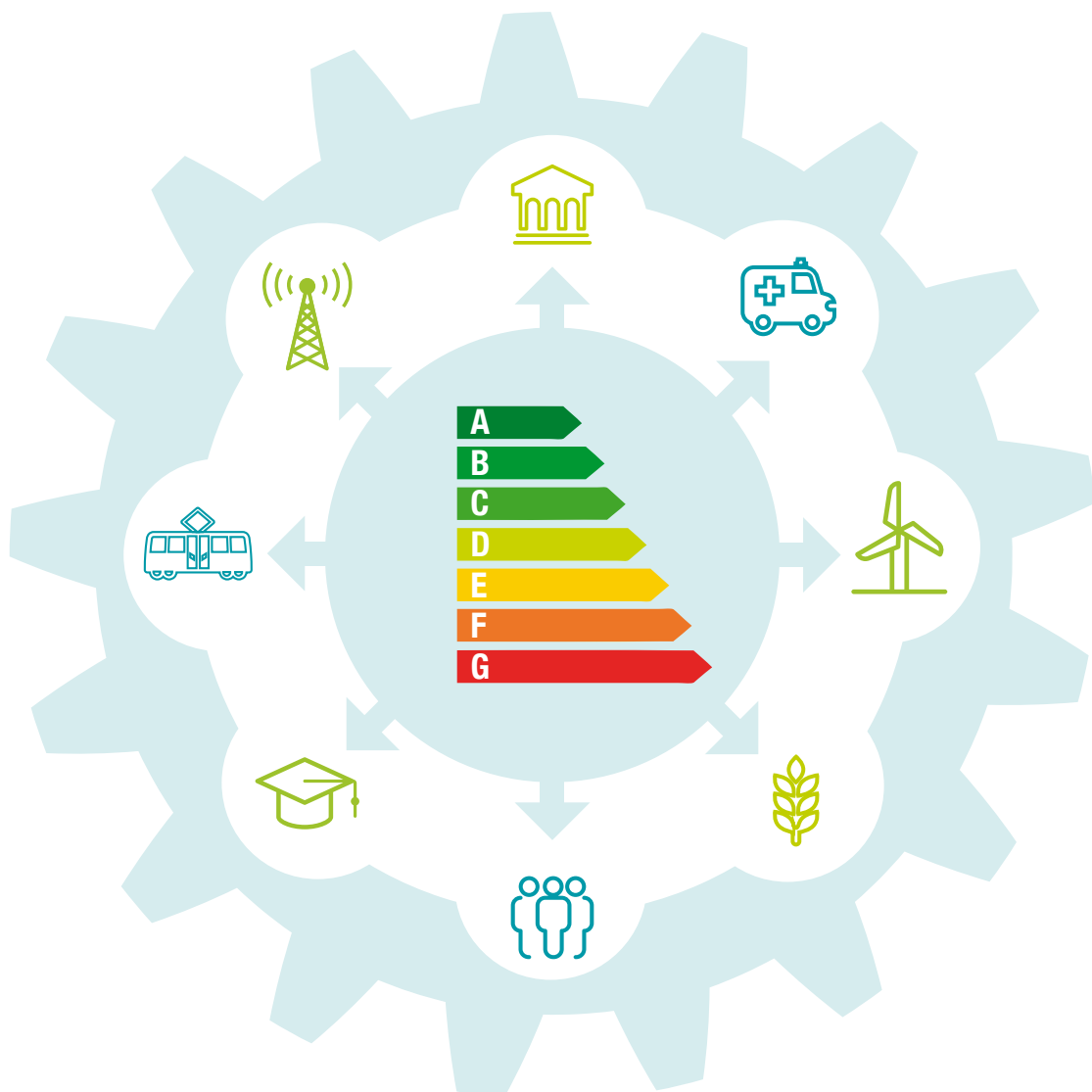


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ar son na hAeráide & Comhshaoil  
Department of Communications,  
Climate Action & Environment

# Public Sector Energy Efficiency Strategy

Department of Communications,  
Climate Action & Environment

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## Ministerial Foreword

The cleanest and cheapest energy is the energy we do not use. Making our public sector more energy efficient simply makes sense. It is good for our environment, achieves better value for public money and improves services for our citizens. It directly supports Government objectives on climate action and public sector reform. A more energy efficient public sector also provides leadership on climate action and the transition to a sustainable energy system for the whole of our economy and society.

This is why, when a national target of improving our energy efficiency by 20% by 2020 was set in 2009, the public sector was given an even higher target of 33%. At the end of 2015, the sector was using 21% less energy than it had in 2009, resulting in avoided costs of €619m and emissions savings of 548,000 tonnes over that period. This is significant progress. However, to reach the 33% target, which forms a substantial part of our national target, a great deal more remains to be done.

The publication of this Strategy is a key milestone in meeting commitments set out in the White Paper on Energy Policy, Ireland's Transition to a Low Carbon Energy Future 2015-30 and in the Programme for a Partnership Government. Its implementation will be a fundamental part of our 2050 National Mitigation Plan, in particular its Built Environment and Transport components. As we look out to 2050, and the vision of reducing carbon emissions by at least 80% (compared to 1990 levels), the case for leadership from our public sector becomes ever clearer.

Providing the new structure to ensure senior leadership and accountability on energy efficiency in the public sector is at the core of this Strategy. Senior managers in over 300 public bodies will be given the responsibility of ensuring compliance with existing energy performance reporting and monitoring requirements and embedding structured energy management in their organisations. In addition, Government Departments are now being asked to take a strategic leadership role and drive the efforts of the bodies under their aegis to realise their potential to save energy, carbon emissions and money. The key message of this Strategy to public sector leaders is to use the supports available to: understand your energy use, identify projects, explore funding options and create business cases that will allow well informed and coordinated investment decisions on cost efficient projects.

Not only is there the potential in the public sector to save energy, the public sector also has the skills to do it. The Sustainable Energy Authority of Ireland (SEAI) through its Public Sector Programme, and the Office of Public Works (OPW) through its Optimising Power@Work programme, are already providing the expertise and support that has seen very significant savings relative to what has been a small scale of investment. With the top 10 energy users in the public sector accounting for almost half of its total energy usage, and the top 25 users accounting for two thirds of that usage, it is clear where we need to look for the large projects to achieve the step change in the scale, and durability, of energy savings necessary to meet the 33% target. The establishment of a large project pipeline, and the provision by my Department of €3m in 2017 for a partnership initiative between SEAI and the OPW to carry out a suite of pathfinder renovation projects, will be the practical actions taken to activate this potential.

It is also important that public bodies see the benefits of their energy efficiency action and have the opportunity to plough the financial savings they achieve back into their organisations, be that in further energy efficiency measures or development of front line services. The clarity that this Strategy brings to the retention of savings is a very positive development and will be key to developing the capacity of the public sector to continue to lead on climate action to 2030 and out to 2050. I acknowledge the input of many people across a wide range of public bodies to the development of this Strategy and I count on their continued commitment to making its implementation a success for our citizens.



**Denis Naughten T.D.,**

*Minister for Communications, Climate Action & Environment*

# 1 Introduction

## 1.1 Achieving an energy efficient public sector – the 2020 target

Everyone uses public services in some form. It is in all our interests that these publicly funded services are provided as efficiently, and cost effectively, as possible, and achieve better outcomes for users. Improving energy efficiency across the public sector<sup>1</sup> sits squarely within this drive to improve public services for our citizens.

Ireland's first National Energy Efficiency Action Plan (NEEAP) of 2009 put an obligation on the public sector to take a leadership role on climate action by improving its energy efficiency by 33% by 2020 – an achievement which would see the public sector avoid €246m in energy spend in the year 2020 and avoided CO<sub>2</sub> emissions of 5.9m tonnes for the period 2009 - 2020. The imperative of improving public sector energy efficiency by 33% has been reiterated in the White Paper on Energy Policy (December 2015)<sup>2</sup> and *A Programme for a Partnership Government 2016*.<sup>3</sup>

With energy savings of 2,442 gigawatt hours (GWh)<sup>4</sup> [reported](#) by 337 public bodies and 1,792 schools in 2015, the public sector has improved its energy efficiency by 21% since 2009.<sup>5</sup> These 2015 energy savings reduced public sector energy spend by €154m, and avoided 548,000 tonnes of CO<sub>2</sub> emissions. The cumulative financial value of public sector energy savings made up to 2015 is €619m. Real progress has therefore been made in this first phase of activity.

However, we cannot underestimate the challenge of the next phase over the period 2017 - 2020. Most of the savings made to date have come from measures such as behavioural change campaigns, smarter use of energy and some equipment upgrades. While this does show just how much can be achieved through low cost measures, the next tranche of savings will have to come from larger scale projects, such as deep renovation of buildings, Nearly Zero Energy new build, lighting and boiler replacement, upgrades to utility networks, fleet management and eco-driving. Behavioural change measures will of course also remain key to sustaining savings. A step change in activity is therefore required between now and 2020. Based on what we have learned since 2009, the aim of this Strategy is to drive the level of effort required to achieve the 2020 target and ensure structured energy management becomes an integral part of sustainable resource management across the public sector.

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- 1 For the purposes of the public sector target, the public sector is considered to encompass the Civil Service, commercial and non-commercial State Bodies, the Defence Forces, An Garda Síochána, Health Service Executive hospitals and other facilities, Local and Regional Authorities, schools and universities. The formal definition of a "public body" is set out in Regulation 4 of SI 426 of 2014 ([www.seai.ie/Your\\_Business/Public\\_Sector/FAQ/What\\_is\\_a\\_Public\\_Body/What\\_is\\_the\\_Public\\_Sector\\_in\\_the\\_context\\_of\\_these\\_obligations.html](http://www.seai.ie/Your_Business/Public_Sector/FAQ/What_is_a_Public_Body/What_is_the_Public_Sector_in_the_context_of_these_obligations.html)).
  - 2 *White Paper - Ireland's Transition to a Low Carbon Energy Future* can be accessed at [www.dccae.gov.ie/energy/en-ie/Energy-Initiatives/pages/white-paper-on-energy-policy-in-ireland-.aspx](http://www.dccae.gov.ie/energy/en-ie/Energy-Initiatives/pages/white-paper-on-energy-policy-in-ireland-.aspx).
  - 3 *A Programme for a Partnership Government* (p. 124) can be accessed at [www.taoiseach.gov.ie/eng/Work\\_Of\\_The\\_Department/Programme\\_for\\_Government/A\\_Programme\\_for\\_a\\_Partnership\\_Government.pdf](http://www.taoiseach.gov.ie/eng/Work_Of_The_Department/Programme_for_Government/A_Programme_for_a_Partnership_Government.pdf).
  - 4 A gigawatt hour (GWh) is a measure of the amount of energy that is consumed over time to produce the power required for a particular activity.
  - 5 The majority of public bodies selected 2009 for baselines, but some have picked baselines prior to 2009, whilst schools mostly have baselines later than 2009.

