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# ENERGY MANAGEMENT STRATEGY FOR NI CENTRAL GOVERNMENT

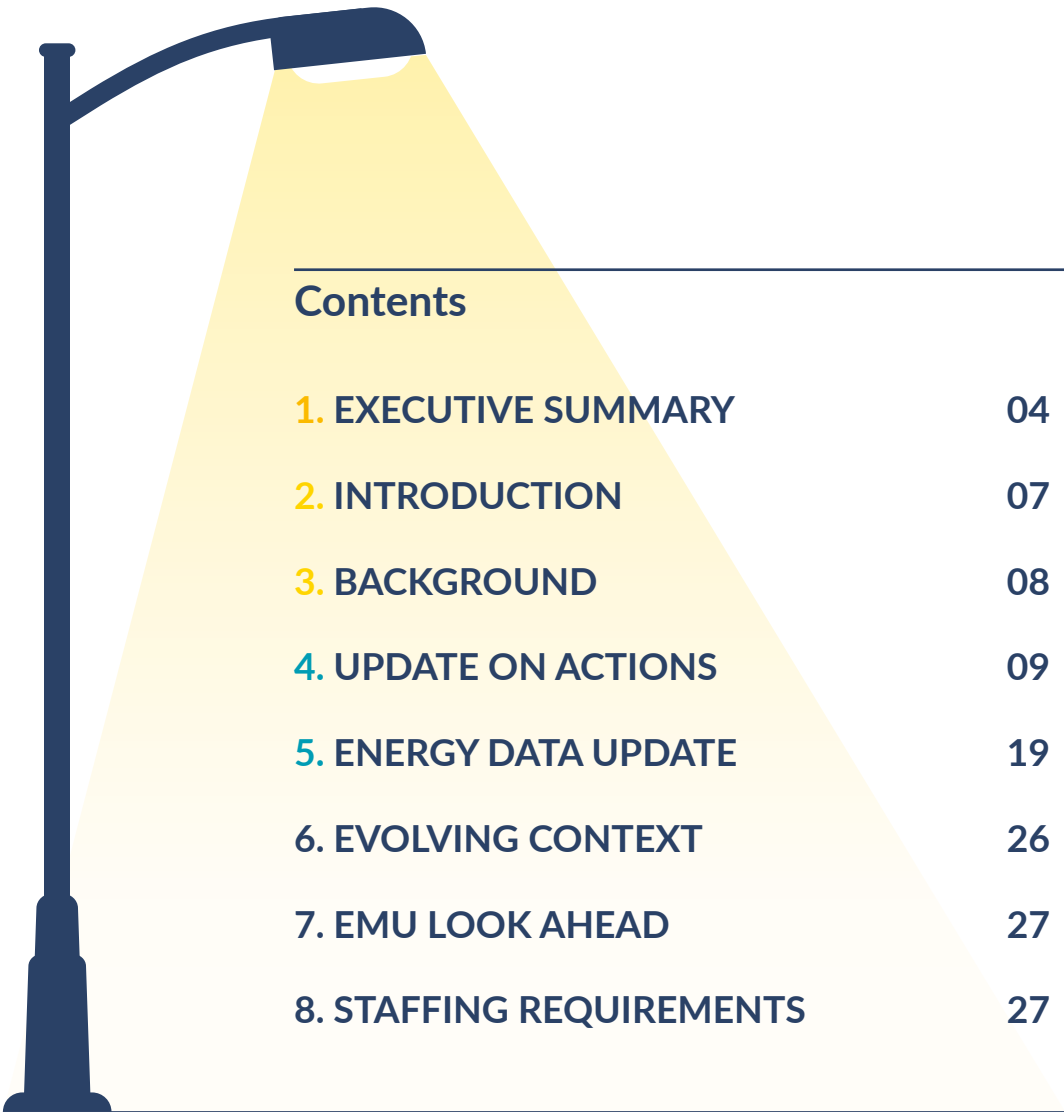
Annual Energy Progress Report 2020/21

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August 2021







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## 1. EXECUTIVE SUMMARY

2020/21 was a year like no other, when we, along with the rest of the world, responded to the coronavirus pandemic. This challenged us to question how we perceive and interact with the world around us, and to reinvent the way in which we deliver public services.

Throughout 2020/21 the Energy Management Unit (EMU) worked steadily to take forward a number of important enabling actions, including the preparation of this annual report which details energy consumption and expenditure across the central government estate in 2019/20. These actions sit under the main management, cost reduction, and decarbonisation recommendations of the Central Government Energy Management Strategy (EMS) and Action Plan to 2030.

**Below is a summary of progress:**

- Total consumption in the 2016/17 base year was 2,032 GWhr. This reduced further in 2019/20 to 1,911 GWhr, representing a 6% decrease in total consumption relative to the 2016/17 baseline.
- Total cost in the 2016/17 base year was £122.6m compared to £133.7m in 2019/20, representing a 9% increase in cost relative to the 2016/17 baseline, driven by a range of factors including market forces, increases to the regulated charges, the increasing cost of carbon, fuel mix and supply issues.
- Comparing 2018/19 to 2019/20, the year on year downward movement in consumption was again encouraging (1,938 GWhrs versus 1,911 GWhrs), confirming a further reduction in net consumption.
- Similarly, the Carbon generated due to the energy consumed by Central Government in NI reduced year on year, dropping from 474,267 tonnes in 2018/19 to 420,565 tonnes in 2019/20, representing an 11% decrease, year on year, in carbon emissions.

