

## 17 Socio-economics

### 17.1 Introduction

17.1.1 This chapter of the Environmental Statement (ES) assesses the socio-economic impacts of the proposed EfW CHP Facility at North Yard, Devonport. The chapter comprises:

- An economic impact assessment, including employment impacts and income/supply chain multiplier effects; and
- A review of other relevant socio-economic impacts.

17.1.2 This chapter describes the relevant policy context to demonstrate the fit of the proposal with objectives at the national and local levels; describes the assessment methods used; outlines the baseline conditions; and identifies the potential direct, indirect and induced impacts during construction and operational phases of the proposed development.

### 17.2 Planning Policy Context

17.2.1 This section reviews those policies that are relevant to the proposed development.

#### National Policy

17.2.2 Planning Policy Guidance (PPG) and Planning Policy Statements (PPSs) provide a national guidance framework that sets out a range of principles and objectives on different aspects of land-use planning in England.

17.2.3 **PPS1 'Delivering Sustainable Development'** (Ref. 17-1) sets out the role of the planning system in the delivery of sustainable development. PPS1 encourages local authorities to recognise the wider sub-regional, regional or national benefits of economic development and consider these alongside any adverse local impacts. In addition, PPS1 seeks to:

- Promote urban regeneration to improve the well being of communities, to include mixed-use developments in locations that allow the creation of linkages between different uses;
- Provide development in locations which are easily accessible by foot, bicycle or public transport; and
- Encourage the use of vacant and underused previously developed land and buildings.

17.2.4 **PPS1: 'Planning and Climate Change' - Supplement to PPS 1** sets out how planning, in providing for the new homes, jobs and infrastructure needed by communities, should help shape places with lower carbon emissions and resilient to the climate change now accepted as inevitable.

17.2.5 **PPS4 'Planning for Sustainable Economic Growth'** (Ref. 17-2) sets out the Government's overarching objective of achieving sustainable economic growth. The statement emphasises that planning must help build prosperous communities by improving the economic performance of areas, reduce the gaps between the growth rates between regions, promote regeneration, and deliver more sustainable patterns of economic development.

17.2.6 **PPS10 'Planning for Sustainable Waste Management'** (Ref. 17-19) sets out the approach to waste management and identifies a 'waste hierarchy' of reduction, reuse, recycling and composting, using waste as a source of energy, and finally disposal as a last resort.

17.2.7 The key objectives of the policy include:

- Driving waste management up the waste hierarchy, addressing waste as a resource and looking to disposal as the last option; and
- Provide a framework in which communities take more responsibility for their own waste, and enable sufficient and timely provision of waste management facilities to meet the needs of their communities.

### Local Policy

17.2.8 **Local Development Framework** - The Planning and Compulsory Purchase Act 2004 (Ref. 17-3) introduced a new two-tiered plan system, made up of the Regional Spatial Strategy and the Local Development Framework (LDF). The LDF is made up of a portfolio of Local Development Documents and a number of Supplementary Planning Documents (SPDs). Its main document, the Core Strategy, sets out the general spatial vision and objectives in the LDF.

17.2.9 The Plymouth LDF Core Strategy was formally adopted by Full Council on 23 April 2007. It is one of the most developed LDFs in England and has several supporting documents. Of particular importance:

- Policy CS05 of Plymouth's adopted Core Strategy sets out the factors that will be considered in deciding on the transfer of existing employment sites to other uses. One of these factors is 'Whether the neighbourhood... already has a good range of employment opportunities for local people, or the proposal will deliver a mixed-use development which continues to provide for a good range of local employment opportunities'. The supporting text notes that it is important that all neighbourhoods in the city have access to a range of job opportunities, as part of the Council's vision for a city of sustainable linked communities (the city is split into 43 neighbourhoods, with populations ranging from 2,000 to 13,000). Based on research by the University of the West of England (UWE), the text suggests a benchmark of seven local jobs per 10 economically active residents as a broad indicator of sustainability.

17.2.10 Those particular policies that are relevant to the proposed development are discussed in more detail below.

17.2.11 The **Waste Development Plan Document** was adopted in 2008. It highlights the need for more sustainable waste management, and most notably objectives 3, 4 and 5:

- 3. Allocating sufficient and appropriate land within the city that is capable of accommodating a range of strategic waste management and treatment facilities. Providing sufficient capacity to meet Plymouth's needs and, if possible, additional capacity to manage and treat waste from adjoining areas.
- 4. Providing a positive planning framework to support the accommodation of sustainable commercial and industrial waste management facilities. Providing local waste management facilities, either on strategic waste management sites or at a range of other smaller sites.

- 5. Providing a positive planning policy framework that enables sustainable waste-related development, which will have an acceptable impact on local and global environmental quality.

17.2.12 The site falls outside the Devonport Area Action Plan (AAP), however, the **Sustainable Neighbourhoods Development Plan Document (DPD)** will show all the major sites, which are not included within the Area Action Plans, that might be required to meet Plymouth's needs for homes, jobs, shopping and recreation, as outlined in the Core Strategy. Plans were approved by Cabinet in January 2011 and at the time of writing are currently undergoing a period of consultation. Of particular importance:

- The proposed site is located in Barne Barton within the St. Budeaux Ward. The **Barne Barton** Neighbourhood DPD document highlights the high levels of deprivation and lack of local or accessible employment opportunities. It shows a job resident ratio of 0.25 compared with the 0.7 needed for a sustainable economy.
- The **Keyham** neighbourhood DPD (directly to the south of the site) pamphlet highlights the dependence on employment of one large employer and highlights the need for a more diverse range of employment opportunities.

