

MVV Environment Baldovie Ltd

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

Pollution Prevention and Control (PPC) Permit Application  
Supporting Statement

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# 1 Introduction

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## 1.1 Overview

**1.1.1** This Supporting Statement is part of a suite of documents submitted in support of MVV Environment Baldovie (MEB) Limited's, a sister company of MVV Environmental Services, application to vary Permit PPC/A/1003157 under the Pollution Prevention and Control (Scotland) Regulations 2012 (PPC Regulations).

**1.1.2** The subject of the PPC permit variation is to request for the parallel operations of the existing Energy from Waste (EfW) facility on Forties Road, Baldovie (formerly known as the Dundee Energy Recovery Ltd (DERL) facility) (Lines 1 and 2) and the new EfW Combined Heat and Power (CHP) facility (Line 3) which is under construction on the adjoining site to the south.

**1.1.3** Under the current PPC permit (PPC/A/1003157 VN05, issued 28<sup>th</sup> February 2019), the new EfW CHP facility was to replace the existing EfW facility in 2020 with minimal operational overlap between the facilities. The permit allows both facilities to operate on an overlapping site with shared use of some equipment, however, the two facilities cannot burn waste at the same time:

Paragraph 2.9.8 of PPC Permit PPC/A/1003157 states:

*"During Commissioning of the Moving Grate EFW CHP Plant, no waste shall be simultaneously incinerated in the Fluidized Bed Plant and the Moving Grate EFW CHP Plant."*

Furthermore, Paragraph 2.9.9 states:

*"Following First Operation of the Moving Grate EFW CHP Plant, waste shall cease to be incinerated in the Fluidized Bed Plant."*

**1.1.4** Since acquiring the EfW facility in 2017, MEB has made a number of improvements, extending the potential operational life of the existing facility beyond 2020. MEB, therefore, is seeking permission to vary PPC Permit PPC/A/1003157 to allow for the operation of the two facilities, in parallel, for a period of up to 10 years from April 2020.

**1.1.5** The application to vary Permit PPC/A/1003157 has been prepared following the guidance set out in applicant meeting of the 13<sup>th</sup> June 2019 to discuss this proposal, and in SEPA's subsequent Scoping Opinion response dated 15<sup>th</sup> July 2019. In addition, further advice from SEPA was provided on 29<sup>th</sup> January 2020.

**1.1.6** The purpose of this supporting statement is to explain the case for the parallel operations and to provide SEPA with a summary of the main information required to determine the application to vary Permit PPC/A/1003157.

## 1.2 Related applications

**1.2.1** Planning Permission 16/00916/FULM for the construction of the new EfW CHP facility was approved on 24<sup>th</sup> March 2017. Under Condition 17 of

16/00916/FULM “*the new energy from waste combined heat and power plant, shall not incinerate waste at the same time as the existing waste incinerator (DERL) facility*”. As such, an application under Section 42 of the Town and Country Planning (Scotland) Act 1997 (as amended) for permission to vary Condition 17 of Planning Permission 16/00916/FUL to allow for parallel operations was submitted to Dundee City Council (DCC) on 29<sup>th</sup> November 2019 (reference: 19/00922/FULM). This application is currently undergoing review.

**1.2.2** An Environmental Statement (ES) update was submitted in support of Planning Application 19/00922/FULM. As per the SEPA’s response to the Environmental Impact Assessment (EIA) scoping opinion request<sup>1</sup>, a complete reissue of the ES in support of planning application 16/00916/FULM was prepared with the relevant sections updated to assess the parallel operations. As agreed with DCC and SEPA, the ES and all supporting documents, were updated to assess parallel operations only, with no revisions made to the construction impact assessment. All updates to the ES were highlighted in yellow with all removed text shown with a strike through.

**1.2.3** Having completed the EIA, MEB have concluded that there will be no significant adverse environmental impacts as a result of parallel operations.

## **1.3 Supporting documentation**

**1.3.1** In order to make the application to vary PPC/A/1003157, the following application forms and accompanying documentation have been provided:

- PPC Application Forms A, C and F;
- Non-Technical Summary (NTS);
- This Supporting Statement;
- Updated Air Quality Assessment (AQA);
- Updated Habitats Regulations Appraisal (HRA);
- Noise Assessment;
- Heat and Power Plan (H&PP);
- Emissions and Impact Assessment Report – H1;
- SEPA response to the EIA scoping opinion request;
- DCC letter confirming valid planning application;
- Confirmation of the Application fee made to SEPA; and

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<sup>1</sup> Received 15<sup>th</sup> July 2019 and issued formally as part of the DCC’s scoping opinion (issued 19<sup>th</sup> September 2019)

- Correspondence from Scottish Water confirming that they have capacity to take the trade effluent and domestic type effluent discharges and surface water from the two facilities operating in parallel.