Table 1. Summary: NI Central Government Energy Consumption, Cost and Carbon Emissions			
	2016/17 (baseline)	2018/19	2019/20
 Consumption GWhs	2,032	1,938	1,911
 Cost £m	£122.6	£144.6	£133.7
 Carbon (tCO2e)	605,060	474,267	420,565

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- The cross-cutting energy management Forum was refreshed in 2019/20 to reflect the requirement to advance the implementation of the strategy, and in doing so ensure opportunities for reducing energy consumption are made available equally across the whole of government.
  - Again delivery on a cross-cutting basis was supported and facilitated by The Strategic Investment Board's (SIB) Energy Management Unit (EMU).
  - Annual reporting of data continues, data collection remains a challenge as a result of manual collection and the volume of data involved.
  - In 2020/21 due to the lack of a ring-fenced budget it was not possible to progress investment as envisaged in the EMS.
  - Work on developing a pipeline of investment projects progressed slower than expected as a result of COVID-19. Work is now underway to ramp up investment in the year ahead with the first tranche of investment under the strategy scheduled for 2021/22.
  - Better buying is progressing well with much greater collaboration between CoPEs with the appointment of an external market adviser to support this work.
  - The EMU delivered an evidence base for costs associated with building to higher energy standards, which will serve to support policy development and potentially unlock significant reductions in energy consumption, particularly when considered longitudinally.
  - Moving forward, redirecting an increased portion of planned capital and revenue investment across the central government estate towards low energy solutions will be an essential strategic requirement to ensure the benefits of the strategy are realised in full.

## 2. INTRODUCTION

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The purpose of this paper is to provide a yearly progress report to the Executive on the implementation of the NI Central Government EMS and Action Plan to 2030. SIB is supporting the Department for the Economy to deliver this work, with the Department acting as sponsor.

The EMS commits the Strategic Investment Board through its Energy Management Unit to produce an annual energy report.

This is the second annual report covering the period 1st April 2020 to 31st March 2021.

**Reporting is a year in arrears with the data that underpins the report arising from the period 1st April 2019 to 31st March 2020.**

The report will be published at [www.sibni.org](http://www.sibni.org)

### 3. BACKGROUND

In January 2019, the NICS Board approved the EMS. The EMS was the result of an intense 2 year period of work with over 110 Government bodies (Departments and their ALBs) which covered over 3,000 publically occupied assets. The EMS offers the opportunity to provide leadership on energy efficiency, drive downward pressure on costs, and improve decarbonisation efforts across NI Central Government.

The EMS has two key strategic objectives:

1



To establish effective energy management processes that unlock value.

2



To reduce net energy consumption by 30% by 2030 across Government (from a 2016/17 baseline). This strategy is primarily a cost saving one and the 30% energy consumption reduction target was selected to ensure that Government does not spend any more on energy in 2030 than it did in the baseline year 2016/17. This target maximises the opportunity to offset expected price increases and the risk posed by energy market volatility.



## 4. UPDATE ON ACTIONS

The EMS proposes a series of recommendations and corresponding time bound actions. These actions were categorised and time bound to highlight the magnitude of change required to deliver them. Progress against these recommendations and actions is presented below:



### Recommendation 1

Ensure that ownership for strategic energy management across the estate is aligned with wider energy policy responsibilities.



### Recommendation 2

Adopt a net energy consumption reduction target of 30% by 2030.



### Recommendation 3

Establish an Energy Management Unit (EMU) to help Departments:

- develop potential energy-saving opportunities
- maximise energy efficiency skills and measures across Government.



### Recommendation 4

Mandate annual reporting of energy consumption against a 30% reduction target to the NICS Board and/or the NI Executive.



### Recommendation 5

Develop a pipeline of energy reduction projects.



### Recommendation 6

Create an Energy Invest to Save Fund.



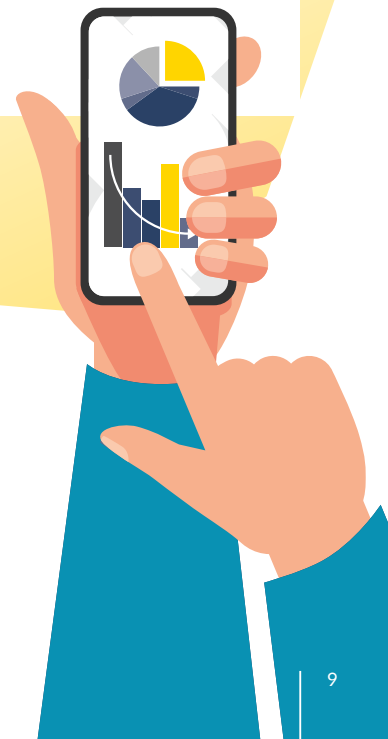
### Recommendation 7

Develop better energy buying.



### Recommendation 8



Work in collaboration with relevant partners to ensure building standards contribute to the 30% energy consumption reduction target.





## Recommendation 1



Ensure ownership for strategic energy management across the estate is aligned with wider energy policy responsibilities.

 <b>Actions</b>	 <b>Action Status</b>
<p><b>1.1</b> By the end of 2018/19 DfE and DoF should agree arrangements for the ownership and oversight of energy management in Government.</p>	<p>→ <b>Complete in 2018/19</b></p> <p>DfE is the agreed sponsor Department for the work and is funding Year 1-4 (2019/20 – 2022/23) of the Programme to deliver the strategy.</p> <p>Governance and oversight is through a DfE chaired Programme Board, of which DoF is a member.</p>
<p><b>1.2</b> By the end of 2024/25 DfE to undertake a mid-term review.</p>	<p>→ <b>Pending</b></p> <p>A mid-term review led by DfE will be undertaken before the end of 2024/25.</p>
<p><b>1.3</b> In 2019/20 commence an energy behavioural change campaign across NI Central Government.</p>	<p>→ <b>Complete until further notice</b></p> <p>A behaviour change working group was established in 2019/20 made up of officials from DoF, DfE and DAERA. A behavioural change specialist was appointed in Feb 2020 and produced a wide ranging literature review. Behaviour change pilots due to commence in 2020/21 were delayed due to COVID-19. These are still under consideration. It is equally possible that the approach taken will be revised moving forward to reflect a changing context. This aspect of the programme will be revisited in 2022/23.</p>
<p><b>1.4</b> Legislate for mandatory responsibility if necessary and when appropriate.</p>	<p>→ <b>Not Necessary at this stage</b></p> <p>Whilst legislative responsibility for the promotion of energy efficiency in public sector buildings is the statutory duty of DoF in practice since the adoption of the EMS this is now largely delivered by the Energy Management Unit (EMU) within SIB working in partnership with DfE.</p> <p>It is likely that this matter will evolve moving forward as DfE develops policy associated with the wider Energy Strategy for Northern Ireland.</p>



## Recommendation 2

Adopt a net energy consumption reduction target of 30% by 2030.


