



NWRWTP

North Wales Residual Waste Treatment Project

AGENDA ITEM NO: 8

REPORT TO: NWRWTP JOINT COMMITTEE

DATE: 13th DECEMBER 2012

REPORT BY: PROJECT DIRECTOR

SUBJECT: PROCUREMENT UPDATE REPORT

1. PURPOSE OF REPORT

- 1.1. To update the Joint Committee on progress relating to procurement aspects of the NWRWTP.

2. BACKGROUND

- 2.1. The NWRWTP project team have been in extensive dialogue with the two remaining participants since the NWRWTP Joint Committee de-selection decision in August 2012. As part of this process the NWRWTP Project Director has reviewed the procurement programme and the latest update is described within this report.
- 2.2. The Joint Committee will be aware that the project team has been tasked to review the potential opportunities for providing some form of community benefit scheme that may be appropriate to support the delivery of the project. On aspect that the project team were specifically addressing was to explore any benefits that could be derived from utilisation of heat produced by a potential energy from waste facility at Deeside. To this end a specialist district heating consultant was appointed to assess the potential opportunities for developing a heat network in the Deeside area and to assess its viability. This work has not yet completed but a presentation is to be made by Cofely District Energy Ltd to accompany this report with the intention of providing some initial findings to the Joint Committee.
- 2.3. At the Joint Committee meeting of 1st August 2012 there was a discussion relating to particulate monitoring that could be enhanced above that required by the Waste Incineration Directive (this directive sets all the emission limits that any operator of a waste incinerator must meet and therefore what it must monitor to ensure compliance). Members from Flintshire County particularly wished to see if additional particulate monitoring could be carried out for very small particulates (PM 2.5). The project team agreed to engage with both Participants to explore this more fully. The outcome of these discussions set out in section 4.3 of this report.



3. CONSIDERATIONS

Procurement programme

- 3.1. The project team and its external advisors have been in detailed discussions and dialogue with the two remaining Participants in the procurement process. The project team has made clear to both participants what level of detail it will require and surety in commercial positions before the Partnership would consider closing dialogue. Participants have as a result informed the project team that they would not be in a position to provide all information and close all issues by the original timetable. The proposed amended timetable is shown at Appendix 1. The project team now expects the commercial issues to have been completed by the end of this year with a few matters requiring finalisation in January 2013 (and potentially into early February 2013).
- 3.2. As a result the Joint Committee in February 2013 will now be provisionally programmed to consider close of dialogue for the project. Welsh Government gateway review (readiness to close dialogue would be programmed for February to March 2013). Call for final tender would expect to be issued in April 2013. The Project team will continue to keep the timetable under review.
- 3.3. The original programme allowed 6 weeks for participants to ready their final tender submissions. Participants have indicated however that their submissions would be fundamentally ready for call for final tender and they are only likely to require 2- 3 weeks. The programme has been adjusted to reflect this. A further update on the programme will be brought to the February 2013 Joint Committee.

Update on progress in exploring options for a Community Benefit Scheme

- 3.4. It is not unusual for community benefit schemes (CBS) to be introduced in conjunction with large high profile developments, e.g. renewable energy schemes, major pipelines or highway improvements, large waste projects, etc. In some cases these CBS are covered by a section 106 planning agreement; in others the benefit is provided by the developer or via a fund put up voluntarily by the developers. In all of those circumstances, the CBS is not offered as compensation for allowing the development to proceed, nor does it imply that the development has an adverse impact on those communities. It is merely recognition that one area or community is being asked to host a development which serves a much wider catchment.
- 3.5. The project team has carried out an initial review of the types of schemes that have been considered or proposed in the UK to date on similar schemes. Two potential types of schemes were considered by the Project board of having the most merit. These were:



- 3.6. **A) “One off” capital provision with potentially an ongoing revenue provision for maintenance upkeep.** This can be for things such as youth facilities, play areas or other community type projects. Typically a local community liaison group would be set up to assist in identifying priorities for such funding.
- 3.7. At the July 2012 Project Board, the Project Transactor confirmed that informal consultations with within Local Partnerships had indicated that for similar types of projects a capital value of £250k with a ongoing review contribution of circa £50k pa had been seen on some other projects. The Project Transactor briefed the Project board on 12th July on further investigations that had been carried out in relation to what had been seen in other similar projects in the UK. The Project Transactor informed the project board that the figures previously reported (e.g. £250k capital and circa £50k pa revenue) were the normal amounts seen, but the majority of projects had no proposed community benefit scheme. The Project board meet again in January 2013 and seeking to agree a position on this for the Joint Committee’s consideration will be a key matter for that meeting.
- 3.8. The Project team would also like to bring to the Joint Committee’s attention that is has received confirmation from WG that dependant on the exact nature of the proposals, WG **will** consider counting such costs within the calculation for WG’s review support (i.e. could be subject to WG’s 25% review support). T
- 3.9. **B) The setting up of a joint venture ESCO (energy services company) for the provision of heat to local residents and / or 3rd sector /public buildings.** There is the potential for the Partnership to enter into a joint venture with an energy provider to form an ESCO, that would then contract with the Partnership’s waste contractor for the purchase of heat for distribution to residential customers (such as for instance the new housing potentially being developed as part of the Northern Gateway Project and that will contain a high proportion of social housing or shared ownership housing). Such heat provision could significantly reduce the heating cost of those households receiving the heat in comparison to conventional heating systems. If a heat distribution system was developed there would also be opportunities to supply heat to 3rd sector or public buildings (such as community or leisure centres etc).
4. The project team were instructed to proceed with securing additional specialist technical support for carrying out a heat distribution feasibility study looking at the potential benefits that could be accrued if the NWRWTP project were to supply energy in the form of heat to potential users located in the Deeside area..
- 4.1. The study is intended to identify whether a heat distribution scheme is technically deliverable, financially viable and importantly for the purposes of providing community benefit can reduce costs for those potential heat



users. This work has not yet completed but a presentation is to be made by Cofely District Energy Ltd to accompany this report with the intention of providing some initial findings to the Joint Committee.

4.2. Two other types of scheme were also considered at the Project Board's meeting of 12th July but were not seen as deliverable as the other potential schemes. The project team agreed to monitor development and keep under review. A summary of any further work is set out below:-

- **The setting up of a joint venture ESCO (energy services company) for provision of electricity to local residents.** There is the potential for the Partnership to enter into a joint venture with an electricity provider to form an ESCO, that would then contract with the Partnership's waste contractor for a better than market electricity rate (with resulting savings being passed onto end users). This is usually considered when a local authority wishes to purchase energy for its own use (such as for council buildings etc). However it could potentially also be used to allow purchase of electricity for sale to residential users. The Project team thought it prudent to ask the two participants to provide their views of the deliverability of such a scheme. Both the participants clearly stated that to set up such a scheme would be very complex and costly for such a relatively small number of potential beneficiaries. Significant regulatory barriers also exist that may well preclude the development of such arrangements. No further work on this area is therefore suggested.

Particulate Monitoring (PM 2.5) Requirements

4.3. Please see Appendix 2 for a paper describing normal monitoring relating to particulates for waste to energy facilities (incineration).

4.4. Waste to energy facilities like all combustion processes emits particulates. The smallest particulates are classified as PM 2.5 (that is particulates of 2.5 µm and below). PM2.5 is simply a sub-set of Total Particulate Matter (TPM) that is continually monitored at such facilities. Therefore although PM2.5 concentrations are not specifically reported, they are still collected and monitored as part of these tests. So, for instance, if the TPM result was 5 mg/m³, we would know that PM2.5 emissions could be no greater than 5 mg/m³, since this value is the concentration of all particle sizes, and PM2.5 only makes up a certain proportion of all monitored particle sizes.

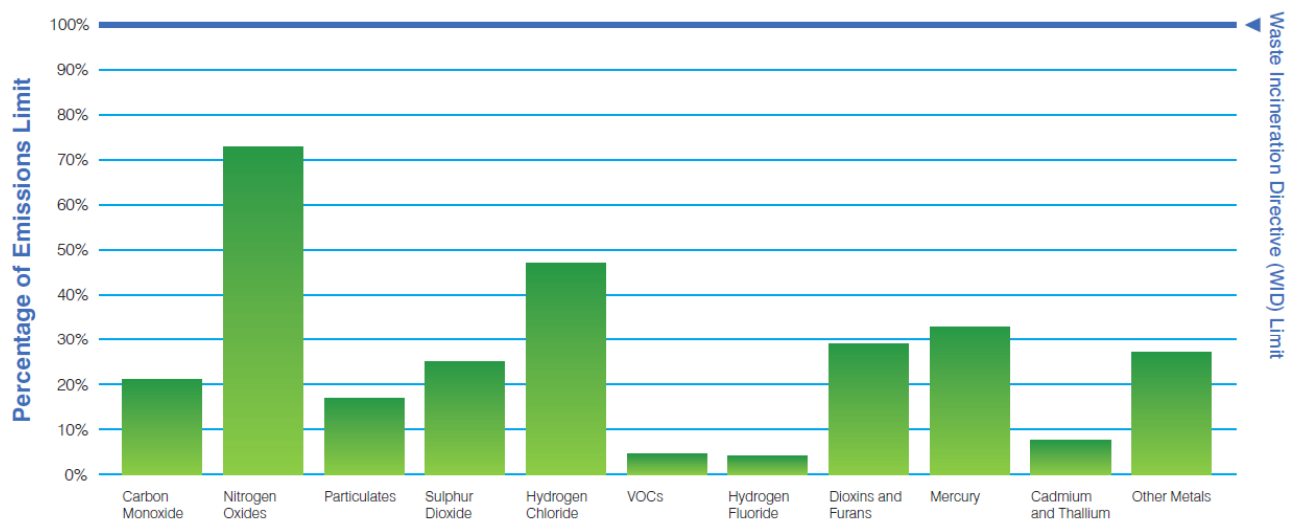
4.5. The Project Director also wishes to remind the Joint Committee that the approved information pack included information that clearly showed that although maximum emission levels are set by the Waste Incineration Directive, in practice most modern incinerators typically operate at levels considerably below this. For instance typical modern waste to energy facilities operate at only 20% or less than their emission limit. The Project Board are also asked to note that Energy from Waste facilities have emission limits as set out by the Waste Incineration Directive of 10mg/m³ for particulates whilst for example a cement kiln has a higher limit of



