MVV Environment Services Ltd

Energy from Waste Combined Heat and Power Facility, Forties Road, Dundee

Environmental Statement: Addendum 2, Non-Technical Summary

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MVV Environment

ARUP

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1 What is the Energy from Waste Combined Heat and Power Facility?

The proposed Energy from Waste Combined Heat and Power (EfW CHP) facility at Forties Road, Dundee, is a scheme to replace the existing Baldovie Energy from Waste plant. The new facility is to be located on the neighbouring site between the Dundee Energy Recovery Ltd. (DERL) facility and the car breakers to the south.

The DERL facility is close to the end of its economic life and does not operate in Combined Heat and Power mode. It is therefore proposed to provide a new, efficient facility that will last for 25 to 40 years and which will also not only manage the residual waste from the Dundee and Angus areas, but will also provide a large quantity of energy in an efficient and economical manner to both the adjoining Michelin tyre factory and the National Grid.

The primary purpose of the EfW CHP facility is to treat the household waste collected by both Dundee City Council and Angus Council which has not been recycled, reused or composted. The proposed replacement facility is designed to treat up to 110,000 tonnes of waste per year and thereby generating 39.9 Megawatts of energy per hour. However, the capacity and output could vary as the residual waste changes over the life of the facility.

Waste received at the site will be managed in an enclosed building with all the malodourous air fed into the boiler which will burn the waste. The boiler will then generate steam which will drive a turbine, generating electricity to power the plant and provide steam and electricity for Michelin. Any excess electricity will be exported to the National Grid. If a heat network is developed in Dundee the energy which is not used by Michelin could be distributed to nearby housing and businesses.

The application for the EfW CHP facility is being made by MVV Environment Services Limited (MVV), a wholly owned subsidiary of MVV Umwelt GmbH. In Germany, MVV Umwelt operate six Energy from Waste and biomass plants, managing 1.6 million tonnes of waste a year. In the UK, MVV already operate an EfW CHP facility in Plymouth, managing the residual waste from south-west Devon and a biomass energy from waste facility in Kent.

The Environmental Statement describes the environmental effects of the proposal and has been prepared in accordance with the Town and

Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (EIA Regulations).

This document is a Non-Technical Summary of the Environmental Statement for the EfW CHP facility, Forties Road, Dundee. The full document can be seen online on Dundee City Council or MVV's web site and inspected at the Dundee City Council offices in Dundee House, 50 North Lindsay Street, Dundee.

Illustration of the design of the EfW CHP facility

2 What is proposed?

The planning application relates to five parcels of land and would result in a new layout for the waste management facility. The application includes the following areas:

