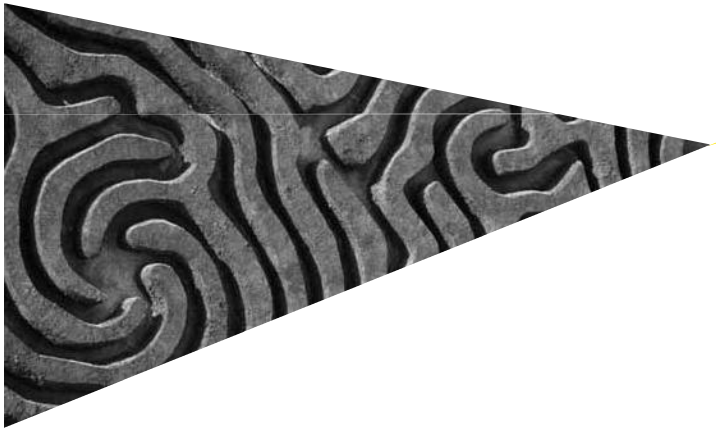


Greater Manchester Heat Networks

Commercial considerations

29 March 2011



29 March 2011

Private and confidential

Mike Reardon
Strategic Director
Greater Manchester Environment Commission
Oldham Council
Civic Centre
West Street
Oldham
OL1 1UT

Dear Mike

**Consultancy Services for the AGMA Low Carbon Capital Project –
Commercial analysis of district heating opportunities**

In accordance with our contract with Oldham Council dated 17 December 2010, we have prepared this short discussion document of our commercial analysis of the Greater Manchester district heating opportunities. This was discussed at the AGMA workshop on Thursday 17 March 2011.


Purpose of our report and restrictions on its use

This discussion document was prepared on the specific instructions of the Greater Manchester Environment Commission to assist in the evaluation of district heating opportunities, and should not be used for any other purpose. In carrying out our work and preparing this paper, we have worked solely on the instructions of the Greater Manchester Environment Commission .

Our report may not have considered issues relevant to any third parties. Any use such third parties may choose to make of our report is entirely at their own risk and we shall have no responsibility whatsoever in relation to any such use. This discussion document should not be provided to any third parties without our prior approval and without them recognising in writing that we assume no responsibility or liability whatsoever to them in respect of the contents of our deliverables.

This information is supplied on the condition that Ernst & Young, and any partner or employee of Ernst & Young, are not liable for any error or inaccuracy contained herein, whether negligently caused or otherwise, or for loss or damage suffered by any person due to such error, omission or inaccuracy as a result of such supply.

Yours sincerely

A handwritten signature in black ink, appearing to read 'C. Watkins'.

Cat Watkins

Assistant Director
Ernst & Young LLP

Contents

		Page
Section 1	What is District Heating?	4
Section 2	Commercial Drivers	5
Section 3	Open Forum Discussion	10
 Appendices		
Appendix A	AGMA District Heating commercial support model - Distribution Instructions	11
Appendix B	AGMA District Heating commercial support model - User Guide	12

Section 1: What is District Heating?

