Annual Information Return 2010 Reporter's Report on the Board Overview



**Public Domain** 

**Reporter's Submission** 

By

CWJ Turner Halcrow Management Sciences Ltd



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# **Public Domain**

**Halcrow Management Sciences Limited** 

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## Reporter's Commentary on the Board Overview

#### 1. Basis of Opinion

In accordance with its Instrument of Appointment, Northern Ireland Water Ltd (NI Water) has appointed Halcrow Management Sciences Ltd, a ring-fenced member of the Halcrow Group, to provide reporting services to the Northern Ireland Authority for Utility Regulation (NIAUR). NIAUR regulates the appointment and work of Reporters by a Protocol which formally sets out the mechanism for appointment and the tasks that the Regulator requires of Reporters.

The Reporter for NI Water, Chris Turner, supported by a team of technical and operational specialists, has examined, tested and provided opinion on the information provided by the Company in its Annual Information Return 2010.

The Reporter's work includes:

- assessing the Company's compliance with NIAUR's reporting requirements and guidelines,
- ensuring that the Company's material assumptions have been exposed and explained, and
- preparing a written report together with a professional opinion on the Company's process for developing its submission and on the accuracy and reliability of the information.

In accordance with our appointment, we have carried out checks on the Company's reporting processes and examined the data in the context of our knowledge of NI Water's activities and the prevailing conditions in the regulated water sector. We have examined and provided opinion on the Company's tables, commentaries and other information forming its Annual Information Return 2010 to NIAUR.

# 2. The Board Overview

Except as identified in the following sections, we consider that:

- NI Water has established suitable procedures for collecting and reporting the required information consistently and accurately. They continue to enhance their corporate governance and QA processes and have applied them to the preparation of this submission. Senior managers and Directors are required to approve and thereby assume accountability for the integrity of the regulatory information provided.
- We note the continued involvement of the Company's Internal Audit function in reviewing and challenging the systems and processes supporting the AIR, particularly focussing on non-financial tables. We have observed a series of enhancements which have improved the accountabilities and management control. In particular, the AIR

Completion Manual has provided a valuable framework for improvement across the whole submission.

- We have carefully considered the Board's statement on the compilation of the AIR10. We confirm that the measures and procedures they describe are highly consistent with those we have observed during our audits.
- Any departures from their prescribed methodologies that we identify are brought to the Company's attention and, where material, are reported on in our commentaries.
- Material assumptions embedded within the Company's procedures appear reasonable.
- The information reported in AIR10 is consistent with the Reporting Requirements.
- The report adequately represents NI Water's activities and performance in the Report Year.
- The information and numerical data provided in the Board's Overview is founded on and is consistent with the tables and commentaries in the AIR10.

Our commentaries and this Reporter's Overview are based upon the information presented in NI Water's submission dated 9<sup>th</sup> July 2010.

## 3. Governance of the Annual Information Return

In the Board's Overview which accompanies the AIR10 submission, NI Water describes the processes and internal systems of control which have been applied to the preparation of the submission.

As stated in their Board's Overview, in 2009/10 NI Water has compiled the AIR Completion Manual. We have reviewed version 1.0, dated 11<sup>th</sup> December 2009 and confirm that it addresses some of our key observations and recommendations from AIR 09 for enhancing the regulatory reporting processes and information quality.

The AIR Completion Manual (ACM) sets out:

- the roles and responsibilities at project and corporate level
- the governance structure, identifying key individuals
- how the responsibilities cascade down into directorates, to AIR tables, commentaries and line methodologies
- the internal governance processes and independent audits that the information will be subjected to
- the preparation programme and deadlines
- guidelines for line methodologies and Company commentaries
- the requirements for assurance statements for each line, table and commentary to be signed-off by originator, reviewer and approver (level 3 senior manager)

We have provided NI Water with a number of suggestions to further enhance their ACM, but believe that this document has substantially enhanced the quality, consistency and accuracy of the AIR submission for 2009/10.