A. The new Energy from Waste Combined Heat and Power Facility.

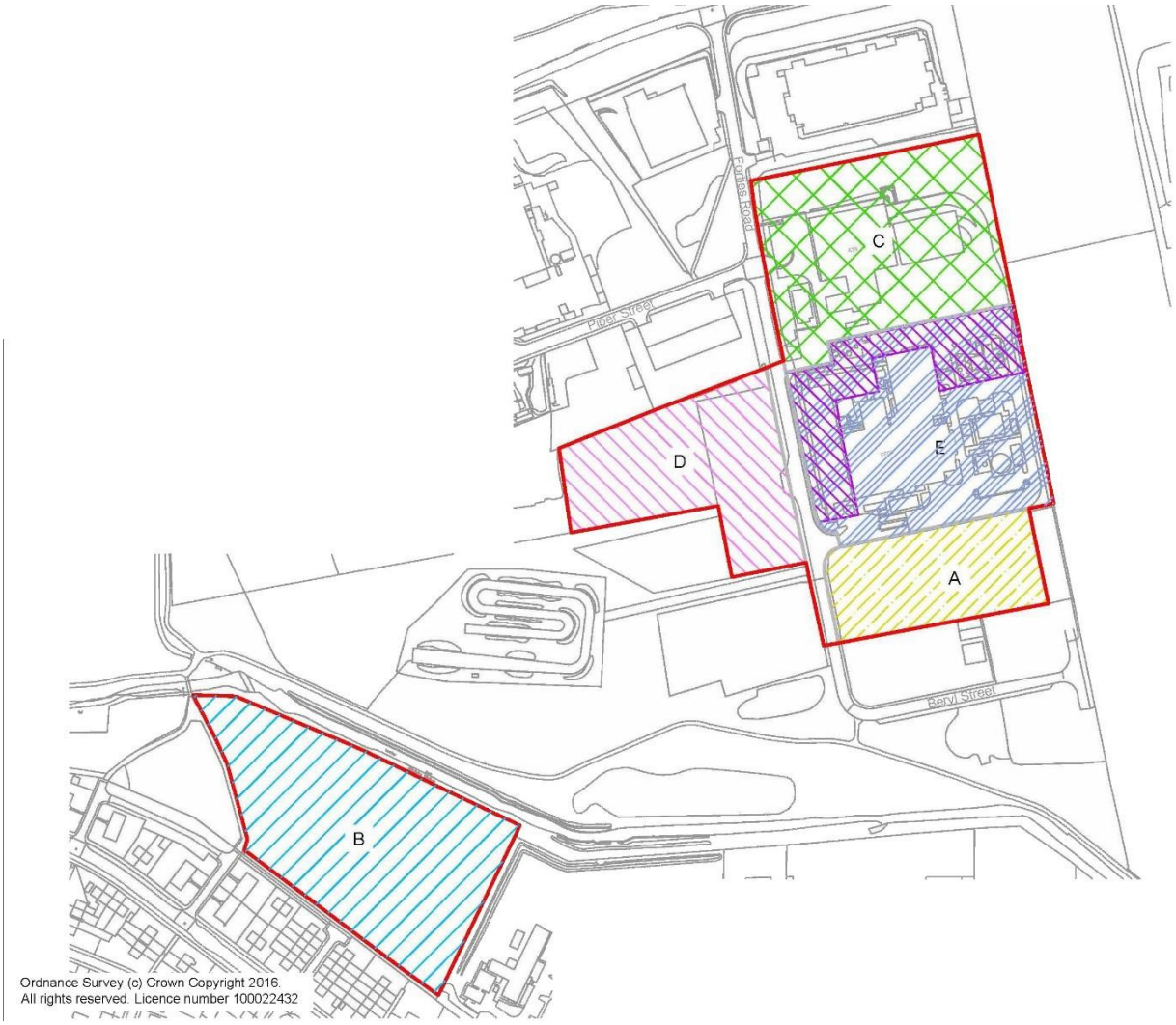
B. A Flood Mitigation Area.

C. The existing ATS Site.

D. The construction compound and contractors' parking.

E. The existing Dundee Energy Recovery Ltd. Energy from Waste facility (DERL).

The replacement facility will be located adjacent to the existing waste management facilities (DERL). Once the new facility has passed its initial commissioning tests all waste will be diverted to it, and DERL would cease to burn waste. At no time would both facilities burn waste simultaneously.



Site Plan

Energy from Waste Combined Heat and Power Facility

The proposed EfW CHP facility would be constructed on the Dundee City Council owned site currently occupied by Tayside Contracts who recycle road construction waste and whose activities will relocate to Riverside. The new facility would generate energy using waste as a fuel. Like DERL, the new facility would continue to take waste after it has been sorted by householders to remove recyclable materials, as well as similar waste from businesses, shops and factories.

Preselected Flood Mitigation Area

To avoid the risk of making flooding worse a, 'Flood Mitigation Area', will be located to the southwest of the proposed scheme on the south side of the Dighty Water. A shallow depression will be constructed in this area which will reduce the risk of flooding from the adjacent Dighty Water as a result of the new development, but will not increase the risk of flooding to nearby residents.

