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ABB drives to save £50,000 for plastic recycling company

A plastic recycling company is set to save nearly £50,000 a year on energy costs following the fitting of an ABB industrial drive to one of its plastic extruders.

Regain Polymers of Castleford, West Yorkshire, is one of the largest plastic recycling companies in the UK, recycling around 50,000 tonnes a year. The company turns waste plastic materials such as polypropylene, high density polyethylene and polystyrene into new pellets that are used to produce products such as water pipes and wheelie bins.

The company's production is based on seven extruder lines. As part of its programme to cut energy use and carbon emissions, it had identified one of its extruder lines as a prime candidate for improvement. This was based on a 400 kW DC motor and the company wanted to convert it to AC operation. As well as the expected energy savings, the conversion to AC would eliminate the need to replace the DC brushes every three months, saving £2,500 a year.

Regain Polymers asked ABB Drives Alliance member Quantum Controls to investigate the extruder for possible conversion to AC. A data logger installed by Quantum established that the daytime electricity costs for the DC motor were £424.

Quantum fitted a 400 kW ABB AC 4 pole squirrel cage motor and variable-speed drive, together with new mains cable. Following installation of the AC motor and drive, energy costs dropped to £260 a day, a saving of around £163 based on a 24 hour a day production. With 300 days total production a year, this would give a total annual saving of £49,000. This would be an energy reduction of nearly 870,000 kWh per year, as well as saving over 488 tonnes of CO₂.

The AC motor runs at the same speed as the previous DC motor, with savings coming from the improved torque ratio and efficiency of the AC drive and motor.

Ian Fenwick, Asset Care Manager for the plant, said: "Quantum estimated that we would get a 20 percent energy saving from the project and we are getting above this figure with the AC motor and drive fitted, so we are more than pleased with the project."

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Caption: Regain Polymers turns waste plastic into pellets for new products. Regain is set to save £50,000 a year on energy costs following the fitting of an ABB industrial drive to one of its plastic extruders.

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For more information please contact:

Layla Hewitt
Marketing Communications
Phone: 01925 741517
Email: layla.hewitt@gb.abb.com

ABB Ltd.
Daresbury Park
Daresbury
Warrington WA4 4BT

Emma Jenkinson
Armitage Communications
Phone 020 8667 2218
Email: emma.jenkinson@armitage-
comms.co.uk