



GEMI[®]

Collecting the Drops:

**A Water
Sustainability
Planner**

Case Example

The Dow Chemical Company: Improving Process Water Quality and Cutting Costs at a Bulgarian Power Station

The Dow Chemical Company stresses the development of innovative solutions to satisfy its clients' needs. The company's innovative UPCORE™ system has afforded facilities like the Deven JSCo power station in Bulgaria to realize higher efficiencies and dramatic decreases in water consumption and cost.

The Deven JSCo thermal power station produces 0.4 million megawatt-hours of power and 3.5 million tons of steam per year. In 1997, after 22 years of operation, station management decided to modernize the water treatment plant, seeking to reduce chemical costs, reduce service water, increase reliability of water production, and reduce waste load to the environment.

The retrofit employed Dow's UPCORE system, designed to provide high operating capacity and chemical efficiency, with reduced waste production and reliable mechanical integrity.

In the thermal power station's production cycle, the system helps to allow flexibility in the operational flow. The feedwater enters from the top of the vessel. During regeneration, the water flows from the bottom to the top in a compact bed configuration. Suspended solids are automatically removed from the surface of the resin bed during each regeneration cycle, leaving no need for a separate backwash tank.

With the retrofit to the UPCORE system, regenerant consumption dropped by over 60 percent, and the amount of wastewater declined by 70 percent. The maintenance needs decreased by 50 percent. Overall, water costs dropped by 40 percent. Based on the excellent results, the power station retrofitted a fourth line in September 2002.