

National Assembly for Wales Annual Environmental Report

2015-16



National Assembly for Wales
Assembly Commission

The National Assembly for Wales is the democratically elected body that represents the interests of Wales and its people, makes laws for Wales, agrees Welsh taxes and holds the Welsh Government to account.

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National Assembly for Wales **Annual Environmental Report**

2015-16



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Foreword

This is our ninth Annual Environmental Report for the National Assembly for Wales, and we are pleased to say one which shows continued improvement.

Despite the significant savings reported at the end of our last long-term carbon reduction strategy, we were keen to continue with ambitious targets for further improvements. We are proud of the fact that despite a lot of the more accessible improvements having already been implemented we are again able to report further progress towards our new targets. Savings are evident for all our key utilities, and we continue to operate to a high diversion from landfill rate.

We have invested in our estate to not only ensure a high quality of service for all our stakeholders, but also to ensure we are making efficiency savings wherever we can. This drive to use resources wisely is delivering important financial benefits and lowering our environmental footprint.

This year we have a new Assembly, with new Assembly Members and a new Commissioner for Sustainability. We look forward to continuing with our strategy for environmental improvements and ensuring we remain an exemplar organisation for sustainability in Wales.



Caroline Jones,
Commissioner for Resources

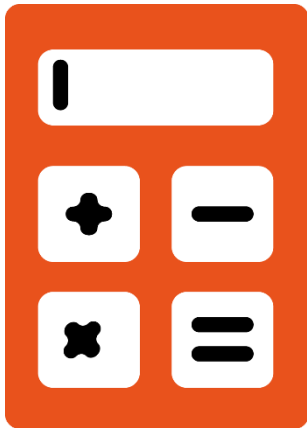


Claire Clancy
Chief Executive Officer



Summary of Performance

Building on the successes made last year, we have already made significant progress towards the long-term goals we set to see us through until the 2020/21 financial year. Incorporating efficiency measures in planned refurbishment works is already delivering noticeable reductions to our utilities figures.



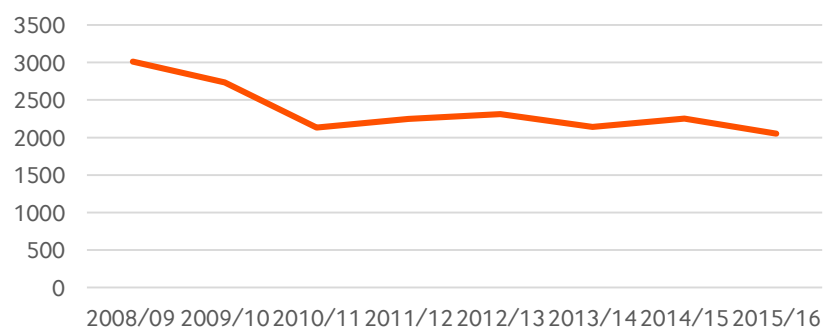
WE HAVE ALSO MADE IMPROVEMENTS TO THE METHODOLOGY USED FOR CALCULATING OUR EMISSIONS.

These have included projects such as PiR sensors, LED lights, and automatic taps in our washrooms. We have overhauled the Senedd's biomass boiler to improve its operation, and the BMS (building management system) which heats our buildings and we are part-way through a rolling replacement of older, less efficient air-conditioning and fan coil units for Tŷ Hywel.

We have also made improvements to the methodology used for calculating our emissions. For example we previously reported new gases being added to the air-conditioning systems as replacing those lost to atmosphere, when in fact they were safely removed by a licenced contractor as part of our efforts to replace the gases with less harmful ones. Another example being the wood chip use; now re-assessed using industry figures for tonnages and related emissions, realising a significant reduction in our 'outside of scope' figure. Other more administrative improvements include the way we assess our environmental aspects and the clarity of our environmental procedures. Success in making the environmental management system (EMS) easier to use has been commented on by our external auditors.

Each area is discussed in more detail further on, but overall we are seeing our investments in the infrastructure of the estate pay off in reduced utilities demand, all the while operating within the structure of a certified environmental system.