As agreed with SEPA on 29<sup>th</sup> January 2020, an update to the existing Best Available Techniques (BAT) Assessment in line with the publication of the new BAT Reference (BRef) document on 4<sup>th</sup> December 2019 is not required for this application to vary PPC/A/1003157. However, MEB is aware that a review will be required for the facility in the future.

## **1.4 The Applicant and other parties involved in the Project**

### **MEB**

**1.4.1** MEB competitively tendered for and was awarded the Dundee and Angus Residual Waste Treatment and Disposal Contract by DCC and Angus Council in 2017. MVV Environment Ltd are operating the EfW facility and constructing the EfW CHP facility on the adjoining land through their sister company, MEB. MEB has submitted this application to vary Permit PPC/A/1003157 to allow for the parallel operation of the existing EfW facility and the EfW CHP facility, which is under construction.

**1.4.2** The MEB project management team for the EfW CHP facility includes, amongst others, experienced waste planners and engineers. The project team and its advisors have extensive experience of preparing permit applications for similar waste management proposals.

### **Arup**

**1.4.3** Arup has been employed by MEB as planning and environmental consultants and has prepared the application to vary Permit PPC/A/1003157, with the exception of the H&PP and Sampling Plan, which were prepared by MEB, and the Noise Assessment, which was prepared by Müller-BBM.

**1.4.4** Arup is one of the leading multidisciplinary consultancies in the UK and has considerable experience of co-ordination of complex EIAs and obtaining planning permission for major waste management facilities. Arup is an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services, formed in 1946. Arup is also a Registered Assessor with the Institute of Environmental Management and Assessment.

## 2 Legislation

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### 2.1 Pollution Prevention and Control (Scotland) Regulations 2012 (PPC Regulations)

**2.1.1** The PPC regulations implement the requirements of the Industrial Emissions Directive (IED)<sup>2</sup>. The PPC regulations apply an integrated environmental approach to the regulation of certain industrial activities. This means that emissions to air, water (including discharges to sewer) and land, plus a range of other environmental effects, must be considered together.

**2.1.2** The EfW facilities fall under Part A of the PPC regulations. The relevant application forms and supporting documentation have been submitted in support of this Part A variation to PPC/A/1003157, as outlined in Section 1.3.

### 2.2 Waste (Scotland) Regulations 2012

**2.2.1** The Waste (Scotland) Regulations 2012 set out a number of provisions to help Scotland move toward the objectives and targets set out in the Scotland's Zero Waste Plan. Under the regulations, biodegradable municipal waste going to landfill was to be banned from 1 January 2021, however, the Scottish Government announced in September 2019 that this will be deferred to 2025.

**2.2.2** MEB is aware that there is a shortage of facilities in Scotland to meet this strategy without exporting waste to England or mainland Europe. The proposal for parallel operations is being submitted, in addition to economic benefits, in order to assist meeting a shortfall thought to be likely when the landfill ban on biodegradable waste comes into force.

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<sup>2</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).

## 3 Proposed Development

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### 3.1 Overview

- 3.1.1** Before MEB took over ownership of the existing EfW facility in 2017, the company had limited access to the facility and, therefore, limited information on the performance of the existing plant. They were, however, aware that the site technology, i.e. the use of fluidised bed technology, was not best suited for EfW and that the site had issues meeting the requirements of PPC/A/1003157. MEB, therefore, planned for the worst-case scenario of operations at the existing EfW facility ending in March 2020, when it was anticipated that the new EfW CHP facility would be operational.
- 3.1.2** After over two years of operation and further investment, MEB are confident that the life of the existing EfW facility can be extended on a commercial basis for up to 10 years. Hence, this application to vary PPC/A/1003157 to permit parallel operations of both the existing EfW and new EfW CHP facilities.
- 3.1.3** DCC (as lead authority for the Dundee and Angus Waste Partnership) has been consulted on the proposal for parallel operation of the two facilities, subject to obtaining planning consent (pending, see Section 1.2) and SEPA approval.
- 3.1.4** MEB will only proceed with parallel operations if satisfied that it can comply with all planning permissions and PPC permit conditions. If one of the following were to occur, MEB would shut down the existing EfW facility, as originally planned, and solely operate the new EfW CHP facility:
- the conditions relating to the project life of the existing EfW facility cannot be met;
  - significant environmental impacts of operating the two facilities in parallel occur;
  - the demand for EfW facilities rather than landfill cannot be met; or
  - the economics of obtaining sufficient waste from within a sustainable catchment area at gate fees that can sustain the proper operation of the existing EfW facility (i.e. Lines 1 and 2) cannot be met.

