



Energy Reduction at Thorntons Recycling

How ICIS enabled Thorntons to reduce Energy Usage

The Facility

Thorntons Recycling is one of the most successful companies in Ireland's recycling industry recovering over 80% of material processed annually. The company has multiple recycling facilities across the country with the latest being a €50 Million state of the art recycling and sorting facility utilising various leading edge recycling technologies with a view to recovering as much material as possible from the waste it collects.

The Challenge

Thorntons required a sustainability solution that would enable them to identify, monitor and target the largest energy consumers at their facilities, and engage in energy reduction projects to reduce their overall consumption and carbon emissions.

As Thorntons have a large number of facilities and processes with limited automation and control it was deemed unfeasible to invest in a complete new automation infrastructure or metering system. As such they turned to ICIS for support with our patented virtual metering sustainability software platform that could leverage all of their existing plant energy meters and provide the additional information that they required.

Thorntons had a corporate requirement to achieve the following:

- Identify significant Energy Users and Energy Flow at each facility
- Target low cost, short term energy projects to maximise savings
- Continuously monitor, review and track energy usage
- Leverage existing infrastructure and data where possible

The Solution

In order to achieve their goals, Thorntons engaged with ICIS in order to utilise our sustainability solution to provide the necessary information and analytical tools that would enable them to quickly and efficiently implement their energy management program. The ICIS platform was used to integrate into their existing Socomec DIRIS metering system and a new ICIS MODBUS AdvanTech I/O virtual metering subsystem to capture device energy.

With the unique ICIS technology, Thorntons could:

- Build complete energy maps for their energy usage from each facility at the building level right down to the waste recycling equipment
- Grow the system modularly, adding new facilities and process areas allowing for the targeted analysis and review of specific energy users and moulding processes
- Leverage existing metering infrastructure and data sources such as their DIRIS Metering, electrical cabling, MODBUS devices and IT infrastructure
- Link Key Performance Indicators (KPI) to waste processed and materials recovered and re-sold
- Build virtual meters for devices through the use of the ICIS AdvanTech I/O modules with MODBUS removing the need for new automation infrastructure

By utilising our approach in leveraging the new and existing meters with the ICIS virtual metering for equipment and energy flow, the ICIS solution was deployed over a number of weeks to the organisation. Thorntons now have complete transparency of energy used in each of their facilities with the aid of dashboards, energy maps and analysis tools.

The Projects

Using the information provided by the ICIS platform, Thorntons can confidently engage in a number of energy reduction projects ranging from large scale capital expenditure ones to free system and work practice changes.

A small example of some of the projects implemented are:

- Load Scheduling: Saving over 20% on Billing/Year
- Equipment Scheduling: Saving the 15% at each facility

The Results

The results achieved by Thorntons show clearly the benefits of using the ICIS platform as opposed to a traditional metering solution.

- A reduction of over 50% in capital expenditure by using ICIS and our MODBUS metering system in comparison to alternative systems
- Zero plant downtime for the installation and configuration of the ICIS platform
- Identification of energy users and projects within weeks of the ICIS deployment
- A reduction of over 15% on their yearly energy spend post reduction projects
- ICIS identified inefficient processes, operational activities and equipment that was using excessive energy and causing the facilities equipment to run idle while not in use

The ICIS platform now provides Thorntons with a targeted analysis toolset that is easily expanded upon. Weekly energy usage and cost reports in conjunction with baseline information is generated that enables management to keep an active view on the facility which they now incorporate into their standard facility business meetings.

The Future

Thorntons continue to utilise and expand the ICIS platform and are now on target to achieve their energy reduction targets through the implementation of projects such as load shedding, equipment control and live max demand alerting that will reduce energy usage from the grid. The ICIS platform has provided a greater understanding of energy usage and the costs associated with it for the each of the facilities. Thorntons continues to strive in its continuous improvement programs through the use of various ISO standards for waste management and will now be targeting itself with achieving **ISO 50001** certification for energy management, with the ICIS platform acting as its driving force behind the monitoring and analysis required to achieve this goal.

About Us

ICIS have been providing sustainability software solutions since 2007 and are the market leaders in virtual metering technology. For further details visit www.icissoftware.com

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