

# Assembly Commission **Environmental Report 2016-17**

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July 2017



**National Assembly for Wales**  
Assembly Commission

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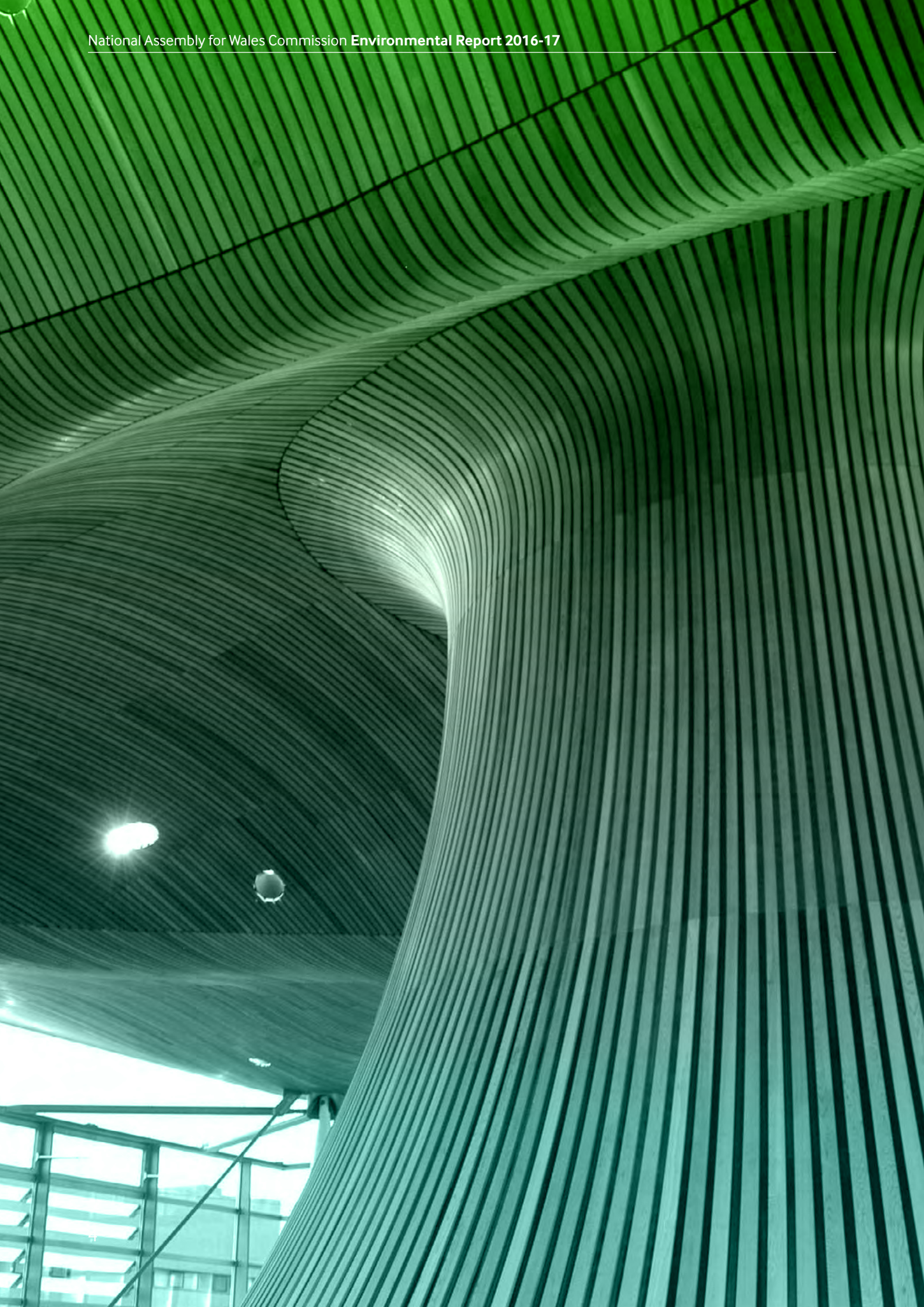
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# Contents

<b>Foreword .....</b>	<b>7</b>
<b>Summary of Performance.....</b>	<b>9</b>
<b>Improvements to the Estate .....</b>	<b>11</b>
<b>Progress against targets.....</b>	<b>13</b>
Energy .....	15
Waste .....	16
Water.....	17
Travel.....	18
<b>Environmental Management.....</b>	<b>20</b>
<b>Pollution Prevention.....</b>	<b>22</b>
<b>Management Review .....</b>	<b>23</b>
<b>The Year Ahead .....</b>	<b>24</b>
<b>Appendix A: Data Tables .....</b>	<b>26</b>
<b>Appendix B: National Assembly for Wales Environmental Policy 2016-17.....</b>	<b>28</b>



# Foreword

In our tenth Annual Environmental Report we are proud to report a continuing trend of reducing our environmental impacts.

We are making good progress towards our long-term goals, with investment in the estate paying off with reduced energy demand and a smaller carbon footprint.

This last year has seen a period of significant change; seeing the dissolution of the Fourth Assembly, an election and new Fifth Assembly being formed. Work has continued to refresh the estate and provide updated committee facilities. We were able to improve our capacity as well as accessibility to the public, whilst incorporating environmentally-friendly features.

Our environmental system is taking a longer-term approach that helps cater for these changes within a five year Assembly cycle. Our work next year will continue in this vein by focussing on monitoring and benchmarking activities to help us make the best of our resources.



**Caroline Jones AM**

Commissioner with responsibility for security and Assembly resources.