### 3.2 The need for parallel operations of the existing EfW and new EfW CHP facilities

- 3.2.1** The EfW CHP facility will sustainably manage waste arising primarily in the Dundee and Angus area, helping to minimise and control the adverse environmental effects of waste that will not be recycled or reused, including the release of greenhouse gases that contribute to climate change, which are currently generated by landfilling.
- 3.2.2** MEB has prepared this application to vary Permit PPC/A/1003 with full knowledge of the Waste (Scotland) Regulations 2012. The proposal for parallel



operations can assist meeting a shortfall thought to be likely when the landfill ban on biodegradable waste comes into force.

**3.2.3** MEB has noted SEPA's comments in response to the EIA scoping opinion request regarding shortfall in capacity:

*"Additional capacity needed to manage unsorted waste" is as follows; "The most up to date data we have was released in August 2018 and based on 2015 Data. This identified that in the TAYplan area, the additional capacity needed was 75,000 tonnes per annum, with a national shortfall for all of Scotland of 1,745,000 tonnes per annum."*

**3.2.4** MEB has also taken note of the answer by Roseanna Cunningham (19/09/2019) in the Scottish Parliament to the question by Stewart Stevenson, Banffshire and Buchan Coast, Scottish National Party, Lodged: 18/09/2019:

*Inter alia Roseanna Cunningham said "Significant progress has already been made towards readiness for the ban and a majority of local authorities and many commercial operators have long-term or interim solutions in place. However, the evidence available suggests that full compliance by 2021 will not be possible without reliance on export options, including landfill in England, with consequent environmental impact and additional financial implications for local authorities. Having carefully considered the key issues and available evidence, including advice from a working group comprising public and private sector waste sector professionals and the views of wider stakeholders, I am prepared to accept – reluctantly - that a transitional approach is necessary; and that some commercial operators and a minority of local authorities need longer to achieve full compliance with the ban. Therefore, I have agreed that full enforcement should be delayed until 2025 for both public and private sectors managing wastes covered by the ban."*

**3.2.5** MEB has investigated the local market and is satisfied that there is sufficient commercial and industrial waste in the local catchment area to enable both facilities to operate. Notwithstanding this, post 2021 the adjoining authorities – Fife Council; Perth and Kinross Council; and Stirling and Kinross Councils – do not have any proposals in place for the use or construction of local treatment facilities for their residual waste without reliance on export options, or landfill in England.

**3.2.6** The proposed parallel operations will, therefore, enable waste which is generated locally to be diverted from landfill and will not be dependent on waste being transported long distance from April 2020.

## 3.3 Parallel operations

### Summary

- 3.3.1** This section outlines the details of the parallel operations of the existing EfW facility (Lines 1 and 2) and the new EfW CHP facility (Line 3).
- 3.3.2** The primary purpose of the existing EfW and EfW CHP facilities is to treat waste from the Dundee and Angus area that has not been recycled, reused or composted. The facilities will primarily deal with Household Waste provided by the Dundee and Angus Councils under the Dundee and Angus Residual Waste Treatment contract.
- 3.3.3** Waste will continue to come to the existing EfW facilities from within a sustainable catchment area at gate fees that can sustain the proper operation of Lines 1 and 2, (the existing EfW facility), in addition to Line 3 (the new EfW CHP facility). The two facilities will be independent, however they will share some plant such as the weighbridges and fire water tank. At the end of their operational life (now estimated at 2030), the majority of Lines 1 and 2 will be demolished, however, the shared equipment will be retained for the continued operation of Line 3.
- 3.3.4** Both facilities will share the same Fire Water Tank as the physical separation between the two facilities is sufficient that a fire is considered unlikely to spread from one facility to the other. This assessment has been accepted by Scottish Fire and Rescue Service and Dundee City Council Building Control.
- 3.3.5** Full details energy consumption, waste streams, raw materials etc. are provided in the Emissions and Impact Assessment report which accompanies this PPC variation application.
- 3.3.6** Changes in atmospheric emissions and noise are expected due to the parallel operations. These are discussed in Section 5.
- 3.3.7** The current CEMS will be retained for the existing EfW facility and no other changes to the operation of each facility will occur.

