Annual Report 2019 on Public Sector Energy Efficiency Performance

An SEAI Report prepared for the Department of Communications, Climate Action & Environment

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

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


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1. Executive Summary

This is the sixth annual report on the energy efficiency performance of public bodies in Ireland. It is set in the context of Ireland's EU and national commitments and wider climate change goals, as set out in the *Public Sector Energy Efficiency Strategy* (2017) which provides the framework for achievement of the target of 33% energy efficiency improvement by all Irish public bodies (as defined in SI 426 of 2014[1]) by 2020.

Energy efficiency continues to be a national imperative with a crucial role to play in Ireland meeting its national and international energy and climate goals and objectives. The value of the contribution of improved public sector energy efficiency and its crucial importance was further underpinned in June 2019 with the publication of the first *Climate Action Plan*. The *Climate Action Plan* is an all of Government strategy which sets a new, more ambitious, target of 50% improved energy efficiency to be achieved by public sector bodies by end 2030. In addition, the *Climate Action Plan* requires a new Public Sector Decarbonisation Strategy to be put in place *'to deliver 30% emissions reduction by 2030 and to develop a roadmap to carbon neutrality by 2050.'*

Progress on public sector energy efficiency also makes a positive contribution to other important national goals, including improved security of energy supply, as set out in the energy white paper, *Ireland's Transition to a Low Carbon Energy Future*. The energy white paper emphasises how energy efficiency will be at the centre of a transition to a clean, low carbon energy system by 2050. In addition, the strategic importance of public sector energy efficiency is underlined in Ireland's fourth *National Energy Efficiency Action Plan* (April 2017), the *National Mitigation Plan* (July 2017) and the *Long Term Renovation Strategy* (2017).

Public bodies are required to report annual energy efficiency data to the Sustainable Energy Authority of Ireland (SEAI) which manages the reporting process on behalf of the Department of Communications, Climate Action and Environment (DCCAE)[2]. The definition of 'public bodies' in Ireland is broad and includes the civil service, local authorities, non-commercial state bodies/ agencies, commercial state bodies and organisations in the health, justice, defence and education sectors.

Approximately 99% of all public bodies are now using the online national energy monitoring and reporting (M&R) system established by SEAI and DCCAE, in addition to 73% of all schools. The monitoring and reporting system provides an important record of how the public sector is performing.

The data for 2018 shows that overall public sector energy efficiency gains have reached 27%, which reflects two sustained years of significant improvement since the introduction of the *Public Sector Energy Efficiency Strategy* (January 2017) following the plateau observed prior to the Strategy. The detailed data in this report for 2018 cannot, however, be compared on a like for like basis to the data for previous years as the overall number of public bodies and schools reporting changes from year to year.

- For 2018, 350 public bodies were requested to report data to SEAI, of which 345[3] submitted complete reports by the reporting deadline (an increase of 5% in the compliance rate since last year).
- In addition, 3,680 standalone schools were requested to report data, of which 2,678[4] submitted complete reports (an increase of 11% in the compliance rate since last year).

This report comprises an analysis of the data submitted by these organisations on annual energy consumption, energy and associated carbon savings achieved and energy efficiency performance in 2018 against 2020 targets.

Efficiency gains are being achieved through implementation of thousands of diverse projects, ranging from structured energy management, building and facility upgrades, retrofits, changes in transportation, better energy procurement and through behavioural change in organisations.

1 Regulation 4 of SI 426 2014 sets out the definition of a "public body".

2 Reporting by public bodies in Ireland is required under Regulation 5(4) of SI 426 2014. The number of public bodies that are required to report may change each year due to organisational changes in line with government policy and legislation.

3 348 public bodies attempted to submit reports but data for three of these was incomplete and is not included in this report.

4 An additional 216 schools attempted to submit reports but their data was incomplete and is not included in this report.

Current Position

ENERGY EFFICIENCY IMPROVEMENT

27% 2018

33% 2020 NEEAP TARGET

PUBLIC BODY REPORTING RATE

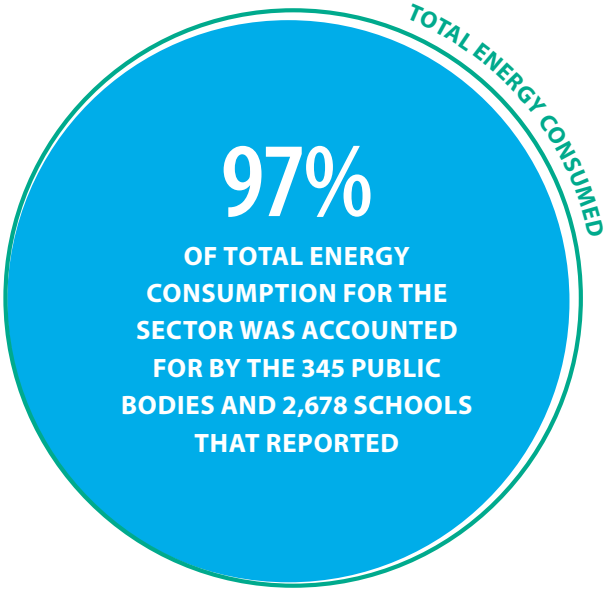
99% REPORTED IN 2018 (excluding schools)

350 TOTAL

SCHOOL REPORTING RATE

73% REPORTED IN 2018

3,680 TOTAL



Key findings from the analysis of the data reported by 345 public bodies and 2,678 schools for 2018:

- Their combined total primary energy consumption was 10,178 GWh and their total energy spend was €668 million.
- This is estimated to represent 97% of the energy consumption of the sector.
- Annual primary energy savings of 3,751 GWh were achieved, which is equivalent to 761,000 tonnes of CO_2 savings.
- These savings amount to a 27% improvement on business as usual, representing €246 million in cost savings for the sector in 2018.
- The cumulative avoided CO_2 emissions since baseline amount to 4,577,000 tonnes, while the cumulative value of energy savings over the same period is €1,307 million.
- 2018 saw sustained and significant additional efficiency gains following the plateau observed prior to the *Public Sector Energy Efficiency Strategy* (2017).

Reporting compliance by public sector organisations is very strong. The compliance rate in 2018 for public bodies was 99% (excluding standalone schools).

Standalone schools are recognised as a separate category. Although 3,680 schools were requested to report they account for just a small proportion (some 5%) of overall public sector energy consumption. Their circumstances and energy use profiles are significantly different to other public bodies (more limited capacity to invest, with building usage profiles that mean building fabric investments of any scale have very long payback periods). The compliance rates for public bodies and for schools are therefore reported separately. The reporting compliance rate for schools for 2018 was 73%, which is a significant improvement on the 62% compliance rate the previous year.

Overall, based on the data reported, the energy efficiency performance achieved for 2018 is a good result, at 27% improvement, particularly as it represents **a sustained linear trajectory of improvement since the introduction of the *Public Sector Energy Efficiency Strategy*** in January 2017.

Continued proactive engagement by all public bodies and their *Energy Performance Officers*, utilising the structures and supports provided under the *Public Sector Energy Efficiency Strategy* will be essential to ensure the 33% target is met by end 2020 and to strongly position the organisations and their departmental groups for the achievement of the 50% target for 2030. The annual M&R process is an enabling tool, providing public bodies, their Energy Performance Officers and key stakeholders with the performance information that enables strategic decision-making and actions to facilitate further progress and achievement of the national targets.

>€1.3bn and 4.58m tCO_2

CUMULATIVE SAVINGS SINCE BASELINE

Key Findings for 2018

10,178 GWh

COMBINED ENERGY CONSUMPTION OF THE 345 PUBLIC BODIES AND 2,678 SCHOOLS THAT REPORTED

WHICH AMOUNTED TO A TOTAL ENERGY SPEND OF

€668m

FOR 2018, THE SAVINGS ACHIEVED WERE:

3,751 GWh

ANNUAL PRIMARY ENERGY SAVINGS

=

27%

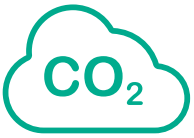
ENERGY EFFICIENCY IMPROVEMENT ON BUSINESS AS USUAL

=

€246m

ENERGY SPEND SAVINGS FOR PUBLIC BODIES & SCHOOLS

=



761,000 tonnes

CO_2 EQUIVALENT SAVINGS

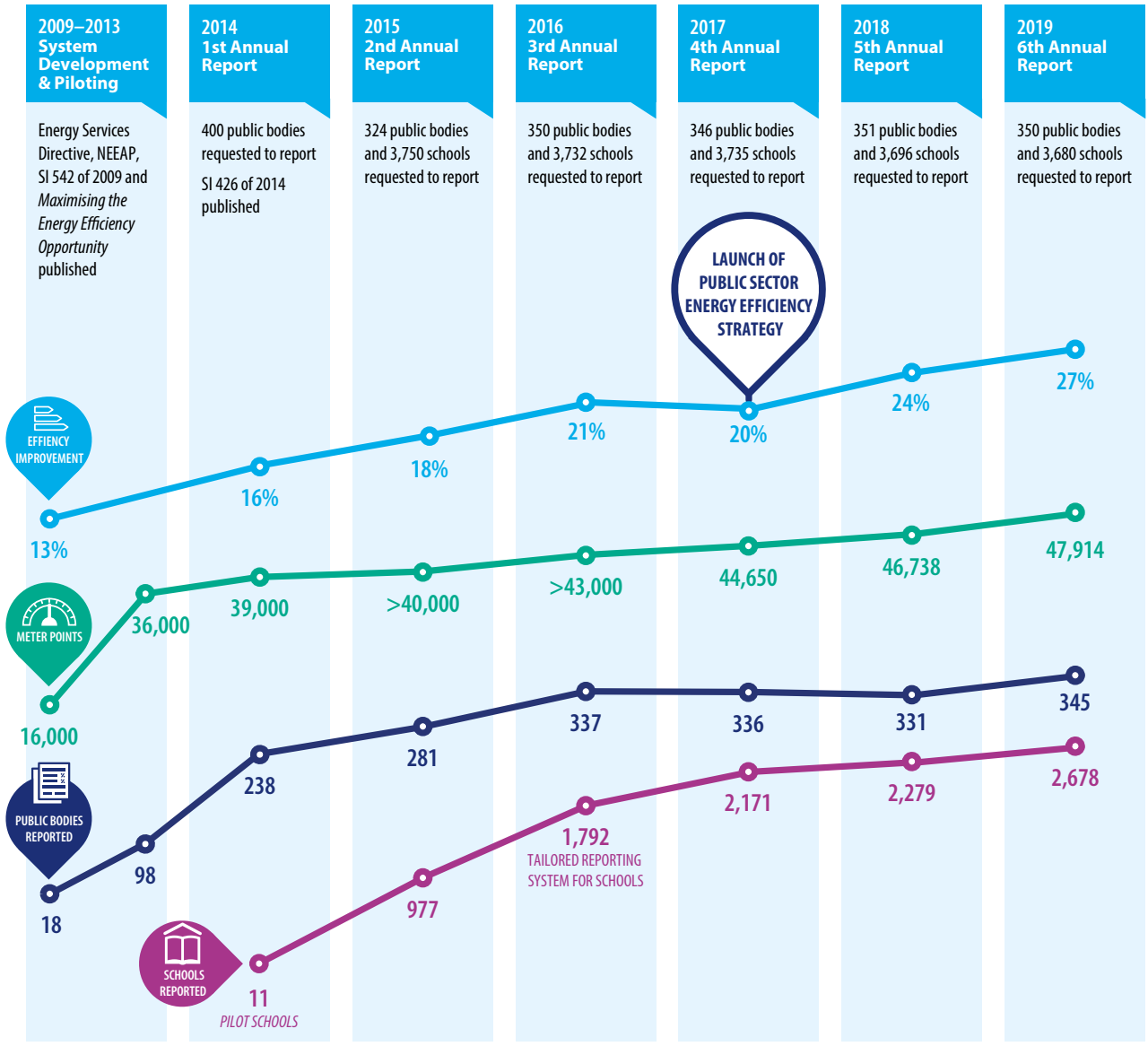
2. Background and Context

2.1 Policy and Legislative Requirements

The Energy Efficiency Directive (EED) (2012/27/EU)[5] sets out the policy roadmap for the period to 2020 and brought forward legally binding measures to intensify Member States' efforts to use energy more efficiently at all stages of the energy supply chain. The EU *2030 Climate and Energy Framework* sets out headline targets for the EU of at least a 40% domestic reduction in economy-wide greenhouse gas emissions by 2030 compared to 1990. Revisions to the *EED*, as set out in *Directive (EU) 2018/2002*, have indicated a more ambitious new EU-wide energy efficiency target of at least 32.5% by 2030. This is expected to be reflected in Ireland's new *National Energy & Climate Plan*, which is to be finalised by year end 2019.

