

G

Figure 24: Wind site G

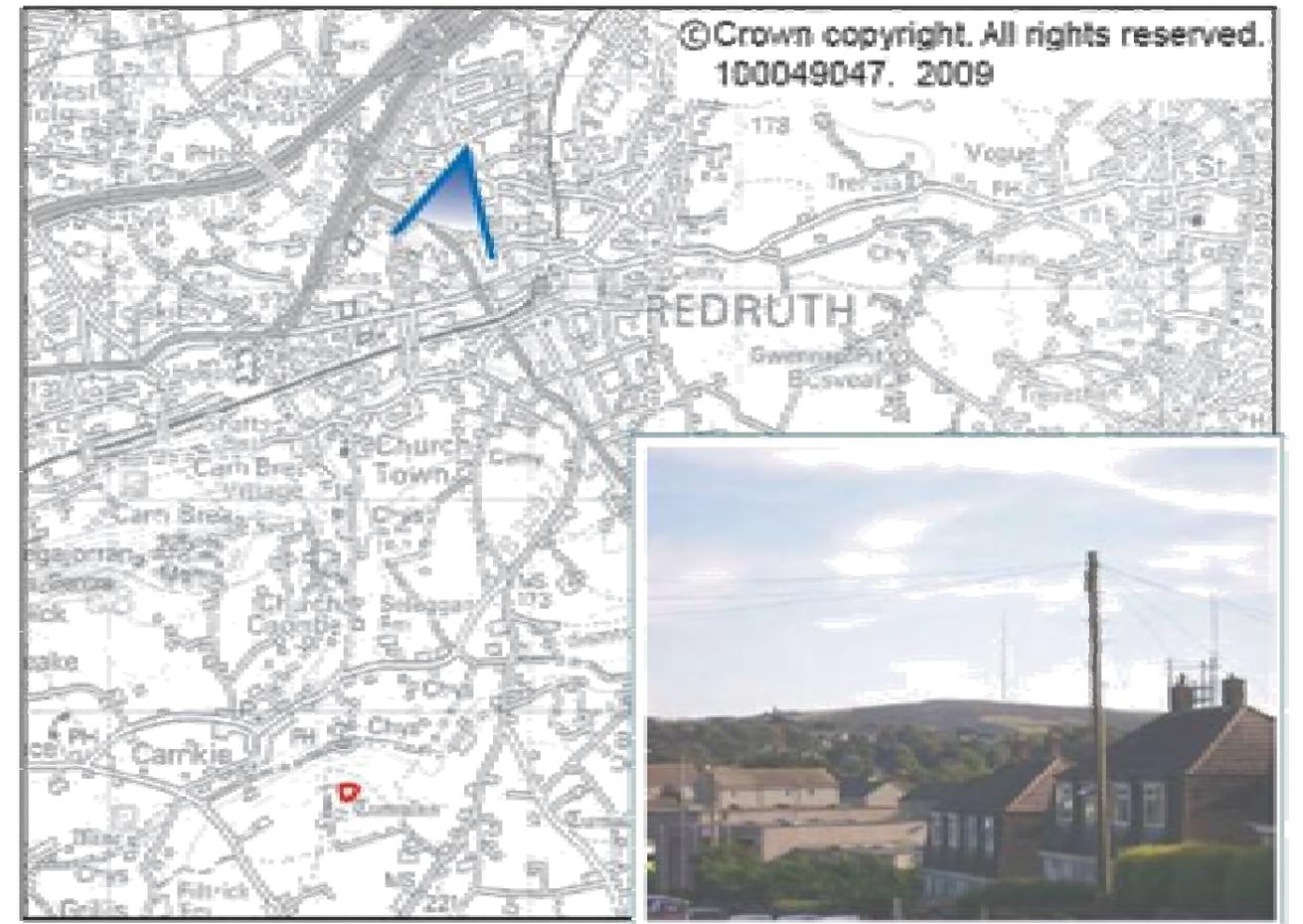
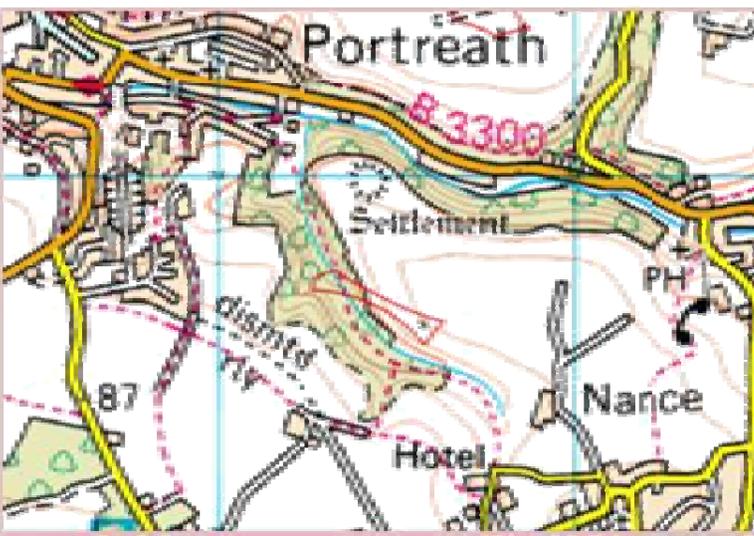
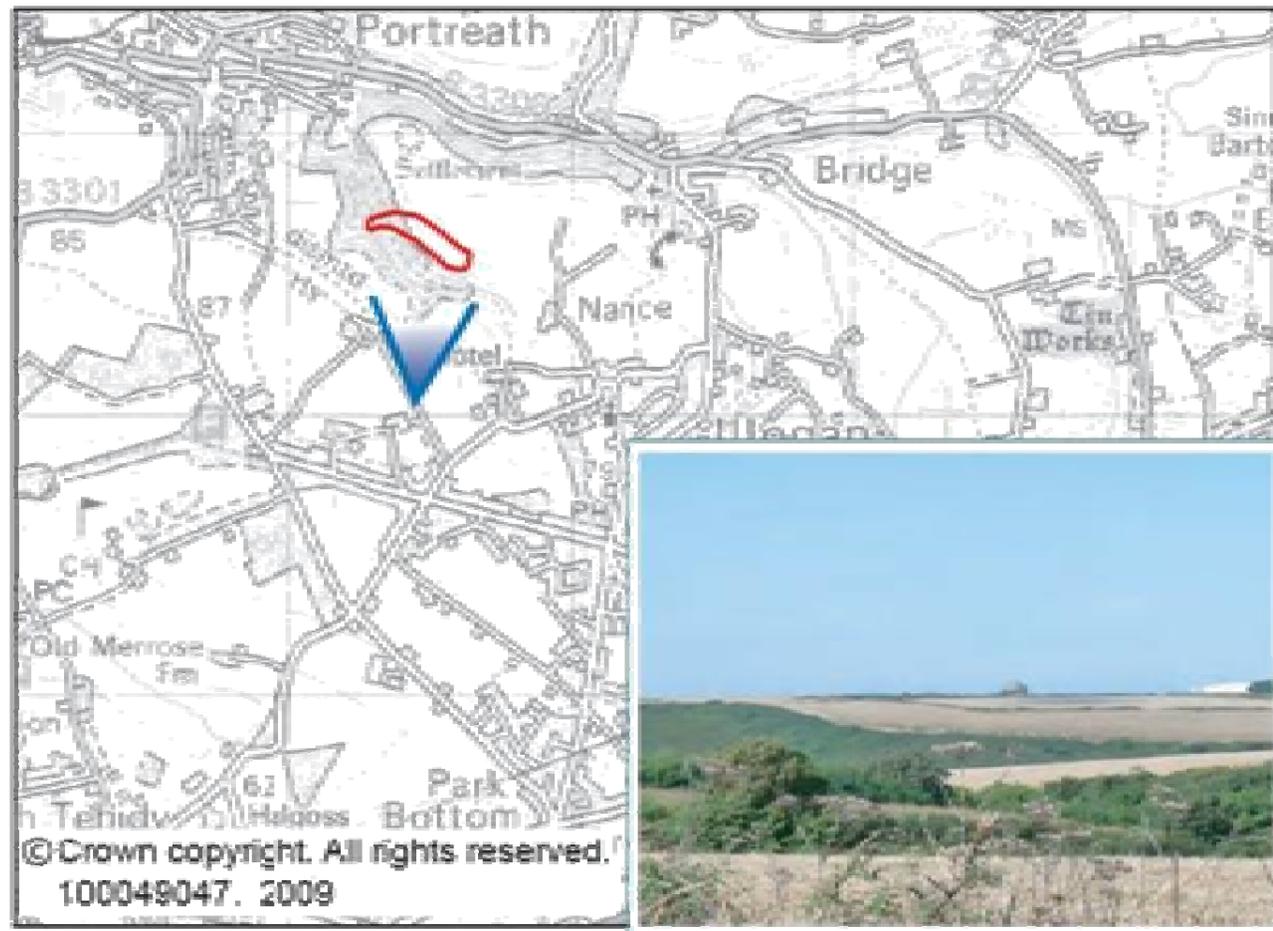
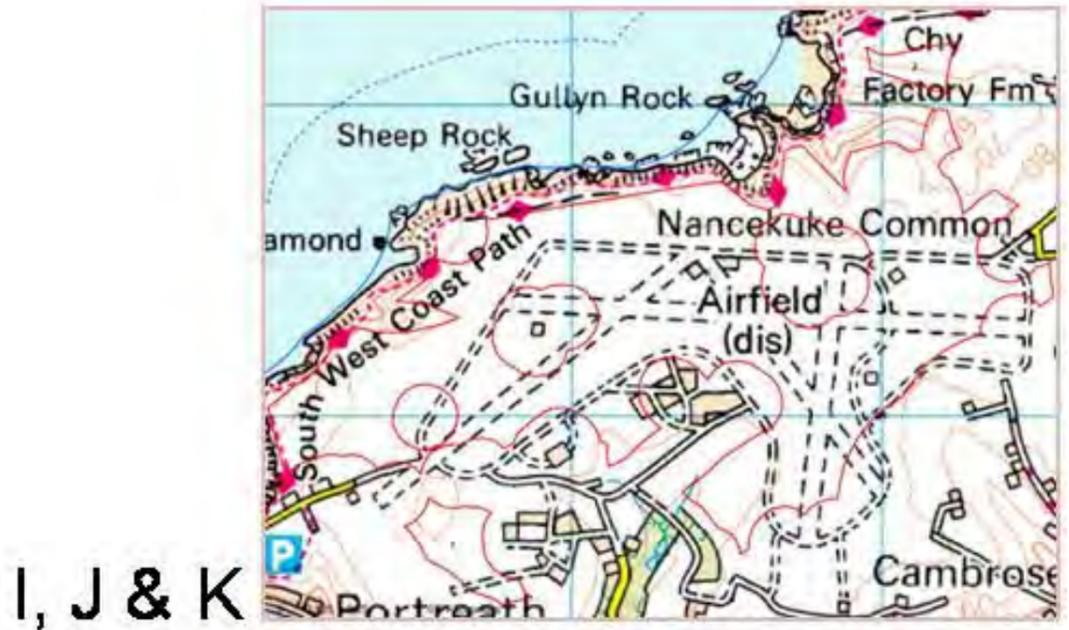