17.2.13 **Plymouth Local Economic Development Strategy 2006 – 2021 & Beyond.** This strategy was adopted by Plymouth City Council in October 2006 (<http://www.plymouth.gov.uk/localeconomicstrategy>). There are six broad aspirations for the city set out in this document:

- A highly competitive City, well recognised and branded on the global economic stage;
- A City with a balanced, diversified and knowledge intensive business base;
- A City Region with well connected and inclusive communities;
- A City with an adaptable and skilled workforce, constantly learning;
- A City where strong stakeholders and agencies work effectively together to deliver shared priorities;
- A City where a genuine commitment to sustainable development reinforces a set of unique environmental assets

There is also a sectoral focus within the strategy which identifies six priorities:

- Advanced engineering;
- Marine industries and renewables;
- Business services;
- Creative industries;
- Health and medical; and
- Tourism and leisure.

17.2.14 The Strategy highlights the levels of deprivation in key neighbourhoods adjacent to the site and illustrates the need for new employment opportunities for local residents. In particular it states:

- A number of communities, in particular those in Devonport, Stonehouse and other westerly areas of the City, will be particularly disadvantaged in being able to tap into new high value added employment or enterprise opportunities (page 18).
- Areas close to the City Centre such as Millbay, Sutton Harbour and Devonport have also been identified as key development locations that can act as a platform for further, high value added economic and business development (page 20).
- Stonehouse, Devonport, the City Centre, North Prospect and Barne Barton exhibit significant deprivation in terms of educational attainment, crime, housing and worklessness. Overall, Stonehouse and Devonport, followed by the City Centre, are the most deprived neighbourhoods in the City (page 24).

### The Plymouth Sustainable Community Strategy 2007 – 2020

- 17.2.15 This strategy was adopted in 2007 and highlights strategic objectives to create a wealthy city which creates and shares prosperity and highlights long term priorities to maintain a clean and sustainable environment and effectively manage Plymouth's waste (page 25).

## 17.3 Assessment Methodology and Significance Criteria

### Assessment Methodology

- 17.3.1 The following assessment seeks to establish the potential economic and social impacts of the proposed development and assess these against current baseline conditions. The impacts of the proposed development are considered at varying spatial levels according to the nature of the impact considered. This approach is consistent with English Partnerships Guidance 'Additionality Guide, A Standard Approach to Assessing the Additional Impact of Projects, 3rd Edition' (Ref. 17-4).
- 17.3.2 The socio-economic impact of the proposed development is considered primarily in relation to the Plymouth Local Authority area. This is the best fit with the wider economic geography of the travel to work area and reflects the availability of data for impact assessment.
- 17.3.3 Table 17.1 presents the different components of the assessment and the geographical scale at which they are assessed.

**Table 17.1 Socio-economic Impacts by Geographical Scale**

Impact	Geographical Area of Impact	Rationale for Impact Area
Employment generation during the construction phase (direct, indirect and induced impacts)	Plymouth Local Authority area	Covers the majority of the travel to work area, as derived from Census 2001
Employment generation during the operational phase (direct, indirect and induced impacts)	Plymouth Local Authority area	Covers the majority of the travel to work area, as derived from Census 2001

### Significance Criteria

- 17.3.4 In this chapter, policy thresholds and best practice are used to assess the scale of significance of the impacts. In the absence of such guidance, expert judgement is used to assess the impact

of the proposed development on the social and economic baseline. The assessment process aims to be objective and quantifies impacts as far as possible. However, some impacts can only be evaluated on a qualitative basis. Impacts are defined as:

- **Beneficial** classifications of significance indicate an advantageous or beneficial effect on an impact area, which may be minor, moderate, or major in effect;
- **Negligible** classifications of significance indicate imperceptible effects on an impact area; and
- **Adverse** classifications of significance indicate a disadvantageous or adverse effect on an impact area, which may be minor, moderate or major in effect.

17.3.5 Temporary to short-term impacts are considered to be those associated with the construction works. Medium to long-term impacts are those associated with the completed development. Local impacts are those affecting neighbouring receptors.

## 17.4 Baseline Conditions

17.4.1 This section establishes the current baseline socio-economic conditions in Plymouth:

- An overview of the Plymouth economy;
- The Plymouth labour market;
- Population and deprivation;
- Existing employment within the Dockyard; and
- Land use.

17.4.2 Potential impacts arising from the proposed development are assessed relative to the baseline impact areas and benchmarked against regional and national standards where appropriate.

### The Plymouth Economy

17.4.3 Plymouth has a distinctive economy and history, based largely on its seafaring tradition and strong links with the military. The maritime and defence sectors continue to play a significant role in the local economy. Devonport is the largest naval base in Western Europe covering over 650 acres and employing approximately 2,500 civilian and service personnel. Estimates suggest that the base accounts for 10% of Plymouth's value added and supports over 400 businesses (Ref. 17-24). As with many other areas of the economy these sectors have come under increasing pressure due to the recession, public expenditure cuts and subsequently have experienced job losses.

17.4.4 In recent years Plymouth has continued to diversify its economic base and developed a local strategy to focus on six priority sectors including advanced engineering, marine and renewables, business services, creative industries, health and medical, tourism and leisure.