In Ireland, the *National Energy Efficiency Action Plan* (NEEAP) sets out several obligations on public bodies to lead the way in relation to energy efficiency, stating *'The public sector will improve its energy efficiency by 33% and will be seen to lead by example — showing all sectors what is possible through strong, committed action.'* Recognising the need for intensification of efforts to achieve our goals a number of steps have been taken by Government. *The Public Sector Energy Efficiency Strategy* (2017) put in place a new framework and governance structure. It also provides further guidance on energy management and enhanced supports to help public bodies achieve this target. In addition, the Strategy highlights the important leadership role the public sector has on energy efficiency.

FIG. 1: PROGRESS BY PUBLIC BODIES AND SCHOOLS



5 This has been transposed into Irish legislation under SI 426 of 2014 *European Union (Energy Efficiency) Regulations*.

Public sector bodies who have the capacity to contribute to energy efficiency retrofit of buildings projects will be prioritised for support under the DCCAE Mobilisation Fund subject to available funding. This fund is administered by SEAI for pathfinder partnership projects. During 2017 and 2018, 95 projects were supported with total funding of €18.4 million provided.

The scale of ambition was increased by Government to 50% by 2030 with the publication of the *Climate Action Plan* in June 2019. There has also been a significant scaling up of investment in energy efficiency – as reflected in the capital allocation for energy efficient supports from DCCAE through SEAI, as well as a significant scaling up of human resources within SEAI. The scale of investment will continue to rise significantly as is recognised in the *National Development Plan* (2018-27) and the putting in place of the Climate Action Fund which will have an allocation of at least €500 million over the period 2018 to 2027.

SEAI, on behalf of DCCAE, established the M&R system to enable public bodies and schools to track their energy efficiency performance towards their targets. This system is based on the groundwork put in place since 2009 by SEAI to enable the public sector meet its energy efficiency reporting requirements. This is illustrated in Figure 1 (previous page).

2.2 The Monitoring and Reporting (M&R) Process

Since 2010, public bodies have been required by Irish statute to report on their energy usage and actions taken to reduce consumption. There are two key obligations for public bodies:

i. Requirement - under the provisions of SI 426 of 2014 - to report energy management and performance data directly to SEAI each year in order to track progress towards the 2020 target.

ii. Requirement to publish an annual statement on energy performance. This statement must describe *'the actions it is taking, or has taken, to improve its energy efficiency and an assessment of the energy savings arising from those actions'.*

The reporting methodology is illustrated below in Figure 2. A more detailed description is in Appendix 1.

There are two key concepts applied:

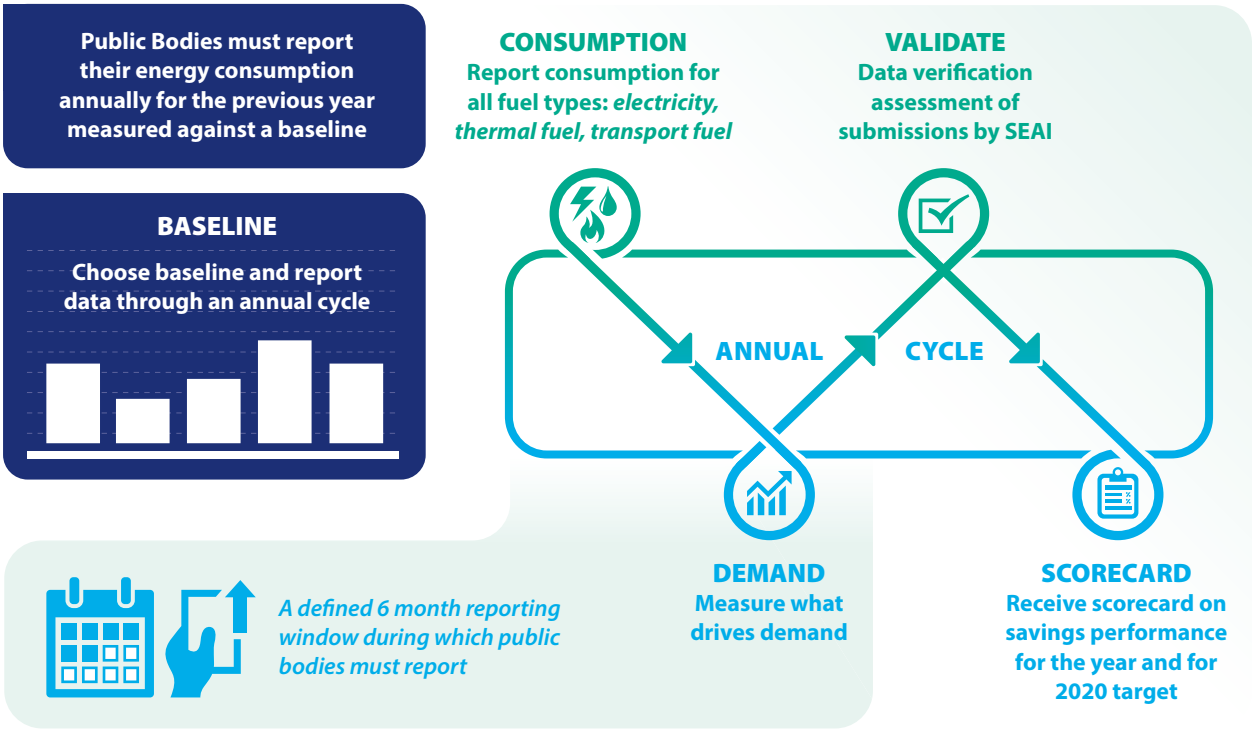
a) Application of an activity metric so that fluctuations in an organisation's level of activity that have an impact on energy **consumption** are taken into account in determining performance, and

b) Tracking energy performance and energy efficiency against a **baseline** so annual improvements can be measured and assessed.

Energy efficiency improvements therefore can be assessed against a 'business as usual' scenario, and take into account organisational or infrastructural changes that impact on the energy requirements of the public body.[6]

SEAI has begun work to re-develop the M&R process, as well as the online system, in order to meet the requirement to track 2030 public sector targets as set out in the *Climate Action Plan*.

FIG. 2: HOW PUBLIC BODIES REPORT



6 The transfer of water services assets from local authorities to Irish Water in January 2014 is fully reflected in the energy performance of those organisations.

2.3 Analysis of Reporting by Public Bodies

In Ireland the definition of 'public bodies' is broad and encompasses a wide range of organisations, including the civil service, local authorities, non-commercial state bodies/ agencies, commercial state bodies and organisations in the health, justice, defence and education sectors.

350[7] **public bodies and 3,680 standalone schools** were requested to report data to SEAI through the 2018 reporting cycle.[8]

The public bodies and schools that were requested to report during the 2018 reporting cycle are broken down as follows:

- 350 public bodies, including 16 Education & Training Boards (ETBs), were requested to report data directly to SEAI using the reporting system. The facilities under the aegis of the ETBs, including 265 schools, were requested to report via their ETBs.
- Another 3,680 schools were requested to report directly as standalone entities.

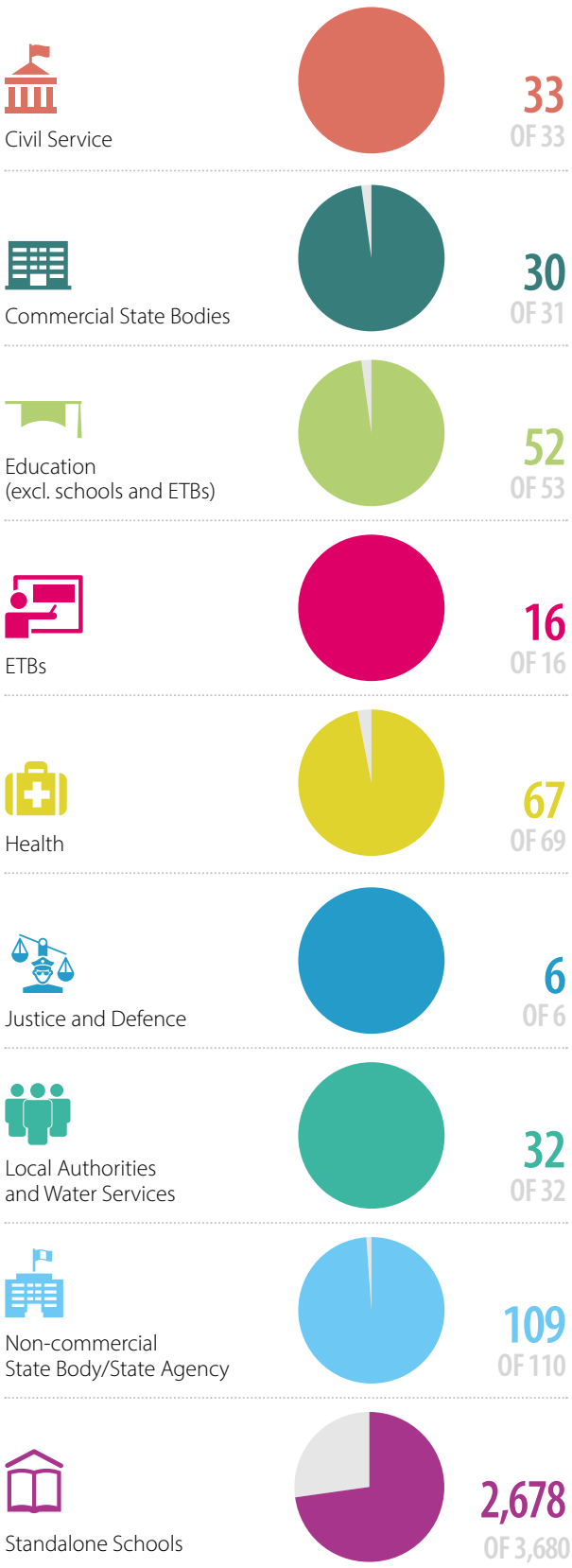
By the reporting deadline, 348[9] public bodies and 2,894 standalone schools had made submissions to SEAI. Some of these submissions were not fully complete and are not taken into account in the analysis of the data presented in this report. The data presented in this report is an analysis of 345 complete submissions from public bodies and 2,678 from standalone schools.

The 345 complete submissions made by public bodies represents a compliance rate of 99%. SEAI estimates that the consumption of all of the organisations that reported represents over 97% of total public sector energy consumption.

Figure 3 shows the number of complete reports submitted from each sub-sector as a proportion of the total number of organisations in each sub-sector.

The consumption of the organisations that reported represents 97% of total public sector energy consumption

FIG. 3: BREAKDOWN OF SUBMISSIONS BY SUB-SECTOR



7 The number of public bodies that are required to report in Ireland may change each year due to organisational changes in line with government policy and legislation e.g. in 2015 the National Roads Authority and the Railway Procurement Agency merged to become Transport Infrastructure Ireland.

8 In addition, a further two public bodies were requested to report but were subsequently excused from reporting as standalone entities.

9 This figure includes 3rd level institutions and ETBs, but excludes standalone schools.

3. Analysis of Primary Energy Consumption and Energy Spend

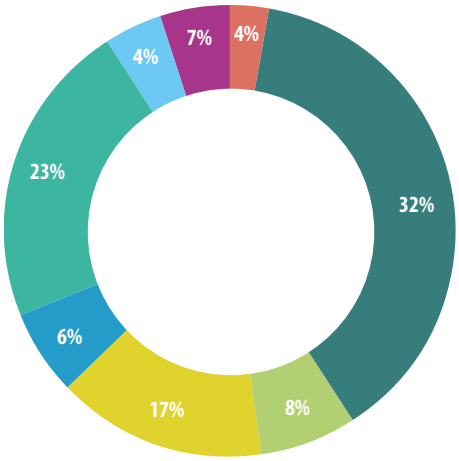
The data presented in section 3 is based on the complete reports submitted by 345 public bodies and 2,678 schools.[10]

3.1 Total Energy Consumption

The total primary energy consumption reported for 2018 was 10,178 GWh.

