

**Facts & Figures  
 for the  
 proposed Energy from Waste Combined Heat and Power Facility  
 at  
 North Yard, Devonport, Plymouth**

<b>Parameter</b>	<b>Amount and Units</b>	<b>Comment</b>	<b>Reference to planning application documents*</b>
Anticipated construction and commissioning time	34 months	Expected start of construction in early 2012 subject to the determination of the planning application	Environmental Statement, V1, chapter 6
Start of operation	2014	Subject to the determination of the planning application and the environmental permit	Environmental Statement, V1, chapter 6
Nominal Waste capacity	245,000 tonnes per annum	245,000 tonnes are expected but it could be up to 265,000 tonnes per annum depending on the energy content of the waste	Environmental Statement, V1, chapter 6
Proportion of commercial/ industrial waste	Approximately 31% of the 245,000 tonne capacity at the start, declining to about 17% at the end of the contract depending on household waste tonnages	MVV will contract with local companies that presently collect such waste and which at the moment is taken to landfill	Environmental Statement, V1, chapter 3
Boiler steam conditions	60 bar and 420°C		Environmental Statement, V1, chapter 6
Electrical capacity	Up to 22.5 MW depending on steam demand from HMNB (the generation capacity is enough to supply up to 39,000 households with electricity)	The majority of the electricity will be consumed by the dockyard and naval base. The balance will be exported to the grid through an existing connection point.	Environmental Statement, V1, chapter 6
Heat capacity	Up to 23.3 MW (the generation capacity is enough to supply up to 9,400 households with heat)	Heat will be used to heat the dockyard and naval base, plus potentially, future district heating systems in Plymouth	Environmental Statement, V1, chapter 6
Overall net efficiency	39% average, 49% maximum	A normal modern EfW plant without CHP has about 23 % net efficiency	Environmental Statement, V1, chapter 6
Operational site	2.6 hectares (6.4 acres)		PASS

Parameter	Amount and Units	Comment	Reference to planning application documents*
area			Appendix 1: Design & Access Statement
Total leased area	Approximately 13 hectares (about 17.2 acres)	Including access road and steam pipe connection to Naval Base system	PASS Appendix 1: Design & Access Statement
Building length	187m	Includes main building (134m), air pollution control building and chimney	PASS Appendix 1: Design & Access Statement
Building height	15m to 45m		PASS Appendix 1: Design & Access Statement
Chimney height	95m	Determined following final analysis	PASS Appendix 1: Design & Access Statement
Visual impact	There are likely to be a number of adverse impacts on views from certain residential properties in the Barne Barton and Weston Mill Area, which will be significant in EIA terms.	Architecture updated to add quality to the design; landscaping and tree planting will be done to soften impact	Environmental Statement, V1, chapter 8  Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter D8
Daylight, sunlight, overshadowing	The proposed development will not result in any unacceptable impacts in relation to daylighting, annual and winter sunlight availability and overshadowing		Environmental Statement, V1, chapter 16
Air quality	See table below	The proposed plant would	Environmental

Parameter	Amount and Units	Comment	Reference to planning application documents*
		<p>reduce the emissions from the dockyard's existing gas boilers. The emissions from the proposed plant will be lower than those imposed by the Waste Incineration Directive In 2010, the Health Protection Agency reported that any potential damage from modern, well run and regulated incinerators is likely to be so small that it would be undetectable.</p> <p>Emissions during start up/commission will not be significantly different to normal operation, any increase in emissions resulting from commissioning activities which are likely to occur during optimisation of the process and systems during start up following outages will be of short duration and will not be of such a magnitude as to cause any significant environmental effect.</p>	<p>Statement, V1, chapter 13</p> <p>Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter D13</p>
Health	The effect of the scheme (with incorporated mitigation) on health and well-being is considered to be negligible and any fears of potential health and well-being effects are unlikely to be objectively justified.	This concerns the health impact on local communities that are directly associated with air quality, acoustics (noise and vibration) or with road vehicle movements	Environmental Statement, V1, chapter 18
Traffic	334 vehicle movements per day altogether	No significant impact compared to current situation, overall traffic increase of about 1% due to proposed development; new entrance road within MoD property to be built	Environmental Statement, V1, chapter 12