### Resource use

- 3.3.8** There will be a marginal increase in resource use as a result of the parallel operations. There will be no change in water abstraction from the Dighty as Line 3 will have air cooled condensers and use small quantities of towns water to top up evaporation.
- 3.3.9** Details of raw materials are provided in the Emissions and Impact Assessment Report. Energy consumption required for the dual operations, as detailed in the Emissions and Impact Assessment Report, is provided in Table 1.

Table 1: Energy Consumption (source: Emissions and Impact Assessment Report)

Number	Energy Sources		Delivered MWh/yr	Conversion Factor	Primary MWh/yr	CO2 Factor	CO2 tonne/yr
1	Waste fuel	direct emissions	392863	1.00	392,863	0.35	137,502
2	Electricity from public supply	indirect emissions	496	2.40	1,190	0.17	198
3	Gas oil	direct emissions	3410	1.00	3,410	0.25	853

## Waste Processing

- 3.3.10** Paragraph 4.2.1 of the current PPC Permit (PPC/A/1003157 VN05) states that “the maximum quantity of waste stored at the Permitted Installation (including waste awaiting dispatch elsewhere) shall not exceed 5,025 tonnes.” Lines 1 and 2 have a total storage capacity of 1,655 tonnes of waste, whilst Line 3 has a total capacity of 3,367 tonnes. Resulting in a total of 5,022 tonnes. Therefore, the maximum waste storage shall not change as a result of the parallel operations
- 3.3.11** Paragraph 4.2.2 of the current PPC Permit (PPC/A/1003157 VN05) states that “the aggregate amounts of wastes...incinerated...shall not exceed the following:
- a. Fluidised Bed Plant - 150,000 tonnes in any calendar year, and shall not exceed an average of 10 Tonnes per hour (Te/Hr) in any 24 hour period
  - b. Moving Grate EFW CHP Plant - 153,216 tonnes in any calendar year, and shall not exceed an average of 19.15 Tonnes per hour {Te/Hr} in any 24 hour period.
- 3.3.12** However, under Paragraphs 2.9.8 and 2.9.9 of the current permit (PPC/A/1003157 VN05) minimal operational overlap between the facilities is permitted (see Section 1). Therefore, parallel operations would effectively double waste incineration capacity at the site to 303,216 tonnes per annum.
- 3.3.13** Bulky waste will no longer be delivered to the adjoining site for pre-treatment. Instead, bulky waste from DCC will be segregated when it is collected at the source by DCC operatives to remove items such as larger household electrical items. It will then be delivered to the Line 3 Tipping Hall where it will be tipped directly into the bunker and fed into the furnace along with residual household waste where the feed chute and moving grate will be able to accommodate the larger items.
- 3.3.14** All municipal waste delivered to the site will have been segregated via kerbside recycling in accordance with the agreements between DCC and Angus Council and SEPA. Commercial and industrial waste will be delivered in bulk from waste transfer stations and recycling centres in accordance with commercial contracts which require the waste to have been segregated at source and, in accordance with the Waste (Scotland) Regulations.
- 3.3.15** There will be no change to the pre-treatment of waste on the site. Waste for Lines 1 and 2 will still be pre-treated by being processed in the hammer mill and shredded in order to prepare it for burning in the fluidised bed. It was not

proposed to pre-treat waste for Line 3 as this facility can accept waste which is of larger size. Municipal deliveries and tonnage will not change from those covered under the current version of PPC/A/1003 (issued on 28<sup>th</sup> February 2019). Deliveries will, however, increase, this is covered in the Transport Assessment (TA) submitted under Planning Application 19/00922/FULM.

**3.3.16** The outlets in the Residue Management Plan are as follows:

**Lines 1 and 2**

- Cyclone Ash            Enva, Dunniflats Depot, Lugton, East Ayrshire, KA3 4EA, then to Landfill (non-hazardous, various)
- APCr                    Enva, Dunniflats Depot, Lugton, East Ayrshire, KA3 4EA, then to hazardous waste landfill (currently in England)
- Bottom Ash            DJ Laing, Petterden, Tealing, Dundee DD4 0QB

**Line 3**

The outlets for Line 3 will be very similar

- APCr                    Enva, Dunniflats Depot, Lugton, East Ayrshire, KA3 4EA, then to hazardous waste landfill (most likely in England)
- Bottom Ash            Either Rock Solid using a facility to be developed at Ladybank Landfill, Lower Melville Wood, off A92, Ladybank, near Cupar, KY15 7UL or on continuation of the use of the DJ Laing Site at Petterden, Tealing, Dundee DD4 0QB

**Waste from the parallel operations**

**3.3.17** Total waste volumes produced by the facilities, as detailed in the Emissions and Impact Assessment Report, are provided in Table 2.