Carbon Footprint (tCO₂e)



Graph showing the Assembly's carbon footprint (in tonnes of CO₂e)



We replaced the high-level lighting in the Senedd with LED units. This will significantly reduce not only electricity usage but also maintenance time and costs from changing bulbs in the inaccessible ceiling areas.

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.



WE OVERHAULED THE
SENEDD'S BIOMASS
BOILER TO MAKE IT
MORE EFFICIENT



ROLLING REPLACEMENT
OF AIR-CONDITIONING
SYSTEMS IS CUTTING
ELECTRICITY USE

They include the following:

- Replaced the older condensing water heaters with more efficient Ecoflow units.
- Refurbished remaining kitchen facilities in Tŷ Hywel; including PiR light sensors and timers on water boilers.
- Improved our cycle storage facility to encourage staff out of their cars and onto their bikes for commuting to work.
- Replaced the combined air-conditioning & heating units in the Pierhead building to provide more efficient heating as part of a drive to only heat rooms when needed.
- Continued a rolling replacement programme for the air-conditioning and fan coil systems in Tŷ Hywel for more efficient units. We have completed 60% so far, and the project will continue through 2016 and 2017.
- Completed our rolling refurbishment of washrooms in Tŷ Hywel; incorporating automatic taps for reduced water use and PiR-activated LED lights for energy efficiency.
- Replaced the high-level lighting in the Senedd with LED units. This will significantly reduce not only electricity usage but also maintenance time and costs from changing bulbs in the inaccessible ceiling areas.
- We have installed LED lighting in our staff restaurant, stairwells and server rooms, again part of a rolling programme which will continue throughout 2016.
- Overhauled the biomass boiler system to provide a more efficient and reliable heating supply to the Senedd building.
- Installed a new BMS (building management system) for a more accessible system which more efficiently controls heating and cooling within our offices.



Progress against targets

Our targets have been amended to reflect longer term objectives across Assembly terms. This will help to iron-out the fluctuations in demand for utilities experienced throughout our 5-year Assembly cycles, as well as allow us to work on projects with longer payback periods and to realise those savings within our target timescales.

These new targets, which take us through to another 2020/21 election year, were only finalised part-way through this reporting period. However we have already made in-roads towards achieving them, as detailed below.

| Objectives | Targets | Progress |
|--------------------------------------|--|---|
| Reduction of carbon footprint | Reduce energy emissions by further 30% by 2020/21 (based on 2012/13 baseline*) | 11% down on baseline year. 8% reduction since last year. |
| | Improve the efficiency of business-related car travel by 10% by 2020/21 (on 2014/15 baseline) | Emissions down by 10%, with mileage covered only dropping 8%. |
| Reduce the impact of waste | Achieve zero waste-to-landfill by 2020/21 | Currently operating at 95% 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 16% this year compared to baseline. |

*baseline from Carbon Trust/ ARUP Carbon Reduction Routemap

Our energy emissions figure is affected in part by the Government's conversion factors each year, which as mentioned previously had a negative effect on our progress last year. However this year, with a higher 'green' quota in the grid it has reduced again slightly. Our overall usage is down for both gas and electricity though, reflected in savings against both our baseline of 11% and against last year of 8%. We are only beginning to work on travel efficiencies and have activity in this area planned for 2016, but are reporting a slight efficiency saving this year. Travel-related emissions are down by 10%, despite a smaller drop in mileage of 8%. This 2% difference reflecting a move to more efficient public transport modes.

Our waste figures are relatively stable, with a high diversion from landfill rate already being achieved. Again more work on both this diversion rate and a 'circular economy' approach to come in 2016.

Water reduction has been an apparent beneficiary of the improvements we have made to our estate. Automatic taps, as well as improved use of the Senedd's greywater system, have contributed to a significant drop in our mains water consumption this year. However we still have work to do in the baselining of our water use, as mentioned later in this report, because we appreciate a large percentage of it is due to visitors to the estate and therefore not as easy to forecast.