Figure 25: Wind site H

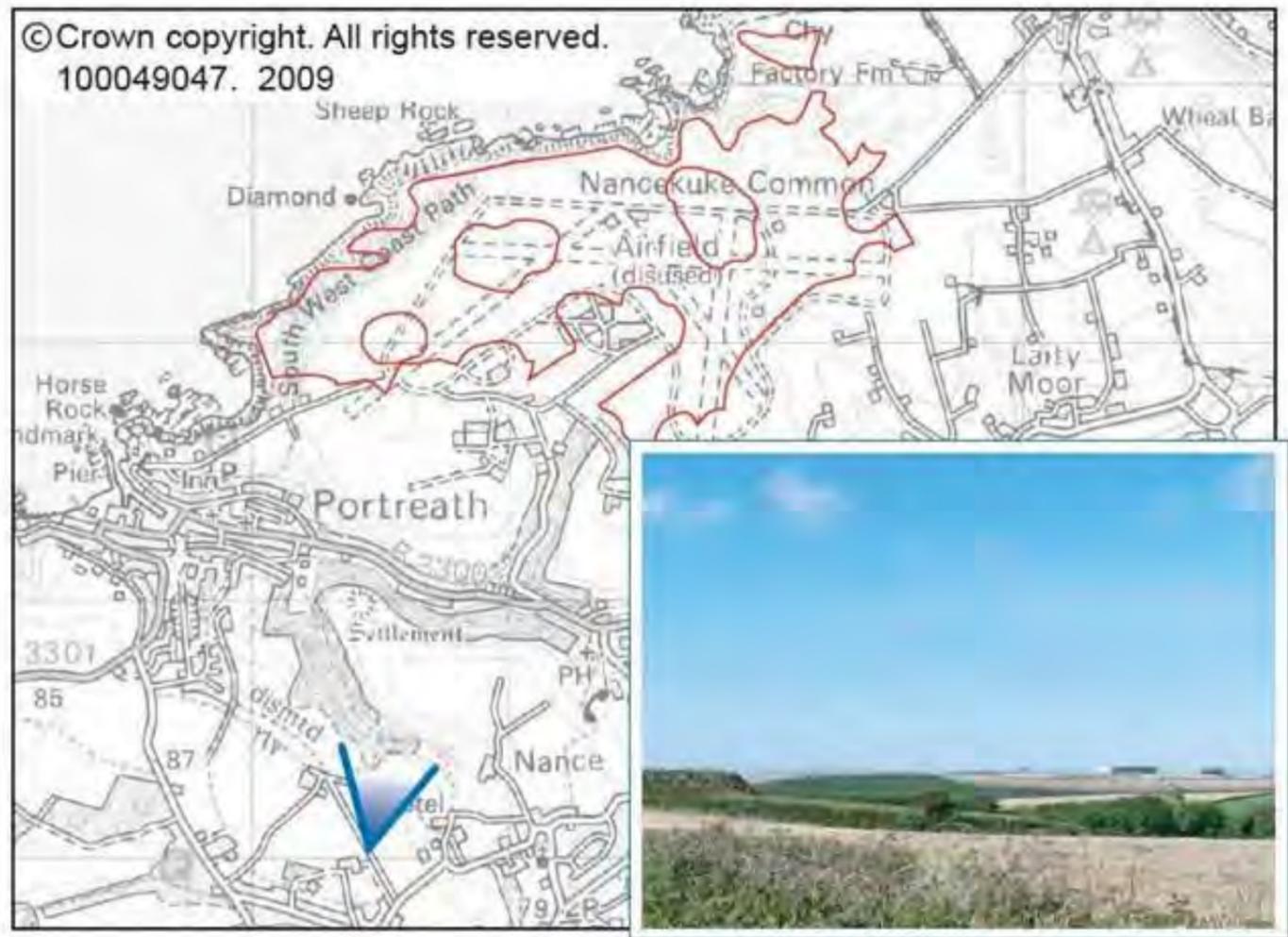


H



I, J & K

Figure 26: Wind sites I, J & K



## 5 Financial analysis

### 5.1 Introduction

By identifying SDHAs in which it is proposed to establish DHNs, the inevitable question of how such a scheme might be financed is raised. The cost for establishing a DHN is significant and, along with planning policy, forms the fundamental hurdle to deliverability. In all but the most extreme cases, it is possible to overcome any technical difficulty associated with the installation and operation of DHNs but it is the question of the level of investment required for that installation and ongoing operation versus the likely revenue that might be generated which is the equation to be balanced if viability is to be demonstrated.

A key requirement of the CPIR Energy Strategy Study was to establish whether deliverable opportunities for DHNs exist within the CPIR area and, where they do, demonstrate their viability in order to provide an evidence base for policy to support their development.

All of the work described in this report thus far has been used to feed into the crucial step of assessing the financial viability of each SDHA opportunity.

Obviously, the financial analysis deals in pounds and pence, but in this instance money can be readily transformed into CO<sub>2</sub>. Indeed, the amount of CO<sub>2</sub> associated with each option is critical to its financial viability. The calculated CO<sub>2</sub> savings are set out in the Table 8.

### 5.2 SDHA datasheets

The results of these analyses are presented here in the form of an SDHA Datasheet for each area.

Terms used within the data sheet include:

- NPV: Net Present value is the sum of all future cash flows, which have all been individually adjusted to reflect their value in 'today's money'. A discount rate is used to adjust the future cash flows. The discount rates used in this report are 6% and 12%, in order to represent a public sector and a commercial sector rate of return.
- I.R.R or internal rate of return is the discount rate at which the NPV is zero. A higher IRR is therefore better.
- The term *Percentage of assumed connected load that is 'secure'* gives the percentage of the total heat load for a given option that is assumed to be secured by planning policy or by control of a building's heating system. The only loads that have been taken as non-secured are those associated with owner occupied housing.

The details of the methodology used to carry out the financial analysis are presented in Appendix 2. A summary of the results of the financial analysis is shown in the table below. All schemes that have an IRR of 6% or higher are potentially financially viable, as this is a typical rate of return for public/private projects (such as PFI). Most of the schemes shown achieve this with one or more technology options, assuming the use of an allowable solutions fund. Biomass heating performs more favourably than gas CHP due to the assumed value of the Renewable Heat Incentive. Energy from Waste (EfW) performs most favourably, due to the revenue from gate fees.

Table 8: Estimated carbon savings from SDHA options

Estimated Carbon Savings from SDHA Options	Carbon Saving (tonnes)	Carbon Saving (% of 2026 baseline)	IRR
<b>Option 2a Camborne West - core option</b>			
Gas CHP	1,610	1%	3%
Biomass Heat	1,273	1%	7%
<b>Option 2b Camborne West - extended option</b>			
Gas CHP	1,744	1%	2%
Biomass Heat	1,722	1%	7%
<b>Option 3a Camborne Central - core option</b>			
Gas CHP	1,492	1%	1%
Biomass Heat	1,192	1%	5%
<b>Option 3b Camborne Central - extended option</b>			
Gas CHP	3,754	3%	3%
Biomass Heat	3,018	2%	6%
<b>Option 4a Pool Community Pilot ESCo - lower RSS housing figure</b>			
Gas CHP	6,102	4%	2%
Biomass Heat	4,032	3%	5%
Biomass CHP	9,215	6%	5%
<b>Option 4a Pool Community Pilot ESCo - higher RSS housing figure</b>			
Gas CHP	7,119	5%	3%
Biomass Heat	4,703	3%	6%
Biomass CHP	10,752	7%	5%
<b>Option 5a Pool EfW - core option - lower RSS housing figure</b>			
Energy from Waste	6,910	5%	13%
<b>Option 5a Pool EfW - core option - higher RSS housing figure</b>			
Energy from Waste	8,890	6%	14%
<b>Option 5b Pool EfW - extended option - lower RSS housing figure</b>			
Energy from Waste	13,505	9%	13%
<b>Option 5b Pool EfW - extended option - higher RSS housing figure</b>			
Energy from Waste	16,154	11%	13%
<b>Option 6a Redruth - core option</b>			
Gas CHP	2,292	2%	2%
Biomass Heat	1,822	1%	7%
<b>Option 6b Redruth - extended option</b>			
Gas CHP	5,649	4%	4%
Biomass Heat	3,811	3%	6%
Biomass CHP	8,412	6%	6%

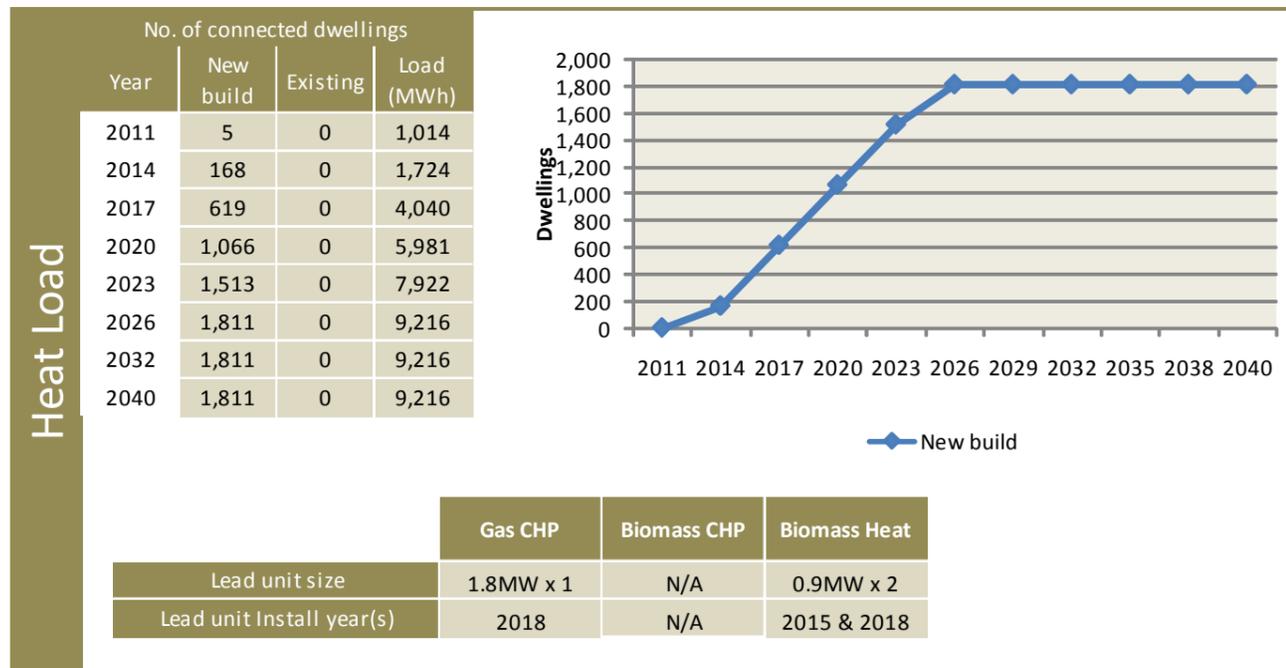
# CPIR Energy Strategy - SDHA Datasheet



SDHA Option 2a

Camborne West - core option

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Camborne School & Community College		7,400 MWh	400 MWh
Existing Residential Heat Load		Mixed	
None		H1 & E	
Existing Non-Residential Heat Load		Non-residential	
1,000 MWh		None	
Potential Social Housing Connection?		Residential	
None		H23	
Percentage of assumed connected load that is 'secure'			100 %