The sectoral breakdown of this total is shown in Figure 4.

FIG. 4: BREAKDOWN OF TOTAL ENERGY CONSUMPTION BY SUB-SECTOR (GWh)



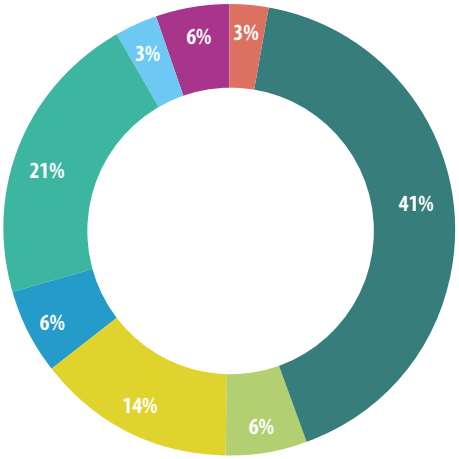
Sub-sector	2018 Energy Consumption (Primary)
	GWh
Civil Service	388
Commercial State Body	3,209
Education (excl. Schools & ETBs)	844
Health	1,747
Justice & Defence	565
Local Authorities & Water Services	2,298
Non-commercial State Body / State Agency	383
Schools & ETBs	744
Total	**10,178**

3.2 Total Energy Spend

In 2018 the total public sector energy spend was €668 million.

The sectoral breakdown of this total is shown in Figure 5.

FIG. 5: SECTORAL BREAKDOWN OF TOTAL ENERGY SPEND



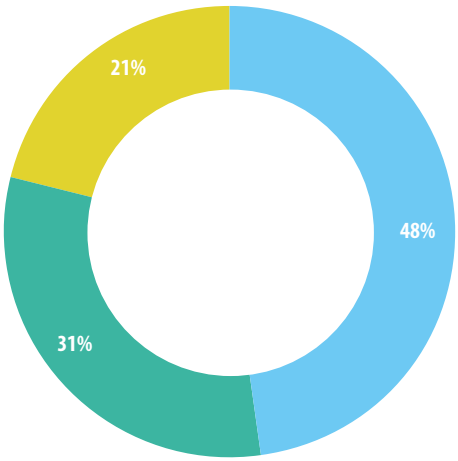
Sub-sector	2018 Energy Spend
	€M
Civil Service	22
Commercial State Body	271
Education (excl. Schools & ETBs)	42
Health	93
Justice & Defence	38
Local Authorities & Water Services	138
Non-commercial State Body / State Agency	23
Schools & ETBs	40
Total	**668**

10 All of the values presented in this report for energy (GWh), expenditure (€ millions) and CO_2 emissions (tonnes CO_2) have been rounded. There are minor rounding differences in some of the tabular data.

3.3 Total Energy Consumption by Fuel Type

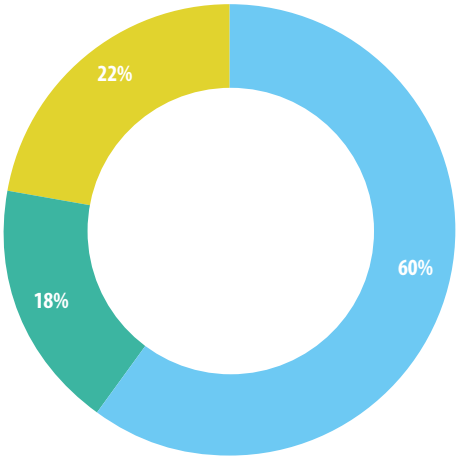
The breakdown of the 10,178 GWh of energy consumption reported for 2018 between electrical, heating (thermal) and transport is illustrated in Figure 6. The thermal and transport subtotals are broken down by fuel type in Figures 6A and 6B.

FIG. 6: CONSUMPTION SPLIT



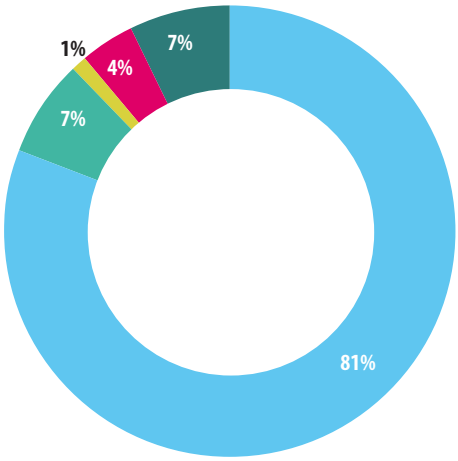
Fuel type	2018 Energy Consumption (Primary)
	GWh
Electricity	4,922
Thermal	3,124
Transport	2,132
Total	**10,178**

FIG. 6A: THERMAL ENERGY BREAKDOWN



Fuel	2018 Consumption (Primary)
	GWh
Natural Gas, LPG & Biogas	1,882
Heating Oils	554
Wood Fuels	688
Total	**3,124**

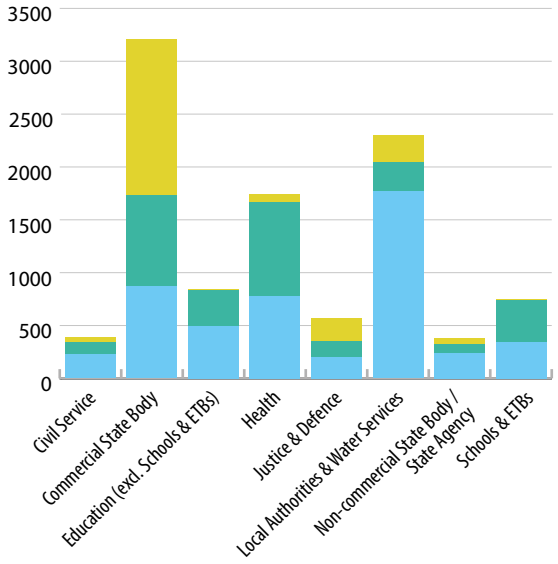
FIG. 6B: TRANSPORT ENERGY BREAKDOWN



Fuel	2018 Consumption (Primary)
	GWh
Road Diesel	1,735
Marked Diesel (Non-thermal)	154
Petrol	13
Biofuels	74
Other Transport Fuels	156
Total	**2,132**

The consumption patterns in the sub-sectors are illustrated in Figure 7.

FIG. 7: BREAKDOWN OF PRIMARY ENERGY CONSUMPTION BY SUB-SECTOR (GWH)

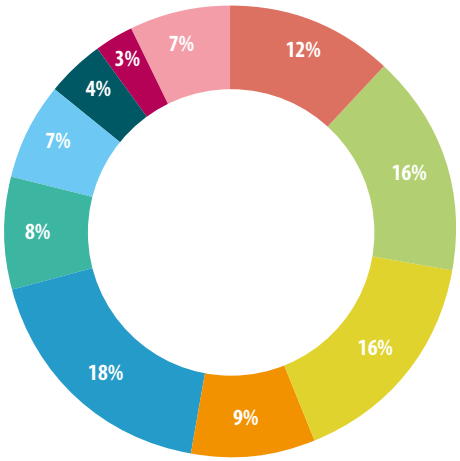


Sub-sector	2018 Energy Consumption (Primary)		
	Electricity GWh	Thermal GWh	Transport GWh
Civil Service	225	121	43
Commercial State Body	870	864	1,475
Education (excl. Schools & ETBs)	496	339	10
Health	780	885	82
Justice & Defence	199	157	209
Local Authorities & Water Services	1,768	282	248
Non-commercial State Body / State Agency	238	80	65
Schools & ETBs	347	396	2
Total	**4,992**	**3,124**	**2,132**

3.4 Electricity Consumption

The total electricity consumption is 4,922 GWh and is broken down in Figure 8. Buildings account for 2,611 GWh or 53% of electricity consumed.

FIG. 8: BREAKDOWN OF ELECTRICITY CONSUMPTION

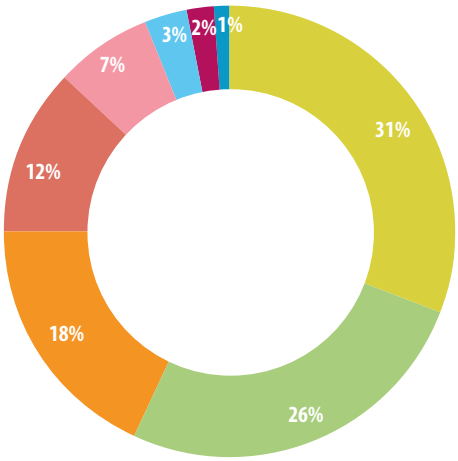


Breakdown by Use	2018 Electricity Consumption (Primary)
	GWh
Office Buildings	609
Education Buildings	775
Healthcare Buildings	773
Other Buildings	454
Water Services	883
Public Lighting	402
Waste & Other Processing	356
Transport	178
Other	147
Unknown	346
Total	**4,922**

3.5 Natural Gas Consumption

The total natural gas consumption is 1,758 GWh and is broken down in Figure 9. Buildings account for 1,525 GWh or 87% of natural gas consumed.

FIG. 9: BREAKDOWN OF GAS CONSUMPTION



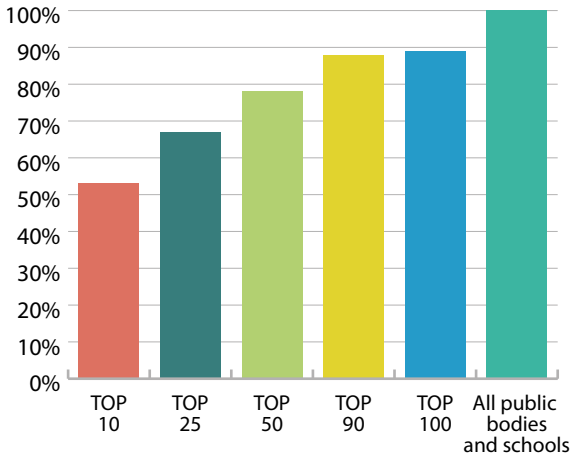
Breakdown by Use	2018 Natural Gas Consumption
	GWh
Healthcare Buildings	539
Education Buildings	461
Other Buildings	309
Office Buildings	216
Unknown	128
Waste & Other Processing	50
Other	41
Water Services	10
Electricity Generation	3
Total	**1,758**

10 public bodies account for 52% of total consumption

3.6 Main Energy Consumers

Altogether, the total primary energy consumption in 2018 of the ten largest energy consumers was 5,331 GWh, which accounts for 52% of total reported consumption. The 100 largest energy consumers that reported account for 88% of the total reported primary energy consumption.

FIG. 10: BREAKDOWN OF MAIN ENERGY CONSUMERS



Main Energy Consumers	2018 Energy Consumption (Primary)
	GWh
Top 10	5,331
Top 25	6,738
Top 50	7,881
Top 90	8,801
Top 100	8,939
All public bodies and schools	10,178

It is likely that improvements by the top 50 energy consumers (which account for 77% of energy consumption) will largely determine if the 33% target will be met by the sector by 2020.

The 10 largest energy consumers that reported for 2018 are set out in alphabetical order below.

- An Garda Síochána
- An Post
- Bus Éireann
- Coillte Teoranta
- Defence Forces
- Dublin Bus
- Dublin City Council
- HSE
- Iarnród Éireann / Irish Rail
- Irish Water

4. Analysis of Energy Savings Achieved and Performance

4.1 Performance of Departmental Groups

The *Public Sector Energy Efficiency Strategy* established a governance framework for achieving the national energy efficiency targets based on departmental groups. Each group comprises the relevant Government Department and the bodies under its aegis.

