

## Delta Research Brief

### **Micro-CHP Finally Arrives in Europe - But Future Growth Uncertain**

January 2011



## Micro-CHP Finally Arrives in Europe – But Future Growth Uncertain

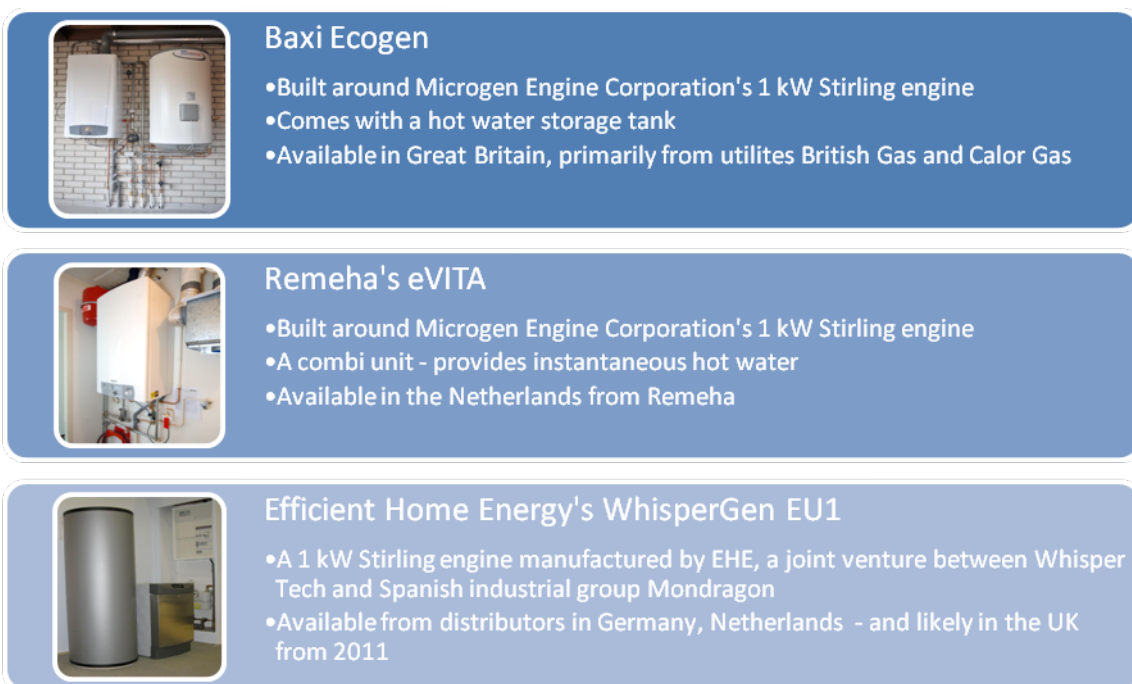
After many years of waiting, households in a number of European countries can now purchase a micro-CHP appliance instead of a boiler. But participants at Delta's Fifth Annual "Micro-CHP in Europe" Summit - held in June 2010 - had a range of views about how the market would emerge. Estimates for the European annual market size in 2015 ranged from less than 50,000 to more than 150,000 units per year.

### The long wait for products is over

Boiler manufacturer BDR Thermea (the new name for the company formed by Remeha-De Dietrich and Baxi's merger) is taking the lead with their Ecogen and eVITA Stirling engine products, closely followed by Efficient Home Energy with their new WhisperGen EU1 product. These companies have volume manufacturing and assembly facilities in place capable of manufacturing tens of thousands of units a year, with channels to market established.

#### FIGURE 1: THREE MICRO-CHP UNITS AVAILABLE FOR EUROPEAN HOUSEHOLDS

*These three companies all have mass production facilities in place, with their product available to households in 2010.*



Source: Pictures from Baxi, Remeha and Efficient Home Energy

Several other companies are planning to follow this lead – ranging from major boiler manufacturers Vaillant (in partnership with Honda) and Viessmann, who are expected to enter the market within the next two years, to start-ups Ceres Power and Energetix.

### **A few European energy suppliers take some early micro-CHP steps**

Most European energy suppliers are still evaluating products. Some are testing a handful of units or tens of units in wider tests with staff and customers – with others watching from the sidelines. A small number have taken the lead. Examples include British Gas and LPG supplier Calor Gas in the UK, both now offering micro-CHP to customers, with a typically installed price tag at a little over £6,000 (€7,200). E.ON UK expects to join them in 2011. Gasag, a Berlin-based gas company, has set up an energy services company subsidiary that is offering micro-CHP to customers in Berlin and beyond. In the Netherlands all three major energy suppliers have run extensive micro-CHP trials, but none have yet solidly integrated micro-CHP into their wider home services businesses.

### **Japan still at the forefront, with fuel cells gaining traction, and product launched in the US**

Japan continues to lead the world with micro-CHP, as gas and LPG suppliers use it as a weapon to grow gas sales and defend their market from a strong electric utility electric heat pump attack. At the moment, the electric utilities are winning, selling hundreds of thousands of electric heat pumps each year. Fuel cells (based on PEM technology) are being sold in their thousands to homeowners and homebuilders. Solid oxide fuel cells, with higher electrical efficiency, are being trialled in tens of homes with market launch imminent.

