

# Clean, Affordable Energy



**Company:** iPower

**Innovative business model type:** Service Systems

**Sector:** Energy

**Company size:** SME

**Product or service:** Energy efficiency product, maintained annually, to provide reduced energy cost and carbon emissions. The only fuel cell micro CHP product in the UK eligible for the Feed In Tariff (FITs).

## Key Facts

- Based in Scotland, iPower is a social enterprise which delivers low carbon energy systems.
- The company aims to make clean energy affordable to all and the majority of the profit is used to help combat fuel poverty and climate change.
- With iPower's BlueGEN product, customers typically benefit from savings of 20–30% on their energy costs.
- REBus has helped iPower to secure capital finance and supported with the development of their business model and communications.

Key facts

Introduction

Why REBus?

Results

Case Study **wrap**

## Introduction

iPower is a social enterprise which delivers low carbon energy systems in social housing and other properties. It uses a unique model that avoids the need for up-front capital from landlords and other property owners. The company's primary aim is to make clean energy affordable to all, and a majority of the profit is used to help combat fuel poverty and climate change.

Based in Scotland, but operating UK-wide, the company works to reduce energy bills and carbon emissions. It has an exclusive agreement with Solid Power, manufacturers of the BlueGEN fuel cell micro CHP, to facilitate installations.

BlueGEN is the only Fuel Cell Micro CHP product in the UK to receive Microgeneration Certification Scheme (MCS) accreditation and thus, eligible for Feed In Tariff (FITs). iPower owns the BlueGEN units and receives the FIT payments, while the user pays for the annual maintenance service (approx £500 per annum in the first year) and for the gas supply. Savings typically translate to a 20–30% on total energy import.

## REBM for Micro CHP Provision

iPower's aim was to create a newly funded business model for micro CHP provision as a first step towards a full 'circular economy' approach.

Typically, low capital sources of energy tend to have high carbon emissions. Since customer choices on how to source energy tend to be based on capital cost rather than carbon emissions, encouraging them to choose a low carbon option relies on structuring projects in a way that maximises customer benefit, whilst reducing financial risks.

iPower's vision is to support the creation of a market where low carbon, low risk options are available for all.

## REBM for energy usage

Fuel Cell Micro CHP (Combined Heating and Power) is a new technology which offers scope for reducing bills for both heat and power in large domestic or commercial buildings with a gas supply. This is achieved by recovering the heat produced when generating electricity, and using it in a heating system.

As a result, the customer is able to save on energy costs and carbon emissions, with no upfront cost.

## What would success look like?

iPower was keen to have the first stage of the project under its belt. Specifically, it was looking for REBus support to:

- Pilot BlueGen, through cementing the business case.
- Develop the business case for large scale-up of provision of fuel cell CHP to universities, using data from an existing pilot with Edinburgh Napier University.
- Engage with targeted and warm contacts in university procurement teams.

Key facts

Introduction

Why REBus?

Results



## Challenges and barriers

In March 2015, the BlueGEN manufacturer, CFCL Ltd, went into voluntary administration. As a result, the entire project was stalled, until a new owner could be sought. In July 2015, Solid Power took over the manufacturing rights. Active marketing re-commenced in August 2015.

More general challenges included:

- The BlueGEN model required a funder, although this was mitigated through scoping work undertaken by the REBus team;
- There is not, at present, a full understanding of the whole life costs of the fuel cell units. This is required if a material saving analysis is to be prepared as part of a business case;
- The BlueGEN model makes a stronger case for REBus in new buildings, rather than retrofit (where heat recovery is often simpler);
- There needs to be consideration of down-time (i.e. reduced demand), which is an issue, for example, in student accommodation not used in the summer; and
- There are quite a number of issues related to the supply and distribution of energy. In retrofit, the requirements for a private wire (where savings are greatest) has proven a challenge.

## Why REBus?

REBus support model facilitated action to address sustainability development and create a new energy mix. iPower believed REBus could help to develop the strategic business opportunities and environmental and financial solutions necessary for changing its business model to achieve its goals. Most of all, it embraced the strategic vision of moving towards a circular economy approach.

“Although project delivery would have been possible without REBus expertise, it would have taken much longer. The delivery team helped especially with the development of the business model, communicating the business model to customers, and gaining credibility with stakeholders such as environmental officers.”

*Jon Cape, Founder and Managing Director, iPower*

## Pilot stages

The pilot was necessary to test the model, to demonstrate the potential for returns and savings.

The scope of the pilot included:

- Customer response.
- Commercial & contractual arrangements.
- Technical integration.
- Processes.

Key facts

Introduction

Why REBus?

Results

iPower wrap

## Results

The Feed In Tariff is a policy mechanism created to encourage the sale energy back to the grid and has been critical to iPower's success. The strong policy conditions in Scotland provided opportunities for this service.

Additional results include:

- A demonstration project that is in place and being utilised;
- Positive customer response and results; and.
- Securing of £1 million of capital finance from Social Investment Scotland (SIS), which will allow the business to aim for its current 'free for the user' (BlueGen) model, to install 70 units in 2015 with a further 350 by the end of 2018.

Future plans include an expansion of service offerings, into the transport sector (with hydrogen electrolysis), and projects involving solar energy, green fuel cells and other renewable energy solutions. iPower are considering a funded programme recommencement taking account product development of BlueGen, other mCHP products and the outcome of the UK Government Feed In Tariff Review.

## Advice to others

"Patience and strategic timing are essential as there may be unexpected obstacles. Taking a new product to a new market can be challenging and very time-consuming. Do not under-estimate the lead time from 'first push' to the purchase order agreement!

Think big and be patient."

*Jon Cape, Founder and Managing Director, iPower*

## Lessons learned

The pilot furnished iPower with insights into the importance of consistency of power supply. Foremost, was the need to retain a back-up supply in case supply was interrupted for any reason. The pilot also provided insight into:

- The importance of having access to adequate resources to manage the demands on time;
- Finance should feature as early as possible in the process;
- Due diligence on the supply chain;
- Convincing potential users that a micro CHP unit can work on a funded arrangement, that it can be fitted to existing plant rooms with minimum disruption, and that the benefits outweigh the costs;
- A need to be clear on the unique selling point for the model, compared to business as usual;
- A need for real-time operational data from a pilot product to prove its cost and carbon savings;
- A really thorough risk assessment of the product or service, to include all stakeholders (e.g. Original Equipment Manufacturer (OEM), agent/developer and installer);
- A need, when promoting or marketing a lease-hire arrangement, not to use the word 'free'. This term can make the audience sceptical or think there some kind of 'catch' to the offering; and
- The development of a comprehensive marketing strategy. Time needs to be spent thinking about this before seeking to develop a new product targeting a new marketplace.

Key facts

Introduction

Why REBus?

Results





Project supported by LIFE funding

REBus is a project delivered in partnership with:



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Ministerie van Verkeer en Waterstaat



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Case studies were generated as a result of pilots carried out for REBus by WRAP or RWS and the named organisations from 2013 to 2016.

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