17.4.5 The Plymouth economy under-performs on a range of measures, notably Gross Value Added (GVA), where performance is below the regional and national averages. This is due to the sectoral mix of the economy; particularly the high dependence on the public sector, poor productivity levels in other sectors, lower levels of participation in the labour market and a low

level of new business creation. Recent analysis suggests that this underperformance amounts to £1bn of unrealised economic potential (Ref 17-22).

- 17.4.6 The Plymouth economy has made significant progress over the past ten years with its performance improving on a range of different metrics. This includes an improved performance on the skill levels within the workforce, an increase in the number of new businesses and an improvement in the economic dynamism of the Plymouth economy as a whole. Having said this, Plymouth still lags behind many of the key towns and cities in the South West (Ref 17-23).
- 17.4.7 To address this gap in economic performance requires a series of measures including sustaining the increasing numbers of new business starts and new employment, securing high-value added sector growth, improving the productivity of existing businesses and maintaining and diversifying the industrial base particularly where there are opportunities to exploit the potential of climate change and low carbon markets and technologies.

### Plymouth's Labour Market

- 17.4.8 In 2009, approximately 107,000 people were employed in Plymouth and just over 2.24 million were employed in the South West. The number is projected to increase by 0.7% per annum up to 2017 in the South West; this is similar to the national average (Ref. 17-5). However, it is worth noting that these projections were made in advance of the recent public sector cuts.
- 17.4.9 In 2010, the economic activity rate in Plymouth was 75.6%, which is below both the regional (78.4%) and national (76.4%) rates. Of Plymouth's economically active residents, 70.1% are in employment and 7.2% are unemployed (Ref. 17-6). Data at the local level is limited to the 2001 Census. At this point the activity rate in St. Budeaux ward, which covers the site, was 69.3% compared with 72.0% for Plymouth and 74.0% nationally.
- 17.4.10 Job Seekers Allowance (JSA) and other out of work benefit claimant data also demonstrate the lower levels of activity and higher dependency on welfare benefits at the local level. JSA data for January 2011 show that 5.0% of the working age population in St. Budeaux ward was claiming JSA compared with 3.7% for Plymouth and Great Britain.
- 17.4.11 In May 2010 almost 24% of the working age population in the St. Budeaux ward was claiming an out of work benefit<sup>1</sup> compared with 16.3% for Plymouth and 14.7% nationally.
- 17.4.12 According to the Census (2001), 21.9% of the Plymouth workforce lives outside of Plymouth (Ref. 17-7). Data from the Annual Business Inquiry (ABI) (2009) show that Plymouth's economy is heavily reliant on the public administration, education and health sectors (with 36.9% employed in these sectors compared to 28.7% regionally and 27.0% nationally). Conversely, there is a lower proportion of people employed in finance, IT and other business activities than regionally and nationally (13.4% for Plymouth, 19.1% for the South West and 22.0% for Great Britain) (Ref 17-8). In 2009 there were estimated to be 98,835 construction workers in the South West, with approximately 3,600 working in Plymouth (Ref. 17-8).
- 17.4.13 Manufacturing employment accounts for a larger share of the total employment in Plymouth relative to the region and Great Britain as a whole. The ABI data show that 12.5% (13,400) of the jobs located in Plymouth are in the manufacturing sector. When considering the residence based employment data (Ref 17.20), i.e. the sectors in which people who live in Plymouth are

<sup>1</sup> this includes JSA as well as, Employment Support Allowance and incapacity benefits, lone parent benefits and other income related benefits

employed, this shows that more than 14% (16,700) of the working age population living in Plymouth are employed in the sector.

17.4.14 Similarly construction jobs located in Plymouth make up 3.4% (3,600) of the total jobs available in the area. However the residence based employment data from the Annual Population survey shows that over 7% (8,300) of the workforce who live in Plymouth actually work in construction. Whilst these differences highlight the movement of people living in Plymouth to work outside of the area in these sectors, they also demonstrate the ability of the proposed development to provide new opportunities for those living locally to also work locally in the construction and operational phases.

17.4.15 A breakdown of employment sectors is presented in Table 17.2.

**Table 17.2 Employee Jobs 2009 (workplace based)**

	Plymouth (%)	South West (%)	Great Britain (%)
Agriculture, Forestry, Energy and Waste	0.8	2.4	1.6
Manufacturing	12.5	10.7	10.2
Construction	3.4	4.4	4.8
Services	83.2	82.5	83.5
Distribution, Hotels & Restaurants	23.1	25.2	23.4
Transport and Communications	5.4	4.8	5.8
Finance, IT, other Businesses Activities	13.4	19.1	22.0
Public Administration, Education & Health	36.9	28.7	27.0
Other Services	4.4	4.7	5.3

Source: ONS Annual Business Inquiry Employee Analysis (2009)

17.4.16 The occupational profile of Plymouth workers is broadly similar to the profile across the region and nationally. However, there are a smaller proportion of managers and senior officials in Plymouth. Table 17.3 below presents further details on the occupational profile of the local labour force.