**Manon Antoniazzi**

Chief Executive and Clerk of the National Assembly for Wales

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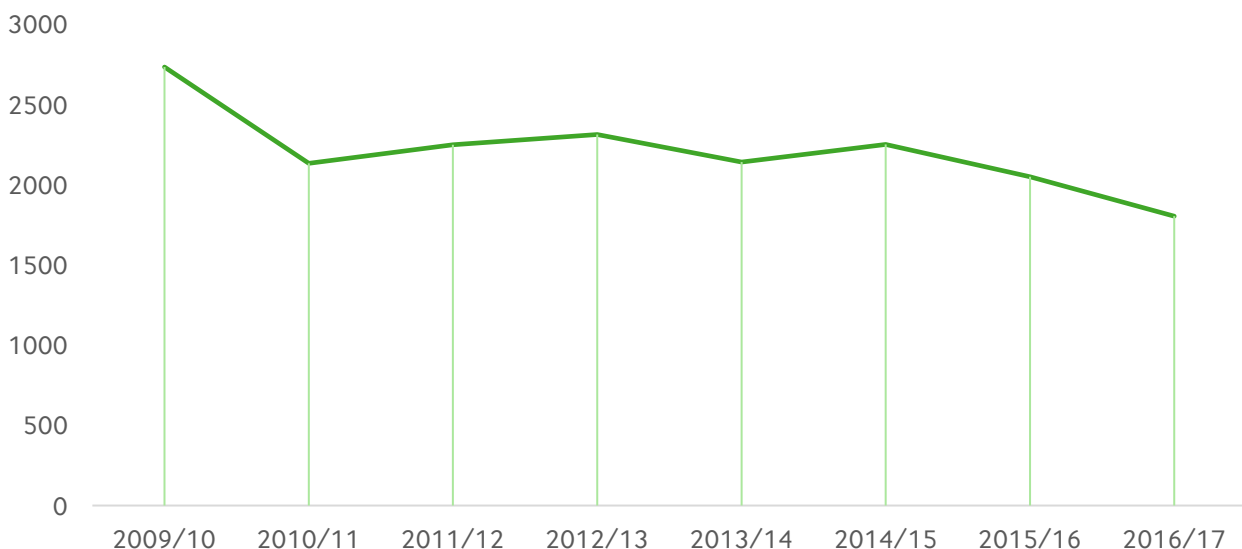
# Summary of Performance

Having reached the end of the second year of our five-year sustainability plan, it is pleasing to be able to report a continuing downward trend in our environmental impact and good progress against our targets.

Our net emissions are down, including our energy emissions, which is the significant contributor to our carbon footprint. We have seen the impact of the transition from the Fourth to the Fifth Assembly reflected in a slight increase in total waste production and a reduction in travel emissions. These fluctuations are to be expected and we will work to incorporate these cyclical changes into our planning and forecasting so that we can predict and compensate for year-to-year changes within them.

Better monitoring and analysis is something we have worked on during 2016/17, and will continue to improve during this next period. We use this data to identify opportunities to make the efficiency savings that are essential in achieving our ambitious goals, such as the further 30% reduction in energy emissions. Benchmarking is an essential part of that process and we have begun to include relevant data in our reporting. For example, we have been looking at the number of visitors to our estate and how this impacts on the use of water and how temperature changes impact on heating and cooling demand. Benchmarking is an area that we will be working with the other devolved legislatures on during 2017/18.

## Carbon footprint (tCO<sup>2</sup>e)



**Graph showing the Assembly's carbon footprint (one of our key indicators)**



New committee room,  
Tŷ Hywel.



New waiting space,  
Tŷ Hywel.



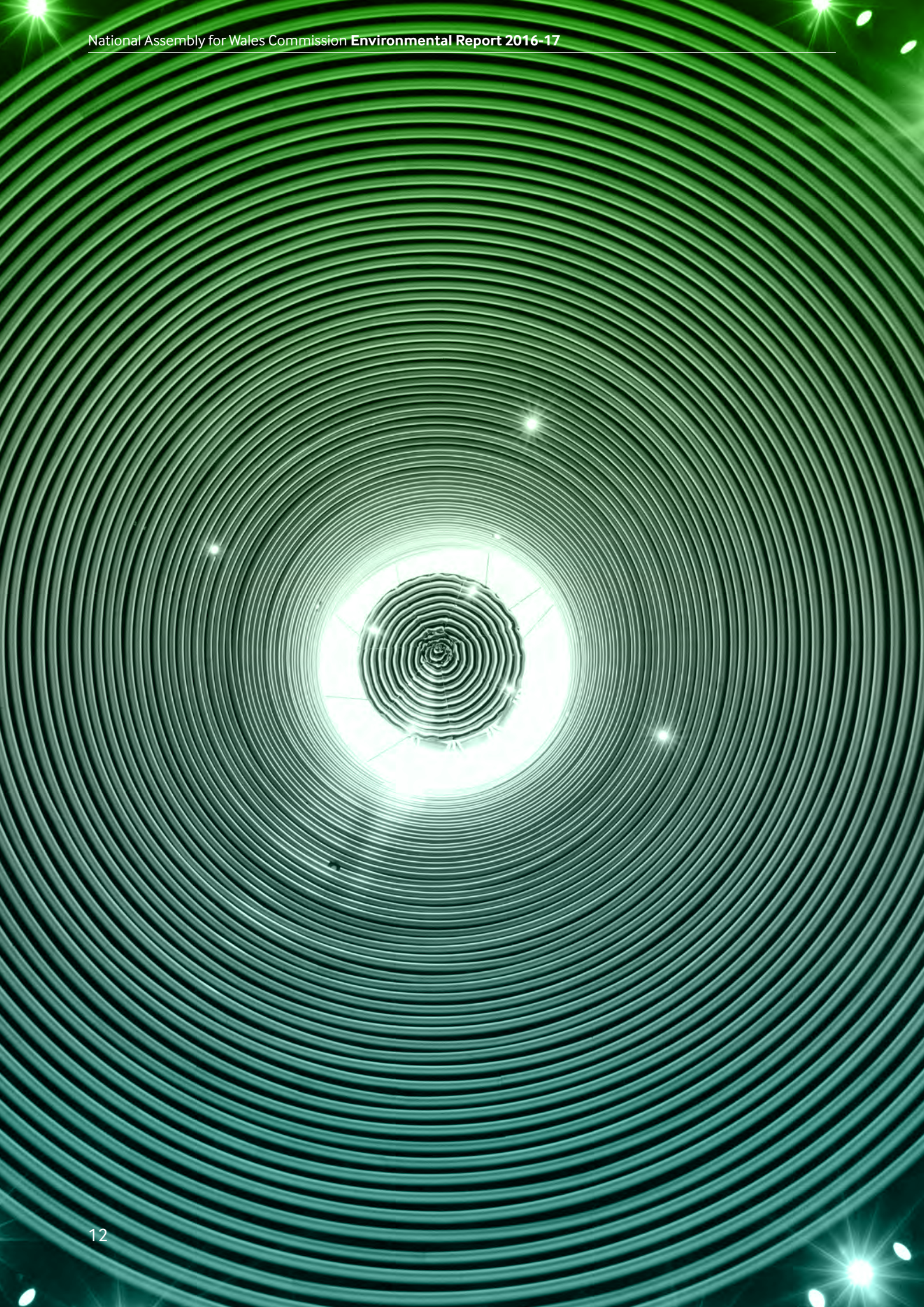
New committee room,  
Tŷ Hywel.