Our audits confirm that NI Water continues to develop their line methodologies for all the non-financial information. To the extent we are required to audit and comment upon the financial measures information, we confirm that methodologies also exist for all these tables.

Ownership of, and responsibility for, all reported lines has been much improved. It was clear and determined well in advance of the submission. In many cases, the structure of the organisation is such that there are several contributors to a line and each has developed a methodology for collecting and processing the data they are responsible for sourcing. Although a detailed understanding of all the requirements will take time to disseminate into the organisation, particularly when a significant re-structuring is in process, we note that NI Water has made significant enhancements to their approach, with associated benefits to their methodologies and quality assurance procedures, resulting in a greater confidence in their reported data.

Evidence of internal peer review and challenge of the reported information was much improved and a top-down review of senior management and director sign-off confirmed that this process has been implemented as described in the Board's Overview.

We have carefully considered the Board's statement on the compilation of the Annual Information Return. We confirm that the measures and procedures they describe are consistent with those we have observed during our audits of the AIR information. Any departures from their prescribed methodologies that we have identified during the course of our work were brought to the Company's attention and, where material, are reported on in our detailed commentaries.

Our audits have also indicated the information reported in AIR10 is materially consistent with the Reporting Requirements. Any areas of concern are identified in our Main Report but the majority of these were already generally known to NI Water and appropriate improvements have been identified and are in hand.

NI Water has fully co-operated with the Reporter's team and facilitated suitable access to information, systems and staff and we express our thanks to all the staff involved.

We are able to confirm the degree of involvement of the Board in the production and completion of the AIR10 submission. We have witnessed Board and Executive Team meeting minutes which demonstrate that the Regulatory information submissions have been an important focus of their attention.

Significant time and resource has been invested in regulatory submissions. We assume that this is as a result of the importance in which the supply of reliable, accurate and complete information is held, and the speed with which the Company is trying to catch up by improving their fundamental systems and processes (which supply and collate the necessary information in a more consistent and timely manner). Indeed, the investment targeted at providing and improving their regulatory information is more significant than that which we witness in similar reviews of water companies in England and Wales. We feel that the continuation of these efforts and the evident pace of improvement is successfully hastening NI Water's progress towards an appropriate quality of information.

All requirements and responsibilities are disseminated into the Directorates through the AIR Project Board. Line authors, reviewers/checkers, and approvers (level 3 manager or above) were identifiable for all entries. As AIR information is reported to the Finance and Regulation team and approvals from senior management are received, the data is locked down and thereafter a formal change control takes effect. Final AIR10 sign-off was achieved at the NI Water Board meeting of 2nd July 2010.

The processes of control of AIR information by the Finance and Regulation team appear to be sound, and simple but reasonable systems are in place to manage and check that the information they receive has been duly approved.

Our commentaries on each of the AIR10 tables provide further details of our findings on the processes and methodologies, assumptions and sources of information employed to assemble the components of reported data and the degree of compliance against the Reporting guidelines that has been achieved.

# 4. Levels of Service

# 4.1 DG2 – Properties receiving low pressure

An extensive programme of pressure logging and analysis using GIS has further refined and improved the robustness of the DG2 Register. There has been a significant reduction in the number of properties on the register during the Report Year due to improved information. This has seen an improvement over the year from 5770 properties (at B4 confidence) to 2,154 (at B3).

Although this measure is not currently determined by direct customer contact, we note that the numbers on the Register are not supported by any commensurate level of customer complaint.

# 4.2 DG3 – Supply Interruptions

NI Water has been able to report data on both unplanned and planned interruptions and calculated an overall performance score. Our assessments indicate that NI Water has reasonably well developed systems for reporting this information but performance has been materially affected by the cold weather experienced during the latter part of the Report Year resulting in a deterioration in DG3 performance for 09/10 compared to the

previous year where unplanned interruptions of more than 6 hours has increased from 8,175 to 9,427.

During these cold weather periods, a very large number of customers were subject to supply interruptions caused by frozen service and communication pipes. The need to restore such large numbers of supplies overloaded the normal recording systems and to assess the impact of this event NI Water has had to use an extrapolationbased methodology, which we deem to be appropriate.