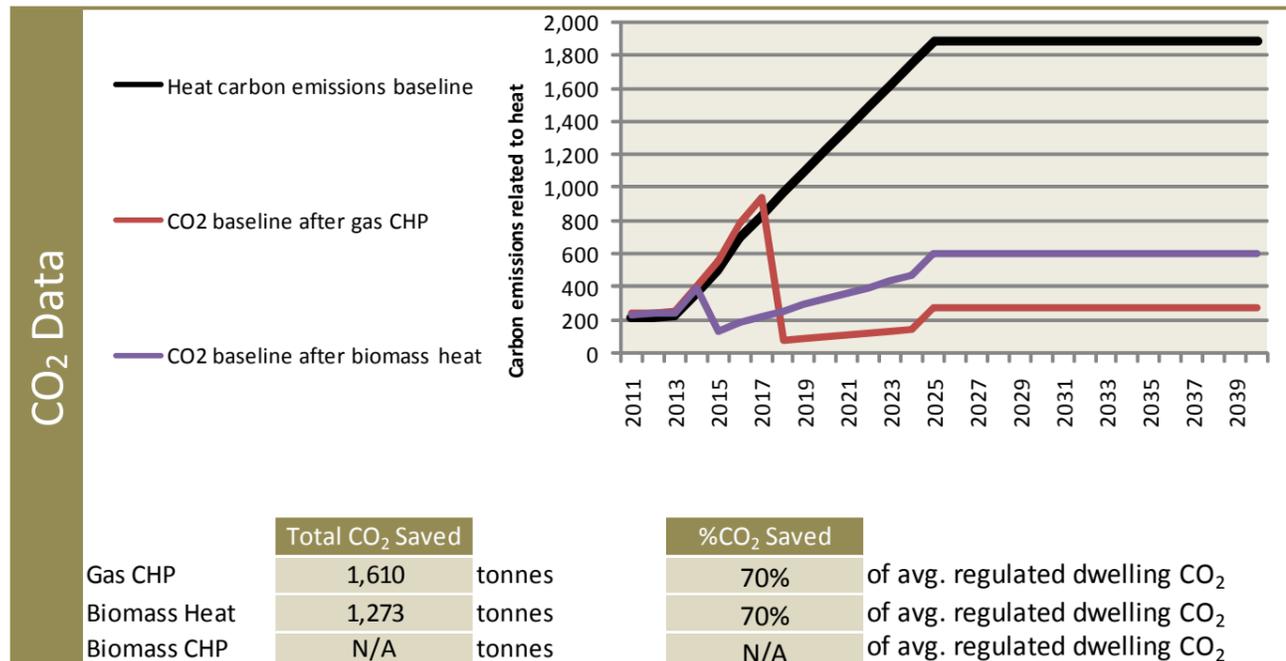
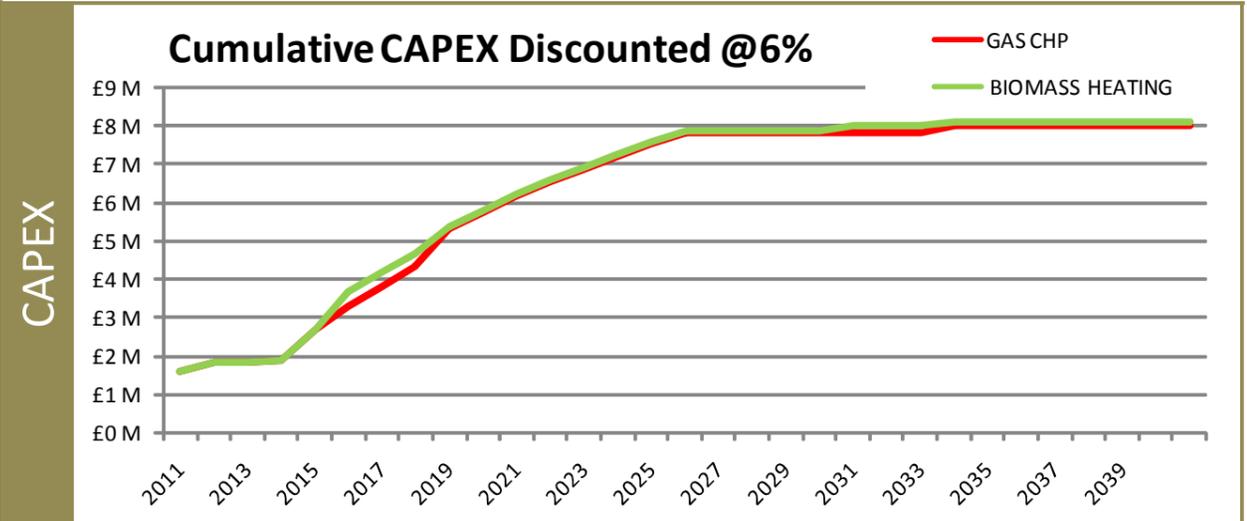
**Description**

The Camborne West SDHA is based primarily on the urban extension north of the railway line (H1 & E) which is scheduled to contain 1,787 dwellings. The density of development has been assumed to be 45 dwellings per hectare. We also suggest that the Park Holly development (H23) is also included, which is scheduled to include 24 dwellings. H1 and H23 are separated by green space and Park Holly road. An energy centre could be located to the north or north east of H1, and if so, detailed policy should consider encouraging development to the north of H1 initially. We also assume that Camborne School & Community College would be able to connect to the scheme as a heat main could be laid in mainly soft ground from the site.

**Assumptions**

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



**Viability**

	Gas CHP	Biomass (heat only)	Biomass CHP
IRR @ 30 years	4%	IRR @ 30 years 8%	IRR @ 30 years N/A
NPV @ 30 years & 12% DF	£-1.89 M	NPV @ 30 years & 12% DF £-1.27 M	NPV @ 30 years & 12% DF N/A
NPV @ 30 years & 6% DF	£-0.78 M	NPV @ 30 years & 6% DF £0.83 M	NPV @ 30 years & 6% DF N/A

**Constraints**

A build out rate taken from CC gives a late CHP installation date of 2018. Two smaller CHP could be used to give a revenue earlier.  
 Availability of sufficient gas main infrastructure to support the CHP option. Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option. The impact of biomass delivery vehicles should be considered.  
 Insufficient heat load to support Biomass CHP option.

**Conclusions**

Because the Camborne West SDHA consists only of new build and the density of development has been assumed to be reasonably high (45/ha) little strategic investment should be required.  
 Biomass heating performs better than gas CHP because renewable heat incentive is assumed for biomass, and gas CHP generated electricity is sold at comparatively low wholesale rates. There would not be sufficient heat load to fully utilise a proven biomass CHP unit

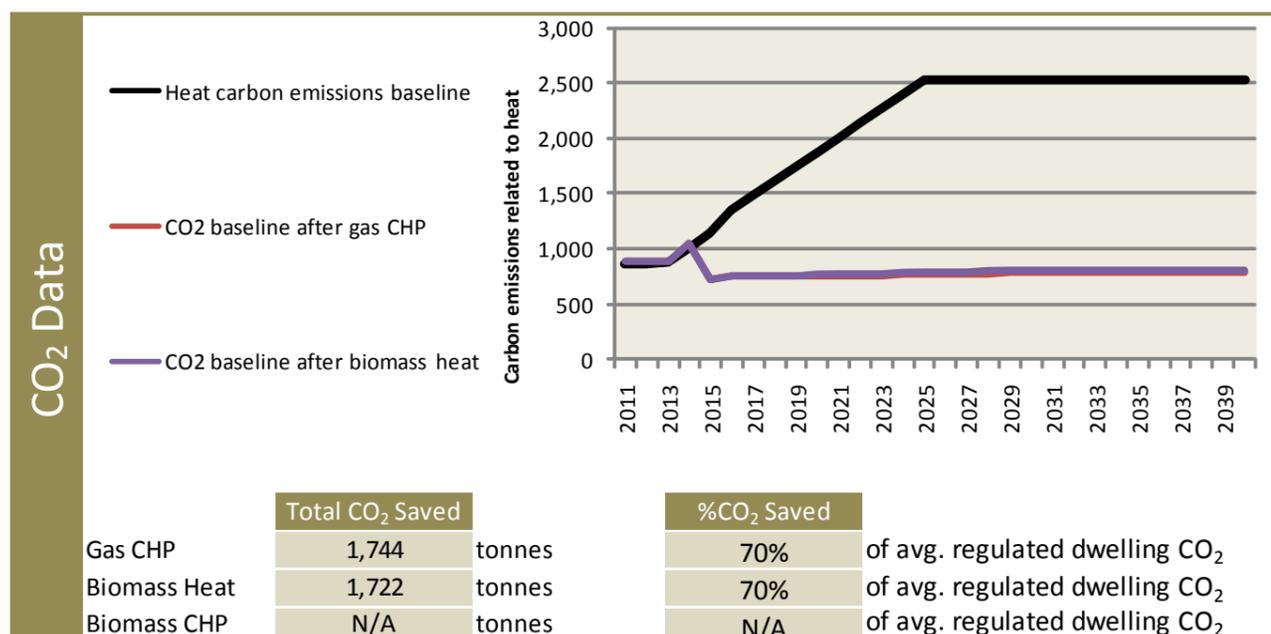
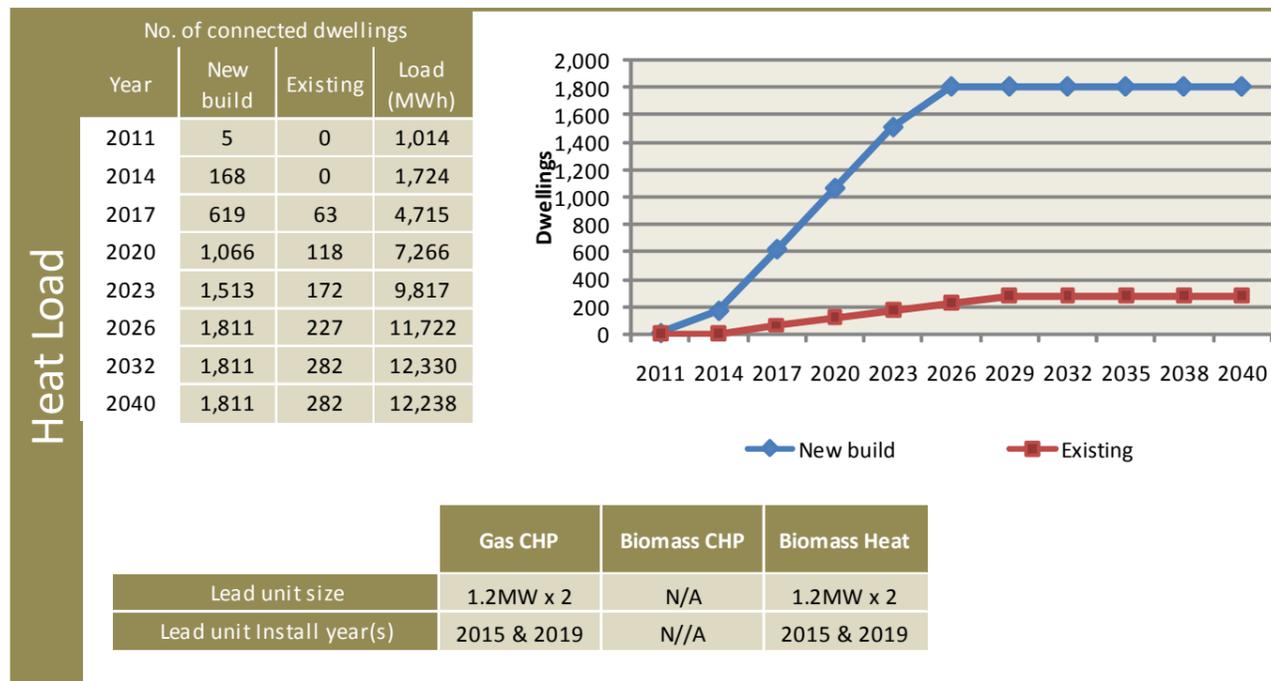
# CPIR Energy Strategy - SDHA Datasheet



