

# Energy Performance Indicator Should be Tied to Product Quality

*AluReport talked with Dr. Helmut Kaufmann, COO, about energy efficiency at Ranshofen and the difficulty of finding an appropriate indicator of energy efficiency.*

*AluRep: Mr. Kaufmann, the AMAG Group recently has again successfully gone through an extensive certification process conducted by external auditors. Why is that so important for the company?*

HK: As already explained several times, AMAG sees itself as a premium manufacturer of flat-rolled products, precision cast plate and recycled cast alloys. All these products are manufactured at the Ranshofen location. As we see it, a premium manufacturer should not only provide high-quality products but also should meet the highest demands of modern manufacturing. So it is very important to us to be certified for quality and delivery performance according to ISO 9001 and specific automotive and aviation standards, and also for environmental manage-

ment according to ISO 14011 and for our corporate occupational health and safety management system according to OHSAS 18001. This year we had our energy management system audited for the first time, and I am pleased to report that we were certified right away according to ISO 50001. One more time, it is the integrated approach to the sustainable manufacture of high-quality products that makes us a premium manufacturer, which is confirmed and appreciated by our customers as shown by the most recent independent customer survey (see AluRep 1/2013).

*AluRep: You mentioned the energy management system; in what way is energy use a management control variable?*

HK: The goal of minimizing energy use for the manufacture of a large number of high-quality products at a complex production facility actually should be the ultimate management objective of those responsible for operations. It really makes sense to compare that to nature. In na-

ture, the thermodynamic principle prevails according to which the preferred state or process is that with the lowest energy level. Any other states are unstable or only form an unstable equilibrium.



Dr. Helmut Kaufmann, COO

The same applies to stable, sustainable production at our company. The goal of minimizing energy use at the company requires us to optimize all processes and procedures. If we want to minimize energy use, we must avoid unnecessary activities throughout the entire value chain. We must have short processing times, we must transport goods without any detours, we must manage with the lowest material usage and we must make even better use of our distinctive strengths in recycling.

*AluRep: Is the annual total energy consumption of a plant an appropriate indicator to evaluate the energy efficiency of processes at a company?*

HK: No, it is not, and it is definitely not appropriate indicator for a dynamically growing company such as AMAG with a flexible and customized product portfolio. Right now, this is an interesting point for discussion when formulating a sensible energy efficiency law in Austria and in all other member states of the EU. Reasonable energy-saving targets cannot be easily generalized. It does not make any sense at all to set a target for energy saving in absolute amounts compared to consumption in a reference period because it would destroy any economic growth in Europe, and it would become very difficult to expand production and create new jobs in Austria, as is currently being implemented by AMAG at the Ranshofen location.

Setting a target for energy saving in relative terms, for example, kWh/ton of rolled

product, would not really be a sensible solution, either. As every expert knows, the process chain and thus the energy use for one ton of non-heat-treatable aluminum plate cannot be compared with that of one ton of high-strength sheet. The non-heat-treatable plate is not subjected to any additional heat treatment but is only hot-rolled, whereas, for example, sheets for automotive and aircraft applications are additionally cold-rolled after hot rolling and then additionally subjected to extensive, complex heat treatments and finishing treatments to achieve the desired target properties. So it is quite clear that total energy consumption and the energy consumption per ton will considerably change on a year-on-year basis if the product mix shifts. And that does not say anything about whether the company's energy efficiency performance improved or deteriorated during the period under review. By the way, this is why it is impossible to compare different rolling mills for their energy efficiency performance.

An appropriate energy performance indicator should therefore take into account the amounts as well as the grades produced. It is absolutely essential to think hard about an appropriate indicator to later avoid a great deal of debate during evaluation.

*AluRep: What path will AMAG take?*

HK: Irrespective of energy efficiency legislation, we are going to optimize all production processes for the individual products and make full use of our strengths in recy-

cling, focusing on the product quality demanded by our customers, with minimum energy use.

*AluRep: Has there been a recent change in these quality requirements, and what does that mean with respect to energy use?*

HK: As a result of increased lightweight construction efforts, the call for ever-higher material strength is getting louder. In my view, this will lead to a significant shift to high-strength, heat-treatable alloys where heat treatment plays a major role. Such rolled products often are also surface-treated in the rolling mill (just think of the passivation of automotive sheets), or machined. These value-adding finishing processes provide European manufacturers with potential for differentiation from commodity producers based on their expertise. It is clear, though, that energy use based on one ton of aluminium product will increase through these value-added steps.

To me it is clear that we have to work towards achieving maximum energy efficiency in manufacturing for the reasons mentioned above, if only to serve our own interests; but it would be disastrous if the issue went in the wrong direction because of half-baked legal requirements and the manufacture of advanced special products were driven out of Europe. ■

*Our goal is to minimize energy use at the company.*

Reduction of energy use was an important issue when renovating and redesigning AMAG's administration building