 Actions	 Action Status
<p><b>2.1</b> By the end of 2018/19 agree to implement an energy consumption reduction target of 30% by 2030 against a 2016/17 baseline of 1,867 GWh, reviewed annually.</p> <p>Note: the baseline data was improved in 20/21 through further analysis and data collection to produced a revised baseline of <b>2,032 GWh</b>.</p>	<p>→ <b>Complete in 2018/19</b></p> <p>The January 2019 NICS Board approved the EMS establishing a 30% consumption reduction target across all NI central government land and property holdings.</p>
<p><b>2.2</b> Introduce legislation for a mandatory energy consumption reduction target if necessary and when appropriate.</p>	<p>→ <b>Not Necessary at this stage</b></p> <p>The 30% target established under the EMS has been adopted across NI Central Government and progress against it is being reported annually.</p> <p>This situation may evolve as the changing context described in Section 6 of this report develops.</p>



### Recommendation 3

Establish an Energy Management Unit (EMU) to help Departments:



- develop potential energy-saving opportunities
- maximise energy efficiency skills and measures across Government.

 <b>Actions</b>	 <b>Action Status</b>
<p><b>3.1</b> Continue the established Energy Management Forum for information sharing, collaborative working and skills/capacity building to sustain momentum for energy efficiency.</p>	<p>→ <b>Ongoing</b></p> <p>The cross Government Energy Management Forum that was established for the development of the EMS in October 2019 was refreshed in 2020/21 signalling a transition to implementation. Updated ToRs for this group were agreed in 2020/21 and the group is now meeting regularly.</p> <p>In addition the EMU, located within SIB, is now actively supporting Departments and ALBs with a diverse range of energy saving, cost reduction and decarbonisation initiatives.</p>
<p><b>3.2</b> By the end of 2018/19 DfE and DoF to agree with SIB the roles, responsibilities and resourcing of an Energy Management Unit (EMU).</p>	<p>→ <b>Complete in 2018/19</b></p> <p>An EMU within SIB has been established and in 2019/20 was staffed by 3 full-time employees (FTE) (Head of the EMU, a Project Manager and an Energy Technical Specialist). Additional data analytics resource and procurement/commercial expertise is provided via SIB associates and the SIB facilitated Collaborative Arrangement for Energy Market Risk Management Advisory Services.</p>
<p><b>3.3</b> By the end of 2019/20 the EMU will establish project support requirements with Departments, and work with stakeholders to bring forward immediate behavioural change, through low and no-cost measures, where possible.</p>	<p>→ <b>Complete in 2019/20</b></p> <p>This has in part been included under the behavioural change work, and in part is addressed through the day to day interaction of the EMU with Departments and ALBs.</p>





#### Recommendation 4

Mandate annual reporting of energy consumption against a 30% reduction target to the NICS Board and/or the NI Executive.

 <b>Actions</b>	 <b>Action Status</b>
<p><b>4.1</b> From April 2019 Government bodies will be responsible for collecting energy consumption data annually at building/facility level, including across all their ALBs to improve and sustain monitoring, targeting and reporting across Government, and should utilise existing departmental Asset Management Plans to present key energy data and ensure alignment with operational investment initiatives.</p>	<p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>SIB Data analysts have developed a bespoke web-based energy reporting tool (supported by the energy data) which allows all NI Central Government staff to view various building attributes (floor area, energy consumption, building use/occupier etc) from individual building level right up to aggregated universal energy data together with reporting functionality. It allows users to compare their asset with other similar assets in their own Department/ALB as well as the wider NICS on an asset and longitudinal basis. Access to the tool has been provided to all Departments and ALBs and they are using it to record their energy consumption. Four years of energy consumption data (2016/17, 2017/18, 2018/19 and 2019/20) is now available. SIB's EMU is a member of the cross-departmental Asset Management Forum (AMF) and provides advice to that group on how best to display energy data in Departmental Asset Management Plans (AMPs).</p>
<p><b>4.2</b> In 2019/20 the EMU will scope and develop a business case for the roll-out of automatic metering and analytics capabilities initially across the high energy users in the NI Central Government Estate.</p>	<p><b>A two strand approach has been approved for this action by the Programme Board.</b></p> <p>→ <b>Complete in 2019/20</b></p> <p>Strand 1: is the development of a business case for the replacement of non-half hourly electricity utility meters i.e. NIE Networks meters that are manually read. This has been completed and a DfE economist has concluded it delivers VfM.</p> <p>→ <b>Complete in 2020/21</b></p> <p>Strand 2: is the development of a business case for automatic metering and analytics capability. Again, a DfE economist has indicated this delivers VfM.</p> <p>Follow on work to establish a collaborative call off contract to support the delivery of metering systems is ongoing.</p>



