Northern Ireland Water Ltd
Annual Information Return 2012

Part 10 of 10 containing:
Energy Consumption and Greenhouse Gas Accounting - commentary for table 45

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Halcrow

Table 45 – Energy Consumption and Greenhouse Gas Accounting

Commentary by REPORTER

1. Background

This commentary provides details from our review of NI Water's Carbon Accounting assessment included in Table 45.

2. Key findings

- NI Water has applied the UKWIR carbon accounting methodology correctly.
- NI Water has applied the correct greenhouse gas conversion factors.
- The carbon accounting boundary includes all of NI Water's activities
- A Climate Change Mitigation Strategy to reduce energy usage and carbon emissions is in place to assist in achieving long term emissions reductions.
- Improving the accuracy of the Flow-to-Full-Treatment figure needs to be considered in the future

3. Audit Approach

The audit consisted of an interview with the NI Water Energy Manager and a review of relevant documentation, system methodologies, and data used to compile the table. The audit also included a review of the Company's commentary.

4. Audit Findings

4.1 General

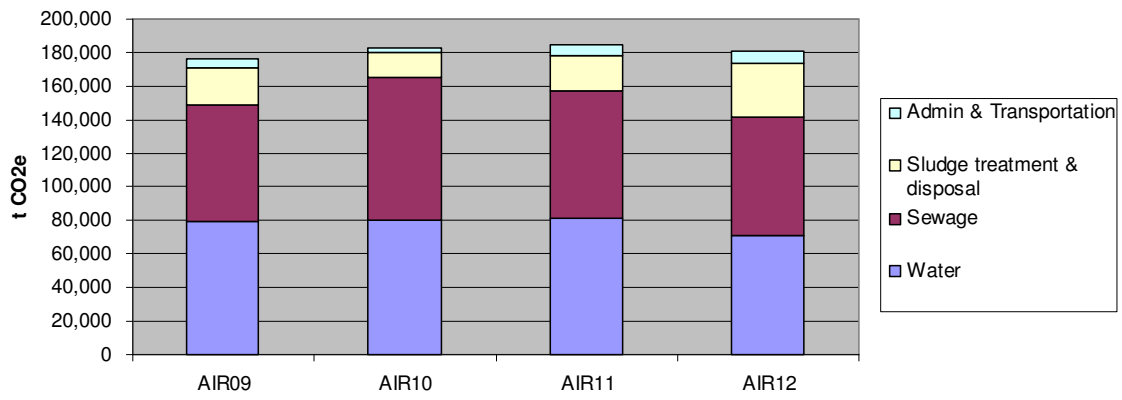
We have reviewed the Company's statement on 'Carbon Accounting' in its Board Overview and have met with NI Water's Energy Manager. NI Water has cooperated throughout the audit process and made available all relevant information to the Reporter.

4.2 Annual operational GHG emissions

Total operational emissions (calculated according to Defra guidelines) were 184,102 tonnes of CO2e. Total operational emissions have decreased by 1% or 2,424 tCO2e from 2010/11. In detail, whilst operational emissions from NI Water's activities are reduced by 8%, emissions from PPP have increased by 12% from AIR11. We understand these are due to a reduction of grid energy usage in NI Water's activities and increases in site usage due to new plant and outsourced activities within the PPP's. Details of this are discussed further in the following sections.

Figure 45.1 below shows the annual change of NI Water's total gross operating emissions. Considering the Company's confidence grades and changes in conversion factors, the change in emissions is within its accuracy limits.

Figure 45.1: Annual change in net emissions



We compared NI Water's gross emissions against E&W in Figure 45.2 below. Considering the size of companies and geography, NI Water is similar to Northumbrian Water (NES), suggesting that NI Water is not a major outlier.