## 4.3 DG5 – Sewer flooding

Whilst we acknowledge that the weather-related nature of sewer flooding incidents and the lack of robust historic information severely hampers the generation of an accurate DG5 sewer flooding register, we believe that there are several steps that could be taken to assist in the development of a more reliable data set from which suitably prioritised capital programmes can be established.

2009/10 saw a number of severe storms pass over the region, resulting in a large number of customer contacts potentially relating to sewer flooding. Only a very small fraction of customers contacting NI Water have had a sewer flooding incident confirmed. This seems disproportionate with similar experiences in England and Wales and the reports we have reviewed from a sample of the affected sites contain insufficient information either to allow the proper assessment of the cause of flooding or to demonstrate it is not related to overloaded sewers. We recommend that improvements are made to the processes involved in the collection of information surrounding potential sewer flooding incidents.

We also noted that the Company is continuing to allocate newly flooded properties to the 1-in-10 year register as the default, rather than the 1-in-20 year register as recommended in the NIAUR guidance. As the DG5 Register is still in its infancy, and there is no statistical reason to assume that a property has not flooded in the relatively recent past, we believe that the Company's position is a sensible one (unless a lower return period can be demonstrated) and that the guidance is changed.

However, we note and commend the action plan that NI Water is currently implementing to assess and enhance the quality of information relating to the properties currently on the Register. This should result in an improvement in the confidence of this data set.

#### 4.4 DG6 to DG9 – Customer Service

During the year NI Water announced its intention to change the contractual arrangements of [ x ] and we confirm these changes have been implemented. NI Water's direct management control of the customer function has afforded them better access to data and has facilitated some improvements to the processes and methodologies employed. We reviewed the operations and found the Levels of Service Methodologies were predominantly compliant with the Reporting Requirements and that the implementation was substantially consistent. NI Water also intends to make further changes to their delivery model in the current year

and this, together with the specific improvement projects planned, should help address some of the weakness identified within our detailed commentaries.

NI Water's 09/10 performance has been affected by a number of events during the year. The cold weather experienced during the winter period led to a high volume of calls received by the Company which caused a deterioration in the 'calls abandoned' metric. Associated disruption to meter reading cycles is also thought to have been a contributing factor to a lower DG8 performance and a larger volume of billing contacts than would otherwise have been expected. The number of written complaints has reduced from that reported previously and NI Water explained that they believe the decrease in volume is related to the improvements implemented to increase the rate of first contact resolution and reduce the average time taken to respond to customer complaints.

# 5. Key Outputs

#### 5.1 Properties and population

There have been several changes to the population estimates due to updates from NISRA, with further updates planned for the current year.

#### 5.2 Water efficiency

NI Water's water efficiency policies are in-line with those employed by water companies in England & Wales. NI Water's greater use of 'face-to-face' and educational techniques is likely to achieve higher installation rates and should therefore be more efficient.

There have been no material changes in the Company's methodologies since 2007/08. Free leakage repair services are not offered to its household customers, which limit options for reducing this component of losses.

#### 5.3 Leakage

NI Water has completed an ambitious two-year programme to improve the robustness of most components of the water balance, which has resulted in a number of changes to the leakage estimate. The extreme freeze-thaw event between December 2009 and January 2010 led to a significant increase in leakage, which we estimate to have been between 8 and 10 Ml/d. NI Water's rapid response to the winter freeze/thaw event in mobilising resources and prioritising activities appear to have successfully mitigated the impact on customers and brought leakage back to previous levels. We consider that had this event not occurred then NI Water would have achieved its leakage target.

#### 5.4 Security of supply

There has been further improvement to the SOS Index from -26 (AIR08) to 45 (AIR09) to 88 (AIR10). Whilst in 20018/09, the completion of the PPP Alpha scheme was a major contributor to the improvement, the improvement this year has largely been due to better information as a result of the development of the draft Water Resources Management Plan.

