

How Innovation Supports Sustainability



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Sustainability defines how countries can meet the needs of their people today without compromising those of future generations. It has been a guiding principle for world economic development.

How can chemical companies solve the dilemma of spurring development while promoting sustainability? In this dialogue, Bjorn Stigson, president of the World Business Council for Sustainable Development (WBCSD; Geneva) exchanges views with Dow Corning vice president Jean-Marc Gilson

What is the status of sustainability as a guideline for business progress?

Stigson: Sustainability has been taken more into consideration by businesses in the past 10-15 years. We have documented that the most ecoefficient companies are also the most successful using such measures as the Dow Jones Sustainability Index. However, there is much left to do. With population growth of 100 million and more every year, there is a risk of adding to existing environmental degradation, and of tipping the balance against natural ecosystems.

Gilson: We are guided by three sustainability 'pillars' as defined by WBCSD: environmental, social, and economic. We want to be involved in businesses that have a positive, or at least no net-negative, ecological impact. We want to provide a social benefit that improves the quality of life of humankind. And we want to be in businesses that can sustain themselves by accepted financial measures. These principles are also worked into our corporate code of conduct. What we've seen in our experiences in the marketplace is that sustainability, as an operating principle, doesn't work if it's imposed from outside an organization. It has to be accepted by all inside an organization as a guiding principle. With that in place, the abilities of people are harnessed to achieving the goal.

What is the place of innovation in addressing sustainability goals?

Stigson: Innovation and new technology provide a counterweight to business as usual. If we want to continue improving living standards alongside population growth, we will put a heavy weight on the planet. Innovations and new technology

provide a way to improve our social progress through smarter ways of conducting our activities.

As you look across the range of sustainability issues, what strikes you are the rigidities of the situations we face. Energy systems are pretty rigid because of the great investment involved in them. It's going to be difficult to change our mix of fossil fuels as energy sources in a reasonable time frame. Being big energy users, the chemical industry is in a position to take a leading role in energy efficiency.

Gilson: The current energy situation is both a challenge and a tremendous business opportunity. We have invested in emerging technologies such as photovoltaic cells and materials for highly energy efficient light-emitting diodes (LED) for illumination. Both of these play to our strengths in understanding silicon chemistry.

We are working to drive down the cost of electricity generation via photovoltaics to make them a viable alternative to combustion or other processes. In the case of LED's—which are well along the road to commercialization - Dow Corning and LED manufacturers are in a position ultimately to replace all incandescent light bulbs. They are terribly inefficient and can be replaced by long-lasting, solid-state electronic devices. It is estimated that by the year 2025 solid-state lighting could reduce the global amount of electricity used for lighting by 50%. Looking farther down the road, we have invested in new biotechnology research to develop enzymatic- or plant-based methods for producing silicone compounds. This could have the double advantage of being a more energy-efficient way to produce chemicals with silicon-carbon bonds, as well as a way to produce new silicones with

potentially valuable commercial properties. We are also exploring wind energy generation and other forms of 'green' energy.

How can an innovation for sustainability be fostered in a business environment?

Stigson: We are trying to stimulate learning by encouraging companies to share best practices. It is important that they see the business case. When you focus on reducing pollution, by utilizing raw materials better, you often improve financial results.

Gilson: Our new ventures group within Dow Corning represents a critically important way in which we foster innovation. It provides an environment in which we can move fast and take risks. It allows us to invest in a variety of new technologies, both within and outside Dow Corning, and to speed them to market. We send our researchers to customers' and partners' laboratories, and bring researchers from outside into Dow Corning laboratories.

We are committed to developing or investing in promising new technology to support sustainability wherever it occurs. We work closely with our customers to help them develop their businesses and create new markets. We have valued partners in many of our new ventures. We also have a venture-capital fund to invest in new research opportunities.

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