

## Success Story

Company name: IMR Metallverarbeitungs GmbH

**IMR** METAL POWDER TECHNOLOGIES GmbH

Country: Austria

### 1) Description of the company and energy consumption:

IMR Metallverarbeitungs GmbH is located in Feistritz im Rosental in Austria. The company is part of the IMR Group, which is processing and trading industrial metals and also is active in the field of engineering and process automation. The analysed plant focuses on remelting and alloying of base metals and producing of anodes for the galvanization industry as well as on the production of metal powders for applications mainly in automotive and chemical industry. Every year, several tens of thousand tons of zinc, lead, tin and other base metals are sold. Electricity is the only energy source which is used at the location. The annual electricity consumption is about 2.9 MWh.



Figure 1: The plant of IMR in Carinthia

Electricity consumption	Gas/fuel/heat consumption (specify the type)
2.905 MWh	-

The company was chosen since the company manager and the employees are very motivated to implement energy efficiency measures. The PINE audit at this company has shown that there is always a potential for reducing the energy demand of companies, even if they have already been very active in reducing the energy consumption in the past.

### 2) Description of the activities carried out with the company and the suggested energy savings measures:

After the scouting phase, a comprehensive energy audit was done. During the audit, which included a tour on site, the processes and the single energy consumers as well as the corresponding consumptions were discussed. The company has installed several sub meters which are recording the electric consumption every 15 minutes. In the past, the company has already installed an energy controlling and a load management system.

The main energy consumers are:

- the compressors
- two melting lines with crucible furnaces
- refrigeration dryers
- fans
- the offices.

The building is heated by electric energy (200 m<sup>2</sup>). The production areas are not heated at all.

Main recommendations for improvement:

1. In order to get a better overview of the energy flows and losses respectively, the auditors drew Sankey diagrams. The energy flow diagram of the zinc granulate line shows that there are considerable high heat losses, which are caused by not covering the melting oven.

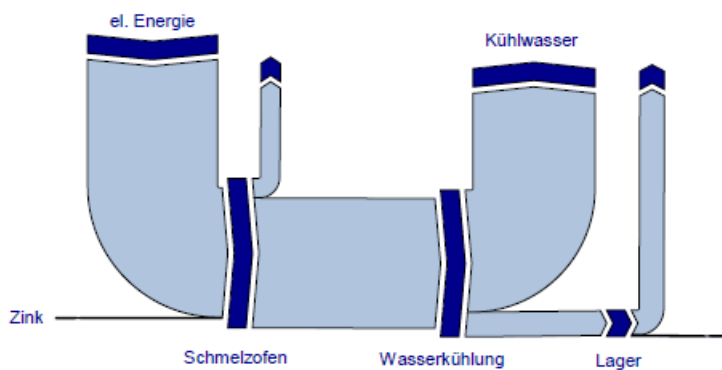


Figure 2: Sankey diagram of one process which was analysed during the PINE audit

2. Another recommendation for improvement which was a result of the energy audit is to make use of the waste heat of the product itself. The metal could be preheated by the product waste heat. Furthermore, the heat could be used for drying processes.
3. The most effective ideas were developed by the plant manager: Optimization of the utilization of the production capacity helped to concentrate the production in one of the two lines only. By creative reorganisation of the process the need for blanketing gas and therefore compressed air to produce nitrogen was significantly reduced.

### 3) The savings:

The company will implement the above mentioned recommendations within the next three years after more detailed planning of the technical installations. The analysis has shown that the potential savings which could be reached by using a lid to minimize the heat losses are about 12% of the annually required energy for melting at the investigated oven. Reusing the waste heat for preheating and drying will have an additional impact on the reduction heat demand of the production. Reorganisation of the process and the reduced need for blanketing gas will reduce the total electricity consumption by about 20%.

	Electricity savings	Gas/fuel/ heat savings (specify the type)
Actual saving	MWh	-
Future saving (in 3 years)	690 MWh	-



*Figure 3: Products of IMR*



*Figure 4: View of metal spraying tower*