

1 Introduction

1.1 The Development and its Environmental Impact Assessment

- 1.1.1 Through a competitive tendering process, MVV Environment Devonport Limited (MVV) has been awarded the South West Devon Waste Partnership's (SWDWP) residual waste treatment and disposal contract. The SWDWP is a collaboration that has been established between Plymouth City Council, Torbay Council and Devon County Council to provide a long term solution to deal with waste from the southwest Devon area which is left over after re-use, recycling and composting.
- 1.1.2 MVV's proposal is to construct and operate an Energy from Waste (EfW) facility, incorporating Combined Heat and Power (CHP) technology, on land currently situated in the north east of Her Majesty's Naval Base (HMNB) Devonport, Plymouth. If the development goes ahead the land would be taken out of HMNB jurisdiction. The facility, referred to in this report as the EfW CHP facility, will have capacity to process under certain conditions up to 265,000 tonnes per annum of waste although it is expected that actual tonnages will be lower as waste composition changes or recycling activity increases over time. Under current expectations the tonnages will be in the order of 245,000 tonnes per annum. The waste will be combusted and the heat will be used to generate steam. The steam will drive a steam turbine and generate renewable electricity for use at the facility, to supply Devonport Dockyard and HMNB, and for export to the grid. Steam will also be extracted from the turbine and fed into the Devonport Dockyard and HMNB steam network to be used for heating purposes.
- 1.1.3 The EfW CHP facility project is subject to an environmental impact assessment (EIA). The EIA procedure is set out in the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (SI No 293) (as amended). The EIA procedure requires the developer to undertake certain environmental studies and compile an Environmental Statement (ES) describing the likely significant effects of the proposed development on the environment and proposed measures to mitigate these effects. This ES has been prepared by Scott Wilson, environmental and planning consultants, on behalf of MVV. The EIA process will continue during the period of the planning application's consideration, taking into account this ES, and the views of Plymouth City Council officers as the Waste Planning Authority, statutory and non-statutory consultees, and the public.

1.2 Structure of the Environmental Statement

- 1.2.1 The EIA Regulations define¹ an 'Environmental Statement' as a statement:
- (a) *"That includes such of the information referred to in Part I of Schedule 4 as is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but*
 - (b) *"That includes at least the information referred to in Part II of Schedule 4;"*
- 1.2.2 Table 1.1 overleaf identifies the requirements of Schedule 4, Parts I and II. This ES meets the requirements of Schedule 4, Parts I and II.

¹ Regulation 2(1).

1.2.3 Table 1.2 further overleaf identifies the structure of the ES.

Table 1.1 Requirements of the EIA Regulations 1999 as to the Content of an ES

EIA Regulations 1999: Schedule 4, Part I
1. Description of the development, including in particular -
(a) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;
(b) a description of the main characteristics of the production processes, for instance, nature and quality of the materials used; and
(c) an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
2. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.
3. A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.
4. A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from –
(a) the existence of the development;
(b) the use of natural resources;
(c) the emission of pollutants, the creation of nuisances and the elimination of waste,
and the description by the applicant of the forecasting methods used to assess the effects on the environment.
5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
6. A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.
7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.
EIA Regulations 1999: Schedule 4, Part II
1. A description of the development comprising information on the site, design and size of the development.
2. A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.
3. The data required to identify and assess the main effects which the development is likely to have on the environment.
4. An outline of the main alternatives studied by the applicant and an indication of the main reasons for his choice, taking into account the environmental effects.
5. A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.

Table 1.2 Structure of this ES

VOLUME 1: MAIN TEXT
Part A: Context
1. Introduction
2. EIA legislation and general methodology
3. The need for the proposed development
4. Land use: the site and surrounding area
5. Alternatives ² to the proposed development
6. Description of the proposed development
Part B: Assessment
7. Ecology
8. Landscape and visual
9. Cultural heritage
10. Contamination – land and water quality
11. Hydrology, hydrogeology and flood risk
12. Traffic and transport
13. Air quality
14. Noise and vibration
15. Construction waste
16. Daylight, sunlight and overshadowing
17. Socio-economics
18. Health and wellbeing
19. Inter-relationships and cumulative effects
Part C: Summary
20. Summary
VOLUME 2: FIGURES
Figures associated with the above, numbered accordingly
VOLUME 3: APPENDICES
Technical appendices associated with the above, numbered accordingly
VOLUME 4: NON-TECHNICAL SUMMARY
Non-technical summary of the ES

² This includes various 'alternatives' considered including alternative technologies, locations, site layouts / designs and transport modes.

