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Media release

Whisper Tech signs \$300 million agreement

Christchurch manufacturer Whisper Tech has secured an agreement worth over NZ\$300 million to supply tens of thousands of its revolutionary 'personal power stations' to the United Kingdom.

Each unit, called a 'WhisperGen', is designed to be installed in a house and runs on natural gas. The size of a domestic dishwasher, the WhisperGen heats water and simultaneously generates electricity (a process known as 'micro CHP'). The hot water produced is sufficient to heat a family home through a network of water filled radiators. Any electricity not used by the householder flows back to the electricity grid and the consumer is credited for this surplus generation.

The multi-million dollar agreement, which includes an immediate manufacturing order worth NZ\$10 million, is with E.ON UK – the company that runs Powergen, the UK's second largest energy retailer with almost nine million electricity and gas customer accounts. E.ON UK's parent company in Germany is the world's largest investor-owned energy company.

The WhisperGen technology is based on a 200-year old design concept called a Stirling engine which has traditionally proved very difficult to produce on a commercial basis. Years of research, product development, patent applications and market testing by Whisper Tech have now culminated in a design that is suitable to be mass produced as an affordable household appliance. Whisper Tech has attracted international attention for its work and is a world leader in micro CHP.

The UK market has always been a prime target for Whisper Tech. Key reasons include the widespread distribution of natural gas and that most UK homes have a boiler linked to water filled radiators. E.ON's customer research indicates that the WhisperGen is attractive to consumers because it is highly efficient, can generate electricity and it lowers the overall power bill for an average UK home by NZ\$450-600 a year. Because of its high efficiency, the WhisperGen also has major environmental benefits, including reducing carbon dioxide emissions by one to two tonnes per household per year.

E.ON, through its Powergen brand, has been trialling the WhisperGen for five years and is so pleased with the results that it has negotiated exclusive rights to market the WhisperGen in Britain and is rolling out the units over the next five years.

Peter Westwood, general manager of Powergen Home Energy Services, said: "We've been working with Whisper Tech to perfect micro CHP technology for a number of years and we're extremely excited to be leading the UK in this field.

"Over the coming years, the home energy services sector will become an integral part of Powergen's business and WhisperGen will form a crucial part of that. It's tremendously

rewarding to be in the position to offer Powergen's domestic customers the option of this unique and revolutionary cost-effective and environmentally friendly technology."

According to Whisper Tech general manager Bill Highet, the WhisperGen has the potential to revolutionise power supply options for the home market. "Just as most homes these days have a personal computer, we believe it will become equally commonplace for homes to have their own personal power station."

Bill Highet describes the E.ON order as 'just the beginning'. "The potential is enormous – in the UK alone there are over 12 million homes that are ideally suited for micro CHP."

He says there is also huge potential for Whisper Tech to make sales in other countries. "We're finalising deals in several other European countries but at an international level the full potential of the WhisperGen can't be fully realised until we're mass manufacturing. One thing that is certain – the WhisperGen represents serious competition for the six million domestic boilers sold in Europe each year."

Whisper Tech will undertake initial low volume manufacturing at its Christchurch plant, but parts of the manufacturing process will increasingly transition to third parties.

"We expect it will take three to four years to evolve from Whisper Tech's current small scale manufacturing set-up to an international mass manufacturing operation suited to E.ON's requirements," says Bill Highet. "This will involve a structured international search and will probably see the WhisperGen being produced by international partners involved in engine and other high volume manufacture."

Job numbers at Whisper Tech will remain around the current level of about 100. "It's our expectation that research and development will remain in Christchurch producing prototypes of new products and ongoing refinements to the WhisperGen," Bill Highet says.

"E.ON's order has secured Whisper Tech's future. It's been a huge boost for our staff and is the ultimate recognition that their work is world class and that they've all had a part to play in developing a product that's revolutionary.

"We're also very pleased to finally deliver some returns to our major shareholders, Orion New Zealand Limited and Meridian Energy Limited" says Bill Highet. "Orion in particular has backed us financially for 10 years and their support has been critical to our success. They own 47% of Whisper Tech and are themselves owned by the Christchurch City, Selwyn and Banks Peninsula District Councils – so the ultimate benefactors of any profits Orion receives long term are actually ratepayers throughout central Canterbury."

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Background - Powergen

Powergen is the consumer trading arm of E.ON UK. It is the UK's second largest energy retailer, with over eight million electricity and gas customers.

E.ON UK's parent company in Germany is the world's largest investor-owned energy company. It has more than EUR46 billion in sales and roughly 66,000 employees.

E.ON UK is also the second largest electricity generator in the UK and specialises in generating energy from renewable sources. It is one of the largest developers, owners and operators of wind farms in the UK and operates a range of hydropower schemes.

The company owns the second largest distribution network in the UK, centred in the Midlands.

www.eon-ag.com; www.powergen.co.uk

History

1816 - 1989

Reverend Robert Stirling becomes concerned about steam engines exploding and killing his parishioners in Scotland.

He develops an alternative design concept named the 'Stirling Engine' - an 'external' combustion engine, burning fuel outside the cylinders. However the development of the internal combustion engine overshadows the Stirling engine concept.

Various parties invest billions of dollars in Stirling engine research but with limited commercial application.

1989-1993

Don Clucas, a PhD research student at University of Canterbury works on the development of a commercially viable Stirling engine.

His research begins to focus on developing a Stirling cycle battery charger for yachts and he successfully develops design solutions that overcome some of the engine's inherent problems. He develops and patents the 'Wobble Yoke', a key breakthrough.

1993

Don's research evolves into development of a 'personal power station' concept and the University of Canterbury establishes a company called Eco Tech to commercialise it. Southpower (Christchurch electricity retailer and lines company, now called Orion) provides seed funding.

1995

Eco Tech changes its name to Whisper Tech. Southpower increases its investment and 3 staff are employed, increasing to 6 over the next year.

1995-1997

The engine and the associated control electronics and software undergo further refinement and development.

Field trials of the DC battery charger unit begin – 20 systems in total.

1996

Whisper Tech wins the ECNZ Rutherford Award (for excellence in energy efficiency).

1999

Commercial sales of the DC unit begin in Europe.

Lab tests of the Mk 1 version of the AC unit begin.

2000

Popular Science Magazine rates the WhisperGen in the 'top 100 new products most likely to change the world'.

Technical trials of the AC (household) micro combined heat and power unit begin in the UK.

2001

Whisper Tech purpose built production facility commissioned.

In-house field trials of 6 AC WhisperGens completed in UK.

2002

Larger UK trial of 30 AC systems completed.

Joint Development Agreement signed with Powergen (now E.ON UK) for UK commercialisation.

2003

DC WhisperGens available commercially in New Zealand

Production of 400 AC WhisperGens commenced for delivery to Powergen.

2003/04

Powergen takes delivery of 400 AC WhisperGens and commences installation in UK homes.

2004

E.ON UK signs order with Whisper Tech for commercial quantity of AC WhisperGens and commits to purchasing at least 80,000 systems over the next 5 years.

Whisper Tech invites registrations of interest from prospective manufacturers.