

Case Study - Accelerate Energy Challenge

Automotive supply chain network

The Project

The Accelerate Energy Challenge, a £450,000 project, was setup to help 25 West Midlands small to medium sized enterprises, (SMEs), in the automotive supply chain to compete more effectively in the world's most demanding global industry. Such companies are particularly affected by increasing competition for business from abroad and rising energy and raw material costs.

The primary focus of this project was to reduce wasteful consumption and improve energy and resource efficiency. Companies with a high energy and resource spend were specifically targeted to participate in The Challenge.

Partners

The Accelerate Energy Challenge was funded by Accelerate, Advantage West Midlands, and the ERDF. This enabled Pro Enviro to ask for a minimal contribution from companies, who typically paid only £1,500 for participation in a project lasting one and a half years. Participant companies also contributed time and expertise into the project.

Completion

A number of innovative techniques were utilised to ensure participants gained the greatest possible benefit from The Challenge, which was undertaken in two distinct phases.

Energy and Resource Monitoring

- Initial review of energy and resource consumption and efficiency through a site visit audit.
- Utilisation of EnviroTracks[®], Pro Enviro's unique, registered process for footprinting the energy consumption of a company over time. Particular effort was applied to identifying out-of-working-hours and non-productive energy consumption.
- Normalisation of energy utilisation as a function of production or turnover to complement the EnviroTracks[®].
- Completion of an Accelerate Business Diagnostic and Benchmark as a means of identifying the current position of a company.
- Formulation and agreement of an energy and resource efficiency improvement action plan with each participant, for implementation within the lifetime of the project.

Energy and Resource Efficiency Improvements

- Implementation of an Energy Champion / Energy Team within each participating company and the transfer of knowledge through regular on-site meetings guided by one of Pro Enviro's experienced consultants. This empowered the Energy Champion / Energy Team to develop their own methods for improving energy and resource efficiencies.
- Utilisation of Pro Enviro's innovative web-portal to enable participating companies to:
 - utilise a members section where they can view private company information including:
 - historic EnviroTracks[®] to easily monitor their reducing energy consumption over time;
 - review and work through their evolving action plan to achieve greater energy and resource efficiency;
 - learn new ideas and techniques for monitoring, targeting and improving energy and resource efficiency through Pro Enviro's innovative Learner Management System[®];
 - network and share ideas and experiences of energy and resource efficiency schemes and projects;
 - view case studies of projects undertaken by companies with the aid of Pro Enviro. Of particular interest are kWhr, raw material and cost savings achieved along with associated payback times;
 - stay up-to-date with latest events and developments in The Challenge.
- Facilitation of a quarterly Challenge Network Meeting to enable closer collaboration between participating companies. At each meeting a set of three presentations relative to the preferences of attendees were provided by industry experts.
- Close collaboration with participants to enable the highest priority improvements from the initial energy and resource efficiency action plan to be targeted. Cost savings and pay-back periods were calculated by Pro Enviro for each project.
- Advice on funding mechanisms available through Accelerate and other programmes for energy and resource improvement projects, and assistance in submitting funding applications.

Energy and Cost Savings

- Completion of a second Diagnostic and Benchmark to identify improvements in performance as a result of participation in The Challenge. This complemented the ongoing monitoring of energy and resource consumption.
- Calculation of savings achieved in kWhr, £s and tonnes of CO₂. Comparison of anticipated savings to actual figures.
- To ensure sustainability of efficiency improvements, a future action plan was constructed for each company at the end of the Challenge covering the following 3 to 5 years.