# 5.5 Water operations

AIR10 reports some significant improvements in water quality, largely due to the completion of PPP 'Alpha' works where there are particularly clear improvements at Castor Bay. The OPI measure at customer taps shows some apparent deterioration but this would appear to be a temporary blip.

NI Water has few remaining legal instruments and no new Legal Instruments or Authorised Departures for distribution input agreed this year. There has been no significant change to approach to plumbosolvency, nor to the level of reported problems.

There has been an apparent decline in the performance in turbidity levels at water treatment works from 98.6% to 97.5%, although this is largely due to the relative change in proportions following removal of the PPP sites from line totals rather than any significant deterioration in performance.

Several water treatment works have been taken out of service mid-year resulting in 6 excluded works. NI Water confirmed that they plan to close all borehole sites within the next few years (with exception of Rathlin Island) as they are considered to present a higher risk of turbidity, crypto etc. Although Lough Neagh does appear to be a resource unlikely to be affected by drought over any tangible timescales, we have some concerns regarding increasing reliance on fewer sources and source types, as this reduces flexibility and resilience to other categories of risk.

#### 5.6 Sewerage operations

NI Water reports a general improvement in performance indicators, but trends are immature as the data sets have only recently achieved a satisfactory level of reliability. There is an apparent deterioration of performance at new PPP sites which we believe to be due to the impact of historic data in the calculation of current performance and possible inconsistencies in calculations for the PPP sites last year.

In terms of sewerage explanatory factors, we note an improvement on AIR09, however the Company continues to find it difficult to allocate information into the sub-areas. It has therefore applied apportionment methods to split data into works size bands, disaggregated information should therefore be treated with caution. As the Business Improvement Programme is implemented the extent of reliance on apportionments will reduce.

The Company report no unsatisfactory sludge disposal in the Reporting Year. The amount of sewage sludge produced remains relatively consistent with AIR08, reflecting stable operation and good quality data collection which has been in place for a number of years. Improvements have been made by excluding small volumes of non-regulated sludge (septic tanks) and including grit and screenings, in accordance with the guidance.

# 6. Serviceability

In general, other than the more established indicators used by the quality regulators, the various parameters being measured which could indicate the general performance of the asset base are still maturing. Significant work is ongoing to identify the relevant data requirements, implement appropriate methodologies to collect and analyse it, and to cleanse existing/historic information. These activities have a dominating influence on the indicators which, when combined with the external impacts of weather or revised standards, render the majority of these indicators too volatile, and therefore unuseable for identifying trends in overall serviceability of the key asset groups.

We also note that the weather extremes during 2009/10 created significant flooding in the summer and a major freeze/thaw event in winter. This will have had substantial impacts on the sewerage and water mains performance indicators respectively, including DG2 (poor pressure), DG3 (unplanned interruptions), DG5 (sewer flooding), leakage, customer contact indicators, and would also have affected operational costs.

In our view, because of the short history, the rapidly changing and improving data quality and the recent weather extremes, the serviceability indicators are currently too volatile to infer any trend information from.

#### 7. Expenditure

#### 7.1 Water service

The Company's proportional allocation methodologies, which assign expenditure into purpose categories and investment drivers, asset types and asset categories and life classes, have been further improved and now report comprehensively on the assets being added through the capital works programme with reasonable reliability and consistency. Procedures are in place to ensure that allocations are checked at key project stages to capture any changes in solution.

Our audits indicate a slight but material difference in view on proportional allocation, particularly relating to under-allocation to Base service (capital maintenance).

Progress to date on the water service programmes is broadly in line with expectations although there have been adjustments to programme detail.

Expenditure on the water service is lower than in the previous year but is some  $\pounds 25m$  over the budget assumed in the SBP. Over the three years of the SBP period, NI Water has spent  $\pounds 74m$  above the assumed budgets. Infrastructure renewals expenditure has been accelerated to help maintain a relatively stable spend profile and to compensate for the deferment of capital schemes emerging from the Drainage Area Studies (DAS) on wastewater. NI Water has therefore delivered some 35% more mains rehabilitation work than was planned for the SBP period which is also the major contributor to the overspend on water quality.