**Table 17.3 Employment by Occupation (workplace analysis)**

	Plymouth (%)	South West (%)	Great Britain (%)
Managers and senior officials	13.5	15.7	15.8
Professional occupations	13.5	13.2	13.9
Associate professional and technical	16.3	14.4	14.6
Administrative and secretarial	13.9	11.2	11.2
Skilled trades	11.1	12.5	10.4
Personal service	7.5	8.9	8.9
Sales and customer service	8.8	7.0	7.4
Process plant and machine operatives	5.7	5.9	6.6
Elementary occupations	9.7	11.3	11.1

Source: ONS (2010) Annual Population Survey 2010



- 17.4.17 Data on occupational profiles for the local level (St. Budeaux ward) are only available for 2001. The data for this point in time show a much higher proportion of the resident working age population of St. Budeaux in elementary and process/machine operatives (31%) relative to Plymouth (23.6%) and Great Britain (20.5%). At the opposite end of the scale higher level occupations only account for 12.1% of those employed as managers, compared with 18.1% and 25.9% for Plymouth and Great Britain respectively.
- 17.4.18 The other key point to note from the 2001 and 2010 data is the falling proportion of employment in lower skilled occupations. This move toward higher value added and skilled employment is likely to be a continuing trend within the UK and other developed economies, as work including the Leitch review (Ref. 17-22) has identified.
- 17.4.19 Skills are an increasingly important factor determining an individual's ability to access employment. Similarly companies will look at skills within the local labour supply when considering investment decisions to locate in a specific area. If the benefits of investment are to be realised at the local level there needs to be a good match between the jobs available and the skills required with the locally available labour supply. Mismatches here can be addressed through training and skills development but this does take time and investment. At the local level the most recent data on skills is from the 2001 Census. The data here show that 45% of the working age population in St. Budeaux held no qualifications compared with 36.6% and 35.8% for Plymouth and Great Britain respectively.
- 17.4.20 More recent evidence illustrates that the *workforce* was marginally less qualified than the regional average, with 94.4% of individuals holding a qualification (compared to 94.6% in the South West). A total of 29.0% of the population have a degree or higher degree, compared to 32.5% in the South West and 35.3% nationally.

### Population and Deprivation

- 17.4.21 The population in Plymouth has expanded from 242,000 in 1999 to 256,700 in 2009 (Ref. 17-9), representing a 6.1% increase over the time period. This is below the regional rise (7.2%) but above the national average (5.3%). In 2009, 165,000 (64.3%) of Plymouth's residents were of working age (defined by the Office for National Statistics as men aged 16 to 64 and women aged 16 to 59). This is above both the regional (59.5%) and national averages (61.9%).
- 17.4.22 According to the Index of Multiple Deprivation 2007 (IMD 2007), Plymouth is the 76<sup>th</sup> (out of 354) most deprived borough in England (Ref. 17-11).
- 17.4.23 Local level analysis of the IMD 2007 undertaken by the Local Strategic Partnership and the University of Plymouth shows that the Barne Barton neighbourhood which contains the proposed development is the fifth most deprived neighbourhood area within Plymouth (Ref 17-21). The Devonport neighbourhood immediately to the South of the development is identified as the most deprived within Plymouth. Both neighbourhoods are identified by the analysis as priorities for investment and regeneration.

### Existing Employment within the Dockyard

- 17.4.24 Together, the Dockyard and Naval Base generate 13% of Plymouth's gross value added income. There are 4,036 personnel on ships and submarines which are based in Devonport. 475 Naval service personnel are employed in naval support together with 380 civilians (Ref 17-28).



- 17.4.25 Babcock employs almost 4,300 people within Devonport Dockyard<sup>2</sup>. A further 7,000 jobs are dependant upon the Dockyard and Naval Base (Ref 17-28).

### Land Use

- 17.4.26 MVV's proposal is to construct and operate an EfW CHP facility 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 leased by MVV and taken out of HMNB Devonport's operational jurisdiction.
- 17.4.27 A central part of the site on which the EfW CHP facility building will be constructed was until recently used by a firm called Ashcroft to process demolition rubble created from different construction projects throughout the naval base and dockyard. It is understood that Ashcroft went into administration. As such there was some employment generating use associated with the site. However the intensity of employment created by the EfW CHP will be higher with a greater number of high skilled jobs on site. This would suggest on a broad level, a degree of additional benefit will result from the proposed development.

## 17.5 Potential Impacts

- 17.5.1 This section analyses the scale, permanence (short, medium, long-term), and significance of socio-economic impacts relative to the baseline established in the previous section. The direct, indirect and induced employment impacts (through supply chain and income multiplier effects) of the proposed development during its construction and operational phases are assessed.

### Construction Phase

- 17.5.2 The following section give details of the number of gross construction workers on site and proceeds to assess the net impact of the proposed development in terms of construction jobs on the local and regional economies.

#### Direct Construction Employment

- 17.5.3 The construction of the proposed development will create new jobs. This represents a positive economic impact that can be estimated as a function of the scale and type of construction. The direct expenditure involved in the construction phase will lead to increased output generated in the UK economy. It is estimated that the gross output per construction employee in the South West is £96,929 (Ref. 17-16).
- 17.5.4 MVV and its contractors have made detailed estimates of the construction costs of the project, a proportion of which will comprise labour costs. There will be approximately 309 construction workers on-site during the peak (October 2013) of construction activity.

#### Leakage

- 17.5.5 'Leakage' effects are the benefits to those outside the impact area. Kier Construction, the civil engineering contractor, expects that it will employ 70% of its labour locally, i.e. 30% leakage. However, the construction of this facility requires a significant amount of bespoke supplies and equipment, so there are other contractors involved. The construction will therefore involve a substantial number of specialist contractors from outside the region with some coming from

---

<sup>2</sup> This is in addition to the 2,500 service and civilian personnel employed within HMNB Devonport, cited in paragraph 17.4.3 above.

continental Europe. For this reason it is expected that leakage effects will be relatively high. In line with the English Partnerships Guidance (Ref. 17-4) leakage is set at 50% and implies that many of the benefits will go to people living outside the area.