## 1.2 Energy efficiency – driving the low carbon transition

Using our energy more efficiently is the most cost effective and accessible way to tackle climate change. Action on energy efficiency also reduces the CO<sub>2</sub> emissions connected with our energy use, which account for over half of all our CO<sub>2</sub> emissions.<sup>6</sup> Currently, Ireland relies on high emission, imported, fossil fuels to meet over 88% of our energy needs at an annual cost of around €4.6 billion.<sup>7</sup> By 2050 we need to hugely reduce this reliance on fossil fuels. Our vision of a low carbon energy system is that CO<sub>2</sub> emissions from the electricity generation, built environment and transport sectors will be reduced by at least 80% compared to 1990 levels, by 2050.

To achieve this, our energy system has to fundamentally change, both in terms of where our energy comes from and how we use it – this is why energy efficiency is important. If we use less energy it makes it easier to replace our fossil fuels with renewable energy. If we use our energy more flexibly it makes it easier to integrate different types of renewable energy into our energy system. The public sector has a leadership role to play in giving practical demonstration of how energy efficiency can be central to our action on climate change.

Ireland has voluntarily committed to improving its energy efficiency by 20% by 2020 to contribute to EU 2020 targets. This means we should make energy savings of 31,950 GWh by the end of 2020. How we plan on doing this is set out in the NEEAP.<sup>8</sup> While Ireland's 20% energy efficiency target is not legally binding, it is critical to our progress towards our statutory EU 2020 targets to meet 16% of our energy demand from renewable sources and reduce CO<sub>2</sub> emissions by 20%.

*The public sector has a leadership role to play in giving practical demonstration of how energy efficiency can be central to our action on climate change.*

6 The latest national greenhouse gas emission projections was published by the EPA in March 2016 and can be accessed at [www.epa.ie/pubs/reports/air/airemissions/2020\\_GHG\\_Projections\\_2016\\_Bulletin.pdf](http://www.epa.ie/pubs/reports/air/airemissions/2020_GHG_Projections_2016_Bulletin.pdf)

7 The SEAI *Energy in Ireland 1990 to 2014* (2015) Report can be accessed at [www.seai.ie/Publications/Statistics\\_Publications/Energy\\_in\\_Ireland/Energy-in-Ireland-1990-2014.pdf](http://www.seai.ie/Publications/Statistics_Publications/Energy_in_Ireland/Energy-in-Ireland-1990-2014.pdf)

8 The NEEAP sets out how Ireland will make energy savings of almost 31,950 gigawatt hours by 2020. The NEEAP can be accessed [http://www.dccae.gov.ie/energy/en-ie/Energy-Efficiency/Pages/National-Energy-Efficiency-Action-Plan-\(NEEAP\).aspx](http://www.dccae.gov.ie/energy/en-ie/Energy-Efficiency/Pages/National-Energy-Efficiency-Action-Plan-(NEEAP).aspx).

### 1.3 Objectives of this Strategy

In the development of this Strategy two clear themes emerged. Firstly, action on energy efficiency in the public sector can, and will continue to, reduce both public expenditure on energy, and CO<sub>2</sub> emissions. Secondly, the public sector can take a leadership role in embedding energy efficient technologies and behaviours in Ireland, developing the energy efficiency supply chain and creating opportunities for indigenous enterprise and innovation. Achieving the transition to a low carbon economy requires that we all use energy more carefully. There is a very real expectation among business and local communities that citizens should be able to look to their public organisations for leadership in this transition, in particular, on energy efficiency. The importance of public sector energy efficiency to wider public sector reform, and citizen engagement in the low carbon transition, has shaped the objectives of this Strategy:

1. The public sector, maximising its own skills and experience, takes a national **leadership role** in deploying cost efficient energy efficiency projects and initiatives
2. The delivery of this Strategy is **a shared, whole of Government, effort** where all Government Departments, and the bodies under their aegis, play their part in embedding structured energy management as part of their business delivery
3. In the context of public sector reform, the public sector takes an action focused and results driven approach to sustainable and cost efficient **energy management**, thereby delivering better value for money and better services for citizens
4. The public sector contributes to the development of a more **sustainable energy system**, a reduction in our CO<sub>2</sub> emissions and a cleaner healthier environment now and for future generations

These objectives draw together policy priorities from the energy and public sector reform areas. The cross-cutting policy context for this Strategy is set out in more detail in Chapter 2.



## 1.4 The five steps to structured energy management

A structured approach to energy management makes environmental and financial sense for all organisations, whatever the size of their energy use. Based on best practice and practical experience from many programmes such as the International Standards Organisation (ISO) 50001 energy management standard, the Irish Standard IS 399 (Energy Efficient Design Management), the SEAI Energy MAP training programme and the SEAI Sustainable Energy Communities Scheme, public sector bodies should, as a minimum, practice these 5 basic, structured energy management steps within their organisation:

- 1. Commit:** appoint a senior manager to provide leadership and accountability; empower staff to act; choose an appropriate path to energy management or certification
- 2. Identify:** work to identify actions and projects based on your energy performance data – SEAI and OPW can assist
- 3. Plan:** avail of strategic planning assistance; build energy management capacity; integrate facilities management, finance and human resource functions in your energy management planning; set annual energy saving targets
- 4. Take Action:** avail of project design, development and supervision support; commit to projects
- 5. Review:** measure results and continually improve energy performance



## OPW – Optimising Power @ Work

The OPW's Optimising Power @ Work campaign which began in 2008, has successfully created and maintained staff energy awareness regarding energy usage, conservation and wastage. It originally targeted central government buildings but has since expanded into the wider public sector. Its core principle is the encouragement of behavioural change with the aim of identifying and eliminating wastage. The campaign involves three key elements: i) availability and feedback of up to date, reliable energy consumption data for each building; ii) appointment of an Energy Advisor to each building who assesses baseline energy performance, sets energy saving targets and measures progress towards these targets; and iii) intensive engagement with staff to create awareness and effect behavioural change. Average annual energy savings of 21% have been achieved in central government buildings which represents a cost saving of circa €4.9m per annum.



## 1.5 Actions

To realise the potential that exists for saving energy, build on existing technical and financial supports, and regulatory measures already in place, drive the level of effort needed to meet the 33% target by 2020 and embed structured energy management in the public sector, Chapter 3 sets out the following range of new actions:

- Strategic leadership on structured energy management by Government Departments
- Creating a project pipeline and ensuring development assistance for key projects
- Procurement frameworks for energy efficiency works to State owned buildings occupied by Government Departments and their agencies
- Project design support and management services for building upgrades
- Ongoing development of public procurement frameworks to support energy saving capacity across the public sector
- Improve energy efficiency in public transport fleets
- Enhanced support for schools
- Retention of financial savings made from energy efficiency improvements to support the implementation of structured energy management
- Evaluation of the implementation of this Strategy and analytical expertise to support effective governance

Core to the implementation of this Strategy will be the maximisation and sharing of existing technical and management skills for energy efficiency that already exist in the public sector, so that, where additional expertise is procured, it really does add value. Given the skills the public sector already has in procurement, building upgrades and new build, fleet management and eco-driving, the sector has the capacity to act to take a structured and consistent approach to understand, measure, manage, improve and be accountable for its energy performance. Details of the new governance arrangements designed to integrate structured energy management into public sector business planning are set out in Chapter 4.

## 2 Policy and rationale – public sector reform and the low carbon transition

### 2.1 Public sector leadership on energy efficiency

Energy efficiency in the public sector is not an ‘energy only’ issue. It is part of the much wider sustainable development agenda already set out in *The National Framework for Sustainable Development in Ireland – Our Sustainable Future*.<sup>9</sup> Our Sustainable Future defines sustainable development as, ‘a continuous, guided process of economic, environmental and social change aimed at promoting wellbeing of citizens now and in the future’ and identifies energy efficiency as one of the key areas of opportunity in the transition to an innovative, low carbon and resource efficient society. It makes the case for leadership from central government, local government, and the public sector as a whole, to mobilise the effort needed to make the transition to a low carbon economy in a way that also supports the essential economic and social progress upon which our national wellbeing depends. Using energy more efficiently, and sustainably, in the public sector is an objective that is fully aligned with the vision for public sector reform and the focus in the *Public Sector Reform Plan 2014-16* on:

- Service users
- Efficiency
- Openness, Transparency and Accountability
- Leadership, Renewal and Organisational Reform

Public sector reform actions, such as the establishment of a Property Asset Register to allow more strategic management of the State’s property portfolio, directly support the actions required to improve public sector energy efficiency.

The four areas of action of *The Civil Service Renewal Plan* can also be applied to how Government Departments need to provide leadership and accountability for action to meet the energy efficiency challenge across the public sector:

- A unified civil service – managing the civil service as a single, unified organisation
- A professional civil service – maximising the performance and potential of all civil service employees and organisations
- A responsive civil service – changing our culture, structure and processes so that we become more agile, flexible and responsive
- An open and accountable civil service – continuously learning and improving by being more open to external ideas, challenge and debate

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9 *The National Framework for Sustainable Development in Ireland – Our Sustainable Future* can be accessed at [www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/Environment/Miscellaneous/FileDownload%2C30452%2Cen.pdf](http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/Environment/Miscellaneous/FileDownload%2C30452%2Cen.pdf).

The description of *The Civil Service Renewal Plan* as a practical plan for how we can achieve the vision of a modern civil service by, ‘*building on what we do well; identifying what we can do better; and setting out the actions we must all take to renew for the future*’, could just as easily be used to summarise the aims of structured energy management and the objectives of this Strategy.<sup>10</sup>

## 2.2 Energy efficiency – a climate action priority

This Strategy provides the policy framework for how public sector can show leadership on energy efficiency and demonstrate how energy efficiency can be central to our transition to a low carbon economy. The publication of this Strategy was a commitment in the [White Paper on Energy Policy, Ireland's Transition to a Low Carbon Energy Future 2015-2030](#), published in December 2015. The White Paper reiterates the obligation placed on the public sector in the NEEAP to achieve the more challenging target of improving energy efficiency by 33%.<sup>11</sup> The focus on energy efficiency in Ireland reflects the strong international consensus that now exists regarding the critical importance of energy efficiency for effective action on climate change. The International Energy Agency (IEA) recommends that governments treat energy efficiency as the ‘first fuel’ in their energy mix on the basis that the most cost effective energy is the energy we do not use. IEA analysis clearly demonstrates that energy efficiency has the potential to support economic growth, enhance social development, advance environmental sustainability, ensure energy system security and help build wealth.<sup>12</sup>

The long term focus of EU energy policy is out to 2050. This may seem a very long time frame. However, when the timescales required to change consumer behaviour and build energy infrastructure are taken into account, it quickly becomes apparent that this timescale is actually very ambitious and action must not be delayed. Achieving a 2050 vision of reducing CO<sub>2</sub> emissions by at least 80% would require EU Member States to place their energy system on a realistic low carbon trajectory as a matter of urgency. This is why the key milestones to this vision have been set at 2020 and 2030. This Chapter explains that 2050 ‘destination’ and what EU Member States have already committed to achieve by 2030. This scenario sets the context for where we currently stand as we work to meet our 2020 target. The aim of the next part of this chapter is to convey how the effort to improve public sector energy efficiency by 33% by 2020 is linked to Ireland’s commitment to play its part in achieving this longer term, international, vision.

