

Feasibility or Case Study for gas supply expansion for Somerset, UK

Del. 4.3.10



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Dissemination level	Public
Partner name	Organic Power
Work Package	WP 4: Supply and distribution infrastructure for gas fuels
Country	UK
Region	Somerset
Are there existing filling stations and natural gas and biogas driven cars already in the region?	No
Status (F:Final, D:Draft)	F – 8 th June 2009

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This case study will look at the successful installation of at least one new gas filling station and one new biogas plant (where appropriate) in your area, and analyse the reasons why this has been successfully installed. Please copy this whole form for each Feasibility Study you undertake

A. Gas filling station

A1. Case Study or Feasibility Study

A1.1. How many feasibility studies or case studies have you undertaken for new gas filling stations from 1 Sep 2007 to 20 Aug 2009

Number of case studies: Number of feasibility studies: 1

A1.2 This is Case Study number 1 Reporting date 31 Jan 2010

A1.3 This is Feasibility Study number Reporting date

A1.4 Title of this Case Study/Feasibility Study: Typical New Gas Filling station

A1.5 How was the Case study/Feasibility study selected. According to what criteria?

This is a generic feasibility study which was used as a marketing tool

A1.6 Would this Case Study/Feasibility Study have taken place without the input from Madegascar

Yes or No No

Please give details: (Was it planned before, was it started before, was it initiated by Madegascar, etc)

The idea of a feasibility study as a marketing tool was a direct result of Madegascar, and it was initiated during the project. With only one filling station in the UK, let alone Somerset, during most of the period of Madegascar it was not possible to persuade other potential filling station owners to commission a commercial feasibility study, without their being able to see the sort of results they could expect.
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A1.7 Did you carry out the Study for a particular company or as a marketing tool?

Marketing Tool

A2. The Study

A2.2 List partners in your study

For whom did you carry out the Study

Company name: EcoTransit Ltd

Public/private: Private

Business/role: Filling station owner and construction company

Address: Unit 17, Bennetts Field Trading Estate, Wincanton,
Somerset
Contact person: Nicholas Putland
Tel: 01963 373 900
Fax :
E-mail: enquiries@ecotransit.co.uk
Website:

Gas supplier

Company name:
Public/private:
Address:
Contact person:
Tel:
Fax :
E-mail:
Website:

Filling station construction company

Company name EcoTransit Ltd
Public/private:
Address:
Contact person:
Tel:
Fax:
E-mail:
Website:

Owner of new filling station

Company name: EcoTransit Ltd
Public/private:
Address:
Contact person:
Tel:
Fax:
E-mail:
Website:

Principal users of new filling station

Company name: Organic Power Ltd
Public/private: Private
Address: Gould's House, Horsington, Somerset, BA8
0EW
Contact person: Christopher Maltin
Tel: 01963 371 100
Fax: 01963 371 300
E-mail: christopher.maltin@organic-power.co.uk
Website: www.organic-power.co.uk

Other relevant partners (please copy this section as many times as is required)

Company name:

Public/private:

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

A2.3 Describe new/proposed filling station:

NEW GAS FILLING STATION

Name of filling station and address	Unit 17, Bennetts Field Trading Estate, Wincanton, Somerset
Type of location, eg. urban, motorway, industrial estate,	Industrial estate
Type of filling station eg stand-alone, within petrol/diesel filling station	Stand alone
Number of fast filling points	2
Number of slow filling points	
Number and make of compressors	Two Compair compressors
Storage pressure (bar)	250 bar
Storage capacity (water litres)	water litres (5 rows of 5 cylinders)
Ownership of station	EcoTransit
Method of financing station	Capital, repaid by rental and gas surcharge
Main user of station	Food distribution companies
Number of vehicle fills per week	140
Total weekly supply of gas to vehicles	2,500Kg
Types of vehicles already using the filling station eg HGV, bus, van, taxi, car	vans
What proportion of the gas is biomethane	None at present, rising to 100%
Name of gas supplier	
Price of gas to vehicle owner	€ 1.14per kg including VAT and tax
Price of gas to station owner	€ .40 per kg
Opening hours	24/7
Method of payment, eg. credit card, special card, number plate recognition and account	Number plate recognition
Profitable or not, with figures if possible	Yes, provided 20 vans fill up at least once every day

A2.4 What was MADEGASCAR's major contribution to the Study

Under Madegascar, Organic Power was the main player and carried out the feasibility study, provided background information, sourced appropriate suppliers of the components for the filling station and the contractors to build



it and calculated the profit and loss scenarios

A2.5 Were there any incentives to help establish the new filling station?

No, former government grants for natural gas filling stations have ceased.

A2.6 Barriers to establishing new gas filling station:

Gas filling stations were seen as unreliable and expensive to maintain, and too expensive to construct in the UK resulting in very extended payback periods as there are not enough vehicles to use any station

A2.7 How did MADEGASCAR help to overcome these barriers

Provided feasibility study, illustrated with best practice studies from other Madegascar partners and showed that, with enough vehicles, filling stations could become economically viable.