- 17.5.6 A 50% discount was therefore applied to the 309 jobs created by the construction phase. It is thus estimated that (154.5 rounded up to) 155 jobs will come from outside the City, and that (154.5 rounded up to) 155 jobs will be created for residents living within Plymouth.

### **Displacement**

- 17.5.7 Displacement measures the extent to which the benefits of a project are offset by reductions of output or employment elsewhere. Any additional labour demand cannot simply be treated as a net benefit – it removes workers from other posts and the net benefit is reduced to the extent that this occurs. This consideration is referred to as displacement.
- 17.5.8 There are approximately 6,400 job seekers within Plymouth, of which there are a minimum<sup>3</sup> of 600 people seeking employment in construction trades. As there are more people seeking employment in construction in Plymouth than there will be jobs created at the proposed site, it is suggested that this project would suffer very little, if any, displacement effects.
- 17.5.9 Displacement has therefore been set at 0. This is also in line with other research measuring the economic impact of a major waste facility on the Newhaven economy (Ref. 17-17).

### **Multiplier Effects**

- 17.5.10 In addition to the direct construction employment generated by the project itself there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth will arise locally in supply chain firms within the construction process (indirect or supply linkage multipliers). Additionally, part of the income of the construction workers and supply chain employment will be spent in Plymouth, generating further employment (induced or income multipliers).
- 17.5.11 The impact of the multiplier depends on the size of the geographical area that is being considered, the local supply linkages and income leakage from the area. English Partnerships Additionality Guide (Ref. 17-4) provides a 'ready reckoner' of composite multipliers – the combined effect of indirect and induced multipliers. Plymouth is likely to have medium / average supply linkages based on the average output per construction employee within the region. The English Partnerships guidance determines that a composite multiplier of 1.1 and 1.5 is appropriate at the local and regional levels respectively for medium supply linkages.
- 17.5.12 Anecdotally, the experience of MVV at its plants in Germany has been that the multiplier has been as high as 2.0.
- 17.5.13 Table 17.4 presents the temporary employment created by the proposed development taking leakage, displacement and multiplier effects into account. The total net additional employment created within Plymouth is estimated to be 170 people with a further 62 construction posts created outside the City.

---

<sup>3</sup> This includes claimants who suggested that they are looking for employment in 'Construction Trades', 'Construction Operatives', and 'Elementary Construction Occupations'. There will however, be others who are seeking employment in the construction sector that fall outside of these occupations, such as management.

**Table 17.4 Net Construction Employment Estimates**

	Plymouth (peak construction employment)
Gross Direct Employment	309
Direct employment after leakage	155
Displacement	0
Net Direct Employment	155
Net Indirect and induced Employment (1.1 multiplier)	15
<b>Total Net Employment</b>	<b>170</b>

Source: URS/Scott Wilson calculations 2011. Figures may not sum due to rounding errors.

- 17.5.14 The direct, indirect and induced employment and expenditure created by the construction phase of the proposed development is likely to have a **minor beneficial** short-term impact (using expert judgment/experience from other similar projects) on the Plymouth economy creating **170 temporary construction jobs** at peak through direct, indirect and induced effects.
- 17.5.15 The 155 jobs that are “leaked” from Plymouth will be taken up by individuals in the wider economy, including certain specialist contractors from continental Europe. As such these 155 leaked jobs will also create further indirect and induced impacts amounting (using the 1.5 multiplier) to a total of 233 temporary construction jobs at peak within the wider economy.

## Operational Phase

### Gross Operational Employment

- 17.5.16 MVV has made detailed estimates of the costs of the project in its financial model, a proportion of which will comprise labour costs. MVV has calculated that the operational phase will generate 33 gross full-time jobs. The following posts will be created: Financial Director, Technical Director, Administrator/Receptionist, Community Liaison Manager, Contract Manager, Financial Manager, Energy Manager, Health, Safety and Environmental Manager, Operations Engineer, Maintenance Engineer, Tipping Hall Supervisor / Weighbridge operator, Shift Team Leaders (control room), Plant Operators, Crane Operators, Consumables & Residues Operator, Mechanic, and Electrician.

### Net Operational Employment

- 17.5.17 ‘Deadweight’ refers to outcomes which would have occurred without the proposed facility. This is usually calculated by deducting the number of people currently employed on the site. However, as this is a new waste facility, and there is no previous or existing economic activity taking place on the site, there will be no deadweight.
- 17.5.18 Leakage will not be as high in the operational stage as compared to the construction as more of the labour can be sourced locally. As per English Partnerships Guidance leakage is set at 25%.
- 17.5.19 The remaining net benefits are consistent with the construction estimates. In other words, displacement is set at 0% and a composite multiplier of 1.1 (local) and 1.5 (regional) is applied. This is summarised in Table 17.5 below.

**Table 17.5 Net Operational Employment Estimates**

Impact level	Plymouth
Gross Direct Employment	33
Direct employment after leakage	25
Displacement	0
Net Direct Employment	25
Net Indirect and induced employment	2.5
Total Net Employment	<b>27.5</b>

Source: URS/Scott Wilson calculations 2011. Figures may not sum due to rounding errors.

