



Water Talk

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Going Green

The Green Movement includes a focus on greenhouse gas emissions and air pollution. The major polluters in this arena are electric utilities, paper mills, refineries and petrochemical plants, primary metals manufacturing and vehicle emissions. Much of the regulations are designed to reduce our demands on fossil fuels in order to reduce greenhouse gas emissions. Upcoming talk of cap and trade regulations would penalize companies for not addressing these issues.

In the commercial institutional market, the USGBC and specifically the LEED certification program, has gained wide acceptance due to the tax breaks associated with the construction of green buildings. The U.S. Green Building Council (USGBC) established the LEED Green Building Rating System as a nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED has a consensus-based certification process makes this the preferred choice of Federal, state and local governments. The water treatment related processes within LEED is focused on energy and water conservation. The increasing population, particularly in arid parts of the world and more specifically, in the western United States, has created a water crisis resulting in legislation to penalize people for excessive water use and provide incentives for measures taken to recycle and reuse water.

Most businesses and institutions today are actively pursuing green initiatives in their day to day operations. In the water treatment business we have taken a multitude of initiatives towards this objective. This water talk addresses the specific items relating to going green.

REGULATORY ISSUES

The green movement is focused largely on the chemical industry due to the substantial regulatory compliance costs that the industry has created. The reason for this is that business that manufacture and produce chemicals need to be encouraged to become more accountable for their use of dangerous raw materials and to reduce the use of hazardous chemicals through the substitution of safer alternatives. It has been discovered that the chemical industry has problems with improperly inventorying chemicals, overlooking toxicity information, and reporting chemicals and emissions incorrectly. One of the largest compliance problems is that the reported information on a raw material can differ from company to company, thus causing information problems and loss of efficiency.

Businesses in the chemical industry need to be aware that many states are pursuing phase-outs of harmful chemicals. The green movement is creating political policies that will be affecting all businesses at one point or another. It is economically beneficial for these companies to make the change now, while consumers are looking for more environmentally friendly and safer alternatives. There are three main areas that companies need to be aware of in terms of the green movement: data, safety, and technology.

The global water crisis has a huge impact on the green movement and its influence on the water treatment industry. Large amounts of water are being rendered unfit for human use through industrial use, pollution emissions, bioaccumulation, and other irreversible environmental impacts of chemicals. The fundamental concept of green chemistry is that all companies are responsible for considering what will happen to the environment and health and safety of people once a product is used.

Due to a growing water shortage, cities are mandating that people reduce water usage. Surcharges are being imposed for water use; this is a financial incentive for businesses to reduce water consumption. There's a movement to get away from using toxic chemicals in order to reduce risks of exposure for employees as well as reduced insurance costs, as well as reduced liability due to the potential impact on the environment.

Policy mechanisms can be used to limit health and environmental hazards such as: design standards, technology specifications, product bans and limitations, tradable emissions, regulatory challenges, integrated permitting, charges on pollution emissions, reporting of chemical properties and further information, technical assistance, subsidies for those taking a greener business approach, liability for environmental and health effects, and voluntary initiatives.

BENEFITS OF GOING GREEN

The movement towards greener products and processes can reduce the impacts on the environment and health. Environmental impacts are evaluated to develop the most environmentally friendly products or services. These impacts include:

- The reversibility of the damage to the environment
- The geographic scale of the impact
- The degree of difference among competing products or services
- The overall impact on human health

There are some basic steps in moving your business towards a greener manufacturing process. Become aware of the processes that you use, evaluate and improve the efficiency of these processes and attempt to reduce pollution, evaluate the profitability of your products and processes, and always strive for continual improvement. It is important to understand that greening your company is profitable due to decreasing operating costs, decreased energy use, increased efficiency, and the recycling of materials. In addition, a green company enjoys the benefits of favorability by consumers due to environmentally preferable purchasing programs. Some of the less tangible profits that a company may receive are greater employee participation and morale due to increased safety and a better community image. Other benefits include:

- Lower costs through recycling
- Lower liability
- Being viewed as an environmentally friendly company
- Reduction in insurance costs by minimizing handling of hazardous materials
- Reduced labor and maintenance costs

BUSINESS OPERATIONS

For 20 years our products have been manufactured without any discharge with total reuse. After our products are manufactured, QC tested, and packaged, the blending tanks are rinsed with water; the rinse water is saved in a container labeled with that product number for incorporation into the next batch of that product that is manufactured. This measure conserves energy and water and eliminates the discharge to the sewer.

We've also converted our mixing operation to use air driven equipment rather than electrically driven equipments. We specifically chose a compressor that adjusts its horsepower based on demand which allows for greater energy efficiency. We've also implemented air cooling for our tanks to eliminate the need for water required for that purpose. We are utilizing reused containers in many of our operations. We also recycle pails, drums and many bulk containers that cannot be reused, thereby eliminating waste.

We've converted many of our administrative functions from paper to electronic format, thereby reducing our paper needs. This includes electronic distribution of order confirmations, technical information including Material Safety Data Sheets (MSDS), Product Data Sheets (PDS), and Confidential Product Profiles (CPP) as well as other technical information.

We recently converted our ISO Manuals to an electronic format thereby reducing need to update hard copies and using mass quantities of paper. Internally, our efforts have included conversion to electronic servicing including: analytical reports, equipment inspections, data logging, and the data generated by controllers and much more. This has also increased the efficiency of servicing and since all the electronic records are in one place it has also reduced the amount of time resources that must be used. The use of facility operations audits to look for opportunities to save energy and water by utilizing water recycling and product technology (equipment and chemicals) can also be beneficial.

Our research and development effort has developed the expertise in promoting the use of reclaimed water such as secondary and tertiary treated sewage as cooling tower makeup there by reducing the need for freshwater supplies for that application. We also have experience in difficult-to-treat waters such as water with high total dissolved solids, high silica concentrations, high hardness and high alkalinity waters. The use controller technology to provide minimal use of chemicals to get the job done efficiently also reduces energy consumption

PRODUCT TECHNOLOGY

- Products that enable maximum recycle of water
- Pretreatment of water to maximize water use
- Recycling wastewater streams
- Use of “grey water” and treated sewage as cooling water makeup
- Devices, rather than chemicals to enable water to be reused
- Biodegradable chemicals
- Use of chemicals that are designed with cradle-cradle mindset rather than cradle-grave mindset
- Provide best available technology to maximize water reuse and improve energy efficiency