10 *Civil Service Renewal Plan* (2014: 5)

11 Part 2 of Statutory Instrument (SI) 426 of 2014. The SI can be accessed at <http://www.irishstatutebook.ie/eli/2014/si/426/made/en/print>

12 IEA (2014): “*Energy efficiency: a key tool for boosting economic and social development*” can be accessed at [www.iea.org/newsroomandevents/pressreleases/2014/september/energy-efficiency-a-key-tool-for-boosting-economic-and-social-development.html](http://www.iea.org/newsroomandevents/pressreleases/2014/september/energy-efficiency-a-key-tool-for-boosting-economic-and-social-development.html)

### 2.3 The 2020 ‘milestone’ and the basis for the public sector target

A key priority of EU energy policy since 2008 has been how to realise the potential of energy efficiency for a cost effective transition to a sustainable, de-carbonised, European energy system. It was in response to the emerging international policy consensus on the importance of energy efficiency that the Government decided in 2009 to set a target for Ireland to improve its energy efficiency by 20% by 2020, meaning that energy savings of 31,950 GWh must be made. Based on end 2015 data, SEAI has calculated that implementation of our NEEAP has resulted in energy savings of 19,204 GWh or a 12% improvement.

In 2009 it was also decided to set a more challenging target of 33% for the public sector. The ‘exemplar’ role for the public sector was confirmed in Articles 5 and 6 of the [EU Energy Efficiency Directive](#) of 2012.<sup>13</sup> This was transposed into Irish law through the requirement on public sector bodies to ‘fulfil an exemplary role with regard to energy efficiency’ in Part 2 of Statutory Instrument (SI) 426 of 2014.<sup>14</sup> Progress to this target is measured by SEAI based on energy use reports made to them by public sector bodies. SEAI publish the results, including the trajectory of each public body to the 33% target, most recently in their *Annual Report 2016 on Public Sector Energy Efficiency Performance*. Based on 2015 data, the current estimate of the level of energy savings that the public sector will need to make in the year 2020 to meet the 33% target is 3,910 GWh. This revises the previous estimate in the NEEAP of 3,240 GWh.

The other main piece of EU energy efficiency legislation impacting on the public sector before 2020 is the [EU Energy Performance in Buildings Directive](#) (EPBD). Under the EPBD all new buildings must be ‘nearly zero energy buildings’ (NZEB) standard by 31 December 2020 and new buildings owned and occupied by public authorities must be NZEB after 31 December 2018, two years in advance of the private sector. The NZEB performance requirement will be introduced for buildings owned and occupied by public authorities early in 2017.<sup>15</sup>

The EPBD defines NZEB standard as a building that has a very high energy performance and that the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby. The NZEB performance requirement for buildings owned and occupied by public authorities will be introduced early in 2017 in order that these buildings meet the NZEB requirement from 31 December 2018. The EPBD also requires that where a building undergoes a major renovation, (defined as a renovation involving more than 25% of the surface envelope of the building), the whole building will be required to achieve a cost optimal performance.

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13 Directive 2012/27/EU Of The European Parliament And Of The Council 2012 can be accessed at [www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027&from=EN](http://www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027&from=EN)

14 S.I. No. 426/2014 – European Union (Energy Efficiency) Regulations 2014 can be accessed at [www.irishstatutebook.ie/eli/2014/si/426/made/en/print](http://www.irishstatutebook.ie/eli/2014/si/426/made/en/print)

15 Department of Housing, Planning & Local Government: *Towards Nearly Zero Energy Buildings in Ireland*, (2012) can be accessed at [www.envron.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownload,42487,en.pdf](http://www.envron.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownload,42487,en.pdf)

## 2.4 The 2030 ‘milestone’

Of course the vision for 2050 will have to be achieved in stages. At the European Council of October 2014 Member States agreed headline targets of at least a 40% reduction (over 1990 levels) in CO<sub>2</sub> emissions and an increase in renewable energy to 27% of energy consumed within the EU. A 27% target was also set for energy efficiency, though this is expected to increase to 30%.<sup>16</sup> The level of effort to be made by each Member State to meet these headline targets remains to be decided at time of publication. It is Ireland’s stated position that the scale of our effort to 2030 must be cost effective, technically feasible and affordable.

In 2014 the European Commission published its proposals for an [Energy Union](#), setting out the policy priorities and common principles which must underpin the meeting of these 2030 targets. Central to this concept of Energy Union is the need to treat energy efficiency as an energy source in its own right, alongside energy sources such as electricity or oil. This policy principle stems from the need to both reduce overall demand for energy and to make energy use more flexible – critical if we are to successfully integrate greater amounts of intermittent renewable energy sources into our energy system. This also means that energy efficiency must be competitive with other energy sources – the prioritisation of energy efficiency must be based on its cost effectiveness.

Member States will also be preparing National Energy Plans under the Energy Union framework. These plans will set out how each Member State intends to make its contribution to the meeting of the EU wide target agreed for 2030. It is intended that these plans will replace and streamline the framework of energy planning and reporting currently in place for 2020. This EU planning framework will drive continued efforts to improve public sector energy efficiency between 2021 and 2030.

## 2.5 The 2050 ‘destination’

In 2011 the European Commission published the Energy Roadmap 2050. It sets a common vision of reducing CO<sub>2</sub> emissions by at least 80% (compared to 1990 levels) by 2050. For Ireland to achieve this vision will mean our energy system has to become almost completely ‘decarbonised’ i.e. reducing the use of fossil fuels in our energy system down to at least 20%. In practice, this will mean that, by 2050, energy efficiency will have to be fully ‘normalised’ across our society and economy. The range of actions we currently call ‘energy efficiency’ will have to become the norm for how we use, and conserve, energy in our buildings, our transport and our utilities. The actions to bring about this change will be set out in the first statutory National Mitigation Plan (NMP) as required by the Climate Action and Low Carbon Development Act 2015. The NMP is currently in preparation by relevant Government Departments and will contain measures from four key sectors – Built Environment, Electricity Generation, Transport and Agriculture. Energy use in the public sector will feature in the sectoral mitigation measures for the Built Environment and Transport, being led by DCCAE and the Department of Transport, Tourism & Sport (DTTAS) respectively.

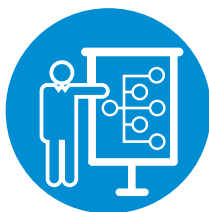
### 3 Actions – a strategic framework for public sector energy efficiency

Like the rest of our economy and society, making energy efficiency the norm is ultimately dependent on changing mind-sets and behaviours. If the management of public sector organisations can optimise the conditions for efficient use of energy by their teams, it will build evidence for public sector staff that their actions make a difference, and that energy efficiency makes good business sense. This Chapter sets out the progress to date across the public sector, where the potential lies for further gains, and what actions will now be taken to support the public sector to realise this potential.

#### 3.1 Opportunities to act

There are three key points at which it is possible to influence the use of energy in the public sector<sup>17</sup>:

- **Design:** when new facilities and processes are being planned and designed and when existing facilities and processes are being re-designed
- **Acquisition:** when equipment and facilities are being bought, upgraded or leased
- **Use:** when public sector staff use energy in the course of their work



##### **Design**

When new facilities and processes are being planned and designed and when existing facilities and processes are being re-designed.



##### **Acquisition**

When equipment and facilities are being bought, upgraded or leased.



##### **Use**

When public sector staff use energy in the course of their work.

This brings us back to the importance of mapping and understanding the energy use of each organisation to make sure that the energy efficiency projects undertaken are based on sound data and tailored to the business needs of the organisation. Energy will be used more efficiently if the conditions to enable that more efficient use are first created. If a facility or process is designed to function in an energy efficient way, or the most energy efficient equipment is acquired, then the gains in terms of energy savings and CO<sub>2</sub> emission reduction at the end use point will be maximised.



# Limerick and Clare Education and Training Board & eeef

Limerick and Clare Education & Training Board (LCETB), in devising a strategy to achieve the 2020 energy consumption reduction target of 33%, identified the European Commission's Energy Efficiency Fund (eeef <http://www.eeef.eu>) as a potential source of funding for the initiatives required to meet this target.

In this context, the European Commission approved funding for LCETB of €335,835 under the eeef Technical Assistance Programme for the implementation of various Energy Management Actions across LCETB, the first Irish Project to participate in this European Initiative. Formally launched by the then Minister for Education and Skills, Jan O'Sullivan, TD in January, 2015, the *'Let's Conserve Energy Together Better Project'*, is due for completion by the end of this year.

The eeef TA funding has facilitated the delivery over the past two years of Energy Reports on all 50 LCETB Schools and Centres, up to date DEC Certs for each building and an overall organisational Energy Management Plan. Investment opportunities in terms of energy savings measures and renewable energy opportunities have been identified and a detailed Register of Opportunities (ROO), budgets, costs and potential energy saving are all in place. Energy-awareness training for staff and students has been completed across all ETB sites.

As the eeef project comes to a conclusion, LCETB is looking ahead to instigating a series of energy saving measures involving an estimated project investment of €9m to ensure the 2020 target is met.



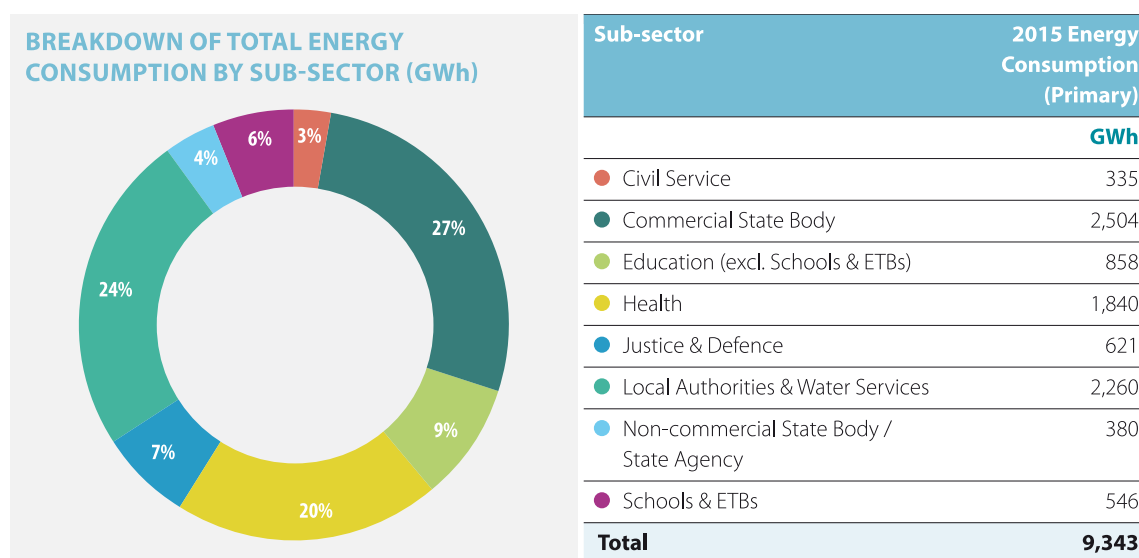
**lcetb**

Bord Oideachais agus Oiliúna  
Luimnigh agus an Chláir  
*Limerick and Clare  
Education and Training Board*