# Improvements to the Estate

Initiatives implemented over the last year have been a mixture of physical improvements to the estate, as well as some behavioural changes.

They include the following:

- replacement of the lighting in Siambr Hywel to LED units;
- replacement of all the emergency lighting in Tŷ Hywel with LED units;
- replacement of some of the boilers in Tŷ Hywel with more energy efficient equipment;
- replacement of the lighting in Tŷ Hywel lifts with LEDs;
- as part of the refurbishment of the ground floor of Tŷ Hywel to provide new committee rooms and waiting space, we have incorporated sustainable features including LED lighting, more efficient heating and cooling, and flooring made entirely from recycled tyres;
- internally we have improved awareness of the functionality of our buildings, including helping staff better understand the heating and cooling features of both Tŷ Hywel and the Senedd; and
- we are also working on improving monitoring and benchmarking - to ensure we get the data we need to manage our buildings more effectively and compare utilities use against changes in staff and visitor numbers.



## Progress against targets

Our targets have been amended to look at longer term objectives across Assembly periods.

These changes will 'iron-out' the fluctuations in demand for utilities experienced throughout our five-year Assembly cycles, and will allow us to identify and implement improvement projects with longer payback periods. Our targets take us through to the 2020/21 election year and it is pleasing to be able to report significant progress as shown below:

Objectives	Targets	Progress
Reduction of carbon footprint	Reduce energy emissions by further 30% by 2020/21 (based on 2012/13 baseline)	20% down on baseline year. 6% reduction since last year.
	Improve the efficiency of business-related car travel by 10% by 2020/21 (on 2014/15 baseline)	Efficiency has improved 8% since the baseline year.
Reduce the impact of waste	Achieve zero waste-to-landfill by 2020/21	Currently operating at 96% landfill diversion.
	Transition from waste management to sustainable resource management by 2020/21	In progress. Working with suppliers during 2016/17.
Reduce water use	Reduce the consumption of potable water across the estate by 5% by 2020/21 (based on 2014/15 baseline)	Down 13% this year compared to baseline.

Our energy emissions figure continues to reduce, although we appreciate it will be more difficult to continue this reduction as we progress through the latter years of the target period. We have made physical improvements to the Estate to improve energy efficiency, and have more planned.

We have seen a marked improvement in the efficiency of business-related car travel during 2017-18, another area which we plan further work on.

Whilst the tonnage of waste produced rose slightly, largely due to housekeeping associated with the end of an assembly term, our *diversion from landfill* figure has increased further and is now up above 96%.

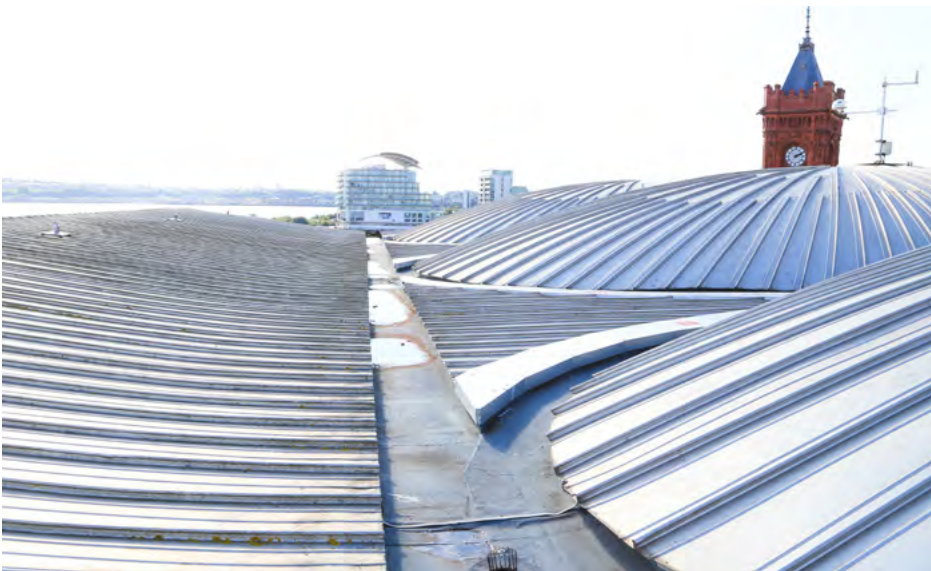
Water use has seen a slight increase this year compared to 2015/16, but one that is linked to the increase in people using our buildings and still well within target. This is one area we hope to progress through 2017-18.



