

Sustainability

The power of science and technology to passionately innovate what is essential to human progress.



## 2012 Global Reporting Initiative (GRI) Report

Including: UN Global Compact – Communication on Progress

Except as otherwise indicated by the context,

The Dow Chemical Company and its consolidated subsidiari



### Dow attains an externally verified application level of A+

The "A" represents the highest level of completeness in addressing core topics as identified by the Global Reporting Initiative (GRI) G3.1 reporting standard. The "+" is achieved as a result of report assurance that involves a third party review by Environmental Resource Management (ERM). Feedback provides insight to help us continually upgrade our reporting on Dow's efforts to set the standard for sustainability. We believe it is important to make this information publicly available and, in addition, we want it to be useful to interested parties who may desire to use GRI indicators in a comparative way.

#### Statement GRI Application Level Check

GRI hereby states that **The Dow Chemical Company** has presented its report "The 2012 Annual Sustainability Report" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines. For methodology, see www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 17 June 2013



Nelmara Arbex Deputy Chief Executive Global Reporting Initiative

The "+" has been added to this Application Level because The Dow Chemical Company has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRII) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

Disclaimer: Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 12 June 2013. GRI explicitly excludes the statement being applied to any later changes to such material.

# Finding what is of interest to you.

Following this page is a high-level table of contents that outlines the color-coded organizational structure of the report.

**Summary of 2012:** The eight page summary is a convenient way to learn more about Dow and its commitment to sustainability. Download this pdf for a quick read on what happened at the Company in 2012. Please consider the environment and only print the pages that you will need offline.

**Detailed GRI Index:** At the end is a detailed index in GRI G3.1 nomenclature with hyperlinks by item that will help you navigate to your topic of interest.

**Embedded Links:** Relevant detail about various can be found at links throughout the report.

### About Our Cover:



The canola plant pictured on the cover of this and last year's report is to recognize Dow's first announced product in our Breakthroughs to World Challenge 2015 Sustainability Goal: Omega-9 oils, made from Dow AgroSciences' NEXERA™ canola and sunflower seeds. Read more <u>here</u>.

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Introduction

For the tenth year, The Dow Chemical Company is providing a Global Reporting Initiative (GRI) Report. This document follows the GRI G3.1 framework, making information available on a range of Environmental, Social, and Economic topics. This document serves as Dow's UN Global Compact Communication on Progress for 2012. Other Company reporting that may be of interest to readers is available on <u>www.dow.com</u> as follows:

- 2012 Databook under Investors, Financial Information
- 2012 Dow Annual Report under Investors, Financial Information
- Code of Business Conduct under Investors, Corporate Governance
- Dow's <u>Annual Report on Form 10-K</u> for the fiscal year ended December 31, 2012 (<u>Dow 2012 10-K</u>) under Investor, Financial Information, SEC Filings
- 2013 Proxy Statement under Investors, Financial Information
- Public Reports from Around the World
- Our Company, Overview
- <u>Quarterly Updates</u> found under Company, Sustainability, Reporting Center

Q and A

### for More Comprehensive Understanding

#### What is the Global Reporting Initiative (GRI)?

GRI is an organization that has pioneered the standardization of sustainability reporting through the creation of the GRI framework. Key principles in its approach include: balance, comparability, materiality, accuracy, timeliness, clarity and reliability. For more information, visit <u>GRI's website</u> or study the GRI index of topics at the end of this document.

#### How does Dow approach sustainability reporting?

The transparent and comprehensive use of the GRI framework creates accountability for the Company to report and improve reporting on the topics stakeholders may find important. We intend to serve broad stakeholder needs efficiently by creating a central repository for all relevant topics. Progress on our 2015 Sustainability Goals is also consistently communicated in our <u>quarterly updates</u> published on <u>www.dow.com</u>.

#### What are Dow's 2015 Sustainability Goals?

A 2012 year-end summary for each of our 10 year Sustainability goals is found in the Summary of 2012 PDF. It is available as a separate PDF, and also found on pages 8 through 17 within this document.

- Local Protection of Human Health and the Environment
- Contributing to Community Success
- Addressing Climate Change
- Energy Efficiency and Conservation
- Product Safety Leadership
- Greenhouse Gas Reduction
- Breakthroughs to World Challenges
- Sustainable Chemistry

### Why does Dow provide Assurance for its Sustainability Report?

Assurance results from conducting a review of the report with an external organization to enable the reader to be confident that the content is accurate, addresses stakeholder interests, and follows the GRI reporting principles. When this process is successfully employed, the "+" designation is added to the GRI application grade. Dow's report is an A+ report because of its completeness (A) and external assurance (+). See <u>section 3.13</u> for more information.

#### How to browse this document:

The electronic version of this report is enabled with links for easy browsing. Browse by index, section or materiality. Navigation bars are included on each page allowing you to jump to any section. Look for the following icon to browse by materiality:



#### What is the United Nations (UN) Communication on Progress (COP)?

We use the annual Sustainability Report to convey our Communication on Progress (COP) for the UN Global Compact's ten principles. The UN Global Compact is the world's largest voluntary corporate citizenship initiative. For more information on the UN Global Compact and its principles, visit http://www.unglobalcompact.org/.

We value your interest in Dow's report and welcome questions, comments and improvement suggestions. Please use the following email address to contact us.

#### Johnathan DiMuro (JDiMuro@dow.com)

1- 989-636-2020 Sustainability Reporting

# Sustainability Overview 2012

The year 2012 marked best-ever performance on many of Dow's 2015 Sustainability Goals, some consistently achieving results better than the 2015 target itself. We are discovering new opportunities through increased awareness of how the sustainability <u>megatrends</u> impact the economy, and announced the Company's first <u>Breakthrough to World Challenges</u>. While macroeconomic headwinds prevailed in 2012, the company continued to make marked improvement in almost all sustainability metrics. We remain focused on developing solutions to make the planet a good place to live for future generations while being responsible for economic, environmental and the social dimensions of our pursuits.

#### **Highlights**

- Best-ever performance on multiple EH&S Metrics: A comprehensive set of safety metrics is tracked and performance carefully scrutinized to help make Dow as safe a place to work as possible. We are nearing the ambitious 2015 performance targets on many metrics and two in particular continue to beat 2015 targets, multiple years early.
  - 16 Process Safety Incidents, down from 19; beating the goal for the year 2015 (25)
  - 0.22 Severe Motor Vehicle Accident rate; beating the goal for the year 2015 (0.28)
- Dow was honored by the National Safety Council (NSC) with the 2012 Green Cross for Safety Medal.
- Dow announced Omega-9 Oils as the Company's first Breakthrough to World Challenges in the area of health, a key milestone in achieving Dow's 2015 Sustainability Goals
- Marked the second year of the collaboration with The Nature Conservancy, completing pilot site work in Freeport, TX and starting work at the second pilot in Brazil.

#### Challenges

- The world continued its rocky recovery in 2012, with volatility and uncertainty proving to be the new normal. Persistent weakness in Europe was a continued drag on global GDP growth, while dramatic declines in China, Brazil and other emerging geographies introduced new risks to a sustained recovery.
- The Energy Intensity performance of the company has lagged behind our 2015 goal due to the profile of Dow's operations and substantial capital required for improvements. It is clear that the 2015 Energy Intensity goal will not be achievable.
- Strong, coherent energy policy sets the foundation for helping countries overcome some of the world's most pressing challenges. Too often, one side of the debate focuses solely on fossil fuels, while the other focuses on renewables and alternatives. This is a false choice – we need both. Meeting the world's need for clean, sustainable, affordable and abundant energy will require getting beyond partisanship and self-interest.

#### **Strong Safety Progress:**

Safety dimension	Improved vs 2011	
Personal injury rate	33% less frequent	
Injury severity	36% less severe	
Process Safety	16 in total, <b>Steady progress</b>	
Severe motor vehicle accident rate	Up from 2011, still <b>better</b> <b>than 2015 target</b>	
Leaks at manufacturing sites (Loss of Primary Containment)	14% fewer	

A research report conducted by the iCompli division of <u>BPA</u> <u>Worldwide</u> and IRAS shows that Dow Chemical scored highest among Fortune 100 companies when it comes to applying the Global Reporting Initiative's (GRI) Guidelines for Sustainability Reporting. Read more <u>here</u>.



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### Year-end Update on 2015 Sustainability Goals

### Goal Progress

#### Local Protection of Human Health and the Environment

#### Materiality



In our ten-year goal period from 2006 to 2015 we have challenged ourselves to achieve breakthrough improvements in traditional Environmental Health and Safety metrics. We are building upon the improvements accomplished in the 1995-2005 Dow goal period. For three improvement goals, we have already achieved a performance superior to our target for the end of the goal (2015).

Key Performance Metric	2012 Actual	2011 Actual	Reduction over 2011	Comment
Process Safety Incidents	16	19	16%	Outperformed the 2015 Goal target of 25.
Severe MVA Rate (accidents per million miles)	0.22	0.19	-16%	Reduction in performance versus best-ever year of 2011, but we continue to outperform the 2015 Goal target of 0.28.
By-product Synergy	312	310	NA	Outperformed the 2015 Goal target to exceed 300 million lbs. This 2015 goal was met in 2011 (four years early) and continues to increase.
Injury/IIIness Rate All Reportable Incidents (per 200,000 hours of work)	0.20	0.30	33%	There were 204 people hurt (Dow Employees and Contractors) in 2012 ,80 fewer than the year before. The non-fatal Injury/Illness rate for U.S. Manufacturing in 2011 was 4.4, which is 37 times higher than Dow's 2015 Goal of 0.12.
DAWC Days Away from Work Cases (per 200,000 hours of work)	0.05	0.08	38%	We reduced more serious incidents where the injury caused the employee to miss work by 38%
Leaks at manufacturing plants (Leaks, Breaks, Spills)	225	262	14%	We are on track to cut these events in half by 2015 from 2005 levels.
Leaks of Hazardous Material (During Transportation)	25	17	-47%	When we started reporting on this goal in 2005, there were 56 annual events. Reduction improves safety and reduces the risk to the environment.

Additional Local Protection of Human Health and the Environment metrics are reported starting on page 52 in the section describing Dow's approach to managing the environment.

#### **Community Success**



Dow continued to make strong progress on the 2015 Goal of Contributing to Community Success. Freeport, Texas, was re-measured in Fall 2012 and results exceeded expectations. The site's general favorability scores increased 5%, from an already high 80% to 85% favorability. This measure is taken from respondents who are at least familiar with Dow.

The site also made important gains in the community's perception of whether Dow plays an important role in impacting "quality of life." Freeport

saw a 10% increase in community favorability for that measure. This second measurement is derived from those that have a generally good impression of Dow and have firsthand knowledge, or at least awareness, that Dow has positively impacted their community in some way. Globally, all Dow sites to date that have been re-measured have improved on this indicator. The chart below indicates their progress.

### 2015 Goal

 Achieve individual community acceptance ratings for 100% of Dow sites where we have a major presence



These Community Success measures continue to serve as important data points as Dow sites determine the best way to engage with the community for success. Survey results are being tabulated in first quarter 2013 for Dow's St. Charles Operations, Louisiana and early indications are that the site will join its counterparts globally in posting strong progress toward its community success goals. Plans also are underway to re-measure Zhangjiagang, China as well as Aratu, Brazil.



#### **Climate Change**





In 2012, Dow expanded our goal to include limiting global Green House Gas (GHG) emissions to the level that Dow experienced in 2006, growing our Company, but not the emitted carbon. The Company will continue to report GHG intensity.

Additionally we are now regularly reporting on a target to grow the use of Clean Power to exceed 400 megawatt equivalents by 2025. At the end of 2011

Dow had identified 215 megawatts that are either low carbon or from renewable sources. This goal is helping us pursue opportunities to incorporate economically-viable, clean-technology energy alternatives into our operations. Examples of projects that will help increase our Clean Power portfolio include:

- Dow's Pittsburg, California facility utilizes solar energy
- Electricity from recaptured landfill gas being used as a partial source of power to Dow's Midland, Michigan Headquarters
- In 2013, Dow will begin use of eucalyptus biomass as a source for steam to serve its Aratu, Brazil site. Upon project completion, the Aratu site will be more than 75 percent sourced for power and steam from clean energy, relying in

Another improvement has been of Dow products. We will quar

Another improvement has been initiated to develop understanding and effectively communicate about the impact of Dow products. We will quantify the impact of our products both in the supply chain, before Dow operations, and during the use phase by our customers and ultimate end users. This assessment will be accomplished with an Impact Tool that quantifies the energy and GHG profile of products and helps convey the benefits by communicating a ratio of burden compared to benefit. For example, we report in <u>EN17</u> that the ratio of benefit throughout the life of the STYROFOAM insulation product line is seven times the GHG emissions involved in the manufacturing and construction phases of making a homes and other applications more energy efficient.

More information about addressing Climate Change is found in the <u>Environmental Summary</u>, (page 53) and in indicators <u>EN 16</u>, <u>EN17</u> and <u>EN18</u>.



### 2015 Goal

- Maintain absolute greenhouse gas emissions below 2006 levels
- Reduce our energy intensity 25%
- Use 400 MW of clean energy by 2025

#### **Energy Efficiency and Conservation**

Related to Dow's absolute Green House Gas (GHG) metric added in the first quarter of 2012, Dow is investing in the development of a Net Impact Tracking Tool.

This technique will sharpen Dow's focus on the full life-cycle benefits of Dow products. A sustainable energy future requires constant manufacturing efficiency improvement inside the Company, while maximizing the contributions of Dow products to improve efficiency and expand affordable alternatives. Energy is an enabler of global economic growth, and energy efficiency remains critical to meeting the world's energy demands. Dow's innovation engine is driving energy solutions that meet society's needs and provide a competitive advantage to Dow and Dow's customers.