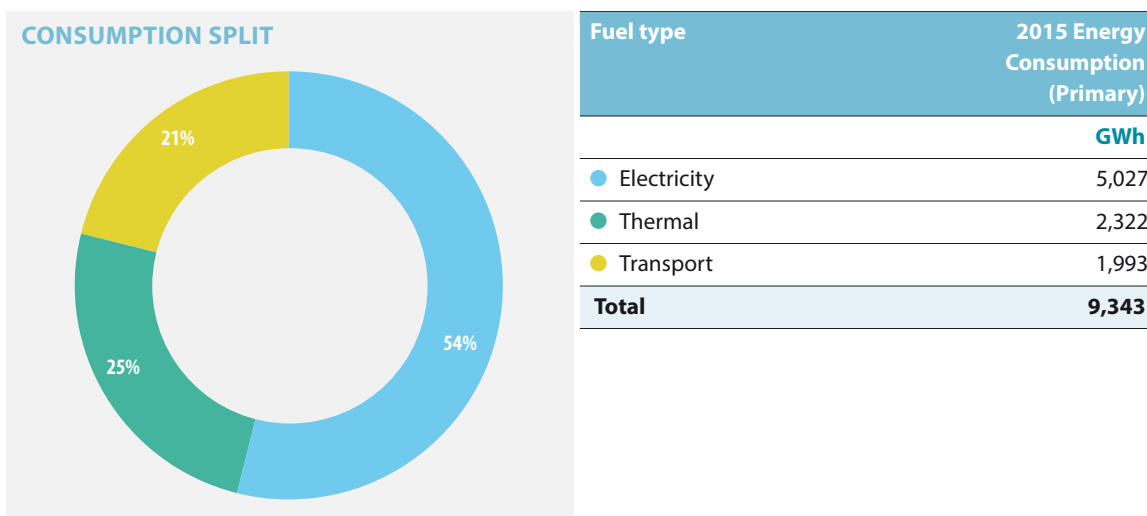
### 3.2 How the public sector uses energy

Like the rest of the economy, the public sector uses energy in 3 areas: electricity (mainly for lighting and equipment), heating (mainly using gas and oil) and transport (overwhelmingly oil based). In 2015 electricity accounted for 54% of the energy used in the public sector, with 25% used for heating and 21% for transport. 80% of reported energy use in the public sector for 2015 is accounted for by 4 sectors: Commercial State Bodies (CSBs), third level education, Local Authorities & Water Services and the health sector. Of these four sectors, the biggest user by far of electricity is Local Authorities & Water Services (their electricity use accounts for 19% of total energy consumption in the public sector), followed by CSBs, health and education. The health sector has the biggest demand for heat (accounting for almost 10% of total public sector energy consumption). CSBs account for 27% of total public sector energy consumption and are the largest users of energy for transport. This means that they are the largest oil consumers in the public sector – one of the biggest sources of CO<sub>2</sub> emissions.

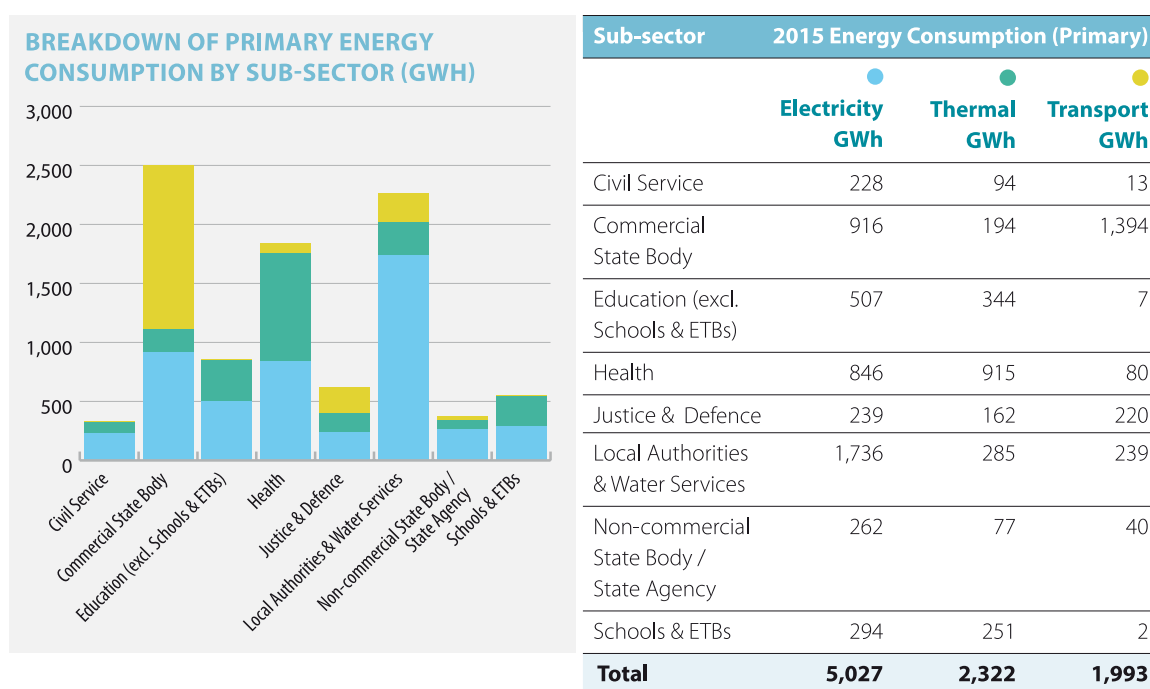
The remaining 20% of energy is used across 4 sectors: Justice and Defence, Civil Service, Non-Commercial State Bodies and State Agencies, and schools. The use of electricity across these sectors is on the whole quite evenly spread. However, when it comes to both heating and transport, usage in the Justice and Defence sector is significantly higher, particularly in transport, which is much higher than the health or third level sectors.



Source - SEAI Annual Report 2016 on Public Sector Energy Efficiency



Source - SEAI Annual Report 2016 on Public Sector Energy Efficiency



Source - SEAI Annual Report 2016 on Public Sector Energy Efficiency

### 3.3 Progress to date – the first phase

The 33% target was set against the then estimated baseline energy usage (c. 10,000 GWh) and spend (€600m) in 2009. The *SEAI Annual Report 2016 on Public Sector Energy Efficiency Performance*<sup>18</sup> provides detailed data on performance in 2015 and the 2,442 GWh of savings reported. This is a 21% improvement (compared to 'business as usual') and brings the sector beyond half way to the 33% target. However, as noted earlier achieving the remaining 12%

will be more challenging. The efficiencies achieved in 2015 also contribute 548,000 tonnes of avoided CO<sub>2</sub> emissions and represent energy spend savings of €154m. Cumulatively these public bodies and schools have avoided energy costs of €619m since 2009. These savings were achieved using a range of measures including: energy management, building renovations, more efficient transportation, procurement of energy efficient products and behavioural change programmes.

***Cumulatively these public bodies and schools have avoided energy costs of €619m since 2009.***

Of the bodies which reported for 2015, 48% were on track for their 2020 targets; a further 34%, while more efficient, are not yet on a trajectory to reach their target. The remaining 18% were less efficient than their baseline. The top 50 energy users in the public sector account for 77% of public sector energy consumption. Therefore, we must look to these larger energy users to make the greatest efforts to meet the 33% target. Nearly half of the reported energy consumption was accounted for by the top 10 energy consumers: An Post, Bus Éireann, Dublin City Council, The Defence Forces, Dublin Bus, An Garda Síochána, the Health Service Executive (HSE), Irish Water, Coillte and Irish Rail.

Beginning in 2009, this first phase of activity has seen the establishment of a comprehensive range of training, support, procurement and data collection measures, which include:

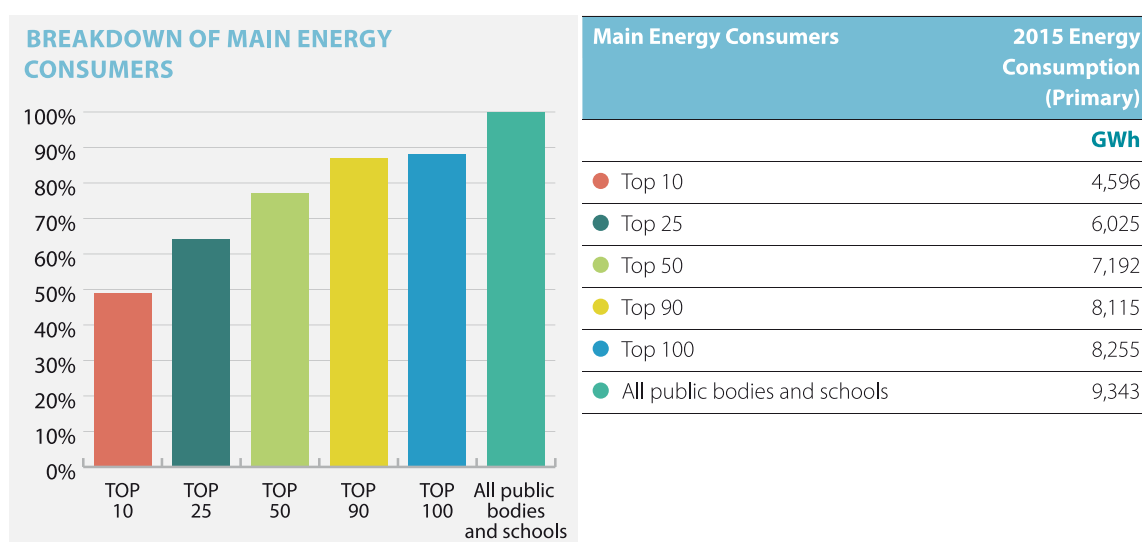
- The Sustainable Energy Authority of Ireland's (SEAI's) [Public Sector Programme](#), including the Partnership programme with nearly 80 public bodies committed to advanced energy management, procurement and networking, the Public Sector Energy Performance Monitoring & Reporting System and the Energy Link peer to peer network
- The Optimising Power@Work Behavioural Change programme by the OPW which has achieved average annual energy savings of 21% in 270 large Central Government buildings and is now being expanded into the wider public sector including the HSE whose National Health Sustainability Office are introducing the programme in acute care hospitals throughout the country
- The launch of the Public Sector ISO 50001 programme by SEAI, to which 28 large energy users in the public sector are now signed up, and 6 have received certification
- The Energy in Education programme is one of a range of supports developed by the SEAI in collaboration with the Department of Education and Skills designed to help schools to improve energy use practices and to reduce school operating costs along with helping to protect the environment for future generations
- The *Green Public Procurement – Guidance for the Public Sector* (Environmental Protection Agency (EPA), 2014) and the Office of Government Procurement (OGP) central framework for energy supplies (including the option to buy renewable electricity)
- The National Energy Services Framework, and accompanying Project Assistance Grants, developed by the DCCA and SEAI, with input from the Office of Government Procurement (OGP) and the Chief State Solicitor's Office (CSSO) in line with GCC rules
- The establishment by the HSE of the NHSO
- Public sector bodies are required to comply with Article 8 of the Energy Efficiency Directive (Energy Audits)<sup>19</sup>