Electricity use continues to fall



Gas use has risen slightly this year



**Top:** Recycling facilities in the Senedd.

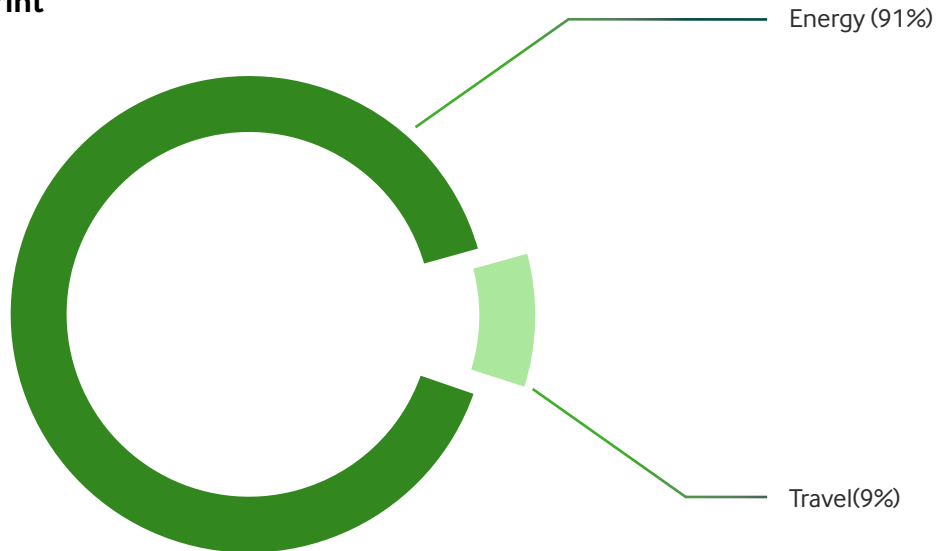
**Middle:** Collecting rainwater from the Senedd roof.

**Bottom:** Natural light being channelled into the Siambr through the funnel.

## Energy

As the diagram below shows, energy is by far the largest contributor to our carbon footprint. This is to be expected from an organisation with largely administrative duties, and means we focus our attentions in this area as a matter of priority.

### Carbon Footprint



#### Composition of the Assembly's carbon footprint for 2016-17 (N.B. water and waste both <1%)

Electricity is the largest component of our energy footprint, accounting for around three quarters of these emissions. This is used to power not only the visible services such as lighting and ICT, but also the air-conditioning units, pumps and fans which move water and air around the buildings and keep the working environment comfortable. We have continued tackling both the visible and less-visible aspects this past financial year; again installing further LED lighting and working on the rolling replacement of air-conditioning and fan coil systems. As a result, despite increases in staff and visitor numbers, we are seeing emissions for electricity down 11% over the last year.

Gas is used primarily for space heating, as well as providing hot water. Given the sustainable design features of the Senedd, this is diversified for that building to include both a ground-source heat pump (GSHP) and a biomass boiler. We try and maximise the use of the biomass in the Senedd wherever possible as it is a near-carbon-neutral fuel. The wood chip it uses is also sustainably-sourced from forests around the UK. Further work on improving efficiency has however been off-set by an increase in *degree days*<sup>1</sup> and a prolonged period of down-time for the biomass boiler. This has resulted in an increase in gas use this year; a rise in emissions of 23% for this part of our footprint.

Work will continue for future years to install more LED lighting and continue refurbishment of the air-conditioning systems. We are also improving monitoring through working with our FM contractor to better understand where energy is used and where it can be saved.

<sup>1</sup> Degree days are calculated by multiplying the difference between outside temperature and a desired minimum level (normally 16°C for offices) by the number of days that difference occurs.