## SDHA Option 2b

## Camborne West - extended option

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Camborne School & Community College		7,400 MWh	400 MWh
Existing Residential Heat Load		Mixed	
2,900 MWh		H1 & E	
Existing Non-Residential Heat Load		Non-residential	
1,000 MWh		None	
Potential Social Housing Connection?		Residential	
3% of existing housing		H23	
Percentage of assumed connected load that is 'secure'			76 %



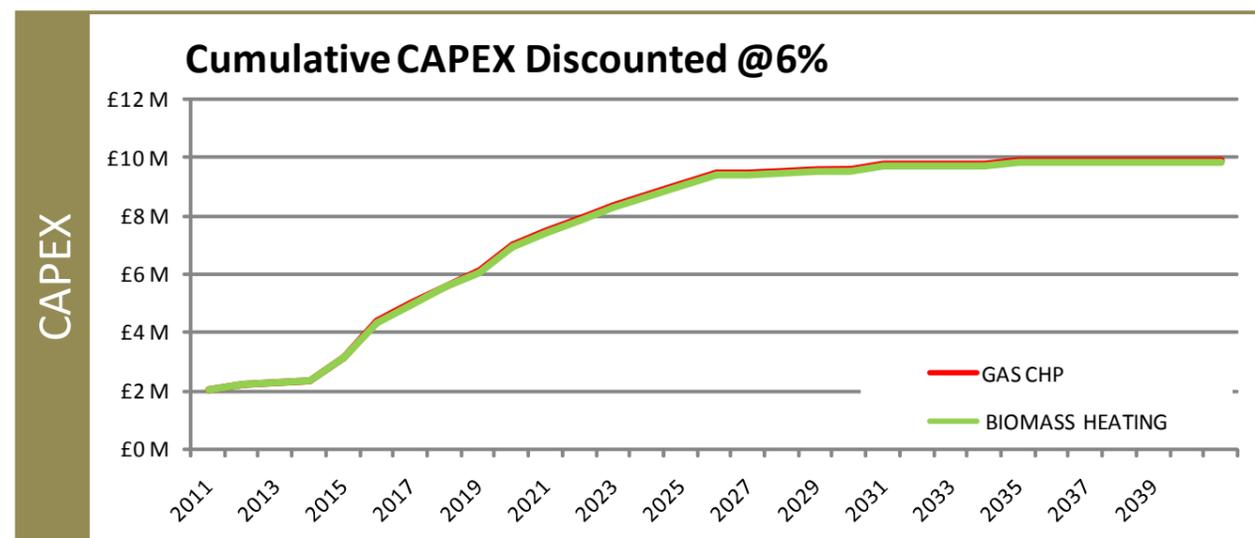
### Description

There are no additional new build parcels which can sensibly be included in addition to the core parcels. According to our analysis there are also no high heat density existing housing areas adjacent to the core SDHA. However, from satellite imagery it is clear that OA GC0002 is concentrated along Treswithian Road (and not spread across the entire output area). The heat density is therefore approximately 2,400kW/km<sup>2</sup> and has therefore been included. Two additional OAs have been included: GC0010 and GC0008, with heat densities of 2,750 and 2,700 kW/km<sup>2</sup> respectively. We also assume that Camborne School & Community College would be able to connect to an extended scheme.

### Assumptions

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



Viability	Gas CHP		Biomass (heat only)		Biomass CHP	
	IRR @ 30 years		IRR @ 30 years		IRR @ 30 years	
	3%		7%		N/A	
	NPV @ 30 years & 12% DF	£-2.77 M	NPV @ 30 years & 12% DF	£-1.72 M	NPV @ 30 years & 12% DF	N/A
	NPV @ 30 years & 6% DF	£-1.68 M	NPV @ 30 years & 6% DF	£0.84 M	NPV @ 30 years & 6% DF	N/A

### Constraints

Low proportion of social housing makes overall secure heat load lower  
 Availability of sufficient gas main infrastructure to support the CHP option.  
 Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option. The impact of biomass delivery vehicles should be considered.  
 Insufficient heat load to support Biomass CHP option.

### Conclusions

By connecting to an anchor load, such as Camborne School, the rate of heat load build up enables lead LZC plant to be installed earlier. The extended option also enables existing housing heat emissions to be significantly reduced. Because of the additional heat main required, the financial performance is worse than option 2A. Biomass performs better than gas CHP for reasons listed under option 2A. There is insufficient heat load to fully utilise proven biomass CHP plant.

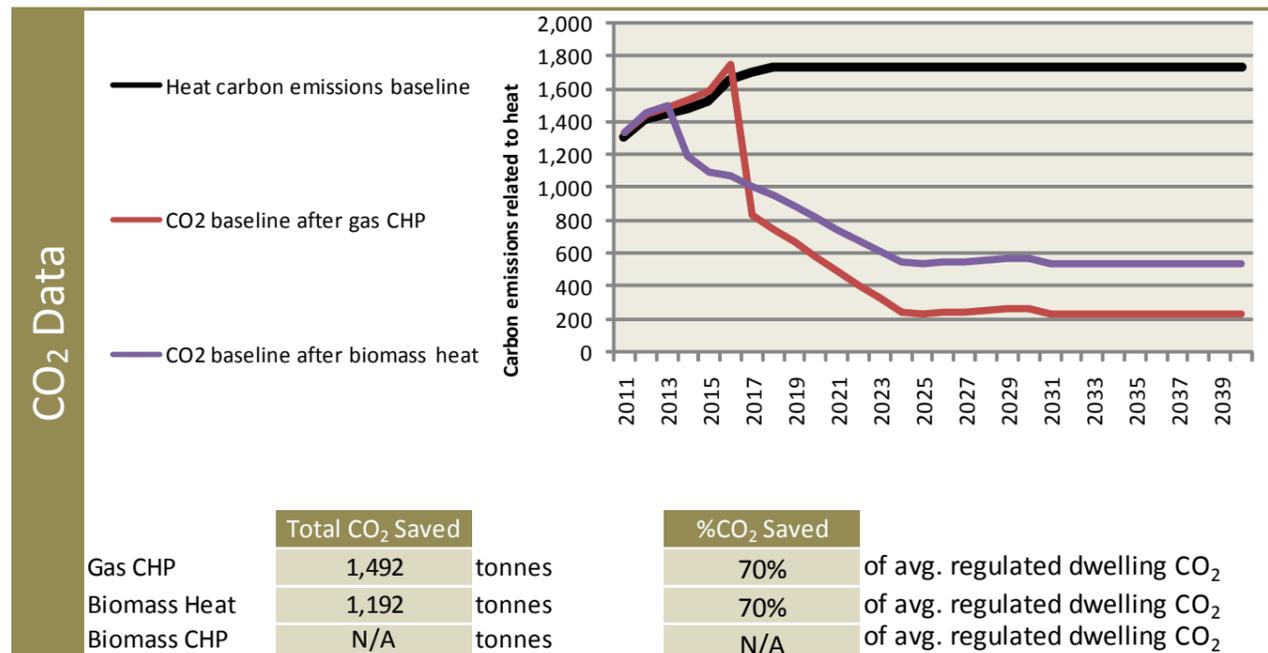
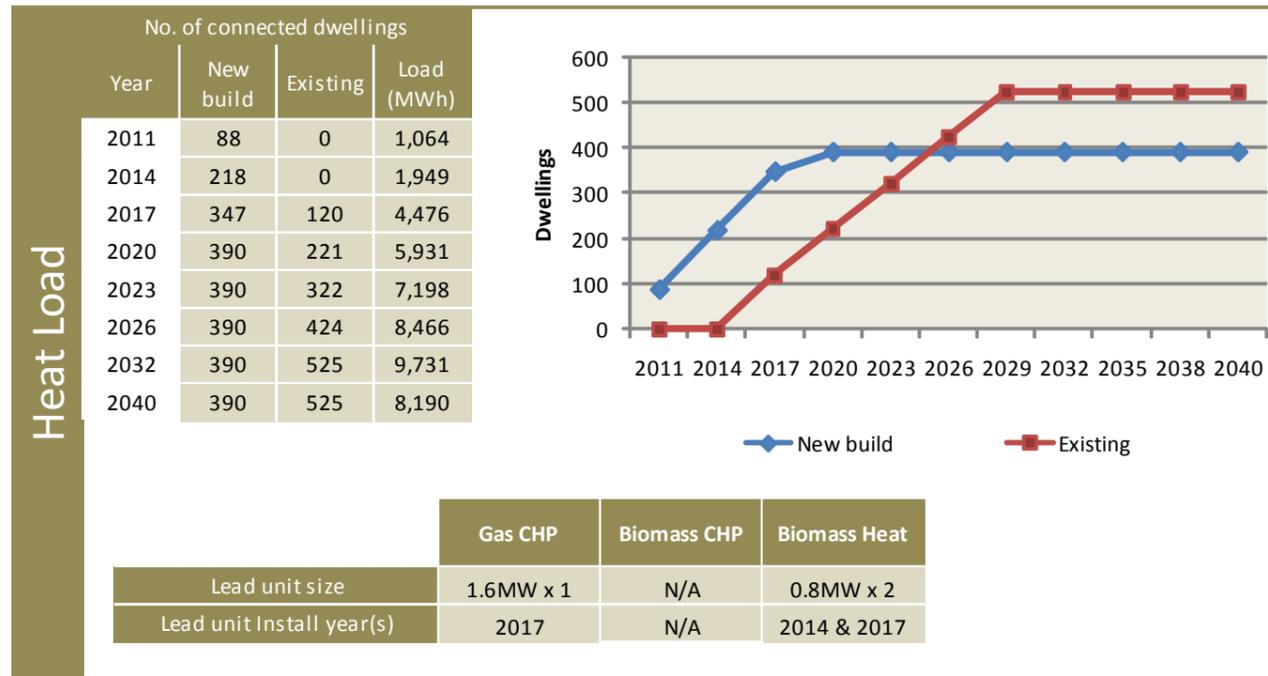
# CPIR Energy Strategy - SDHA Datasheet