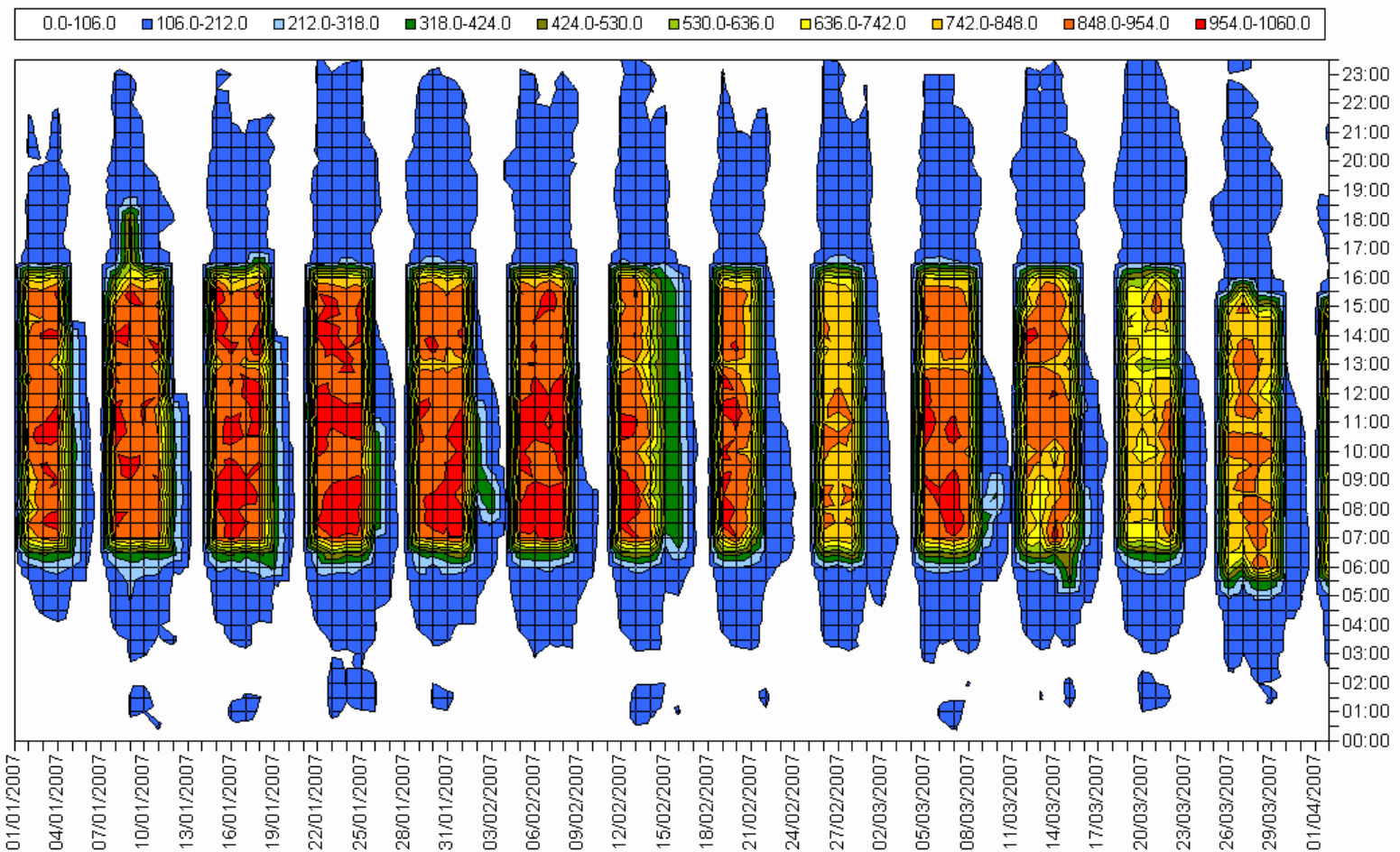
The Benefits

25 West Midlands benefited from bespoke monitoring and targeting of energy and resource consumption and identification, prioritisation and implementation of projects to improve efficiencies and reduce waste in these areas. Funding for such project ensured that paybacks were less than two years and less than one in the majority of cases. The Challenge objectives listed below were exceeded:

- 125 Jobs Safeguarded;
- 50 Jobs Created;
- £5,000,000 of New Business Generated
- £6,250,000 of Safeguarded Sales