Table 2: Waste Inventory (source: Emissions and Impact Assessment Report)

Number	Waste Stream	Mass tonne/yr	Category of Waste	Disposal/Recovery Option
e.g.	ETP sludge		non-hazardous	
1	Incinerator Bottom Ash (Line 3)	26,400	other non-hazardous	Other Recycling (R3:R4:R5:R11 and R12)
2	APCR (Line 3)	3,850	hazardous	Landfill (D5)
3	Recovered Metals (ferrous) (Lines 1&2)	293	inert	Other Recycling (R3:R4:R5:R11 and R12)
4	Process Water (Line 3)	2,250	other non-hazardous	Biological and Physico-chemical treatment
5	Rejected waste (unquantified)	0	other non-hazardous	Landfill (D5)
6	Recovered Metals (non-ferrous) (Lines 1&2)	196	inert	Other Recycling (R3:R4:R5:R11 and R12)
7	Incinerator Bottom Ash (Lines 1&2)	14,491	other non-hazardous	Other Recycling (R3:R4:R5:R11 and R12)
8	APCR (Lines 1&2)	2,788	hazardous	Landfill (D5)
9	Cyclone Ash (Lines 1&2)	5,434	inert	Other Recycling (R3:R4:R5:R11 and R12)
10	Process Effluent (Lines 1&2)	207,367	other non-hazardous	Biological and Physico-chemical treatment

## Effluents

**3.3.18** MEB have had discussions with Scottish Water, who have confirmed that they have the capacity to take the trade effluent and domestic effluent and surface water discharges from the two plants operating in parallel. The following correspondence with Scottish Water has been provided:

- Capacity review letter
- New sewer connection approval (with the commercial information redacted).

**3.3.19** MEB acknowledges that the above correspondence cannot be used to acquire a habitation certificate(s) from the local authority. Only a Certificate of Compliance, issued following a successful inspection by Scottish Water, can be used for this purpose. The inspection by Scottish Water is currently being organised and the relative documentation will be issued once available.

## 4 Heat & Power Plan

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- 4.1.1** The H&PP for the new EfW CHP facility has been prepared in accordance with SEPA's Thermal Treatment of Waste Guidelines (TTWG)<sup>3</sup>. As agreed with SEPA on 29<sup>th</sup> January 2020, TTWG does not need to be demonstrated for the existing EfW facility. Rather, the H&PP contains information demonstrating that the existing EfW facility is as efficient as possible.
- 4.1.2** In both facilities the waste will be incinerated, and the heat used to generate steam. The steam will drive a steam turbine and generate renewable electricity for use at each facility and for export to the grid.
- 4.1.3** In the case of the EfW CHP Facility the turbine is designed so that up to 20 tonnes per hour of medium pressure steam can be extracted and fed into an industrial steam network to be used for process and heating purposes. The EfW CHP Facility will therefore incorporate CHP technology.
- 4.1.4** The existing EfW facility was not designed for CHP operation and the turbine does not have any extraction points for the delivery of the quantities of steam required for a CHP network. Modification of the turbine which is now some 20 years old would not be practicable and the use of "live" high pressure steam with pressure reduction for this purpose is not cost effective and would have a significant detrimental effect on the overall energy efficiency of the facility.
- 4.1.5** The location of the EfW CHP facility on Forties Road was agreed with Dundee and Angus Councils in order to enable the facility to meet the requirement for new EfW CHP facilities to operate at maximum efficiency as CHP.
- 4.1.6** The location on Forties Road would have enabled the facility to provide steam and electricity directly to Michelin enabling them to receive energy at more economical prices and in a more sustainable form than if they were to generate it themselves or to buy it from the grid. MEB entered into an agreement with Michelin for the delivery of energy from the EfW CHP facility to the Michelin plant. A new steam pipeline has been constructed to connect the EfW CHP facility with Michelin's heat network to be able to deliver medium pressure steam once the EfW CHP facility is commissioned. Unfortunately, Michelin announced in November 2018 that it will close the production site in 2020.
- 4.1.7** Michelin is currently looking for suitable tenants to occupy the plant once tyre production has ceased. MEB and Michelin remain in close contact and because the necessary supply infrastructure is already in place MEB will be in a position to supply steam and electricity to new businesses on Michelin's premises should the opportunity arise.
- 4.1.8** The H&PP concludes that MEB is in a position to operate the EfW CHP facility in CHP mode from the outset and explore further opportunities to maximize the energy saving opportunities the project presents. The CHP component of the

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<sup>3</sup> SEPA (2014). Thermal Treatment of Waste Guidelines 2014. Available online at [https://www.sepa.org.uk/media/28983/thermal-treatment-of-waste-guidelines\\_2014.pdf](https://www.sepa.org.uk/media/28983/thermal-treatment-of-waste-guidelines_2014.pdf)

facility could, therefore, make a major contribution to the strategic and local economic objectives of the City of Dundee, helping to safeguard existing jobs and to attract new jobs.