18mg/m³. Thus waste energy facilities are already high performing industrial processes in terms of particulates. The table from the Partnership’s information pack is reproduced below.

4.6. Figure 4.6

Average emissions performance of UK Energy from Waste plants



Source: Fichtner 2007

NWRWTP Information Pack – Summer 2012

4.7. Despite the fact that PM 2.5 is measured as part of measuring overall particulate levels, in order to address some members concerns, both Participants were required to bring forward their proposals for specific PM2.5 monitoring. Both participants have indicated that as part of their permit requirements they are required to carry out additional emissions tests (twice yearly) to the continuous on-line measurements. This is carried out by using the required sample point located in the stack to extract samples for further laboratory analysis of a suite of compounds. Although specific PM2.5 particle size analysis is not currently required under permit, both Participants have confirmed that they would include the additional analysis of PM2.5 particulates emissions as part of our regular twice yearly sampling regime. Therefore the NWRWTP’s contractor would be able to produce data showing what PM2.5 particulates were being emitted. The costs of this additional monitoring and analysis are marginal (estimated total costs at circa £4k pa).

Please note that it is the intention in early 2013 to offer a meeting open to all members of partner authorities at which a specialist representative of the Health Protection Agency (HPA) will attend. The aim of the meeting is to allow detailed questioning of the HPA from members in relation to



emissions from energy from waste facilities. The HPA representative will be able to brief member directly on the facts and their position in relation to air emissions arising from waste to energy facilities.

5. RECOMMENDATIONS

- 5.1. To note the content of this report.
- 5.2. To agree the proposed way forward for ensuring PM2.5 particulates emissions are specifically monitored within the NWRWTP solution.

6. FINANCIAL IMPLICATIONS

- 6.1. See section 3.7 to 3.10 within this report.

7. ANTI-POVERTY IMPACT

- 7.1. If affordable heat can be provided to social housing and low income households this will reduce fuel poverty.

8. ENVIRONMENTAL IMPACT

- 8.1. Significant environmental benefits if heat usage can be secured from the Northern Gateway Development.

9. EQUALITIES IMPACT

- 9.1. Not applicable.

10. PERSONNEL IMPLICATIONS

- 10.1. Not applicable.

11. CONSULTATION REQUIRED

- 11.1. See above.

12. CONSULTATION UNDERTAKEN

- 12.1. Not applicable.

LOCAL GOVERNMENT ACCESS TO INFORMATION ACT 1985

Background Documents:

None

Contact Officer: Stephen Penny - NWRWTP Project Director



Appendix 1 Programme

JC meeting to confirm agreement to close dialogue (projected to be ready for this date but subject to review)			20/02/2013
WAG Readiness review (readiness to close dialogue)	30 days	Feb 2013	Mar 2013
Issue Call For Final Tender + Close CD			April 2013
Final tender submission			April 2013
Final Evaluation / Fine Tuning	4 wks	Apr 2013	May 2013
Project Board Meeting to approve PB Appointment, FBC & IAA2			Jul 2013
JC approve preferred bidder, FBC and IAA2			Aug 2013
Individual authority approved bidder & FBC & Contract award approvals	80 days	Aug 2013	Dec 2013
All partner authority approvals in place			Dec 2013
Gateway review 3 – Investment Decision (WAG approval of FBC)	20 days	Dec 2013	Jan 2014
All FBC & PB approvals complete			Jan 2014
JC approval of Contract award			Jan 2014
Planning Application			April 2014
Construction Period (Treatment)	700 days	Mar 2015	Nov 2017
Construction period	30 mons	May 2015	Sep 2017
Commissioning (waste accepted at facility)	3 mons	Sep 2017	Nov 2017
Facility fully available			Nov 2017



Appendix 3 PM_{2.5} Emissions from Energy Recovery Facilities

What is PM_{2.5}?