19 Energy auditing introduced under Art. 8 of the EED is being introduced on a phased basis for public bodies according to energy spend: from 2016 – spend >€1m; 2017 - >€500,000; 2018 - >€250,000; 2019 - >€35,000. Further information can be accessed at [http://www.seai.ie/Your\\_Business/Energy-Auditing-Scheme/](http://www.seai.ie/Your_Business/Energy-Auditing-Scheme/)

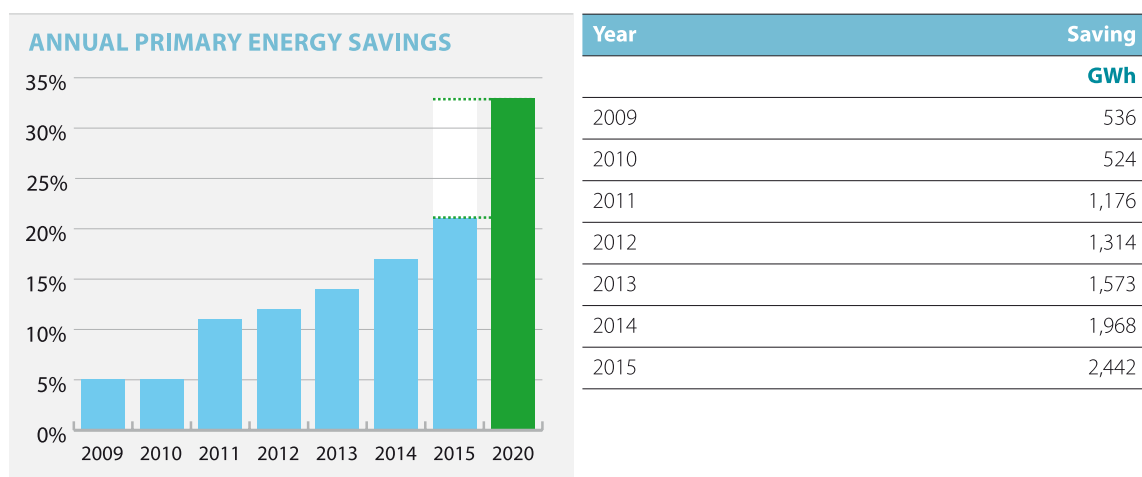
- Energy network companies contributing to the national energy efficiency target and submitting reports on their energy efficiency plans to the European Commission under Article 15 (Energy transformation, transmission and distribution) of the Energy Efficiency Directive. The public sector has strongly availed of SEAI capital grant programmes such as Better Energy Workplaces and Better Energy Communities

This activity has laid the foundation for the second phase of effort now needed in the public sector. In this next phase we need to implement large scale projects, particularly in areas such as building renovation and fleet management, which will continue to provide durable energy savings beyond 2020. It is particularly important that action is taken to reduce consumption of energy in heat and transport – 2 areas that are significant sources of CO<sub>2</sub> emissions.

*In this next phase we need to implement large scale projects, particularly in areas such as building renovation and fleet management, which will continue to provide durable energy savings beyond 2020.*



Source - SEAI Annual Report 2016 on Public Sector Energy Efficiency



Source - SEAI Annual Report 2016 on Public Sector Energy Efficiency



## Dublin Fire Brigade – The GreenPlan

“The GreenPlan” was developed by fireman Neil McCabe beginning at Dublin Fire brigade’s Kilbarrack Station. This approach uses a mix of motivation, energy management, behavioural change, technology improvement and building fabric upgrade underpinned by its own unique project development system. As a result the station was transformed reducing its energy consumption by 90%, water intake by 92% and gas consumption by 97%. Annual running costs were reduced by €48,000 and carbon emissions cut by 145 tonnes a year. There have also been multiple social and community benefits. Applying The GreenPlan more widely across its estate, Dublin Fire Brigade had, by October 2014, saved over €11m in operating costs and reduced its energy spend by 44%. The GreenPlan© approach has won numerous awards. It is being successfully applied in other local authority premises across Dublin, including libraries, swimming pools, leisure centres and The Mansion House. It has been impactfully employed in communities such as Mulranny in Co. Mayo.

This approach is now being made freely accessible as a short online learning course – The GreenPlan Champion for Communities. [A longer version of this case study can be accessed at the DCCAE Website – from Q1 2017.]



### 3.4 Where is the energy efficiency potential in the second phase?

**Building and process design:** The greatest opportunity to reduce lifecycle energy and carbon is at the early design stages of new investments. Up to 95% of the lifespan cost is already committed at the end of the design process. Case study projects have demonstrated that savings available can range up to 50% improvement from a baseline design. [IS \(Irish Standard\) 399](#) is a new standard developed by the SEAI and the National Standards Authority of Ireland (NSAI) to allow organisations to develop and continuously improve their capacity in energy efficient design management. The short time-bound period of design provides the greatest energy saving potential with the most attractive return on investment.

Coupled with the [ExEED Certified Energy Efficient Design Programme](#) launched as a pilot by SEAI in April 2016, the standard provides a mechanism to certify Energy Efficient Assets. The certification is based on full life cycle, verifiable energy savings, fully compatible with other IS and ISO standards and fully independent, compliance based, audit. The standard is applicable to any scale of facility, new build or building renovation and creation or re-design of equipment and processes.

**Building renovation:** The SEAI report, [Unlocking the Energy Efficiency Opportunity](#) published June 2015, identified the technical potential for energy savings of 2,500 GWh in public buildings to 2020. The report went on to analyse how much of this technical potential it would be cost effective to realise. It found that ‘deep’ measures i.e. those that technically could produce the largest amount of energy savings such as, solid wall insulation, window replacement and heat pumps, were often not cost effective when installed on their own because the pay-back periods are too long. However, when installed as part of a ‘package’ of measures, including ‘shallower’ measures with shorter pay-back periods such as lighting and heating upgrades (both to include controls and roof insulation, then these deeper measures become relatively more cost effective and could provide 1,600 GWh of energy savings. This technical and economic analysis shows that it is the *combination* of shallow and deep measures that will achieve increased, and more durable, energy savings and better value for money.

In practical terms, the approach should be to exploit the short pay back works first (e.g. behaviour change, optimising existing controls, and mechanical and electrical upgrades). The next step is to consider those projects with longer payback and identify synergies between these work packages

**Public Lighting:** Public lighting accounts for over €56m in public expenditure and, using 485 GWh of primary energy per annum, over half of the entire electricity consumption of Ireland's 31 Local Authorities. The City & County Management Association (CCMA), working with Transport Infrastructure Ireland (TII) and SEAI, have identified the opportunity to halve these costs by upgrading the energy efficiency of public lighting assets. The National Public Lighting Steering Group, chaired by the CCMA including representatives from TII, DCCAE, the DTTAS and SEAI, was established in 2014. TII and SEAI are supporting the preparation of an inventory of public lighting, and supporting the CCMA implement their national public lighting strategy. The Group is working closely with ESB Networks to implement a work programme which includes, addressing network issues, and most importantly, the introduction of ‘burn profiles’ (i.e. lighting settings), that will allow the flexibility of operation of upgraded public lighting necessary to make

### 3 Actions – a strategic framework for public sector energy efficiency

the investment economic over a suitable payback period. The CCMA aims to tender for upgrade works in 2017. The completion of this flagship national project is critical if the Local Authority sector is to meet its part of the public sector target in 2020.

## Certification of Cork County Council's energy management system to ISO 50001



Cork County Council recently received the Sustainable Energy Association of Ireland Public Sector Award 2016. The award recognised Cork County Council as the first Local Authority in Ireland to achieve ISO 50001 certification in May 2016. This certification covers the entire scope of their annual €7m energy spend and 41m kWh of energy consumed each year. Through their ISO50001 certification they are now compliant with the energy audit requirement of SI 426. Cork County Council are well on their way to the 33% target, having achieved 15% by 2015.

The project was implemented by securing senior management buy in and committing five staff from their Energy Management Unit to work with the Significant Energy User managers, setting energy reduction objectives and targets, and measuring the results to ensure continual improvement. Through the SEAI master class programme and with the assistance of the SEAI relationship manager a road map of actions and milestones was progressed at pace leading to a minimal ten month turnaround to certification. This project has created a roadmap which other local authorities can now follow having set the best practice standard in their sector.

An example of a key area targeted was Public Lighting, which had an energy load that is over 95% unmetered and accounted for 43% of their total energy use. By developing a strategy of effectively managing these assets, the council demonstrated that a verifiable change in energy consumption was achieved that was in line with International Measurement and Verification Protocol (IPMVP) best practice (IPMVP is standard for measuring and verifying energy savings).



**Water Services:** The processes around the collection, treatment and transport of water and wastewater make this service one of the most energy intensive in the public sector. Irish Water's reported 2015 usage through the SEAI's Monitoring and Reporting system (M&R) was 1,037 GWh of energy. Therefore, energy efficiency must be kept firmly in the centre of plans to upgrade and develop our water network. To achieve this, Irish Water has committed to attaining ISO 50001 certification and adopting the IS399 Standard for Energy Efficient Design Management into its programme of retrofitting of existing facilities and procurement of new assets. Achievement by the Water Services sector of the 33% target would account for a significant portion of the energy savings needed to reach the public sector 2020 target.

## Irish Water benefiting our environment and delivering national energy efficiency with Sustainable Energy Strategy

Irish Water has a Sustainable Energy Strategy to help address the negative impact of climate change and achieve a 33% improvement in energy efficiency.

Working with our partners in local authorities, Irish Water has made annual energy savings of 10GWh; enough to power 2000 homes, and we are working together to progress more projects to deliver almost an additional 190GWh.

The Irish Water Strategy addresses the need to work across different functions within our business to ensure that energy efficiency savings are maximised for the good of our environment. We work across a variety of different projects including Energy Projects, New Projects, Energy Innovation, Renewable Energy, Water Conservation, Source Control and Behaviour.

Collaboration with our partners is key to achieving energy efficiency savings of 198GWh; equivalent to powering nearly 40,000 homes or a county the size of Longford.

Irish Water's aim with our Sustainable Energy Strategy is to achieve and sustain these energy savings beyond 2020.



### 3 Actions – a strategic framework for public sector energy efficiency

**Transport:** The SEAI's Annual Report 2016 on Public Sector Efficiency Performance found that transport accounted for 21% of primary energy consumption in the public sector in 2015. Therefore public sector transport fleets account for a very significant proportion of expenditure, and emissions, in the public sector. As an area spanning the public sector, better transport energy management through actions, such as ensuring energy efficiency criteria are a priority in fleet replacement, can deliver real financial savings and make an important contribution to reducing CO<sub>2</sub> emissions.

Efficient driving behaviour has been shown to improve transport fuel efficiency by between 5% and 10%. Many public sector bodies with transport fleets already provide 'Eco-driving' training for their employees and have driver management processes in place. Advice on how to do this is available from the SEAI.