#### 7.2 Sewerage service

For the sewerage service, expenditure in 2009/10 is slightly below that of the previous year but £5m above the budget assumed for the year in the SBP. Over the 3-year SBP period, NI Water has under-spent the total budget by £13m.

As noted above, the DAS work has not yet produced the volume of capital works that was anticipated in the SBP. The WWTW programme has also been subject to significant change, through re-assessment of scope, re-prioritisation and re-programming. Whilst quality outputs are being met numerically, and investment is currently perceived to be beating the efficiency targets, it is not clear whether that which is being delivered is fully comparable with the original expectations.

We believe the regulatory process would benefit from a greater level of formality of outputs (sites, standards and dates) to allow a structured and more accurate assessment of progress in delivering the capital programmes to be made.

#### 7.3 Operating costs

The Company has achieved a reduction in nominal 'functional' expenditure of  $\pm 21$  million for both water and sewerage combined. The Company has achieved this through a combination of factors, including reduced employment costs obtained from the ongoing severance programme, reductions in provisions compared to AIR09 and some efficiencies.

The Company approach to reporting data for tables 21 and 22 has changed compared to AIR09. As a result it has restated its AIR09 data using the same method as that employed in AIR10. The key difference is a revised approach to account for general and support expenditure. We feel that the approach could be further refined to better allocate costs more directly and this is something that NIAUR and NI Water should address for AIR11.

NI Water has identified  $\pounds$ 16.3million of atypical costs for AIR10. Inter alia, these relate to the Business Improvement Programme, and the Voluntary Early Retirement Scheme. These are reported as general and support activities, customer services and general and support activities respectively. We believe a case may exist to report these costs as exceptional items.

# 7.4 PPP Charges

[ x ]

[x]

# 8. Other Initiatives

## 8.1 Health and Safety

The Company has introduced computer-based reporting systems, Oracle and Datix for reporting absence and RIDDOR incidents in table 41. As reported in our detailed commentaries, the Company has provided appropriate evidence that the information reported is derived from the records and systems and reasonable assumptions have been made. The Company has reported significant improvements in both its lost time due to illness, and major incidents. However the Company does not currently capture employees' hours working for non-appointed businesses, therefore the confidence grades should be downgraded.

NI Water currently captures all of their contractors' H&S information from their Captrax system which is manually transferred onto Datix. We have not performed any audits on source data, calculations or data transfers and we believe that only limited, if any, checks are performed on this information by NI Water. Currently, we therefore have limited confidence in the data reported for contractors.

# 8.2 Carbon Accounting

We confirm from the completed UKWIR worksheets and supporting information that NI Water has applied the correct methodology and used correct greenhouse gas conversion factors. The Company's approach is in accordance with the Reporting Requirements and the data used in the calculations, which are largely 'actuals', are considered to be reliable. The assumptions and omissions made by the Company, as described in detail in our commentary, are appropriate and we believe that the omissions are not material to the overall emissions figure.

The Company has reported an increase in GHG emissions of  $13,000tCO_2e$  to  $189,000tCO_2e$ , which is largely due to an increase in electricity consumption. The Company also included business mileage into their emission figure in this year.

Although NI Water intends to follow the Government's carbon reduction targets, except for targets for introducing renewable energy, they do not have a formal strategy for managing their carbon emissions.

#### 8.3 Sustainable Procurement

We note the commentary provided by NI Water in their Board's Overview on this issue and provide detailed coverage of this in our Procurement Activity Report, which covers the AIR10 period and the Procurement Plan which sets out the strategy for the years ahead.