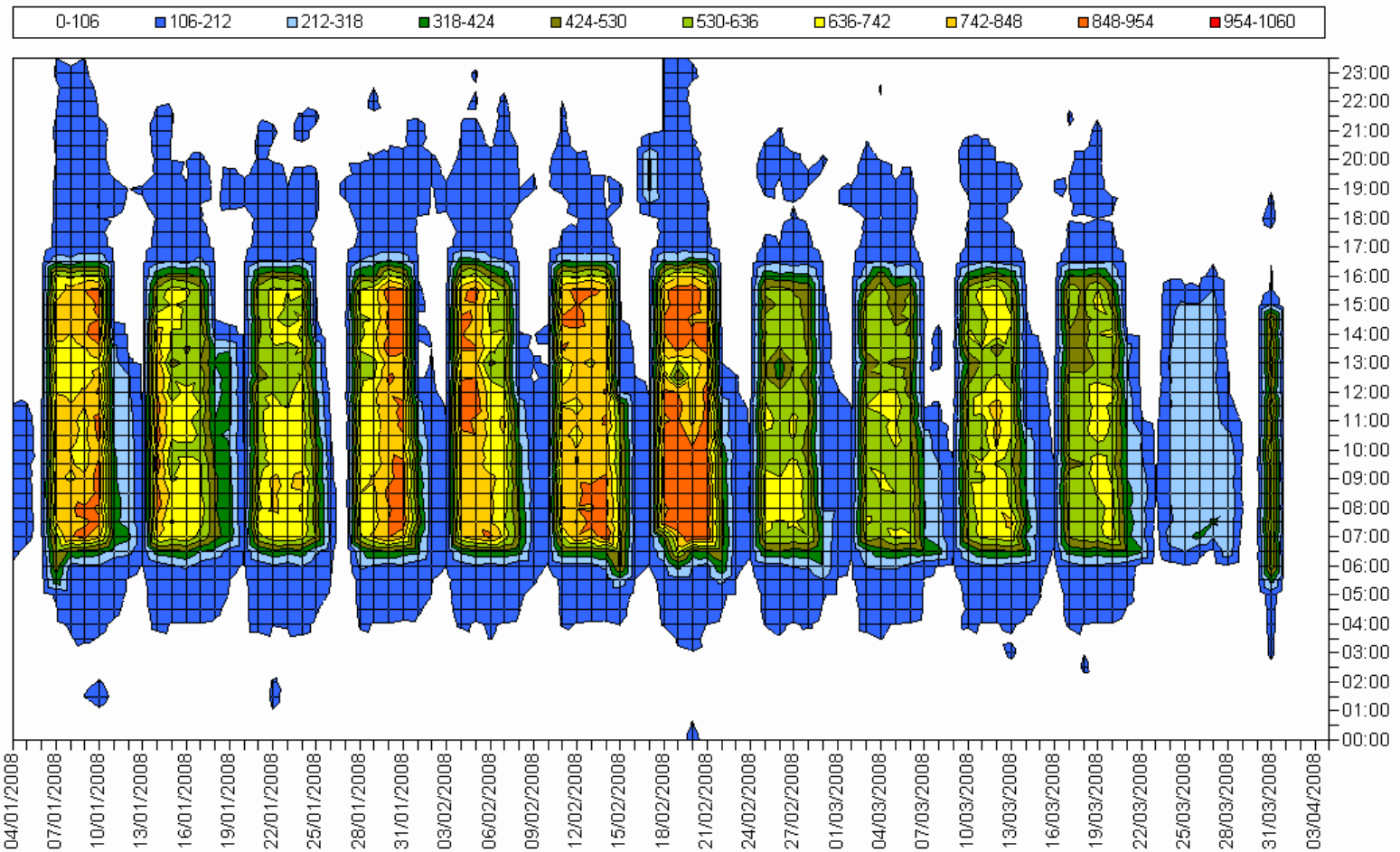
One participant in the project, Brockhouse Group managed to save £25,000 on its annual electricity costs alone, with significant savings also made through improving gas consumption efficiency and resource utilisation.

Pro Enviro EnviroTrack - Brockhouse Group (142364500005)- EnviroTrack From Jan07 To Mar07, kWhr Per 30 Minute Period





Pro Enviro EnviroTrack - Brockhouse Group (142364500005)- EnviroTrack From Jan08 To Mar08, kWhr Per 30 Minute Period