## SDHA Option 3a

## Camborne Central - core option

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Council Offices		1,700 MWh	800 MWh
Existing Residential Heat Load		Mixed	
4,800 MWh		H5 & E	
Existing Non-Residential Heat Load		Non-residential	
600 MWh		None	
Potential Social Housing Connection?		Residential	
4% of existing housing		None	
Percentage of assumed connected load that is 'secure'			41 %



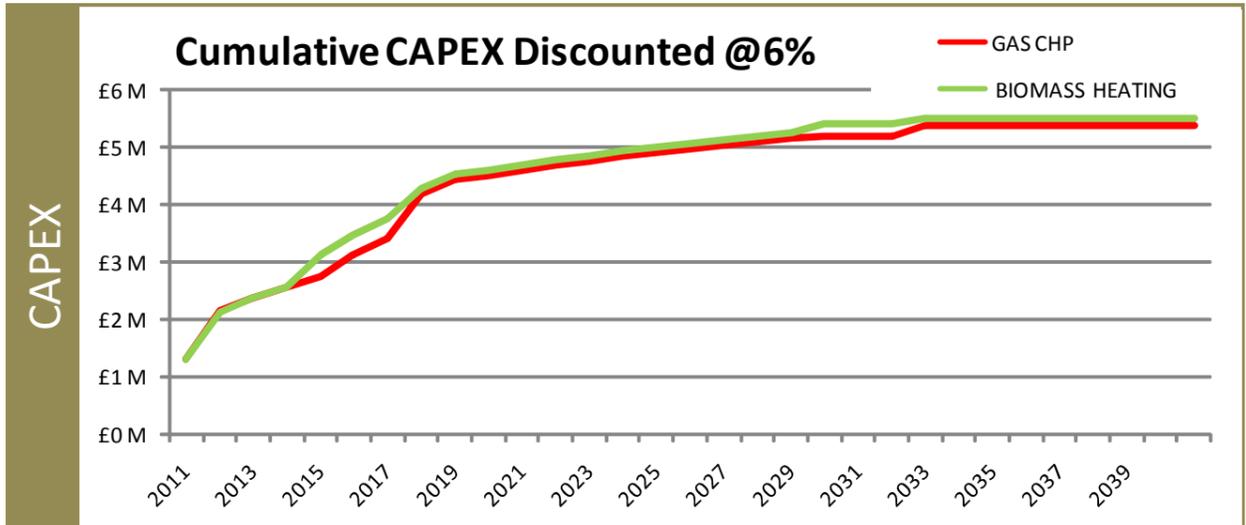
**Description**

The Camborne Central SDHA is located around the new build developed in the Dolcoath (CompAir) site. It also includes the Council Offices on Dolcoath Avenue. Due to the high estimated heat density of adjacent existing housing we have also included five output areas, containing 525 houses, within the SDHA. The SDHA, even for the core option, would require strategic investment in a heat main backbone from the Dolcoath site to the development west of site H95 & E. This could be along the railway line if feasible or along Carmarthen Street to the B3303. The backbone would facilitate connection of H95&E and extensive existing housing.

**Assumptions**

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



Viability	Gas CHP		Biomass (heat only)		Biomass CHP	
	IRR @ 30 years	1%	IRR @ 30 years	5%	IRR @ 30 years	N/A
NPV @ 30 years & 12% DF	£-2.08 M	NPV @ 30 years & 12% DF	£-1.63 M	NPV @ 30 years & 12% DF	N/A	
NPV @ 30 years & 6% DF	£-1.58 M	NPV @ 30 years & 6% DF	£-0.26 M	NPV @ 30 years & 6% DF	N/A	

**Constraints**

Availability of sufficient gas main infrastructure to support the CHP option.  
 Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option.  
 Insufficient heat load to support Biomass CHP option.  
 The impact of biomass delivery vehicles should be considered.

**Conclusions**

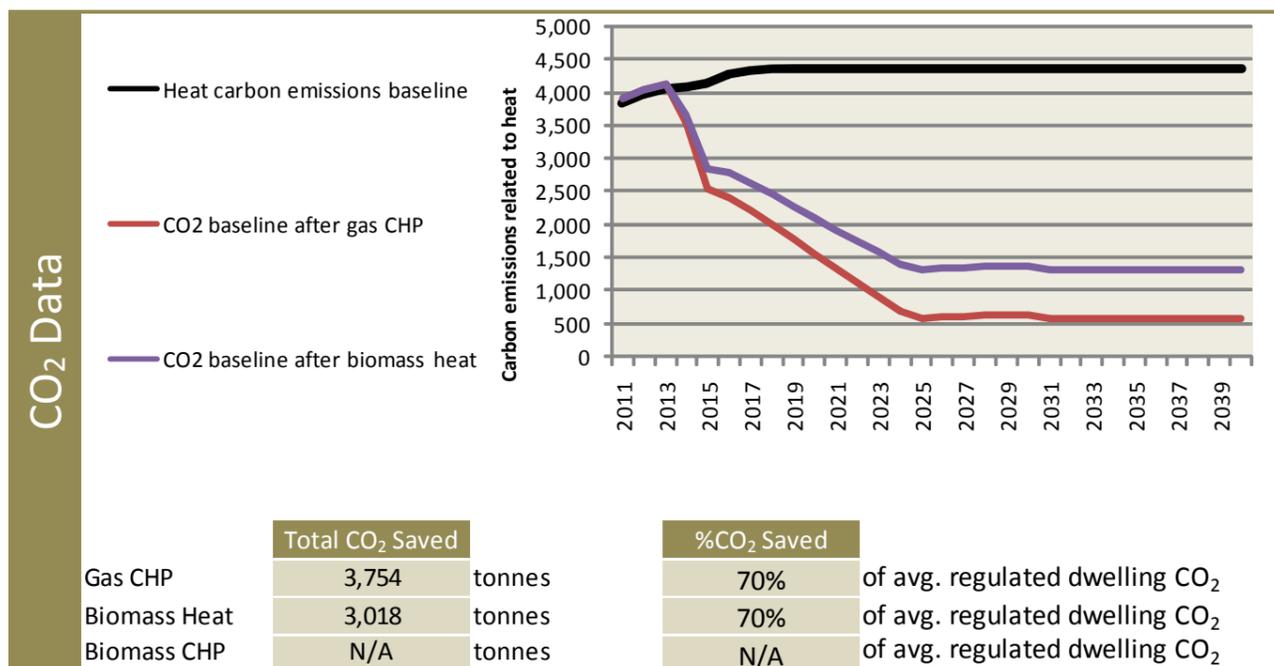
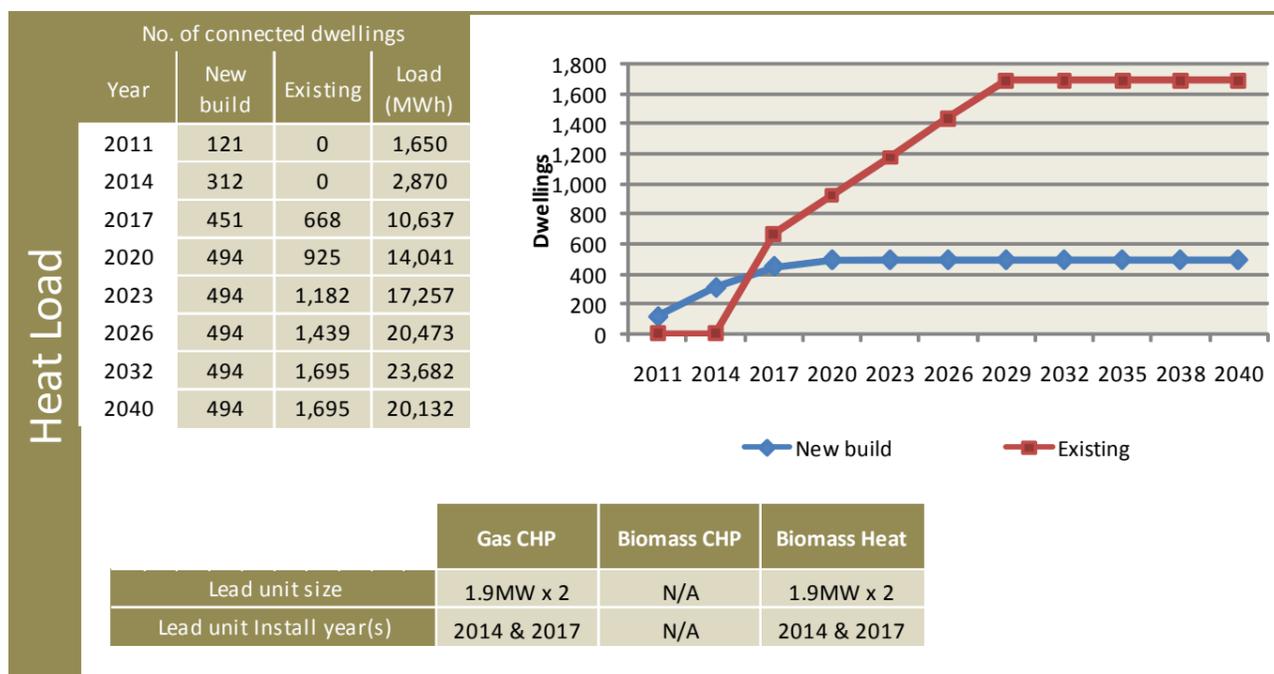
The central Camborne SDHA would rely on strategic investment to enable the connection of sites west of the Dolcoath site. However, a smaller option could be considered. Our analysis has shown significant heat density to the west of the site, therefore the opportunities for the Dolcoath site to act as a springboard for reducing existing housing stock emissions are considerable. Biomass performs better than gas CHP for reasons listed under option 2A. There is insufficient heat load to fully utilise proven biomass CHP plant.