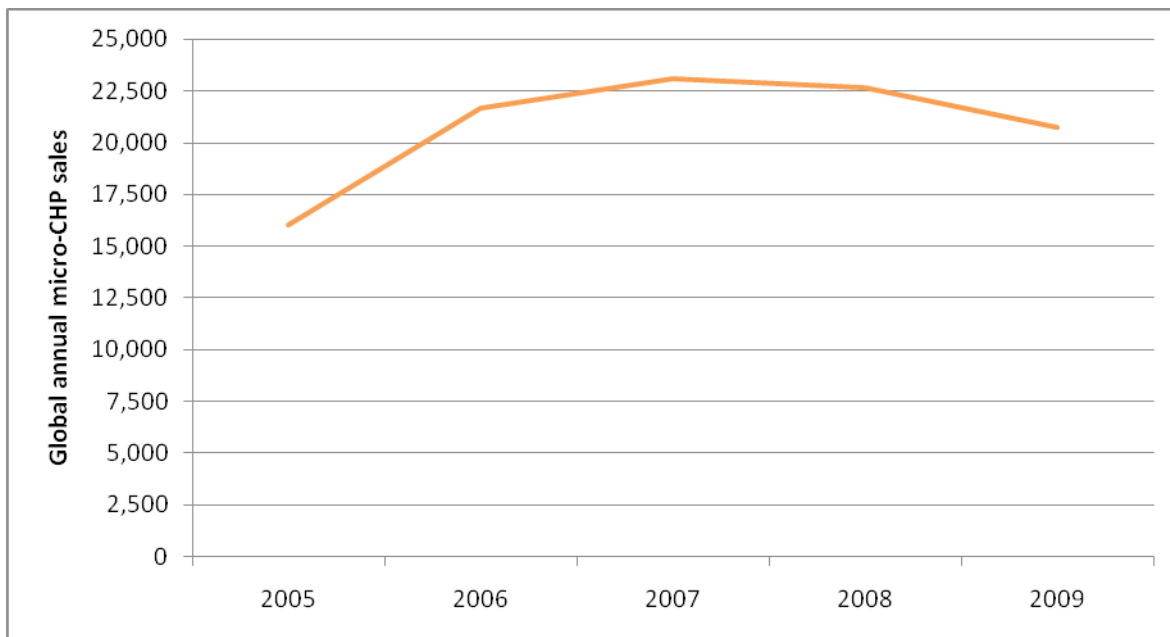
The US has overtaken Europe in terms of micro-CHP commercial offerings. Homes in the northeast can purchase a micro-CHP heating appliance from regional boiler manufacturer ECR International, with a new variant being developed that can be remotely dispatched to help meet electricity system peaks. In California, Clear Edge Power is selling fuel cell micro-CHP to top end homes.

### **The emerging global micro-CHP market is worth €269 million, or over 20,000 units a year**

Delta's latest 'Micro-CHP Annual Roundup and Outlook' report showed that global micro-CHP sales actually fell slightly in the last year, to 20,930 units (>80% in Japan). However the market size actually grew slightly to 37.8 MWe of capacity, with a market value of €269 million. This was because sales of 5 kWe products to the German market (to a mix of multi-family homes, single family homes and small business) grew slightly from the previous year, making up for the fall in the number of 1 kWe units sold in Japan.



FIGURE 2: GLOBAL MICRO-CHP SALES HAVE BEEN FLAT OVER THE LAST THREE YEARS  
*The Honda ECOWILL product in Japan has contributed the vast majority of these sales*



Source: Delta Energy & Environment

**The European market could grow to more than 100,000 in 2015, but some key challenges must be overcome**

At one level, the overall market opportunity for micro-CHP in Europe is huge – well over 5 million boilers are sold through the EU each year. Even taking into account that only a subset of these will be appropriate for micro-CHP, the overall market opportunity is at least several hundred thousand units a year, if not millions.

To start to exploit this, a number of key challenges must be met:

- Proving product performance, reliability and lifetime from newly established manufacturing plants
- Establishing a strong micro-CHP brand that excites customers, and understanding how to position micro-CHP to maximise sales
- Managing high initial product costs, and increasing volumes to drive down costs
- Securing government support to help manufacturers move down the volume – cost curve and enable the full value of micro-CHP to be captured

Overall, Delta continues to believe that if everything proceeds smoothly for micro-CHP, European sales could reach tens of thousands of units per year in the next three years, and 50,000 – 100,000 units by 2015, with a possible upside. Much will depend on the above four factors.

Delta's 5th Annual 'Micro-CHP in Europe' Summit, held in June 2010, was attended by fifty European and Japanese energy companies, Europe's leading boiler manufacturers, and several micro-CHP developers. Participants included Honda, Bosch, BDR Thermea, Vaillant, Viessmann, Ariston, Ceres Power, Hexis, Centrica, Repsol, E.ON, GDF-Suez, EDF, SHV Gas, and Nippon Oil.

Delta's Micro-CHP Service provides many of these companies, and others, with in-depth micro-CHP insight and expertise.

For more information on Delta's micro-CHP research or the Delta Micro-CHP Service, please contact Jon Slowe, [jon.slowe@delta-ee.com](mailto:jon.slowe@delta-ee.com), +44 131 625 1004, [www.delta-ee.com](http://www.delta-ee.com).

