

CPF, Bosch Expand Partnership to Apply AI in Energy Management for Food Production

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Charoen Pokphand Foods Public Company Limited (CPF) and Robert Bosch Limited are expanding their sustainability collaboration to incorporate real-time operational data, predictive analytics and artificial intelligence (AI) into energy management across food production.

The two companies have signed a Phase 2 memorandum of understanding (MoU), extending their partnership for another two years. The collaboration aims to improve energy efficiency, reduce fuel consumption and lower greenhouse gas emissions by combining CPF's food production expertise with Bosch's engineering, thermal technology and energy-management capabilities.

The first phase of the partnership focused on improving boiler systems and evaluating alternatives to fossil fuels. The pilot project achieved an energy efficiency rate of more than 97 per cent, while helping reduce fuel costs and greenhouse gas emissions.

Under Phase 2, the companies will expand their focus from equipment optimisation and cleaner fuels to digital energy management. Real-time machinery data will be connected and analysed using digital technologies and AI to identify areas of high energy consumption, detect abnormal operating conditions and support predictive maintenance planning.

By analysing data from actual production operations, the companies aim to develop energy-management solutions tailored to CPF's manufacturing processes. The approach is expected to help improve equipment reliability and operational efficiency while reducing the environmental impact of food production.

Boiler and steam systems are essential to food processing, where consistent thermal performance is critical to maintaining product quality and safety. Integrating operational data with engineering improvements could help manufacturers identify energy losses more accurately and make informed decisions about maintenance and resource use.

Dr Athapol Pecharaply, Director – Sustainability and Environmental Engineering at CPF, said the company aims to produce safe, high-quality food while maintaining its commitment to society and the environment.

He noted that the collaboration combines CPF's food industry expertise with Bosch's boiler technology and engineering capabilities to reduce greenhouse gas emissions from food production.

The companies also aim to develop an approach that could serve as a model for other industries seeking to improve energy efficiency and reduce their carbon footprint.

The expanded partnership reflects the growing role of digital technologies and AI in industrial sustainability, as food manufacturers explore ways to combine energy-efficient equipment, cleaner energy sources and data-driven operational decisions.