**CARBON TARGETS**

**Executive Summary**

The purpose of this report is to initiate a discussion on the scope, baseline and form of new carbon targets, which will be required for the Environmental Sustainability Strategy. The current targets expired in 2015/2016. The requirement to set new targets presents an opportunity to review the current baseline and scope of the targets to ensure these are set in line with best practice and in response to sector and national policy commitments.

This paper does not recommend the scale of the targets to be set but does illustrate a couple of scenarios and the subsequent reductions. Once the scope, baseline and form have been agreed the ambition and feasibility of new targets should be discussed.

**Background**

There are a considerable number of drivers, which require carbon emissions to be monitored and managed. These include:

* The Scottish Climate Change Act places a duty on the public sector to mitigate carbon emissions.
* The public sector is required to report annually on emissions to the Scottish Government.
* The Scottish Government (SG) is in the process of setting a national target to reduce emissions by 66% from 1990 levels by 2032. To achieve the planned emissions reduction pathway requires a reduction in service sector emissions (which includes Universities) by 94% by from 2017.
* The agreement reached in Paris in 2016 by 195 countries to limit global warming to 2C.

The University needs to demonstrate for sound financial, risk management and reputational reasons that it is complying with the spirit of these drivers.

**Progress**

The carbon emissions from Edinburgh Napier’s academic estate for 2015/16 was equivalent to a reduction of 42% compared to the baseline set in 2006/2007 (Chart 1). By the end of April 2017 emissions were down nearly 40% from 2006/2007. Business travel emissions have been excluded from these calculations as robust data on travel is not available from 2006/07.

The carbon emissions for 2015/16 was 4814 tonnes of carbon dioxide equivalent (CO2e) emissions.  This comprises 4756 tonnes CO2e from utilities, 38 tonnes from fleet vehicles and 19 tonnes from waste.

When business travel is included in the scope of this calculation the Universities carbon footprint for 2015/16 increases by 3509 tonnes including 3434 tonnes from flights.

**Table 1: Emission sources and percentage reductions**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Emissions Source** | **Tonnes CO2e** |  | **% of carbon footprint 15/16** | **% Change from 06/07 to 15/16** |
| **2006/07** | **2015/16** |  |
|   |   |   |  |   |   |
| Fleet Vehicles  | 53 | 38 |  | 0.8 | -28 |
|   |   |   |  |   |   |
| Waste | 270 | 19 |  | 0.4 | -93 |
| Fuel oil | 108 | N/A  |  | 0.00 | -100 |
|   |   |   |  |   |   |
| Electricity | 4,611 | 3,106 |  | 64.5 | -33 |
| Gas | 3,311 | 1,622 |  | 33.7 | -51 |
| Water | 59 | 29 |  | 0.6 | -51 |
| **Total Utilities** | **7,981** | **4,756** |  | **99** | **-40** |
|   |   |   |  |   |   |
| **Grand total** | **8412** | **4814** |  | **100** | **-42.8** |

**Options for scope, targets and KPIs**

A target was set in 2011/2012 to reduce emissions by 35% by 2015/2016 (following an audit of the Carbon Management Plan led by the Carbon Trust). The scope of emissions included in this target included those from electricity, gas and water consumed by academic buildings, business travel and waste.

A range of options exist to modify the scope of the target or to set targets for different emissions sources. Areas to be included in targets should have a good level of data quality or have the potential for good quality data to be attained.

Sources included in the 2015/2016 target are highlighted in bold.

**Table 2: Potential areas to include in scope**

|  |  |  |  |
| --- | --- | --- | --- |
| **Source** | **Data Quality** | **SG Reporting**  | **Comment** |
| **Academic Buildings & Activities** |
| **Electricity** | High | Yes |  |
| **Gas** | High | Yes |  |
| **Water** | High | Yes |  |
| F-Gas  | TBC | No | Not included in current measure but a major source of national emissions. Carefully management and monitoring is required by regulations.  |
| **Business travel** | Medium | Yes | Greatly improved from 2016/2017 |
| **Waste** | Medium | Yes | Greatly improved from 2016/2017 |
| **Fleet vehicles** | High | Yes |  |
| **Residential Properties** |
| Electricity | High | Yes |  |
| Gas | High | Yes |  |
| Water | Low | No | Meters not installed at all properties |
| F-Gas | TBC | No | Not included in current measure but a major source of national emissions. Carefully management and monitoring is required by regulations.  |
| Waste | Low | Yes | The City of Edinburgh Council are unable to provide actual waste figures. Average and estimated weights per resident are used but potential to be highly inaccurate. |

**Scope**

SG’s mandatory Climate Change reporting requires that the all sources identified in Table 2 with the exception of F-Gas and water at residences are reported. Best practice would suggestion that F-Gas (refrigerant gases) emissions are also monitored and reported. Water is such a minor component of ENU’s carbon footprint that it will not have any real impact whether residential water is monitored and included. However, from a wider resource use perspective it is good practice to monitor and manage water use. This would require additional meters to be installed at a number of residences.

