

Energy Conscious Organisations - Selection of Case Studies

• Manufacturing and Engineering

Imerys Minerals Ltd

Sector: Industrial Mineral Processing

Requirements: Energy Reduction Programme at five UK sites
Services provided: Facilitation, identification and implementation of energy saving projects
Provider: Imerys I-Nergize teams
Achievements: The plant roadmap shows a potential saving of **6% of total energy** purchased
Opportunity: Systematic focused multi-team effort to identify, evaluate and implement energy saving projects



Transferable Principles

- Focused investigation by in-company experts who are external to site
- Combination of experts with on-site staff as a team
- Proven methodology, approach and actions
- Identify, evaluate, prioritise, implement

Critical Success Factors: Proven methodology. Clear ownership. Top level support.
Agreed actions in specific timescales.

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Ibstock Brick

Sector: Manufacturing - high volume, energy intensive

Requirements: Demonstrate energy and carbon reduction
Services provided: Awareness and training for ISO50001 Energy Management
Provider: Mulholland Energy
Achievements: **17% less carbon** per tonne of production compared to 2015 baseline
Opportunity: To reduce energy consumption by engaging significant energy users as part of ISO 50001



Transferable Principles

- A 'people-first' approach by applying ISO 50001 across the business.
- Identification of Significant Energy Users who were given specific training.
- Awareness raising for All Energy Users.

Critical Success Factors: Top management support. Correct application of people clauses in ISO 50001 including competency, training, awareness and communication

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Tata Steel

Sector: Steel production

Requirements: Implement energy efficiencies through people and processes

Services provided: Behavioural analysis, change programme development and implementation

Provider: npower Business Solutions

Opportunity: Senior management team leading and supporting a data driven programme



Transferable Principles

- Focus on people and process, a thematic analysis approach (using a semantic questionnaire) and behavioural model development.
- Real-time feedback on production line energy use via a smart dashboard in different areas to heighten focus during times of variable / semi-loaded production when the plant was found to be most inefficient.

Critical Success Factors: Sub-metering and software (to identify opportunities for, and measure the impact of, interventions).
Board level credibility (financial and carbon savings had to be 'actual' data-driven and not self-reported measures).

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Rolls-Royce, Bristol

Sector: Aerospace

Requirements: Demonstrate energy reduction

Services provided: Behaviour change programme

Provider: JRP Solutions

Achievements: **8.9% savings delivered**

Opportunity: Multi-team behaviour change energy savings programme based around an ISO 50001 system.



Transferable Principles

- A holistic and coordinated multi-intervention-based behaviour change programme
- Creation of an EnCO Charter at the outset ensured full buy-in from site leadership
- Ownership of energy responsibility through Energy Champions for each building
- Energy Champions community where 'how to do it' was demonstrated in the workplace
- ECM Interventions log of all improvement opportunities managed through software and reporting tool

Critical Success Factors

- Empowerment and quick action processes (e.g. funding immediately available for all <£1k ECM's)

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Naylor Industries plc

Sector: Manufacturing products for construction and retail

- Requirements:** To promote environmentally conscious behaviours in energy, waste reduction and resource efficiency
- Services provided:** Tools and training to help employees save energy at work and at home through the Greenwise Initiative and EHS Roadshow
- Provider:** In-house teams led by Naylor EHS Department
- Achievements:** Consistent, longterm **monitoring of energy use** and feedback to divisional management. Introduction of an **alert card system**.
- Opportunity:** Raising energy awareness as part of a broader EHS programme aimed at all employees



Transferable Principles

- Use existing programmes/information highways
- Focus on employees operating energy intensive plant/equipment
- Promote open dialogue
- Formal feedback system to capture and evaluate suggestions for improvement

Critical Success Factors: Driven by EHS and Marketing Departments working together. Making it personal to employees' home life. Top down support.

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Furniture Manufacturer

Sector: Medium-sized manufacturers running a one or two shift operation (not 24/7)

- Requirements:** To reduce electricity consumption
- Services provided:** ESOS Energy Audit Report advising behaviour change
- Provider:** Mulholland Energy
- Achievements:** **25.4% reduction in electricity** in 6 months
- Opportunity:** Base load reduction in electricity during non-production hours by changing procedures to switching equipment on/off.



Transferable Principles

- Use half hourly data to identify possible savings during quiet shift.
- Systematic procedures to power down lights and equipment during non-production hours.

Critical Success Factors: Top level commitment. Site ownership at department level
Team work to rapidly implement standard operating procedures.