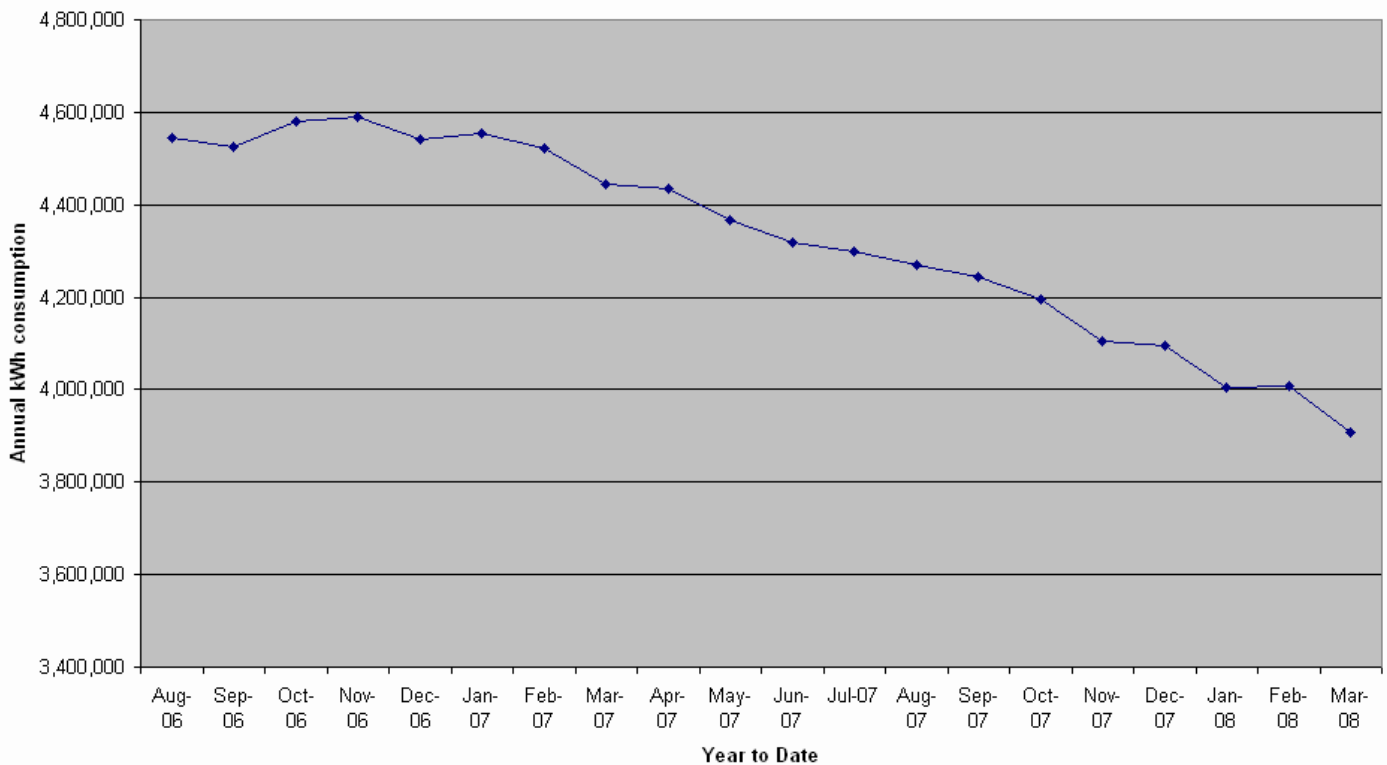
EnviroTracks displaying Brockhouse's changing electricity consumption pattern between January-March 2007 and 2008

Reduction of electricity consumption

The consumption patterns for each participating company were monitored closely throughout the lifetime of the project. A simple measure of year to date electricity consumption (kWh) ending 31st January 2007 was compared to year to date electricity consumption (kWh) ending 31st March 2008 with some pleasing results:

| Sector | Saving in kWhr | Saving in kWhr (primary) |
|-----------------------|------------------|--------------------------|
| Forging | 646,388 | 1,680,608 |
| Plastics | 18,833 | 48,965 |
| Ferrous Castings | 19,838 | 51,579 |
| Anodising | 293,720 | 763,673 |
| General Engineering | 6,833 | 17,766 |
| Precision Engineering | 10,360 | 26,936 |
| Polishing and Plating | 42,229 | 109,795 |
| Precision Engineering | 48,199 | 125,317 |
| TOTAL | 1,086,400 | 2,824,639 |

Brockhouse Year To Date Electricity Consumption in kWh



Year to Date Electricity Consumption in kWh displaying the continuing reduction in Brockhouse's electricity consumption between the year ending August 2006 and year ending March 2008

Through the Accelerate Energy Challenge, we have facilitated a number of innovative and successful one-off efficiency improvement projects. These are listed in the table below along with calculated annual savings in kWhr (primary), tonnes CO₂ and tonnes C.

Calculated energy savings achieved through 'one-off' projects identified and implemented through Accelerate Energy Challenge

| Sector | Project Undertaken | Saving in kWhr (primary) | Saving in tonnes CO ₂ | Saving in tonnes C |
|-----------------------|---|--------------------------|----------------------------------|--------------------|
| Forging | Compressed Air Controls | 1,053,000 | 175 | 48 |
| Forging | Water Tower Controls | 1,134,640 | 188 | 51 |
| Ferrous Castings | Repairs to Compressed Air Systems | 113,438 | 19 | 5 |
| Anodising | New Rectification Equipment | 247,415 | 41 | 11 |
| Forging | Oil Quench | 1,612,780 | 268 | 73 |
| Forging | Water Quench | 784,680 | 130 | 36 |
| Precision Engineering | Reduce Non-Productive Machine Operation | 142,350 | 24 | 6 |
| | | | | |
| TOTAL | | 5,088,303 | 845 | 231 |