Dow's manufacturing energy intensity, measured in BTUs per pound of product, has improved more than 40% since 1990, saving the Company over \$25 billion and about 5,500 trillion BTUs. This is roughly equivalent to the annual energy consumption of 48 million single-family homes. Dow estimates that 2015 Energy Intensity Goal efforts will yield a cumulative savings of more than \$1 billion and 190 trillion BTUs. This is equivalent to the annual energy consumption of over 1.7 million single-family homes. Dow's portfolio transformation, coupled with global economic conditions, has impacted the scale and speed of anticipated energy intensity reductions. Dow expects additional energy efficiency progress from in-flight projects that will see results after 2015.

Between 1990 and 2005, the Energy Intensity (Btu/lb) of global operations was improved by 38%. By 2015, Dow has a goal to achieve an additional 25% improvement. The average Energy Intensity of year 2005, adjusted for mergers and acquisitions, is the basis for calculating performance against this target. Dow's goal for Energy Intensity for the full year of 2012 is 3,436 BTU/lb, or 82.5% of the value in 2005. Dow's actual performance through Q4 2012 was 4,058 BTU/lb, which is 97.4% of the 2005 baseline

For more information on this and other Dow Energy initiatives: <u>www.dowenergy.com</u>

#### **Product Safety Leadership**

At the end of 2012, 470 Product Safety Assessments (PSAs) had been posted to <u>Dow's product</u> <u>safety website</u>.

Dow's published Product Safety Assessments now cover products accounting for over 86% of Dow's annual revenue. Additionally 100% of Dow's 224 High Priority chemicals are now covered by a PSA. We are on-track to meet our 2015 Goal to have a Product Safety Assessment publically available for applicable Dow products.

PSAs are written for the lay public and cover topics such as basic hazards, exposure potential

and risk management measures. They complement other product safety, handling and stewardship documents, which are part of the product responsibility "package" Dow offers to strengthen relationships with communities and customers. This holistic approach enables Dow customers and the communities in which Dow does business to stay informed about the Company's products and the plants that produce them. Dow is dedicated to providing the public with accurate information and building trust as it uses technology to develop better products.



### 2015 Goal

• Publish Product Safety Assessments for all products

#### **Greenhouse Gas Reduction**



Dow has reported to the Carbon Disclosure Project (CDP) since 2006. The CDP is a not-for-profit organization working to understand the risks and to drive greenhouse gas emissions reduction from business. In 2012, Dow reported on its 2011 Greenhouse Gas (GHG) performance and commitment to being a solution provider to the Climate Change challenge. The report scored 91 out of a possible 100 points. This excellent result highlighted Dow's commitment to strong Governance and complete disclosure through transparent Emission Reporting.

Dow's energy efficiency and chemicals management efforts have significantly reduced the Company's GHG emissions footprint. As a result, Dow has prevented over 270 million metric tons of GHG emissions from entering the atmosphere since 1990. This is equivalent to the annual emissions of more than 16 million single family homes. Dow's goal is to maintain

GHG emissions below 2006 levels on an absolute basis for all GHGs, thereby growing Dow, not the carbon. Dow will continue to focus on managing Dow's footprint and delivering solutions to help customers manage theirs. For example, Dow's insulation products contribute to greater energy efficiency, helping avoid millions of metric tons of GHG emissions per year.



#### **Breakthroughs to World Challenges**



In June of 2012, Dow <u>announced Omega-9 Oils</u> as the Company's first <u>Breakthrough to World Challenges</u> in the area of health, a key milestone in achieving <u>Dow's 2015 Sustainability Goals</u>. Set in 2006, these Goals included a commitment to achieving at least three breakthroughs that will significant help solve world challenges in the areas of energy and climate change, water, food, housing and health.

Derived from <u>Dow AgroSciences'</u> NEXERA<sup>™</sup> canola and sunflower seeds, Omega-9 Oils have zero trans fat and the lowest amount of saturated fat among commonly used cooking oils. Since 2005, the use of Omega-9 Oils has eliminated more than one billion pounds of trans and saturated fat from the North American diet.

### 2015 Goal

 Achieve at least three breakthroughs that will significantly help solve world challenges

In order to be designated as a Breakthrough to World Challenges, Omega-9 Oils passed a rigorous, transparent evaluation by Dow scientists and external stakeholders. Omega-9 Oils, like other candidates in Dow's R&D pipeline, were evaluated for positive impact on millions of human lives, as well as minimal environmental impact from development through manufacturing, distribution, use and end-life.

We have a robust pipeline of candidates for further Breakthroughs to meet our goal, and look forward to announcing more Breakthroughs as they meet the criteria.





#### **Sustainable Chemistry**

	Mat	erial	ity Wery High	
ments and Decision	Product Safety Leadership	Water Sustainable Chemistry	Chemical Security Local Protection of Human Health & the Environment Energy	VeryHigh
heh of de rs Asse ser	Environmentally Preferred Purchasing	Community Success Biodiversity and Ecosystem Services		
importance to Sta	Breakthroughs to World Challenges*	Climate Change Trade Policy	Sustainable Agriculture	High
	3	gnificance of Impa	cts	₽

The 2015 Goal for Sustainable Chemistry is to increase to 10% the percentage of total Company sales that are highly advantaged by sustainable chemistry, as measured by our Sustainable Chemistry Index (SCI). The SCI is updated annually and involves assessing sustainability attributes of the Company portfolio at a detailed level. During 2012 the SCI increased from 21.8 to 22.0. The portion of Company revenue that was from Highly Advantaged products grew to 7.1%, up from 4.8% as measured for 2011, the largest ever year-over-year increase. A significant number of opportunities have been identified towards enabling additional products to be included in the Highly Advantaged category. Engagement is ongoing to further integrate these opportunities into the business strategies.

Find information about our ongoing implementation of the 2015 Sustainability Goals each quarter at our <u>Reporting Center</u>.





Strategy & Profile

of The Dow Chemical Company

### 1. Strategy and Analysis

#### 1.1 Statement from CEO presenting overall vision

The chemical industry operates at the intersection of all sciences, of energy and innovation, of possibility and progress. Today, we use feedstocks like natural gas to create products and technologies that enable more than 95% of manufactured goods. And to build a better future, society is counting on chemistry to navigate a complex maze of entrenched economic, political and social systems to deliver more sustainable technologies that meet humanity's needs as well as those of our planet.

Building bridges to this sustainable future will mean using our resources in smarter ways, evolving clean energy technologies to power tomorrow, cleaning and distributing water more effectively to save nearly four million people who die every year from waterborne diseases, and feeding, in 30 years, two billion more hungry mouths with the same amount of farmland.

Solving sustainability challenges is an enormous responsibility. And for Dow, it is not only a moral obligation but also a business mandate. As a 116-year-young company, we realize that this responsibility extends far beyond our plant walls to our customers, to our communities and even to those who will inherit our society a century from now.

The daunting task before us drives many to draw a straight line from the current situation to an inevitably grim future. But by remaining grounded in the sciences – especially in chemistry and engineering – we can share a more optimistic vision.

Dow has a rich legacy of putting the periodic table to work for humanity. And today, this company has the strategy, the people and the geographic reach to address the challenges faced by our world. Indeed, we have purposely transformed from a commodities-driven chemical company into a solutionsdriven, customer focused, and market oriented innovator equipped to rise to this occasion.

But we realize that we cannot secure this future alone. Sustainability is not an individual endeavor. Rather, it requires collaboration – across industries, across cultures, across parties, and across all boundaries. Through Dow's spirit of partnership, we see progress being made today – in our labs, in our operations, in our supply chains, and in our businesses. A case in point is Dow's collaboration with The Nature Conservancy, which is already two years into its quest to help companies value nature.

While there are many hurdles, momentum is building. In our own operations since 1990, Dow has saved \$25 billion and more than 5,500 trillion BTUs. And we are delivering solutions that help the rest of the world reduce its footprint, using the 118 elements as a palette to paint a better future.



#### **Strategy & Profile**

For example, we have married chemistry with photovoltaic science to create a revolutionary new solar shingle, which is rolling out across America to make harnessing the sun's energy more affordable for more homeowners.

And we have bridged genetics, chemistry and nutritional science to create trans-fat free Omega-9 healthy oils. The adoption of this technology by popular restaurants has removed more than one billion pounds of bad fats from the American diet.

Chemistry is what allows and enables all the other sciences to bond together, to create, together, something more magical and more meaningful than the sum of their parts. And by unlocking the bonds of chemistry, we can strengthen the bonds of humanity. That is Dow's philosophy as we work to put the power of chemistry to work creating a cleaner, safer, healthier, and more productive world. We take great pride in assembling and presenting our Annual Sustainability Report – which consistently garners top recognition for completeness and accuracy. With this report, we also renew our commitment to the 10 principles of the United Nations Global Compact, which is demonstrated through our values, our Code of Business Conduct, and the broad impact of our 2015 Sustainability Goals.

In these pages, you will see how our commitments, our actions, our people and our innovation engine are delivering value for society, the planet, and the business' bottom line.

Sincerely,

Indrew N Liveris

Andrew N. Liveris Chairman and Chief Executive Officer The Dow Chemical Company





#### 1.2 Key Impacts, Risks, and Opportunities

#### Viewing Opportunities through Megatrends

At Dow, we believe that connecting chemistry and innovation can generate new ways to solve global challenges. Driven by our rapidly expanding global population, four megatrends serve as the focus of Dow's market-driven strategy. The Company focuses on developing <u>solutions</u> that improve products using Dow's scientific and technological advances. Dow is communicating about these opportunities while understanding and managing risks and impacts through a communication campaign, <u>Solutionism</u>.

#### **Global Growth**

<u>Sadara Chemical Company</u> (Sadara) is a joint venture (JV) between Dow and Saudi Aramco, one of the leading energy suppliers to the world.

Once complete, the JV complex now under construction will be one of the world's largest integrated chemical facilities and the largest ever built in a single phase. Utilizing many of Dow's industry leading technologies, the complex will possess flexible cracking capabilities and produce over 3 million metric tons of high value specialty chemical products and performance plastics annually. The joint venture will capitalize on rapidly growing local, regional, and international markets in energy, transportation, infrastructure and consumer products.



Sadara is projected to deliver estimated EBITDA margins of 35-40 percent and average equity earnings for Dow of

approximately \$500 million annually during the first 10 years following its start up.

#### Managing Sustainability at the Company

Chaired by the Chief Sustainability Officer, the Sustainability Team is composed of six senior executives and serves as the Company's governance body for Environment, Health & Safety (EH&S), Public Policy Issues, and Sustainability. This team provides direct linkage to the Environmental, Health, Safety and Technology Committee of Dow's Board of Directors to lead in oversight responsibilities for Dow performance in these critical areas.

The Company uses our Business Risk Review Work Process to identify, evaluate and manage EH&S risks, including risks associated with possible failure of a product to perform as intended.

Corporate-level identification and management of risk is systematically accomplished using an Enterprise Risk Management approach. The Company assesses financial risk from many perspectives. Examples include the potential impact of weather-related impacts, access to credit, effect of foreign exchange related movements, volatility in purchased feedstock and energy costs, and pension plan related risks. Risk management results are regularly communicated to the Chief Financial Officer with a formal annual review with the Board of Directors and its Audit Committee.

An update of performance for each of the 2015 Sustainability Goals is reported quarterly on dow.com.

See the <u>Dow 2012 10-K</u>, PART I, Item 1A for a more complete discussion of Risk Factors.

### The Megatrends



### 2. Organizational Profile

#### 2.1 Name of reporting organization

The Dow Chemical Company

#### 2.2 Primary brands, products and/or services

#### **Corporate Profile**

Dow combines the power of science and technology to passionately innovate what is essential to human progress. The Company connects chemistry and innovation with the principles of sustainability to help address many of the world's most challenging problems such as the need for clean water, renewable energy generation and conservation, and increasing agricultural productivity. Dow's diversified industry-leading portfolio of specialty chemicals, advanced materials, agrosciences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sectors such as electronics, water, energy, coatings and agriculture. In 2012, Dow had annual sales of \$56.8 billion and employed approximately 54,000 people worldwide. The Company's more than 5,000 products are manufactured at 188 sites in 36 countries across the globe.

The Company is organized into the following six operating segments:

- Electronic and Functional Materials
- Coatings and Infrastructure Solutions
- Agricultural Sciences
- Performance Plastics
- Performance Materials
- Feedstocks and Energy

See the <u>Dow 2012 10-K</u>, PART I, Item 1. Business for a description of these operating segments. See the <u>Society</u> <u>section</u> (page 100) for more information about how Dow AgroSciences is working to deliver solutions for sustainable agriculture.

#### 2.3 Operational structure of the organization

The ultimate authority to oversee the business of The Dow Chemical Company rests with the Board of Directors (Board). The role of the Board is to effectively govern the affairs of the Company for the benefit of its stockholders and, to the extent appropriate under Delaware corporation law, other constituencies including employees, customers, suppliers and communities in which it does business. Among other duties, the Board appoints the Company's officers, assigns to them responsibility for management of the Company's operations, and reviews their performance.

Subsidiaries of the Company, for which the effective ownership by Dow is 50 percent or more, are listed in the <u>Dow 2012 10-K</u> in Exhibit 21. Information about joint ventures can be found in <u>Section 3.6</u>.

#### 2.4 Location of organization's headquarters

Midland, Michigan, USA

#### 2.5 Countries of operation

The Company operates 188 manufacturing sites in 36 countries. The Company's major production sites, including consolidated variable interest entities, are as follows:

COUNTRY	PROPERTIES
United States:	Plaquemine and Hahnville (St. Charles), Louisiana; Louisville, Kentucky; Midland, Michigan; Freeport, Seadrift, Texas City and Deer Park, Texas.
Canada:	Fort Saskatchewan and Joffre, Alberta.
Germany:	Boehlen; Bomlitz; Leuna; Schkopau; Stade.
The Netherlands:	Terneuzen.
Spain:	Tarragona.
Argentina:	Bahia Blanca.
Brazil:	Aratu.
Thailand:	Map Ta Phut.