Figure 11 gives an overview of the efficiency performance by the end of 2018 and energy use by departmental group, as well as the number of public bodies in each Group and their reporting status. The consumption and efficiency data shown represent the **aggregate data for all of the individual public bodies within each Departmental Group, including the governing Department itself.**

FIG. 11: PERFORMANCE OF DEPARTMENTAL GROUPS

Departmental Group	2018 Energy Consumption (Primary)	Compliance		Overall Status (2018)	Energy Savings Since Baseline
	% public sector	No. complete reports	No. organisations		%
Agriculture, Food & the Marine	12%	11	11	●	21%
Business, Enterprise & Innovation	<1%	14	15	●	46%
Children & Youth Affairs	<1%	5	5	●	21%
Communications, Climate Action & Environment	4%	16	16	●	32%
Culture, Heritage & the Gaeltacht	<1%	17	17	●	32%
Defence	3%	3	3	●	26%
Education & Skills	10%	77	78	●	31%
- Standalone Schools	5%	2,678	3,680	●	4%
Employment Affairs & Social Protection	<1%	3	3	●	32%
Finance	2%	9	10	●	32%
Foreign Affairs & Trade	<1%	1	1	●	38%
Health (excl. HSE)	<1%	19	19	●	37%
- HSE	17%	56	58	●	23%
Housing, Planning & Local Government	11%	16	16	●	30%
- Local Authorities	12%	32	32	●	25%
Justice & Equality	4%	18	18	●	20%
Public Expenditure & Reform	<1%	9	9	●	22%
Rural & Community Development	<1%	5	5	●	47%
Taoiseach	<1%	8	8	●	31%
Transport, Tourism & Sport	17%	26	26	●	32%

The overall status of energy efficiency improvement on baseline for 2018 is illustrated as follows:

● More efficient than baseline and on track for 2020 target

● More efficient than baseline, but not yet on the path for 2020 target

● Less efficient than baseline

4.2 Total Public Sector Primary Energy Savings (GWh) and Performance

The combined savings in 2018 of the public bodies and schools that submitted complete reports is 3,751 GWh[11] of primary energy, as illustrated in Figure 12. This amount is equivalent to a 27% improvement compared to what the business-as-usual energy consumption would have been had these organisations maintained their baseline efficiency levels[12]. This is the primary indicator used for tracking the sector's progress towards the 33% target. Based on 2018 data, a 33% improvement would be equivalent to 4,581 GWh of primary energy savings.

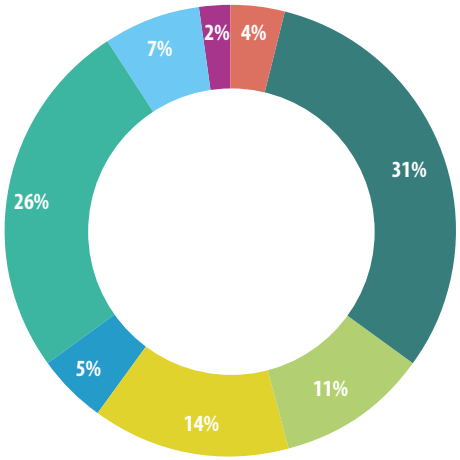
The 3,751 GWh of annual energy savings are equivalent to 761,000 tonnes of annual CO_2 savings.

The cumulative avoided CO_2 emissions (up to 2018) since their baselines reported by the public bodies and schools that submitted complete reports amount to 4,577,000 tonnes.

Cumulative
4.6 million
tonnes

2018
761,000
tonnes

FIG. 12: SOURCES OF ENERGY SAVINGS



Sub-sector	2018 Energy Savings (Primary)
	GWh
Civil Service	141
Commercial State Body	1,156
Education (excl. Schools & ETBs)	422
Health	537
Justice & Defence	176
Local Authorities & Water Services	967
Non-commercial State Body / State Agency	276
Schools & ETBs	77
Total	**3,751**

11 Calculated by subtracting each organisation's actual 2018 energy consumption from its business-as-usual energy consumption. The business-as-usual energy consumption is the amount that each public body would have consumed in 2018 had it not made the reported efficiency gains since its baseline.

12 The calculation of these results incorporates adjustments to the business-as-usual consumption for local authorities to account for the transition of water services to Irish Water.

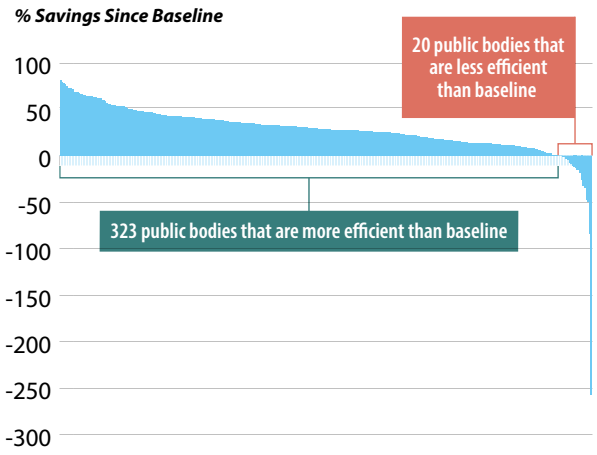
The analysis of the performance of the 345 public bodies (excluding standalone schools) that reported shows that:

- **54%** are more efficient than their baselines and are on track for their 2020 target (Aggregate 2018 savings of 2,348 GWh, which is equivalent to 475,000 tonnes of CO_2).
- **40%** are more efficient than their baselines but are not yet on the path to the 2020 target (Aggregate 2018 savings of 1,385 GWh, which is equivalent to 282,000 tonnes of CO_2).
- **6%** are less efficient than their baselines (Aggregate 2018 deterioration in performance of 12 GWh, which is equivalent to 2,000 tonnes of CO_2).

Of the public bodies that reported, **94% have made improvements on their baselines**. Taking both the savings and deteriorations into account, overall improvement for the public bodies is 3,720 GWh. This is equivalent to 755,000 tonnes of CO_2.

The distribution of the performance results is shown in Figure 13.

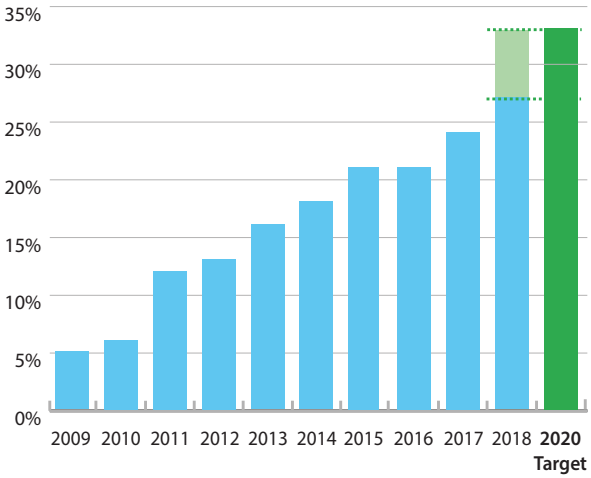
FIG. 13: OVERALL LEVEL OF IMPROVEMENT ON BASELINE



2018 Performance (all sectors)	No. Public Bodies	No. Stand-alone Schools	Total No.
>40% improvement	92	158	250
30-40% improvement	70	198	268
20-30% improvement	75	265	340
10-20% improvement	59	385	444
0-10% improvement	29[13]	421	450
Deterioration in performance	20	1,251	1,271
Total	**345**	**2,678**	**3,023**

The graph in Figure 14 tracks how the total savings achieved in each year since 2009 compare to the 2020 target.

FIG. 14: ANNUAL PRIMARY ENERGY SAVINGS



Year	Saving GWh
2009	498
2010	730
2011	1,378
2012	1,528
2013	1,982
2014	2,300
2015	2,703
2016	2,741
2017	3,335
2018	3,751

In addition to the energy efficiency improvements achieved, the absolute level of energy consumption has reduced over time. The 345 public bodies and 2,678 schools that reported data consumed **1,105 GWh** less primary energy in 2018 than they did in their baselines, a reduction of 10%.

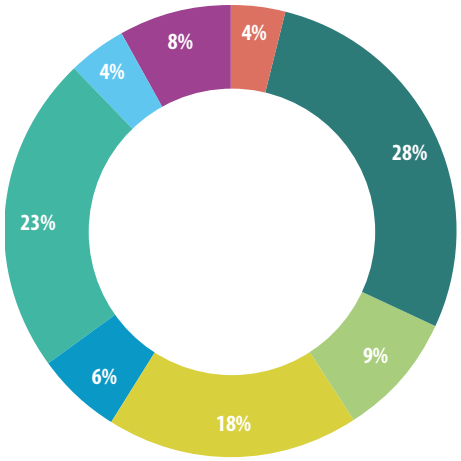
13 Two organisations are being tracked from a 2018 baseline. Their savings for 2018 are zero. Their progress towards their targets can only be calculated after they report next year for 2019.They are included in the 29 public bodies shown in the table as having made 0-10% improvement, but are not included in the 323 public bodies labelled in the chart as being 'more efficient than baseline'.

4.3 Analysis of Public Sector CO_2 Emissions (tonnes)

The 2018 energy consumption of the 345 public bodies and 2,678 standalone schools that reported is equivalent to 1,927,000 tonnes of CO_2 emissions, which is a reduction of 21% since their baselines. The sectoral breakdown of these emissions is shown in Figure 15.

The 3,751 GWh of annual energy savings achieved are equivalent to 761,000 tonnes of annual CO_2 savings. These are CO_2 emissions that have been avoided because the sector has improved its energy efficiency by 27%.[14]

FIG. 15: BREAKDOWN OF ENERGY-RELATED CO_2 EMISSIONS

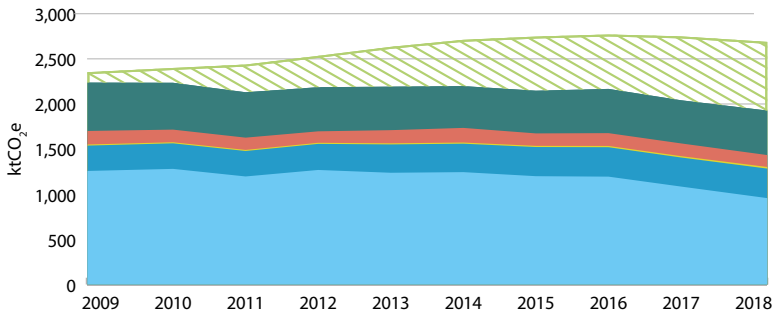


Sub-sector	2018 energy related CO_2
	$ktCO_2$
Civil Service	76
Commercial State Body	544
Education (excl. Schools & ETBs)	163
Health	350
Justice & Defence	118
Local Authorities & Water Services	447
Non-commercial State Body / State Agency	77
Schools & ETBs	150
Total	**1,927**

14 The avoided emissions for each organisation are calculated by working out what the organisation's 2018 energy-related CO_2 emissions would have been had it not made the reported efficiency gains since its baseline.

Figure 16 shows the avoided CO_2 emissions over the period from 2009 to 2018, as well as the actual energy-related CO_2 emissions from the sector, split by energy type. The avoided emissions have increased over time, as the sector has improved its energy efficiency.