Recommendation 4 continued

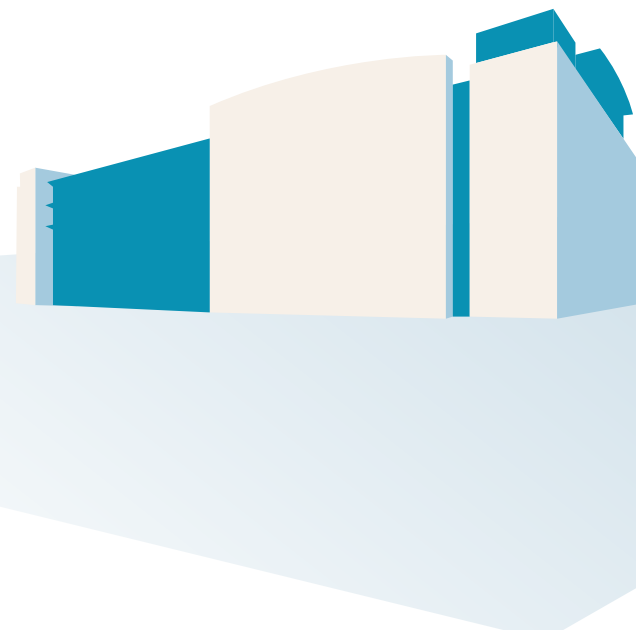
 <b>Actions</b>	 <b>Action Status</b>
<p><b>4.3</b> The EMU will produce an Annual Energy Report to provide the NICS Board and/or the Executive with a means of tracking progress and assessing performance.</p>	<p>→ <b>Complete in 2020/21 and 2021/22</b></p> <p>This second annual energy report has been completed and provided to DfE as sponsor Department for distribution.</p>
<p><b>4.4</b> Prior to the closure of the Carbon Reduction Commitment (CRC) in 2019, DfE and DAERA should agree arrangements to coordinate and publish the annual collection of all NI Central Government large users' energy data, including mandatory emissions recording and reporting, in the same way DfE plans to do for the private sector.</p>	<p>→ <b>Complete in 2020/21</b></p> <p>DAERA Environmental Policy Group has advised that SIB EMU should provide the energy and carbon emissions data for NI Central Government to the DAERA statisticians who co-ordinate the published Greenhouse Gas emissions inventory.</p>



## Recommendation 5

Develop a pipeline of energy reduction projects.



 Actions	 Action Status
<p>5.1 During 2019/20 the EMU will undertake coordination of the development of energy investment opportunities across Government and produce information of a quality suitable for business case preparation to inform future budget planning.</p>	<p>A two strand approach has been approved for this action by the Programme Board.</p> <p>→ <b>Complete in 2020/21</b></p> <p>Strand 1: In order to identify energy investment opportunities, SIB has commissioned comprehensive energy surveys and associated management and investment recommendation reports across 7 schools and 4 court service properties. The survey work commissioned in Q4 FY 2019/20 was completed in 2020/21. The survey conclusions and associated reports will now form the basis of future business cases in 2021/22.</p> <p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>Strand 2: working collaboratively with departments and ALBs a pipeline of potential investment opportunities will be identified and screened annually - ongoing.</p>





## Recommendation 6

### Create an Energy Invest to Save Fund



 <b>Actions</b>	 <b>Action Status</b>
<p><b>6.1</b> By the end of 2019/20 DoF and EMU agree to set investment criteria and benefits appropriate for an Energy Invest to Save approach to funding across Government.</p>	<p>→ <b>Complete until further notice</b></p> <p>SIB commissioned a piece of work to develop appropriate investment criteria to support the delivery of the EMS.</p> <p>The absence of a requirement to account for the cost of carbon within the traditional business case process currently works against Energy Invest to Save opportunities. This action will be revisited once (and if) a Climate Bill for NI ascends into law and with consideration to the DAERA Green Growth Strategy.</p>
<p><b>6.2</b> By the end of 2021/22 the EMU, along with CoPEs, will coordinate a review to develop potential energy efficiency frameworks and energy performance contracting opportunities.</p>	<p>→ <b>Ongoing</b></p> <p>SIB continues to work with partners to explore how we can access more innovative funding and delivery models such as Energy Performance Contracts.</p> <p>Work is being advanced in partnership with DoF CPD to consult the market on transformative funding and delivery models through a market dialogue process.</p> <p>Separately work is being progressed to bring forward a metering call off framework, which will help unlock transformative funding and delivery models.</p>
<p><b>6.3</b> By the end of 2022/23 the EMU shall examine the potential for renewable generation and storage across the Government estate.</p>	<p>→ <b>Pending</b></p> <p>Activity due to commence in 2021/22, which will be reported in third annual report.</p> <p>SIB continues to support ALBs that wish to initiate pilot projects in this area.</p>
<p><b>6.4</b> By the end of 2019/20 the EMU will work with DoF to agree the nature and timing of an “Energy Invest to Save” Fund.</p>	<p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>Work is now underway to ramp up a pilot investment programme in the year ahead with the first tranche of investment under the strategy scheduled for 2021/22.</p> <p>Discussions with DoF are ongoing. SIB is working collaboratively with the DfC on the ‘DfC Climate Action Challenge Fund’ to acquire learnings and insights.</p> <p>Note: a number of dependencies to the ISNI, PfG, Green Growth Strategy, Housing Supply Strategy, NI Energy Strategy, Environment Strategy and the Climate Bill(s) exist, which will influence any final decision regarding an Energy Investment approach. Due to these interdependencies, an approach will not be agreed before 2022/23 – 2023/24.</p>





