



# Natural Capital Protocol: Case Study for Dow Chemical

*Water is extremely important to our global operations and we need to find new ways to make water sources more reliable.*

Earl Shipp, Vice President, Dow U.S. Gulf Coast Operations

### Audience

- Internal
- External

### Organizational focus

- Corporate
- Project/product/site/process

### Value chain boundary

- Operations
- Upstream
- Downstream

### Value Perspective

- Business
- Society

### Impacts and/or dependencies

- Business impacts
- Business dependencies
- Societal impacts

### Type of Value

- Qualitative
- Quantitative
- Monetary

### The company in brief

Dow Chemical Company (Dow) is a United States based multinational corporation and the world’s second-largest chemical manufacturer by revenue. Dow’s Freeport, Texas manufacturing site depends heavily on water from the nearby Brazos River, where Dow is the largest of its water users which also include farmers, cities, and other industries. Although the company has historical ‘priority’ river water rights, supply variability in recent years has led to more competition, raising concerns with regulators and society.

### Why a natural capital assessment?

Dow is active on water issues, having previously conducted freshwater analysis studies, internal water usage reviews and efficiency projects. However, the team wanted to apply the international, standardized framework of the Natural Capital Protocol to validate their conclusions.

Dow wanted to know whether it was possible to apply scenario pricing on their water supply into the future, using a net present value (NPV) analysis. This would allow Dow to introduce a more systematic approach to forecasting their natural capital dependency on water than was previously the case.

### How was the Natural Capital Protocol used?

The aim was to apply a risk based approach to understanding water scarcity, and to enable the company to consider water in a similar way to that which they would typically consider and cost other forms of capital (e.g. labour, gas, etc.). They asked internal stakeholders to imagine operating on much less water, and in doing so, incentivised the business to actively seek out mitigation



measures leading to valuable savings across the Freeport site.

**What were the outcomes of the assessment?**

In a huge achievement for their internal business understanding, Dow's application of forward-looking water shadow pricing revealed that the company could save on average up to 20% on water consumption in a conservative costing scenario, by implementing a range of efficiency improvements.

At a time during which issues around water supply were critical, Dow seized the opportunity to engage a range of individuals in understanding this natural capital dependency. Not only were they able to engage site personnel including plant operators, site supervisors etc., but also senior level support, including Freeport site management, Corporate VP EHS and Sustainability and key stakeholders, for data gathering and review phases.

As well as reviewing their water dependency from an operational perspective, Dow also considered water in terms of regulatory and legal materiality criteria. One key learning was that an understanding the potential for future regulatory change must become integral to doing business, in case of future water crises.

Dow realised that to achieve a fit-for-purpose natural capital assessment, they required external support and experts, such as consultants. Dow found that the Natural Capital Protocol complemented the logical process they had previously implemented with The Nature Conservancy.

**Next steps**

Dow has now been collaborating with the Nature Conservancy since 2011 in the area of measuring and valuing natural capital, and will continue to do so. One example of recent work emerging from the collaboration has been the ESII Tool, designed to help corporate, government, and organization decision makers rapidly assess the value of nature to a business or community. Dow has also started to incorporate an understanding of natural capital into a variety of departments such as business development, and real estate.

Dow wanted a "different way of thinking" inside their organisation, as regards environmental issues, and one that both accounted for nature in business practices, and would lead to increased investment in protecting nature's valuable resources. A better understanding of natural capital is one way in which Dow are continuing to pursue this objective.