# CPIR Energy Strategy - SDHA Datasheet



## SDHA Option 3b Camborne Central - extended option

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Council Offices, St Martins (HFE)		2,200 MWh	800 MWh
Existing Residential Heat Load		Mixed	
15,100 MWh		H4 & E, H5 & E	
Existing Non-Residential Heat Load		Non-residential	
1,000 MWh		H95 & E	
Potential Social Housing Connection?		Residential	
26% of existing housing		H13	
Percentage of assumed connected load that is 'secure'			40 %



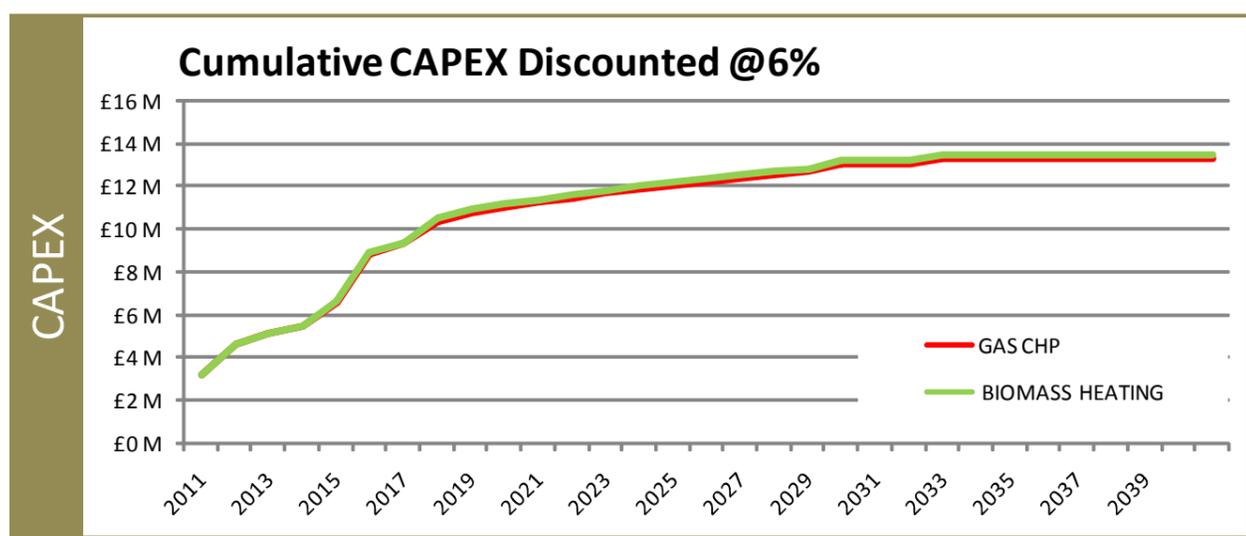
**Description**

There are significant opportunities to invest in strategic heat mains within Camborne to enable connection of existing housing. The extended option of the SDHA tests the viability of connecting the majority of housing we have estimated to have a heat density of over 3,000kW/km<sup>2</sup>, totalling 1,500 houses. We have also included additional new build within Gladys Holman House (H13) and Trevu Road (H4 & E). The large social housing cluster to the south of the railway line from the Dolcoath road site would provide a key anchor load and could be connected by Foundry road.

**Assumptions**

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



**Viability**

	Gas CHP	Biomass (heat only)	Biomass CHP
IRR @ 30 years	3%	IRR @ 30 years 6%	IRR @ 30 years N/A
NPV @ 30 years & 12% DF	£-4.80 M	NPV @ 30 years & 12% DF £-3.53 M	NPV @ 30 years & 12% DF N/A
NPV @ 30 years & 6% DF	£-2.73 M	NPV @ 30 years & 6% DF £0.55 M	NPV @ 30 years & 6% DF N/A

**Constraints**

Availability of sufficient gas main infrastructure to support the CHP option.  
 Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option.  
 Insufficient heat load to support Biomass CHP option.  
 The impact of biomass delivery vehicles should be considered.

**Conclusions**

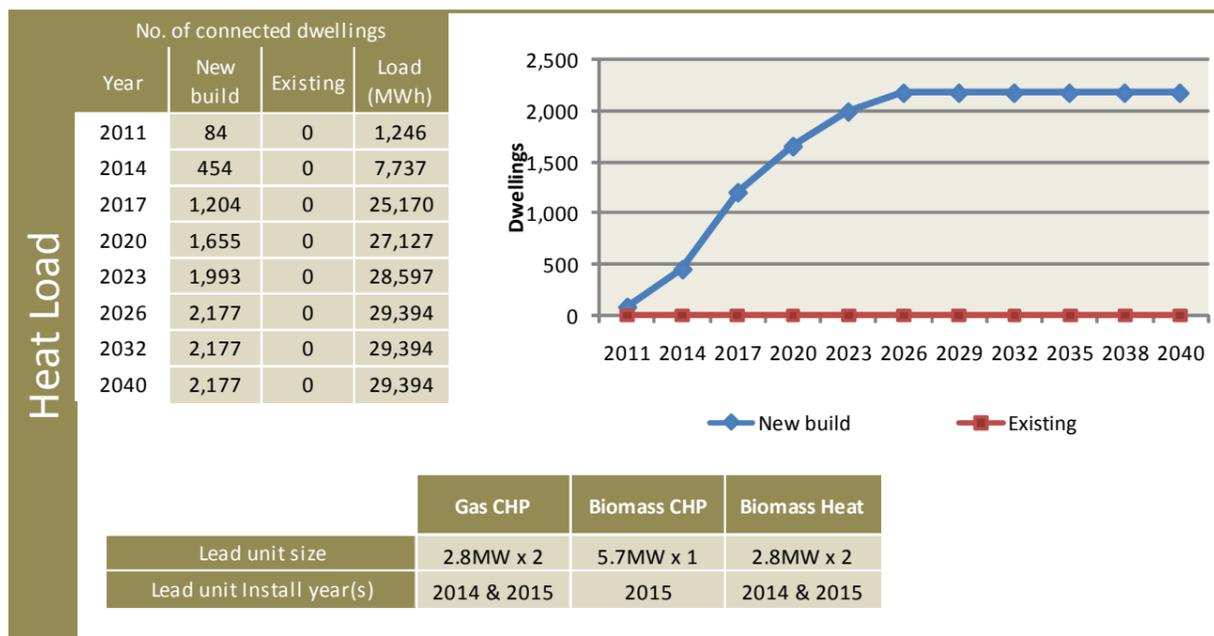
The extended Camborne Central SDHA could give rise to significant carbon emissions savings through connection of existing housing. Because of the high density of existing housing connected the SDHA can still maintain a financial performance comparable to other smaller options. Biomass performs better than gas CHP for reasons listed under option 2A. There is insufficient heat load to fully utilise proven biomass CHP plant, but it may be that developments made in biomass CHP technology in the future could enable a unit to operate efficiently.

# CPIR Energy Strategy - SDHA Datasheet



SDHA Option 4a - using lower RSS housing figure for urban extension Pool Community pilot ESCO

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Cornwall College		9,000 MWh	17,900 MWh
Existing Residential Heat Load		Mixed	
None		H91 & E, H92 & E, H36 & E, H37 & E, H38 & E, H41 & E, H42 & E, E14	
Existing Non-Residential Heat Load		Non-residential	
800 MWh		E10, E11, E12, E13, E2, E9	
Potential Social Housing Connection?		Residential	
None		H30, H40, H90, H46, H45, H33, H34, H93, H122	
Percentage of assumed connected load that is 'secure'			100 %



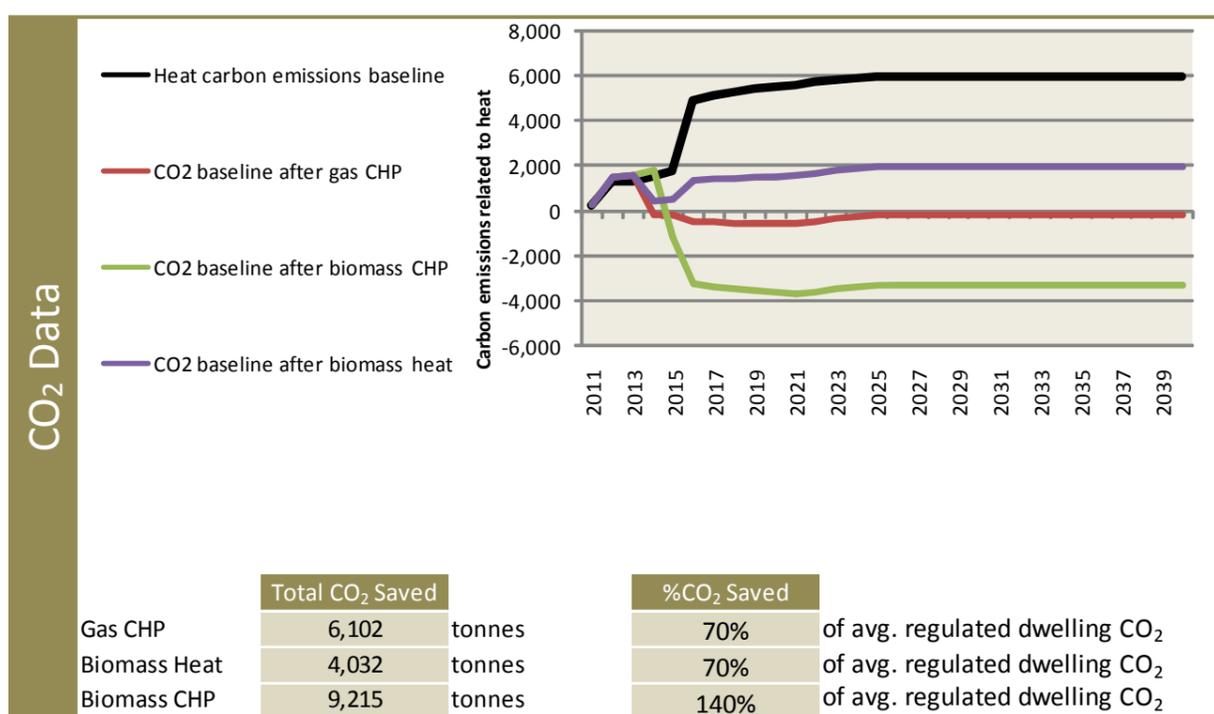
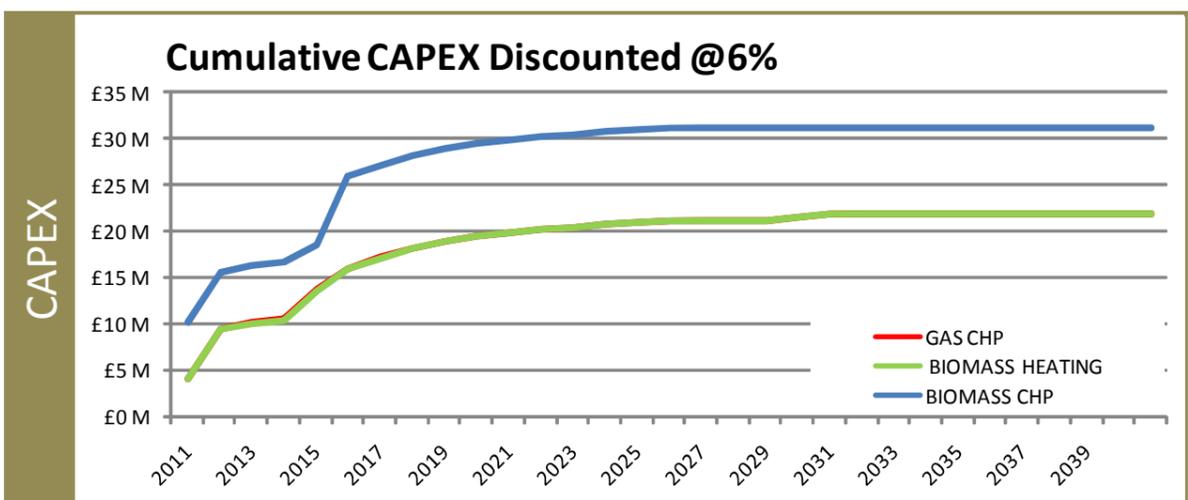
**Description**

The Pool Community pilot ESCO as described here would support the currently proposed Tolvaddon Energy Park scheme by assuming additional loads that might be secured by the proposed planning policy, including 2,177 dwellings in the Tolvaddon and Park Bottom urban extension, and DLIP and TRIP areas. This datasheet is based on the lower RSS housing figure for the urban extension, an additional option looks at the same SDHA extent with the higher RSS housing figure for the urban extension.

