

Amarinth gets manufacturing boost from Carbon Trust

11 September 2009

Amarinth has scooped a £160,000 (€183,000) grant from the UK's Carbon Trust to bolster its process for manufacturing impellers. The pump manufacturer aims to develop a new process for designing and manufacturing bespoke best efficiency point (BEP) optimised impellers for us in industrial pumping applications.

The project, led by Amarith working with Furniss & White (Foundries) and Pera Innovations, is due for completion in June 2011. The project aims to reduce impeller design lead time by 25 per cent and impeller foundry pattern cost to 10 per cent of current production methods with a lead time of less than a week. The resulting impellers will reduce energy consumption by between 10 per cent and 25 per cent compared to 'fit-to-curve' pumps. It is estimated that this project could reduce annual CO2 emissions in Amarith's target market by 17,000 tonnes by 2020 and 110,000 tonnes by 2050.

End users generally select centrifugal pumps for particular applications by matching the required pumping parameters to performance curves produced by manufacturers. However, it is estimated that about 50 per cent of these pumps operate between 10 per cent and 40 per cent away from BEP (i.e. the maximum efficiency). The key to pumping efficiency is to design the pump's impeller to match the pumping requirement exactly, which has the potential to reduce energy consumption by between 10 per cent and 25 per cent.

Producing bespoke impellers is not usually commercially viable however because it can cost three to five times more than 'fit-to-curve' impellers and they are generally on a significantly longer lead time.

The project aims to develop a new process for manufacturing impellers optimised for BEP at the customer's duty point. The work will involve:

- Carrying out industrial research for the design and testing of optimised impellers
- Developing a rapid and cost effective impeller design process
- Developing the commercially viable pattern equipment
- Carrying out the mould making and casting of optimised impellers
- Developing an alternative method of fusing the impeller materials base and optimised impeller

Oliver Brigginsshaw, managing director of Amarith commented: "We are delighted to have been awarded this grant from the Carbon Trust for undertaking a project that we have thought long overdue. We have a number of ideas to achieve the project aims of significantly reducing the carbon footprint of pumps and look forward to working with our partners over the coming years in delivering this."