FIG. 16: TOTAL ENERGY-RELATED CO_2 EMISSIONS OVER TIME[16]

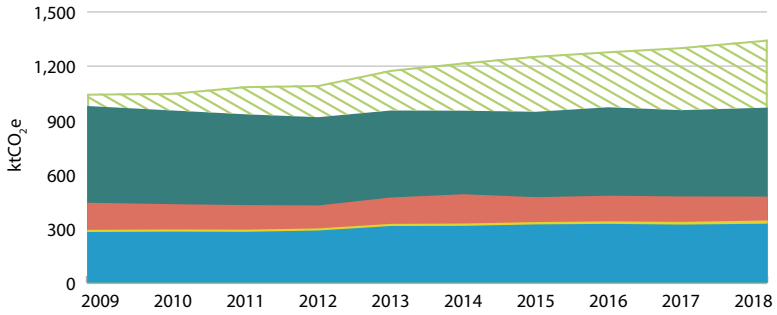


Fuel type ktCO$_2$e	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Electricity	1,258	1,281	1,197	1,269	1,238	1,245	1,200	1,195	1,085	957
Natural gas	281	283	282	289	314	315	323	326	322	327
LPG	12	12	12	12	12	13	13	14	15	18
Heating oils & solid fossil fuels	150	140	136	127	146	162	138	142	141	132
Transport fuels	536	519	503	489	482	463	473	490	478	493
Total	**2,237**	**2,236**	**2,131**	**2,186**	**2,192**	**2,199**	**2,146**	**2,168**	**2,041**	**1,927**
Avoided emissions	115	164	307	347	441	513	600	603	708	761

Electricity accounts for half of the 2018 emissions, with thermal and transport accounting for approximately one quarter each. The impact of the electricity system emissions reductions is excluded from Figure 17, which only shows the non-electricity related CO_2 emissions from the public sector, as calculated from the energy data reported by public bodies and schools i.e. emissions from the use of thermal and transport fuels reported by public bodies and schools.[15]

The *Climate Action Plan* requires a new Public Sector Decarbonisation Strategy to be put in place *'to deliver 30% emissions reduction by 2030 and to develop a roadmap to carbon neutrality by 2050'.*

FIG. 17: ENERGY-RELATED CO_2 EMISSIONS OVER TIME, EXCLUDING ELECTRICITY-RELATED EMISSIONS[16]



Fuel type ktCO$_2$e	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Natural gas	281	283	282	289	314	315	323	326	322	327
LPG	12	12	12	12	12	13	13	14	15	18
Heating oils	150	140	136	127	146	162	138	142	141	132
Transport fuels	536	519	503	489	482	463	473	490	478	493
Total	**979**	**955**	**934**	**917**	**954**	**954**	**947**	**973**	**956**	**970**
Avoided emissions	68	98	156	178	225	267	310	310	349	377

15 It includes energy-related emissions produced as a result of fuel combustion on site, such as gas/oil boilers and fleet vehicles.

16 Most standalone schools have a baseline of 2013, so are not included in the 2009-2012 CO_2 emissions figures shown here.

4.4 Analysis of Total and Cumulative Public Sector Energy Savings (€)

The value of the **energy savings** reported for 2018 is **€246 million.** As the total spend in 2018 for all of the organisations that reported data is €668 million, this represents a saving of 27% in energy costs attributable to energy efficiency improvements.

The value of the cumulative energy savings (up to 2018) since their baselines reported by the public bodies and schools that submitted complete reports is **€1,307 million.**

4.5 Sub-sector Primary Energy Savings (GWh)

The breakdown of savings in primary energy (GWh) and percentage improvement on 'business as usual' by sub-sector is set out in the table in Figure 18. The equivalent CO_2 savings are also identified.

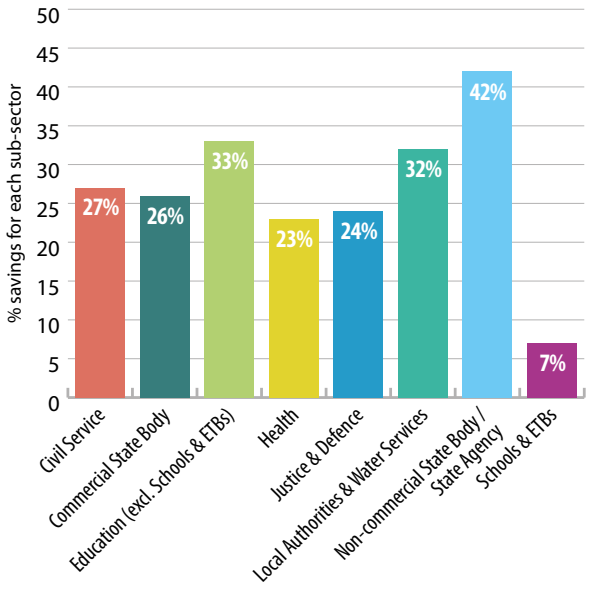
The bar chart in Figure 18 illustrates percentage savings for each sub-sector.

Avoided Energy Spend

2018
€246 million

Cumulative
€1,307 million

FIG. 18: SUB-SECTOR COMPARISON OF PERFORMANCE TO DATE (PRIMARY ENERGY SAVINGS)



Sub-sector	2018 Energy Savings (Primary)		CO_2 Savings
	GWh	% Improvement on BAU	Tonnes (000s)
Civil Service	141	27%	28
Commercial State Body	1,156	26%	245
Education (excl. Schools and ETBs)	422	33%	82
Health	537	23%	108
Justice & Defence	176	24%	38
Local Authorities & Water Services	967	32%	190
Non-commercial State Body / State Agency	276	42%	55
Schools & ETBs	77	7%	15
Total	**3,751**	**27%**	**761**

BAU: business as usual

Making Progress

The data submitted demonstrates savings achieved through the implementation of thousands of efficiency measures. During 2017 and 2018, 95 projects were supported by the DCCAE Mobilisation Fund through SEAI in partnership with the OPW, the HSE and the Department of Education and Skills. Over half of the measures reported addressed **lighting, heating, building fabric and structured energy management improvements.** Projects in schools accounted for a further 26%. The projects illustrated on these pages are a selection of the **4,036 projects** that were reported to SEAI in 2018. While the overall level of project reporting is improving, many of the efficiency measures are still relatively small scale.

During 2018 and 2019, DCCAE, SEAI and the OPW delivered a series of workshops to provide guidance, advice and support to help public bodies through their Departmental Energy Performance Officer network groups. This process is helping to drive progress, facilitate the sharing of best practice and assess the range and nature of project opportunities to develop a project pipeline. Feedback from those groups who have participated has been very positive.

Further details of the projects reported by public bodies can be found in SEAI's online database of public sector energy-saving projects. This is available at **www.seai.ie/publicsectorreport**

Note: Case study savings are total final consumption (except where indicated). All other figures in the report are primary energy consumption.

14,000 kWh

Louth County Council Animal Pound installed solar photo-voltaic generators and a wind turbine in 2017, generating approximately 6,570 kWh of electricity at the site per year. To further improve efficiency, the Council installed a heat pump in 2018, with grant funding from SEAI's Community Grant Scheme. Through this combination of energy saving measures and on-site generation, dependence on imported energy has reduced by 30%, equivalent to almost 14,000 kWh per annum.

Louth County Council

80,000 kg of CO_2

Inland Fisheries Ireland invested €160,000 in a range of measures aimed at reducing their CO_2 emissions, with a target set for an overall reduction of 24%. To achieve this they rationalised and reduced their vehicle fleet, utilised telematics to implement a fleet management system to generate efficiencies, renewed older vehicles with more efficient models and purchased eight electric vehicles. These measures meant the organisation used approximately 45,000 fewer litres of fuel in 2018 and avoided over 80,000 kg of CO_2 emissions.

Inland Fisheries Ireland

90,000 kWh

Enterprise Ireland are upgrading gas boilers in two buildings at their head office in Dublin 3. The purpose of the upgrade is to provide efficient generation of hot water while improving energy usage and reducing maintenance costs. Six 50 kW gas boilers have been replaced by a single condensing boiler. This replacement was completed in one building in early 2019 and the second building will be completed before year end. When the upgrades are complete, the total predicted annual savings will be 90,000 kWh (€12,600).

Enterprise Ireland

ISO 50001

Maynooth University has improved energy efficiency by 34% since 2009 through the implementation of energy efficient practices, plant upgrades, LED light replacements and enhanced building system design. The university achieved ISO 50001 energy management accreditation in 2018. Raising energy awareness has helped to instill a culture of conservation and sustainability among the campus community. The university also provides a series of electric vehicle charging points to promote electric vehicle use among staff and students. Maynooth University's ambition and integrated approach continues to achieve energy savings and improved resource efficiency.

Maynooth University

141,000 kWh

In 2018, the **Commission for the Regulation of Utilities** (CRU) changed its standard 65W fluorescent tube lighting units to more efficient 30W LEDs and also introduced motion sensors throughout the building. This lighting retrofit contributed to a 141,000 kWh saving on annual electricity consumption, equating to a saving of 45% compared to the baseline year of 2009. The CRU's energy efficiency team, renamed 'The Green Machine', is a motivated group of staff members focussed on energy, water and waste. The team actively promotes the goal of reducing energy consumption through staff engagement and awareness.

Commission for the Regulation of Utilities

43,000 kWh

Works were undertaken on **Our Lady of Lourdes school** in Limerick as part of an SEAI and Department of Education and Skills energy retrofit pilot scheme over the summers of 2018 and 2019. Works included replacement of existing flat roofs, installation of roof and cavity wall insulation, lighting controls, new high efficiency boilers and replacement of the old heating system. It is estimated that these works will result in overall annual energy savings of almost 40% (over 43,000 kWh) and cost savings of €2,500. On top of the energy savings, the school has experienced a noticeable improvement in comfort and warmth.

Our Lady of Lourdes School

900,000 kWh

Through the **HSE's East Region Energy Bureau** and a newly formed energy management team, St Ita's in Portrane saved €95,000 and removed over 900,000 kWh of energy usage from their bill. This resulted in a carbon emissions reduction of 220 tonnes per annum and a simple payback period of 3.1 years based on an investment of €100,000. Projects included upgrading all heating pumps on site to newer more efficient models and installing LED lighting. The money saved is being invested in the service and is funding environmental projects to benefit clients and staff.

HSE

15,000 kWh

In June 2018, the **National Oil Reserves Agency** installed solar panels on the roof of its existing fire water pumphouse in Tarbert, on the Shannon Estuary. Annual electricity generation from the solar panel system is approximately 15,000 kWh, which gives an average annual reduction in imported electricity of 22%. The power generated by the solar panel system is used on-site, with excess power exported to the national grid.

National Oil Reserves Agency

296,800 kWh

In 2018, two energy saving projects were completed in the **Central Statistics Office** in Mahon, Cork. Firstly, gas heating boilers were replaced with four cascade boilers and area zoning controls were also fitted, providing greater control over the heating system. The second project involved a full retrofit of internal light fittings, replacing existing fluorescent fixtures with LEDs and occupancy-based controls, as well as daylight harvesting. A year on from project completion, gas consumption has reduced by 171,100 kWh (€3,600) with electricity savings of 125,700 kWh (€21,400).

Central Statistics Office

5. Towards 2020 and 2030

5.1 Departmental Group Performance

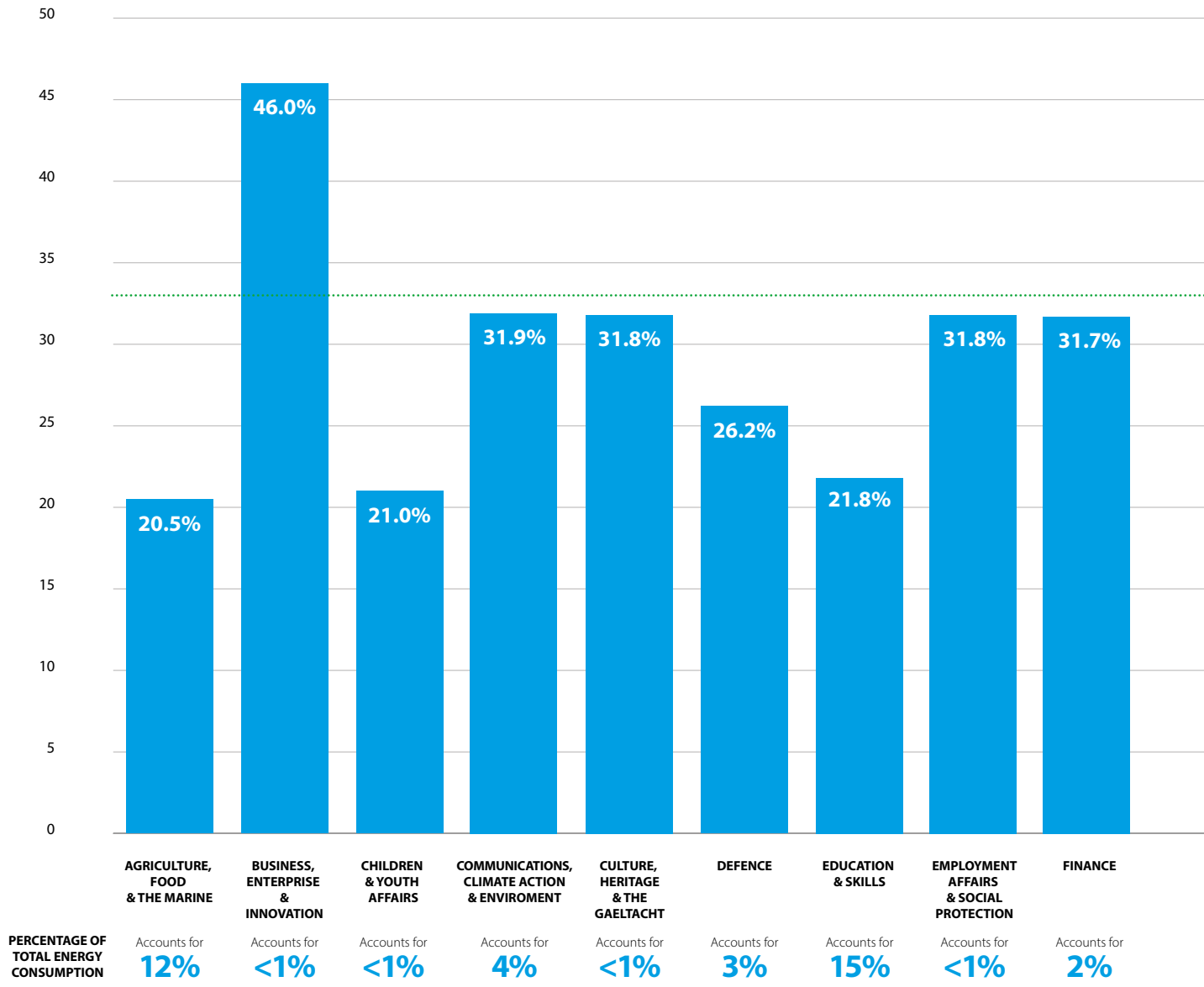
The analysis of the data reported by 345 public bodies and 2,678 schools shows that the annual energy efficiency savings at 2018 represents an overall efficiency gain of 27%.