Including the major production sites, the Company has plants and holdings in the following geographic areas:

United States:	58 manufacturing locations in 22 states.
Canada:	5 manufacturing locations in 3 provinces.
Europe, Middle East and Africa:	53 manufacturing locations in 18 countries.
Latin America:	30 manufacturing locations in 5 countries.
Asia Pacific:	42 manufacturing locations in 11 countries.

#### 2.6 Nature of ownership and legal form

Dow is a publicly traded company. Total common stock outstanding at January 31, 2013 was 1,204,364,155 shares.



"Dow is working harder than ever to understand our customers' short- and long-term needs as well as market trends, leveraging our full portfolio of product and service offerings to develop innovative and sustainable solutions that will deliver the greatest success."

-David Blakemore Business President, Specialty Chemicals

#### 2.7 Markets served

Dow combines the power of science and technology with the "Human Element" to innovate solutions for a more sustainable world. With over 96 percent of manufactured products enabled by chemistry, world challenges will ultimately be solved by companies like Dow, who collaborate with customers, industries, governments, academia and civil society. Our innovation engine is focused on water purification, crop productivity, building efficiency, development and commercialization of carbon mitigation, alternative energy and many more solutions that improve lives while protecting the planet. We are as committed to minimizing our own footprint as we are to delivering technology that helps the rest of society do the same. In 2006, we established our second set of Sustainability Goals, which we report on publicly every quarter. Our commitment to sustainability is integral to our corporate vision, mission, and values - which continue to drive change that is good for the environment, good for people, and good for business.

Information about markets served, which are listed below, can be found on dow.com under <u>Products</u>. Dow typically provides its product and service offerings to target markets on a global basis.

- Agricultural
- Consumer and Lifestyle
- Energy
- Infrastructure and Transportation



### **2.8 Scale of reporting organization** (year-end 2012 data)

Personnel count was 54,353 at December 31, 2012 (Based on full time equivalent persons, as reported in the <u>Dow 2012 10-K</u>) Net Sales – \$ 56,786 million

#### **Total Capitalization**

- Total Assets: \$ 69,605 million
- Total Debt: \$20,987 million
- Total Equity: \$21,867 million

Beneficial ownership information is found in the Dow <u>2013 Proxy Statement</u> on page 46.

The Company's more than 5,000 products are manufactured at 188 sites in 36 countries across the globe.

#### 2.9 Significant changes during the reporting period

#### 2012 Overview

In 2012, Dow faced a challenging and volatile operating environment where changes to regional demand, a significantly weakened price environment and currency headwinds out of Europe caused macroeconomic conditions to deteriorate throughout the year. Additionally, major shifts in various industries (e.g., alternative energy) and changes in government priorities and policies around the world also presented significant headwinds.

The Company ramped up efficiencies through an intense focus on work processes and procurement activities. These efforts gained momentum throughout the year, as Dow took focused action to reduce its structural costs.

Despite macroeconomic challenges, Dow delivered against its near-term cash flow targets, paid down debt and maintained a strong liquidity position. Further, the Company maintained its commitment to increasingly reward shareholders by increasing dividends.

#### 2012 Sales and Employees by Geographic Area

(dollars in millions)



Net sales for 2012 were \$56.8 billion, down 5 percent from \$60.0 billion in 2011. Sales decreased in all operating segments, excluding Agricultural Sciences (up 13 percent), and in all geographic areas.

Price was down 3 percent compared with 2011, with currency representing more than 60 percent of the price decline. Price was also impacted by weaker demand and a decrease in feedstock and energy costs. The Company's purchased feedstock and energy costs were \$2.5 billion lower than 2011, a decrease of 11 percent. Price declines were reported in all segments except Agricultural Sciences (up 3 percent).

Volume declined 2 percent due to the impact from recent divestitures<sup>(1)</sup>. Excluding this impact, volume was up 1 percent with gains in Asia Pacific and Europe, Middle East and Africa ("EMEA"). Volume in North America remained flat primarily due to the impact of shutdowns of vinyl chloride monomer manufacturing facilities, while Latin America reported a volume decline.

Dow continued its strategy of investing in science-based innovation and technology integration. Research and development ("R&D") expenses for the year were \$1.7 billion, an increase of 4 percent compared with 2011. Selling, general and administrative ("SG&A") expenses were \$2.9 billion, an increase of 3 percent compared with 2011. The increase in R&D and SG&A expenses was primarily due to growth initiatives in Agricultural Sciences, which reported sales and EBITDA<sup>(2)</sup> records in 2012. In 2012, the Company recorded a pretax goodwill impairment loss of \$220 million, the total amount of goodwill carried by the Dow Formulated Systems reporting unit.

The Company's Board of Directors approved two restructuring plans to optimize the Company's portfolio and to address macroeconomic uncertainties. The restructuring plans, approved in the first and fourth quarters of 2012, will accelerate the Company's structural cost reduction program and will affect approximately 3,750 positions and result in the shut down or idling of nearly 30 manufacturing facilities. These actions are necessary to manage the Company's earnings growth in volatile and challenging economic conditions. These restructuring charges totaled more than \$1.3 billion in 2012.

Dow's earnings from nonconsolidated affiliates totaled \$536 million in 2012, down from \$1,223 million in 2011. Dow Corning Corporation (Dow Corning) represented the largest decline in equity earnings primarily due to ongoing weakness in the polycrystalline silicon value chain.

The Company delivered \$4.1 billion of cash from operating activities in 2012 and ended the year with \$4.3 billion of cash and cash equivalents. Interest expense declined \$72 million from 2011 as the Company reported a \$613 million reduction in gross debt in 2012.

See additional information about changes in the <u>Dow 2012</u> <u>10-K</u>, PART II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

(1) The Polypropylene business was divested on September 30, 2011 and Dow Haltermann was divested during 2011.

(2) EBITDA is defined as earnings (i.e., "Net Income") before interest, taxes, depreciation and amortization. See Note 24 in the Dow 2012 10-K, to the Consolidated Financial Statements for a reconciliation of EBITDA to "Income Before Income Taxes."



#### 2.10 Awards during 2012

The following awards are a sampling of the recognition earned by Dow in 2012.

#### January 2012

- Dow Brazil Awarded São Paulo Seal of Diversity
- Dow Noted for Collaboration on European Initiative for New CO<sub>2</sub>-monitoring Program

#### February 2012

- Dow Toxicology and Environmental Research and Consulting (TERC) Recognized for Thought Leadership in Human Health and Risk Assessment by the Journal of Human Health and Ecological Risk Assessment
- Dow Honored in S&P 500 Clean Capitalism Rankings
- Dow Recognized by University of Texas Austin for Supporting Increased Female Participation in Engineering

#### March 2012

• Dow China Reaches No. 6 in Fortune China Corporate Social Responsibility Ranking

#### April 2012

- Dow Accepts Green Cross for Safety Medal from National Safety Council
- Dow Chemical Ibérica named one of the 50 Best Companies to Work for in Spain by Great Place to Work<sup>®</sup>

#### May 2012

- Dow Among the 20 Best Companies to Work for in Switzerland by Great Place to Work®
- Dow Mexico is Ranked in the Top Five Companies to Work for in the Country for Third Consecutive Year
- Dow Receives 2011 TRANSCAER® National Achievement Award

#### June 2012

• Dr. Neil Hawkins, V.P. of Dow Sustainability, Environment, Health and Safety presented with the <u>2012 C.K. Prahalad</u> Award for sustainability leadership.

#### September 2012

• Dow Named for Twelfth Time to Dow Jones Sustainability World Index



- U.S. Ambassador and AmCham Spain honor Dow Chemical Iberica for Most Innovative Initiative
- Diversity Executive Highlights Dow's Diversity and Inclusion Effort and Paralympics Partnership
- Green Company Award by Época Negócios Magazine (Brazil)

#### October 2012

• Dow, Solutionism Recognized as BtoB's Best for 2012

#### November 2012

- Dow Recognized with Angel of the Year Award by Corporate Angel Network
- Dow Recognized as One of the Most Sustainable Companies in Brazil by Exame Magazine

#### December 2012

• Dow Named One of China's Top Employers for the 5th Consecutive Year

More information is provided at <u>Awards and Recognitions</u> on Dow.com.

### 3. Report Parameters

#### 3.1 Reporting Period

Based on 2012 corporate data for the year ended December 31, 2012.

#### 3.2 Date of most recent previous report

This is the tenth GRI Sustainability Report. The previous report covered 2011 and can be found at our <u>Sustainability</u> <u>Reporting site</u>.

#### 3.3 Reporting cycle

Annual

### **3.4 Contact for questions regarding the report or its content**

**Johnathan DiMuro** 1- 989-636-2020 Sustainability Reporting

### **Report Scope and Boundary**

#### 3.5 Process for determining report content

Two complimentary processes merged to form our picture of materiality, as defined in GRI Reporting Guidelines. The first is the development of and the attention given to the implementation of our ten-year Sustainability Goals. The second is an annual Public Policy Issues Prioritization process.

The seven goals represented by blue shading were declared in 2006, with specific targets to drive improvements by 2015. These remain a focus for guiding our pursuit of being a more sustainable company. Links on the Goals go to more information located within this report.



\* Focus areas by 2015: Sustainable Water, Housing, Energy and Climate Change, Food, Health and Safety Materiality as defined in GRI Reporting Guidelines and used for this report: **The information in a report should cover topics and indicators that reflect the organizations significant economic, environmental and social impacts; or that would substantively influence the assessments and decisions of stakeholders.** 

Trade Policy is a new issue found to be material for this report. See <u>SO5</u> for coverage of Trade Policy. Also of note is the increasing importance of Energy and Product Safety to stakeholders. These issues can be found in <u>SO5</u> and the Product Stewardship section of this report. While Climate Change remains an important and material issue to Dow, it is our assessment that this topic's importance to stakeholders has reduced in 2012.

<u>Sustainable Agriculture</u> encompasses a number of topics of interest to a diverse audience. <u>Dow AgroSciences products</u> <u>and solutions</u> are designed to solve pressing crop production problems for our customers, boosting agricultural productivity to maximum sustainable levels to help keep pace with the growing needs of our world's rapidly expanding population.

This report is targeted to multiple audiences. However, we anticipate that those with specialist sustainability interests will be most interested in the details of this report. At Dow, the process and publication of this document is a crucial building block to the rest of our sustainability communication and disclosure, as it informs and guides these processes. We continue to consider how we can better meet the needs of our audiences and would appreciate your feedback and suggestions. See <u>Section 4.14</u> for stakeholder identification.

#### 3.6 Boundary of the report

This report covers majority-owned Dow subsidiaries over which the Company exercises control, entities for which the Company has a controlling financial interest or is the primary beneficiary, and operations in leased facilities that are Dow managed, worldwide as of December 31, 2012. Entities for which the Company has a controlling financial interest or is the primary beneficiary ("consolidated JVs") are represented in the lower right-hand part of the following diagram. Nonconsolidated affiliates are not included in the sustainability metrics of this report. This is consistent with the financial reporting treatment of accounting for nonconsolidated affiliates (20-50 percent owned companies, joint ventures, and partnerships) on an equity basis. These affiliates are represented in the upper left corner of the following diagram, reflecting their significance and the fact that management control resides within the affiliate. Background on the use of this matrix to guide the scope of inclusion can be found in the GRI Boundary and Technical protocols.



Dow's earnings from nonconsolidated affiliates totaled \$536 million in 2012, down from \$1,223 million in 2011. Dow Corning Corporation (Dow Corning) represented the largest decline in equity earnings primarily due to ongoing weakness in the polycrystalline silicon value chain.

#### Principal nonconsolidated affiliates

- <u>Dow Corning Corporation</u>
- EQUATE Petrochemical Company K.S.C.
- The Kuwait Olefins Company K.S.C.
- Map Ta Phut Olefins Company Limited
- <u>MEGlobal</u>
- Sadara Chemical Company
- <u>The SCG-Dow Group</u>
- Univation Technologies, LLC

Partner selection is critical and Dow will work only with companies that have compatible business strategies, are financially strong, and share the same perspective on business ethics and EH&S principles. Stakeholders may be assured that joint ventures are:

- created for strategic reasons
- designed to accomplish a long-term relationship with the partner
- given appropriate management attention related to values, culture and operating standards

More information is provided on pages 82-89 of the <u>2012</u> <u>Databook</u>. Subsidiaries of the Company, for which effective ownership by Dow is 50 percent or more, are listed in the <u>Dow</u> <u>2012 10-K</u> in Exhibit 21. Further information on Dow's principal nonconsolidated affiliates is disclosed in Part II, Item 8. Financial Statements and Supplementary Data - Note 8 - Nonconsolidated Affiliates and Related Company Transactions in the <u>Dow 2012 10-K</u>.

#### **3.7 Limitations on the scope or boundary of the report**

This report, including links for Dow reporting found on page 2, addresses the material economic, environmental, and social impacts of the organization, within the context of the boundary of the report as described in <u>Section 3.6</u>.

# **3.8 Basis for reporting that can significantly affect comparability from period to period or between organizations**

The basis for reporting on subsidiaries, joint ventures, leased facilities, and other entities does not significantly affect comparability from period to period with the exception of the following:

- Reporting beginning with the second quarter of 2010 excludes the Styron business unit divested on June 17, 2010.
- Reporting beginning with fourth quarter of 2011 excludes the Polypropylene business divested on September 30, 2011.