## Recommendation 7



### Develop better energy buying

 <b>Actions</b>	 <b>Action Status</b>
<p><b>7.1</b> By the end of 2019/20 the EMU will improve collaboration between CoPEs and Departments focussing on the pre-procurement phase.</p>	<p>→ <b>Complete in 2019/20</b></p> <p>There is ongoing progress and a change of mindset since the adoption of the EMS in how Central Government buys energy. In 2019/20 SIB supported DoF CPD to put in place a collaborative arrangement for the provision of external expert energy market advisory services to support CoPEs in terms of precompetition services, contract management, bill validation and a range of other market advisory services. This has resulted in a more collaborative approach during the FY 2020/21 to the procurement of unmetered electricity and natural gas, resulting in the procurement of 100% green electricity.</p> <p>On 1st of May 2020 the EMU, working with DoF CPD, tendered a SIB facilitated collaborative arrangement for the provision of energy market risk management advisory services and on the 1st of August 2020, a new collaborative arrangement was awarded to Horizon Energy Group ('HEG') for risk management advisory services. During FY 2020/21, the SIB facilitated collaborative contract supported most metered and unmetered electricity and natural gas contracts across Central Government and Health Trusts.</p> <p>The risk managed approach delivered savings against the tender baseline for DoF CPD's metered electricity contract during 2020/21. However, for all other energy contracts awarded by DoF CPD and BSO PaLS, the risk managed approach adopted in FY 2020/21 will result in some disbenefit arising in FY 2021/22 due to exogenous market conditions.</p>
<p><b>7.2</b> By the end of 2020/21 the EMU, working with CoPEs and Departments shall facilitate a risk review of buying strategies to include consideration of renewable energy procurement across the Government estate.</p>	<p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>On 1st of May 2020 the EMU, working with DoF CPD, tendered a SIB facilitated collaborative arrangement for the provision of energy market risk management advisory services.</p> <p>On the 1st of August 2020, a new collaborative arrangement was awarded to Horizon Energy Group ('HEG') for risk management advisory services.</p> <p>SIB produced a report into the possibility of the Government estate entering into Power Purchase Agreements, a form of contract to access renewable electricity, and provided this report to the Energy Forum.</p> <p>Further work is anticipated in 2021/22 and 2022/23.</p>



### Recommendation 8

Work in collaboration with relevant partners to ensure building standards contribute to the 30% energy consumption reduction target.

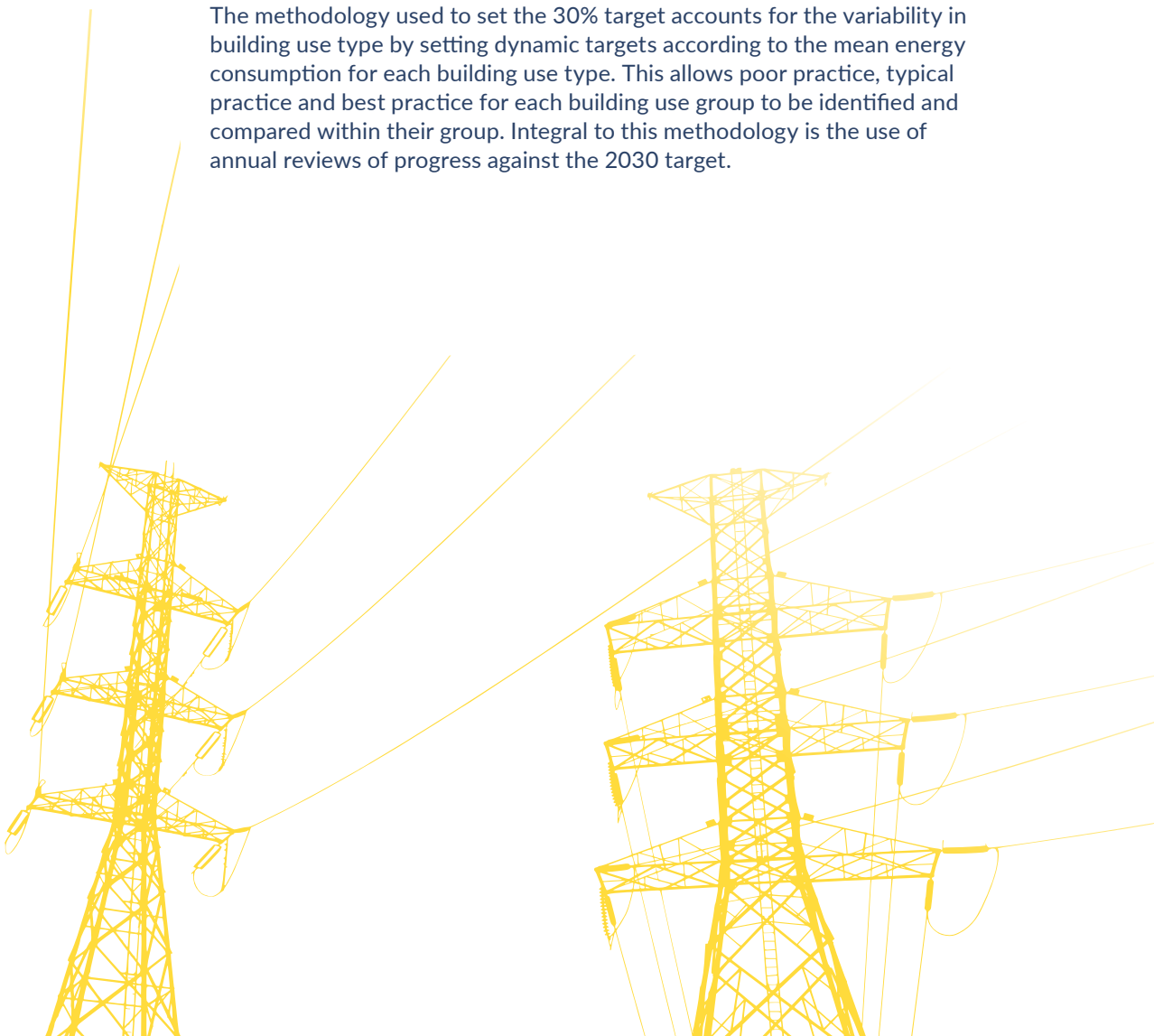
 <b>Actions</b>	 <b>Action Status</b>
<p><b>8.1</b> By the end of 2019/20 CoPEs should include operations and facilities management staff at pre-business case stage to ensure energy reduction considerations are embedded into the design upfront.</p>	<p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>The results from the low energy non-domestic buildings study completed in 2020/21 has provided evidence to facilitate an evidence based discussion.</p> <p>Work will be taken forward in 2021/22 to develop a Client Guide to Net Zero Carbon Outcomes for non-domestic public sector buildings in NI.</p>
<p><b>8.2</b> By 2021/22 the EMU will in collaboration with CoPEs and Departments, undertake a review of energy specifications, standards and guidance in use across Government essential to support and sustain the delivery of the 30% energy consumption reduction by 2030.</p>	<p>→ <b>Ongoing / Advanced in 2020/21</b></p> <p>In March 2020 SIB delivered a piece of work that provides an evidence base for low energy non-domestic public buildings in NI. SIB is collaborating with Scottish Futures Trust on this work who are in the process of concluding a very similar exercise. The findings have been shared with DoF CPD and a further piece of work will now be taken forward in 2021/22 to develop a Client Guide to Net Zero Carbon Outcomes for non-domestic public sector buildings in NI.</p>