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Numatic

Sector: Manufacturing

Requirements: eLearning programme to support wider initiative
Services provided: 'Be Energy' - Energy Awareness eLearning programme
Provider: JRP Solutions
Achievements: Engaged staff in Numatic's energy saving strategy, contributing to **savings on gas of 20%** over 12 months period.

Opportunity: To clearly outline the company objectives
On the importance of saving energy on site



Transferable Principles

- Raising of awareness through a detailed, tailored energy training course, delivered via eLearning
- Energy 'Quiz' to pass course to ensure understanding
- Ownership of the wider initiative by Energy Champions

Critical Success Factors

- Specific filming of senior leadership team members on the company's energy objectives for the eLearning course

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● Utilities

Severn Trent Water

Sector: Water, utilities

Services provided: Energy Champion training and coaching
Provider: JRP Solutions
Achievements:

- Greater team cohesion
- Improved engagement with energy opportunities
- Better understanding of specific technologies
- Production of a 'live' energy action plan
- **Over £100k potential savings identified** as part of the course and £m's savings implemented

Opportunity: Enabling a more focused approach to saving energy, including behavioural opportunities



Transferable Principles

- 6-month programme of Energy Champion training (including full time Energy Managers) covering behavioural and different technical approaches and techniques for identifying opportunities
- Understanding gained through real on-site exercises to help find and deliver energy savings which helped hone the skills needed to manage energy well
- Metrics linked to bottom-up savings trackers and number of ideas generated

Critical Success Factors

- ECM Interventions tracker of all improvement opportunities through to completion managed through software and reporting tool.

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● Commercial, Retail and Logistics

Heathrow Airport

Sector: Airports: commercial buildings, retail concessions and leases

Requirements: Energy reduction, from 2007 to 2020 (& beyond)
Services provided: Energy management through people
Provider: Discovery Mill
Achievements: 1) **15% savings** delivered across airport operations
2) **24% savings** achieved within retail fit-outs
3) Shared vision for business partners for the future

Opportunity: Need to demonstrate leadership in energy and sustainability



Transferable Principles

- Leaders are the change-facilitators - they must show commitment, plan and facilitate change.
- Local energy users are the change-makers - they must make their own changes by focusing on their tasks and using their local knowledge and expertise.

Critical Success Factors: Balance of solutions. Top-down bottom-up. "Win Win".

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Vanderlande Industries

Sector: Logistics, materials handling, manufacturing

Requirements: Develop an energy management system
Services provided: ISO 50001 through people and training
Provider: Discovery Mill
Achievements: **ISO 50001 certification** in fewer than 6 months

Opportunity: Need to respond to stakeholder pressure to gain ISO 50001 certification



Transferable Principles

- Colleagues support programmes which have a shared plan owned by the people involved.
- Top management look for business benefits; colleagues buy into the co-benefits.

Critical Success Factors: Collaboration. Celebration. "Win Win".

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● Public Sector, Healthcare and Education

Copthorne Barracks, Shrewsbury



Sector: Ministry of Defence (offices)

Requirements: Reduce energy usage, with limited budget
Services provided: Behaviour change course for staff volunteers
Provider: Speedwell Energy Services
Achievements: **10% electricity & 20% gas usage reductions**
Opportunity: Training to save energy as a no/low cost option (as capital funding is limited)

Transferable Principles

- Training programmes should allow all colleagues to actively participate and be empowered to take control of their energy usage.

Critical Success Factors: Ask for volunteers; training content to relate directly to the staff involved (and their home environments). Don't use industry or technical jargon.

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North Bristol NHS Foundation Trust



Sector: Healthcare, hospitals

Requirements: Reduce energy/waste consumption by employee engagement
Services provided: Full campaign support/services
Provider: Mulholland Energy (NIFES)
Achievements: **Net savings of £212,000** over three years
Opportunity: To reduce energy, water and waste across the Trust by engaging 10,000 staff

Transferable Principles

- A clear strategy, supported by senior management
- Appointment of champions across the estate supported by training and walkabouts, supported by a comprehensive and sustained awareness initiative aimed at all staff
- Applicable where energy is used by thousands of staff where SEUs are hard to identify

Critical Success Factors: Top level support. Training 210 environmental reps.
Awareness-raising of all staff

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Aston University

Sector: Higher and Further Education

Requirements: To achieve meaningful carbon emissions reduction while organisation continues to grow

