

Energy Efficiency Challenges Drive Greater Focus on Sustainability



Gerritt Reinders
Johnson Controls Inc.



Ron Fillmore
Dow Corning

How are energy-efficiency challenges driving business sustainability initiatives?

GR: With today's volatile energy prices and unprecedented awareness of the environmental impact of our addiction to oil, it's becoming increasingly obvious that upgrading buildings to make them "green" is critical, particularly since green buildings are, by definition, very resource efficient. Many local governments now require that new buildings be constructed to green standards. This is a great thing that unfortunately only addresses one percent of buildings; the opportunity is greatest if we also "green" the existing building stock. For that reason, organizations are hiring energy services companies to renew their infrastructures with more energy-efficient equipment. Some are paying for these improvements through the savings they generate. We've seen energy savings as high as 90 percent by upgrading lighting and 60 percent by upgrading HVAC, office equipment, and appliances. The business case for energy efficiency is clear, and there's widespread acceptance that doing the right thing and making money are not conflicting strategies.

RF: I agree. As energy costs soar, companies are looking to reduce energy requirements. Businesses now have more of an incentive to balance energy-efficiency strategies and environmental stewardship than ever before. For example, technology leaders are exploring the potential of photovoltaic cells, also called solar cells. These semiconductor devices convert sunlight into electricity. In the near future, they will provide a more energy-efficient way to power appliances, charge batteries, and operate motors. Public-private partnerships are tackling this need. Producers, research universities, and government agencies together are addressing the biggest challenges to making solar energy a viable source: accessibility, affordability, and long-term reliable performance.

How can energy efficiency and sustainability performance be improved in buildings?

GR: Sustainability must be incorporated into every decision related to building improvements. Green buildings are evaluated over their entire life-cycles and incorporate sustainability into every step of the process – from building design to operations and maintenance. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system, which offers guidelines for

In this dialogue, Gerritt Reinders, director, Sustainable Energy Solutions, Johnson Controls Inc., and Ron Fillmore, Dow Corning global executive director for Construction and Xiameter, discuss the importance of sustainability to businesses.

making buildings more sustainable, has become the most widely adopted way to demonstrate a commitment to sustainability. First released in 2000 for new buildings, the rating system now includes existing buildings – a good thing, considering there are about 100 existing buildings for every new building constructed.

New technologies also help optimize use of resources, such as light-emitting diodes which consume 10 percent of the power and have 10-20 times the life of incandescent lamps and building control equipment with self-tuning loops in heating, ventilating, lighting, and air conditioning systems.

RF: Designing buildings that bring more natural light inside, such as skyscrapers with all-glass curtain walls, has been effective. Advanced adhesive materials enable architects to design large, dramatic windows that offer occupants a sense of spaciousness and a connection with nature while reducing lighting costs.

Considering how structures built for one-time events, such as the Olympics, can be reused is another important strategy. Years ago, these facilities were often torn down after the event. Today, athletes' villages at Olympics events can be designed to have future lives as community centers or residential facilities. In Lisbon, Dow Corning helped turn a structure built for an international expo into a transport interchange for rail, bus, and metro links thus giving it a longer life and useful purpose to benefit the community.

How can employees and building occupants support these goals?

GR: It's one thing to have awareness; it's another to have the knowledge and tools to change behaviors. Through the implementation of over 100,000 energy efficiency projects, my company has learned that significant savings are possible if building occupants are educated on the impact of their behaviors and trained on how to conserve resources like water and electricity. Working with the National Energy Foundation, we created a program called SEEC (Sustainable Energy Education and Communication) that teaches building occupants how to reduce their environmental impact and support sustainability. Such programs can have a significant impact – as much as 10 percent of the entire utility spend. To keep it interesting, we arrange competitions between departments or buildings, and report results so employees see the positive outcomes of their actions.

RF: No company can achieve its sustainability goals or introduce new technologies to help

customers and its facilities protect the environment unless every employee, from the ground level to the top, is committed. A policy is often nothing more than a piece of paper. Transferring policy into actions is what really makes the difference. Recycling is one thing that can easily be taken on. Our company transforms waste materials into usable products by collecting scrap and materials that are off-specification or beyond their shelf-life, then either reapplying them into alternative markets and applications or converting them into other products. Employees at one of our U.S. manufacturing sites have shipped more than a ton of scrap-cured rubber to a recycler over the past year which has reduced disposal costs and recaptured valuable raw materials.

How can sustainability be transformed from an add-on program to the way a company does business?

GR: Leadership commitment and ensuring this commitment permeates all levels of the organization are key factors, as is purchasing based on a 'life-cycle analysis.' This commitment is demonstrated in the types of products and services a company offers, the partners it chooses, how employees are educated, and how sustainability is driven through the supply chain. Since an organization's buildings and fleet typically are its largest assets (after people), a commitment to sustainability is most easily demonstrated by making those assets more energy-efficient. Obtaining LEED certification for buildings and improving fleet mileage by converting to biodiesel, natural gas, or hybrid vehicles, as well as instituting 'no idling' policies, offer enormous opportunities.

RF: The three pillars of sustainability – social, economic, and environmental – need to be considered and embedded in all business decisions. They must become part of the fabric of a company's culture – not merely a set of tactics. There's not one perfect model for balancing sustainability and economics. It requires a long-term approach and the ability to align with societal needs. If an opportunity offers strong economic benefits but doesn't meet our company's social or environmental goals, it doesn't pass our screens. We see sustainability as more than a policy or commitment; it's how we do business.

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