Energy

Overall, energy use is still by far the largest contributor to our carbon footprint, as is to be expected from an administration-centric organisation.



ELECTRICITY USE IS
DOWN 7%



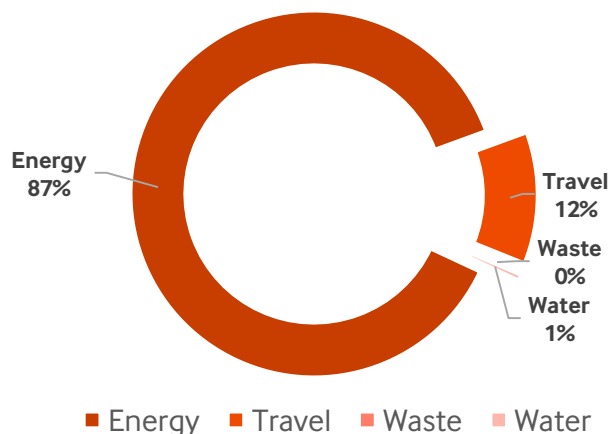
GAS USE IS DOWN 6%

As such we are looking to build on our previous reduction in energy emissions (a good indicator of how efficiently we use electricity and gas) and have set a further 30% reduction target by 2020/21 financial year. After another year of improvements to promote the estate's efficient operation, we are seeing continued reductions in our use of utilities. This is despite a slight increase in the numbers of personnel using our buildings and a busy final year of this Assembly.

Energy emissions for the site are down by 8% this year. DECC's (Department for Energy and Climate Change) carbon conversion factor has dropped slightly; a reflection of more renewable energy in the grid, which certainly helps. But coupled to this our real-world electricity use has decreased by 7% over the past year and gas by slightly over 6%. Biomass heating for the Senedd building is up on last year as we aim to use it wherever possible over the back-up gas boilers, biomass being a relatively carbon-neutral fuel source.

One aspect which we hope to improve in 2016 is benchmarking against degree-days, in order to better understand demand and ensure our use of heating fuels reflects this. To support this we are also introducing environmental dashboards; where we will monitor utilities usage quarterly, meeting with relevant stakeholders to discuss progress against targets and then publish the results internally to raise staff awareness.

Carbon Footprint 2012/13



Composition of the Assembly's carbon footprint for 2015-16 (N.B. water and waste <1%)



We have extensive recycling facilities across our estate, and encourage staff and visitors alike to make use of them.

Waste

Our figures for waste management in 2015/16 are very similar to last year (4.6t landfill vs 4.7t last year). With well-established infrastructure for separating our waste and good awareness of reasons for doing so, we are hovering around the 95-96% diversion from landfill mark.

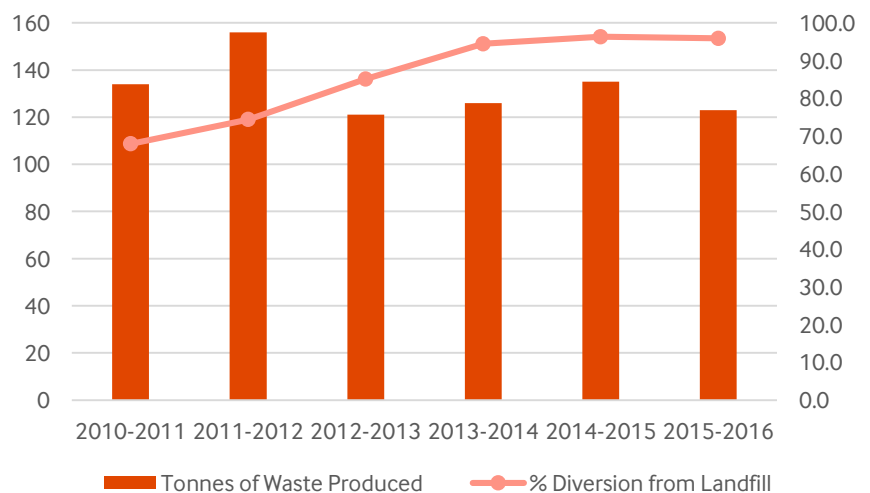


WE HAVE EXTENSIVE RECYCLING FACILITIES ACROSS OUR ESTATE, AND ENCOURAGE STAFF AND VISITORS ALIKE TO MAKE USE OF THEM.