Existing ATS Site

The existing ATS site will continue to be used to treat bulky waste as the new facility is being built. The ATS site managed the residual waste from Dundee from the 1970's, until the DERL facility came on line in 2000. It continues to pre-treat some residual waste and acts as a transfer station for recyclates, a depot for the refuse collection vehicles and parks department, providing garaging, stores and 'messing' facilities.

Existing Dundee Energy Recovery Ltd. Energy from Waste Facility

The existing DERL facility will cease to operate as soon as the proposed replacement facility is commissioned. The access, weighbridges, tipping hall and some electrical switchgear would be retained and used as part of the new facility. The tipping hall will be used for the pre-treatment of bulky waste which currently occurs on the ATS site.

Construction compound and contractor parking

A temporary construction compound will be established on the land on the west side of Forties Road, opposite the proposed EfW CHP facility. This will minimise disruption of waste deliveries to the existing site and reduce traffic impacts associated with the transportation of construction materials for the new facility.

3 Why here?

The existing DERL waste management facility is currently owned by Dundee City Council. The facility is close to the end of its economic life but does not operate in Combined Heat and Power mode. It generates electricity but does not provide steam to any industrial premises.

By locating the new facility in an existing industrial area adjacent to the existing DERL, there will be minimum disruption to both local residents and to the existing household waste collection operations in Dundee and Angus. The use of the adjacent site presents the best opportunity to construct a new facility while also allowing the existing DERL facility to continue to operate during the three year construction period. The proposals will also allow some of the existing buildings to be incorporated into the new facility thereby making the best use of existing assets. The proposals will also facilitate the future supply of energy to the Michelin factory.

The applicant has used the Scottish Government's 'Heat Map', to identify the largest heat users in Dundee. Although there are other areas where the proposed scheme could have been located and which could have also provided energy to nearby users, none of these sites are able to provide the opportunity to provide such a large quantity of heat in such an efficient manner to a key employer such as Michelin. It was therefore on this basis that the site adjacent to the existing waste management facility was identified as the most appropriate site for the provision of the new facility

Aerial Plan

4 How would it be constructed?

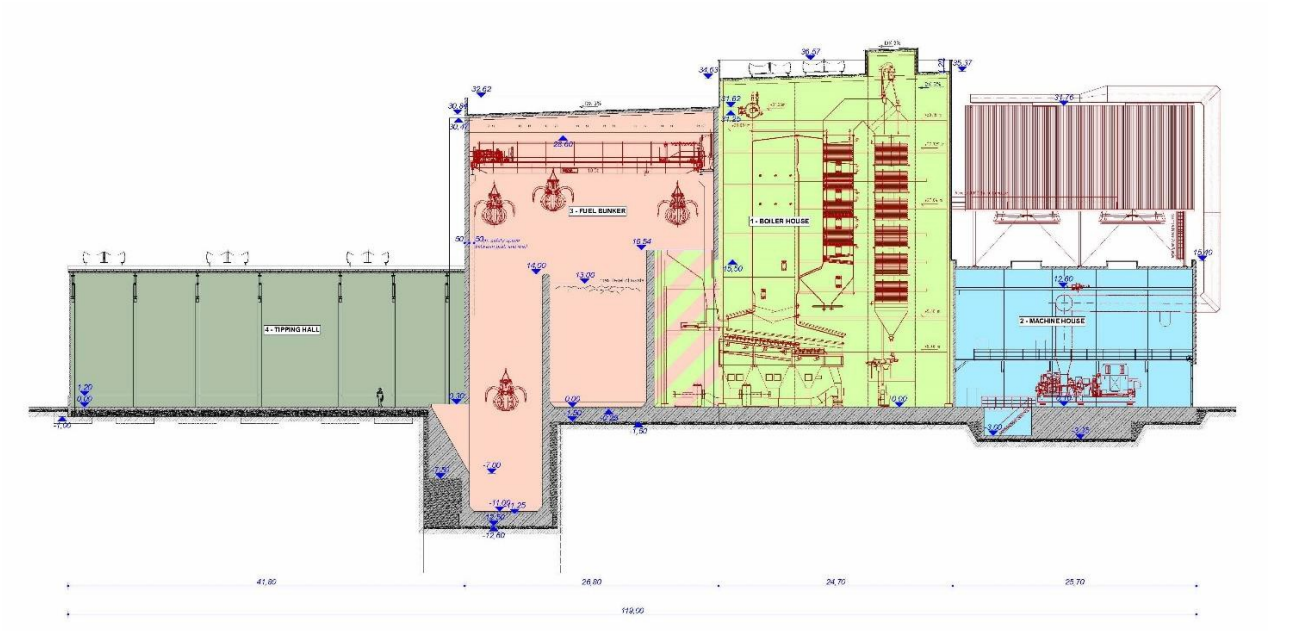
Construction of the proposed EfW CHP scheme is expected to take place between mid-2017 and early 2020 and will take approximately 3 years to complete. The existing DERL facility will remain operational until the new facility is completed.

