



Electroplating enterprise makes impressive savings

Ruhl & Co. GmbH, based in Wetzlar, Germany is an electroplating enterprise, employing 32 people. Electroplating is the process of coating one metal with another (using electrical charges and metal ion solutions) to bestow specific qualities, such as rust and wear resistance. Ruhl & Co. undertake this process in eight automatic treatment plants, with all necessary metal pre- and post-treatments. Their customer base ranges from mechanical engineering to automotive applications.

„Through the REMake voucher we received professional help in finding where we were losing resources. This allowed us to react and make positive changes to save materials and money. Due to REMake, resource efficiency has become a solid component of our long-term planning.“

Frank Benner – CEO, Ruhl & Co.

Electroplating is a resource intensive industry, and each year Ruhl & Co. treats around 2.4 billion metal parts, using 450 tonnes of chemicals, 80 tonnes of metals, and 7,500m³ of water, making resource use a large part of company expenditure.

REMake-Recycling and resource efficiency in manufacturing The REMake project enables manufacturing SMEs to tap into the potential that recycling and resource efficiency can offer in an easy, tailor-made way. With the support of REMake experts, companies can assess their savings potential and can discover in a simple, hands-on manner how material efficiency measures and life-cycle approaches increase their profitability.

demea-German Material Efficiency Agency

In Germany, the scheme is run by the German Material Efficiency Agency (Deutsche Materialeffizienzagentur - demea). A two stage voucher allows for an experienced consultant selected from a demea vetted pool to complete a questionnaire, assessing material efficiency. After completion, the expert can print out a voucher to tackle efficiency problems. Vouchers come in two different funding rates covering 67% of consultancy fees up to €5,000 or 50% up to €0,000.



Resource efficiency audit

Ruhl & Co. wanted to work with REMake to understand if they had a resource efficiency problem and if they could reduce costs. An expert with a background in electroplating performed an audit of facilities and identified areas where savings could be made. The voucher covered €0,050 of the consultancy cost, with Ruhl & Co. paying the rest. Using Material Flow Analysis, the consultant identified that incorrect operation of a de-oiling plant was leading to high resource waste. In particular, chemicals were lost as a result of 'drag out' (remaining on the metal surface) following chemical treatment. There was also a high water loss rate from rinsing treated metals and from improperly constructed bath covers that did not prevent evaporation. Evaluation also identified that a newly planned production hall was to have an inefficient heating system installed.

Suggested solutions

The expert suggested the creation of a newly designed process flow of the deoiling system, coupled with a dragout recovery system to prevent chemical and oil waste. A new rinsing system was installed to reduce water waste. Further water loss was prevented by installing new bath covers to prevent evaporation. The problem of the heating system in the new production building was answered innovatively, with the installation of an under-floor heating system that reused heat emitted by temper ovens used in the electroplating process. The reconstruction of the plants cost around €1,000.

Increasing profit by saving chemicals and water

Through the implementation of the identified resource efficiency measures, the company was able to make large resource savings:

- Preventing the loss of 15,000kg of chemicals;
- Introducing water recovery and management to save 600m³ of water;
- Reducing the consumption of chemicals and water by between 5-8%.
- Saving energy with an innovative heating system.

These solutions reduced the consumption of chemicals and water by between 5-8%. Overall, Ruhl & Co. were able to increase their profits by €0,000 (around 10%), with a return of investment in only 4 months.

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