### **3.9 Data measurement techniques and the bases of calculations**

Dow's Operating Discipline Management System (ODMS) is used throughout Dow and helps accomplish meaningful data capture and aggregation. A key element of ODMS is a measurement policy and requirements. As part of these requirements, measurements are established and performance is monitored to ensure consistent performance that meets our objectives and targets. The ODMS sets expectations on calibration, measures, measuring equipment, measurement systems and critical instruments. Several data management systems address specific requirements and are unique to the particular needs of the respective measures. Examples include the Global Emissions Inventory (GEI) system that tracks emissions, the Global Incident Reporting Database (GIRD) that records occupational health and safety events, and the Global Asset Utilization Reporting (GAUR) system that collects utilization and energy use information. Each of these examples is global in scope, and defines data collection and the bases of calculations for the respective system.

### **3.10 Explanation of any re-statements of information** provided in earlier reports

None identified.

#### 3.11 Significant changes from previous reporting

None identified.

### **3.12** Table identifying the location of the Standard Disclosures in the report

GRI index at end of report.

#### Assurance

#### 3.13 Policy and practice with regard to external assurance for the report

Dow has engaged Environmental Resources Management (ERM) to review our 2012 Sustainability Report. ERM is one of the world's leading providers of environmental consulting services. They have significant experience in the assurance process. This is the sixth time Dow has included assurance as a part of the annual Sustainability Report.

### Independent Assurance Statement by ERM

Environmental Resources Management (ERM) was retained by The Dow Chemical Company (Dow) to provide an independent review and assurance statement for Dow's Annual Sustainability Report covering 2012 (the Report).

#### Scope of Work

The assurance process was conducted in accordance with AA1000AS (2008).

ERM was engaged to provide moderate level, Type 2 assurance, covering:

- evaluation of adherence to the AA1000AS (2008) principles of inclusivity, materiality and responsiveness (the Principles); and
- the reliability of specified sustainability performance information.

In addition, ERM reviewed the Report against the Global Reporting Initiative (GRI) G3.1 Sustainability Reporting Guidelines (2011) – Application Level A criteria.

The intended user of this statement is the reader of the Report.

#### **Assurance Work Performed**

ERM tested the effectiveness of processes used to adhere to the AA1000AS Principles through management interviews, the review of data and visits to selected operations.

ERM conducted interviews with personnel at The Dow Chemical Company's headquarters in Midland, Michigan and manufacturing operations in Freeport, Texas, Bahia Blanca, Argentina and Fort Saskatchewan, Canada. These sites were selected to represent a range of operations and material sustainability impacts and included a site located in a non-English speaking country.

During the interviews and site visits, ERM focused on:

- Understanding the Dow business context and its sustainability strategy;
- Reviewing the Report and other relevant supporting documents;

- Understanding the logistics of Dow's data collection and reporting processes and systems, including the Global Incident Reporting Database (GIRD), Global Emissions Inventory (GEI) and Global Asset Utilization Report (GAUR);
- Checking the accuracy of a sample of data from the sites visited;
- Reviewing the mechanisms for checking and verifying data at the site, business, and corporate level; and
- Reviewing the process for the management of change to data, including how errors are communicated to the data providers and corrective action checked to ensure accuracy in the reported data.

The review was conducted during May 2013 and included an assessment of Dow's data collection and verification processes and the Report's content as well as the development of this assurance statement.

#### **Responsibility and Methodology**

Dow was responsible for the preparation of the Report and this statement represents ERM's independent opinion. ERM's responsibility was to express our assurance conclusions within the agreed scope.

We delivered our work in accordance with ERM's assurance methodology, which is based on AA1000AS, the GRI Sustainability Reporting Standards and the International Standard on Assurance Engagements (ISAE) 3000. We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusions as to whether the reported information and data set out in our scope of work was appropriately reported (moderate assurance).

The accuracy and completeness of this information is subject to inherent limitations given their nature and methods for determining, calculating and estimating such data.

#### Evaluation of Alignment with AA1000AS (2008)

ERM evaluated Dow's alignment with the three AA1000AS principles of inclusivity, materiality and responsiveness. ERM determined through interviews with internal and external Dow stakeholders at both the corporate and site level that Dow has effectively included stakeholders, determined materiality of issues, and responded to those issues.

#### Inclusivity

Dow has established robust and on-going processes for effective and quality stakeholder engagement. Discussions held as part of the assurance project with customer facing employees, a representative of Dow's Sustainability External Advisory Council (SEAC) and the Community Advisory Panels (CAP) at the plants visited confirmed that Dow has provided a robust channel for engagement and dialogue with stakeholders and that Dow is responsive. Dow has also demonstrated their commitment to engaging their internal stakeholders through examples such as their Global Employee Opinion and Action Survey (GEOAS) and active Employee Diversity Networks.

#### Materiality

Dow has a number of processes for identifying issues that present material risks to the company. These include public affairs review, enterprise risk management and GRI reporting processes. Dow was assessed to have identified the material issues for the company and those issues that are taken into consideration when the organization or its stakeholders make decisions. Dow is also collaborating with The Nature Conservancy to better understand selected impacts of the Company on nature and to identify ways to recognize, value and incorporate nature into global business goals, decisions and strategies.

#### Responsiveness

Dow was assessed to have in place processes for responding to material issues, that is, they have developed and implemented appropriate policies, strategies and plans consistent with stakeholder and organizational interests and expectations. Dow's established goals for sustainability performance are aligned with the issues that are material to their business. The resources allocated to the goals and the quarterly tracking of progress towards these goals provides a measure of the responsiveness of the company.

#### **ERM Conclusions**

On the basis of the work undertaken, nothing came to our attention to suggest that the Report does not properly describe Dow's adherence to the principles, content and quality requirements of GRI G3.1 and AA1000 AS (2008) or the associated performance.

In terms of data accuracy, nothing came to our attention to suggest that data has not been properly collated from information reported from manufacturing sites. We are not aware of any errors that would materially affect the data reported.

During the review period, ERM identified a number of issues that were discussed and subsequently addressed by Dow in the final draft of the Report. These issues and the associated recommendations are included in detail in a separate assurance project report to Dow management.

#### **ERM Competence**

ERM operates strict conflict of interest checks and has confirmed our independence to work on this engagement with Dow. During 2012, ERM worked with Dow on unrelated consulting engagements. The members of the review team have not provided consulting services to Dow outside of the review of the Report. The review team has the required combination of education, experience, training, and skills for this engagement.

#### **Environmental Resources Management** Chicago, USA June 2013

ERM is an independent global provider of environmental, social and corporate responsibility consulting and assurance services. We have worked with over half of the world's 500 largest companies, in addition to numerous governments, international organisations and NGOs.



### 4. Governance, Commitments, and Engagement

#### 4.1 Governance structure of the organization

We rely on our <u>Board of Directors</u> to know our Company, conduct thorough reviews and ask the difficult questions. Dow exemplifies good governance with a lead director; directors with solid, diverse experience and credentials; corporate governance guidelines; and codes of business conduct and financial ethics. A substantial majority of Dow's Board members are independent directors.

See <u>LA13</u> for information about the gender make up of the Board of Directors.

Dow's <u>Corporate Officers</u> are accountable to the Board, in addition to their management roles within the Company.

Detailed information about Dow's <u>governance structure</u> can be found on our website, dow.com.

Board Committees, which are listed below, are described in the Company's <u>bylaws</u> available on the website. A Board Committee Membership chart provides

an overview of members and Committee roles.

- <u>Audit Committee</u>
- Governance Committee
- <u>Compensation and Leadership</u> <u>Development Committee</u>
- <u>Environment, Health, Safety and</u> <u>Technology Committee</u>

The Sustainability Team serves as the governance body within the Company for EH&S, Public Policy Issues and Sustainability. This team, which assists the Environment, Health, Safety and Technology Committee of the Board in their oversight responsibilities for Dow performance in these areas, is composed of the following members:

- Dave Kepler: Chief Sustainability Officer, Chief Information Officer, Business Services and Executive Vice President
- Charles Kalil: General Counsel, Corporate Secretary, and Executive Vice President
- Antonio Galindez: President and Chief Executive Officer, Dow AgroSciences
- Joe Harlan: Executive Vice President, Chemicals, Energy and Performance Materials
- Carol Williams: Executive Vice President, Manufacturing & Engineering, Supply Chain and Environmental, Health and Safety (EH&S) Operations
- Neil Hawkins: Vice President, Global EH&S and Sustainability

"Sustainability is not just one of the key issues; it is actually the key issue for today's manufacturers. I am convinced that manufacturers that put in place creative, far-reaching sustainability policies will thrive in the 21st Century, while those that don't will fall behind and struggle to survive."



- Carol Williams



### **4.2** Is the Chair of the Board of Directors also an executive officer?

Andrew Liveris is Chairman of the Board of Directors, and also President and Chief Executive Officer. Jeff Fettig, Chairman and Chief Executive Officer, Whirlpool Corporation, was elected as Lead Director in May 2011, 2012 and 2013.

The Board has determined that the Company and its stockholders are currently best served by having one person serve as Chairman and CEO as it allows for a bridge between the Board and management and provides critical leadership for carrying out the Company's strategic initiatives and confronting its challenges. Mr. Liveris' service as Chairman facilitates the Board decision-making process because Mr. Liveris has first-hand knowledge of the Company's operations and the major issues facing the Company, and he chairs the Board meetings where the Board discusses strategic and business issues.

### 4.3 Number of members of the Board of Directors that are independent and/or non-executive members

As of the end of 2012 the Board has assessed the independence of each non-employee Director based upon the Company's <u>Director Independence standards</u> described in the Company's Corporate Governance Guidelines.

These standards incorporate the criteria in the listing standards of the New York Stock Exchange, as currently in effect, as well as additional, more stringent criteria established by the Board. Based on these standards, the Board determined that the following members of the Board are independent: Directors Barton, Bell, Fettig, Hess, Polman, Reilley, Ringler, and Shaw. These independent Directors constitute 80% of the full board, a substantial majority of the Board, consistent with Board policy. Of these independent members of the Board, 20% are female.

In addition, the Board determined that the following members of the Board serving during 2012 were independent at the time they served as Directors: Franklin and Stern. Directors Franklin and Stern retired from the Board in May 2012.

The Board also determined that Director Banga, elected to the Board in February 2013, is independent.

# **4.4 Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body**

Stockholders and other interested parties may communicate directly with the full Board, the Lead Director, the nonmanagement Directors as a group, or with specified individual Directors by any of several methods. These include mail addressed to The Dow Chemical Company, 2030 Dow Center, Midland, MI 48674, and the "Contact Us" feature of Dow's corporate governance website at <u>www.DowGovernance.com</u>. The Presiding Director and other non-management Directors may also be contacted by email addressed to <u>PresidingDirector@Dow.com</u>.

The Dow Proxy Statement describes the requirements for submitting a proposal to be considered for inclusion in the Company's proxy material for a future annual meeting. Agenda item 4 of the 2013 Proxy Statement is an example of a stockholder proposal.

Employees are invited to give voice to their views at the HuB. This electronic venue creates an employee dialogue about far-reaching topics related to Dow. Mr. Liveris, CEO, extends the following invitation to employees: "Please join me in a conversation about Dow. The topics will be far-ranging. The focus: how today impacts tomorrow. We are looking for a dynamic, candid and constructive discussion. Feel free to disagree – with me or with others posting to the blog. I do ask that your disagreement is respectful, adds value and moves the discussion forward. Each person visiting this site has a distinct view of our Company and of our world. Your vantage point brings real value, so give voice to your views. Help us engage in a conversation that is not only about our future but helps us shape our future."

Employees also provide input and direction through a Global Employee Opinion & Action Survey (GEOAS).

The Dow EthicsLine is a safe, reliable and convenient avenue to report ethical concerns. It is available globally, with multi-lingual capabilities, 24 hours a day, seven days a week. In addition, Dow employees can also access the EthicsLine via an on-line reporting option. No call tracing or recording devices are ever used and the users of the EthicsLine have the option to remain anonymous as permitted by the governing jurisdiction.

# **4.5** Linkage between compensation for members of the highest governance body, senior managers, and executives, and the organization's performance

The following provides an overview of Dow's compensation philosophy and programs:

- The compensation programs at Dow are designed primarily to support the realization of Dow's vision of being the most profitable and respected science-driven chemical company in the world, while promoting the long-term interests of our stockholders and other stakeholders.
- Our compensation programs are designed to attract, motivate, reward and retain the most talented executives who can drive business performance.
- Dow believes in pay-for-performance, which we implement through an annual incentive award that includes objective performance criteria and through equity awards where the value realized is tied to our stock price performance, including shares that vest only if certain performance hurdles are satisfied. These performance components represent at least 80% of the direct compensation of the Named Executive Officers ("NEOs").
- The following elements comprise the total direct compensation awarded to our NEOs: base salary, performance-based annual cash incentive award ("Performance Award"), and equity based Long Term Incentive ("LTI") awards consisting of Performance Shares, Stock Options and Deferred Stock.
- We emphasize stock ownership. LTI awards are delivered as equity-based awards to senior executives. Dow executives are required to maintain, until retirement, between four and six times their annual base salary in Dow stock. This encourages managing from an owner's perspective and better aligns their financial interests with those of Dow stockholders.
- We target all elements of our compensation programs to provide a competitive compensation opportunity at the median range of our peer group (the "Survey Group") of companies whose compensation is surveyed by the Compensation and Leadership Development Committee (the "Committee"). Actual payouts under these programs can be above or below the median based on Company and personal performance.
- Our executives participate in the same group benefit programs, including pension and retirement plans, on substantially the same terms as other salaried employees.
- Our executives are provided limited perquisites which are granted to facilitate strong, focused performance on their jobs.
- The Committee exercises discretion in determining compensation actions when necessary due to extraordinary changes in the economy, unusual events or overall Company performance.

See the compensation discussion and analysis section of the <u>2013 Proxy</u> Statement for more detailed information.