Societal

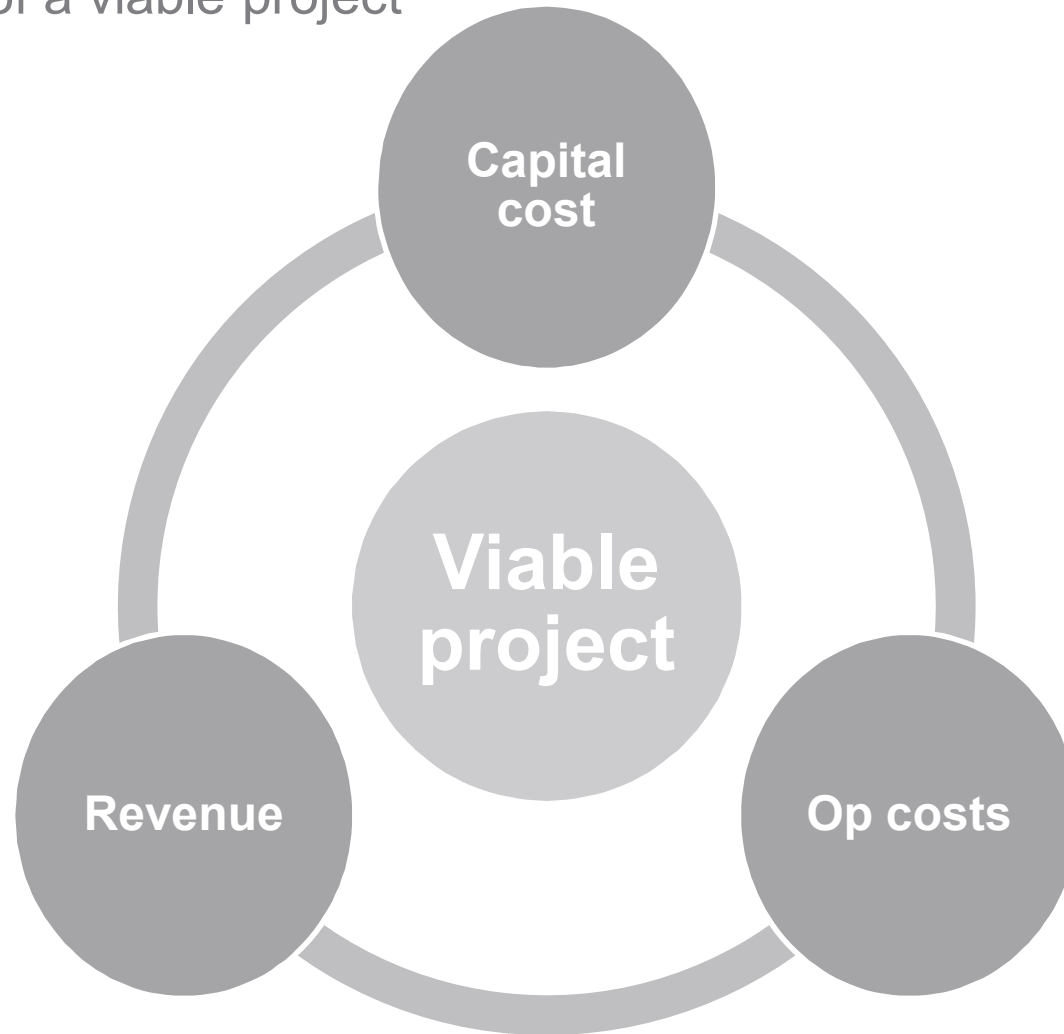
- ▶ Source of low carbon heat
- ▶ Can be from renewable sources
- ▶ Can address fuel poverty (residential)
- ▶ Make use of a waste product

Commercial

- ▶ Can be two revenue streams (heat and electricity)
- ▶ Usually needs fuel
- ▶ Investment in generating plant, network and connections

Section 2: Commercial Drivers

Commercial drivers of a viable project



Section 2: Commercial Drivers (Continued)

Capital Expenditure

Margins need to provide a return on building the:

Generating plant

Major capital item

Network from plant to offtakers

Lower risk asset

Connections (network pipe – offtaker)

Who bears the cost – project or offtaker?

Back up boilers

How can value be extracted?

Section 2: Commercial Drivers (Continued)

Revenue

Heat

- ▶ Pricing – market based or participant supported?
- ▶ RHI
- ▶ Use of forward curves?
- ▶ Volume – demand today vs tomorrow ... what is the impact of phasing in?

Electricity

- ▶ Valuable – currently worth more than heat
- ▶ If renewable – additional value ROCs/RHI
- ▶ Generating plant configured accordingly



What is the LA's role as a heat offtaker?

Section 2: Commercial Drivers (Continued)