#### 9. Consistency of the Board's Overview with other parts of the AIR 10 submission

We confirm the consistency of the Report Year information in Tables A to E in the Board's Overview with the relevant information provided in the AIR10 tables as follows:

- Table A fully consistent except for line 16 where the audited data in table 11 gives a value of 376.27km.
- Table B fully consistent except line 12 where the definition is in error: % satisfactory intermittent discharges requires a different calculation to that stated. Table 16, lines 16a + 16b divided by 17a+17b gives the value provided by NI Water in Table B.
- Table C blocks A & B only checked. These are fully consistent.
- Table D materially consistent.
- Table E materially consistent.

CWJ Turner Reporter for Northern Ireland Water Ltd

Halcrow Management Sciences Ltd 30th July 2010

## **Carbon Accounting**

# Commentary by REPORTER

#### 1. Background

This commentary provides details from our review of NI Water's Carbon Accounting assessment included in the Board Overview of AIR10.

#### 2. Key findings

- NI Water has applied the UKWIR carbon accounting methodology correctly
- NI Water has applied the correct greenhouse gas conversion factors
- Carbon accounting boundary includes all of NIW's activities

## 3. Audit Approach

The audit consisted of an interview with the NI Water carbon accounting system owner 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.

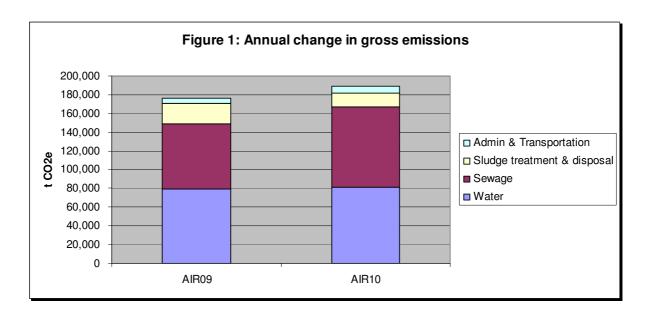
#### 4. Audit Findings

#### 4.1 General

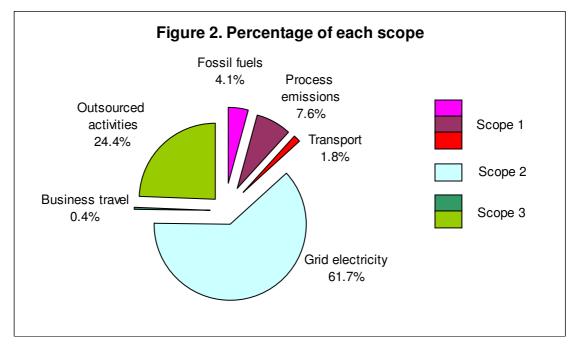
We have reviewed the Company's statement on 'Carbon Accounting' in its Board Overview and have met with NI Water's energy team. NIW has cooperated throughout the audit process and made available all relevant information to the Reporter.

#### 4.2 Annual operational GHG emissions

Total operating emissions (calculated according to Defra guidelines) was 186,673 tonnes of CO2e. Total operating emissions has increased by 12,640 tCO2e from 2008/09 (7%). Figure 1 below shows the annual change of NIW's total gross operating emissions. The increase from AIR09 is mainly as a result of increase in grid electricity consumption, which equates to 10,158 tCO2e. The change in conversion factor causes a minor increase of 1,991 tCO2e. An inclusion of emissions from private car equates to 837 tCO2e. Historic figures are not directly comparable over time and the following chart should be used with caution.



The following Figure 2 shows that the majority of emissions are from scope 2, grid electricity used by the Company, which is around 62% of total emissions. Therefore the changes in the conversion factor and treatment of green energy will directly affect to the Company's total annual emissions.



# Sludge treatment, recycling and disposal

NIW's gross emissions from Sludge have decreased by 7,973 tCO2e (35%) from AIR09 due to a decrease in sludge volumes. The emissions from sludge are now passed to Kinnegar and are counted as scope 3 'outsourced' activities.

## Administration

Emissions from administration are reduced by 16 tCO2e (0.7%) from AIR09. As previous years NIW has not included emissions from SF6 and HFC.

# Transportation

NIW has previously reported emissions from diesel used for the Company cars and air travel. In AIR10, they explained that emissions from transportation are split between water and wastewater on a 50:50 basis and between petrol and diesel on a 30:70 basis.