We are getting better value for old ICT equipment

## Waste

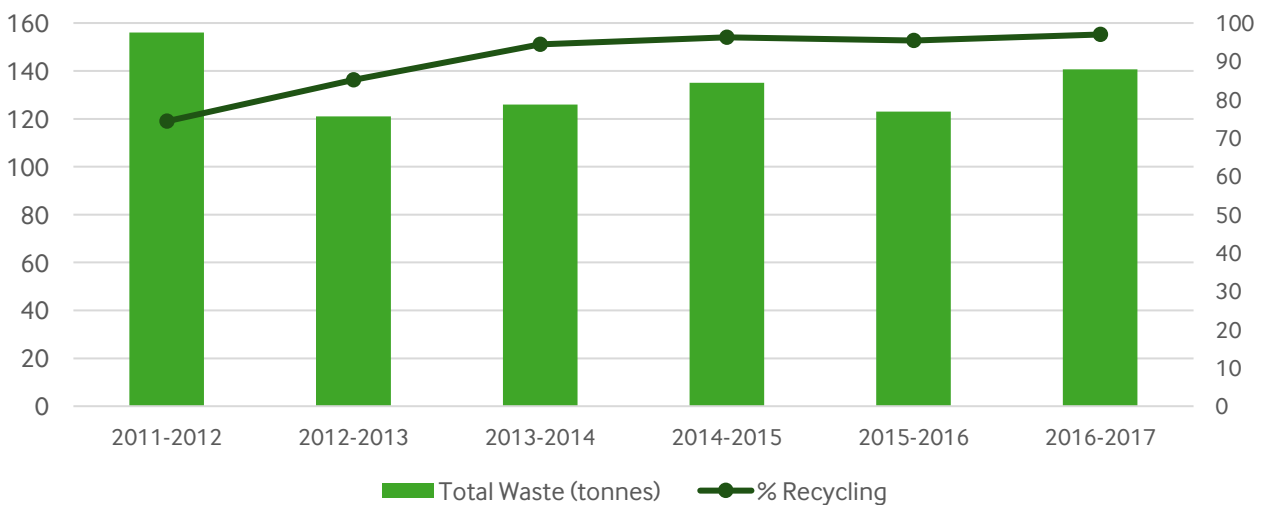
We have seen an increase in total waste production this year, but also a continued increase in our 'diversion from landfill' amount. Whilst we were in a period of dissolution for some of the year, the total waste tonnage figure increased due to office clear-outs and general housekeeping at the end of the last Assembly. More of this waste than ever is being diverted from landfill though, with our diversion rate now just above 96%.

As is to be expected with improvements in technology and tightening of legislation, hazardous waste has dropped significantly over time. With the phase-out of CRT monitors and other older equipment, our hazardous waste stream is now largely consisting of fluorescent tubes and PC base units. All of this equipment is still collected as WEEE (waste electrical and electronic equipment) but we have been working to improve the value the Assembly receives for waste such as redundant ICT equipment. We have recently been trialling new contractors; to ensure best value is received whilst ensuring legal compliance.

We continue to promote recycling facilities throughout our buildings, and will be looking to work with suppliers over the forthcoming year to reduce packaging waste. In particular we are due to trial returnable packaging, as used in the manufacturing industry.

Paper use is down again this year, perhaps to be expected in a year with an Assembly transition; however we are continuing to work to minimise paper use across the estate, for example by the introduction of electronic billing and receipting. This will not only reduce the volume of paper handled, but also improve the ease with which we can record monitoring data. All the paper we do purchase is still either FSC-certified or 100% recycled-content.

**Total Waste (t) vs Total Waste Diverted from Landfill (%)**



**Graph showing our total waste production and the percentage diverted from landfill**





Water use has increased slightly, in-line with building users.

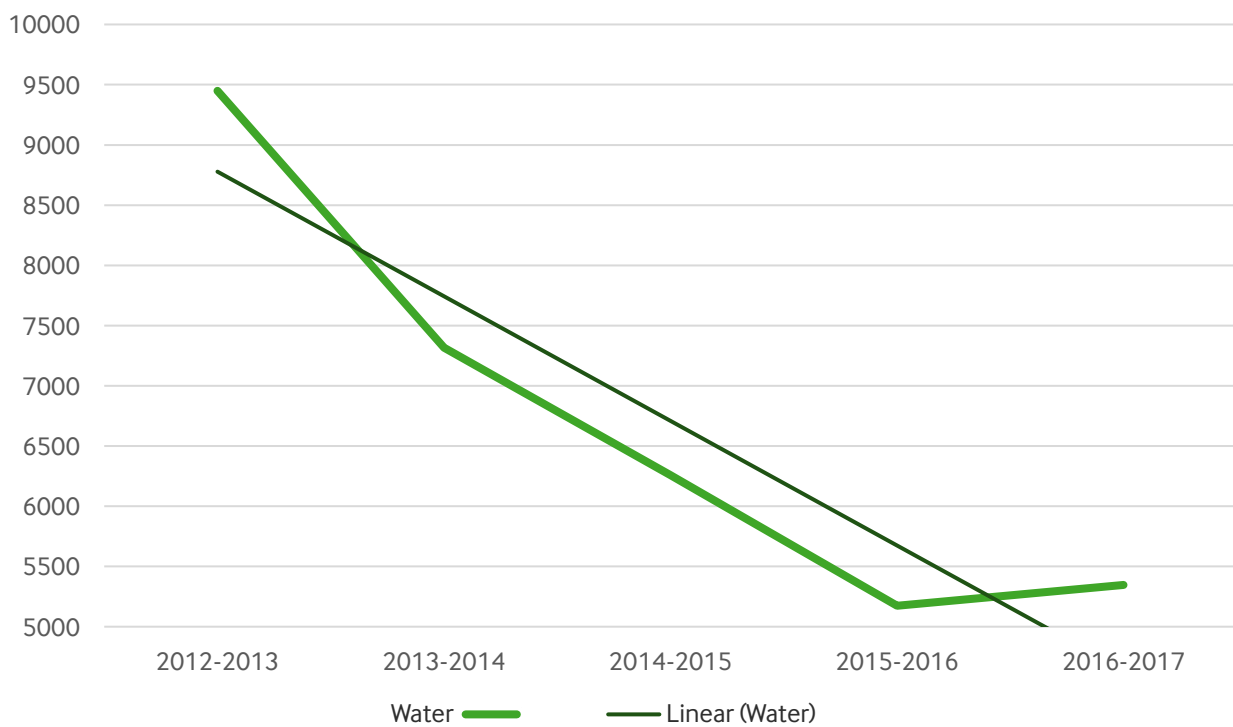
## Water

Water is used throughout our Estate for drinking and washroom facilities, and for catering including the canteen facility in Tŷ Hywel and smaller catering facilities in the Pierhead and Senedd.