## 5. ENERGY DATA UPDATE

A key element of the Energy Management Strategy for NI Central Government is ongoing data collection and analysis. The '30% energy consumption reduction target by 2030' that has been adopted across NI Central Government is based on a 2016/17 energy consumption dataset. It is derived from the mean energy consumption for each building use type using targeting and forecasting techniques.

Each year, the data collected is fed into a modelling tool (complete with a user interface) helping government to develop a detailed longitudinal dataset which provides valuable insights into emerging consumption, cost and decarbonisation trends, as well as providing the ability to track performance at both a building and organisational level. The data collected since 2016/17 has confirmed the significant diversity across building use groups in terms of fuel mix and energy consumption as well as laying bare where progress is and is not being made.

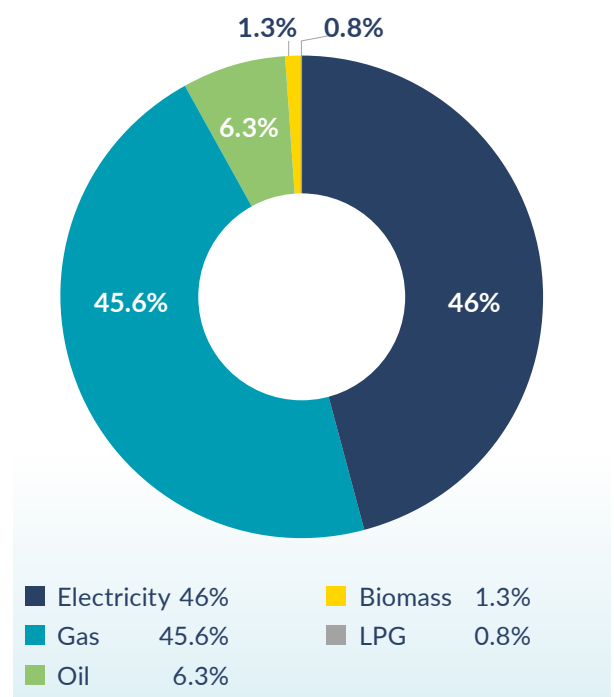
The methodology used to set the 30% target accounts for the variability in building use type by setting dynamic targets according to the mean energy consumption for each building use type. This allows poor practice, typical practice and best practice for each building use group to be identified and compared within their group. Integral to this methodology is the use of annual reviews of progress against the 2030 target.



## CURRENT POSITION – ENERGY CONSUMPTION DATA

Data collection has now been ongoing for 4 years and we have a robust, validated and verified dataset that can now be statistically analysed to derive trends, patterns and insights and accessed by asset owners through the data tool. The collected consumption data has been validated against supplier data (primarily electricity and gas supplier data) to further improve accuracy and reliability, and where possible it was collected directly from suppliers. This process has added an increased confidence level to the data that ensures that any spurious readings could be quickly identified, investigated and rectified. With a four-year longitudinal dataset now available, more in-depth statistical validation has been possible as part of a continuous improvement process, which has led to a more accurate representation of the 2016/17 baseline figure. The updated 2016/17 baseline stands at 2,032GWhrs. The fuel split for NI Central Government in 2019/20 is set out below in Figure 1.

Figure 1:  
2019/20 fuel split across NI Central Government



## EMERGING FINDINGS

The statistical analysis of 4 years of data has identified the following:



**A 6% reduction** in overall energy consumption in 2019/20 compared to the updated 2016/17 baseline figure (from 2,032GWhr to 1,911GWhr)



**A 49.4% reduction** in the use of oil across NI Central Government in 2019/20 compared to 2016/17 (from 239GWhr to 121GWhr)



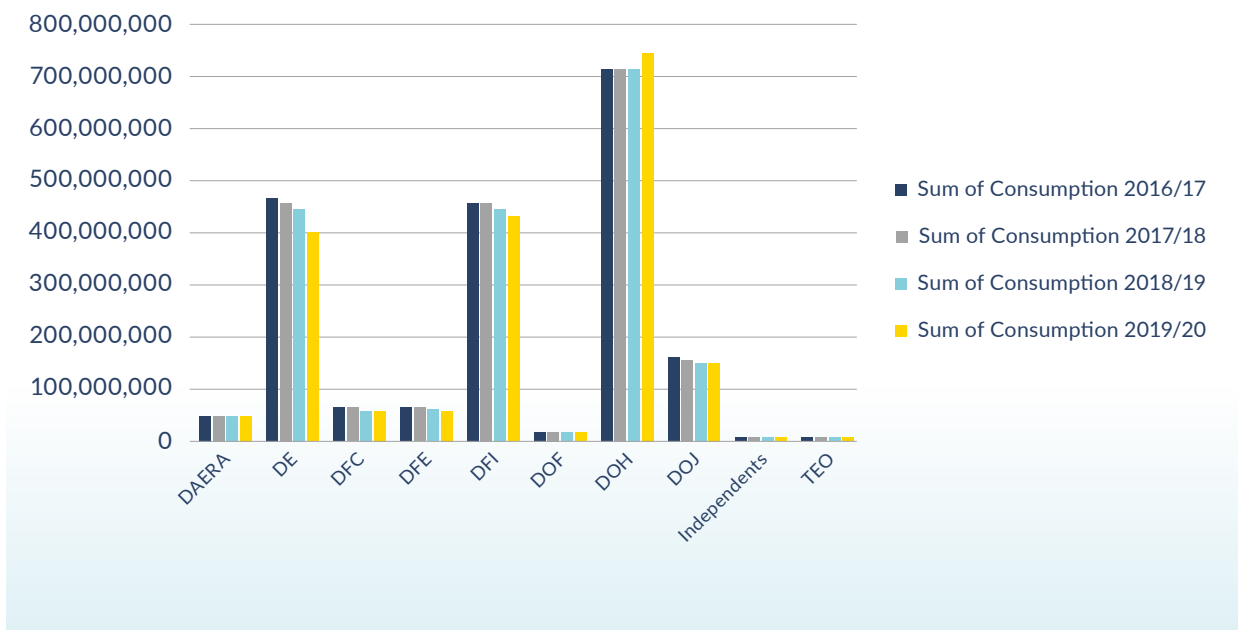
**A decrease of 3.3%** in the use of LPG across NI Central Government in 2019/20 relative to the 2016/17 baseline (from 15.1GWhr to 14.6GWhr)