Commercial drivers – operating costs

Fuel

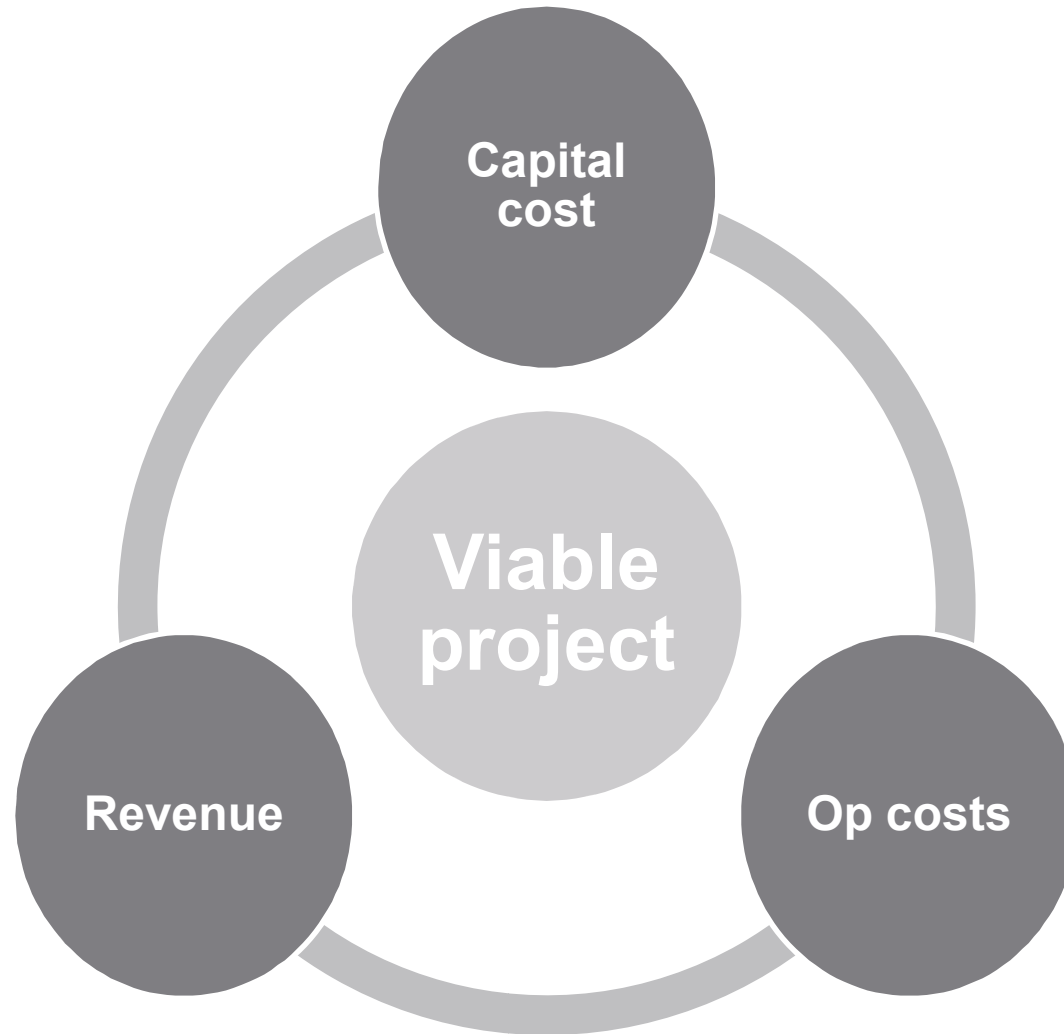
- ▶ Major cost item ... and ...
- ▶ Unless gas, feedstock contract key to raising finance:
 - ▶ Price
 - ▶ Tenor
 - ▶ Covenant
 - ▶ Quality

Other costs

- ▶ Operations & maintenance
- ▶ Bottom and fly ash disposal
- ▶ ...

Section 2: Commercial Drivers (Continued)

Recap



Section 3: Open Forum Discussion

- ▶ Key issues for GM heat networks
- ▶ Key Actions
- ▶ Opportunities to work collaboratively

Appendix A: AGMA District Heating Commercial Support Model – Distribution Instructions

Introduction

We have been requested by Oldham Council to provide you with a copy of the district heating commercial support model 'AGMA Gas & biomass project cashflow model March 2011 v1.xls' ('the Model') which we prepared in accordance with the instructions of Oldham Council.

In order for us to provide you with a copy of the Model, we request that you first provide written confirmation that you agree to our terms and conditions for the release of the Model to you.

We would therefore be grateful if you would provide the following addressee information in order for a release letter setting out our terms and conditions to be issued to your organisation for signature by the appropriate officer.

Contact Details Required

- ▶ Name and title of addressee
- ▶ Organisation full name and address (including postcode)

Please email the above contact details to Andrew Mee of Ernst & Young at amee@uk.ey.com .

Appendix B: AGMA District Heating Commercial Support Model - User Guide

A User Guide has been prepared for the Model. This provides guidance and instruction on the following:

- ▶ Model Structure
- ▶ Model conventions
- ▶ Model mechanisms and checks
- ▶ Databook

The Model should be utilised and amended in conjunction with the accompanying User Guide.

The User Guide has been issued as an accompanying output to this document.

Contact Details:

Cat Watkins

Assistant Director – Energy and Environmental Infrastructure Advisory

cwatkins@uk.ey.com

01392 284 344

07900 82 88 72

Andrew Mee

Senior Executive – Infrastructure Advisory

amee@uk.ey.com

0161 333 2602

07827 23 07 32

Ernst & Young LLP

Assurance | Tax | Transactions | Advisory

www.ey.com/uk

The UK firm Ernst & Young LLP is a limited liability partnership registered in England and Wales with registered number OC300001 and is a member firm of Ernst & Young Global Limited.

Ernst & Young LLP, 1 More London Place, London SE1 2AF.

© Ernst & Young LLP 2008. Published in the UK.
All rights reserved.