Whilst we minimise its use wherever possible, water is one area where we have seen a 3% increase in use over the past twelve months. We know that increases in water use are largely reactionary, so we see an increase in water use in the Pierhead when events occur in the Bay area, and this is reflected in our baselining data. This 3% increase in water use can be seen in the context of a 2% increase in visitor numbers and a 4% increase in staff numbers.

Given water use is an area which has not seen any recent development, we would expect to see this increase in-line with an increase in building users. Water will be given a further focus during 2017-18.

### Total Water Consumption across the National Assembly for Wales (actual and trend), m<sup>3</sup>



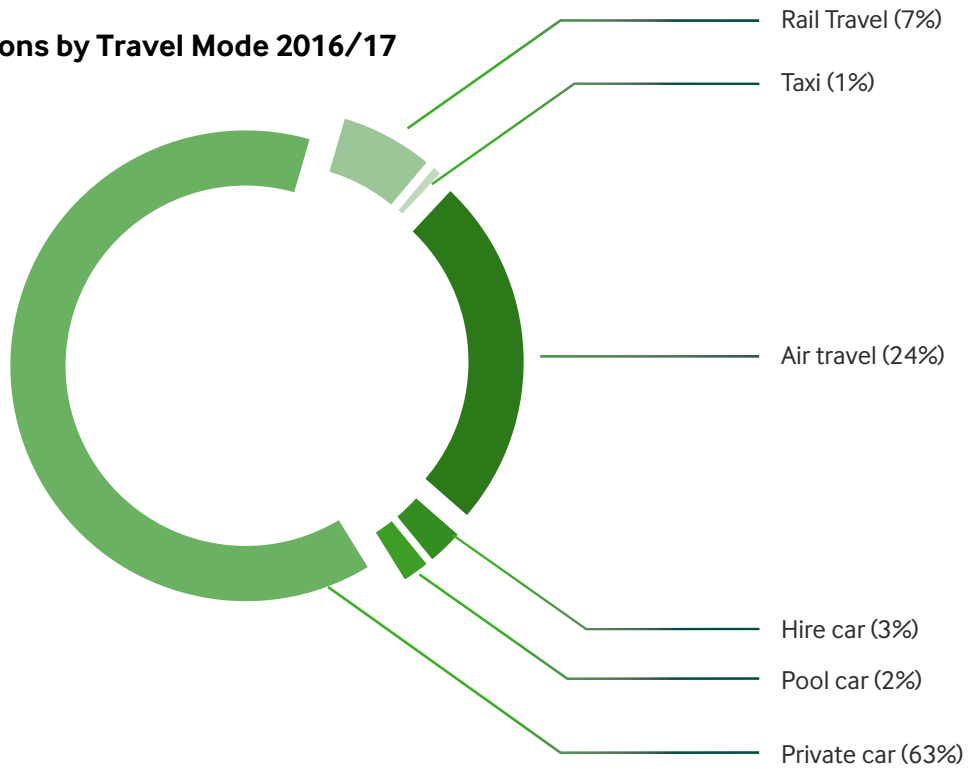
Graph showing mains water use by the Assembly's estate

## Travel

Gross travel and travel spend are both down this year, as is to be expected in a period involving an Assembly transition. Our target for business travel by 2020/21 is an improvement in efficiency of 10%, something we are already making good progress towards. We are seeing a move away from more polluting vehicles in both the business and private fleet, something we are working with our suppliers to encourage. Indeed one exciting area of technology we hope to investigate and encourage during 2017/18 is that of near-zero emissions vehicles, such as hydrogen and electric cars.

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### Carbon Emissions by Travel Mode 2016/17