A temporary construction compound will be established on land to the west side of Forties Road opposite the proposed EfW CHP facility. All construction material will be transferred to and from the application site by road. Construction traffic will access and leave the site via Forties Road and both to and from Drumgeith Road. The number of vehicles will vary during the construction period.

The normal working hours for the construction works will be from 07:00 to 18:00 Monday to Friday and from 08:00 to 13:00 on Saturdays. No work is expected to take place on Sundays, public and local holidays or outside the proposed working hours. Any construction work outside of these periods will only take place if it has been agreed in advance with officers of the city council.

During construction, good practice measures would be followed to ensure that the risk of negative impacts on people and the environment are responsibly managed. A Construction Environmental Management Plan has been developed for the proposed scheme in order to support good practice.

MVV has recently built a similar facility in Plymouth which is located much closer to houses than the proposed plant in Dundee. MVV will also draw on its experience in keeping construction activities as quiet as possible and to minimise any disturbance from traffic, dust and lighting, in order to reduce the impact on nearby residents.



Cross Section of Energy from Waste Combined Heat and Power Facility

5 Summary of Environmental Impact Assessment findings

The Environmental Impact Assessment (EIA) has been undertaken, in part, to avoid or reduce negative environmental effects and to also identify and promote positive effects.

The assessment considers the following aspects of the environment:

- Acoustics;
- Air Quality;
- Ecology;
- Ground Conditions and Contamination;
- Landscape and Visual;
- Socio-Economic;
- Traffic and Transport; and
- Interactive Effects

Engagement has been undertaken with various organisations during the EIA process in order to agree the scope of topic assessments, the methodology to be followed and to provide input to the design.

Acoustics

Daytime and night time noise measurements have been taken at seven locations close to residential areas. In addition two unattended logging sound level meters were deployed on the north and south boundaries of the Michelin Tyre facility which captured relevant noise metrics in 15 minute intervals between 20 and 26 June 2016.