## 5 Potential Impacts

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**5.1.1** The updated AQA and updated HRA, which accompany this application to vary PPC/A/1003157, were also submitted as part of the ES update for Planning Application 19/00922/FULM and, therefore, all changes to assess parallel operations are highlighted as described in Section 1.

**5.1.2** The following should be noted when reading the updated AQA and updated HRA:

1. Construction of the new EfW CHP commenced in January 2018 and first firing on waste is scheduled to commence by the end of March 2020. However, no updates have been made to the construction assessment within the AQA. The following updates have been made to the construction assessment within the HRA:
  - a. the construction assessment has not been reassessed, however, has been restructured to align with the new 'People over Wind' case law. Mitigation is now discussed within the Appropriate Assessment;
  - b. The Outer Firth of Forth and St Andrews Bay Complex proposed Special Protection Area (pSPA) was identified by the Scottish Government as a pSPA after planning application 16/00916/FULM was submitted in November 2016, therefore this site has been included in both the construction and operational assessment. The addition of this pSPA has not changed the overall construction assessment conclusion;
2. In the parts of the assessments which did not require updating, the existing EfW facilities are referenced as the Dundee Energy Recovery Ltd (DERL) facility. It was renamed to MVV Environment Baldovie (MEB) in 2017;
3. Where the assessments have been updated, the existing EfW facility is referred to as the existing EfW facility. The new facility, which is under construction, is referred to as the EfW CHP facility; and
4. Michelin is scheduled to close; however, it is currently operational. The pipeline between the two facilities has been constructed, however, the connections have not been made. As the site is currently operational, it has been assumed that the facilities will supply steam to Michelin for the purposes of the assessments. In addition, there is the potential to supply energy to future developments as outlined below.
  - c. A statement was released on 6 November 2019 stating that "*The Dundee's Michelin site has received a £60m funding commitment to turn the former plant into an innovation centre. The new centre will focus on sustainable mobility, clean transport and low carbon energy. Michelin Scotland Innovation Parc (MSIP) will be created over the next decade. The investment is supported by Michelin, Scottish Enterprise and DCC. The new centre will include office space, with an "innovation hub" for collaborations between industry and academia.*"



d. MVV is in discussion with parties involved in developing Michelin Scotland Innovation Parc (MSIP) with the objective of delivering energy from the EfW CHP Facility to MISIP.

5. The Applicant of the original planning application made in November 2016 (16/00916/FULM) was MVV Environment Services Ltd. Its sister company, MEB Ltd, now own and operate the existing EfW facility and are constructing the new EfW CHP facility on the adjoining land. The Applicant for the application to vary PPC/A/1003157 (and planning application 19/00922/FULM) to allow for parallel operations is, therefore, MEB. As the assessments have been updated to assess parallel operations only, reference to the Applicant has remained as MVV throughout the AQA and HRA. The company's logo has also changed and the new one is used wherever convenient.

**5.1.3** The AQA includes a Human Health Risk Assessment (HHRA) of the parallel operations which is also discussed below.

**5.1.4** A noise assessment of the parallel operations has also been undertaken. Unlike the AQA and HRA, the noise assessment was a standalone assessment of the parallel operations only, not an update of the previous assessment.

**5.1.5** Copies of these assessments have been included as part of this application to vary PPC/A/1003157, with summaries provided in the subsequent sections.

## **5.2 Air Quality Assessment (AQA) Update**

**5.2.1** The effect on air quality of emissions from the proposed parallel operation of both the existing EfW facility and the EfW CHP facility were found to be not significant with respect to both human and ecological receptors.

**5.2.2** All concentrations resulting from emissions from the existing EfW facility and the EfW CHP facility, are below the relevant standards, with the exception of hexavalent chromium. The assumed background concentrations (taken from a UK-wide metals data review as agreed with SEPA) already exceed the relevant standards by 313%. For all other pollutants assessed, the impact on air quality is not considered to be significant.

