

Saving energy and money with intelligent energy management

Large moving masses in intralogistics facilities offer the potential for energy-efficient concepts. A joint study by Swisslog and Helbling Technik has demonstrated that it is possible to save up to 40%. There is no silver bullet: a well-thought physical model is the basis for innovative approaches to careful resource management.



Up to 40% of energy can be saved through the intelligent operation of drive axes and technical measures.

As one of the leading suppliers of warehouse and distribution solutions, Swisslog plans, develops, produces and provides installations for distribution centers, primarily for the food and beverage, retail and pharmaceuticals sectors. Swisslog stands for high quality, reliability and for high energy efficiency of the delivered intralogistics equipment. For customers in Switzerland and Germany, that may also include civil engineering and construction.

From a Green Policy to concrete solutions in collaboration with Helbling Technik

Pursuant to Swisslog's Green Policy, its future facilities in the field of intralogistics should be optimized in terms of total energy consumption. The measures proposed in an internal program are as follows: installation of energy efficient motors, lightweight construction, peak shaving, speed adjustment as per effective requirements, energy

recuperation and an integral energy management system.

Swisslog's Green Label

According to the implemented energy-saving measures, Swisslog will award the Green Label, in 4 levels, to each delivered system. At the same time, Swisslog will approach its existing customer base to undertake an energy-savings assessment by measuring consumption and proposing improvements based on clear ROI statements. Helbling Technik was commissioned by Swisslog to examine precisely the energy requirements and possible savings of its material flow technology, to build a model to calculate energy consumption of the equipment elements and to build a tool to estimate system energy consumption.

These results shall be placed within the context of its overall system.




Up to 40% energy savings

It does not come as a surprise that the greatest potential lies in the automated storage and retrieval machines of high-bay warehouses, where large masses are handled at high speeds. A high-bay pallet crane may well have a weight of 12–16 tons and a mini-load crane between 1 and 1–5 tons, and all this in addition to the pallet payload of 1–1,5 ton or bins of 32 kg each.

Through the intelligent operation of drive axes and technical measures such as recuperation and DC-DC links, and depending on the specific application, up to 40% of the energy used by these devices can be saved. Around half of this potential can even be harnessed cost-neutral! Even in older facilities, drive technology can be adapted in a cost-efficient manner and without creating problems for the controls architecture required for recuperation. In absolute numbers, this means that, per device, it is possible to save the equivalent electricity consumption of up to two average Swiss households, or up to 6,000 kWh electricity, per year. Logistic centers, where often 10 or more such devices are installed, can therefore make a substantial contribution to a careful resource management. Owing to the newly developed physical models and the knowledge gained about the energy flows in its systems, Swisslog is now able to quickly and efficiently assess the saving potential by applying the developed models and tools. At the same time, these models are the basis by which energy consumption of systems can be reliably assessed even in the planning and design phase.

Accordingly, they form an essential element for further innovations in the field of energy saving.

On a sound analysis for an optimal solution

Even established technologies offer a remarkable potential for energy savings that can be economically translated into competitive advantages. But beware: slogans can lead you down false paths – in that sense, the implementation of energy-saving motors (IE2/3) in dynamic applications can even become counterproductive. In any event, it is worthwhile to diligently examine possible solutions in order to have a solid basis for important decisions about technology and investments. Furthermore, such analyses often lead to surprising methods that can, in the best-case scenario, result in innovative products. 

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Helbling Technik AG – Innovation, together we do it

Helbling Technik, the leading Swiss innovation and engineering provider, has expanded its services in the clean technology sector, and is now also a competent partner for eco-design and eco-efficiency engineering. The existing and broad technological know-how in the fields of mechatronics, mechanics, control engineering, measurement technology, calculations, and simulations offers ideal conditions to develop innovative solutions with high customer benefits in regards to optimized energy and resource allocation.

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