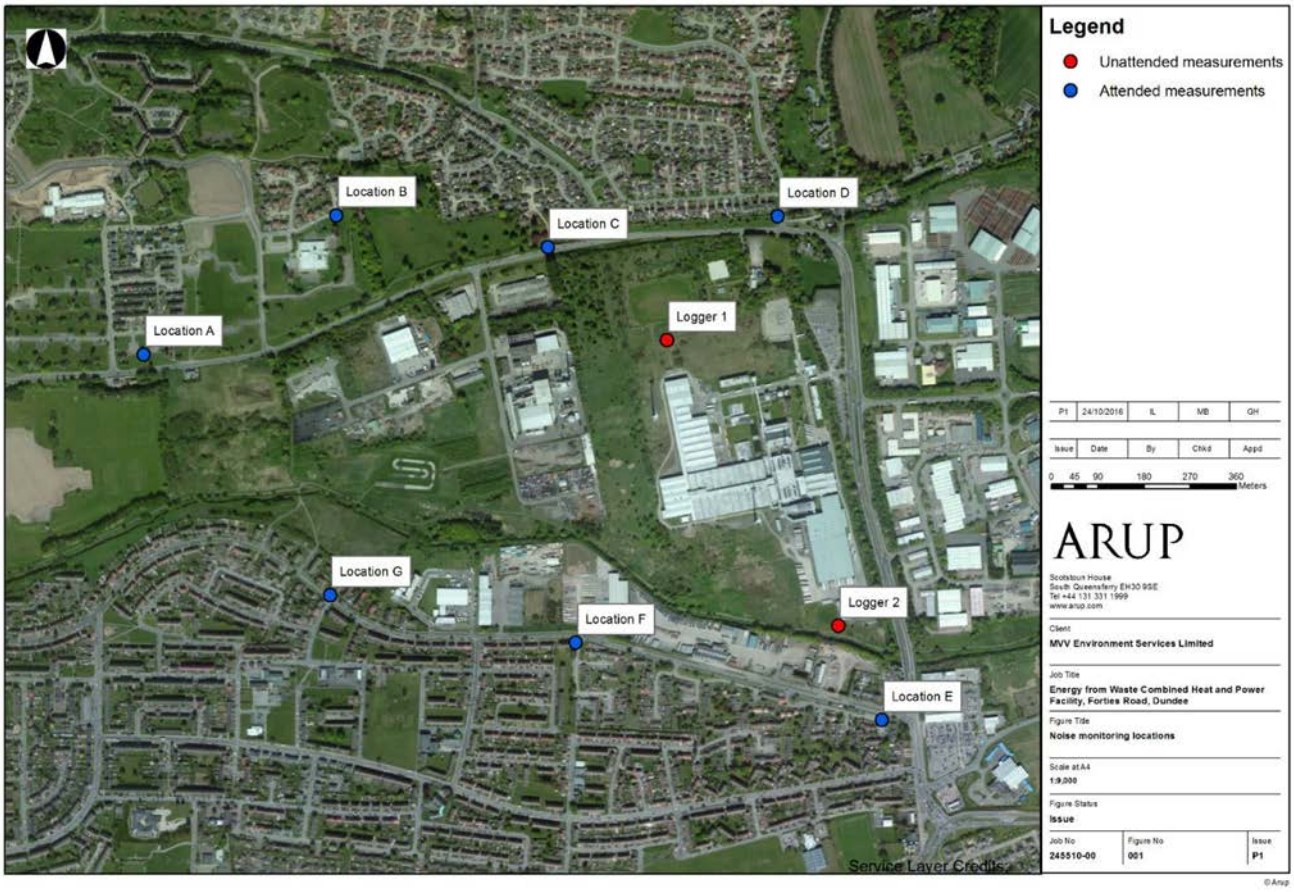
The following residential noise sensitive receptors, were identified and survey positions were chosen to be representative of residences at these locations:

- Residences on Strathaven Terrace
- Residences on Britannia Drive
- Residences on Montpellier Gardens
- Residences on Hawick Drive
- Residences on Balunie Drive

The predicted noise levels arising from construction activities at the closest receptor were found to be below construction noise thresholds based on the magnitude of the impact and duration, as well as the external and internal absolute levels when compared against criteria outlined in national and international guidelines. Therefore, the effects are assessed as, “not significant”. Effects from vibration arising from the construction activities on existing receptors have also been assessed as, “not significant”.

The increase in noise arising from traffic flows is expected to be less than 3dB increase as a result of both construction traffic and operational traffic and therefore effects are assessed as “not significant”.

A supporting planning document is provided, showing the noise model results which will be used for the permit application. The permit will demonstrate compliance with SEPA’s requirements for noise emission.