Although a 27% efficiency improvement represents a substantial saving, there are significant challenges ahead for public bodies to bridge the gap to the 2020 target and beyond to the new 50% target for 2030.

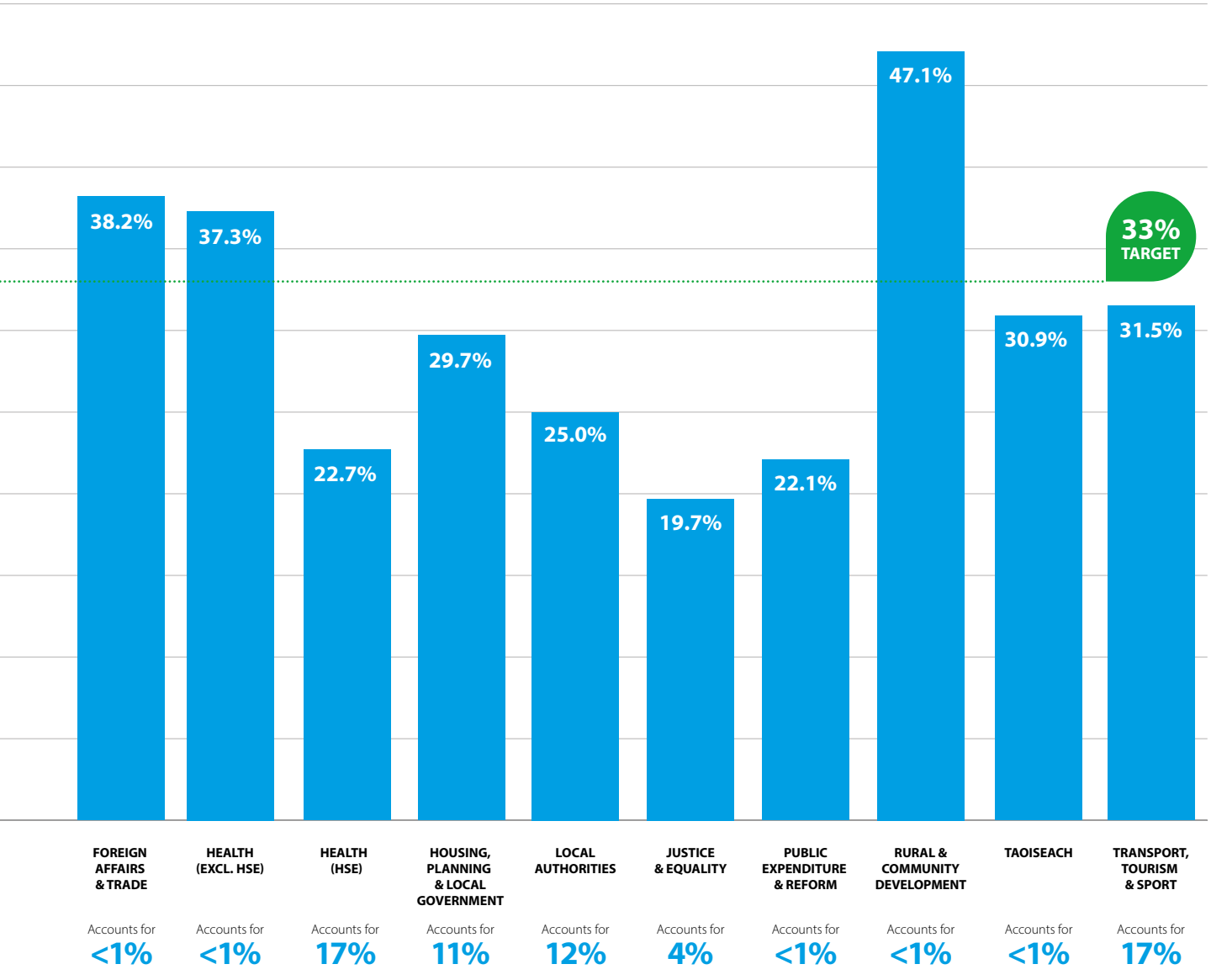
Figure 19 illustrates the 2018 position of each Departmental group with respect to the target.

A collective effort across all Departmental groups continues to be required to meet our 2020 obligations. The M&R performance measurement system enables every organisation – regardless of its level of energy consumption – to analyse the gap to target and design strategic interventions in energy efficiency that will have the most significant impact for it. The public sector organisations that were requested to submit reports are detailed in section 5.2.

FIG. 19: DEPARTMENTAL PERFORMANCE AGAINST 2020 TARGET



There are significant challenges ahead for public bodies to bridge the gap to the 2020 target.



5.2 Performance of Public Bodies

SEAI recognises that building a complete energy profile for organisations is an iterative process that will take time as public bodies are in a better position to submit improved data each year. This work is ongoing.

SEAI continues to work with public bodies and schools to improve the quality of their data through the provision of guidance materials, training and bespoke support services.

The public bodies and schools are listed as follows:

Public Bodies (Excluding Standalone Schools)

The 345[17] public bodies that made a complete submission to SEAI by the deadline are alphabetically listed in section 5.2.1.

Non-reporting Public Bodies

The public bodies that did not report are listed alphabetically in section 5.2.2.

Standalone Schools

The 2,678 standalone schools that made complete submissions to SEAI by the deadline account for 5% of total reported energy consumption. They are listed in an Annex to this report, which is available at www.seai.ie/publicsectorreport.

Additional Detailed Data

SEAI publishes public sector energy data online, including detailed organisation-level energy consumption and performance data, and a database of energy-saving projects. This is available at www.seai.ie/publicsectorreport.

Detailed organisation-level and project data is available at www.seai.ie/publicsectorreport

17 Including ETBs but excluding standalone schools.

5.2.1 Public Bodies (Excluding Schools)

LIST OF PUBLIC BODIES THAT REPORTED

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Abbey Theatre	2.2	●	20.5%
Ability West	2.8	●	26.5%
Adoption Authority of Ireland	0.2	●	32.7%
AHEAD	<0.1	●	31.0%
An Bord Pleanála	1.0	●	46.4%
An Foras Teanga - Foras na Gaeilge	0.8	●	12.2%
An Foras Teanga – Ulster Scots Agency	<0.1	●	24.6%
An Garda Síochána	191.2	●	27.0%
An Post	145.8	●	8.1%
Arts Council	0.5	●	26.0%
Athlone Education Centre	0.1	● 2	32.8%
Athlone Institute of Technology	12.4	● 2	22.5%
Bantry Bay Port Company Ltd	<0.1	●	28.1%
Beaumont Hospital	60.3	●	16.6%
Blackrock Education Centre	0.2	●	59.8%
Bord Bia	0.6	●	58.7%
Bord Iascaigh Mhara	3.7	●	14.8%
Bord na Móna plc	58.1	●	41.4%
Broadcasting Authority of Ireland	0.2	●	43.8%
Brothers of Charity Services Ireland	40.3	●	17.2%
Bus Éireann	334.2	●	12.8%
Camphill Communities (Ireland)	10.6	● 2	16.5%
Cappagh National Orthopaedic Hospital	7.8	●	39.4%
Carlow County Council	12.5	● 3	28.7%
Carrick-on-Shannon Education Centre	0.1	●	-7.9%
Carriglea Cáirde Services	3.9	●	21.8%
Cavan & Monaghan Education & Training Board	12.0	●	-6.9%
Cavan County Council	13.1	● 3	21.6%
Central Bank of Ireland	21.0	●	55.0%
Central Remedial Clinic	5.5	● 2	17.7%
Central Statistics Office	3.9	●	36.2%
Charities Regulator	<0.1	●	47.2%
Cheeverstown House	6.2	●	14.4%
Cheshire Ireland	6.7	●	22.3%
Chief State Solicitor's Office	1.6	●	35.4%
Children's Health Ireland (CHI) at Crumlin	31.3	●	31.1%
Children's Sunshine Home/Laura Lynn	1.2	●	27.9%
Children's University Hospital	17.0	●	15.9%
Citizens Information Board	0.9	●	25.5%
City of Dublin Education & Training Board	27.5	●	9.1%
Clare County Council	30.7	● 3	12.4%
Clare Education Centre	0.2	●	37.8%
Co. Wexford Education Centre	0.1	●	17.0%
Cobh Community Hospital	0.5	●	12.1%

The overall status of energy efficiency improvement on baseline for 2018 is illustrated as follows:

● More efficient than baseline and on track for 2020 target

● More efficient than baseline, but not yet on the path for 2020 target

● Less efficient than baseline

Note 1
Public body submitted sufficient data to calculate a savings result for 2018; however the result lies beyond the expected range of probable energy performance and needs verification.

Note 2
SEAI identified aspects of the data submitted at the reporting deadline that needed to be addressed. Public body may have addressed these aspects prior to calculation of the published savings result.

Note 3
Each local authority's result includes the performance of water services assets up to and including 2013, but excludes water services since then.

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Coillte Teoranta	1,085.6	●	19.3%
Commission for Aviation Regulation	0.2	●	29.3%
Commission for Communications Regulation	0.5	●	29.8%
Commission for Railway Regulation	0.3	○ 1	
Commission for the Regulation of Utilities	0.3	●	67.1%
Commissioners of Irish Lights	13.7	●	36.1%
Companies Registration Office & Registrar of Friendly Societies	0.4	○ 1	
Competition and Consumer Protection Commission	0.3	○ 1	
Coombe Women & Infants University Hospital	9.5	●	7.7%
Cope Foundation	17.8	●	12.0%
Cork Airport	19.1	●	48.0%
Cork City Council	47.3	● 3	31.6%
Cork County Council	83.1	● 3	21.9%
Cork Education & Training Board	22.6	●	9.6%
Cork Education Support Centre	<0.1	○ 2	53.2%
Cork Institute of Technology	25.6	●	42.3%
CORU	0.2	○ 1	
Courts Service	40.2	●	-9.7%
Crawford Art Gallery Cork	1.3	○ 2	0.9%
daa plc	139.5	● 2	53.1%
Data Protection Commissioner	0.3	○ 2	36.9%
Daughters of Charity – Child & Family Services	0.6	●	30.2%
Daughters of Charity - Intellectual Disability Services	20.3	●	11.3%
Defence Forces	255.2	●	26.2%
Dental Council	<0.1	○ 1	
Department of Agriculture, Food & Marine	47.1	●	36.2%
Department of Children & Youth Affairs	1.0	●	62.8%
Department of Communications, Climate Action & Environment	6.0	○ 2	38.7%
Department of Culture, Heritage & the Gaeltacht	3.5	●	65.4%
Department of Defence	4.0	●	24.3%
Department of Education & Skills	8.6	●	28.1%
Department of Employment & Social Protection	49.5	●	32.1%
Department of Finance	10.2	●	17.7%
Department of Foreign Affairs & Trade	7.9	●	38.2%
Department of Health	4.2	○ 1	
Department of Housing, Planning & Local Government	5.5	●	22.5%
Department of Jobs, Enterprise & Innovation	3.6	●	49.5%
Department of Justice & Equality	10.1	●	32.5%
Department of Public Expenditure and Reform	5.8	●	68.2%
Department of Rural & Community Development	0.4	○ 4	0.0%

The overall status of energy efficiency improvement on baseline for 2018 is illustrated as follows:

● More efficient than baseline and on track for 2020 target

● More efficient than baseline, but not yet on the path for 2020 target

● Less efficient than baseline

Note 1
Public body submitted sufficient data to calculate a savings result for 2018; however the result lies beyond the expected range of probable energy performance and needs verification.