### **4.6 Processes in place for the highest governance body to ensure conflicts of interest are avoided**

All Directors, officers and employees of Dow are expected to be familiar with the Company's Code of Business Conduct, and to apply it in the daily performance of their Dow responsibilities. The Code of Business Conduct is intended to focus employees, officers and Directors on our corporate values of integrity and respect for people, help them recognize and make informed decisions on ethical issues, help create a culture of the highest ethical and business standards, and provide mechanisms to report unethical conduct. The full text of Dow's Code of Business Conduct is available at <u>www.DowGovernance.com</u>.

To assess independence of Board members, the Governance Committee and the Board consider all relationships between the Directors and the Company, including commercial, industrial, banking, consulting, legal, accounting, charitable and familial relationships, among others. The Company screens for such relationships using an annual Directors and Officers questionnaire that requires disclosure of any transactions with the Company in which the Director or executive officer, or any member of his or her immediate family, has a direct or indirect material interest.

The process for on-boarding new directors also includes a defined orientation process that includes training for guiding their fulfillment of duties as a member of the Dow Board of Directors.



### **4.7** Process for determining the qualifications and expertise of the members of the Board of Directors

There are certain minimum qualifications for Board membership that Director candidates should possess, including strong values and discipline, high ethical standards, a commitment to full participation on the Board and its Committees, relevant career experience, and a commitment to ethnic, racial and gender diversity. The Governance Committee has adopted guidelines to be used in evaluating candidates for Board membership in order to ensure a diverse and highly qualified Board of Directors. In addition to the characteristics mentioned above, the guidelines provide that candidates should possess individual skills, experience and demonstrated abilities that help meet the current needs of the Board and provide for diversity of membership, such as experience or expertise in some of the following areas: the chemical industry, global business, science and technology, finance and/or economics, corporate governance, public affairs, government affairs, and experience as chief executive officer, chief operating officer or chief financial officer of a major company. Other factors that are considered include independence of thought, willingness to comply with Director stock ownership guidelines, meeting applicable Director independence standards (where independence is desired) and absence of conflicts of interest.

Please see qualifications in <u>The Dow Chemical Company</u> <u>Corporate Governance Guidelines</u>.

### 4.8 Statements of mission or values, codes of conduct, and principles

Dow's mission, vision, values, and strategy describe why the Company exists, who we are, what we intend to do, and how we intend to do it. All of these guide our practices and priorities.

At Dow, we are committed to promoting socially responsible conduct that aligns with the 10 universally accepted principles of the United Nations Global Compact. These principles are woven throughout the Code and are also consistent with our expectations of suppliers and business partners. The Diamond Standard, Dow's Code of Business Conduct, can be found on <u>our website</u>.

### Vision:

To be the most profitable and respected science-driven chemical company in the world

### Mission:

To passionately innovate what is essential to human progress by providing sustainable solutions to our customers

Corporate Strategy:

Preferentially invest in a portfolio of technology-integrated, market-driven performance businesses that create value for our shareholders and growth for our customers.

Manage a portfolio of asset-integrated, building-block businesses to generate value for our downstream portfolio

alues:

IntegrityRespect for PeopleProtecting Our Planet

#### 4.9 Procedures of the highest governance body for overseeing economic, environmental, and social performance, including risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles

The Environment, Health, Safety and Technology (EHS&T) Committee of the Board of Directors assists the Board of Directors in fulfilling its oversight responsibilities by assessing the effectiveness of programs and initiatives that support the Environment, Health and Safety (EH&S) and sustainability, innovation, and technology policies and programs of the Company and by advising the Board on matters impacting corporate social responsibility and Dow's public reputation.

The EHS&T Committee has the authority and responsibility to take the actions set forth below:

- Review the status of the Company's EH&S and sustainability policies and performance, including processes to ensure compliance with applicable laws and regulations and programs to manage risks.
- 2. Review and provide input to the Company on the management of current and emerging EH&S and sustainability issues.
- 3. Report periodically to the Board of Directors on EH&S and sustainability matters affecting the Company.
- 4. Review with management of the Company, the science and technology capabilities of the Company in all phases of its activities in relation to its corporate strategies and plans and its external competitiveness.
- 5. Review the status of the Company's philanthropy initiatives.
- 6. Review the Company's public policy and advocacy priorities.
- 7. Review the Company's initiatives to build reputation.

In a similar fashion, the Audit Committee of the Board oversees the quality and integrity of the financial statements of the Company and its system of disclosure controls and procedures and system of internal control over financial reporting.

The specific responsibilities of each of the Committees of the Board are found on <u>www.dow.com</u> at <u>Corporate Governance –</u> <u>Board Committees</u>.

The Executive Committee is continually informed about the financial performance of the Company and is tasked in part with defining and implementing a strategy to maximize long-term shareholder value.

# **4.10** Process for evaluating the highest governance body's performance, particularly with respect to economic, environmental, and social performance

Each of the four Board Committees conducts an annual review of its charter and performance. In addition to this self-assessment, each Committee makes regular reports to the Board of Directors. The Compensation and Leadership Development Committee and the other non-employee Directors conduct an annual review of the performance of the Chief Executive Officer.

The Committees undertake numerous risk oversight activities related to their charter responsibilities. For example, the Compensation and Leadership Development Committee regularly reviews any potential risks associated with the Company's compensation policies and practices. As another, the Environment, Health, Safety and Technology Committee regularly reviews the Company's operational risks including those risks associated with process and product safety, public policy, and reputation risks.

The responsibilities of each Committee are stated in the Bylaws and in their respective Committee charters, which are available at www.DowGovernance.com.


### **Commitments to External Initiatives**

## **4.11 Explanation of how the precautionary approach or principle is addressed by the organization**

Dow supports a precautionary approach as set out in Principle 15 of the Rio Declaration on Environment and Development: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

The Rio Declaration was amended at the Johannesburg summit to include health impacts, in addition to environmental impacts.

Dow believes that approaches should be risk-based and costeffective. Additionally, the selected chemicals management approach should be:

- proportional to the objective being pursued;
- provisional;
- the least burdensome option that provides adequate protection from the risk.

As a responsible corporate citizen, Dow continues to use a well-defined process for assessing and managing risks in the face of uncertainty. This process is science-based, ensuring decision-making includes an appropriate evaluation of risk and benefits. It applies to current products as well as those being contemplated for development.

Dow views the Precautionary Principle as an application of the principles of risk assessment and risk management. Risk assessment includes hazard identification, characterization, exposure assessment and risk assessment. Risk management encompasses the identification, selection and implementation of alternative actions for addressing risk through the control of identified hazard(s) and/or exposure.

## **4.12 Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses**

Dow signed the UN Global Compact in June 2007. The annual Communication on Progress is accomplished with this report. See the Social Disclosure on Management Approach and the letter from the CEO for more information.



#### Advocacy in the Area of Addressing Climate Change

The United States Climate Action Partnership (USCAP), an alliance including Dow and leading climate and environmental groups, works to call on the federal government to enact legislation requiring significant reductions of greenhouse gas emissions. The USCAP developed a set of principles and recommendations to guide the formulation of a regulated economy-wide, market-driven approach to climate protection.

Dow continues to participate in the Carbon Disclosure Project (CDP). This index highlights global companies that have displayed the most professional approach to corporate governance in respect to climate change disclosure practices.

Dow is a member of Caring for Climate, a voluntary action platform for those UN Global Compact participants who seek to demonstrate climate change leadership. It represents a commitment to develop corporate strategies and practices to reduce carbon emissions, to publicly disclose emissions, and to urge governments to make progress. It also provides a framework for business leaders across the globe to advance practical solutions and help shape public policy as well as public attitudes.

#### Dow Commitment to <u>Responsible Care</u>® Management System



Integral to our commitment to Responsible Care, Dow will make continuous progress toward the vision of no accidents, no injuries and no harm to the environment and will publicly report

our global health, safety and environmental performance. We will lead in ethical ways that increasingly benefit society, the economy and the environment while adhering to the <u>12 specific commitments</u> that guide the discipline of our Responsible Care® Management System. A key part of the Responsible Care<sup>®</sup> management system process is mandatory certification by an independent, accredited auditor. Obtaining independent certification that a management system is in place and functions according to professional standards is mandatory for American Chemistry Council member companies. Dow presently works with Lloyd's Register Quality Assurance (LRQA) as the independent, accredited auditor(s) and we are currently in our third Responsible Care® Management System (RCMS) certification cycle which extends from 2011 to 2013. During 2011, Dow's headquarters activities were audited and found to be in conformance with the RCMS Technical Specification RC101.03. Five additional Dow sites were also audited against this Technical Specification in 2011/2012 and each location received a Certificate of Conformance from LRQA. These sites include: Michigan Operations, Midland R&D, Wilmington, Plaquemine, and Marietta.

Over past decades, Dow has been a leader in working with industry associations and chemical companies around the world resulting in wide participation in Responsible Care<sup>®</sup>. This management system helps every participating chemical company continuously improve its health, safety and environmental performance.

#### **Biotechnology Principles**

Dow has adopted the following principles to guide its decision-making in <u>applying biological knowledge</u> and techniques to develop products and services for the benefit of our customers, shareholders and society. We will pursue biotechnology in alignment with Responsible Care<sup>®</sup>, Dow's Values, and the Code of Business Conduct. We recognize that the unique scientific, philosophical and ethical implications of biotechnology must be considered.

- We will actively listen to and dialogue with stakeholders to understand their concerns and help us progress responsibly.
- We will inform the public about relevant benefits, risks, and potential implications of our biotechnology products and processes and encourage others to do the same.
- We will participate in outreach efforts and explore opportunities to make the benefits of biotechnology available to developing countries and will respect the rights of indigenous people to have access to local germ plasm.
- We will promote research on the potential benefits and safety of our biotechnology products and services for humans, animals, and the ecosystem.
- We will support the development and implementation of internationally harmonized approaches to biotechnology safety analysis and promote the creation of a predictable and scientifically sound regulatory framework to reduce scientific uncertainty, manage potential risks, and assure public confidence.
- We will apply our established corporate Environment, Health & Safety Risk Review Process, which includes a thorough consideration of the impact on humans, animals, the environment and society, throughout the life cycle of all our biotechnology products and services and will take appropriate corrective actions.
- We will support the patentability of inventions as determined by the applicable laws of the countries in which we do business and will respect the intellectual property rights of others and not knowingly infringe upon valid patents.
- We will support the conservation of biological diversity and the sustainable use of biological resources.
- We will promote these principles throughout the industry and value chain.

#### 4.13 Memberships in associations and/or advocacy organizations

Examples of trade, business associations and alliances where Dow is an active member are shown below. Dow participates in numerous additional organizations, including many at the local and regional level.

- Akatu Institute for Conscious Consumption (Brazil)
- Alliance to Save Energy
- American Cleaning Institute
- American Council for an Energy Efficient Economy
- American Council of Commerce (China, Japan)
- American Institute for Packaging and the Environment (AMERIPEN)
- Alliance with US OSHA to share health and safety expertise
- Alliance with China SEPA to share pollution prevention practices with SMEs
- Alliance with China SAWS to share worker safety practice with SMEs
- American Chemistry Council (ACC)
- Association of International Chemical Manufacturers (China)
- Brazilian Business Council for Sustainable Development (CEBDS)
- Brazilian Chemical Industry Association (ABIQUIM)
- Business Civic Leadership Center
- Carbon Disclosure Project
- China-US Center for Sustainable Development
- Chlorine Chemistry Division of the American Chemistry Council
- Clinton Global Initiative
- Corporate Eco Forum
- Ethos Institute (Brazil)
- European Chemical Industry Council (CEFIC)

- German Chemical Industry Association (VCI)
- Institute of Argentine Business Development (IDEA)
- International Council on Chemical Associations (ICCA)
- Japan Chemical Industry Association
- Netherlands Chemical Industry Association (VNCI)
- Plastics Europe
- Sustainable Packaging Coalition
- The Business Roundtable (BRT)
- The Sustainability Consortium
- United Nations Global Compact
- United States Climate Action Partnership (USCAP)
- United States Studies Centre at the University of Sydney
- University of Michigan Fellows Program
- University of Queensland Program
- World Business Council for Sustainable Development (WBCSD)
- China Business Council for Sustainable Development (CBCSD)
- US Business Council for Sustainable Development (USBCSD)
- Consejo Empresario para el Desarrollo Sostenible. (Argentina)
- World Chlorine Council (WCC)
- World Environment Center (WEC)
- World Resources Institute Corporate Consultative Group
- World Resources Institute Green Power Market Development Group



#### **Stakeholder Engagement**

## **4.14 List of stakeholder groups engaged by the organization**

Advocacy and Advisory Groups	NGOs and Think Tanks	Governments
Communities	Industry and Trade Associations	Regulators
Customers	Academia	Financial Community
Employees	Retirees	Competitors
Investment Professionals	Shareholders	Suppliers
IGOs	Consumers	Media

Stakeholder engagement takes place in a variety of other ways throughout the year. Some specific examples of intentional and purposeful listening to stakeholders occur through the following:

- The Sustainability External Advisory Council (<u>SEAC</u>) has represented a wide variety of external stakeholders since its initial meeting in 1992. <u>Thought leaders</u> are selected to represent external points of view in ongoing semi-annual meetings. Members bring their knowledge, experience and understanding to discuss issues of concern to Dow.
- Community Advisory Panels (CAPs) Dow has been an industry leader in establishing and using CAPs in the communities where we have operations.
- The Business Sustainability Forum is a group of Dow marketing and business people who identify trends and help enable responses to address growing sustainability requirements.

# The Sustainability External Advisory Council Celebrates 20 Years of Collaboration and Progress in 2012

The year 2012 marked 20 years of Dow leaders and members of Dow's Sustainability External Advisory Council (SEAC) working together to shape the Company's sustainability vision and strategy.

