



**Howden technology is a critical part of the UK's plan for meeting carbon reduction targets.**



In October 2012, during a visit to Howden Group's headquarters in Renfrew, Scotland, the UK Secretary of State for Energy and Climate Change Ed Davey announced a new technology project that could lead to government investment of over £20 million in a ground-breaking carbon capture and sequestration (CCS) initiative for combined cycle gas turbine power stations. The system will be suitable for both new build stations and retrofit projects, and could make a significant contribution to meeting the UK's carbon reduction targets.

The development is the result of international co-operation under the auspices of the UK's Energy Technologies Institute, through a consortium led by the Canadian company Inventys. The process uses a carbon-adsorbent material contained in a rotating bed to draw up to 95% of the CO<sub>2</sub> out of the exhaust gases from the power stations, then release it into a stream of steam for sequestration and storage.

The mechanical infrastructure of the machine, a slowly rotating assembly several metres in diameter, has been developed by Howden engineers based on their experience of producing

the most advanced rotary regenerative heat exchangers for power stations. The adsorbent material, VeloxoTherm®, was designed by Inventys and will be produced by MAST in the UK. Doosan Power Systems will provide system design and engineering expertise and Rolls Royce is providing specialist support.

Initial assessment suggests that the system could reduce electricity production costs by 13% compared to current CCS technologies. The first phase of the project involves a £1.6 million small-scale 5MW prototype that will be carefully monitored to confirm that the expected benefits are reached. This will be followed by a £20 million three-year programme culminating in large-scale commercial use.

Ian Brander, CEO of Howden, emphasised the importance of the project when he said, 'We have all become increasingly aware of the effects of climate change and the need to reduce CO<sub>2</sub> emissions from energy intensive industries. This need for change provides an opportunity to use our knowledge and experience to develop products and systems that will help in meeting reduction targets, and in the longer term help position the UK as a leading provider of next generation low carbon technologies.'