Services provided: Gaining senior level commitment and engagement to the University team's sustainability and behaviour change programme

Provider: Mulholland Energy on behalf of The Green Consultancy - 2015

Achievements: **30% carbon emissions reduction**

Opportunity: Vice-Chancellor and senior management team leading and supporting a culture of carbon saving across the University



Transferable Principles

- Gain senior level engagement and commitment to enable implementation of a low carbon strategy which includes effectively engaging staff and students

Critical Success Factors: Vice-Chancellor leading initiative with meaningful support by senior management

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Cheney School, Oxford

Sector: Education: schools

Requirements: Consumption monitoring and reduction

Services provided: Operational and Behavioural Change

Provider: REDUCE YOUR USE

Achievements: **Overall energy savings of 16%**

Opportunity: Data driven programme which identified and delivered Multiple interventions



Transferable Principles

- Analysis of consumption patterns using energy data, particularly to reduce consumption out of hours; "When you have eliminated the impossible, whatever remains, however improbable, must be the truth" (Sherlock Holmes).

Critical Success Factors

- Close monitoring of data and deep dives to understand consumption patterns.

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● Hospitality

Mitchells & Butlers plc

Sector: Hospitality: hotels, pubs, bars, restaurants

Requirements: Investigate the potential of energy savings through behaviour change while maintaining guest satisfaction

Services provided: Initial R&D, M&V plan, workshops, training, behaviour change campaign and analysis.

Provider: Mitchells & Butlers plc.

Achievements: **20% energy reductions, savings of £10M**

Opportunity: Detailed planned approach to optimise energy use through multiple small interventions



Transferable Principles

- Strong communication supported by data
- Long term training programme
- Ownership by Energy Champions
- An engaging programme of interventions

Critical Success Factors

- Initial assessments of people, practices and culture to identify optimum approach

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Bourne Leisure Limited

Sector: Hospitality

Requirements: 1% per annum reduction in energy consumption
Services provided: Behaviour Change Programme focused on Site Energy Champions
Provider: Sam Arje, Energy Manager, Bourne Leisure Ltd
Achievements: **6.7% reduction in Year 1** and ongoing savings in Years 2 and 3



Opportunity: Implement a holistic long-term approach to Energy saving reductions across the estate

Transferable Principles

- Employee engagement as part of a comprehensive energy management strategy.
- Applying obliquity to focus on visitor comfort and experience with energy savings as a co-benefit.

Critical Success Factors

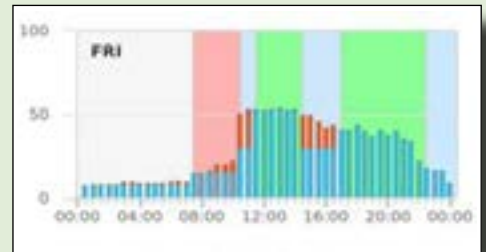
- Appointment of Energy Management and Sustainability team supporting a network of champions taking local action, enabled by training and regular communications.

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Gala Bingo

Sector: Leisure / Entertainment

Requirements: Reduce consumption on a limited budget
Services provided: Behaviour change programme with site reporting
Provider: Matthew Murphy, Energy Manager
Achievements: **£1.3m saving on energy costs** in year 1
With scheme still in operation after 10 years



Opportunity: Energy Champions driven behaviour change programme using detailed energy data

Transferable Principles

- Energy Champions bonus scheme linked to achievable calculated targets for each club based on the surveys and data analysis.
- Single page weekly report that gave the club performance against their calculated targets plus weekly reports of the performance of their region in a company league table, and a league table of their own clubs.
- From these reports two clubs that were underperforming and one that was doing well against targets would receive a call from the FD in a motivational way.

Critical Success Factors

- Getting the buy-in from the club managers and appointment of an Energy Champion for each club.

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• Property

Landlord (Name Withheld)

Sector: Property

Requirements: To maximise energy savings with no capital cost

Services provided: Full M&E Operation and Maintenance

Provider: Withheld

Achievements: In the 12 month period the building's **CO₂ emissions reduced by 29.2%** with **cost savings** of approximately **£44,000/year**

Opportunity: Every contract to have its own Carbon Reduction Plan



Transferable Principles

- Make sure that the initial discussions involve the right people to get the buy-in straight away.
- There then needs to be regular feedback on progress, whether that comes from the EnCO lead or the sponsor directly.

Critical Success Factors: Plan to be collated centrally so that innovation and best practice can be disseminated. Log every action. Regular feedback on progress.

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