In a groundbreaking move for industry and Dow, the SEAC held its first meeting in 1992 to cultivate diverse expert perspective on EH&S and sustainability issues. Comprised of leaders from leading business, academic, government and non-government organizations, the SEAC meets with Dow leaders to share knowledge, experience and ideas. Since its founding, the SEAC has helped define Dow's approach to sustainability and played a critical role in the development of the company's Sustainability Goals.

"Dow's sustainability story is one of collaboration at the highest levels," said Dave Kepler, Dow's executive vice president and chief sustainability officer, and SEAC Chair. "For the past two decades, we have sought the best outside-in thinking, from a diverse panel of experts, on what it means for Dow to 'set the standard for sustainability'."

To celebrate 20 years of continuous operation, Dow leaders joined current and former SEAC members to reflect on achievements and milestones from the past, and share visions for the future. The keynote was delivered by Georg Kell, executive director of the United Nations Global Compact, who challenged the audience to "keep your focus at the micro level while maintaining our effective leadership at the global level. The world needs Dow and its leadership." Kell also suggested that our Chambers of Commerce need to become our "Chambers of Sustainability."



Neil Hawkins, Dow's vice president of sustainability and EH&S, and recently retired former SEAC Chairs Dave Buzzelli and Larry Washington, also shared their perspectives on the SEAC legacy and the importance of collaboration.

The SEAC will continue to help shape Dow's sustainability initiatives and commitments into the future, helping the Company define and address goals, business success, stakeholder engagement and key trends.

Neil Hawkins (right) talks with (from left to right) Steve Polasky (current SEAC member), Georg Kell (Executive Director, UN Global Compact and Keynote speaker), Jianyu Zhang (current SEAC member)

## **4.15** Basis for identification and selection of stakeholders with whom to engage

Stakeholder analysis helps identify and evaluate stakeholders that can and do impact or influence the Company's strategy and reputation. The intentional effort is to identify stakeholders who can drive, block or shape the discourse around sustainability. In addition, those who are affected may then influence how this discourse ultimately impacts Dow. Through keeping up with current perspectives, more successful issues management and government affairs efforts are accomplished helping to avoid negative impacts for the Company's businesses.

The selection of members for the SEAC focuses on the potential to challenge conventional thinking and press the case for adopting proactive and effective positions on important issues.

#### 4.16 Approaches to stakeholder engagement

The fundamental principles of Dow's on-going sustainability stakeholder engagement strategy focus on three areas: (1) information sharing and disclosure; (2) participating in active dialogue; and (3) collaborating on issues of mutual interest. The overall purpose of engagement is to advance the most appropriate business objectives while building Dow's reputation.

The following are examples of engagement with key stakeholders in 2012. The engagements described were not undertaken specifically as part of the report preparation process.

- A collaborative project with King Abdullah University of Science and Technology (KAUST) allows Dow to develop innovative solutions that directly address regional water challenges. The collaboration project is intended to be used for application development on the Red Sea, with the objective of developing an optimized low-cost, low-energy consuming, membrane able to meet the challenge of desalination in arid parts of the world like Saudi Arabia.
- Dow participated in the European Commission's annual environmental flagship event in Brussels, the EU Green Week. Dow used the forum to highlight the business community's definition of a green economy and discussed the need to incorporate better indicators at the "Great Green Economy Debate" at the Rio+20 Earth Summit.
- Dow and The Nature Conservancy (TNC) made significant progress on the \$10 million collaboration announced in 2011 to help Dow and the business community recognize, value and incorporate nature into global business goals, decisions and strategies. In 2012, the TNC-Dow Collaboration finished work at the first pilot site for the collaboration and Dow's largest global manufacturing facility, Texas Operations in Freeport.

- In 2012, Investor Relations with Executive Management hosted in New York City the 2012 Investor Forum with over 150 analysts and institutional investors. The Company's reinforced its commitment to its long-term strategy, and shared with investors strategic interventions and key catalysts that will enable Dow to achieve nearterm targets and drive sustainable earnings growth.
- Dow recently participated in a two-day meeting of the Latin America Conservation Council in Foz do Iguaçu, Brazil. The event was coordinated by The Nature Conservancy and focused discussions on generating innovative, entrepreneurial solutions to challenges facing Latin America's natural environment. Since 2011, the Council has focused on the areas of food security, water security and smart infrastructure development. Solutions from Dow will contribute significantly in areas such as food security and water use. Related activities, such as the Brazilian sustainable livestock initiative and land use initiatives, will promote biodiversity and resource sustainability in the context of agricultural production.
- Dow AgroSciences and the Australian Centre for Plant Functional Genomics have entered into a crop improvement research, option, and license agreement to discover and develop new traits for crop improvement. Both companies will utilize their trait capabilities to create plants with improved environmental stress response and agronomic performance. The collaboration will mean that Australian growers have greater access to international resources and know-how – and has the potential to bring valuable new solutions to the agricultural market and farmers around the world.



- Dow AgroSciences announced that it has entered into a new research collaboration with the Victoria Department of Primary Industries to develop novel plant genetics tools designed to increase crop performance for the benefit of farmers in Australia and around the world. The collaboration builds upon the current research and development program in plant genomics between the companies.
- Dow AgroSciences (DAS) and The Royal Barenbrug Group announced a global strategic relationship for the development and commercialization of advanced germplasm in forage seeds. Barenbrug will form a new entity in Brazil to build a state-of-the-art cleaning, coating, and packaging facility to process hybrid Brachiaria for DAS, as well as produce other tropical grasses and legumes. This collaboration will build upon DAS's current seed portfolio by expanding into forage grass seed, a very important global crop.
- The Sustainability Consortium drives scientific research and development of standards and tools that help companies better understand and address the environmental, social, and economic implications of their products, which can lead to significant competitive advantage. Dow provides invaluable insight regarding sustainable chemistry and advanced manufacturing perspective across industry sectors of emphasis by the consortium. Key sectors of focus are Food Beverage & Agriculture, Home & Personal Care, Electronics, Clothing Footwear & Textile, and Pulp Paper & Forestry. The Sustainability Consortium is a collaborative member organization jointly managed by Arizona State University and the University of Arkansas. The Sustainability Consortium has a broad base of support, including P&G, Wal-Mart, Marks & Spencer, Unilever, Coca-Cola, Non-Government Organizations and Industry trade associations.
- The Dow Center School of Sustainability Education for Suppliers it is a pioneering initiative on the Brazilian market in partnership with Uniethos. In August of 2012, the Center launched a supplier-focused program, the main goal of which is to incorporate social responsibility and sustainability into Dow's supply chain and integrate suppliers into the company's sustainability guidelines and market trends. Among the subjects addressed by the program are how to align corporate social responsibility and sustainability, training on how to use Ethos Metrics, and training on Dow's Supplier Code of Conduct. Due to the success on this initiative Dow is planning to leverage it to other Latin America countries, like Mexico and Argentina.
- In 2012, the fourth annual SISCA program was held with 18 Universities around the globe. The competition started in 2009 in line with the 2015 Sustainability Goals and has been established to strengthen University collaboration efforts and to recognize student enthusiasm for sustainable development, and to foster innovative and interdisciplinary project development.

#### Employees

The Global Employee Opinion and Action Survey (GEOAS) measures employee attitudes on important topics of engagement, satisfaction and commitment, and monitors perceptions about key strategic themes important to the Company. Many GEOAS items are benchmarked against feedback from other large, well-respected companies that conduct similar employee surveys. This survey provides key information to leadership so they can focus on items that are most directly aligned to engaging our employees.

Seven employee networks – each with a senior executive sponsor – bring together people with a common interest to share experiences, find mentors, seek professional development, and gain access to senior leadership.

- African American Network
- Asian Diversity Network
- Disability Employee Network
- Gays, Lesbians & Allies at Dow
- Hispanic Latin Network
- Middle East Intercultural Network
- Women's Innovation Network (WIN)

The networks at Dow offer mentoring and networking opportunities, and provide access to professional development. All employees are eligible to join any of the networks as early in their career as they choose.

#### Communities

See the Society Disclosure on Management Approach and <u>SO1</u> for a description of Community Advisory Panels.



## **4.17** Key topics and concerns raised through stakeholder engagement and how the organization has responded to those key topics and concerns

The SEAC (Sustainability External Advisory Council) provides for open dialogue between Dow's business leaders and independent external thought leaders. The SEAC challenges the way the Company thinks, helping to frame important challenges and opportunities in a creative, solutions oriented way. Examples of topics addressed include:

- Management of natural resources
- Dialogue about progress and impact of 2015 Sustainability Goals; and about Dow's next generation approach to sustainability
- Review of enterprise risk issues
- Dialogue on doing business in new emerging regions, including growth projects

A similar method called Dow CAPs (Community Advisory Panels) are used locally at many of Dow's manufacturing/ R&D sites. These panels are made up of selected Dow and community leaders for the purposes of conducting ongoing and open communication regarding Dow's operations, safety programs, environmental conditions, community interactions, and many other aspects of the plant that might be of interest to the community. Feedback from Dow CAPs allows Dow to be responsive in areas such as; addressing the community's quality of life needs where they believe Dow can have the greatest impact.

This year, Dow's Midland CAP was separated into three groups based on the community's perception of Dow's rightful role in the community; Education, Environment and Economy (Quality of Life). As a result of these focus group sessions, issues were identified and recommendations were offered by the CAP where they believe Dow can have the greatest impact.

"Sustainability is not a program, a project, an initiative, or part of our business strategy. Sustainability is our business strategy, everything we do, all of our innovation - commercial, operations, technology - is executed through the lens of sustainability. The opportunity we see through that sustainability lens is to bring innovation to market that is sustainable in terms that matter to all key stakeholders, not `green-washing' - but terms that deliver real value to stakeholders."

- Mark Henning

We also measure Dow's impact as a corporate citizen and identify concerns through periodic community assessment surveys at select sites. These surveys generate feedback related to quality of life issues, identifies Dow's "rightful role" in a community, and also provides direct recommendations on identified opportunities where Dow can have a positive impact. We address these and many more issues through our local site Community Success Plans.

An issue of increasing concern to stakeholders is reform of the Toxic Substances Control Act (TSCA), the law that governs production, import and use of chemicals in the United States. Insight about the significance of the issues and the gaps that exist between industry and other stakeholder positions makes this a topic in which constructive conversation is needed. Dow has organized, with American Chemistry Council (ACC), a series of TSCA dialogue sessions with stakeholders from state environmental agencies with an interest in TSCA Reform and several other ACC member companies. Representatives from the State Agencies and ACC member companies are coming together to learn from each other – sharing our positions on key TSCA framework issues. This understanding provides a better backdrop for both groups as TSCA reform legislative dialogue advances.

Dow provides information about historical <u>issues and</u> <u>challenges</u> such as Agent Orange, asbestos, Bhopal and dioxin on Dow.com. Recent plans that address the resolution of the dioxin issue in Midland, Michigan are available at Dioxin Resolution Website: <u>http://www.midlandresolution.com/</u>



# The Economic Impact of Sustainability

## **Economic Summary**

As the Company pursues its corporate target to deliver \$10 billion in EBITDA in the near term, we recognize the need for Dow's problem-solving expertise to be used to help address the world's most difficult challenges. By understanding the direct and indirect value associated with innovations we will help meet the current and future needs of society.

Dow realizes that our innovations generate value at multiple steps in the downstream value chain. New chemistry pioneered by Dow enables the performance of high technology products. More efficient processes deployed by our operations reduce the purchase and usage costs of products. We seek opportunities to partner with others, believing that breakthrough solutions to challenging problems are often best addressed through collaboration.

#### **Key Accomplishments for 2012**

The global economy in 2012 continued with its volatility and uncertainty, proving to be the new normal. Persistent weakness in Europe was a continued drag on global GDP growth, while dramatic declines in China, Brazil and other emerging geographies introduced new risks to a sustained recovery.

As market conditions further deteriorated in the second half of 2012, Dow took aggressive action – driving a full array of cost and cash flow measures, prudently managing our portfolio and further prioritizing growth investments.

- Continued to harness the power of our innovation portfolio in Agricultural Sciences, realizing record sales of \$6.4 billion and record EBITDA of \$977 million;
- Generated nearly \$8 billion in cash flow from operations in the two-year period ended December 31, 2012;
- Launched \$2.5 billion of cost and cash flow actions;
- Further paid down debt, with a \$613 million decrease in gross debt;
- Increased dividends declared per share in 2012 by 34 percent versus 2011;
- Achieved significant milestones with game-changing, enterprise growth projects such as our investments on the U.S. Gulf Coast and our Sadara joint venture in the Middle East; and
- Made continuous progress toward our vision of zero accidents and injuries, evidenced by a 36 percent improvement in our illness and injury rate versus 2011.

#### Healthy Oils:

In 2012, Dow declared Omega-9 oils as its first Breakthrough to World Challenges – one of three the Company is committed to achieving by 2015. Omega-9 oils, made from Dow AgroSciences' NEXERA<sup>™</sup> canola and sunflower seeds, have zero trans fat, the lowest amount of saturated fat among oils, and feature more than 70 percent heart-healthy monounsaturated fat. Since 2005, Omega-9 oils have removed more than 1.5 billion pounds of trans and saturated fat from American diets. By using Omega-9 oils, many of these bad fats have been replaced by healthier monounsaturated fats, decreasing risk of heart disease and type 2 diabetes. Read more <u>here</u>.

#### Indirect Economic Impacts

Dow understands the importance of a strong manufacturing economy, and the importance of manufacturing jobs on the local and global scale. Each job in manufacturing is responsible for multiple indirect jobs created in the regions we do business. We strive to be a good neighbor as well as a global corporate citizen. Through our actions, we know that we are building better, stronger, more sustainable communities in the places where we do business. Our site and local charitable contributions are illustrated in <u>EC8</u> below.

