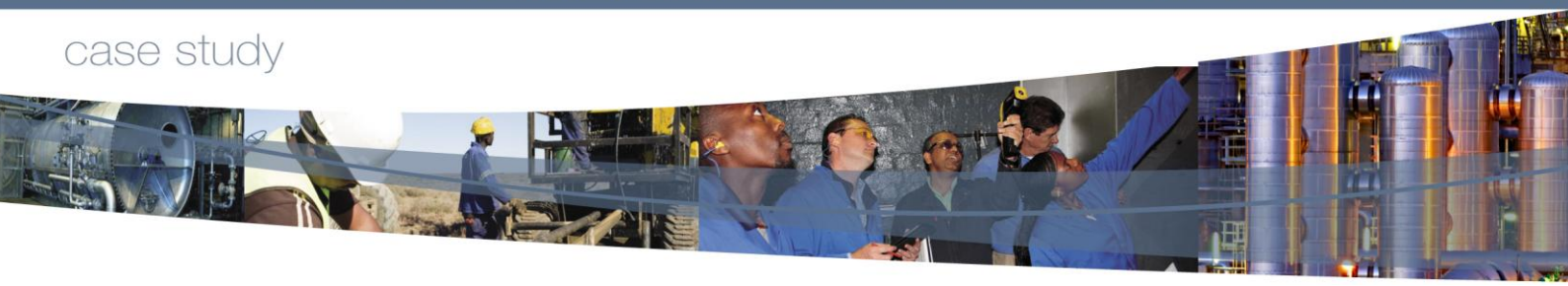
case study



ENERGY SYSTEMS OPTIMISATION in an SME

Precision Press

March 2013

THE ISSUE AND MAIN FINDINGS

Precision Press is a medium-sized metal pressing automotive parts manufacturer which manufactures a wide range of automotive parts and components. They have 163 employees and are based in Cape Town.

Due to the nature of the machines and processes used to manufacture the parts, technological solutions were very expensive, and focus had to be placed on systems and procedures to reduce the electricity usage and bring the maximum demand energy usage down.

Key findings:
By repairing compressed air leaks, at no cost to the company, and rolling out an awareness campaign at a cost of only R793, energy savings of 117 100 KWH with a value of R 66,265 p/year were realised. The overall payback period was 0.14 months.

ENERGY CONSERVATION OPPORTUNITIES IDENTIFIED

A programme of energy efficiency (and other resource efficiency considerations) was initiated in order to:

1. Create sustainable energy efficiency awareness amongst all employees
2. Reduce the company's electricity bill by 20%

Based on the results of a SWOT analysis and an IEE Project assessment, opportunities for intervention were identified as follows:

Objective Description	Implementation timeframe
Subproject 2: Switching off - hydro-boils, lights & motors (presses) when not in use	1 months
Subproject 3: Compressed air – leak tagging, awareness & sustainable system	1 months

IMPLEMENTED SAVINGS MEASURES

	Capital Cost ZAR	Savings per annum ZAR	Payback Months	Environmental Benefit per annum
Switching-off electrical equipment	793.20	37,699	0.25	55,000 kWh
Repairing Compressed air leaks	0	28,566	-	62 100 kWh
Total	**793.20**	**R66,265**	**0.14**	**117 100 kWh**

Switch-off campaign

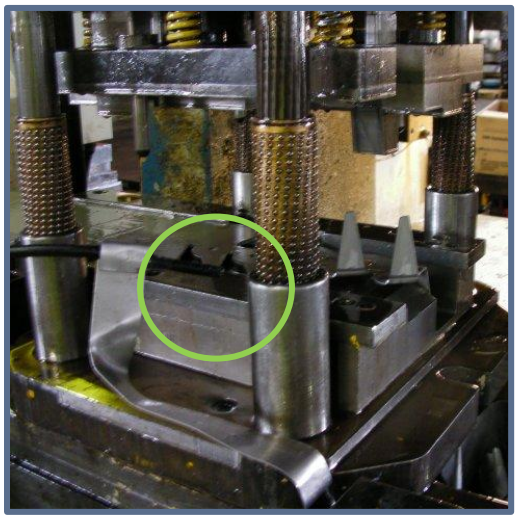
During weekends a base load was measured of around 30kW. This was due to lights and electrical machinery being left on during non-production hours. Automatic timers were installed on the hydro-boils to switch them off. For items that could not be automated due to flexible operating hours, employees such as team leaders and supervisors were given the responsibility of ensuring manual switch-off. Awareness posters were placed near or on all switches and machines. The switching off project has reduced the electricity usage by an estimated 55,000 kWh, which amounts to a cost saving of R37,699.

Standard operating procedures (SOP's) and awareness posters were placed on all machines and at strategic places

Compressed Air

Air leaks frequently occur due the heavy vibration of the machinery during the production process. In this sub-project, all air leaks were tagged and a policy set up to ensure that air leaks are fixed every month. Compressed air was also being used to blow finished parts from the machine into the finished goods bins. This was done for convenience and the operators were unaware of the high costs involved in compressed air usage. Alternative mechanical solutions were implemented and the operators' awareness established. This has produced a saving of 62 100 kWh, which amounts to a cost saving of R28 566.

Compressed air leaks tagging



The inappropriate use of compressed air as it was used to blow parts out of the press. This cost the company an estimated R5000.00 annually

CONCLUSION

A successful and sustainable energy efficiency campaign requires all employees to be involved and aware of the cost implications on operational expenses. The level of commitment and support from the management at Precision Press made the task easier. Precision Press has improved its energy awareness and it can be seen everywhere in the factory. This adds value to the client and improves the competitiveness of Precision Press.

UNIDO Enquiries NCPC NATIONAL CLEANER PRODUCTION CENTRE SOUTH AFRICA

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