Volume 1: Main Text

- 1.2.4 Part A: Context; introduces the ES (this Chapter); outlines EIA legislation and general methodology (Chapter 2); describes the need for the proposed development (Chapter 3); describes the land use of the site and the surrounding area (Chapter 4); provides a description of the alternatives considered (Chapter 5); and finally describes the proposed development itself (Chapter 6).
- 1.2.5 Part B: Assessment; comprises what are sometimes termed the ‘technical’ or ‘assessment’ chapters (Chapters 7 to 18). Their structure is broadly but not exclusively as follows:
- Introduction (including introduction to the topic and the potential environmental impacts; scoping / consultation responses; and relevant design characteristics);
 - Relevant legislation and policy;
 - Existing (or ‘baseline’) conditions;
 - Methodology used to predict impacts, including magnitude and significance criteria, guidance used and details of any limitations regarding methodology or available data;
 - Incorporated mitigation, i.e. mitigation measures that are features of the design of the development or are future management measures that have been committed to by MVV;
 - Impact assessment;
 - Additional mitigation (where necessary);
 - Residual effects (with mitigation in place);
 - Conclusion; and
 - References.
- 1.2.6 Part C: Summary; closes the ES by summarising the environmental effects and mitigation, including inter-relationships and cumulative effects (Chapters 19 and 20).

Volume 2: Figures

- 1.2.7 Volume 2: Figures; presents graphics, typically design drawings and maps, illustrating the Chapters of Volume 1: Main Text. The numbering of Figures corresponds to their respective Chapter numbers, e.g. Figures for Chapter 6 are numbered Figure 6.1, Figure 6.2, etc.

Volume 3: Appendices

- 1.2.8 Volume 3: Appendices; provides detailed and/or technical documents that support the Chapters of Volume 1: Main Text but which are appended for the sake of brevity. As with Figures, the numbering of Appendices corresponds to their respective Chapter numbers.

Volume 4: Non-Technical Summary

- 1.2.9 A Non-Technical Summary is provided separately. It provides a synopsis of Volumes 1, 2 and 3 with accompanying illustrations, in non-technical language.

1.3 Synopsis of the Proposed EfW CHP Facility

Location

- 1.3.1 The proposed development is to be located on land currently situated in the north east of HMNB Devonport, Plymouth. If the development goes ahead the land would be taken out of HMNB jurisdiction. Further information on the site location and setting can be found in Chapter 4 of this ES.

Process

- 1.3.2 A full description of the proposed EfW CHP facility can be found in Chapter 6 of this ES, with accompanying Figures in ES Volume 2.
- 1.3.3 The EfW CHP facility will have the capacity to process up to 265,000 tonnes per annum (tpa) of waste under certain conditions. However, it is expected that actual tonnages will be lower as waste composition changes or recycling activity increases over time. The total tonnage throughput is currently anticipated to be 245,000 tpa.
- 1.3.4 The waste will be combusted and the heat will be used to generate steam. The steam will drive a steam turbine and generate renewable electricity for use at the facility, to supply Devonport Dockyard and HMNB, and for export to the grid. Steam will also be extracted from the turbine and fed into the Devonport Dockyard and HMNB steam network to be used for heating purposes.
- 1.3.5 Solid residues will be left in the form of bottom ash, which will be transported off site and recycled, and residues from the air pollution control system, which will require disposal off site at a licensed hazardous waste landfill.
- 1.3.6 The facility will primarily deal with Municipal Solid Waste (MSW) provided by the SWDWP member authorities under the SWDWP Residual Waste Treatment and Disposal Contract. This 'Contract Waste' is estimated to amount to 168,428 tpa in 2014/15, increasing to 203,265 tpa in 2038/39, and will come from Plymouth City, West Devon Borough, South Hams District, Teignbridge District and Torbay Waste Collection Authority (WCA) areas.
- 1.3.7 Assuming the plant's upper processing capacity limit of 265,000 tpa, the remaining processing capacity of up to 96,572 tpa in 2014/15, reducing to up to 61,735 tpa in 2039/39, will be used to process 'Non-Contract Waste' in the form of combustible Commercial and Industrial (C&I) waste from local businesses.

Design

- 1.3.8 The EfW CHP facility will comprise the following principal components:
- Tipping hall, into which the vehicles delivering the waste to the facility will drive and deposit their loads;
 - Waste bunker hall, in which the waste will be deposited from the tipping hall and then mixed prior to being fed into the furnace;
 - Bale store, a standby facility which will be used to bale in plastic film and temporarily store waste from the waste bunker in the event that the main plant is temporarily unavailable, e.g. during periods of planned maintenance. When the plant becomes available again, the bales

will be fed into the furnace. Baling and temporarily storing waste in this way avoids the need to divert incoming waste to landfill;

- Turbine / boiler house, in which the waste is combusted, and electricity and steam are generated;
- Air pollution control (APC) system and chimney, in which the gases are cleaned to strict environmental standards before being emitted into the atmosphere via the 95m high chimney, with the solid APC residues produced in the cleaning process being collected and loaded into enclosed vehicles for transportation and disposal off site;
- Bottom ash collection area, where the bottom ash will be loaded into covered vehicles and transported off site for recycling;
- Air cooled condensers, which condense the low pressure exhaust steam from the turbine into water for return to the boiler system;
- Water treatment plant building where demineralised water is produced for use in the boiler system;
- Central control room for control and monitoring of the facility;
- Administration building, containing the staff welfare facilities, offices and meeting rooms;
- Workshop and stores building;
- Transformer compound for the export of electricity from the facility;
- Emergency diesel generator enclosure; and
- Electricity cables and steam and condensate pipework for connection to the relevant networks.

