



Energy management: boosting productivity and performance

Optimizing energy use in industry is essential to improve competitiveness and achieve wider societal goals such as energy security, economic recovery and development, climate change mitigation, and environmental protection. Importantly, energy management in industry enables businesses to achieve corporate productivity goals as well as meet governmental targets and improve environmental performance.

Not managing energy: missed opportunities

The term “value for money” means that businesses should receive maximum benefits for resource expenditures. However, this concept is not widely extended to the use of energy. Most industries use far more energy to produce goods than required. This not only results in unnecessary costs but also in missed benefits associated with energy-saving measures. Managing energy can contribute to key corporate goals such as improved competitiveness, more productive use of plant assets and resources, reduced risk, and additional shareholder value.

Despite this, energy-efficiency projects are still not widely viewed as strategic investments in future profitability and often seen as a luxury. There are several reasons for this. There are numerous barriers to the implementation of cost-effective energy efficiency measures, e.g., low priority and lack of interest from top management, lack of information and know-how, inadequate methods to calculate costs and benefits, and perceived risks including the perception that focus on energy will distract from core business processes. Furthermore, improving energy efficiency is frequently seen as an add-on or technical activity rather than an integrated part of business operations leading to sustained additional annual earnings.

Energy management: a business improvement process

Energy management is a business improvement process that enables businesses to identify and address energy losses in production. It is as much about technical solutions as changing how things are done. While energy savings of about 5% can be achieved by replacing individual machines with energy-efficient units, savings of up



to 40% are possible by taking a system-oriented approach. This means considering components, equipment, processes, and systems and optimizing how these interact within the business. Not all measures require large investments, as relatively simple no- or low-cost measures such as good housekeeping and process optimization can reduce energy use significantly.

Energy efficiency potentials are constantly increasing in line with technological developments, scientific progress, changes in political signals, and price fluctuations. Improving energy efficiency is a continuous process; it is not a one-off activity or end state. A framework for continuous improvement is needed to ensure constant tracking, analysis, planning, and redirecting energy use so that the least energy is used to receive the greatest benefit. Company experiences show that, notwithstanding previous efforts in the area of energy efficiency, by implementing energy management systems they are able to identify and exploit new opportunities.

Energy management systems provide a framework to establish practices and procedures for continuous improvement. Energy management systems and standards do not dictate solutions; instead they provide a framework to optimize how energy is used in specific operations. Since energy management is about understanding energy use, eliminating unnecessary losses, and finding solutions to ensure that energy is used productively, it is compatible with and can com-

plement business improvement systems such as lean manufacturing, total productive maintenance, and Six Sigma.

Role of government


The rate of uptake of energy management systems in industry is correlated with government-led programs that provide incentives and drivers. Such programs play an instrumental role in addressing the numerous barriers that inhibit the application of energy management in industry, as well as fostering the development and growth of a sustainable energy service subsector including energy auditing and energy performance contracting. Furthermore, energy management programs can accelerate market transformation and the development and deployment of energy-efficient technologies. Elements of effective government-led energy management programs include continuous consultation with industry, establishment of linkages with wider policies, reporting requirements, provision of support and training, establishment of networks, and development of methodologies and tools. Energy management programs are flexible instruments that can be adapted to evolving policy needs and changes in industry, thereby ensuring continued effectiveness and relevance.

To support the establishment of policies in this area, the International Energy Agency (IEA) collaborated with the Institute for Industrial Productivity to develop a new *Policy Pathway on Energy Management Programmes for Industry* (released in February 2012). The publication provides practical guidance for policymakers at all levels of government, managers in industry, and other relevant stakeholders on how to develop, support, monitor, or modify programs aimed to accelerate the adoption of energy management systems in industry. Furthermore, to promote energy management by interconnecting policymakers and industry, the Energy Management Action Network has been established. This network is managed by the IEA and Institute of Energy Economics, Japan, on behalf of the International Partnership of Energy Efficiency Cooperation and the Government of Japan.

Value of being proactive

While governments play an important role in establishing enabling conditions and providing incentives to stimulate energy management in industries, there are benefits for proactive businesses. Businesses are under increasing pressure to become more sustainable in every sense, and implementing energy management systems is an effective way to respond to that demand. Furthermore, and especially in times of crisis, it is crucial to bring all costs under control, including energy costs. Energy management is a viable strategy for decreasing exposure to risks related to increasing energy prices and possible future supply constraints. It is also an effective preemptive approach to ensure compliance with increasingly stringent regulations, as well as resilience against carbon pricing. The systematic analysis of energy use also triggers innovation since it makes businesses question how things are done and how they can be improved.

Adopting energy management systems is not about redirecting the focus

from core businesses toward environmental or climate considerations. Rather, it is a sound business decision that provides enterprises with the added bonus of improved environmental performance. The question for businesses is not “can we afford to prioritize environmental and climate issues?” Instead, it is “can we afford to miss business opportunities by using energy unproductively?” 

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