Noise Monitoring Locations

Air Quality

Air quality has been assessed by monitoring and modelling. Baseline monitoring of NO_2 has been undertaken at eleven locations in the vicinity of the proposed EfW CHP facility since November 2015. They include one location adjacent to the DERL site, eight close to residential properties, one background site and one co-located with an automatic monitor operated by Dundee City Council.

After one year, NO_2 concentrations, which had been bias-adjusted with respect to the Dundee City Council automatic monitor, were below the annual mean air quality objective at all the monitoring sites.

During construction, the project has the potential to impact air quality through emissions from construction and demolition activities and traffic emissions from construction vehicles travelling to and from the site, affecting concentrations of dust, NO_2, PM_{10} and $PM_{2.5}$. Impacts from construction traffic were modelled and found to be not significant. A dust management plan will be developed as part of the Construction Environment Management Plan (CEMP) for the site and agreed with Council Officers. The CEMP will be implemented and regularly reviewed to control and manage dust and other emissions.

Energy from Waste facilities are regulated by SEPA to meet stringent European standards to ensure that they do not pose a risk to human health or to protected sites of natural importance. The proposed EfW CHP facility will use the best available techniques (BAT) to comply with the required emission limits and will include the required odour management. Emissions from the stack will be measured and continuously recorded as part of a Continuous Emissions Monitoring System (CEMS). The results will be available for SEPA and Dundee City Council to inspect so that it can be confirmed that the emissions are within the permitted limits.

The impact of the EfW CHP facility on air quality at human and ecological receptors, and on odour, has been found to be not significant. A human health risk assessment demonstrated that the maximally exposed individual would not be subject to a significant carcinogenic risk or non-carcinogenic hazard, arising from exposures via both inhalation and the ingestion of foods.

Ecology

The Ecological Impact Assessment considers the effects of the Proposed Scheme on ecological features within the, 'Zone of Influence' and assesses the significance of those effects, taking into account committed mitigation measures.

It is considered that there will be no significant effects on ecological features as a result of the proposed scheme. During the construction phase this is principally due to the implementation of a Construction Environment Management Plan (CEMP) which details the measures being incorporated to prevent pollution to the watercourses, prevent light spill onto adjacent habitats and ensure compliance of works with ecological legislation.

In addition, a number of ecological measures are proposed in order to enhance the wildlife corridor along the Dighty Water, improving its resource for otter and birds. These include the removal of litter and eradication of invasive species, such as Himalayan balsam and giant hogweed.

Ground Conditions and Contamination

An assessment is being undertaken of the effects on ground conditions of the potential for contamination at the application site. In particular the potential for the project to affect the quality of the groundwater beneath the application site and the nearby Dighty Water is being assessed.

The Geotechnical and Geo-environmental Interpretative Report will identify any ground related and hydrogeological related constraints and will make appropriate recommendations. Foundation and Earthworks Specifications will be produced to allow appropriate measures to mitigate and manage any geotechnical risk. The contamination assessment will identify any unacceptable risk to potential receptors and set out any requirements to mitigate these risks.

Previous and current investigations at the site have identified the presence of some materials within the 'made' ground materials which could pose a particular risk to construction workers. A specific Management Plan will be created as part of the overall Site Waste Management Plan (SWMP) detailing requirements for the identification and management or removal of these materials so that they do not pose a risk to construction workers or anyone else .

Landscape and Visual Effects

The landscape and visual effects have been assessed for the construction and operation of the proposed development.

There would be no significant adverse effects on the character of the landscape during either the construction or operation of the proposed development. This is largely due to the heavily urbanised setting of the proposed development.

Significant adverse visual effects during the construction of the proposed EfW CHP would be recorded by receptors located in close proximity to the site, including residential receptors on Balunie Drive and by people using the footpaths and cycleways to the south of the site. These effects would however be temporary in nature.