Charts 2 and 3 illustrates where data is currently available by two different groupings the predicted emissions for 2016/2017 from all sources as listed in table 2.

**Type of targets and timescale**

A range of options exist for new targets however best practice would is to set an absolute target with a scope of all the emissions sources identified in table 2 in line with the SG aspirations. Absolute targets remain best practice and this approach should be retained. KPIs could be developed alongside the target to help explain progress.

The SG is developing a programme to further reduce emissions from 2017 with a requirement for service sector emissions to be reduced by 94% from this year. It therefore makes sense to align with this approach.

It is suggested that a target is agreed for 2025 with a three year rolling target to ensure we remain on course. The first target should be set for 2020.

**Target Options**

**Option 1: Separate targets for academic and residential estate baseline 2006/07**

* Academic estate and activities - Retain an absolute target with the current scope and a baseline of 2006/07. Recognising that travel and waste emissions for the baseline year will need to be estimated.
* Residential - Set an absolute target with a scope of electricity, gas, water and waste with a baseline of 2006/07. Recognising that water and waste will need to be estimated.

**Option 2:**  **Overall absolute target with a baseline of 2016/2017**

* Set an overall absolute target with the scope including all items as listed in table 1 with a 2016/2017 baseline. This baseline would be required to ensure that good quality data is available to measure the majority of sources.

**Option 3:**  **Separate absolute targets with a baseline of 2016/2017**

* Set absolute targets for different activities such as academic estate, residential estate and business travel with baselines of 2016/2017.

**Option 4:**  **Separate or combine relevant targets with a baseline of 2016/2017**

* Set relevant targets based on turnover or other appropriate matrix for different activities such as academic estate, residential estate and business travel with baselines of 2016/2017.

**Recommendations**

The following recommendations are proposed:

1. That option 2 is used as the basis for a new target.

*An overall absolute target with a scope including all items as listed in table 1 with a 2016/2017 baseline.*

1. That a target is agreed for 2025 with a three year rolling target to ensure we remain on course to achieve this. The first target should be set for 2020.
2. That we do not lose sight of the achievement made to date to reduce utility-based emissions and that emissions compared to the 2006/07 baseline are regularly calculated and reported.

It is also recommended that KPI’s are agreed as follows:

* Academic buildings – performance per meter squared of internal area for gas, electricity, water, waste and F-Gas.
* Residential buildings - performance per meter squared of internal area for gas, electricity, water, waste and F-Gas.
* Business travel – performance per £ million turnover.

**Scale of targets**

It is not the intention of this paper to recommend the scale of a target. This should be agreed following consultation with the wider university community and once an exercise has been completed to determine the size of emission reductions which may be feasible. **For example, under a scenario of** very low carbon grid electricity and a 20% reduction in utility consumption at all sites by 2025 a reduction in utility based emissions of around 50% would be achieved. A of 5% reduction in utility consumption delivers a reduction of 44% by this date.

Annex 1 contains details of other universities’ targets.

**Conclusion**

Final recommendations

* That the recommendation made in the on target options are agreed.
* To commence a project to identify the scale of targets, which could feasibly be achieved and a proposal is developed for a consultation on this topic with the wider university community.

**Annex 1: Examples of other university targets**

**Edinburgh University**

To meet this challenge, and to support Scotland's and the world's transition to a low carbon economy, the University of Edinburgh will reduce its carbon emissions per £ million turnover by 50% from a 2007/08 baseline, and will become a **net zero carbon university by 2040**.

Our targets are:

1. We will reduce our emissions of carbon per £ million turnover by 50% from a 2007/8 baseline year by 2025.
2. We will return our carbon emissions to 2007/08 baseline year levels by 2025.
3. We will become a net zero carbon university by 2040.

**Heriot Watt University**

A 15% absolute reduction in greenhouse gas emissions between 2014/15 and 2019/2020 and a 10% relative energy efficiency target (measured in relation to internal area) over the same period.