

Food Processing - October

Five Ways to Reduce Energy Consumption in Food Processing Applications

The food processing sector is notoriously competitive, yet a volatile energy market has placed further pressure on already tight operating margins. Now more than ever, manufacturers are turning to technology to gain a better understanding of their energy consumption with a view to either retaining or regaining a competitive advantage.

Here, David Bean, Solutions Group Manager at Mitsubishi Electric Automation Systems UK, outlines his top five technology-led energy reduction tips for food processing applications.

Tip 1) Switch it off!

Whilst it may sound obvious, one of the quickest wins for food processing plants looking to curb unnecessary energy consumption is to turn off any equipment when not in direct use. For many, the prevailing thought may be that energy consumption for powering up or down equipment may be greater than leaving it idle in between cycles. However, unless this is backed up by data then the thought is likely to remain conjecture.

Implementing an energy management platform at asset level will take data that is probably already being collected and extract it in a way that helps operations team to visualise the specific energy use of individual applications. In turn, this data-led insight can help processors to identify potential inefficiencies to address and to optimise both demand side management and workflows accordingly.

Tip 2) Optimise the performance of existing plant

Another easy-to-implement solution which can deliver significant energy savings is to install variable speed drives (VSDs) where applicable. Whilst this is not a ground-breaking solution, I am always amazed when I visit a site and see direct online (DOL) motors used throughout the plant. Indeed, Mitsubishi Electric was able to reduce the weekly electricity consumption of a large food processing plant in Ireland by 89% – from 6113 kWh to 664 kWh – through the implementation of a demand management system and the replacement all DOL motors with VSDs.

Tip 3) Consider a third-party energy audit

You cannot measure what you don't know. Using an independent, third-party energy consultant such as 'MyCarbon' will give you an impartial overview of your current energy usage and distil it into actionable insights. Not only will this provide a holistic view of opportunities to improve energy consumption, which will in turn impact profitability; but it can also support in reducing both scope two and three carbon emissions whilst also contributing to the Courtauld Commitment.

Tip 4) Go beyond the production line

Extending the energy management platform remit beyond the production line provides food processing plants with even more opportunities to cut back usage. Whether it is HVAC or lighting systems, applying the same approach to critical building infrastructure and services can help contribute to reducing the plant's energy consumption. The PropTech industry continues to grow exponentially and many of the emerging technologies – from machine learning to digital twins, both of which form part of Mitsubishi Electric's ICONICS Intelligent Building Software – can be just as effectively deployed in an industrial environment as a commercial building.

Tip 5) Diversify the energy mix

Whilst optimising the energy performance of plant equipment and workflows will help improve demand side management, another option for food processors to consider is to diversify the source of the energy itself. The use of microgrids in production environments continues to grow, driven both by the impact of the energy crisis and ESG commitments. From solar PV and on-site wind generation through to battery storage systems, introducing local renewable energy resources into the energy mix can give food processors more flexibility and control when it comes to managing energy generation, usage and cost.

For more information on energy reduction strategies for food processing applications, please visit:

<https://gb.mitsubishielectric.com/fa/service/podcasts>.

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