- 17.5.20 The direct, indirect and induced employment created by the operational phase of the proposed development is likely to have a **minor beneficial** long-term impact (using expert judgment/experience from other similar projects) on the Plymouth with 27.5 net additional jobs being created through direct, indirect and induced effects. In addition the 8 “leaked” from Plymouth will be taken up by residents in the wider regional economy. These will create a further 4 jobs through indirect and induced effects giving a total of 12 jobs in the regional economy as a result of the proposed development. In total the proposed development will create **40 permanent jobs in the regional economy** through direct, indirect and induced effects.
- 17.5.21 There will be **additional employment created** within the dockyard through the upgrading of the steam pipe work (Ref 17-28).

### Other Impacts Generated

- 17.5.22 There are a range of other potential benefits which the EfW CHP facility is expected to bring to the Plymouth and local neighbourhoods. These include:
- 17.5.23 **Safeguarding and creating further employment in the dockyard:**
- Devonport is the only Nuclear Dockyard in the UK that has the infrastructure and skills required to carry out deep nuclear maintenance and upgrading of the current and planned future submarine fleet. The MoD is currently investing significant resources to upgrade the submarine repair facilities, which will provide continuing employment for several hundred highly skilled local employees (Ref 17-28);
  - Following the Naval Base Review the Government made a commitment that Devonport would be the home of the Royal Navy's amphibious ships; HMS OCEAN, HMS ALBION and HMS BULWARK. Plans are being developed as part of the Devonport Landing Craft Co-Location Project to establish a Royal Naval Amphibious centre of excellence for landing craft training, maintenance and operations, which will bring 500 Royal Marines to Devonport from Turnchapel and Poole (Ref 17-28);
  - Help for Heroes, with MOD support, is planning to establish a recovery facility for injured armed forces personnel. The ambitious plans will create a £22 million rehabilitation and accommodation centre in Devonport. The facility will form the main recovery centre in the UK for Royal Marine and Royal Navy casualties returning from the war in Afghanistan and other theatres. MVV propose to supply heat to this facility as part of their proposals. (Ref 17-28);
  - Devonport has been named as one of two candidate sites under the second stage of Statutory Consultation to remove the radioactive elements of the de-commissioned

submarines. This MoD project extends over a 60 year period and includes the provision of facilities to dismantle 27 defuelled nuclear submarines of past and current classes. Devonport is the only UK site which currently conducts nuclear defuel, de-equipping and layup of decommissioned nuclear submarines. The project team currently developing the requirements for the Submarine Dismantling Project are based in Devonport (Ref 17-28);

- Under Programme Roundel the MoD is rationalising the Naval Base site in order to concentrate the activities into North Yard, with the objectives of reducing operating costs to the MoD and taxpayers, and releasing land into the private sector to allow regeneration and additional opportunities for local employment. The release of South Yard areas for housing redevelopment by Redrow and yacht manufacture by Princess Yachts are recent examples (Ref 17-28).
- 17.5.24 **Local relevant skills uplift** - Kier will promote civil engineering career opportunities to young people at all school levels through appropriate presentations, workshops, site visits and competitions. Where possible, organised visits to the project will be provided with the aim of showing what goes in to such an important engineering project. Throughout Kier's time in the Plymouth area they have developed very strong relationships with both City College Plymouth and the University of Plymouth. Kier advise the University on current trends in the industry, the relevance of the academic curriculum to employment and advising students on their final year projects and continuing educational development. Kier have funded several local team members to gain construction and civil engineering qualifications from City College Plymouth. Kier have also sponsored selected students through their studies and provided them with work experience during their holidays or placement years. Kier will actively promote and assist these and other colleges and institutions, to support, discuss and recruit future apprentices, undergraduates and graduates.
- 17.5.25 **Reductions in the number of people claiming benefits** – subsequent savings to the Exchequer due to reduced benefit payments. The plant would create temporary construction and permanent operational jobs. There is good potential for local jobless/economically inactive individuals to access these opportunities and as such this could have a minor beneficial impact by reducing the cost to the exchequer of welfare benefit payments.
- 17.5.26 **Reduced cost of paying for waste to go landfill** – by offering an alternative to landfill the EfW CHP facility will help to significantly reduce the cost of waste disposal for the member authorities of the South West Devon Waste Partnership, including Landfill Tax and Landfill Allowance Trading Scheme (LATS) penalties. Evidence suggests that savings generated through the use of the EfW CHP facility would amount to £60M less than the landfill alternative, over the lifetime of the contract. In addition the partner Councils will receive a PFI grant worth £177M (Ref. 17-25).
- 17.5.27 **Saving on energy costs/reduced carbon emissions for Devonport Naval base** – As well as generating electricity the EfW CHP facility is designed to deliver steam into the Naval Base North Yard steam system. The steam provided will displace steam generated by the existing North Yard boilers which run on natural gas and, occasionally in times of gas disruption, distillate oil. The savings due to the displacement of the North Yard boilers will amount to 82,200,000 kWh per annum of natural gas and 15,200 mtoe (Million Tonnes of Oil Equivalent) in carbon dioxide emissions. This is a significant benefit in both economic and environmental terms (Ref. 17-18). The electricity supplied by the EfW CHP facility to the naval base and dockyard will also displace electricity imported from the grid, most of which is derived from fossil fuel sources.
- 17.5.28 **CHP incentives** The benefits that flow to the EfW CHP facility as a result of achieving relevant efficiency standards bring an entitlement to be awarded Renewable Obligation Certificates

(ROCs) under the Renewables Obligation (RO) Regulations. These are awarded by the electricity regulator, OFGEM, and can be sold in the electricity markets so generating additional revenue. This revenue allows the EfW CHP facility to offer reduced waste disposal costs to the SWDWP and reduced energy costs to the Naval Base.