Figure 45.2: Comparisons with E&W

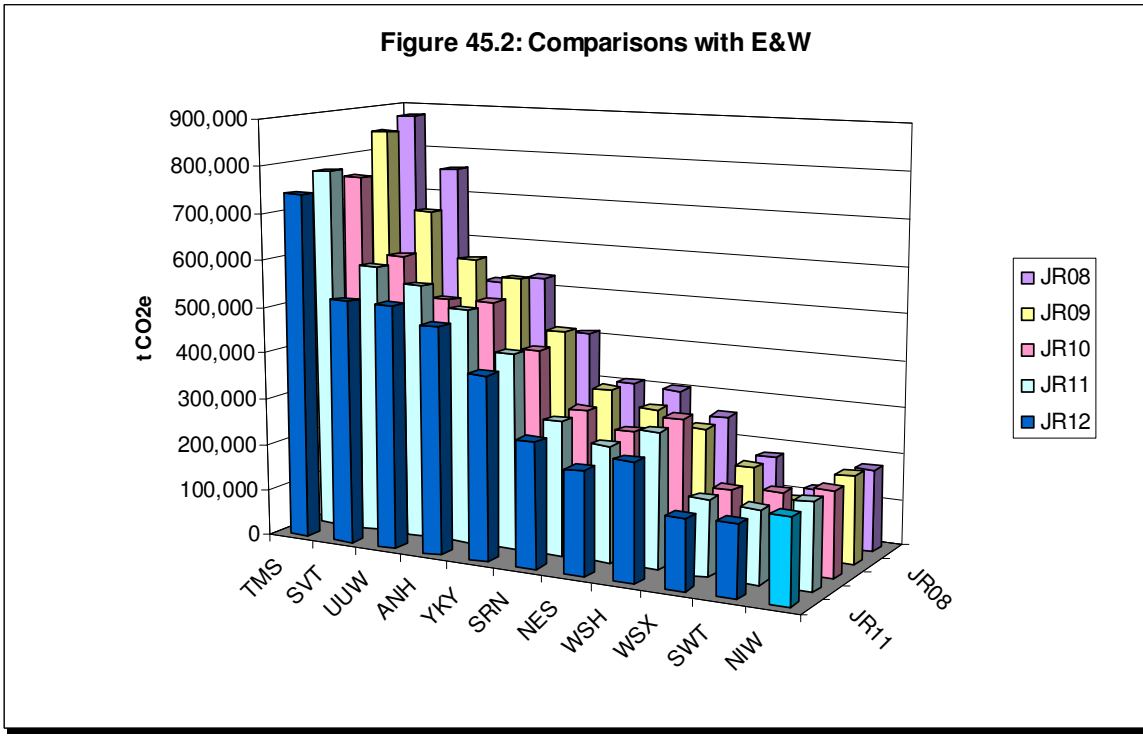
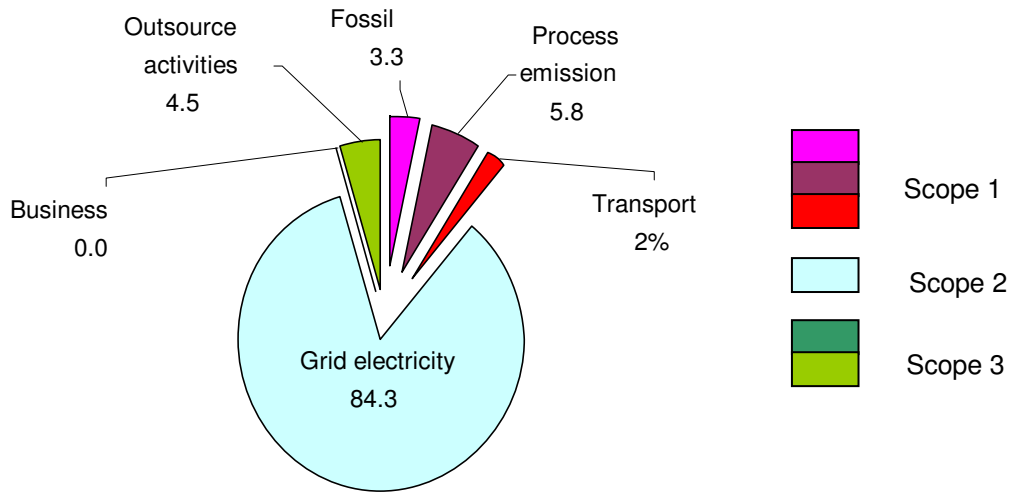