**A reduction of 30.5%** in carbon emissions across NI Central Government in 2019/20 relative to the 2016/17 baseline (from 605,060 tonnes to 420,565)

It is important to note that the energy consumption data that has been collected has not been adjusted for weather or occupancy and the trends identified are based on analysis of raw energy consumption data. When minor data gaps occur, data is cloned from a previous year so that trends can be established.

Figure 2:  
Consumption KWh (all energy) by Department 2016/17 through to 2019/20



## DEPARTMENTAL POSITIONS

Indicative comparisons of raw consumption data by Department indicate that the biggest year on year reduction in consumption in 2019/20 was achieved by DE, which achieved a reduction of 58.7GWhr<sup>1</sup> in 2019/20 versus 2018/19. There is anecdotal evidence to suggest that this may be due, in part, to the effects of COVID-19 on school activity in February and March 2020.

DfC, TEO, DfE, DoF, DfI and DAERA have also seen reductions in total energy consumption while DoH and DoJ have seen small year on year increases in total energy consumption in 2019/20.

Further validation of the DoF owned and occupied buildings is required to ensure that Departmental allocations are correctly allocated. The graph above in Figure 2 sets out the indicative position at this point, but may be subject to review following further validation.

<sup>1</sup> Based on returns from controlled, integrated, catholic maintained, voluntary grammar schools, grant maintained integrated and Irish language schools.

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## BENCHMARKING

A more accurate representation of comparative Departmental performance is to analyse the energy use intensity in kWh/m<sup>2</sup> for each Department. This work is currently ongoing, and it is to note that the accuracy of this measurement is greatly impacted by the accuracy of the floor area provided by Departments. It is hoped that in the year ahead the work led by DoF to advance a central Government Land and Property Register (GLPR) for NI will in due course help address this point as a more accurate and comprehensive suite of data for the estate is acquired and validated.

As previously stated, 2020/21 was an exceptional year and we would therefore not expect the consumption data to benchmark favourably as the general patterns of consumption will have been uncharacteristic of normal operating conditions due to COVID-19.

Moving forward the school sector (primarily the voluntary grammar schools and grant maintained integrated schools) may have to be removed from the analysis due to uncertainty about their data returns, or alternatively measures mandated by the department to ensure complete, timely and accurate returns in the future.

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## CARBON EMISSIONS

During the period over which data has been collected (2016/17 – 2019/20) decarbonisation of the electricity grid has been proceeding at pace. In line with the more accurate representation of the 2016/17 baseline figure for all fuels, the original CO<sub>2</sub>e estimates for NI Central Government have also been further refined. Applying the UK Government's greenhouse gas reporting factors gives a reduction in carbon emissions of approximately 30.5% from 2016/17 – 2019/20. This is in part attributable to the decarbonisation of electricity over the time period due to higher levels of renewable electricity generation as well as the ongoing movement away from oil based heating, with 6% due to reduction in overall energy consumption.



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## ENERGY COST UPDATE

Energy costs have been collected over the 4 year period 2016/17 – 2019/20, although some organisations were unable to provide robust figures for their energy costs (See table 2 below). Broadly speaking it appears that from 2016/17 to 2019/20 the increasing price of natural gas in the All-Island market had driven the steadily increasing cost of energy. This would be in line with the increase in fuel costs that was seen globally during this period and increases in use of system charges (such as carbon tariffs) and other non-fuel costs. Organisations that followed a market driven approach to buying their energy, or were exposed to increases in the price of carbon during this period, saw increases in costs accordingly.

2020 saw the introduction of the DoF CPD risk managed electricity contract, which, along with the softening of global gas prices, meant energy prices reduced compared to the previous year.

Table 2. Energy Costs (on average) over the 4 year period 2016/17 to 2019/20

Financial Year	Spend (£m)	Total Consumption (GWhrs)	Cost (£) per GWhr
2016/17	£122.68	2032	£60,374
2017/18	£132.54	2025	£65,454
2018/19	£144.62	1938	£74,623
2019/20	£133.70	1910	£70,000

## COST BY FUEL TYPE AND ORGANISATION

From the cost data collected from all procurement organisations it can be seen that electricity (both metered and unmetered) accounts for the vast majority of energy costs at approximately 69% each year. This is followed by natural gas at approximately 22% and then oil at 9%. As detailed above in the Update On Actions section, SIB and DoF CPD recently awarded 2 significant contracts. The first was to procure a specialist energy advisor who, along with DoF CPD, assisted with the hedging of the DoF CPD

awarded metered electricity contract which will see two year electricity procurement more actively managed. A similar approach will be applied to all Health & Social Care Trusts' energy contracts and DoF CPD awarded unmetered electricity and natural gas contracts in 2021/22. The aim of actively managing energy procurement is ultimately to reduce costs incurred by central government. However, significant increases in commodity prices since contract award mean central government is facing a cumulative disbenefit for FY 2020/21.