Parameter	Amount and Units	Comment	Reference to planning application documents*
		with traffic lights	
Number of heavy goods vehicles (HGVs) per day	132 vehicles (264 two-way movements)	This includes deliveries of municipal and commercial waste; deliveries of chemicals; and removal of residues	Environmental Statement, V1, chapter 12
Number of other vehicles per day (eg cars)	35 vehicles (70 two-way movements)	Depending on actual number of staff who might walk or cycle to the site or car share	Environmental Statement, V1, chapter 12
Noise	The plant will operate within the noise levels prescribed by the Environment Agency and Plymouth City Council.  Some elevated levels of noise during construction but these would be short term in nature and mitigation measures will be applied	During construction, noise levels can be elevated; maximum noise suppression incorporated in the design	Environmental Statement, V1, chapter 14  Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter D14
Ecology	No significant impact	Protected species to be relocated before works commence; breeding area for Black Redstarts on building roof; enhancement of Blackies Wood will improve biodiversity. There will also be ecological enhancement of Blackies Wood and offsite (through financial contribution)	Environmental Statement, V1, chapter 7  Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter D7
Number of direct employees	33		PASS Appendix 4
Additional indirect workforce	Approximately 70	Depends on maintenance activities which vary from time to time and are subcontracted	PASS Appendix 4
Total investment	€250 million		-
<b>Benefits of the solution</b>			
Economic	SWDWP savings of	MVV'S solution will provide	PASS

Parameter	Amount and Units	Comment	Reference to planning application documents*
benefits	approx. £388.8m compared to the reference case of a single EfW facility	local jobs and local waste disposal for businesses	Appendix 4  Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter C5
Energy benefits	Very high efficiency levels maintained at all times; facility will provide for Naval Base's entire heating needs with the existing boiler put on standby	MVV could potentially extend a district heating network into Plymouth	PASS Appendix 4
Environmental benefits	>97% diversion from landfill; facility will save >70,000 tonnes of carbon dioxide per year; 50 % of usable energy produced will be classed as "green"	Roughly a 5% annual saving for Plymouth's carbon footprint	PASS Appendix 3 (WRATE report) & PASS Appendix 4  Planning Application and Environmental Statement Further Information, Sept 2011, V1, chapter C5
Education and Employment	Up to 300 jobs during construction; 33 full time jobs in operation; about 70 additional jobs with operations sub-contractors	We will provide training opportunities for university or college students	PASS Appendix 4
Community benefits	£150,000 per year community funds for 25 years covered by Section 106 agreement	Community will have use of Visitor Centre; improvements to Blackies Wood , Weston mill lake and Weston Mill Creek; play area on Savage Road	PASS Appendix 4  Section 106 Agreement

Parameter	Amount and Units	Comment	Reference to planning application documents*
		planned; full time Community Liaison Manager employed by MVV	

\* Reference to the figures may appear in other parts of the planning application documents as well.

Predicted Emission figures

Substance	Unit	Daily Limit		Annual Expected (tonnes)
		WID Average	Expected	
Dust (PM <sub>10</sub> and PM <sub>2.5</sub> )	mg/Nm <sup>3</sup>	10	1.5	2.4
Hydrogen Chloride	mg/Nm <sup>3</sup>	10	8	12.5
Sulphur Dioxide	mg/Nm <sup>3</sup>	50	40	62.8
Oxides of Nitrogen	mg/Nm <sup>3</sup>	200	160	251.0
Cadmium and Thallium	mg/Nm <sup>3</sup>	0.05	0.015	Negligible
Mercury	mg/Nm <sup>3</sup>	0.05	0.0025	Negligible
Dioxins and Furans	ngTEQ/Nm <sup>3</sup>	0.1	<0.005	Negligible
Carbon Monoxide	mg/Nm <sup>3</sup>	50	15	23.5