For major organizational risks and opportunities, see <u>Section</u> <u>1.2</u> and <u>EC2</u> below. Please consult Dow <u>financial reports</u> and quarterly <u>earnings</u> information for externally reported financial information.

Use the <u>index</u> to find indicators of most interest to you in this section.

## Economic Performance Indicators

EC1 Direct economic value generated and distributed including revenues, operating costs, employee compensation, donations and other community investments, retained earnings and payments to capital providers

Economic value retained, dollars in millions	2012	2011
Revenues	56,786	59,985
Operating Costs	43,049	46,332
Wages/Benefits	7,255	6,954
Payments to providers of capital	3,278	3,884
Payments to governments	1,421	1,173
Donations/Community investments	45	44
Economic value retained	1,738	1,598

#### Taxes 2012, Dollars in Millions

(Payments to governments, above)



## **EC2** Financial implications and other risks and opportunities due to climate change



A sustainable energy future requires sharpening our focus on manufacturing efficiency inside our company while maximizing the contributions of Dow products to improve efficiency and expand affordable alternatives. Energy is an enabler of global economic growth, and energy efficiency remains critical

to meeting the world's energy demands. Through corporate energy efficiency programs and focused GHG management efforts, the Company has significantly reduced its GHG emissions footprint. The Company's manufacturing energy intensity, measured in Btu per pound of product, has improved more than 40 percent since 1990, saving the Company a cumulative \$25 billion and 5,400 trillion Btus. Since 1990, Dow has prevented over 200 million metric tons of GHG emissions entering the atmosphere, reducing the Company's absolute emissions footprint by more than 30 percent. As part of our 2015 Sustainability Goals, Dow will maintain GHG emissions below 2006 levels on an absolute basis for all GHGs.



#### Energy Intensity Performance (Since 1990 through 2012)

Dow will continue to focus on managing its energy and greenhouse gas ("GHG") emissions footprint and delivering solutions to help our customers manage theirs. Through its science and technology capabilities, Dow is committed to bringing solutions to enable a sustainable energy future by producing products that help others reduce GHG emissions, such as lightweight plastics for automobiles and insulation for energy efficient homes and appliances. For example, Dow's building insulation materials and air-sealing products can save up to 20 percent on heating and cooling costs and significantly reduce GHG emissions. The Company's STYROFOAM<sup>™</sup> insulation is installed in over 20 million buildings worldwide, saving over \$10 billion in energy costs annually. Dow's DOWTHERM<sup>™</sup>A heat transfer fluids are used in 14 large, concentrating solar power plants, with a total capacity of over 700 megawatts. These plants will provide power for the equivalent of approximately 415,000 homes and save 1.6 million metric tons of GHG emissions per year.

Dow is studying the life cycle impact of its products on climate change and additional global projects that could improve the Company's overall GHG emissions footprint. The Company has some units subject to the European Union's Emissions Trading Scheme ("EU ETS"); however, the Company has not experienced any considerable impact in regard to regulated GHG emissions from the EU ETS. Dow will continue to evaluate and monitor future developments that may affect operations in the region.

Dow's Energy & Climate Change Policy and Issue Management Team is tasked with developing and implementing a comprehensive strategy that addresses the challenges of climate change and energy security and is advocating an international framework that establishes clear pathways to help slow, stop and reverse the rate of GHG emissions globally.

See the Dow <u>Carbon Disclosure Project</u> report for 2012 for more information.

## EC3 Coverage of the organization's defined benefit plan obligations

Dow offers defined benefit pension plans in several countries where defined benefit plans are common. The largest of these plans are in the United States, Canada, The Netherlands, Switzerland and Germany. The plans are funded by the Company.

It is Dow's policy to contribute to defined benefit plans where pension laws and/or economics either require or encourage funding. As such, most of our pension plans are funded through separate trusts or legal entities, with the notable exception of Germany where defined benefit plans are commonly book reserved. Dow also has unfunded plans for compensation above qualified or registered plan limits in the United States and Canada. All funded plans are in compliance with all local funding laws. The aggregate projected benefit obligation ("PBO") under U.S. GAAP as of December 31, 2012, for Dow's significant defined benefit plans was \$26.8 billion with an aggregate fair value of assets of \$17.7 billion. Contributions to Dow's defined benefit plans are determined by funding regulations, negotiation with Trustees (where applicable) and economics. The corporate Benefit Governance and Finance Committee or CFO, as applicable, must approve any funding in excess of legal minimums.

Dow also offers defined contribution plans in many countries. Typically Dow encourages employee contributions to plans by offering matching contributions. The plan formulas in each country are designed to be competitive within that country. Since pension plans and other retirement benefits build upon social security, and social security benefits vary widely by country, Dow's plan varies considerably country to country.

#### EC4 Significant financial assistance received from government

Funding Program	Program Title	Project Face Value (\$MM) *	Tax Credit
Dutch National	Catalysis for Sustainable Chemicals from Biomass	39.2	
Dutch National	Heterogeneous catalysis in structured reactors	2.7	
European Commission	Dynamics of Architecturally Complex Polymers	5.1	
European Commission	New PU Foaming Technology for the Cold Appliance Industry Assuring a Cost- Efficient Ecodesign with Augmented Energy Saving	4.2	
European Commission	New NANO-technology based high performance insulation FOAM system for energy efficiency in buildings	4.8	
European Commission	Economically and Ecologically Efficient Water Management in the European Chemical Industry	17.1	
German National	Light and resource-efficient electric car bodies in multi-material construction method	11.4	
US-DHS	Port Security Program - Emergency Response Boat	0.2	
US-DOD	Demonstration of New, Highly Perchlorate-Selective Ion Exchange Resin Coupled with Resin-Optimized, Single Vessel Engineering Design	2.4	
US-DOD	Scale-up of Novel Low- Cost Carbon Fibers Leading to High-Volume Commercial Launch	13.5	
US-DOE	Development of Inorganic Precursors for the Manufacturing of Photovoltaic Devices	3.1	
US-DOE	Advanced Insulation for High Performance Cost-effective Wall, Roof and Foundation Systems	5.9	
US-DOE	Development and Comercialization of Alternative Carbon Fiber Precursors and Conversion Technologies	11	
US-DOE	US China Clean Energy Research Center (CERC) Building Energy Efficiency Center	50	
US-DOE	Energy Efficient Housing Research Partnerships	1.4	
US-DOE	Commercial Cool Roof Coating Development	4.2	
US-DOE	Transformational Approach to Reducing the Total System Costs of Building Integrated Photovoltaics	23.5	
US-DOE	Development of Modified PAG (Polyalkylene glycol) High VI High Fuel Efficient Lubricant for LDV Applications	0.6	
US-DOE	Development of a solar reflective retrofit coating for asphalt shingles	1.5	
US-DOE	Development of a Long Life Cycle, Highly Water Resistant, Solar Reflective Retrofit Roof Coating	1	
US-Michigan	Development of technology for improved equipment and materials for the automated manufacture of wind-turbine blades.	6	
US-Michigan	Engineered Carbon Fiber / Development and Commercialization of Low-Cost Industrial-Grade Carbon Fibers	7.8	
US-Fed	Dow Solar Solutions: 48C US Federal Tax Credit		17.8
US-Fed	Dow Specialty Films: 48C Tax Credit		2.2

\* The dollar figure listed is for the entire value of the program that is receiving support.

The value of the direct government support does not equal the face value in most cases.

Many programs have multiple participants along with Dow.

Programs were active in 2012; however, many are multi-year.

There is not a government presence in the shareholding structure related to the assistance received.

#### EC5 Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation

Dow offers competitive employee base pay, which is determined through a salary survey process. This process benchmarks compensation at competitive companies and helps Dow maintain employee pay that is tailored to geographically competitive standards. The entry level wage offer will vary based on the job role, experience, and responsibilities but is not varied due to gender.

In addition to employee base pay, where applicable, employees participate in Dow's annual variable pay program, which is dependent on individual and Company results.

#### EC6 Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation



Dow will conduct business with suppliers who are globally competitive and who will provide the lowest long-term costs. Dow is dedicated to working closely with local suppliers to educate them about our strategic purchasing requirements. The Company now provides a <u>Code of Business</u> <u>Conduct for Suppliers to help make</u>

business conduct requirements clear.

Purchases that are from local-based suppliers vary significantly based on factors such as availability of materials. Results are given by state and by country, and exclude internal (Dow-to-Dow) transactions. The sites reported below are the same as those found in indicator <u>SO1</u> and tracked as part of Dow's Community Success goal. Dow's calculation methodology for this indicator changed in 2012 and therefore results are not directly comparable to those in previous reports.

#### Local Purchases

Site Location	Country	State	Country
ARATU	Brazil	5.5%	99.2%
FREEPORT, TX	USA	1.1%	96.0%
MIDLAND, MI	USA	23.5%	79.7%
PITTSBURG, CA	USA	24.0%	80.0%
PLAQUEMINE, LA	USA	2.6%	98.3%
RHINE CENTER	Germany	53.9%	58.4%
STADE	Germany	9.1%	37.8%
TERNEUZEN	The Netherlands	22.1%	50.5%
ST. CHARLES, LA	USA	29.5%	96.2%



#### EC7 Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation

The organization does grant preference to local residents when hiring in significant locations of operation in order for our workforce to reflect the places where we do business.

In 2012, we hired 3,259 people around the world, excluding acquisitions, rehires and returns from leave. Headcount increased from year-end 2011 due to growth initiatives and the inclusion of 1,946 seasonal employees in Agricultural Sciences operating segment as part of the Company's personnel count. Ninety-three percent of hires were local (employee hired in their country of citizenship). Areas with a significant growth emphasis accomplish a very high percentage of hires from within the respective country: China (97 percent hired have a Chinese citizenship), Korea (100 percent), and India (99 percent). Half of all senior management hiring in 2012 was in-country, a total of 6 hires.



#### EC8 Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement

Through financial contributions and the volunteer efforts of our employees, Dow supports programs that address education, the environment and economic success – all important aspects of community sustainability. In 2012, Dow and The Dow Chemical Foundation contributed \$43.5 million to hundreds of programs globally. In-kind contributions for product were valued at an additional \$6.92 million and \$130,000 for equipment. The organization assesses community quality of life near where we have major presence sites. See Summary Section for more information. See the Society Summary section for a description of the Dow Sustainability Corps which is a way for the Company to provide public benefit through the talents of Dow people deployed on projects that rely directly on their areas of expertise.



#### Habitat for Humanity

Dow was the first corporate sponsor of Habitat for Humanity – almost 29 years ago. Over that period we have donated over \$37.5 million in cash and gift-in-kind products and participated in project activities in more than 20 countries. Please check out specific project activities at our Habitat <u>Upcoming and Past Builds site</u>.

# EC9 Understanding and describing significant indirect economic impacts, including the extent of impacts

Studies conducted by the American Chemistry Council (ACC) have shown that each job in the U.S. chemical industry generates nearly 8 additional jobs in the overall economy and every dollar of energy used in the U.S. chemical industry creates upwards of \$8 of added value in the overall economy.

Dow chooses to put one of its 2015 Sustainability Goals, <u>Contributing to Community Success</u>, into practice by active involvement in shaping quality of life. The impact is assessed over time, not in currency, but through survey results that inform about Dow's acceptance rating in that community. Dow also has multiple examples of projects, ranging from corporate philanthropy to volunteerism to in-kind support that have an impact on everything from science, technology, engineering and mathematics (STEM) education to economic development at a site location.

Dow <u>videos</u> such as "Buen Trabajo: A Second Chance," "Rainbows 4 Children," "Preservation Generation" and others demonstrate this far-reaching impact.



## Environmental Summary

Dow holds **Protecting Our Planet** as a core value; Dow's commitment to the health of our shared environment is strong and growing.

At Dow, each employee has the responsibility to ensure that our products and operations meet all applicable government and/ or Dow standards – whichever is more stringent. Dow achieves manufacturing excellence through effective implementation and leveraging of Most Effective Technology and Operating Discipline practices within and between businesses. EH&S aspects are among the drivers for continuous improvement of manufacturing processes and Most Effective Technology, and subject matter experts from functions and businesses collaborate closely to improve our performance, and ensure continued progress against the 2015 Sustainability Goals.

Sustainable chemistry is our "cradle-to-cradle" concept that drives us to use resources more efficiently, to minimize our footprint, provide value to our customers and stakeholders, deliver solutions for customer needs and enhance the quality of life of current and future generations. We strive to prevent adverse environmental and health impacts, reduce waste and emissions, and promote resource conservation at every stage of the life cycle of our products. As an example, our commitment to environmental footprint reduction includes reducing company-wide emissions of volatile organic compounds by 30%, NO<sub>x</sub> by 30% and priority compounds by 30% (by the end of 2015 from a 2005 baseline). We have already met our 2015 goal of re-using 300 million pounds of by-products as raw materials, instead of disposing them as waste. Internal Dow teams are recognized for their efforts through an annual program aimed at waste reduction. The Waste Reduction Always Pays (WRAP) award recognizes individuals who find innovative ways to save money while reducing waste or emissions at Dow. Waste reduction includes waste avoidance, source reduction, greenhouse gas emissions reduction, material reuse and/or recycling, by-product synergy, and water and energy conservation.

In January 2011, Dow, The Dow Foundation and The Nature Conservancy (TNC) announced a \$10 million collaboration to help Dow and the business community recognize, value and incorporate nature into global business goals, decisions and strategies. In 2012, the TNC-Dow Collaboration finished work at the first pilot site for the collaboration and Dow's largest global manufacturing facility, Texas Operations in Freeport. More information on the first two years of the collaboration can be found <u>here</u>.

The table on the following page summarizes progress for many of the environmental goals that are part of the focus referred to as Local Protection of Human Health and the Environment. More information is provided in our quarterly <u>Goal Update</u>.

Use the <u>index</u> to find indicators of most interest to you in this section.