Note 2
SEAI identified aspects of the data submitted at the reporting deadline that needed to be addressed. Public body may have addressed these aspects prior to calculation of the published savings result.

Note 3
Each local authority's result includes the performance of water services assets up to and including 2013, but excludes water services since then.

Note 4
Tracked from a 2018 baseline

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Department of the Taoiseach	3.5	●	14.6%
Department of Transport, Tourism & Sport	29.6	●	21.9%
Design & Crafts Council of Ireland	0.4	●[2]	-17.6%
Digital Hub Development Agency	4.9	●	3.3%
Donegal County Council	52.1	●[3]	21.1%
Donegal Education & Training Board	10.3	●	-4.0%
Donegal Education Centre	0.1	●[2]	24.2%
Donegal Regional Airport	0.7	●[2]	7.7%
Drogheda Port Company	0.6	●	67.7%
Drumcondra Education Centre	0.1	●	29.2%
Dublin & Dún Laoghaire Education & Training Board	34.9	●	26.1%
Dublin Bus	317.8	●[2]	14.4%
Dublin City Council	179.9	●[3]	33.1%
Dublin City University	68.5	●	43.4%
Dublin Dental Hospital & School	2.2	●	32.6%
Dublin Institute for Advanced Studies	1.7	●	34.7%
Dublin Institute of Technology	32.4	●	28.0%
Dublin Port Company	16.6	●	29.8%
Dublin West Education Centre	0.1	●	20.3%
Dún Laoghaire Institute of Art, Design & Technology	6.1	●	15.2%
Dún Laoghaire-Rathdown County Council	49.9	●	32.4%

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Dundalk Institute of Technology	14.8	●	8.9%
Economic and Social Research Institute (ESRI)	1.4	●[2]	-14.9%
Educampus Services	<0.1	●	28.5%
Education Centre Tralee	<0.1	●	28.3%
EirGrid Plc	6.7	●	43.3%
Electricity Supply Board	112.0	●	35.0%
Enable Ireland	8.4	●	33.5%
Enterprise Ireland	6.1	●	50.2%
Environmental Protection Agency	4.5	●	48.9%
Ervia (Business Services)	3.4	●	43.0%
Fáilte Ireland	3.6	●	44.4%
Financial Services and Pensions Ombudsman	0.2	●	52.8%
Fingal County Council	62.2	●[3]	27.8%
FOLD Ireland	1.6	●	17.8%
Food Safety Authority of Ireland	0.3	●	73.4%
Forensic Science Laboratory	1.4	●	19.1%
Foyle, Carlingford and Irish Lights Commission	0.4	●	31.5%
Galway City Council	23.9	●[3]	28.6%
Galway County Council	28.2	●[3]	29.5%
Galway Education Centre	<0.1	●	44.3%
Galway Mayo Institute of Technology	14.0	●	24.6%
Galway Roscommon Education & Training Board	13.4	●	16.0%
Garda Inspectorate	0.1	●	32.4%

The overall status of energy efficiency improvement on baseline for 2018 is illustrated as follows:

● More efficient than baseline and on track for 2020 target

● More efficient than baseline, but not yet on the path for 2020 target

● Less efficient than baseline

Note 1
Public body submitted sufficient data to calculate a savings result for 2018; however the result lies beyond the expected range of probable energy performance and needs verification.

Note 2
SEAI identified aspects of the data submitted at the reporting deadline that needed to be addressed. Public body may have addressed these aspects prior to calculation of the published savings result.

Note 3
Each local authority's result includes the performance of water services assets up to and including 2013, but excludes water services since then.

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Garda Ombudsman Commission	1.2	●	32.7%
Gas Networks Ireland	10.3	●	45.1%
Good Shepherd Cork	0.4	●	24.7%
Grangegorman Development Agency	0.3	●	77.0%
Health & Safety Authority	0.9	●	20.4%
Health Products Regulatory Authority	1.6	●	38.6%
Heritage Council	0.2	●	33.2%
Higher Education Authority Irish Research Council	0.4	●	26.9%
Horseracing Ireland Ltd	1.3	●	51.1%
Houses of the Oireachtas Service	13.1	●	27.8%
Housing Finance Agency	<0.1	●	8.2%
HSE	1,063.5	●	24.9%
Iarnród Éireann / Irish Rail	648.0	●	32.8%
IDA Ireland	6.8	●	53.6%
Incorporated Orthopaedic Hospital of Ireland	3.0	●	47.0%
Inishowen Development Partnership	0.1	●	25.1%
Inland Fisheries Ireland	6.9	●	24.8%
Inspector of Prisons and Places of Detention	<0.1	●	-15.1%
Institute of Public Administration	1.0	●	10.8%
Institute of Technology Carlow	9.0	●	41.4%
Institute of Technology Sligo	9.4	●	34.1%
Institute of Technology Tallaght	8.7	●	38.6%
Institute of Technology Tralee	6.8	●	33.2%

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
InterTradeIreland	0.4	●	41.3%
Irish Aviation Authority	21.7	●	37.6%
Irish Blood Transfusion Service	13.4	●	35.0%
Irish Film Classification Office	0.2	●	3.2%
Irish Greyhound Board / Bord na gCon	7.4	●	36.2%
Irish Human Rights & Equality Commission	0.3	●	61.6%
Irish Prison Service	113.1	●	10.2%
Irish Water	1,109.4	●[3a]	29.5%
Irish Water Safety	0.3	●	-33.7%
Irish Wheelchair Association	7.3	●	39.2%
KARE	2.4	●	16.7%
Kerry County Council	43.8	●[3]	35.1%
Kerry Education & Training Board	5.9	●	19.5%
Kildare & Wicklow Education & Training Board	16.1	●	40.1%
Kildare County Council	43.9	●[3]	22.5%
Kildare Education Centre	0.1	●	32.7%
Kilkenny & Carlow Education & Training Board	6.2	●	12.4%
Kilkenny County Council	22.9	●[3]	33.2%
Kilkenny Education Centre	0.2	●	6.3%
Laois & Offaly Education & Training Board	6.7	●	9.5%
Laois County Council	18.5	●[3]	41.1%
Laois Education Centre	<0.1	●	65.2%
Law Reform Commission	0.2	●[1]	
Léargas - The Exchange Bureau	<0.1	●[1]	

The overall status of energy efficiency improvement on baseline for 2018 is illustrated as follows:

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Note 1
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Note 2
SEAI identified aspects of the data submitted at the reporting deadline that needed to be addressed. Public body may have addressed these aspects prior to calculation of the published savings result.

Note 3
Each local authority's result includes the performance of water services assets up to and including 2013, but excludes water services since then.

Note 3a
Irish Water's energy performance is calculated on the basis of the water services assets' performance since 2009. These assets were owned and operated by local authorities up to the end of 2013, during which time the water services sector had improved its performance by 6.9%. The savings figure may be revised in future years as the local authorities, Irish Water and SEAI continue to work together to improve the quality and quantity of energy data, including historical data.

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Legal Aid Board	3.4	●	25.1%
Legal Services Regulatory Authority	<0.1	● 1	
Leitrim County Council	18.2	● 3	25.2%
Leopardstown Park Hospital	3.2	●	36.2%
Letterkenny Institute of Technology	6.5	●	46.6%
Limerick & Clare Education & Training Board	18.8	●	18.1%
Limerick City & County Council	42.7	● 3	24.0%
Limerick Education Centre	0.4	● 2	-25.9%
Limerick Institute of Technology	14.5	●	33.7%
Local Government Management Agency	1.8	●	39.3%
Longford & Westmeath Education & Training Board	6.3	●	34.4%
Longford County Council	11.2	● 3	34.9%
Louth & Meath Education & Training Board	17.4	●	0.5%
Louth County Council	27.5	● 3	40.8%
Marine Institute	26.9	●	31.0%
Mary Immaculate College Limerick	10.2	● 2	26.0%
Marymount University Hospital and Hospice	5.1	●	36.8%
Mater Misericordiae University Hospital	48.1	● 1	
Maynooth University, NUIM	38.8	● 2	34.6%
Mayo County Council	37.3	● 3	27.0%
Mayo Sligo & Leitrim Education & Training Board	10.4	● 2	-46.9%
Meath County Council	38.6	● 3	15.1%

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Medical Bureau of Road Safety	<0.1	●	27.3%
Mental Health Commission	0.3	●	-0.7%
Mercy Hospital	13.2	●	35.6%
Met Éireann	2.0	●	3.3%
Milford Care Centre	5.6	●	18.0%
Monaghan County Council	14.3	● 3	29.1%
Monaghan Education Centre	0.2	●	3.8%
Muiriosa Foundation	7.2	●	54.2%
National Archives	1.2	●	48.0%
National Cancer Registry Board	0.1	● 2	20.2%
National College of Art and Design	5.2	●	30.7%
National Council for Special Education	0.5	●	14.3%
National Disability Authority	0.4	●	31.7%
National Economic and Social Development Office	0.2	● 1	
National Gallery	12.5	●	46.6%
National Library of Ireland	3.5	● 2	29.6%
National Maternity Hospital	9.7	●	10.6%
National Milk Agency	<0.1	●	43.4%
National Museum of Ireland	14.5	●	7.2%
National Oil Reserves Agency	0.2	●	49.2%
National Rehabilitation Hospital	7.2	● 1	
National Shared Services Office	2.5	○ 4	0.0%
National Transport Authority	6.1	●	74.9%
National Treasury Management Agency	4.5	●	64.2%

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Note 4
Tracked from a 2018 baseline

Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
National Treatment Purchase Fund	0.4	●	13.6%
National University of Ireland, Galway	53.7	●	36.3%
Navan Education Centre	0.2	●	40.9%
NCCA (National Council for Curriculum and Assessment)	0.3	●	44.2%
New Ross Port Company	0.1	●	34.7%
Northern & Western Regional Assembly	0.1	●	44.7%
NSAI	3.8	●	21.9%
Nursing and Midwifery Board of Ireland	0.5	●	15.5%
Oberstown Children Detention Campus	6.8	●	4.6%
Offaly County Council	17.7	●[3]	26.5%
Office of Public Works	58.0	●	11.0%
Office of the Attorney General	1.9	●	22.1%
Office of the Comptroller & Auditor General	0.9	●	35.7%
Office of the Director of Corporate Enforcement	0.6	●	44.6%
Office of the Director of Public Prosecutions	1.7	●	45.8%
Office of the Ombudsman	1.0	●	27.3%
Office of the Ombudsman for Children	0.2	●	13.3%
Office of the Ombudsman for the Defence Forces	<0.1	●[2]	23.8%
Oifig an Choimisinéara Teanga	0.1	●	29.9%
Ordnance Survey Ireland	4.5	●	8.7%
Our Lady's Hospice Harold's Cross Limited	13.7	●	16.0%
Peamount Hospital Newcastle	10.0	●	14.2%
Permanent TSB	24.1	●	23.7%
Personal Injuries Assessment Board	0.4	●[2]	65.7%
Pobal	0.8	●	63.7%
Port of Cork Company	23.2	●	30.6%
Port of Galway	0.8	●	71.9%
Port of Waterford Company	3.0	●	78.1%
Pre-Hospital Emergency Care Council	<0.1	●	63.9%
President's Establishment	3.3	●	0.4%
Private Security Authority	0.2	●[2]	16.0%
Probation Service	4.7	●	13.0%
Professional Development Service for Teachers	<0.1	●	54.5%
Property Service Regulatory Authority	0.2	●	62.7%
PSI - the Pharmacy Regulator	0.7	●[2]	43.5%
Public Appointment Service	1.7	●	47.8%
Quality and Qualifications Ireland	0.3	●	-31.9%
Raidió Teilifís Éireann	69.1	●	47.5%
Regulator of the National Lottery	<0.1	●[2]	0.5%
RehabGroup	15.0	●	3.1%
Residential Tenancies Board	0.9	●	43.2%
Revenue Commissioners	47.9	●	25.8%
Road Safety Authority	2.5	●	5.5%
Roscommon County Council	18.4	●[3]	27.7%
Rotunda Hospital	9.5	●	13.2%
Royal College of Surgeons in Ireland	18.1	●	39.3%
Royal Hospital	6.3	●	12.0%