Other innovative measures to improve efficiency in, and reduce emissions from, public sector fleets will be identified in consultation with key public sector bodies and stakeholders, primarily through accelerating the introduction of more energy efficient and alternative fuelled vehicles across the public sector.

The National Transport Authority (NTA) and DTTAS will also consider options for improving efficiency in the publicly funded public transport fleets including potential investment in new engine technologies and driver advisory systems.

## Iarnród Éireann



Iarnród Éireann embarked on a mission to transform the way they conducted their business in the late 1990s; this was predicated on the investment strategy to renew the assets of the company. At that time, their assets were life expired and new track, signalling, and trains were required. A number of innovative actions were undertaken by the company which generated massive gains in Energy Efficiency that accrued between 2006 and today.

Now Iarnród Éireann uses 36% less energy while delivering the same or more train services and passenger journeys. This has been achieved by implementing a "Regenerative Braking system" which captures braking energy and transforms it into power for other trains in the vicinity. The Motor control Software has been modified to reduce wastage on acceleration and matched train length to passenger numbers. On the diesel trains, a "Push-Pull" system was implemented which eliminated the need for shunting actions and Shunting Locomotives. They have moved away from locomotives for shorter trains, to Diesel Multiple Units, where each carriage has a smaller engine so that the engine matches the load. They have installed Automatic Engine Shut Down and matched train length to passenger numbers. In addition, revised Track, and Signalling facilitates efficient running and the Operational Timetable is constantly revised to improve performance.

**Schools:** Developed by SEAI in partnership with the Department of Education & Skills, the Energy in Education programme offers a range of supports, to help schools to improve energy management practices, reduce school operating costs and protect the environment. Schools can make a 5-10% energy saving by implementing low, or no, cost energy saving measures. Schools can also avail of an Assessment, Mentoring and Advice (AMA) service, which saw 108 schools report average energy savings of 12% in 2015. Up to end September 2016, 119 schools have attended energy management workshops and are in the process of receiving advice and mentoring under the programme. In total since the programme began, nearly 400 schools have participated, saving nearly 11% on their energy bills.

## Energy in Education Programme



**Case Study – Ashbourne Community School:** Ashbourne Community School is a large, busy primary school with an annual energy spend of €54,000. The school has an active Green Schools programme and in 2015 students from the school were successful in reaching the national final of One Good Idea with their dynamic energy awareness campaign, which targeted the whole school community. The school took part in the Energy in Education Programme and three months after an SEAI Energy Adviser visited, the school had achieved an estimated 10% saving and stand to achieve a further 15% saving from lighting upgrades and improved boiler controls. The school management and staff Energy Coordinator have a keen interest

in the area of energy saving and with the support of the student energy committee there is no doubt that Ashbourne Community School will achieve their projected savings.

**Health:** The National Health Sustainability Office (NHSO) was established by the HSE in 2013 to build awareness among health service staff, patients and the public of sustainability issues, with the aim of achieving lower costs and a healthier environment. Its remit includes effective energy management. The NHSO will publish the health services first Sustainability Strategy in 2017 (in which energy efficiency and green procurement will be amongst the seven pillars for delivery of a Sustainable Healthcare System) and will provide support and advice to the health service in achieving the actions outlined in the Strategy. In 2014 and 2015 the OGP, in partnership

### 3 Actions – a strategic framework for public sector energy efficiency

with the NHSO and HSE Procurement, ran a procurement programme for Energy Suppliers for the Health Service. Each one of the four main energy types are now on a National Contract with a single supplier for natural gas, electricity, oil and LPG. The NHSO is now engaging with the new suppliers to agree on: monitoring & reporting, usage & cost analysis, and developing the best tariffs for sites. Having a single supplier for each energy type has improved the HSE's ability to monitor its energy use and assisted with its obligations with regard to the reporting requirements of SI 426 of 2014.

**Sustained support for behavioural change:** The OPW Optimising Power@Work (OP@W) behaviour change campaign has been fundamental to the energy efficiency gains made so far by the civil service sector. OP@W accounts for a very significant part of the 21% improvement achieved so far by the civil service. OP@W has since been extended to the wider public sector. Real progress has been made to raise awareness among public sector staff of how to save energy using existing facilities and equipment. Behaviour change support shouldn't stop with the completion of energy efficiency projects in an organisation. Rather, these upgraded assets often need to be used differently if their potential to provide energy savings is to be realised. Providing this support and awareness raising is essential to the on-going process of continual energy management improvement and is why this programme will continue to be critical to public sector energy efficiency.

#### **Energy efficiency and renewable energy**

This Strategy focuses on energy efficiency in support of the national energy efficiency target. While it does not specify actions on renewable energy, public bodies should adopt renewable energy solutions in tandem with their energy efficiency action where appropriate. Use of renewable energy is rewarded in the methodology used to track public bodies energy performance (SEAI's Monitoring and Reporting system). Onsite renewable energy generation that offsets imported grid electricity will improve an organisation's energy performance.

A holistic approach to energy saving projects and improved energy performance is encouraged. For example, to reduce the CO<sub>2</sub> emissions of a heating system, the first step is to renovate the building so that it loses as little heat as possible. The next step is to install a renewable heating system e.g. a heat pump, biomass system or CHP if appropriate. If the fabric of the building has already been improved, these less energy intensive solutions will still produce the desired level of comfort. This approach will reduce to a minimum the amount of energy required to deliver a particular service, whilst supplying the remaining energy use through renewable sources. The strategy to improving energy sustainability is therefore:

1. Energy management: understand your existing energy use, and adopt ongoing controls
2. Energy efficiency: identify energy efficiency improvements to facilities and equipment to reduce that usage
3. Renewable technologies: examine renewable options when considering how to meet this reduced energy use

This is why it is so important to make energy efficiency and renewable energy central to design and acquisition processes.



## Tipperary Energy Agency and Tipperary County Council Solar PV Installation

In 2014, Tipperary Energy Agency undertook a project to improve the energy efficiency of a number of Local Authority buildings in Tipperary. The Agency procured photovoltaic (PV) solar panels and a contractor to design, install and maintain these panels on nine buildings. The installation was designed to meet the minimum day time energy consumption of the building with no excess energy consumption being produced. In addition, details of real time energy production, cumulative KWh, annual cost and carbon reduction impact of the solar panels was publicly displayed to increase the educational value of the project. Total project costs were €327,000, of which 50% was grant funded by SEAI. The annual average saving on electricity use is 11% with project payback estimated at seven years.



### 3.5 Strategic actions to unlock the energy efficiency potential of the public sector

Considerable expertise in energy management already exists across the public sector. It is critical that this expertise is used to expand the public sector's own capacity to manage energy use effectively. The following sets out the strategic measures necessary to create a strong framework within which public sector organisations can draw on this capacity and realise their energy efficiency potential. These measures are the additional interventions necessary to complement the existing range of supports and regulatory requirements relating to energy efficiency in the public sector.

#### 3.5.1 Project pipeline and development assistance

Using data on public sector energy use gathered through the Public Sector Energy Performance Monitoring & Reporting System by SEAI, and by OPW through the Optimising Power@Work programme, projects will be identified by public sector bodies, as part of their energy management planning process. The Steering Group (see Chapter 4 – Governance) will use this list of projects to establish a project pipeline with a particular focus on medium to large scale projects in the built environment (medium to deep renovation; lighting upgrades; boiler replacement), utilities, networks and transport (fleet replacement; fleet management; eco-driving).

Organisations with significant property portfolios, such as, the OPW, HSE, HEA, Local Authorities, relevant bodies under the aegis of the Department of Justice and Equality, and the Department of Defence, and the Department of Education and Skills, should prepare a building renovation schedule as part of their Energy Management Plan for the period to 2020, to include suitable sites, expected energy savings, costings and payback period.

Inclusion in the pipeline will provide organisations with access to tailored, project development assistance around project design, management and financing, including assistance for suitable projects to seek innovative market solutions (as required by the Programme for Government 2016).<sup>20</sup>

20

A *Programme for a Partnership Government* can be accessed at [www.taoiseach.gov.ie/eng/Work\\_Of\\_The\\_Department/Programme\\_for\\_Government/A\\_Programme\\_for\\_a\\_Partnership\\_Government.pdf](http://www.taoiseach.gov.ie/eng/Work_Of_The_Department/Programme_for_Government/A_Programme_for_a_Partnership_Government.pdf)

### 3.5.2 Support for strategic leadership on structured energy management

Under the governance arrangements set out in Chapter 4, Government Departments will have the pivotal role in providing leadership on energy management in their own organisations and in the bodies under their aegis. While each organisation will remain separately accountable for its energy performance, there is an urgent need for strategic leadership from the centre to ensure this accountability is shown across the public sector.

To fulfil this role, Departments first need to understand their own energy use, and that of their 'group' of public bodies, using the data and advice already available to them from the SEAI and OPW. The next step is to put in place an Energy Management Plan for their own organisation that is based on a commitment to reach an appropriate level of energy management certification, identifies concrete projects and sets annual targets for energy savings to 2020, through participation in SEAI programmes such as Energy MAP or the public sector ISO 50001 programme. This process, overseen by each Government Department, needs to be replicated across their group so that a collective effort is made and strategic decisions about where best to focus that effort can be taken. It is strongly recommended that organisations with an energy spend of €5m or above pursue ISO 50001 certification. Under the [Public Sector Programme](#), SEAI provide extensive support for energy management implementation.

To support Departments, planning advice will be available to each Departmental Management Board through the Steering Group, which will draw on the expertise and experience of leaders in public sector energy efficiency. In this way, practical experience and best practice will be shared along with advice on choosing the appropriate certification path (where relevant) and guidance on applying the governance arrangements set out in Chapter 4.

## Implementing ISO 50001 – Defence Forces

The Defence Forces was awarded ISO 50001 (Energy Management) in 2012 following significant changes in its approach to and systems of energy management. Measures implemented include the appointment of a dedicated officer to address organisational energy awareness, the adoption of SEAI's Energy Management Action Plan "Energy Map", the establishment of the Senior Energy Executive (SEE) and the development of an Energy Strategy (2011) and Energy Policy (2012). These changes have resulted in significant improvements and benefits with annual savings of 17% (2009 – 2014) along with a carbon emissions reduction of 9,400 tonnes (2013).



**Óglaigh  
na hÉireann**  
DEFENCE FORCES IRELAND



### 3.5.3 Framework procurement – building and utility upgrades

To ensure value for money, the OPW, subject to funding and resources, and working closely with the OGP, will put in place a central procurement framework for building renovation, covering medium to deep renovation, lighting upgrades, boiler replacement, from which central government and their agencies occupying State owned (and in some cases leased) buildings can draw down relevant services for building renovation projects and lighting and boiler upgrades. The specifications developed by OPW for this procurement process will also be available to the wider public sector. This approach to procurement will be an important tool for the aggregation of smaller scale projects, particularly with regard to lighting and boiler upgrades, and for the further implementation of the State's property management strategy.