A2.8 How did others help to overcome these barriers

No outside help

A2.9 Was a new gas filling station built as a result of your Study

No, marketing tool, so no new filling station yet built, but probably will be within a year

A2.10 Total capital cost of new filling station

€123,000

A2.11 How long did it take to execute the Case Study/Feasibility Study

35 hours

A2.12 What is the current status (e.g. finished, work in progress)

Finished

A2.13 When did the Case Study/Feasibility Study start

Jun 2009

A2.14 When did/will the Case Study/Feasibility Study end

Aug 2009

A2.15 How long did you spend working on this Case Study/Feasibility Study

35 hours

A2.16 How much did this Case Study/Feasibility Study cost

35 hours
internally, no
outside cost

A2.17 General conclusions and recommendations

The aim of this feasibility study was to determine the number of vans needed for a filling station to be profitable if no HGVs or buses were using it. This will be used for filling stations to be owned by EcoTransit, and for ones to be sold to customers with fleets of vehicles

A2.18 Comments

B. New biogas plants**B1. Case Study or Feasibility Study**

B1.1. How many feasibility studies or case studies have you undertaken for new biogas plants from 1 Sep 2007 to 20 Aug 2009

Number: 1

Number of case studies:
Number of feasibility studies: 1

B1.2 This is Case Study number

Reporting date

B1.3 This is Feasibility Study number 1

Reporting date Aug 2009

B1.4 Title of this Case Study/Feasibility Study: Typical Biogas Plant

B1.5 How was the Case study/Feasibility study selected. According to what criteria?

The cost of a full feasibility study for a biogas plant is in the region of £50,000, but no customer was prepared to allocate this sort of funding before seeing an existing feasibility study. This study was carried out using theoretical figures, to be used as a marketing tool, and to plan the parameters and layout of a real feasibility study for a customer.

B1.6 Would this Case Study/Feasibility Study have taken place without the input from Madegascar

Yes or No No

Please give details: (Was it planned before, was it started before, was it initiated by Madegascar, etc)

This was initiated under Madegascar and has provided a generic feasibility study which has been used as a marketing tool

- B1.7 Did you carry out the Study for a particular company or as a marketing tool?
Marketing tool

B2. The Study

- B2.2 List partners in your study

Owner of biogas plant

Company name: Farmer

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

Supplier of waste

Company name: Farmer and cheese factory

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

Plant construction company

Company name: Organic Power

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

Purchaser of biogas

Company name: Milk distribution company

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

Other relevant partners (please copy this section as many times as is required)

Company name: Cheese manufacturer

Address:

Contact person:

Tel:

Fax

E-mail:

Website:

B2.3 Describe new biogas plant:

NEW Biogas PLANTS

Name of biogas plant and address	Dairy generic
Type of location, eg. farm, municipal, industrial estate,	Farm
Make of biogas plant e.g.	Organic Power
Principal feedstocks e.g. municipal waste, cattle slurry	Cattle slurry, cheese processing waste
Tonnes per annum of waste treated	30,000 tpa
Cubic metres of biogas produced	2,050,000 m ³ per annum
Proportion of biogas upgraded to biomethane	50%
Method of upgrading the biogas to biomethane	Water scrubbing to produce dry CNG
Whether biomethane is fed into the gas grid	No
Name of gas filling station where biomethane is used	Milk distributor's own filling station
Method by which biomethane reaches a gas filling station e.g. gas grid, pipeline, trailer, etc	trailer
Price paid for gas to biogas plant owner	€ 0.40per m ³

B2.4 What was MADEGASCAR's major contribution to the Study

Under Madegascar, Organic Power was the main player and carried out the feasibility study to include research into biogas yields from different feedstocks, calculating the ideal feedstock mix for Somerset farmers (a dairy and cheese making area), to give a ratio between cheese processing waste and cattle slurry

B2.5 Were there any incentives to help establish the new biogas plant?

No

B2.6 Barriers to establishing new biogas plant:

Too much uncertainty about government price for biomethane when not used to make electricity, uncertainty about actual biogas yields from different feedstocks when mixed, capital cost of equipment and maintenance required, all of which affect profitability

B2.7 How did MADEGASCAR help to overcome these barriers

Lobbied government to recognise the value of biomethane and to allow grid injection. For this feasibility study provided research, provided information and knowledge to compile this generic feasibility study, investigated published and actual figures to give costs and effectiveness of different biogas plant designs

B2.8 How did others help to overcome these barriers

No help

B2.9 Was a new biogas plant built as a result of your Study

Not yet

B2.10 Total capital cost of new biogas plant

£1,040,000

B2.11 How long did it take to execute the Case Study/Feasibility Study

45 hours

B2.12 What is the current status (e.g. finished, work in progress)

Finished

B2.13 When did the Case Study/Feasibility Study start

June 2009

B2.14 When did/will the Case Study/Feasibility Study end

Aug 2009

B2.15 How long did you spend working on this Case Study/Feasibility Study

45 hours

B2.16 How did this Case Study/Feasibility Study cost

45 hours
internally, no
outside cost

B2.17 General conclusions and recommendations

This feasibility study is used as a marketing tool to illustrate to Somerset farmers that a biogas plant can be a worthwhile investment to produce

electricity, but if the biogas is used to fuel a related fleet of vehicles, only when the Renewable Transport Fuel Obligation certificates have been finalised.

B2.18 Comments