Figure 45.3 shows that the majority of emissions are from scope 2, grid electricity used by the Company, which is around 84% of total emissions.

Figure 45.3: AIR12 Percentage of each scope



NI Water explained that outsourced activities such as its call centre, Echo, are excluded. However when we checked the electricity data, a part of Capital House is included in the electricity calculation, totalling 32,773kWh, 0.01% of total electricity consumptions and therefore immaterial. All other activities including septic tank and vehicle maintenance, which are non-appointed business, are included.

Sludge treatment, recycling and disposal

NI Water's gross emissions from Sludge have increased by 11,499 tCO2e (56%) from AIR11. The Company explains that this increase is due to the inclusion of emissions from sludge disposed to a third party by PPP.

Administration

Emissions from administration are reduced by 453 tCO2e (19%) from AIR11. As previous years NI Water has not included emissions from SF6, PFC or HFC.

Transportation

In AIR11, NI Water explained that emissions from transportation are split between water and wastewater on a 50:50 basis and between petrol and diesel on a 20:80 basis. This methodology was retained for AIR12.

Emissions from air travel have only been included for PPP contracts. The Company explained that they included all of NI Water's business related travel emissions and this includes staff site mileage and company fleet vehicles.

We found that business travel (scope 3) has reduced by almost 12% from AIR11.

Electricity

We observed a 3% decrease in total grid electricity consumption from AIR11 to AIR12. In detail, electricity consumption by NI Water is reduced by 9% but this is offset by a 4% increase in PPP usage. The Company explained that all of their sludge is sent to PPP sites and disposed of to third party land. The electricity consumption increase at PPP sites is due mainly to the new incinerator coming on line during the reporting period.

4.3 Annual operational GHG intensity ratio

The Company has calculated its gross emissions/Ml of water or sewage treated, using Table 10 Line 26 (for water) and Table 14 Line 7 (for wastewater) respectively. We found that the gross emissions/Ml of treated water is similar to that reported in AIR11.

NI Water uses the Flow-to-full-treatment (FFT) figure and assumes that this includes the volume of wastewater returned (based on distribution input) and surface water. We and the Regulator believe that this surface water estimate should also include:

- road drainage (as NI Water highlights),
- groundwater infiltration,
- roof and other surface drainage to sewer,
- other surface water directly discharged to river, and
- water spilled through CSOs and storm-tanks.

During our AIR11 audit, we consulted with the Regulator and the Company. We checked the England & Wales FFT figures (where the companies use MCERT figures for Line 23) of 5 of the 10 E&W WaSCs. To analyse the proportion of the estimated components above in the FFT figure, we calculated the percentage of FFT that was accounted for by Distribution Input. These varied from 22 to 60%, averaging 44% (based on JR11 figures). NI Water's figure of 35% is not measured by MCERTS. It lies within this range and could produce a significantly different '*emissions/Ml of sewage treated*' figure if better means of measurement or better estimates of the components were available.

We understand that the Company did not have enough time to investigate FFT figure any further; however, the road drainage estimate is made up from a number of coarse assumptions and is therefore considered to be of a low accuracy. We would recommend further consideration of how FFT should be measured in the future.

