Dow’s 2025 Nature Goal: Scaling Corporate Decisions and Culture in Valuing Nature

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Dec 9, 2016
Agenda

Safety Moment
Top-Down Goal
Bottom-Up Culture Change
Case Study: Lake Jackson Pump Station
Direction Forward
Safety Moment – Distractions

Common Distractions
  Cell Phone
  Conversations
  Multi Tasking
  Lost in Thought

Hazards
  Poor Work and/or Communication
  Slips, Trips, and Falls
  Vehicle and/or Pedestrian Accidents

Be where you are!!!
Top-Down Goal

“Environmental conservation is not just good for nature – it is good for business. By integrating the value of biodiversity and ecosystem services into their strategic plans, companies can incorporate sustainability as an adjective into everything they do, delivering positive growth for enterprise and planet alike.”

- Andrew Liveris at announcement of Dow’s collaboration with The Nature Conservancy in 2011
<table>
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<tr>
<th>2025 Sustainability Goals</th>
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<tr>
<td><strong>Leading the Blueprint</strong> Dow leads in developing a societal blueprint that integrates public policy solutions, science and technology, and value chain innovation to facilitate the transition to a sustainable planet and society.</td>
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<td><strong>Delivering Breakthrough Innovations</strong> Dow delivers breakthrough sustainable chemistry innovations that advance the well-being of humanity.</td>
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<td><strong>Advancing a Circular Economy</strong> Dow advances a circular economy by delivering solutions to close the resource loops in key markets.</td>
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<td><strong>Valuing Nature</strong> Dow applies a business decision process that values nature, which will deliver business value and natural capital value through projects that are good for business and good for ecosystems.</td>
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<td><strong>Increasing Confidence in Chemical Technology</strong> Dow increases confidence in the safe use of chemical technology through transparency, dialogue, unprecedented collaboration, research and our own actions.</td>
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<td><strong>Engaging Employees for Impact</strong> Dow people worldwide directly apply their passion and expertise to advance the well-being of people and the planet.</td>
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Dow’s 2025 Valuing Nature Goal

Our Goal is to apply a business decision process that takes into consideration the value of nature. Dow will deliver business value and natural capital value through projects that are better for business and nature.

• By 2025, Dow will **identify $1B in value through projects that are good for business and good for ecosystems.**

• By 2020, **all R&D, capital and real estate projects at Dow will be screened** using Nature’s Future Value (NFV) assessments, a tool we developed with The Nature Conservancy to measure the value of ecosystem services.
Bottom-Up Culture Change
Nature Goal Team

Paul Dean  Vice President, Engineering Solutions & Technology Centers
Mary Draves  Global Director, Remediation and Restoration
            Global Director, Environmental Operations and Technology Center
Tommy Polzin  Project Manager / Land
France Guertin  Environmental TC
Todd Guidry  Engineering TC
Jarod Davis  Operations Regulatory
Research & Development  Future
Process Changes

Global Project Management

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<tr>
<th>Front End Loading (FEL) (FEED in Industry)</th>
<th>Detailed Design</th>
<th>Construction</th>
<th>Commissioning &amp; Start-up</th>
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<td>Stage 1 Project Identification</td>
<td>Stage 2 Project Definition</td>
<td>Stage 3 Project Design &amp; Construction</td>
<td>Stage 4 Startup &amp; Closure</td>
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**Project Development**

- Process engineering and TICA alternative consideration
- Classes of Facility and Value Improving Practices

**Project Development:**

- EH&S Sustainability Checklist
- Functional Input and Evaluation Plan
Project Screening

Best projects included in goal benefit.

Inclusion in the $1B

NFV1 or NFV2

Impactful projects considered for further review

ALL Projects screened

NFV0

.ALL Projects screened

Inclusion in the $1B

NFV1 or NFV2

Impactful projects considered for further review

ALL Projects screened

NFV0
Integrated Development

Tools
- ESII
- NPV
- Most Effective Technology (MET)

Design Capacity

Training
- External Engagement

Project Engagement
- Education
- Workshops

Training
- Initiate Innovation
- Identification of Potential Opportunities
- Identification of Tools
- Identify Potential Synergies
- Education from Project Engagement Learnings

Tools
- Foster and Develop Innovation
- Identify of Appropriate Design and Design Optimization
- Risk Identification
- Develop Appreciation
- Apply Learnings from Project Engagement

Project Engagement
- Initiate and Apply Innovation to Overcome Project Barriers
- Gain Learning for Future Application
- Identification of Other Opportunities

Opportunity for Business decisions that are good for Dow and ecosystems.
Case Study: Lake Jackson Pump Station

Summary: Project involved updating an existing raw water pump station due to regulatory drivers and aging infrastructure

Opportunities

- Sustainable Landscaping
- Erosion Control

Challenges

- Late Stage Involvement
- Bigger is better - Hard Armor vs Soft Armor
- Contractor Experience and Capabilities
Case Study: Lake Jackson Pump Station

Value Identified

Erosion Control - 16% Capex
Sustainable Landscaping - 14% O&M and Capex

Learnings

Early Engagement
Technical Support and Education
Nature Based Technologies can reduce Upfront Costs
Every inch counts!!
Direction Forward

Project Screening
Implement Learnings
Technical Acumen Development
Mixed Project Portfolio (Big and small)
Regional Champions
Key Projects
Research & Development
Incentives
Nature Moment – Mangroves

Nature’s Living Sea Wall

Source: http://ocean.si.edu/mangroves

Source: http://mangroveactionproject.org

Source:
UNEP World Conservation Monitoring Centre and International Society for Mangrove Ecosystems NGM Maps
Copy Right: National Geographic Magazine
Most all creative endeavors are somewhat unpredictable. They often seem ambiguous, hit-or-miss, trial and error. And unless people have a high tolerance for ambiguity and get their security from integrity to principles and inner values they find themselves unnerving and unpleasant to be involved in highly creative enterprises.

- Stephen Covey
Questions

Redefining the Role of Business in Society.

Sustainability is our commitment. This is how our employees make it happen.

#DOW2025