



## ISO 14001 – Environmental Management

# CASE STUDY JOHNSON MATTHEY

### Summary

#### Needs

- To significantly reduce the amount of raw materials used
- To ensure compliance with environmental legislation
- To control and limit the negative impact the business has on the environment
- Reduce the risk of potentially costly pollution incidents
- Continually improve business operations and save costs associated with wastage

#### Benefits

- 33% reduction in proportion of new precious metal in every kilogram of precious metals shipped as product
- 13% reduction in electricity per unit of product shipped
- 50% reduction in water consumption
- 37% reduction in number of rubbish bags generated daily
- 85% reduction in number of bin liners placed and buried as landfill daily
- 20% reduction in packaging weight

### Background

In 2007 the chief executive of Johnson Matthey, a worldwide precious metals and advanced materials company, challenged the company to 'halve the amount of raw materials used and remove waste while doubling profitability'. This new sustainability initiative was a ten year goal linked to the forthcoming 200th anniversary of the company in 2017.

ISO 14001 is an internationally accepted standard that defines requirements for establishing, implementing and operating an environmental management system. It was by achieving compliance that the chief executive's challenge could be met.



Johnson Matthey

The Noble Metals (NMs) business unit at Johnson Matthey comprises 200 personnel working with solid forms of the platinum group metals, exporting precious metals, sheet, wire, fabrications, coating, catalytic fabrics to all parts of the world. Noble Metals chose to interpret and communicate the new sustainability goals as 'sustainability with profitability', exploiting the clear link between good sustainability and environmental practice and the health of more traditional, financial measures of success for the business.

## Customer Needs

As a starting point the Noble Metals unit created a 'common sense' list, utilising the 'aspects and impacts' register that forms part of the ISO 14001 requirement. The list was modified to take into account other considerations such as key consumable and service spends. This approach enabled Noble Metals to produce a priority list of the top 10 impacts to focus on. Operations director, Dr Mark Doyle acknowledged that, "By improving performance in each of these areas, we have been able to improve both the sustainability and profitability of our business. Something we were keen to progress quickly."

## Benefits

The amount of electricity associated per unit of product shipped has reduced by 13% in the two years following implementation of the standard. This is a significant achievement as the aim is to reduce energy usage by 20% over five years.

Natural gas reductions of over 40% have also been achieved over a period of 3-4 years by utilising on site CHP steam instead

of new gas. Water consumption has been reduced by 50%. Having achieved their target in this area, Noble Metals is now working to further reduce water consumption.

Noble Metals no longer land fills metal or ceramic waste and has reduced the amount of solid waste sent to landfill by more than 66%. The company is set to halve the amount of solid waste generated overall in the coming year. Airblade hand dryers have eliminated the need for paper towels and a successful 'own cup' trial for coffee vending has resulted in the complete removal of paper cups from the business.

The amount of paper purchased has been halved within a year with obvious cost saving and environmental benefits. Hybrid boxes have replaced wood-only boxes which has resulted in a 20% reduction in packing weight. This has had a positive impact on air-freight costs.

In addition to the achievements detailed above Dr Doyle explains that Johnson Matthey's Noble Metals unit has invested in new product technology and with key partners developed a market leading position for a catalyst for use with one of its other products that destroys nitrous oxide emissions. Nitrous oxide is a greenhouse gas 310 times more damaging than CO<sub>2</sub> and covered by the Kyoto protocol. It is estimated that through current installations alone this catalyst will reduce emissions by 7 million tonnes of CO<sub>2</sub> (equ.) per year.

The operational changes and new product changes represent a benefit to the business running into several hundred thousands pounds.

Dr Doyle credits the Noble Metal employees with a lot of the achievements to date. The commitment to various changes

implemented is most evident in the 'Switch Off' campaign – a continuing periodic out of hours check on electrical items left switched on out of hours. Seven successive reductions over the last couple of years demonstrate staff buying-in on an individual level. In addition to this the whole-hearted adoption of waste recycling and the work on raw material (metal) reductions have encouraged shop floor involvement.

## Summary

'The Noble Metals experience was successful due to a reservoir of goodwill which existed within the work force regarding sustainability ideas,' continues Dr Doyle. 'The sustainability message has actually encouraged the commitment of individuals to a new cause'.

Dr Doyle notes that environmental targets are sometimes regarded as an after thought to other business concerns, but the notion of sustainability allowed Noble Metals to bring together environmental and business metrics and highlight the clear link between environment and business performance. This logic struck a chord with staff, who responded with enthusiasm.

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