



Dow Chemical Company (A): The WRAP Program *(ABSTRACT)*

For more than a decade, WRI's Sustainable Enterprise Program (SEP) has harnessed the power of business to create profitable solutions to environment and development challenges. BELL, a project of SEP, is focused on working with managers and academics to make companies more competitive by approaching social and environmental challenges as unmet market needs that provide business growth opportunities through entrepreneurship, innovation, and organizational change.

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One of the best known corporate programs in the environmental area is Dow Chemical's WRAP program. WRAP stands for Waste Reduction Always Pays, a name that reminds participants of the economic benefits available to companies who can reduce the pollution created in their production processes. Dow credits the program with major cost improvements along with reduced levels of pollution. In addition, the WRAP program has persisted over several years and has left its mark on the company's culture.

Background and Program History

The Louisiana Division of Dow Chemical Company is located in Plaquemine, Louisiana, where the company produces a number of chemicals, including such commodity chemicals as chlorine, caustic soda, vinyl chloride, polyethylene, propylene, ethylene, and benzene. The Louisiana Division consists of about two dozen main plants, each corresponding roughly to a major product, and the division employs 2300 people. The site, which was built in 1956, also contains a power plant, an incinerator for solid waste, and a biological oxidation plant for

aqueous waste. Organizationally, responsibility for the site rests with a general manager, to whom four production managers report. The production managers are each responsible for four or five plants, each one run by a superintendent. At each plant there is a non-union line organization, three or four levels of engineers, and a plant staff.

In the early 1980's, Dow was reacting to the second wave of oil price shocks that affected American manufactures. Like many other companies, Dow was taking a hard look at its energy use. As a result, there was a shift in emphasis toward greater diversification into specialty chemicals, and there was also growing financial conservation at corporate in supporting energy-intensive products such as commodity chemicals. Both trends made capital scarce for the Louisiana Division whenever it wanted to pursue expansions or process modifications. Thus, in 1981, the division initiated an energy contest in which the prize was essentially capital dollar. The funds came from the corporate budget for small-scale capital investments, which originally meant amounts from \$10,000 up to \$200,000. A decade later, this budget covered investments up to \$2 million, while larger investments came under the aegis of a separate, large-scale capital budget.

The energy contest was quite successful, and a few years later it was broadened to include yield improvement. Eventually, the program focus turned to waste reduction, and the program was named WRAP, for Waste Reduction Always Pays. The name of the contest was actually Energy/WRAP, since it continued to include projects aimed purely at energy savings. However, the number of winning energy-based projects declined from 90 in 1987 to 74 in 1992, while the number of winning WRAP projects rose to 54 by the same year.

The financial criteria were modified over the years. At the outset, when the capital crunch was severe and interest rates were high, the program required a return on investment (ROI) of at least 100%. In later years, the cutoff was lowered to 30%, and in order to qualify, a project also had to demonstrate savings of at least \$10,000.

Although Dow had a long history of environmental concern, the timing of WRAP may have been related to events outside the company. During 1985, a congressional committee asked Dow to compile a corporate-wide summary of emissions as part of a broader industry survey. For many top managers at Dow, this survey provided the first opportunity to see the magnitude of the company's waste streams on an aggregate basis, and the figures were surprisingly high. Around the same time, environmental groups were pressing vigorously for more information about Dow's emissions and for more evidence of waste reduction efforts. In addition, within another year, the reporting requirements of SARA Title III were being written into new legislation. WRAP was announced in 1986 and implemented for the first time during the following year.