**5.2.3** The maximum Predicted Environmental Concentrations (PEC) for annual mean and 24-hour mean NO<sub>x</sub> are only predicted to exceed the 70% threshold at the Fithie Burn ecological receptor during parallel operations, which is adjacent to the site. The respective Critical Levels for both annual mean and 24-hour mean NO<sub>x</sub> are not exceeded. The Burn is not a designated ecological site; however it is directly connected to the Firth of Tay SAC and the Outer Firth of Forth pSPA, approximately 4km away. Liaising with Ecologists it is considered that the potential impact on Firth of Tay SAC and the Outer Firth of Forth pSPA is unlikely to be significant. This is discussed in more detail in the accompanying HRA update.

**5.2.4** The impact of the parallel operations on odour nuisance was also found to be not significant under normal operating conditions and under standard maintenance conditions.

## **5.3 Human Health Risk Assessment (HHRA)**

**5.3.1** The AQA includes a HHRA which considered the effects of human exposure from emissions to air from the EfW CHP facility, including a cumulative impact assessment of both the existing EfW facility and new EfW CHP facility operating in parallel. This cumulative assessment is included in Appendix G (Section 4) of the AQA Update. At the time the HHRA was undertaken, a cumulative assessment was not required since the existing and new facilities were assumed not to operate in parallel. However, a cumulative assessment was provided in order to provide an extreme worst-case assessment. As a consequence, the HHRA (undertaken in 2017 as part Planning Application 16/00916/FULM) was reviewed as part of the parallel operations assessment and no updates were required since a cumulative assessment of the parallel operations had already been considered in 2017.

**5.3.2** The cumulative impact assessment concluded that the maximally exposed individual is not subject to a significant carcinogenic risk or non-carcinogenic hazard, arising from exposures via both inhalation and the ingestion of foods.

**5.3.3** It should be noted that human exposure to emissions from the proposed EfW facilities were assessed under the very worst-case scenario, namely that of an individual exposed for a lifetime to the effects of the highest airborne concentrations and consuming mostly locally grown food. This equates to a hypothetical farmer consuming food grown on limited rural areas within the locality. Therefore, this builds a high degree of conservatism into the assessment. The assessment has also identified more plausible pathways of exposure for the individuals considered (e.g. residents). The key results of the cumulative assessment include:

- The Hazard Index (HI) for exposure to the existing EfW and the new EfW CHP facilities operating in parallel is well below unity (1.0) and so it is highly unlikely that emissions of Compounds of Potential Concern (COPCs) would cause an adverse non-carcinogenic health risk when cumulative impacts are considered.
- The highest carcinogenic annual risk for the existing EfW and the new EfW CHP facilities operating in parallel is 1 in 8,764,000 which is well within the annual risk that is conventionally considered to be acceptable for industrial regulation in the UK (1 in 1,000,000)<sup>4</sup>.
- Human exposure to dioxins and furans has been compared against the Committee of Toxicity (COT) Tolerable Daily Intake (TDI) of

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<sup>4</sup> Risk Assessment for Environmental Professionals, CIWEM Publication (December 2001)

2 pg/kg per day<sup>5</sup>. For the existing EfW and the new EfW CHP facilities operating in parallel, the percentage contribution to the 2 pg/kg per day COT TDI is less than 6.9% for the nearest farmer receptors and less than 0.7% for the nearest residential receptors.

## 5.4 Habitats Regulations Appraisal (HRA) Update

5.4.1 The HRA update comprised an update to the results of the HRA screening and Appropriate Assessment exercise undertaken as part of the ES for 16/00916/FULM.

5.4.2 The key results of the HRA screening and Appropriate Assessment exercise include:

- The assessment identified five European sites and one proposed European site located within 15km of the proposed site. These include Firth of Tay and Eden Estuary SAC, Firth of Tay and Eden Estuary SPA and Ramsar, Barry Links SAC, River Tay SAC and the Outer Firth of Forth and St Andrews Bay Complex pSPA
- Potential indirect impacts associated with air pollution and deposition as a result of the Project once in operation on the six listed European sites were identified and assessed.
- Potential indirect impacts associated with runoff and pollution as a result of the Project construction were identified at the Firth of Tay and Eden Estuary SAC, Firth of Tay and Eden Estuary SPA and Ramsar and the Outer Firth of Forth and St Andrews Bay Complex pSPA. These impacts were further assessed in the Appropriate Assessment. With the implementation of the CEMP, these potential indirect impacts were scoped out.
- The results of the air quality modelling were used to determine if the Process Contribution as a result of the Project is likely to have a significant impact on European sites. This was undertaken using the published Critical Levels and Critical Loads for the most sensitive qualifying SAC, SPA, pSPA and Ramsar features.
- The results showed that, currently, the existing EfW facility is predicted to exceed the 70% PEC Critical Level threshold for the maximum 24 hour mean at the Fithie Burn receptor site (72.1% PEC). With the dual operation of the existing EfW facility and the EfW CHP facility, the NO<sub>x</sub> 24 hour mean PEC is predicted to rise to 77.1%. With regards to annual mean NO<sub>x</sub>, the results showed that the 70% PEC threshold at the Fithie Burn receptor site is predicted to be met through operating the existing EfW facility in isolation (56% PEC). With the parallel operations however, the annual mean NO<sub>x</sub> is predicted to rise to 71.7% PEC of the EAL. The results also showed that all other ecological receptors (including European designated sites) identified