- 17.5.29 **Roll out of energy saving benefits/reduced emissions to existing and new business users**  
The South Yard is seen by the Ministry of Defence as an area in which alternative commercial activities will take place. A recent example is the establishment in South Yard of Princess Yachts who manufacture boats. The manufacturing process requires heat which could in future – given appropriate conditions – be supplied by the EfW CHP facility. Any additional demand would require the replacement of the central pipework between North Yard and South Yard which under current South Yard demand is not considered viable. Further information can be found in the Sustainability Statement that accompanies the planning application.
- 17.5.30 In addition to the potential savings that may be available to existing businesses the presence of cheaper heat and power could also act as a catalyst for investment, particularly to businesses where energy is a significant input cost.
- 17.5.31 **Savings on energy costs, reduced carbon emissions and increasing certainty on energy prices over the long term for local residents** – The presence of a significant source of heat and power could in future – given appropriate conditions – be used to roll out district heating and reduce expenditure on energy for low income households in neighbourhoods close to the proposed development. This could help to reduce fuel poverty and free up household income for other purposes. At the same time carbon dioxide emissions and reliance on fossil fuels would be reduced. Further information can be found in the Sustainability Statement that accompanies the planning application.
- 17.5.32 Work by the Energy Savings Trust (Ref.17-26) suggests that even under a conservative scenario (assuming an average efficiency for a CHP system and that the heating system being replaced is gas fired) smaller scale CHP systems could produce annual savings per dwelling of 3280 Kwh and 600kg of carbon dioxide. Other sources suggest that carbon and energy savings from CHP would be a minimum of 10% per annum (Ref.17-27) but ultimately this is dependent on the carbon profile of the waste streams being used, the scale and type of retrofitting required, the existing energy source and the contract/pricing that the ESCo (see below) uses .
- 17.5.33 There are presently no District Heating (DH) systems in Plymouth. These are expensive to build and normally need a significant heat demand to be viable. Under legislation established in 2005 it is possible to set up Energy Supply Companies (ESCOs) as joint ventures between local authorities and the private sector. In 2009 local partners commissioned a commercial feasibility study into the development of several low carbon district energy schemes. The study was published in January 2010 and examined the setting up of an ESCo in Plymouth, as a vehicle for developing up to three DH systems in the south Devonport area of the city, external to the Naval Base, the city centre and around Derriford Hospital.
- 17.5.34 MVV's ultimate parent company is Germany's third largest operator of DH systems and is well placed to assess the viability of any DH systems in Plymouth. MVV has reviewed the above study report and believes that subject to further detailed analysis such DH systems could be established.
- 17.5.35 The Barne Barton neighbourhood is the closest residential area to the EfW CHP facility. It comprises mainly residential flats and houses, with a few shops and schools. There are no significant commercial or industrial premises. Many of the flats are owned by housing



associations. As such the heat demand of the area has typical characteristics of UK residential heat demand, i.e. strong seasonal variations and also diurnal (i.e. twice daily) variations in heat demand.

- 17.5.36 The practical delivery of a DH system also depends on the nature of the existing heating in individual residences and the level of heat demand from households. The practical deliverability of such a scheme could be affected by the need to install new hot water and heating systems in some of the housing stock. MVV will therefore examine the existing energy network in the neighbourhood; how far away from the EfW CHP facility additional residences would need to be connected in order to achieve the best balance between increasing heat load and practical deliverability.
- 17.5.37 From a commercial point of view the supply of heat to residences could be somewhat cheaper than gas or electricity fed systems, with the latter being particularly expensive. It would also be possible for the tariffs to be adjusted only to normal inflation, e.g. the Retail Prices Index, rather than be subject to the volatility inherent in the gas and electricity markets which gain much public attention, especially when prices rise steeply (Ref. 17-18)
- 17.5.38 Over the longer term the Keyham, St Budeaux and Weston Mill residential areas could also benefit from a DH scheme in the ways described above. However the cost of the infrastructure would be higher and managing heat demand and cost balance to achieve viability may be more difficult to achieve.
- 17.5.39 **Land Use impacts** - MVV's proposal is to construct and operate the facility on land currently situated in the north east of HMNB Devonport. Until recently much of the site has been used to process demolition waste. This is likely to have been a relatively low employment density use compared with the proposed development. There will therefore be a beneficial impact on local land use by increasing employment levels from previous uses and by bringing land back into use.

## 17.6 Residual Effect Assessment and Conclusion

- 17.6.1 This chapter has analysed the socio-economic impacts of the proposed development. In summary, it is considered that this proposed development would have an overall beneficial impact on Plymouth and the South West's economies, through a range of different effects including new employment, supply chain benefits, increased local income, cost savings to businesses, households and the MoD, alongside wider carbon savings. The proposed development will also have beneficial impacts on land use.
- 17.6.2 Table 17.6 below summarises the residual effects associated with the proposed development.