Balunie Drive - Existing

Balunie Drive – With proposed EfW CHP

The proposed EfW CHP building and stack would be noticeably larger than the existing DERL facility. Both the existing DERL facility and the proposed EfW CHP facility would be visible as being in close proximity to each other. This would give rise to significant adverse visual effects being recorded by receptors in close proximity, including residential properties on Balunie Drive and people using the footpaths and cycleways to the south of the site due to the increase in bulk and mass on the site

In relation to the significant adverse effects that would arise from the construction and operation of the proposed EfW CHP there are no measures that can be applied to reduce the effects due to the necessary scale of the works and the structures.

Traquair Gardens

Traquair Gardens – With proposed EfW CHP

Socio-Economics

The socio-economic assessment has considered the effects of the proposed scheme on the local economy.

Construction employment associated with the proposed scheme is expected to generate approximately 500 jobs over the 3-year construction period with up to 300 workers on site at any one time. Once fully operational, the new facility will provide continued employment for 37 staff. The project is anticipated to bring in the order of £50 million in spending power to the local economy in both Dundee and Angus through construction spending with local suppliers and the money spent by people working on the project. The project will support local apprenticeships during the construction and operational phases. The new operators will also undertake community and awareness raising activities to promote improved reuse and recycling in Dundee and Angus and will encourage people to visit the facility to understand how their waste is managed.

The proposed scheme will contribute toward meeting the local economic policy objectives for the area, contribute to improving pathways to employment and will help tackle youth unemployment. Finally, the operator will work with higher and further education institutions to drive economic growth in the area.

Traffic and Transport

The traffic and transportation assessment considers the effects of the EfW CHP facility scheme, including staff travel, on pedestrians, cyclists, public transport users, private car users and heavy goods vehicles. The assessment takes account of both construction and operational vehicle movements. Both temporary and permanent effects are therefore considered.

While the scheme is predicted to increase traffic levels during the construction period, it is expected that through the implementation of a Construction Traffic Management Plan any impacts will be minimised.

Good construction practice measures will be followed to ensure that the risk of impacts on people and the environment from construction are responsibly managed. The construction impacts will be temporary in nature and no long term impacts are anticipated once construction is complete.

Once the facility is operational, traffic levels are predicted to increase by only 8 heavy goods vehicles per day over current traffic volumes, with the result that any impact on the surrounding road network will be minimal. All staff will be encouraged to use public transport or the surrounding footpaths and cycleways to travel to and from work.

Water Resources

The water resources assessment looks at the impact of the proposed development on flood risk, surface water, water supply sources, quantity and waste water disposal. The flood risk to the development is analysed considering all sources of flooding. In particular, flooding from the nearby Dighty Water is analysed in detail using a computer hydraulic model. The flood risk assessment ensures that the development is sufficiently protected against flooding and does not result in any increase of flood risk elsewhere.

It is proposed to construct a compensatory storage area, next to the footbridge over the Dighty Water. This will be in the form of a ‘depression’ outside the flood plain, which could in extreme circumstances flood and which will compensate for the capacity of the flood plain which is lost by building the plant on land which could flood. This flood mitigation area will not add to the risk of nearby houses flooding. In addition to this, the proposed building is set 0.5 m higher - at 29.0 m AOD - in order to minimise flood risk.

The impact of the proposed surface water drainage is also assessed. The surface water system has been designed to connect into the Scottish Water surface water network. Scottish Water will not currently accept the surface water into their system, and further discussions are required. A sustainable urban drainage system (SuDS) has been designed to meet the storage and treatment requirements of the site. This has been achieved by using a number of SuDS features including permeable paving, filter drains and additional storage in the form of two detention basins (or one large detention basin with a dividing structure). The detention basins are located in the flood plain, however they will be bunded to protect them from the 1:200 year event (including climate change).

6 How to find out more

The Environmental Statement and other Planning Application documents can be viewed online at: www.mvv-energie.de/en/uiu/uiu_mvv_environment/dundee_and_angus_waste_project/dundeeandangus.jsp

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