Table 3. Cost by Fuel Type 2016/17 to 2019/20

Fuel Type	2016/2017 (£m)	2017/2018 (£m)	2018/2019 (£m)	2019/2020 (£m)
Biomass	0.92	0.82	0.86	0.34
Electricity	71.86	79.25	86.91	84.05
Gas	29.29	27.43	30.05	28.86
LPG	0.08	0.04	0.57	0.67
Oil	10.97	13.45	14.64	12.0
Unmetered electricity	9.55	11.56	11.60	7.75
<b>Grand Total (£m)</b>	<b>122.68</b>	<b>132.54</b>	<b>144.62</b>	<b>133.7</b>

In terms of which organisation spends the most on energy it can be seen that Business Services Organisation (BSO) has the largest spend in 2019/20 at approximately 31% of the total costs. This is followed by NIW at 24%, Education at 20% and then DoF CPD at 17%.



**Table 4. Cost by CoPE 2016/17 to 2019/20**

CoPE	2016/2017 (£m)	2017/2018 (£m)	2018/2019 (£m)	2019/2020 (£m)
BSO	36.04	39.88	44.47	42.0
DoF CPD	30.92	27.13	28.17	22.92
EA	23.98	28.40	29.37	26.68
NI Water	25.15	28.25	32.62	32.5
PSNI	4.40	6.57	7.26	6.44
Translink	2.19	2.31	2.73	3.1
<b>Grand Total (£m)</b>	<b>122.68</b>	<b>132.54</b>	<b>144.62</b>	<b>133.7</b>

## FUTURE DATA COLLECTION

Going forward the plan remains to collect as much energy data as possible directly from energy suppliers. For the 20/21 data collection exercise, which will commence in September 2021, the electricity element of the data collection exercise can largely be collected directly from suppliers meaning that organisations will primarily have to report their oil, gas, LPG and biomass usage manually. This will speed up the process and lessen the administrative burden on organisations.

The new NI Central Government electricity contract awarded in April 2020 requires the new supplier to provide DoF CPD and SIB with monthly electricity usage reports, this can potentially be incorporated

into the energy management tool to allow almost complete automation of the data collection of NI Central Government's electricity use from then onwards. It is hoped that this will also be a requirement of future gas and oil purchasing contracts to ensure the collection of these fuels is automated as well.

EMU continues to collaborate with LPS on their development of the NI Asset Register and with DoF on their Concerto system as they plan for a digitally enabled asset management function within Central Government and a digitally enabled repairs and maintenance service across the parts of the estate where DoF provides such services.

## 6. EVOLVING CONTEXT

As governments across the UK and Europe continue to increase efforts to respond to the Climate Emergency and the opportunity presented by the new low carbon (Green Growth) economy, the policy context in which the Energy Management Strategy operates continues to evolve.

Looking back over the last 12–24 months, notable developments, which influence the context in which the EMS is delivered, include:

- **1st May 2019**  
the UK declared a climate and biodiversity emergency
- **9th May 2019**  
Ireland declared a national climate emergency, which has implications for the EMS given the nature of the Single Electricity Market (SEM)
- **11th June 2019**  
the UK government announced a decision to enshrine in law its commitment to reach net zero carbon emissions by 2050
- **April 2021**  
the UK government made a commitment to set the world's most ambitious climate change target into law to reduce emissions by 78% by 2035 compared to 1990 levels
- **July 2021**  
the EU published proposals to introduce a Carbon Border Adjustment Mechanism which will put a carbon price on imports of a targeted selection of products from 2026 (iron and steel, cement, fertiliser, aluminium and electricity generation). If it goes ahead, this may influence the UK's carbon price.

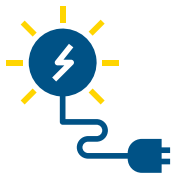
Looking ahead over the coming 12–24 months notable developments will potentially include:

- Evolving procurement policy. From September 2021, the Whitehall Procurement Policy Note 06/21 will come into force. This requires all suppliers who bid for government contracts, with a value exceeding £5m, to demonstrate that they are taking action to reduce their carbon emissions. This will have implications for supply chains across the UK and Europe and will potentially impact upon the cost of goods and services even if such requirements are not mandated in NI. Such developments may impact upon the viability of the EMS investment pipeline and commodity costs more generally, including fuel/energy costs.
- The debate regarding the Northern Ireland Climate Bill(s) is likely to progress.
- DfE will publish the Energy Strategy for NI and Action Plan to 2030.
- DoF planned uplift to building regulations.
- DAERA will publish the Green Growth Strategy and Climate Action Plan for NI.
- New commitments following COP 26.

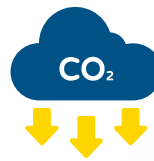
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## 7. EMU LOOKING AHEAD

Looking ahead, in addition to the agreed EMS action plan, in the next reporting period the EMU will consider:



2020/21 has provided a period of unprecedented and ongoing high-energy commodity prices resulting in notable cumulative disbenefits for FY 2020/21 and FY 2021/22. The EMU will explore new alternative commercial arrangements to help avoid or mitigate such disbenefits in the future.



Recognising that many organisations in central government are now moving beyond energy reduction and are seeking to progress decarbonisation strategies and action plans. The EMU will support and complement this activity with a view to advancing the objectives of the EMS and the general requirement to decarbonise the Central Government estate.

## 8. STAFFING

In 2020/21 there were 2 FTEs in the Energy Management Unit

- **Head of the EMU**
- **Energy Technical Specialist**

Additional data analytics resources, procurement and commercial expertise was provided via SIB associates and the SIB facilitated Collaborative Arrangement for Provision of Energy Market Risk Management Advisory Services contract plus the SIB Asset Management Professional Services Framework. In April 2020, the EMU's Project Manager returned to the NICS.