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Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
Royal Irish Academy	0.4	●	26.2%
Royal Irish Academy of Music	0.7	●	10.6%
Royal Victoria Eye and Ear Hospital	3.8	●[2]	-2.7%
safefood	0.4	●[2]	35.5%
Saint John of God Community Services clg	36.0	●	10.2%
Science Foundation Ireland	0.5	●	14.1%
Screen Ireland	<0.1	●[2]	50.2%
Sea Fisheries Administration Division	4.3	●	40.2%
Sea Fisheries Protection Authority	1.6	●	32.1%
Shannon Airport Authority DAC.	27.0	●[2]	22.9%
Shannon Commercial Properties	0.9	●	52.8%
Shannon Foynes Port Company	3.3	●	31.1%
Sligo County Council	18.0	●[3]	13.8%
Sligo Education Centre	0.1	●	-11.7%
SOLAS	1.7	●	40.8%
SOS Kilkenny Ltd.	1.4	●	49.4%
South Dublin County Council	50.6	●[3]	29.4%
South Infirmary - Victoria Hospital	9.7	●	0.5%
Southern Regional Assembly	0.1	●[2]	66.3%
Special EU Programmes Body	<0.1	●	38.0%
Sport Ireland	31.5	●	73.4%
St Josephs Foundation	4.4	●[2]	6.8%
St. Angela's College Sligo	2.0	●	20.9%
St. Catherine's Association Ltd.	0.8	●[2]	40.0%
St. Christopher's Services Ltd.	1.6	●	27.9%
St. Cronan's Association CLG	0.5	●	-1.1%
St. Francis Hospice	5.1	●	25.4%
St. James's Hospital	84.3	●[2]	16.8%
St. John's Hospital	3.8	●	40.2%
St. Michael's Hospital	5.4	●	14.8%
St. Patrick's Centre Kilkenny	4.8	●[2]	46.7%
St. Vincent's Hospital Fairview	4.5	●	19.2%
St. Vincent's University Hospital	50.5	●	31.5%
State Examinations Commission	1.6	●	13.3%
State Laboratory	9.9	●	13.6%
Stewarts Care Ltd	13.2	●	24.7%
Sunbeam House Services	4.9	●	18.2%
Sustainable Energy Authority of Ireland	0.4	●	52.0%
Tallaght University Hospital	40.1	●	27.9%
Teaching Council	0.5	●	48.1%
Teagasc	38.9	●	12.8%
Technological University Dublin - Blanchardstown Campus	6.5	●	61.9%
TG4	2.6	●	39.6%
The Bessborough Centre	0.9	●[2]	53.2%
The Health Information & Quality Authority (HIQA)	1.5	●	41.9%
The Health Insurance Authority	<0.1	●	32.4%
The Health Research Board	0.4	●	38.3%
The Insolvency Service of Ireland	0.8	●	53.5%

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Public Body	2018 Energy Consumption (Primary)	Overall Status (2018)	Energy Savings Since Baseline
	GWh		%
The Irish Museum of Modern Art	6.5	●	24.7%
The Medical Council	0.8	●	33.6%
The National Concert Hall	3.1	●	26.5%
The Pensions Authority	0.4	●	8.7%
The Property Registration Authority	3.8	●	29.5%
Tipperary County Council	46.4	●3	36.8%
Tipperary Education & Training Board	7.7	●	11.1%
Tourism Ireland	0.2	●2	54.7%
Transport Infrastructure Ireland	124.8	●	25.3%
Trinity College Dublin	122.6	●	27.7%
Údarás na Gaeltachta	4.0	●	43.2%
University College Cork	94.6	●	40.8%
University College Dublin	122.3	●	32.5%
University of Limerick	72.2	●	24.1%
Valuation Office	1.2	●	10.7%
Valuation Tribunal	<0.1	●1	
Voluntary Health Insurance Board	9.0	●	43.1%
Waterford & Wexford Education & Training Board	13.8	●	37.8%
Waterford City & County Council	42.9	●3	14.3%
Waterford Institute of Technology	19.1	●	39.4%
Waterford Teachers' Centre	0.2	●	11.2%
Waterways Ireland	8.5	●	5.4%
West Cork Education Centre	0.1	●	-13.1%
Western Care Association	5.1	●	31.7%
Western Development Commission	<0.1	●2	62.1%
Westmeath County Council	25.3	●3	19.4%
Wexford County Council	32.0	●3	32.1%
Wicklow County Council	34.8	●3	11.4%
Workplace Relations Commission	1.5	●	7.6%

5.2.2 Non-reporting Public Bodies

The number of public bodies that are required to report in their own right changes from year to year due to organisational changes within the sector. Some smaller organisations that were requested to report for 2018 did not report data in their own right, but their data was reported via 'parent' organisations, while others may no longer come under the definition of a public body, as set out in SI 426 of 2014. Such organisations are not listed here. These organisational changes are the subject of continual review by SEAI.

Irish Bank Resolution Corporation Limited
Labour Court
Mayo Education Centre
Nua Healthcare Services
St. Michael's House

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Appendix 1 – Reporting Methodology

The key principles of the reporting methodology are:

- Individual public bodies report annually for the previous year. There is a defined reporting window during which public bodies must report and the cycle repeats annually.
- Public bodies report all of their energy consumption for all fuel types (electricity, thermal fuels and transport fuels) at an organisational level.
- Public bodies report baseline data on a once-off basis.
- Public bodies then report their energy consumption annually for the previous year.
- For electricity & natural gas, public bodies submit their meter numbers once to SEAI (MPRNs & GPRNs) and then validate them annually. SEAI accesses the energy consumption data corresponding to these meter numbers directly from the regulated meter operators (ESB MRSO and Gas Networks Ireland) each year.
- For all non-network-connected energy sources (e.g. heating oils, LPG, solid fuels, diesel), public bodies self-report their consumption subtotals directly to SEAI.
- Each year, each public body must self-report a value for an activity metric that best corresponds with its energy usage.

The next reporting cycle will commence in December 2019. All public bodies will be required to report their 2019 consumption before the cycle ends in early May 2020; they will also have the opportunity to review/edit their previously reported data.

Measuring Energy Savings

In order to quantify energy savings, changes in given parameters that are related to energy use must be measured. The SEAI system uses energy performance indicators (EnPIs) to measure each organisation's energy performance. This enables organisations to determine how efficiently they are using energy because it accounts for changes in the activity level related to the energy use – or 'activity metric'– of each organisation.

Each year, an EnPI is calculated by dividing the organisation's total primary energy requirement (TPER) by an activity metric.

The primary indicator for tracking each organisation's energy savings is the change in the organisation's EnPI each year and is expressed as a percentage saving between a baseline period and the current year (i.e. 2018). This is a workable methodology which accounts for an organisation's energy performance as well as its energy consumption and enables public bodies to determine if energy is being used efficiently or not in accordance with the definitions of 'energy efficiency' and 'energy savings' used by the European Commission.

Baselines

The progress made by an organisation in meeting its 2020 target is measured against an historical baseline. Organisations have a choice of baseline period. Public bodies can choose whichever of the following baseline periods suits them best: 2001-2005 (averaged); 2006-2008 (averaged); 2009 (single year). 2009 is the default baseline for public bodies. Schools can choose any of these baselines, or any single year up to and including 2013 (default).

Data Verification

The validity of submitted data is checked in two ways:

- Automated Data Verification Assessment (DVA), which consists of validation rules built into the reporting software to check for errors when entering inputs.
- DVAs undertaken by SEAI-appointed assessors, which entail assessments of specific aspects of submissions. A DVA of a public body's submission consists of direct interaction(s) between an SEAI assessor and the public body to verify that the data submitted falls within certain acceptability criteria.

The purpose of the data verification system is threefold:

- To ensure, insofar as practical, that the data which is submitted is robust and verifiable;
- To provide an incentive for organisations to submit accurate data;
- To provide a means for supporting organisations in improving how they gather and submit M&R data and for providing feedback on the M&R system.

The data verification process on the 2018 data involved an assessment of 32% of public bodies that reported data.

For more information on Monitoring and Reporting, visit **www.seai.ie/publicsector** or contact **publicsector@seai.ie**

SEAI would like to thank the meter registration system operators of ESB Networks and Gas Networks Ireland for their continued support in providing the data required to measure and monitor energy efficiency.

Appendix 2 – Glossary

Activity Metric

A measure of the activity that a public body undertakes. Ideally, the activity metric should quantify the key activities that affect energy use, e.g. for organisations in which most of the energy consumption is in buildings, good activity metrics are: the total useful floor area that is heated or air conditioned; the number of people that benefit from the energy service provided (e.g. number of employees for office-based organisations, number of students for universities etc.)

Baseline

The period from which an organisation's progress towards the 2020 target is tracked. There are three alternative baselines for public bodies. Public bodies can choose whichever one suits them best: 2001-2005 (averaged); 2006-2008 (averaged); 2009 (single year). 2009 is the default baseline. Schools can choose any of these baselines, or any single year up to and including 2013 (default).

EnPI

An Energy Performance Indicator (EnPI) is a way of measuring an organisation's energy performance. Each year, an EnPI is calculated by dividing the organisation's total primary energy requirement (TPER) by an activity metric.

GPRN

Gas Point Registration Number is a unique reference number assigned to every gas point on the natural gas network.

MPRN

Meter Point Reference Number is a unique 11-digit number assigned to every single electricity connection and meter in the country.

Public Body

For the purposes of the NEEAP target, public bodies are considered to encompass the Civil Service, commercial and non-commercial State Bodies, State-owned financial institutions, the Defence Forces, An Garda Síochána, Health Service Executive hospitals and other facilities, Local and Regional Authorities, schools and universities.

Thermal Fuels / Thermal Energy

For the purposes of this report, thermal fuels (thermal energy) comprise all solid, liquid and gas fuels used for non-transport purposes. This includes both fossil and renewable fuels used in boilers, space & process heating systems, catering, fuel-based electricity generators (on site), Combined Heat and Power (CHP) and in all plant, equipment & other non-road-mobile vehicles.

TPER

Total Primary Energy Requirement (TPER), or primary energy, is a measure of all of the energy consumed by the organisation, which accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes.

TPER is calculated by applying published conversion factors to each element of the organisation's energy consumption. The conversion factors can vary from year to year and the factor for electricity is typically at least twice the value of those for thermal and transport fuel types.

Conversion factors for each year are available on the SEAI website.

Transport Fuel

For the purposes of this report, transport fuels comprise all liquid fuels used for transport vehicles (road, rail, air, water). This includes both fossil and renewable fuels. The electricity used for transport (rail, electric vehicles) is included within the electricity totals in this report, although an electricity-for-transport subtotal is broken out in Figure 8.

SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Sustainable Energy Authority of Ireland
3 Park Place
Hatch Street Upper
Dublin 2
Ireland
D02 FX65

t +353 1 808 2100
f +353 1 808 2002
e info@seai.ie
w www.seai.ie

@seai_ie