**Assumptions**

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



**Viability**

	Gas CHP	Biomass (heat only)	Biomass CHP
IRR @ 30 years	2.4%	IRR @ 30 years 5.3%	IRR @ 30 years 4.5%
NPV @ 30 years & 12% DF	-£7.74 M	NPV @ 30 years & 12% DF -£7.01 M	NPV @ 30 years & 12% DF -£13.11 M
NPV @ 30 years & 6% DF	-£4.89 M	NPV @ 30 years & 6% DF -£1.31 M	NPV @ 30 years & 6% DF -£4.38 M

**Constraints**

Availability of sufficient gas main infrastructure to support the CHP option.  
 Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option.  
 The impact of biomass delivery vehicles should be considered.

**Conclusions**

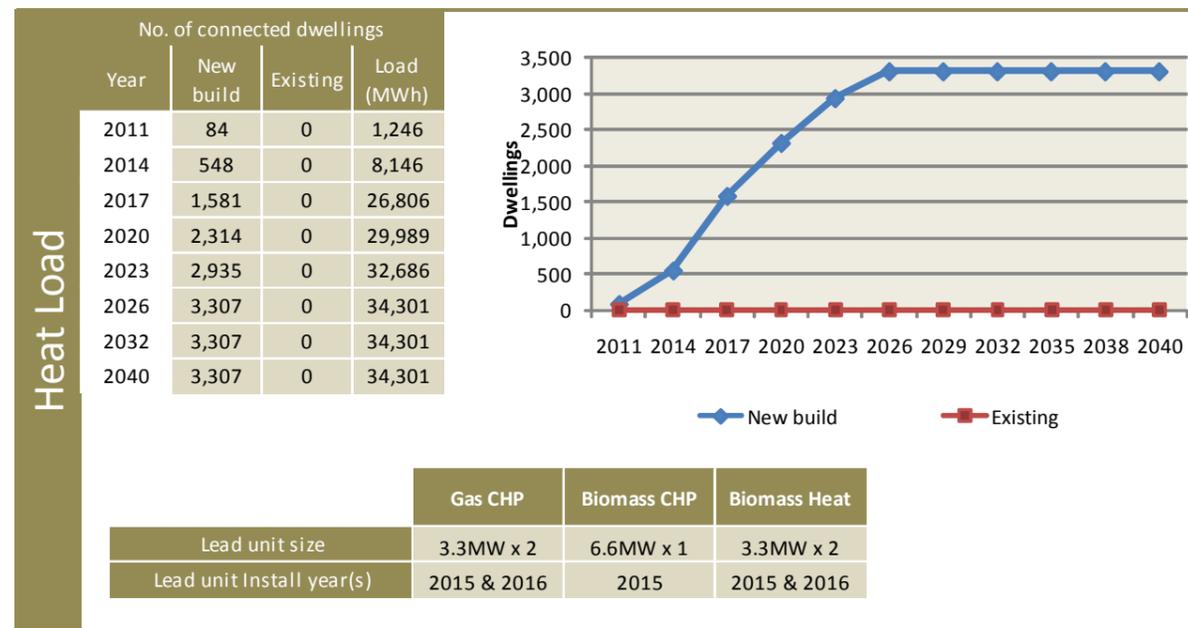
The financial model, assuming the large number of new dwellings and a density of 45 /ha, performs relatively well. Residential customers help the financial performance relative to non residential customers, who attract a relatively low revenue in our analysis. Our analysis shows there is no existing housing which could be realistically connected to the scheme. With the urban extension and DLIP / TRIP areas connected there is sufficient heat load to utilise proven biomass ORC CHP plant. Biomass performs better than gas CHP for reasons listed under option 2A. Biomass CHP, as modelled, benefits from double ROCs as well as RHI, but has a much higher capital cost than biomass heat only.

# CPIR Energy Strategy - SDHA Datasheet



SDHA Option 4a - using higher RSS housing figure for urban extension Pool Community pilot ESCO

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Cornwall College		13,600 MWh	17,900 MWh
Existing Residential Heat Load		Mixed	
None		H91 & E, H92 & E, H36 & E, H37 & E, H38 & E, H41 & E, H42 & E, E14	
Existing Non-Residential Heat Load		Non-residential	
800 MWh		E10, E11, E12, E13, E2, E9	
Potential Social Housing Connection?		Residential	
None		H40, H90, H46, H45, H33, H34, H93, H122, H30b	
Percentage of assumed connected load that is 'secure'			100 %



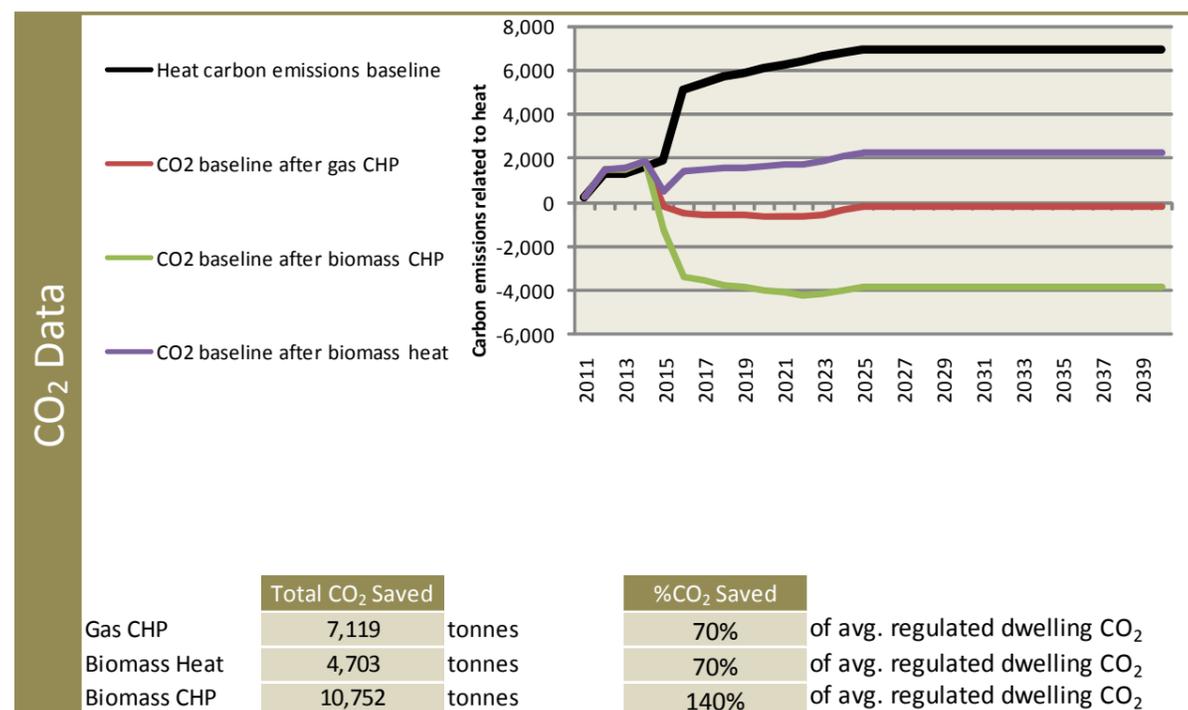
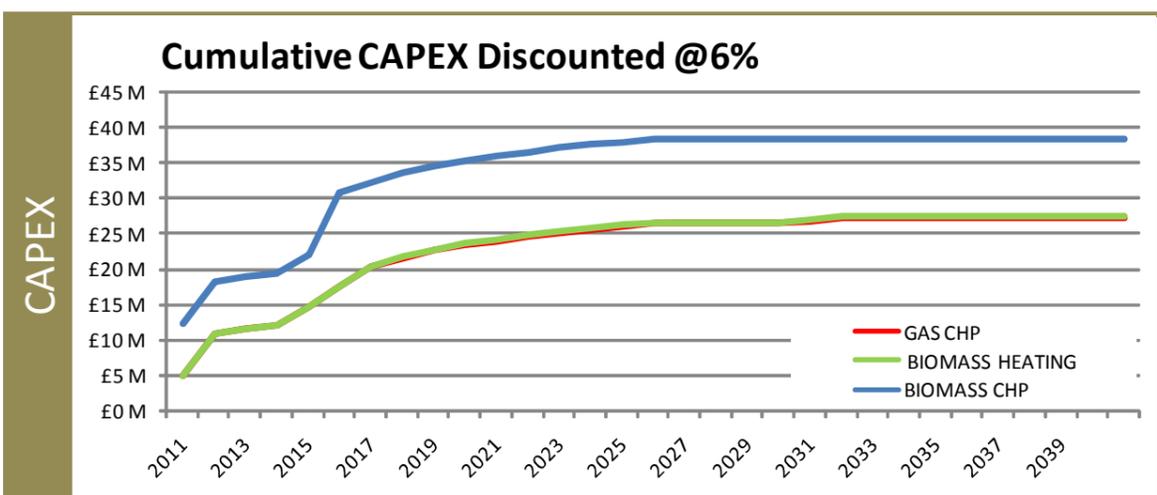
**Description**

The Pool Community pilot ESCO as described here would support the currently proposed Tolvaddon Energy Park scheme by assuming additional loads that might be secured by the proposed planning policy. This data sheet models the same SDHA extent as the previous data sheet (Tolvaddon and Park Bottom urban extension, and DLIP and TRIP areas), with the higher RSS housing figure for the urban extension. This gives a total of 3,307 dwellings.