The HSE's NHSO, as part of its Intergovernmental Partnership with the NHS to deliver Energy Performance Contract (EPC) projects will be establishing a procurement framework for EPC contractors in 2017. The framework will be specifically designed for energy retrofits repaid through guaranteed savings over a fixed term, providing healthcare facilities with a streamlined and cost efficient framework within which they can upgrade their energy systems.

The CCMA, with TII, will establish a national framework for the procurement of energy efficient public lighting assets working with ESB Networks and in consultation with the Commission for Energy Regulation (CER).

### 3.5.4 Central procurement

Public procurement has a critical enabling role in helping public sector bodies achieve their energy efficiency objectives. The OGP continually reviews its sourcing programme to prioritise activity that will best serve requirements, enable savings and ensure compliance with procurement procedures. OGP can advise and offer assistance in developing criteria where relevant. DCCAE and SEAI will work with the OGP to explore the potential to assist public sector bodies achieve enhanced energy efficiency through procurement.

*Public procurement has a critical enabling role in helping public sector bodies achieve their energy efficiency objectives.*

### 3.5.5 Project design and management – medium to deep renovation of buildings

Many large public bodies have the expertise within their teams to undertake energy efficiency investments of scale. For those public bodies, without these expertise 'in-house' (particularly those part of central government), subject to funding and resources, OPW will provide the project design and management services necessary to ensure large scale, medium to deep renovation, projects are to cost optimal levels in line with the forthcoming revision of Part L of the Building Regulations. The Steering Group (see Chapter 4 – Governance) will identify projects suitable for this support from those included in the Project Pipeline.

As part of this process, the OPW will identify a pipeline of renovation projects from its portfolio, feasible to schedule to 2020, with a view to piloting a range of medium to deep renovation packages in 2017 that could then be replicated across the public sector. The specifications developed by the OPW for these renovation and new build works will be available to the wider

public sector to ensure that the innovation needed to meet the high standards required from medium and deep renovation and new build is transmitted across the public sector and to the wider commercial built environment. This work will also contribute to the on-going development of the State property management strategy. Implementation of this action will make a significant contribution to developing the supply chain to the level necessary to ensure sufficient skills are available to meet existing building regulations, and those forthcoming under NZEB requirements. DCCAE is making €3m available for a first tranche of projects in 2017 in a partnership between the SEAI and OPW.

Energy Efficient Design (EED) is a methodology that assists organisations to design, construct and manage projects to achieve minimum energy consumption. Many public bodies, with SEAI support, are adopting EED practices. For example Irish Water is embedding EED into the 7-10 year planning and design process for water services assets. The HSE has completed 6 pilot EED projects and the requirement for an EED Review is now incorporated into the Scope of Works for Design Team Services for Capital Projects. This allows energy management to be addressed at the earliest possible stage to realise the greatest energy saving potential.

The NHSO has also established an Estates Sustainability Group to share knowledge and keep up to date on building related energy and sustainability issues. Training has been provided to 18 staff members (estates and acute hospitals), in partnership with SEAI, to become Certified Energy Managers. The designation CEM® recognises individuals who have demonstrated high levels of experience, competence, proficiency and ethical fitness in the energy management profession. Certified Measurement and Verification training is planned for 2017. SEAI supports training and competency building, including the CEM, Certified Measurement and Verification training, Institute of Public Lighting certification programmes, and other courses when identified and requested by public bodies.

#### 3.5.6 Transport – fleet management and eco-driving

It makes sound energy management, and financial, sense for public bodies with large transport fleets (either operational vehicles or public transport) to make energy efficiency central to their fleet management. Therefore, public sector bodies with fleets of 10 vehicles or more should undertake a transport specific energy audit as part of their wider energy management planning process.

They should also undertake a vehicle life span cost analysis as part of the requirement on them to produce an annual Energy Management Plan to ensure that appropriate vehicles are matched to task in the public fleet. Relevant public bodies are required to publish the findings of their analysis in their Annual Report and ensure that these results inform procurement of new fleet.

Public sector service fleets (excluding school transport), travelling more than 5000 km per year should have a telematics or tracking system fitted to optimise journeys and eliminate unnecessary journeys.

Public sector bodies with fleets of over 10 vehicles should provide ‘Eco-driving’ training, and utilise telematics and associated transport management systems.

The public sector can influence energy usage through developing Workplace Travel Plans (WTPs) with support, as required, from the NTA. A WTP is a package of measures aimed at supporting sustainable travel for work-related journeys. It comprises actions to promote walking, cycling, public transport, car-sharing, modal shift, the use of technology instead of travel, and flexible working practices. It is recommended that all public sector bodies develop a WTP and establish a review mechanism. The emphasis in WTPs on physical exercise is a good example of how energy efficiency could link with Government objectives to improve public health and wellbeing such as the Healthy Ireland Initiative.

### 3.5.7 Schools

Schools constitute a unique cohort within the public sector due to their particular energy use profiles, which result in very long pay-back times on investment, and limited scope to deal with the technical issues around project implementation. The Energy in Education Partnership<sup>21</sup> between the SEAI and the Department of Education and Skills provides a forum for education stakeholders to share knowledge and best practice. The aim is to leverage the skills and experience of this partnership in order to report to the Steering Group on how best to realise the potential of this sector to improve its energy efficiency, provide a healthy environment for students, and maximise the opportunity that a comfortable, energy efficient environment provides and in turn, helps students and their communities understand and participate in the low carbon transition.

### 3.5.8 Sustaining behavioural change in the built environment

The Optimising Power@Work programme, run by the OPW, is now available to all public bodies that have individual buildings with energy spend in excess of €100,000. Maintaining and developing the Optimising Power@Work programme will be critical to ensuring that both Central Government and public sector buildings are being operated in the most energy efficient manner possible. This is achieved through staff behavioural change, elimination of energy wastage and optimisation of existing controls systems in each building.

Currently, a Display Energy Certificate (DEC) must be obtained and displayed by many public sector buildings. Unlike a BER, which is based on a standardised energy performance for the type of building rated, the DEC is based on the *actual* energy performance of that building. To help embed behavioural change and proper use of renovated buildings, it would be good practice for those public sector buildings to achieve a DEC standard of C or above.

### 3.5.9 Retention of savings

Investing in energy efficiency reduces an organisation's energy consumption and their energy spend. It can also reduce Ireland's fossil fuel import bills – Ireland spent over €4.6 billion on imported fossil fuels in 2015. By making energy savings, public sector bodies can free up funds for use elsewhere in their service provision. It is within the discretion of public service bodies to re-deploy budgetary resources no longer needed within their annual budget allocation to pay for energy to other areas of their operational budget. There is therefore a clear incentive for individual public sector bodies to achieve energy savings and to deploy the funds freed up as a result.

*It is within the discretion of public service bodies to re-deploy budgetary resources no longer needed within their annual budget allocation to pay for energy to other areas of their operational budget.*

## 4. Governance

### Leadership and Accountability

This Strategy sets out the new actions, which have been identified as necessary to complement the existing suite of support and regulatory measures for public sector energy efficiency introduced since 2009. This governance structure has been designed to improve leadership of, and accountability for, energy performance in the public sector. Therefore, it is an integral part of these new actions. It builds on the work that many public sector bodies already do with the SEAI and the OPW to monitor, report on and improve their energy performance.<sup>22</sup> However, the requirements set out below will go beyond those operational arrangements to allow Government to form a clear strategic view of progress to the public sector energy efficiency target. Ultimately the aim of this governance structure is to ensure:

- Public sector energy efficiency is driven as a whole of Government priority
- Each public sector body avails of the flexibilities and supports available to it, while remaining accountable for its own energy management and the delivery of its contribution to the 33% target

To achieve these outcomes, the following governance structures are established:

### 4.1 Reporting to Government

The target of improving energy efficiency by 33% is shared by every public sector body. However, the reality is that not all bodies have the same scope to make large energy savings. Nevertheless, the aggregation of smaller contributions to the target remains critical to success. In recognition of this, the overall national target has been apportioned to groups consisting of each Government Department and the bodies under their aegis. This approach gives scope for a strategic and more flexible approach that:



































- allows each group the flexibility to manage the achievement of its aggregate target in the most efficient way including the option to focus on large scale projects
- utilises the energy management expertise that already exists in large organisations in the public sector
- increases the opportunity to aggregate smaller, replicable, projects

22 Of 351 public sector bodies (excl. standalone schools) obliged to deliver energy efficiency gains and report to SEAI, 337 made returns for 2015 – a compliance rate of almost 96%, covering 89% of public sector energy use. It is critical that Government has accurate and timely data on public sector energy use to ensure that progress towards the 33% target is accurately tracked and policy decisions are as fully informed as possible. Public Sector bodies will continue to provide their data to SEAI to publish data from the Monitoring & Reporting system annually. This will continue to provide a public record of progress being made by each public sector body towards the 33% target across the public sector.

To facilitate governance and management of the public sector target each public body is assigned to a Group (headed by their parent Department) through whom the Group will report.

Table 1 below provides an overview of energy use by Government Department Group. It shows the number of public sector bodies in each group, how much of the overall energy use they account for, their reporting status, the level of efficiency they have attained and their trajectory to target.

**Table 1 Energy Use by Government Department Group**

Public Sector Energy Performance			
Department	% of Public Sector Energy Consumption	Compliance with Energy Data reporting obligation	Energy Performance
<b>Agriculture, Food &amp; the Marine</b>	 6%	10/10 Public bodies reported	 10.3% savings, but not on target
<b>Arts, Heritage, Regional, Rural and Gaeltacht Affairs</b>	 <1%	16/17 Public bodies reported	 23.3% savings
<b>Children and Youth Affairs</b>	 <1%	4/4 Public bodies reported	 12.5% savings, but not on target
<b>Communications, Climate Action and Environment</b>	 5%	15/15 Public bodies reported	 27.3% savings
<b>Defence</b>	 3%	3/3 Public bodies reported	 12.1% savings, but not on target
<b>Education &amp; Skills</b>	 12%	75/79 Public bodies reported	 23.7% savings
<b>Housing, Planning, Community and Local Government</b>	 25%	44/45 Public bodies reported	 18.9% savings
<b>Finance</b>	 2%	11/11 Public bodies reported	 21.3% savings
<b>Foreign Affairs and Trade</b>	 <1%	1/1 Public bodies reported	 27.7% savings
<b>Health</b>	 21%	76/79 Public bodies reported	 21.5% savings
<b>Jobs, Enterprise and Innovation</b>	 <1%	16/16 Public bodies reported	 42.5% savings
<b>Justice &amp; Equality</b>	 4%	19/21 Public bodies reported	 13.5% savings, but not on target
<b>Public Expenditure and Reform</b>	 <1%	7/8 Public bodies reported	 36.1% savings
<b>Social Protection</b>	 <1%	3/3 Public bodies reported	 24.2% savings
<b>Taoiseach</b>	 <1%	7/7 Public bodies reported	 16.4% savings, but not on target
<b>Transport, Tourism &amp; Sport</b>	 19%	30/31 Public bodies reported	 26.2% savings
<b>Total</b>	 100%	337/350 Public bodies reported	 21.7% savings

\*This data excludes standalone schools.

