



The traditional Asian rice fields that grace the front cover of this edition of *ABB Review* have ensured the survival of local communities for generations. Although greenhouse gas emissions are a matter of concern, the farmers who work these fields do so in a way that maintains and respects the basis of their production, permitting future generations to continue to use them. Like these farmers, society as a whole is the guardian of a fragile system. Besides optimizing profitability, businesses today must protect the elemental factors underlying their success: the environment and natural resources.



Sustainability matters

In the early days of industrialization, mankind enjoyed seemingly inexhaustible supplies of raw materials. The scale of activity then was small enough that the negative effects of waste or pollution could be disregarded. Anthropogenic effects on the environment have since grown to the point that the correlation between the usage of assets and their availability can no longer be ignored. Indeed even the clean water and air that we need for our survival cannot be taken for granted. Business leaders today must not only optimize the performance of their own companies, but consider the broader possible implications of their activities.

ABB's motto "Power and productivity for a better world" reflects our vision that our products and services must not only support our customers in their business objectives, but that these products are symbiotically embedded within the wider perspective of society and the world in which we live. Only by thinking sustainably and protecting the basis of our success can we assure its continuation. ABB's commitment to sustainability is reflected in the fact that 50 percent of its corporate R&D budget is now being invested in energy-saving solutions.

ABB supplies many highly energy-efficient products. These reduce the carbon footprint of their applications by converting, transporting or using energy more efficiently than was previously feasible. Examples of efficient energy conversion covered in this edition of *ABB Review* include the new A100 turbocharger, and the BORDLINE® M converter for auxiliary traction applications.

ABB's variable-speed drives frequently feature among the company's flagship products in terms of energy savings that can be achieved. An objective environmental balance does not just focus on energy, but considers a wider range of aspects. An article in this edition of *ABB Review* shows that the overall environmental impact across the life cycles of these drives is also extremely favorable.

In a connected vein, a further article looks at how waste is being reduced through better recyclability of insulation materials.

The use of permanent magnets in large motors has long been an elusive objective but advances in magnetic materials mean that such applications can now be realized. Besides the savings in energy and complexity achieved by eliminating excitation equipment, the lower speed range that these motors can achieve means that gearboxes can also be dispensed with. Apart from the resulting gains in energy efficiency, this is also advantageous in terms of space, reliability, and life-cycle costs. Such arrangements are relevant to both industrial drive applications and generators in wind turbines.

Energy savings can also be achieved through improvements in the associated control concepts. cpmPlus Expert Optimizer helps run industrial processes efficiently. In another article, *ABB Review* investigates how software can be designed to support energy efficiency.

Not only are robots iconic for productivity, they are also a powerful sustainability tool. They can work in environments that would not be safe for humans, and furthermore the precision and repeatability of their actions leads to less waste. Most robot applications presented in *ABB Review* focus on ABB robots at work in customer facilities. An article in this edition takes a different approach and shows that ABB also uses its own robots – meet ABB robots that are hard at work making ABB motors.

I hope that these articles will give you a greater understanding of ABB's contribution towards sustainability and show how the ongoing efforts of the company are continuously leading to further improvements.

Enjoy your reading.

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