**Table 17.6 Summary of Residual Socio-Economic Effects**

Measure	Significance	Explanation
Employment creation during construction	Major beneficial Impact - short term	The total net additional employment created within the local area is estimated to be 170 jobs per year, and overall 232 jobs per year.
Employment creation during the operational phase	Moderate beneficial Impact - long term	It is anticipated that there will be 40 jobs created, 27.5 of which are likely to be local, and 12 within the region.
Local supply chain effects and increased local expenditure	Moderate beneficial Impact	The development will generate some local supply chain impacts and induced income



Measure	Significance	Explanation
		effects within the Plymouth economy. These are reflected in the construction and operational phase job numbers
Additional safeguarding and creation of employment associated with the dockyards' medium and long terms plans	Major beneficial impact	There are a large number of wide ranging longer-term plans that will bring significant investment into the dockyard
Cost savings to the exchequer through reduction in number of welfare benefit claimants	Minor beneficial impact	A proportion of the jobs created by the proposed development could be accessed by local unemployed/economically inactive individuals who currently receive welfare benefit payments. By providing employment the cost to the exchequer of welfare benefits would be reduced.
Cost savings to the South West Devon Waste Partnership	Major beneficial impact	The proposed development will significantly reduce the amount of waste going to landfill and consequently the level of costs associated with this – evidence shows cost savings to SWDWP partners is in the order of £60million over the lifetime of the contract.
Costs savings and reduced carbon emissions to the Devonport Naval base	Major beneficial impact	The cost of 82,200,000 kWh per annum of natural gas saved and a 15,200 mtoe per annum reduction in carbon dioxide emissions
Potential costs and carbon savings to new and existing businesses	Moderate beneficial impact - further evidence required	The proposed development could provide combined heat and power to other local businesses and could reduce the use and hence cost of fossil fuels for heating. At the same time the presence of cheaper heat and power could attract new business investment
Potential costs and carbon savings to local households	Moderate beneficial impact – further evidence required	The proposed development could provide combined heat and power and could reduce the use and cost of fossil fuels for heating
Land use	Moderate beneficial impact	The proposed development will utilise a redundant HMNB site, bring it back into use and intensify employment numbers on site relative to the last existing use.

## 17.7 References

- Ref. 17-1 Office of the Deputy Prime Minister (ODPM), (2005); Planning Policy Statement 1 – Delivering Sustainable Development, HMSO, London.
- Ref. 17-2 Department for Communities and Local Government (DCLG), (2009); Planning Policy Statement 4 – Planning for Sustainable Economic Growth, HMSO, London.
- Ref. 17-3 HMSO, (2004); Planning and Compulsory Purchase Act.
- Ref. 17-4 English Partnership, (2008); Additionality Guide: A Standard Approach to Assessing the Additional Impact of Projects, 3rd Edition, English Partnership, London.
- Ref. 17-5 Sub-Regional Employment and Skills Analysis (2010), SLIM
- Ref. 17-6 Office for National Statistics (ONS), Annual Population Survey (2010)
- Ref. 17-7 Office for National Statistics (ONS), (2001); Census 2001
- Ref. 17-8 ONS, (2009); Annual Business Inquiry
- Ref. 17-9 ONS, (2009); Mid-year Population Estimates
- Ref. 17-10 South Hams and Plymouth Housing Needs Survey (2002), Opinion Research Services
- Ref. 17-11 ODPM, Index of Multiple Deprivation (2007)
- Ref. 17-12 Department for Transport, (2009); National Travel Survey, DfT, Newport.

- 
- Ref. 17-13 Department for Children, Schools and Families (DCSF), (2007); School Cross Border Movements, HMSO, London.
- Ref. 17-14 Audit Commission, (1996); Trading Places, The Supply and Allocation of School Places, HMSO, London.
- Ref. 17-15 Department of Health (2009)
- Ref. 17-16 ONS, Construction Statistics Annual (2009)
- Ref. 17-17 Impact of Major Waste Facilities on the Newhaven Economy, (2002)
- Ref. 17-18 Sustainable Energy Benefits of the Scheme, MVV (2011)
- Ref. 17-19 Department for Communities and Local Government (DCLG), (2011); Planning Policy Statement 10 – Planning for Sustainable Waste Management, HMSO, London.
- Ref. 17-20 Annual Population Survey – extract of residence based employment by sector for Plymouth data for 2008 to allow comparison with ABI workplace data
- Ref. 17-21 Plymouth 2020 Partnership Neighbourhood Renewal Index of Deprivation 2007, Plymouth LSP and University of Plymouth, 2008.
- Ref. 17-22 Prosperity for all in the Global Economy - World Class Skills, Lord Leitch, 2006
- Ref. 17-23 A Strategic Overview of the Development of the Plymouth Economy, EKOSgen, March 2010
- Ref. 17-24 HMNB Devonport, [www.royalnavy.mod.uk/operations-and-support/establishments/naval-bases-and-air-stations/hmnb-devonport/](http://www.royalnavy.mod.uk/operations-and-support/establishments/naval-bases-and-air-stations/hmnb-devonport/)
- Ref. 17-25 A joint scrutiny report on the proposals to procure an energy from waste plant to serve South West Devon, Report to the South West Devon Waste Partnership Joint Committee South West Devon Waste Partnership, September 2010.
- Ref. 17-26 Small Scale Multi-residential CHP and Environmental Benefits, Juliette Smith, Energy Saving Trust
- Ref. 17-27 Combined Heat and Power Association, Knowledge Centre, 2011.
- Ref. 17-28 MoD *pers comm.*, 2011