We have extensive recycling facilities across our estate, and encourage staff and visitors alike to make use of them. We have seen an increase in composting figures for the past 12 months, due in part to working with our catering teams and also including composting bins in newly-refurbished kitchens.

For 2016 we are looking at working more closely with our waste contractors to again improve environmental and financial efficiencies wherever possible, as well as continuing to make it as easy as possible for staff and visitors around our estate to avoid sending waste to landfill. One area we will also be focussing on is auditability of figures; to ensure accurate monitoring data can be traced back to source to help us validate our diversion figures more easily.

Waste Management at the Assembly



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



A plentiful supply of rain water, and no maintenance issues meant we could maximise our use of grey water in the Senedd, with mains water down to half the figures used last year.

Water

2015 has been the first year to realise actual savings from the physical improvements made to the Tŷ Hywel washrooms.



AUTOMATIC TAPS ARE HELPING REDUCE WATER USE

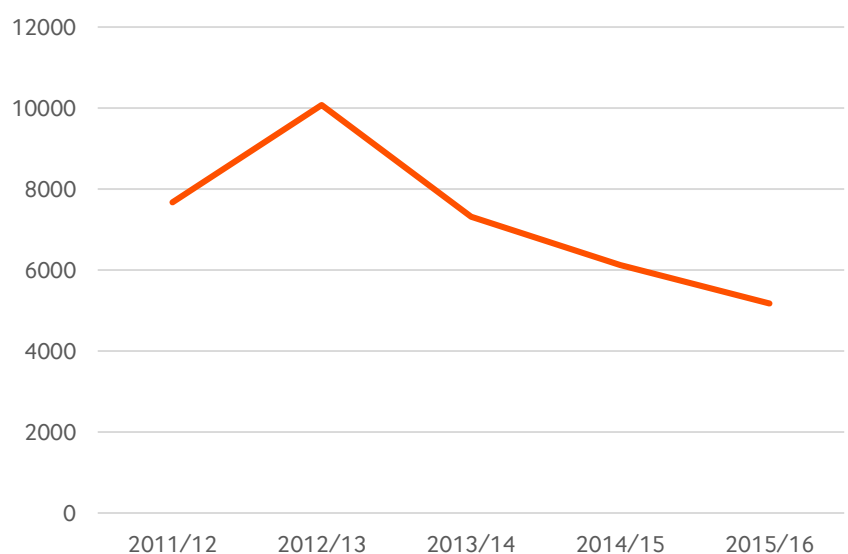


WE HAVE BEEN MAXIMISING THE USE OF RAINWATER

Despite similar numbers of staff on site, the usage for Tŷ Hywel is 15% lower than last year. A plentiful supply of rain water, and no maintenance issues meant we could maximise our use of grey water in the Senedd, with mains water down to half the figures used last year. The Pierhead's usage has also fallen slightly, though the last two years have been around the 600m³ mark. This is significantly lower than three and four years ago, but the Pierhead sees a largely reactive service; with low staff occupancy but high visitor numbers depending on weather conditions and prevalence of public events in Cardiff Bay. The Pierhead is one building where we have identified the potential for further savings, which we hope to effect in 2016.

These improvements to the Pierhead should also help minimise one area of variation within our water bill which to an extent is beyond our control. Whilst staff numbers and the way in which water is used are both relatively constant in Tŷ Hywel, we do see visitor number variations affecting water use in our public buildings. As an organisation we certainly want to encourage more people to visit both Pierhead and the Senedd, therefore improving monitoring and infrastructure through 2016/17 will help them do so as sustainably as possible.