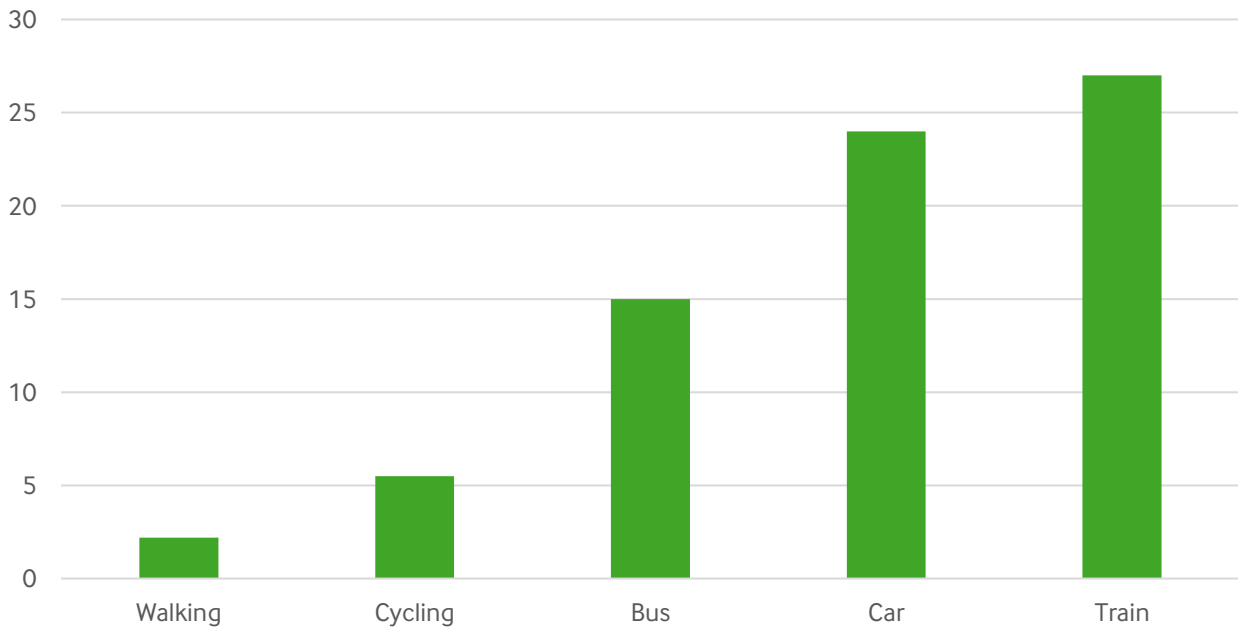


### Composition of the carbon footprint of Assembly business travel

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During the winter of 2016-17 we conducted a travel survey amongst our staff to find out more detail about their commuting to and from work. We do this every two years in order to calculate the carbon footprint of commuting (part of 'scope 3' emissions), as well as to find out how we can better encourage people to more sustainable travel means. The graph below shows some interesting statistics about how far people travel by each mode.

### Distance by Mode (miles)



### Average round-trip commuting distance by different modes for people working in Cardiff Bay estate

We already knew cycling was a popular choice for commuters to our Cardiff Bay Estate as Cardiff is one of the flattest cities in the UK. We have good facilities for cyclists, including covered bike storage and on-site shower rooms. Some more space for bike storage was one piece of feedback received, along with these other key points:

- driving is still a popular choice, used by around half our staff, with reasons for doing so focussing on convenience and cost, with an average round-trip in the car covering 24 miles (as shown in the graph above);
- there is scope to encourage more efficient car use in the grey fleet though; many respondents said they would consider using electric vehicles if facilities were available on the Assembly estate to charge them; and
- awareness of sustainable practices was shown to be high amongst our staff, with over half being aware of the travel hierarchy and the vast majority saying they would use more sustainable means of travel if feasible to do so.

# Environmental Management

As part of our drive to maintain excellence in environmental management and be at the forefront of the Welsh public sector, we have been looking at developing our EMS (environmental management system) over the next year to a new standard. Similar to our plans for benchmarking against the other devolved administrations, we are also looking at their environmental systems and where best practice can be shared.

## Impacts

After re-evaluating our environmental impacts last year, we have kept the ratings the same for this period. The risk figure for each aspect is calculated using the scale of the impact and the probability of occurrence, taking into account legislation and the level of control offered. Impacts with a score of twenty five or above are then deemed 'significant' and are prioritised by the rest of the environmental system, for example our objectives and targets.

The Assembly has the following significant impacts:

Aspect	Activity	Impact	Significance rating
Use of electricity	Lighting the estate	– Resource depletion	35
		– Indirect air emissions	
		– Carbon footprint increase	
Use of electricity	Powering office equipment	– Resource depletion	35
		– Indirect air emissions	
		– Carbon footprint increase	
Waste production	Disposal of general waste	– Pollution risk	35
		– Use of landfill space	
Transport	Business travel	– Carbon emissions	30
		– Health risk	
		– Resource depletion	
		–	

Aspect	Activity	Impact	Significance rating
<b>Transport</b>	Commuting by staff	– Pollution risk	30
		– Carbon emissions	
		– Health risk	
		– Resource depletion	
<b>Use of electricity</b>	Cooling- operation of air-conditioning equipment and fan coils	– Resource depletion	28
		– Indirect air emissions	
		– Carbon footprint increase	
<b>Use of gas</b>	Heating our buildings	– Resource depletion	28
		– Air emissions	
		– Carbon footprint increase	
<b>Use of contractors</b>	Maintenance and refurbishment projects	– Pollution risk	28
		– Risk of incorrect disposal route (e.g. landfill)	
		– Waste production	
		– Procurement of new products/ equipment	
		– Possible carbon impact	

As can be seen our key impacts arise from utilities usage, transport and maintenance of the Estate. These are to be expected from a largely office-based environment and for a strongly engagement-focussed organisation.

# Pollution Prevention

We ensure we operate strict processes for the prevention of pollution from the activities carried out across our Estate. Our pollution prevention plan identifies potential sources of pollution and associated mitigation measures. Complimenting this we then have physical barriers, training and procedures to control these risks. However it should be remembered that as a largely office-based organisation we are a relatively low-risk site with few chemicals and no large storage tanks.

Across the site we have a number of available spill kits and have placed them in accessible locations near to any possible source of spillage. These are supported by spill kit procedures displayed near to the kits and all facilities contractor staff assigned to handle any pollution incidents have been trained in spill response. Surface water and foul water drains across the site are colour-coded to ensure clear designation and a double-skinned tank is used for external diesel storage. All paints and COSHH substances are stored securely in locked cabinets and any hazardous waste storage, such as fluorescent tubes, electrical equipment and batteries, are stored securely within a designated cage. Duty of care requirements for the safe storage of other waste materials are followed accordingly by all staff that manage or dispose of waste.



# Management Review

A formal Management Review meeting was held during the 2016-17 year to discuss progress against targets, work for the forthcoming year, and the effectiveness of the EMS. The review team included representatives from senior management as well as the sustainability team, and an independent colleague with experience of environmental issues.

At the meeting the proposed developments to the estate were discussed including issues such as charging points for electric vehicles. Also discussed was the suitability of the current environmental system and the desire to operate in a similar fashion to the other devolved legislatures. At the start of a new Assembly period, with new Assembly Members, and the arrival of a new Chief Executive, it was agreed to keep all key stakeholders involved of any key changes over the forthcoming year.



# The Year Ahead

We continue to operate towards the targets which will see us through to 2020/21, monitoring and reporting progress along the way.