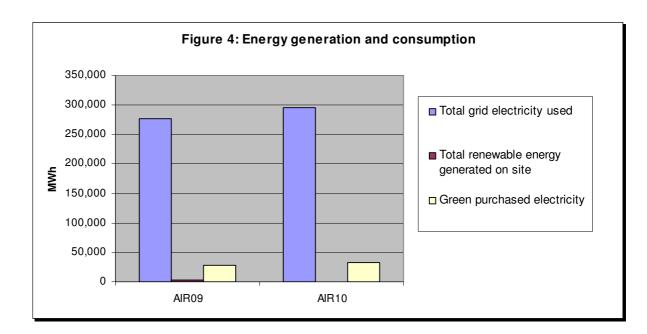
Emissions from air travel are derived from expenses claims. No rail travel is included. At the end of the year, this information is sorted by each travel mode, i.e. car or air travel, and the mileages of each trip are calculated via a website mileage calculator. The Company assumed that all of their mileages are for regulated business. Considering its nature, we believe this assumption is reasonable for NIW.

NI Water has included its emission from all of the Company's air travel, which could be overestimated as this emission figure may include non-regulated business. However, we believe that the emission from air travel is immaterial.

The Company explained that they are doing as much as they can to improve their accuracy, but we acknowledge that this produces a relatively small component of the emissions and reasonable management action in this area is unlikely to affect the overall totals materially.

#### Electricity

We observed the slight increase (circa 7%) in total grid electricity consumption from AIR09 to AIR10 (Figure 4). NIW explained that this is due to transfer of capital projects to operational ownership and is as a result of improved water and waster treatments processes many of which are more energy intensive but are required to meet various environmental legislative drivers. PPP sites which were previously being managed and run by contractors were also handed over in the year and ownership of emissions commensurate with increased electricity and other fuel usage transferred at this stage to NI Water.



# 4.3 Annual operational GHG intensity ratio

The Company has calculated its gross emissions/MI 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/MI of treated water has increased from AIR09 by 3%, and the gross emission/MI of treated sewage has increased by 12%. This is due in the main to transfer of capital projects to operational ownership and is as a result of improved water and waster treatments processes many of which are more energy intensive but are required to meet various environmental legislative drivers.

# 5. Company methodology

# 5.1 Strategy

We had a discussion on 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 for water companies in England and Wales but that they do accept the targets set by the Government. NI Water's long term target is 80% reduction in carbon emissions by 2050 against a 1990 baseline.

To assist in achieving the target, the Company has set targets for the 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.

#### 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 acquisition 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 which 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:

- All of the NIW's business usage has been included.
- No supply chain, embedded or short cycle emissions are included, except NIW's outsourced emissions from their capital programme partners and PPP programmes.
- Scope 3 emissions from process wastes to land and landfill are separated from the NIW's emissions.
- Emissions from all of business mileage 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 AIR10:

- 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 AIR10. We believe emission from these gases would be immaterial.

# 5.5 Validation of inputs

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

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

#### 5.6 Conversion factors

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

The conversion factor for grid electricity increased from 0.537 to 0.54418 kgCO2/kwh. This has been correctly applied for the calculations.

## 6. Confidence Grade

As electricity consumption contributes the most to the overall GHG emissions, overall confidence grades reflect the energy consumption confidence grades. 61.7% of total emissions according to Defra guidance are from electricity consumption (scope 2), of which 98.2% (58.6% of the total emission) are based on half hourly metered data in scope 2. Thus, we consider the overall confidence grade of B3 would be appropriate.

NIW assigned B2 for the CRC emissions in AIR09 which they down graded to B3 this year. Whilst the vast majority of emissions are from electricity usage, some emissions are unknown. However, we believe that the unknown emissions are relatively immaterial. Therefore we concur with the Company's assessment.

#### 7. Company Specific Guidance

None.

 Date:
 30 July 2010

 Prepared by:
 [x]