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<sup>5</sup> The TDI represents the tolerable daily intake for lifetime exposure and short-term excursions above the TDI would have no consequence provided that the average intake over long periods is not exceeded.

within the Air Quality Assessment were predicted to be well below the 70% PEC threshold for all pollutants.

- It is not considered that the slight increase in both annual mean and 24 hour mean NO<sub>x</sub> from this single tributary will have a material impact on any of the conservation objectives of the European designated sites.
- No potential for significant effects in combination with other projects were identified.
- Consequently, predicted impacts in terms of airborne pollution emissions are not considered to be significant, either alone or in combination with other Projects.

## 5.5 Noise Assessment

**5.5.1** The assessment estimated the sound pressure levels from the parallel operations. Noise propagation calculations were carried out by means of a digital 3D-model of the plant and following standardized procedures according to DIN ISO 9613-2<sup>6</sup>.

**5.5.2** Locations of representative points of interest (POI) were used for the noise modelling. The POIs were determined based previous noise studies which were confirmed by an onsite inspection in October 2016. The POI locations are illustrated in Appendix A of the noise assessment and are used in the noise contours provided in Appendix C.

**5.5.3** In line with BS 4142:2014<sup>7</sup>, the measured background sound level has been subtracted from the rating level of both facilities operating in parallel. The conclusion of the analysis was that the difference in sound levels with both plants in operation would be less than + 5dB. Therefore, the parallel operation of the new MEB plant and of the existing MEB facility will not have any adverse impact on the energy-equivalent noise levels at the receptor points near the plant, and additional noise mitigation measures will not be necessary.

**5.5.4** It was concluded that additional noise mitigation measures would not be required as significant adverse impacts were not predicted by the model.

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<sup>6</sup> ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors. Part 2: General method of calculation. Draft issued September 1997

<sup>7</sup> BS 4142:2014. Methods for rating and assessing industrial and commercial sound. October 2014.

## 6 Sampling Plan

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- 6.1.1** As discussed with SEPA on 29<sup>th</sup> January 2020, further to the Human Health Risk Assessment HHRA study, a sampling plan has been requested in order to demonstrate that there are no significant impacts from metals, dioxins and furans at nearby sensitive receptor locations. The preference is for monitoring to begin before the new EfW CHP facility comes online to provide background data without the potential effect of the new EfW CHP facility emissions.
- 6.1.2** MEB's current proposal is to undertake soil sampling for metals along with dioxins and furans. The sampling plan is included as part of this application to vary PPC/A/1003157. This includes updates to address SEPA's comments on the draft sampling plan, received on 30 March 2020.
- 6.1.3** Initial testing will be undertaken for a period of 6 months on a monthly basis followed by repeat testing on a 6 monthly basis extending up to five years after the commencement of the operation of both facilities in parallel. A sample will be obtained before the EfW CHP facility comes online to provide a baseline. Further sampling will then be obtained during the commissioning of the EfW CHP facility and then once it is operational. The data will be sampled in line with historic soil sampling (1990-1994) and comparisons undertaken to consider and assess the potential changes in ground level concentrations over the last 25-30 years.
- 6.1.4** In addition to soil sampling, an ambient air quality monitoring programme was also suggested by SEPA to measure concentrations of heavy metals, dioxins and furans present in the existing atmosphere, and also quantify the relevant contributions from the existing and proposed facilities.
- 6.1.5** Due to the complexities in setting up an ambient air sampling programme to accurately measure dioxins, furans and heavy metals, together with operational constraints such as ensuring dedicated power supply, the need for equipment security, capital and operational expenditure, laboratory analysis time and the necessary duration and spatial sampling coverage needed for any meaningful data (period of months to obtain any meaningful data), it is considered that a soil sampling programme is the most appropriate approach to take forward.
- 6.1.6** A draft of the sampling plan draft sampling plan was shared with SEPA on 18 March 2020 and discussions are currently ongoing with SEPA on the acceptability of this sampling plan.