Particulate matter (PM) is a term used to describe all suspended solid material in air. PM can range in size from a few hundred microns (usually referred to as 'grit' or 'dust') to less than one micron (commonly referred to as 'ultra-fine particles' or 'nano-particles'). 1 micron is equal to one millionth of a metre, or 1 micrometre (1µm). As a comparison, 100µm is the average width of a human hair, whilst 6-8µm is the diameter of a red blood cell. PM_{2.5} refers to all particles that have a diameter less than or equal to 2.5µm.

PM_{2.5} occurs due to emissions from both natural and man-made sources. Natural sources include sea spray/salt and natural fires, whilst man-made sources usually derive from transport and domestic and industrial combustion.

Why is PM_{2.5} Important?

Long-term and short-term exposure to PM in air we breathe is consistently associated with a range of ill health effects (Defra, 2007). Recent reviews by the Committee on the Medical Effects of Air Pollutants (COMEAP) suggest PM_{2.5} is primarily responsible for such effects due to its smaller size, meaning it is able to enter deep into the lungs (COMEAP, 2009, 2010).

How is PM_{2.5} Regulated?

PM_{2.5} emissions from energy recovery facilities are currently regulated in England and Wales through the Waste Incineration Directive (WID). Prior to any energy recovery facility commencing operation, the operators of that plant will need to apply to the Environment Agency for an environmental permit. The Environment Agency will only issue a permit if the operator can demonstrate that emissions of total PM from the stack (i.e., inclusive of PM_{2.5}) will not exceed a certain concentration, known as an emission limit value (ELV)¹. Additionally, they will need to demonstrate that when emissions from the stack are mixed with ambient air, the concentration of PM_{2.5} in the air breathed in at nearby populated areas does not exceed a certain concentration known as an Air Quality Standard (AQS)². This standard is set at both an EU and UK level and is set at a level that protects human health.

How are Emissions of PM_{2.5} Monitored?

WID only requires that concentrations of total PM (TPM) be monitored and reported at an energy recovery facility (i.e., concentrations of all particle sizes including PM_{2.5}). Currently, there is no specific requirement to report PM_{2.5} separate from this total figure. However, **as PM_{2.5} is simply a sub-set of TPM, although PM_{2.5} concentrations are not reported, they are still collected and**

¹ The current ELV for TPM is 30mg/m³ as a maximum 30-minute average concentration, and 10 mg/m³ as a maximum daily average concentration.

² The statutory AQS for PM_{2.5} is 25µg/m³ as an annual average concentration which must be met at all locations in the UK by 2015.



monitored as part of these tests. So, for instance, if the TPM result was 5 mg/m³, we would know that PM_{2.5} emissions could be no greater than 5 mg/m³, since this value is the concentration of all particle sizes, and PM_{2.5} only makes up a certain proportion of all monitored particle sizes.

TPM emissions from energy recovery facilities are monitored using a combination of techniques. During periodic tests, particles collect on a filter, and the filter is weighed before and after the test to calculate the total concentration of all particle diameters present in the stack emissions as a single figure. The filter collects all particle sizes with a high degree of efficiency³, including PM_{2.5}, and this has been conclusively demonstrated from recent peer reviewed research on particulate emissions from Italian energy recovery facilities (Buonanno et al, 2012).

Many new plants now automatically, and continuously, publish data from their CEMS unit via a dedicated internet site, allowing regulators and members of the public to view current and historical emission levels in near real-time. Regardless of whether or not a plant makes data available in real time, operators are required to submit quarterly and annual summary reports of monitored data to the Environment Agency. These reports are then placed on the public register and available for viewing by members of the public.

References

- Buonanno, G., Scungio, M., Stabile, L. and Tirler, W., 2012. 'Ultrafine Particulate Emission from Incinerators: the Role of the Fabric Filter.' *Journal of the Air and Waste Management Association*, 62:1, 103-111.
- COMEAP 2009. 'Long-term Exposure to Air Pollution: Effect on Mortality'.
- COMEAP, 2010. 'The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom.'
- Defra, 2007. 'The Air Quality Strategy for England, Scotland, Wales and Northern Ireland.'
- Environment Agency, 2009. 'How to Comply with your Environmental Permit: Additional Guidance for the Incineration of Waste (EPR 5.01)'.

This appendix extracted from a note provided by the partnership's external technical advisors Amec.

³ Up to 99.5% for particles with a diameter of 0.3µm or more