1.3.9 In addition to these principal components, there will also be access roads and trafficked areas for operational purposes; replacement of two existing crossings of Weston Mill Stream with a new clear-span bridge; weighbridges and a gatehouse; drainage and connections to infrastructure; hard and soft landscaping, and an ecological mitigation area.

1.3.10 The layout has been designed so that the waste deliveries and storage will occur on the south-east side of the building and thus will be screened as much as possible from the nearby properties in Barne Barton to the north and west.

1.3.11 The design life of the EfW CHP facility will be 30 years, and the life expectancy of the facility is approximately 40 years. MVV has experience of operating EfW CHP facilities for periods in excess of the design life, for example MVV's Mannheim facility in Germany has now been operational for more than 45 years.

Community Use

1.3.12 As well as the operational plant delivering the service requirements of the SWDWP contract, the aim is to provide facilities for the use of the public such as the community area/visitor centre which, as well as its main purpose of providing an educational outlook on waste issues, can be made available as a general community resource for meetings etc.

Risk Assessments

- 1.3.13 The site is outside the MoD's dockyard explosive safeguarding zone and so no additional measures are required for building design. An Accident Management Plan has been prepared (see Appendix 6.1), including a Warships in Harbour Risk Assessment, Nuclear Safety Case Risk Assessment and Helicopter Flight Path Risk Assessment which have been carried out by the MoD and confirm that no restrictions on the proposed EfW CHP facility have been identified.

Construction

- 1.3.14 A construction compound will be temporarily established on a raised area of land in the south western area of the site which is known colloquially by HMNB Devonport and the Ministry of Defence as 'Table Top Mountain'.
- 1.3.15 Construction is expected to occur between early 2012 and late 2014 and to take approximately 35 months (including the mobilisation, main construction and commissioning phases).

1.4 Parties Involved in the Project

MVV Environment Devonport Limited

- 1.4.1 MVV Environment Devonport Limited is a wholly owned subsidiary of MVV Umwelt GmbH, a leading German energy from waste company. MVV has competitively tendered for and been awarded the SWDWP Residual Waste Treatment and Disposal Contract and has applied for planning permission to construct the EfW CHP facility.
- 1.4.2 The MVV project management team for the proposed EfW CHP facility includes, amongst others, experienced waste planners and engineers. The project team and its advisors have extensive experience of preparing planning applications and associated ESs for similar waste management proposals.

Scott Wilson

- 1.4.3 In July 2010, the Scott Wilson Group was acquired by the URS Corporation. There is a period of transition which runs until the end of 2011.
- 1.4.4 Scott Wilson Limited was employed by MVV as planning and environmental consultants for this project in March 2009. Scott Wilson has prepared the planning application documents including this ES.
- 1.4.5 Scott Wilson 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. Scott Wilson is a registrant to the EIA Quality Mark scheme run by the Institute of Environmental Management and Assessment.



Savage and Chadwick

- 1.4.6 Savage and Chadwick is the architect and has designed EfW facilities elsewhere in the UK and Isle of Man.

MVV O&M

- 1.4.7 MVV O&M GmbH is responsible for the plant design and construction, employing a variety of international and local subcontractors to achieve this. ('O&M' stands for operations and maintenance.) MVV O&M GmbH is a separate wholly owned subsidiary of MVV Umwelt GmbH.

Envi Con

- 1.4.8 Envi Con & Plant Engineering GmbH is the general designer.

Kier Construction

- 1.4.9 Kier Construction is the civil engineering contractor.

Lab

- 1.4.10 Lab will provide the Air Pollution Control equipment.

SAR

- 1.4.11 SAR is the electrical and control supplier.

Standardkessel Baumgarte

- 1.4.12 Standardkessel Baumgarte is the boiler and grate supplier.

Imtech

- 1.4.13 Imtech is the water steam cycle supplier.

Ministry of Defence

- 1.4.14 The Ministry of Defence is the owner of the site and will lease the site to MVV.

1.5 ES Availability and Comments

- 1.5.1 The ES can be viewed on the MVV website at: www.mvv-environment.co.uk.
- 1.5.2 Hard copies of the full ES, consisting of all four ES volumes can be purchased at a cost of £250.00. Electronic copies can be purchased at a cost of £5.00. Cheques should be made out to MVV Environment Devonport Ltd. There will be no charge for the Non-Technical Summary only. Copies are available from:

Ian Roach
Scott Wilson
3rd Floor, Mayflower House
Armada Way

Plymouth
PL1 1LD

- 1.5.3 Copies are also available for viewing by the public in the Department of Development of Plymouth County Council at the following address:

Plymouth Civic Centre
Plymouth
PL1 2AA

- 1.5.4 The offices are open Monday to Friday, between 08:30 and 17:00.
- 1.5.5 Comments can be made to Plymouth City Council at the address above.