Mains Water Use (m3)



Graph showing mains water use by the Assembly's estate



Both rail and bus/coach travel have increased this year, at the same time reflecting a drop in air travel.

Travel

Having finalised all our totals from the last financial year, we can see that Business Travel emissions are down for 2015/16. A drop of 10% in emissions is accompanied by only an 8% drop in mileage; demonstrating an increased efficiency in travel modes. Both rail and bus/coach travel have increased this year, at the same time reflecting a drop in air travel.



EMISSIONS FROM AIR TRAVEL ARE DOWN ON 2014/15

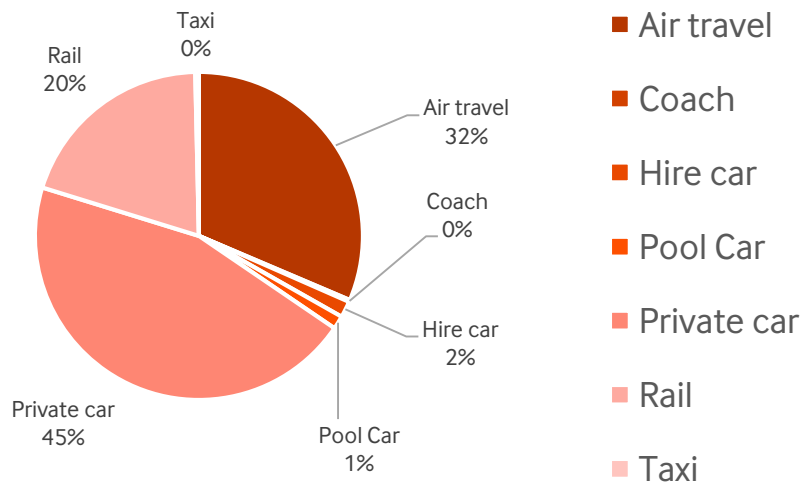


RAIL MILEAGE IS UP ON LAST YEAR

We certainly do not want to discourage Assembly Members and staff from visiting constituents and other stakeholders across the varied and often rural landscape of Wales, so it is therefore this efficiency of travel that is our focus for improvements.

During 2016 we will hold another travel survey for staff internally (something we do every couple of years), to look again at how and why staff travel, both for business-related activities and to commute to their place of work. From this we hope to again improve the efficiency of these journeys to further lower our footprint.

Carbon Emissions by Travel Mode 2015/16



Composition of the carbon footprint of Assembly business travel

Environmental Management

Following a successful audit in early 2016, we have again retained our Level 5 certification to the Green Dragon Environmental Standard.



THE ASSEMBLY HAS
HELD GREEN DRAGON
CERTIFICATION FOR 9
YEARS.

This is the highest level of the Standard and similar to international schemes such as ISO14001, albeit with the requirement to produce this annual environmental report (also available on our website). With no non-conformances found the auditor was satisfied we are managing our legal obligations, setting and acting on continual improvement targets and ensuring all our staff are aware of their role in the sustainability of the estate. The auditor commended the good work done in recently updating the environmental management system (EMS) to improve its clarity and auditability. We have overhauled all procedures and the way we assess our impacts on the environment (*environmental aspects*) in order for it to be easier for staff and other stakeholders to follow.

Impacts

During the 2015/16 period we made improvements to the methodology used for scoring our impacts on the environment, used to managed the way we deal with them through the rest of the EMS. We assess the impact of each risk, the probability of occurrence and take into account legislation and the level of control offered. This has given us the following significant impacts for 2015/16, which we will carry through the forthcoming year:

Environmental Aspects and Impacts

| Aspect | Activity | Impact | Significance rating |
|--------------------|---------------------------|---|---------------------|
| Use of electricity | Lighting the estate | <ul style="list-style-type: none"> – Resource depletion – Indirect air emissions – Carbon footprint increase | 35 |
| Use of electricity | Powering office equipment | <ul style="list-style-type: none"> – Resource depletion – Indirect air emissions – Carbon footprint increase | 35 |
| Waste production | Disposal of general waste | <ul style="list-style-type: none"> – Pollution risk – Use of landfill space | 35 |

| Aspect | Activity | Impact | Significance rating |
|--------------------|--|--|---------------------|
| Transport | Business travel | <ul style="list-style-type: none"> – Carbon emissions – Health risk – Resource depletion | 30 |
| Transport | Commuting by staff | <ul style="list-style-type: none"> – Pollution risk – Carbon emissions – Health risk – Resource depletion | 30 |
| Use of electricity | Cooling- operation of air-conditioning equipment and fan coils | <ul style="list-style-type: none"> – Resource depletion – Indirect air emissions – Carbon footprint increase | 28 |
| Use of gas | Heating our buildings | <ul style="list-style-type: none"> – Resource depletion – Air emissions – Carbon footprint increase | 28 |
| Use of contractors | Maintenance and refurbishment projects | <ul style="list-style-type: none"> – Pollution risk – Risk of incorrect disposal route (e.g. landfill) – Waste production – Procurement of new products/ equipment – Possible carbon impact | 28 |

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-focused 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

As in previous years, a team of senior management representatives met to discuss progress over the last year and approve targets for the forthcoming period.

Topics covered include progress against targets, the findings of environmental audits (both internal and external), changes to operating procedures, the approval of objectives for the next year and communications relating to environmental issues (from staff, Assembly Members and members of the public). The annual process also involves initial approval of this Environmental Report.

The team approved the draft copy of the Environmental Report and agreed on the changed format for this year. The physical improvements that have been made to the buildings were discussed, along with the planned improvements over the forthcoming year. The monitoring data which tracks our progress against our 2020/21 targets was presented and discussed. The need to continue to be as transparent as possible was stressed; with auditable figures and as much information as possible to be publicised on the internet pages.



The Year Ahead

Operating as we are on these long-term targets, aimed at improvements through to 2020/21, we hope to iron out periods of flux such as the Assembly election and EU referendum both falling in this next financial year.

We will continue along the lines of these Assembly-election period timelines, but monitor and report annually on our progress towards achieving them.

| Objectives | Targets |
|-------------------------------|--|
| Reduction of carbon footprint | 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) |
| Reduce the impact of waste | Achieve zero waste-to-landfill by 2020/21 |
| | Transition from waste management to sustainable resource management by 2020/21 |
| Reduce water use | 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.

Other improvements planned for 2016/17 include the continued rolling programmes in Tŷ Hywel of LED lighting and the air-conditioning / fan coil refurbishments. We will 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.

Appendix A

Data Tables

Environmental Data

| Key performance indicators | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 |
|---|---------|---------|---------|---------|---------|
| Total net greenhouse gas emissions (Scopes, 1, 2 and 3), tCO ₂ e | 2,345 | 2,314 | 2,144 | 2,252 | 2,058 |
| Total energy emissions, tCO ₂ e | 1,828 | 1,880 | 1,712 | 1,800 | 1,663 |
| Waste to landfill in tonnes | 39.1 | 17.2 | 6 | 4.7 | 4.6 |
| Recycle and reuse rate, percentage of total | 73% | 83% | 94% | 95% | 95% |
| Total water consumption, m ³ | 8,457 | 10,069 | 7,315 | 6,177 | 5,174 |
| Total business travel emissions, tCO ₂ e | 204 | 222 | 231 | 252 | 227 |
| Paper Use (million sheets) | 2.17 | 2.24 | 2.26 | 2.09 | 1.93 |

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.

| | |
|--------------|---------------------------|
| Tŷ Hywel | 15266m ² |
| Senedd | 5121m ² |
| Pierhead | 1821m ² |
| Total | 22462m² |

For 2016/17 we will be looking to improve benchmarking by reviewing utilities use against the number of people who use our buildings, as well as degree days. 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 for 2015/16:

| Staff Numbers | | Visitor Numbers |
|----------------|-----|-----------------|
| 2015/16 | 923 | 182485 |

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.
- 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.