Objectives	Targets
<b>Reduction of carbon footprint</b>	Reduce energy emissions by further 30% by 2020/21 (based on 2012/13 baseline)
	Improve the efficiency of business-related car travel by 10% by 2020/21 (on 2014/15 baseline)
<b>Reduce the impact of waste</b>	Achieve zero waste-to-landfill by 2020/21
	Transition from waste management to sustainable resource management by 2020/21
<b>Reduce water use</b>	Reduce the consumption of potable water across the estate by 5% by 2020/21 (based on 2014/15 baseline)

One key area of development we will be exploring through 2016/17 is monitoring data. In the past, as mentioned in Appendix A, we have looked at baselining our key impacts against building areas which have remained relatively constant. We are now collating data such as 'staff numbers' (to include outside contractors and third parties based on our Estate) and utilising the visitor numbers already collected by our colleagues. This will allow us to look more closely at trends and compare them to the numbers of people using our buildings. In a similar fashion we have started working on *degree days* which allow an organisation to examine the efficiencies of their operations and benchmark against climatic conditions.

Using these variables could help explain scenarios such as lower gas use in a warmer winter, or more water use in months when we have welcomed more visitors. The degree days also allow us to monitor the efficiency of our heating, i.e. checking it is responding closely to external temperature changes. We will also be working with our colleagues in the other devolved parliaments to baseline against their usage, for example electricity use vs staff numbers.

Other improvements planned for future years as part of our forward maintenance and investment plan include the continued rolling programmes in Tŷ Hywel of LED lighting and the air-conditioning refurbishments. We'll be looking at the Pierhead in more detail to implement some efficiency savings in its use of utilities, and working with our suppliers to get the best value and environmental footprint we can from our waste management.

Business travel will also see improvements during 2017-18. With the travel hierarchy in mind, but conscious that we will never negate the need for car travel, we are looking at encouraging more efficient methods of using cars. We are investigating charging points for electric vehicles as well as looking at an electric pool car for staff on business journeys.





# Appendix A: Data Tables

## Environmental Data

Key performance indicators	2012/13	2013/14	2014/15	2015/16	2016/17
<b>Total net greenhouse gas emissions (Scopes, 1, 2 and 3), tCO<sub>2</sub>e</b>	2,314	2,144	2,252	2,058	1,804
<b>Total energy emissions, tCO<sub>2</sub>e</b>	1,880	1,712	1,800	1,663	1,563
<b>Waste to landfill in tonnes</b>	17.2	6	4.7	4.6	5
<b>Recycle and reuse rate, percentage of total</b>	83%	94%	95%	95%	96%
<b>Total water consumption, m<sup>3</sup></b>	10,069	7,315	6,177	5,174	5,347
<b>Total business travel emissions, tCO<sub>2</sub>e</b>	222	231	252	227	160
<b>Paper Use (million sheets)</b>	2.24	2.26	2.09	1.93	1.99

## Benchmarking

Our floor areas (used as a baseline for many years) have remained the same this year, as our primary estate consists of the three Cardiff Bay buildings detailed below.

<b>Tŷ Hywel</b>	15266m <sup>2</sup>
<b>Senedd</b>	5121m <sup>2</sup>
<b>Pierhead</b>	1821m <sup>2</sup>
<b>Total</b>	22462m <sup>2</sup>

During this target period we are seeking to improve benchmarking by reviewing utilities use against the number of people who use our buildings, as well as degree days. To this end we collate 'staff' and visitor figures for year-on-year comparisons to help explain changes and recognise long-term trends. There are several contractors and external agencies with staff based in our buildings, but as they use the same utilities we will combine them under the 'staff' figure. We have already begun this process with the following figures:

Year	Staff Numbers	Visitor Numbers
2016/17	959	188616*
2015/16	923	182485

\*Includes Tŷ Hywel visitors for the first time in 2016/17

## **Appendix B: National Assembly for Wales Environmental Policy 2016-17**

The National Assembly for Wales Commission ensures the provision of the property, staff and services required for the effective functioning of the National Assembly for Wales. Our aim is to be an exemplary organisation in terms of sustainability and to ensure the efficient delivery of our services with due regard to the principle of promoting sustainable development.

Our day-to-day operations have an impact on the environment, arising mainly through the consumption of resources (utilities and raw materials), travel and the generation of waste.

The National Assembly Commission commits to:

- ensure the efficient use of our buildings and seek opportunities to minimise the use of natural resources in the delivery of our services;
- dedicate appropriate time and resource to improving the energy efficiency of our estate;
- promote our sustainability credentials to the public, our visitors and other stakeholders;
- ensure all Members, Support Staff, Commission Staff and other building users fully understand the contribution they can make to improve our environmental performance;
- develop a culture of environmental responsibility amongst our occupants, contractors, suppliers and visitors to our buildings;
- avoid unnecessary travel where possible and promote sustainable travel in the performance of our duties;
- place sustainability considerations at the heart of transparent decision-making processes and integrate purchasing principles which favour those products and services which cause the least harm to the environment;
- require our suppliers and contractors to support our environmental policy in the delivery of goods and services;
- plan, adapt and ensure sufficient measures/resources are in place to future-proof our assets against the challenges of a changing climate;
- comply with all relevant environmental legislation, standards and other codes of practice;
- maintain both procedures and physical measures in order to prevent pollution; and
- set ambitious environmental objectives and targets to ensure continual improvement, and publicly report progress against them.

This policy statement applies to the whole Assembly Estate (comprising of Tŷ Hywel, Senedd, Pierhead and the Colwyn Bay office) and will be reviewed annually and made available to all staff of the National Assembly for Wales through our intranet site and any other interested parties through our website. It will be contractually binding on suppliers who use our premises and will be made available to anyone on request.