Using a template to be provided by the Steering Group, each Department will report annually to Government on the progress to target of their own organisation and that of the aggregate progress of bodies under their aegis (in their group), highlighting successes, challenges, and how those challenges are being addressed. Group progress monitoring will facilitate targeted interventions and allow for responsive implementation of this Strategy.

***Each Department will report annually to Government on the progress to target of their own organisation and that of the aggregate progress of bodies under their aegis.***

## **4.2 Providing leadership – senior management accountability for energy management**

As is the case across all areas of Government, effective energy management is dependent on leadership and accountability. The critical success factor for the achievement of energy efficiency gains within individual public sector bodies is leadership and accountability from senior management that provides:

- Strong sponsorship of structured energy management within their organisation, including decision making on training and projects necessary to empower staff to act
- Effective communication within the organisation, and with Government, on progress towards/challenges to, achieving targets
- Openness to sharing best practice and to accessing project supports

### **4.2.1 Designation of Energy Performance Officers**

All public sector bodies must designate an Energy Performance Officer (EPO) from among their senior management team. In order to be accountable for energy management and performance, the EPO should have decision making powers with regard to facilities management, corporate budgets and procurement, along with responsibility for corporate and financial reporting, so that they can:

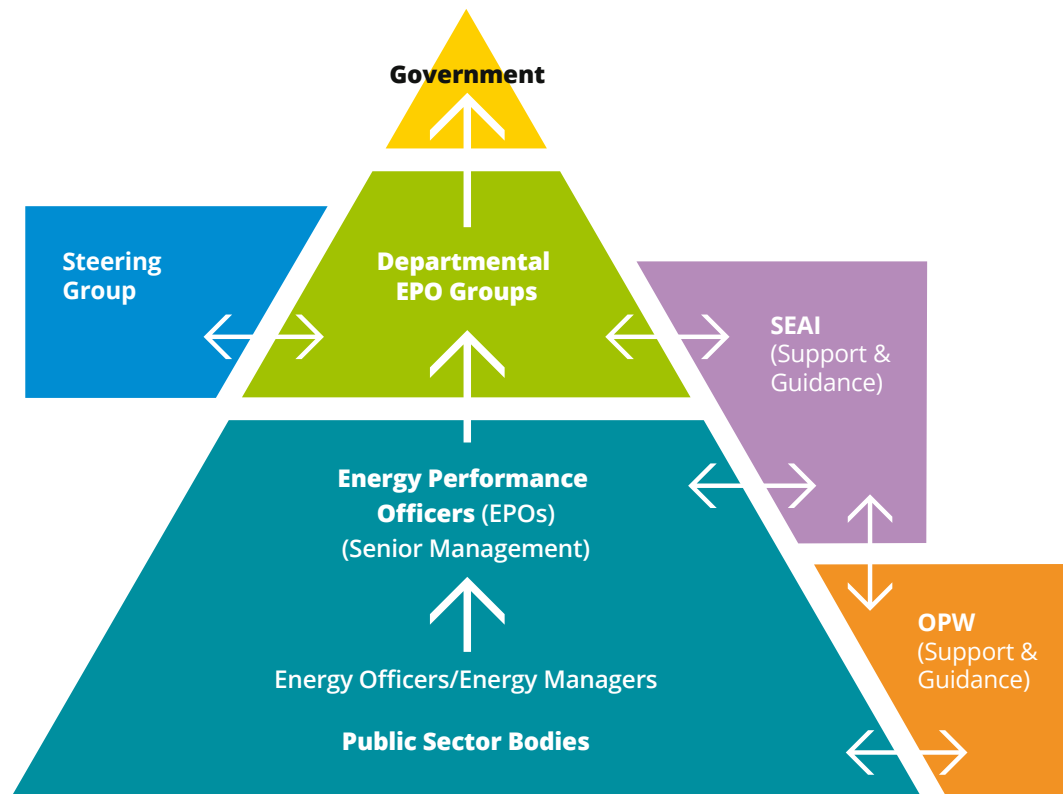
***All public sector bodies must designate an Energy Performance Officer (EPO) from among their senior management team.***

- Lead the development of their organisation's Energy Management Plan as an integral part of their organisation's Business Planning and Performance Management processes
- Drive the implementation of the actions and projects agreed under the Energy Management Plan
- Assign clear responsibility for implementation of the Energy Management Plan and ensure staff have the necessary training and support to carry out these tasks
- Ensure the setting of annual energy saving targets for their organisation
- Ensure the timeliness and quality of their organisation's annual data reports to the SEAI Public Sector Energy Performance Monitoring & Reporting System
- Ensure timely provision of their organisation's report for the Annual Memorandum to Government on the implementation of this Strategy
- Include these tasks as part of annual goal setting under PMDS

### 4.2.2 Functions of Departmental Energy Performance Officers

In addition, EPO's appointed in Government Departments will:

- Exercise oversight, in the context of corporate governance functions, of the discharge by the bodies under the aegis of their Department (their "Group") of their obligations under this Strategy, to include the setting of a combined (aggregated) annual target for energy saving by their organisation and bodies under its aegis
- Ensure that the bodies under the aegis of their Department provide timely and quality input for the annual strategic report, to be provided by their Minister, for the annual Memorandum for Government on the implementation of this Strategy and progress to the 2020 target
- Brief the Cabinet Committee on Infrastructure, Environment & Climate Action, as required, on progress towards energy efficiency goals in their Group





### 4.3 Oversight of this Strategy

DCCAE in its capacity as lead Department for energy policy will chair a Steering Group to oversee the implementation of this Strategy that will consist of the Department of Housing, Planning, Community & Local Government, DTTAS, OPW, SEAI and the NTMA. The Steering Group will:

- Oversee the preparation and maintenance of the project pipeline, drawing initially on the projects identified by the OPW and public sector bodies energy performance data in the SEAI M&R system
- Identify the projects best placed to benefit from 'one stop shop' project development assistance
- Identify projects likely to require the approval of Department of Finance to impact the General Government Deficit (GGD)
- Monitor progress on the energy management plans and key projects of large energy users (i.e. with an energy spend > €5m)
- Prepare the annual Memorandum for Government providing the strategic overview of progress to the 33% target across the public sector and provide on-going reports on progress with regard to the Programme for Government
- Oversee the research and evaluation component of this Strategy

### 4.4 Evaluation

Evaluation is a critical part of the implementation of any project. The first phase of activity to reach the 33% target has seen the establishment of sound data collection mechanisms which can be exploited to carry out the research and evaluation needed to properly inform on-going development of measures to ensure public sector bodies realise their energy efficiency potential. Therefore, a research and evaluation team will be established by the Steering Group to carry out tasks such as:

- In-depth analysis of energy performance data in support of the on-going maintenance of the project pipeline
- Assistance in the provision of strategic advice to Departments on the integration of energy management with business planning and their preparation of annual reports to Government
- Analysis of the strategic reports made annually by Departments to Government and support to the Steering Group in the preparation of the annual Memorandum for Government
- Research on public sector energy efficiency internationally and the benchmarking of Ireland's performance
- Identifying the multiple benefits of public sector energy efficiency and establishing a metric for monetising these benefits

### 4.5 Knowledge Sharing

Annual workshops for EPOs and energy management personnel will be organised by SEAI as part of their on-going implementation of the Public Sector Programme. These workshops will be modelled on the Healthy Ireland Cross Sectoral Group as a forum to facilitate the sharing of information on best practice and identify solutions to common problems.

To conclude, the importance of the leadership shown by the public sector on energy efficiency cannot be overstated. Not only is the public sector a very large user of energy, it exerts a very extensive influence on how energy is used across the economy and within communities. The opportunity to tap into the capacity of the public sector to be a catalyst in our low carbon transition must be grasped.

### 4.6 A new Public Sector Strategy from 2021

While real progress has been made on energy efficiency by the public sector since 2010, it is clear that a very significant level of additional effort is required to meet the 2020 target. However, achieving that target will not be an end point. Rather it is only the first key milestone in harnessing the potential of the public sector to contribute to our energy and climate goals. Research carried out for SEAI in 2015 found the economic potential for a further 1,400 GWh of energy savings in the public sector after 2020.<sup>23</sup> Therefore, this new Strategy will be reviewed in 2019 and a revised Strategy put in place for the period after 2020. The importance of this Strategy for laying a strong foundation for continued public sector action on sustainable energy to 2030, and beyond, cannot be overstated.

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23 SEAI, [Unlocking the Energy Efficiency Opportunity](#), June 2015

## Glossary of Terms

<b>BER</b>	Building Energy Rating
<b>CCMA</b>	County and City Management Association
<b>CEF</b>	Carbon Energy Fund
<b>CER</b>	Commission for Energy Regulation
<b>CHP</b>	Combined heat and power
<b>CoCo</b>	County Council
<b>CSBs</b>	Commercial State Bodies
<b>DAA</b>	Dublin Airport Authority
<b>DCCAE</b>	Department of Communications, Climate Action & Environment
<b>DEC</b>	Display Energy Certificate
<b>DES</b>	Department of Education and Skills
<b>DPER</b>	Department of Public Expenditure and Reform
<b>DTTAS</b>	Department of Transport, Tourism and Sport
<b>ESCO</b>	Energy Services Company
<b>EEF</b>	Energy Efficiency Fund
<b>EMAP</b>	Energy Management Action Plan
<b>EPC</b>	Energy Performance Contracting
<b>EPO</b>	Energy Performance Officer
<b>ESB</b>	Electricity Supply Board
<b>EESO</b>	Energy Efficiency Supplier Obligation
<b>EU</b>	European Union
<b>GCC</b>	Government Contract Committee
<b>GGD</b>	General Government Deficit
<b>GHG</b>	Green House Gas
<b>GPP</b>	Green Public Procurement
<b>GWh</b>	Gigawatt hours
<b>HEA</b>	Higher Education Authority
<b>HSE</b>	Health Service Executive
<b>IEA</b>	International Energy Agency
<b>IEEF</b>	Irish Energy Efficiency Fund
<b>ISO</b>	International Organisation of Standardisation
<b>LED</b>	Light-emitting diode
<b>MAP</b>	Management Action Plan
<b>NEEAP</b>	National Energy Efficiency Action Plan
<b>NESF</b>	National Energy Services Framework
<b>NHSO</b>	National Health Sustainability Office
<b>NRA</b>	NATIONAL Roads Authority (now Transport Infrastructure Ireland)

<b>NSAI</b>	National Standards Authority of Ireland
<b>NZEB</b>	Nearly Zero Energy Building
<b>OGP</b>	Office of Government Procurement
<b>OPW</b>	The Office of Public Works
<b>O&amp;M</b>	Operation and Management
<b>PMDS</b>	Performance Management and Development System
<b>PSB</b>	Public Service Body/Bodies
<b>SEAI</b>	Sustainable Energy Authority of Ireland
<b>SEO</b>	Sectoral Energy Officer
<b>SI</b>	Statutory Instrument
<b>SME</b>	Small or Medium Enterprise
<b>TII</b>	Transport Infrastructure Ireland (previously the National Roads Authority (NRA) and Railway Procurement Agency (RPA))









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