**Assumptions**

**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



**Viability**

	Gas CHP	Biomass (heat only)	Biomass CHP
IRR @ 30 years	3.1%	IRR @ 30 years 5.6%	IRR @ 30 years 4.7%
NPV @ 30 years & 12% DF	-£8.82 M	NPV @ 30 years & 12% DF -£7.88 M	NPV @ 30 years & 12% DF -£15.27 M
NPV @ 30 years & 6% DF	-£4.95 M	NPV @ 30 years & 6% DF -£0.77 M	NPV @ 30 years & 6% DF -£4.63 M

**Constraints**

Availability of sufficient gas main infrastructure to support the CHP option.  
 Network operators may require a significant contribution to enhance local infrastructure.  
 Local availability of wood chip fuel for the biomass option.  
 The impact of biomass delivery vehicles should be considered.

**Conclusions**

The financial analysis for the Pool Pilot ESCO SDHA with the higher RSS housing figure performs better than the lower RSS option.  
 With the DLIP and TRIP area connected there is sufficient heat load to utilise proven biomass ORC CHP plant. Biomass performs better than gas CHP for reasons listed under option 2A. Biomass CHP, as modelled, benefits from double ROCs as well as RHI, but has a much higher capital cost than biomass heat only.

# CPIR Energy Strategy - SDHA Datasheet



SDHA Option 5A - using lower RSS housing figure for urban extension

Pool EFW - 40,000 tpa plant - core option

Existing Heat Loads		Future Heat Loads	
Potential Anchor Loads		Residential	Non Residential
Pool - Carn Brea Leisure Centre, Cornwall College, Pool School and Community College		9,000 MWh	17,900 MWh
Existing Residential Heat Load		Mixed	
MWh		H91 & E, H92 & E, H36 & E, H37 & E, H38 & E, H41 & E,	
Existing Non-Residential Heat Load		Non-residential	
3,700 MWh		E10, E11, E12, E13, E2, E9	
Potential Social Housing Connection?		Residential	
None		H30, H40, H90, H46, H45, H33, H34, H93, H122	
Percentage of assumed connected load that is 'secure'			100 %

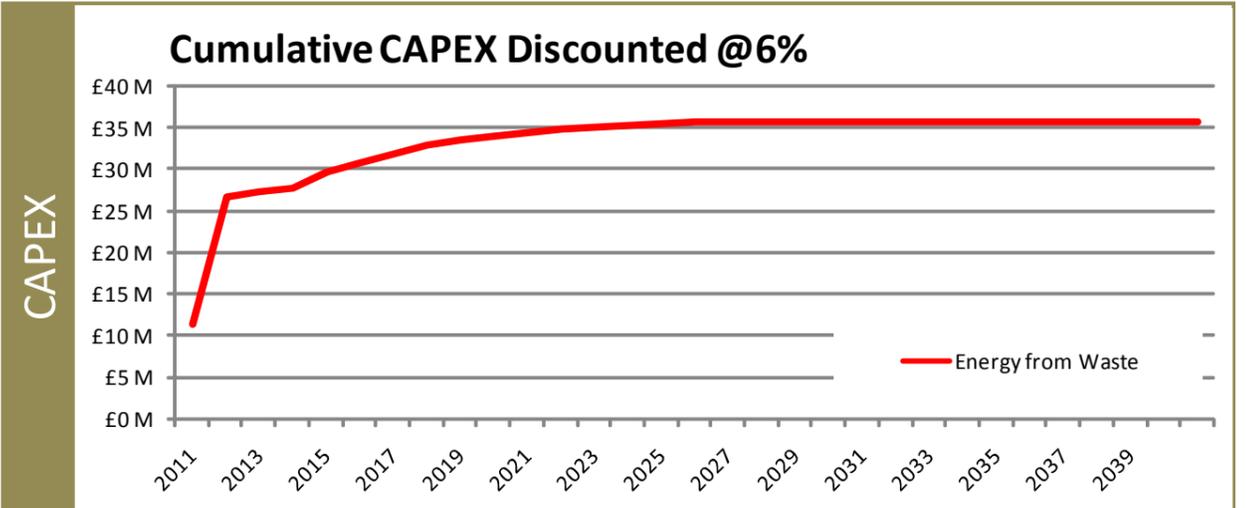
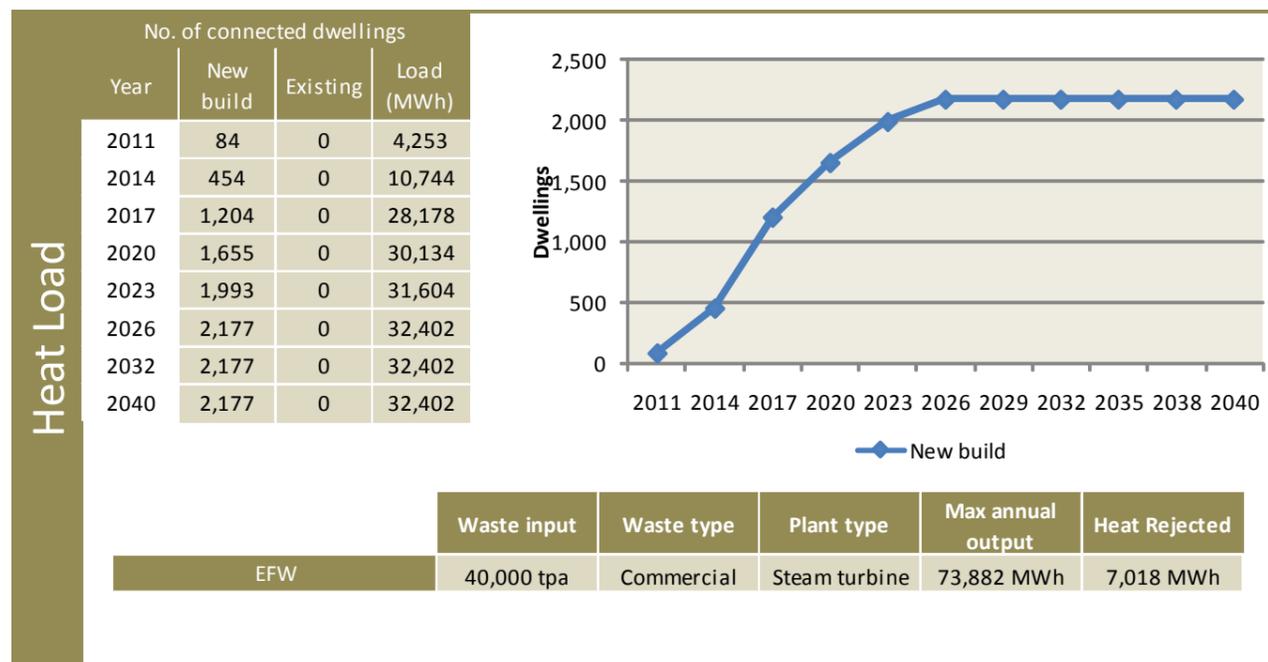
## Description

The Pool Energy from Waste SDHA is based on the idea of locating an EFW plant in the Resource Recovery Park directly to the south, and on the edge, of the Pool area. We assumed a 40,000tpa plant for both the core and extended options. Assuming a steam turbine plant was used the heat output could be 'tuned' to meet heat load requirements. Where the plant heat output exceeded the demand, the heat could be rejected. Therefore, the extended option makes better use of 40,000tpa plant's heat output, rather than requiring a larger plant. The core options encompass all the new build development in the Pool area south of the A30, in addition to the Tolvaddon and Park Bottom urban extension. This datasheet is based on the lower RSS housing figure for the urban extension.

## Assumptions

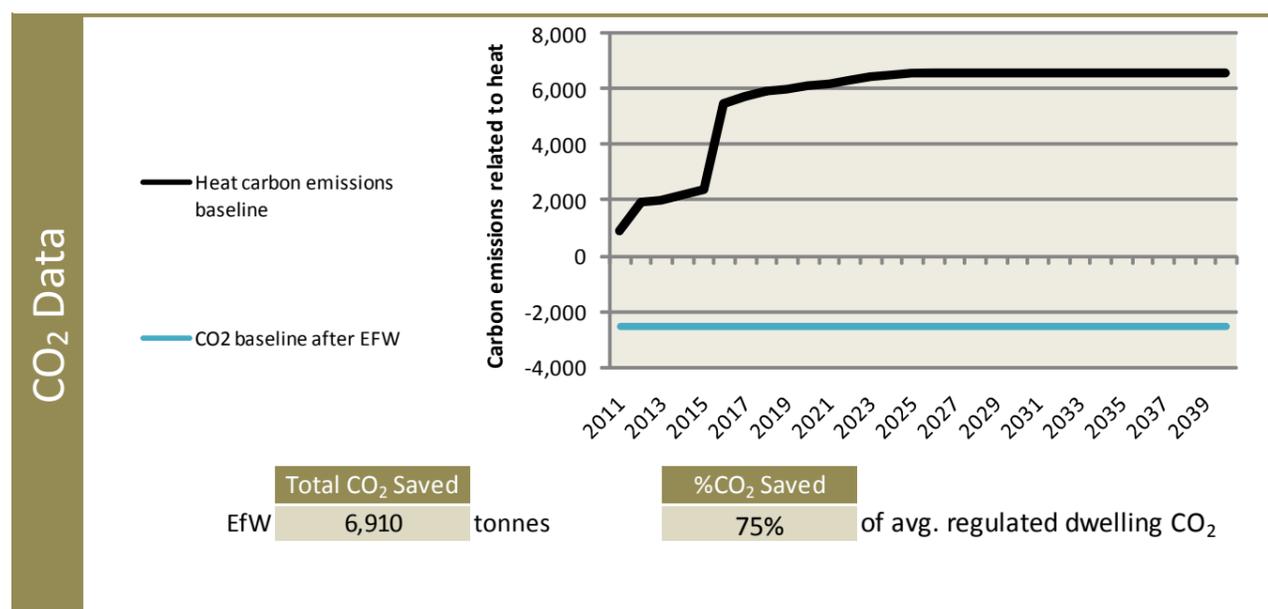
**Technical**  
 Life of principal plant: 15 years  
 Life of infrastructure: 30 years

**Financial**  
 Discount rate: 6%, 12%  
 Gate fees for waste £80 / tonne  
 Project life: 30 years  
 Fuel costs (p/kWh): [Gas 2] [Elec 8.4] [Wholesale Elec 5] [HeatResi 5.25] [HeatNonResi 3.20] [wood chip 1.29]  
 Renewable Heat Incentive: 4.3p/kWh for biomass heat from 2011  
 Renewable Obligation Certificate (ROC): 4.3p/kWh  
 Number of ROCs for biomass CHP = 2



## Viability

Energy from waste	
IRR @ 30 years	13.4%
NPV @ 30 years & 12% DF	£2.7 M
NPV @ 30 years & 6% DF	£24.6 M



## Constraints

Availability of sufficient gas main infrastructure to support the back-up gas boilers  
 EFW constraints relate to possible additional separation from dwellings due to air emissions and the impact of vehicle movements.  
 Waste supply should also be considered in relations to other planned waste recovery facilities.

## Conclusions

Energy from waste has the best financial performance of all the technologies considered and could enable significant carbon emissions reductions for new and existing housing. However, the financial performance is highly dependant on the gate fees. CC should begin discussions with potential technology providers, such as EnerG , and the CC waste team.