5. Company methodology

5.1 Strategy

During the audit, we discussed the Company's carbon reduction commitment. The Company explained that NI Water does not presently have a specific strategy akin to the Strategic Direction Statements of water companies in England and Wales. However the Company does have its own specific Climate Change Mitigation Strategy aligned to energy and carbon reduction and they do acknowledge the

targets set by the Government and their long term target is to reduce carbon emissions by 80% by 2050 (against a 1990 baseline). The Company also explains that they have a green energy efficiency target, which was set at 12% during the AIR 12 period and out-turned at circa 3.6% above this target.

To assist in achieving this, the Company has set targets for renewable energy use (details described in the Company's commentary) and now self generate their own renewable electricity and also purchase electricity derived from renewable sources.

The Company does not currently have a figure for 1990 baseline however the current Climate Change Mitigation Strategy will assist in the reduction of carbon emissions over the PC13 & PC15 periods. To purchase green tariff energy is not the only way to reduce emissions. We urge NI Water to come up with short and medium term goals to achieve and measure against a long-term target; however the aforementioned strategy (subject to Regulatory funding) will address the concerns.

5.2 Data source

During our audit, we discussed data sources, and use and requirements of data as per the UKWIR methodology. We believe the data collection process is appropriate. For example, energy suppliers send electricity invoices from half-hourly meters at each site to the Company's finance and energy teams on a monthly basis in a spreadsheet format. This subsequently enables compilation for returns such as the AIR submission.

5.3 Reporting boundary

During our audit, we discussed with the Company its carbon accounting reporting boundaries. The inputs to the UKWIR worksheet appear to be in line with the NIAUR guidance:

- The Company has produced CAW workbooks (version 6.1) for NI Water only and PPP, and then added these to provide NI Water total figures.
- The Company explained that emissions related to outsourced activities are not included except emissions from sludge disposed by outsourced operators. All of NI Water activities including non core business is included.
- No supply chain, embedded or short cycle emissions are included, except NI Water's outsourced emissions from their capital programme partners and PPP programmes.
- Emissions from all of business mileage related to NI Water's activities are included.
- Other GHG emissions and their carbon equivalents are not included as the Company does not presently record this information.

5.4 Assumptions & Omissions

During our audit, the Company confirmed the assumptions made for AIR12:

- The volume of water in sludge has been calculated at 30% of wet tonnes to dry

solids. This information was provided by its contractors. We confirm a ratio of 22% to 30% has been widely used in the industry, thus we confirm the approach is reasonable.

- Other GHG gases such as PFC's, HFC's and SF6 are not included in AIR12. We believe emission from these gases would be immaterial.

5.5 Validation of the inputs

We checked that all data collected and used in the methodology was clearly marked with units and these had been consistently applied.

We also checked that figures from other tables such as Tables 10 and 14 are consistent.

Having 3 UKWIR workbooks (NI Water only, PPP and total) to produce Table 45 is not efficient and could lead to possible mistakes (although no errors were found). Considering emissions from outsourced activities, except PPP are so small, we suggest the Company consult with the Regulator to manage the better presentation of Table 45.

5.6 Conversion factors

We confirm that the correct spreadsheet has been used and the conversion factors locked within it have been applied.

6. Confidence Grade

As electricity consumption contributes the most to the overall GHG emissions, overall confidence grades reflect the energy consumption confidence grades. Circa 84% of total emissions according to Defra guidance are from electricity consumption (scope 2), of which 98.9% (83% of the total emission) are based on half hourly metered data.

Electricity consumptions are directly linked to the cost and were also checked. We believe that the electricity related emissions should therefore be reasonably accurate and we concur with the Company's assessment.

Scope 1 emissions are also linked to finance and we thoroughly checked the usage from both finance and consumption. As is common across the water industry in England and Wales, NI Water is confident in the reliability of data relating to its own activities (reported in blocks B1 and B2), but has less confidence in the information provided by its contractors in block B3. NI Water assigned CX for the emissions in this block this year. However, we believe that the unknown emissions are relatively immaterial and we concur with the Company's assessment.

Date: 25 July 2012
Prepared by: HMS