



ENERGY MANAGEMENT SYSTEM (EnMS)

FELTEX AUTOMOTIVE TRIM – DURBAN

Vehicle Component Supplier
2013

BACKGROUND

Feltex Automotive Trim Ltd is a leading supplier of a wide range of quality automotive acoustic and trim components, including carpets, various compartment insulators, parcel shelves and wheel arch insulators. One of their plants is located in Jacobs, Durban South, KwaZulu Natal.

Heat is used in various stages within the manufacturing process, including heating and forming of fibre sheets under pressure, and pre-heating of materials used in floor carpet manufacture before layering and pressing via banks of heating elements. Press mouldings are water cooled via a centralised chiller system, and fumes produced in the process are extracted via hood and extractor fan systems. Certain products are trimmed using high pressure water-jet cutting units. Compressed air is supplied via a centralised compressor, and lighting is provided by fluorescent tubes.

Feltex Durban underwent an energy audit in February 2012 as part of the National Cleaner Production Centre of South Africa (NCPC-SA)'s Resource Efficiency and Cleaner Production Programme. The purpose of this was to help Feltex to characterise energy usage, determine Significant Energy Users (SEU's), and to identify opportunities for energy consumption reduction within the plant. The audit identified the need to address energy management systems within the plant, and a recommendation was made to strengthen the energy management capabilities of the plant.

This prompted Feltex to adopt an Energy Management System (EnMS) through the Industrial Energy Efficiency (IEE) Project, as implemented by the NCPC-SA in conjunction with UNIDO. Feltex's company engineer attended the IEE Expert Level training from November 2012 and successfully completed it in November 2013. This prompted the development of an energy policy in the early stages of the EnMS programme.

The endorsement of and commitment to the programme by Feltex's top management was a key benefit of this.

Key findings / savings table

Implementation Period	2013 to 2014
Number of projects	6
Energy savings in KWh	1,070,000 kWh per annum
Payback period in years	<12 months
GHG Emission Reduction (ton CO _{2e})	1,024 tonnes CO ₂

IMPLEMENTATION OF AN ENERGY MANAGEMENT SYSTEM

An energy policy was drafted and adopted, and an energy team was established. Each member of the team was assigned specific responsibilities and given clear mandates regarding utility efficiency and energy management. A decision was taken to implement mandatory targeted training for all energy end-users. To this end a needs analysis and skills assessment were done to determine the content of the training, and content specific to different functions was developed.

IMPLEMENTATION CHALLENGES

The determination of a key driver as the primary influence on the level of energy usage and against which performance could be measured, proved challenging as the development of a realistic baseline was difficult. A more rigorous meter reading procedure, combined with a specific weekly production monitoring initiative, meant that the relationship between production and energy usage could be modelled using regression analysis techniques.

SUMMARY OF INTERVENTIONS.

System	Intervention	Energy saving per year
Taca moulding section presses	Thermal insulation of the press housings to minimise unnecessary heat wastage to atmosphere	140,000kWh
Autoline press and chiller systems (two projects)	Insulation of the heating plate to minimise unnecessary heat loss to atmosphere Insulation of suction-side pipework on the Autoline chiller system	18,500kWh
Lighting retrofit	Replacement of dated fittings with modern equivalents; more appropriate switching arrangements; making optimal use of daylight.	732,000kWh
Compressed air programme	Optimising compressed air usage through employee awareness; reduction of consumption at point of use; optimisation of system including leakage reduction; replacement of compressors.	44,100kWh
Unused equipment	Switching off unused equipment	135,400kWh

LESSONS LEARNED

- **Leadership support** at all levels of the programme is a prerequisite.
- **Composition of energy team** – it is important to involve people from a wide range of backgrounds and skill-sets.
- **Analysis of key data** (production and energy data) is vital in the identification of opportunities.
- **Many opportunities** exist for energy saving with little or no implementation cost.
- **Linking of data** - It is vital to link the business case to key business drivers and to highlight any additional benefits that the company may derive through the uptake of energy management best practice.



Enquiries



For more information about the training workshops and participation opportunities:
www.iee-sa.co.za • Tel.: 012 841 2768 (Pretoria) 021 658 3983 (Cape Town) or 031 242 2365 (Durban)

For more information about partnership opportunities: www.unido.org • Tel.: 012 394 1567 (Pretoria)