

## Cutting energy use and costs at a Cambridgeshire SME

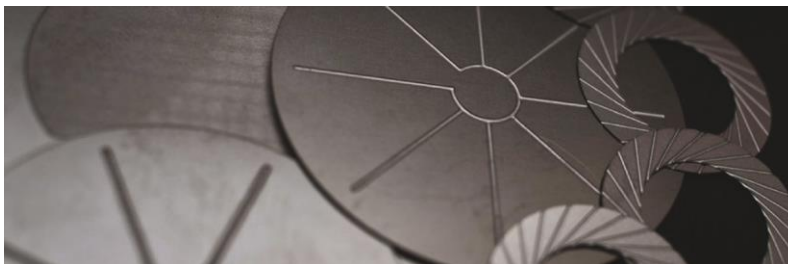
### Photofabrication

*(www.photofab.co.uk) is a specialist photochemical machining company that employs around 50 people and produces intricately shaped metal components. Services include chemical etching, plating, laser cutting and metal stamping. Its operations range from prototype to production in aerospace, automotive, communications, defence, life sciences, medical and security. IfM ECS worked with the firm through the part ERDF-funded PRISMS programme which is supported by the Centre for Industrial Sustainability. PRISMS aims to transform the growth prospects of manufacturing start-ups and SMEs in the East of England by helping firms grow revenues and profitability, make products and operations more sustainable, and create and safeguard jobs. Read more information on the PRISMS program in the Sustainable Business Tools section of this report.*



### The challenge

The company wanted to explore the potential to cut their energy bill by: reducing energy use for the etching tanks; reducing lighting bills; moving away from using compressed air; and implementing a formalised energy management policy.



### Approach

IfM ECS and Ecopare, a company that specialises in practical energy management solutions for businesses, worked with Photofabrication to create an energy use report that identified potential savings. Energy use was then monitored to assess the savings made. Actions included:

- Etching tanks: rebalancing the weekly start-up cycle for more efficient heating of the tanks; reducing liquid in the tanks to reduce energy consumption; replacing heater elements to bring tanks to the required temperature more quickly; lagging tanks to reduce heat loss
- Lighting: a new lighting strategy was introduced
- Compressed air use: exploring more efficient processes
- Formalised environmental management systems: potential adoption of ISO14001 standard.

### Outcomes

Implementation of energy-saving measures is expected to save the firm around £30,000 a year. Measures include: eliminating the need to heat the etching tanks; reducing lighting bills by about 60% with the introduction of LEDs; and, purchasing a new compressor resulting in a recurring energy savings of £8,000 per annum (the capital cost was recovered in eight months). As a result of all these actions, the power consumption per sheet etched has fallen from 12.5 kWh to 8.4 kWh in the last 12 months – this is an improvement of 32.7%. In addition, water usage has become more efficient, including using recycled water, and a large investment in effluent treatment means a reduction in metals (nickel, copper, chromium and zinc) in the discharge from 7 part per million to just trace elements. Crucially, all of these improvements can be sustained or enhanced.

### Recommendations

Additional energy savings could be realised with continuous electrical consumption monitoring via a dashboard/portal which would allow for a programme of continuous optimisation of energy. Further energy savings could potentially be achieved by reusing waste heat from existing processes or adding a combined heat and power system which could produce 'free heat' to further reduce the electricity bill by up to 30%.

### Wider lessons

IfM ECS helped Photofabrication establish strategic priorities for the medium term; ensured senior management's direction was focused; prioritised issues and created action plans. The firm is reducing its lead time to offer a 3-day premium turn-around to all customers, it has set targets for key performance indicators and runs quarterly projects to achieve them, and it has invested in improving staff development, customer service and new processes. Paul Rea, operations director, says: "We have worked closely with IfM ECS and we see the benefits. It allows us to tap into resources we don't have, to see things in a different way and to make decisions on that basis."