#### Progress on 10 Year Environmental Goals

Targets (base year 2005)	2012 Performance	2012 Result	2015 Target
<b>By-Product Synergy</b> At least 300MM lbs upgraded by 2015		312	more than 300MM
<b>VOC Emissions</b> 30% reduction from 2005 level		-29%	-30%
<b>Priority Compound Emissions</b> 30% reduction from 2005 level		-42%	-30%
<b>NO<sub>x</sub> Emissions</b> 30% reduction from 2005 level		-35%	-30%
Hazmat Transportation LOPC Count Less than 14 incidents in 2015		25	14
Highly Hazardous Material Tonne-Miles Reduce tonne-miles by 50% from 2005 level		-47%	-50%

#### Other Local Protection commitments found within this report

Injury and Illness	<u>LA7</u>
Loss of Primary Containment	<u>EN23</u>

In addition to our commitment to Local Protection of Human Health and the Environment, we have a 10 year improvement goal focused on Climate Change and our Green House Gas footprint. During 2011 we set a new goal to limit total global Green House Gas (GHG) emissions to the level that Dow experienced in 2006, growing our Company, but not the emitted carbon. During 2012 the Scope 1 GHG emissions declined 2 percent, reducing our carbon footprint by 0.6 million metric tons compared to 2011. The 2015 Goal objective to decrease GHG Intensity does not reflect Dow's absolute emissions performance, nor is it consistent with transformational aspirations to provide solutions that enable a sustainable energy future. Dow's goal will be to maintain GHG emissions below 2006 levels on an absolute basis for all GHGs, thereby growing our Company, not the carbon. Dow will continue to focus on managing its footprint and delivering solutions to help our customers manage theirs. For example, Dow's insulation products contribute to greater energy efficiency, helping avoid millions of metric tons of GHG emissions per year.



Intensity of Kyoto GHG as CO<sub>2</sub> Equivalent



The most senior position with responsibility for environmental aspects is the Chief Sustainability Officer, which is held by David E. Kepler II.

Additional contextual information is available:

 Further information on Dow's environmental matters are disclosed in PART II, Item 7 – Other Matters – Environmental Matters in <u>Dow 2012 10-K</u>. <u>Our Commitments</u> to Sustainability, including the environment, can be found on <u>www.dow.com</u>.



## **Environmental Performance Indicators**

The Company uses an emissions tracking system that collects and reports data by facility, site and business. This multi-layered review process provides a discipline to maintain the quality of data captured. A change management process is used to document historical data corrections.

#### **EN1** Materials used by weight

The Company operates in an integrated manufacturing environment. Raw materials are processed through many stages to produce a number of products that are sold as finished goods at various points in those processes. The two major raw material streams that feed the integrated production of the Company's finished goods are chlorine-based and hydrocarbon-based raw materials.

Salt, natural brine and electricity are the base raw materials used in the production of chlor-alkali products and derivatives. The Company owns salt deposits in Louisiana and Texas; Alberta, Canada; Brazil; and Germany. The Company also produces a portion of its electricity needs in Louisiana and Texas; Alberta, Canada; and Germany. The Company purchases hydrocarbon raw materials including ethane, propane, butane, naphtha and condensate as feedstocks. These raw materials are used in the production of both saleable products and energy. The Company also purchases certain monomers, primarily ethylene and propylene to supplement internal production. The Company purchases natural gas, mainly to generate electricity, and purchases electric power to supplement internal generation. Expenditures for hydrocarbon feedstocks and energy accounted for 37 percent of the Company's production costs and operating expenses for the year ended December 31, 2012. Materials purchased, including hydrocarbons that were consumed as fuel, were of the magnitude of 75 million metric tons. An additional 15 million metric tons of brine was mined as raw material for chlorine-related production. The mass of materials shipped in final products (direct materials) was of the magnitude of 45 million metric tons.

## **EN2** Percentage of materials used that are recycled input materials

The Company focuses on recycle opportunities in the following ways:

To effectively steward raw materials and limit waste the Company set a goal to implement 300 million pounds of by-product synergy between 2005 and 2015. The by-product synergy effort matches under-valued by-product streams from one facility with potential users at another facility to create new revenues or savings, with potential social and environmental benefits instead of disposing as waste. We exceeded our initial



300 million pound commitment during the 2011 calendar year, four years early. As of the end of 2012 we have identified and redeployed an additional 2 million pounds of useable by-product material, bringing our cumulative total to 312 million pounds.

The Chlor-Alkali/Chlor-Vinyl business is the major feedstock producer for Dow processes that use chlorine. In some cases, instead of consuming the chlorine, a manufacturing process will "rent" the chlorine molecule. Afterward, the chlorine molecule is returned as hydrochloric acid (HCl) to the Chlor-Vinyl business, which uses it to make key raw materials for other products.

The Chlorinated Organics business recovers chlorinated by-product streams and turns them into raw materials for refrigerants, pharmaceuticals and other products for sale on the merchant market. The combined value of Dow's recycling engines conserves more than \$200 million per year in raw material costs. In addition, these recycling processes avoid disposal of hundreds of railcars of waste annually.

One example of the use of recycled material coming from external companies is in the production of perchloroethylene by Dow Chlorinated Organics. Carbon tetrachloride byproduct streams are used to harvest chlorine. The generators of carbon tetrachloride avoid high disposal costs and Dow captures chlorine as a useful raw material.



## **Aspect: Energy**

## EN3 Direct energy consumption by primary source

The direct energy consumed by the Company to produce product in 2012 was 405 trillion BTUs, or 427 million gigajoules. Approximately 63 percent of this direct energy was generated from purchased fuel gas and 37 percent was fuel from feedstock.

#### EN4 Indirect energy use by primary source

Indirect energy is a challenge to aggregate by source in a company with diverse operations that operate globally and engage in the purchase and the sale of energy. In 2012, the Company estimates that indirect energy to produce product came from power and steam totaling 155 trillion Btus, or 164 million gigajoules. In addition to this energy for operations, Dow is consuming approximately 1.9 million gigajoules in lab and office space around the world.

Approximately 7 percent of purchased electricity is hydroelectric. The remaining 93 percent is assumed to be from fossil fuels, though an analysis of the primary source of the generators of that energy has not been completed.

#### Sources of Energy Consumed by Dow Manufacturing Operations



## **EN5 Energy saved due to conservation and efficiency improvements**

Dow's manufacturing energy intensity, measured in BTUs per pound of product, has improved nearly 40% since 1990, saving the Company over \$25 billion and 5,400 trillion BTUs.

This is roughly equivalent to the annual energy consumption of 51 million single-family homes. The 2015 Energy Intensity Goal is expected to yield a cumulative savings of more than \$1 billion and 190 trillion BTUs. This is equivalent to the annual energy consumption of over 1.7 million single-family homes.

Energy intensity improved 22 percent during the first 10-year Energy Intensity Goal (1994-2005), exceeding the 20-percent improvement target for the period. In 2006, Dow defined a new 10-year Energy Intensity Goal to drive an additional 25-percent improvement in energy intensity by 2015 using 2005 as the basis for comparison. At the end of 2012 we had improved our intensity by 2.6% compared to 2005. We report our progress quarterly at the <u>Reporting Center</u>.

## EN6 Initiatives to provide energy-efficient or renewable energy-based products and services

Dow has pioneered the use of insulation products to make buildings more efficient for over 60 years with STYROFOAM<sup>™</sup> brand extruded polystyrene insulation. Dow continues to demonstrate its innovation and ongoing commitment to providing brand leading and innovation solutions to the marketplace. Many insulation products from Dow Building Solutions have been certified by the Cradle to Cradle<sup>®</sup> Certification program, a well-known, eco-label that assesses a product's safety and environmental impact. Dow offers a <u>comprehensive line of solutions</u> to meet building and construction needs. By converting solar energy into electricity and reducing the need for the homeowner to pull energy from the grid, clean sunshine is now being captured and converted to electric power helping to avoid the burning of fossil fuels. POWERHOUSE<sup>™</sup> shingles are designed to help keep up front system cost lower by providing the function of the residential roof through the same building unit that encompasses the collection surface. It installs in the same way as a traditional shingle roof, requiring no unique mounting system. The concept is described as Building Integrated Photovoltaic (BIPV). The first larger scale installation took place in October of 2011 on 50 new homes in Spring Mesa, Colorado. Commercialization is progressing well and the product is available now in 11 states. More information can be obtained at <u>www.dowsolar.com</u>.

Dow Electronic Materials is creating new materials and processes for the manufacture of silicon solar cells. Texturing is one of the key process steps which etches the silicon surface to minimize light reflection from the wafer surface, thereby improving the power output of the cell. New texturing chemistries are being developed to reduce VOC's and flammability hazards and new technology for copper electroplating will enable optimized cell designs while significantly decreasing the cost of consumable materials.

Dow ion exchange resins are used in a variety of applications in the energy sector. DOWTHERM<sup>™</sup> Performance Fluids enable thermal solar power plants to collect heat and convert it to electrical energy. Learn more about Dow Water and Process Solutions and the power generation applications <u>here</u>:

#### **Dow Water and Process Solutions**

Windmill blades that use STYROFOAM<sup>™</sup> brand extruded polystyrene and AIRSTONE<sup>™</sup> Systems for Wind Energy are key components in many wind turbines operating today. <u>Learn</u> how Dow is helping create lighter, stronger and longer turbine blades that are helping harness more energy than ever.

#### Alternative Feedstocks

More than 96 percent of all manufactured products are based in chemistry – and the building block for this begins with feedstocks. The challenge is that most feedstocks are also the world's most highly sought-after commodities – oil and natural gas. Dow is searching for <u>alternative feedstocks</u> for manufacturing in an energy-challenged world.

In 2010 the Company announced that its largest manufacturing facility in Brazil, the Aratu Complex, will add biomass to its <u>portfolio of clean energy sources</u>. The renewable fuel source is fast growing eucalyptus trees. As of the end of 2012, 2,200 hectares of trees have been planted and start up of the facility is scheduled for March of 2013. Aratu will be more than 75 percent sourced for power and steam through hydropower and eucalyptus cogeneration when the biomass plant is fully operational.

## **EN7** Initiatives to reduce indirect energy consumption and reductions achieved

About a third of the energy required to produce product is indirect. We work to improve the energy efficiency of indirect energy consumption in the same way that we address and track direct energy consumption. Energy efficiency savings are reported in <u>EN5</u>.

Cost reduction efforts involving employee office behavior, purchasing of materials, outbound shipping, commuting, and subcontracted production are not significant when compared to the hydrocarbon raw materials and energy requirements of Dow. The reductions achieved have not been quantified.



## **Aspect: Water**

•	Mat	erial	ity Very High
with and Decision	Product Safety Leadership	Water Sustainable Chanistry	Chemical Security Local Protection of Human Health & the Environment Energy
to hald or a Assessment	Environmentally Pheferred Purchasing	Community Success Biodiversity and Ecosystem Services	
mpor fan ce to Sta	Breakthroughs to World Challenges*	Climate Change Trade Policy	Sustainable Agriculture
1	Sk	prificance of Impa	:ts

#### CEO Water Mandate

Dow is a participant in the CEO Water Mandate, which seeks to make a positive impact with respect to the emerging global water crisis by mobilizing companies to advance water sustainability solutions in partnership with the United Nations, civil society organizations,

governments, and other stakeholders. This voluntary initiative creates a platform to share best and emerging practices and to forge multi-stakeholder partnerships to address the problems of access to water and sanitation.

From developing countries to the most advanced industrialized nations, <u>Dow Water and Process Solutions</u> is providing sustainable solutions to passionately innovate what is essential to human progress. For more than 60 years, Dow separation and purification technologies have helped make water cleaner and more accessible, food taste better, pharmaceuticals more effective and industries more efficient. Dow technology is also vital to desalination and water reclamation efforts in communities with severe water shortages. Dow Water and Process Solutions is constantly improving the performance and energy intensity of water purification technology.





Throughout 2012, Dow Water and Process Solutions supplied innovative water solutions across regions and markets including:

- Aiding the Chinese government with its twelfth Five-Year Plan at the China (Guangzhou) Water Week in February 2012, where the business highlighted is products for filtration, purification and separation processes that make water safer, cleaner and more available to those living in China.
- Bringing in-home water purification to consumers in India, China, Vietnam, Turkey and Russia with DOW<sup>™</sup> FILMTEC<sup>™</sup> reverse osmosis elements for residential water treatment systems. DOW<sup>™</sup> FILMTEC<sup>™</sup> RO Inside brings clean drinking water to consumer homes in water-scarce regions.
- Demonstrating efficient wastewater reuse in an HVAC system at the Park Hyatt Dubai with the successful implementation of a wastewater fueled HVAC system, where enough potable water was saved, in its first year, to fill as many as 62 Olympic-sized swimming pools.
- Strengthening the freshwater resources of Terneuzen, the Netherlands, and Tarragona, Spain, by reusing municipal household wastewater.
  - Through an innovative wastewater recycling program, Dow's Terneuzen manufacturing facility accepts 10,000 cubic meters of wastewater each day from the city, has it purified by water company Evides, and uses it to generate steam and feed its manufacturing plants. Dow Terneuzen has reduced its energy use by 95 percent by recycling the city's wastewater – the equivalent of reducing its carbon dioxide emissions by 60,000 tons each year.
  - In Tarragona, the switch to reusing about 20,000 m<sup>3</sup> per day of municipal wastewater as industrial feedwater increases supply of potable river Ebro water to the growing tourist industry.
- Working on significant water cost reduction innovations at its R&D center in Tarragona, Spain. The Tarragona Global Water Technology Center accelerates the commercialization of Dow's water treatment technologies while also driving the production of clean drinking water from a variety of sources and has received multiple awards (American Chamber of Commerce in Spain's Trade & Innovation Award 2012, Spain's 100 Best Ideas, 2011, 2011 Best Enterprise Initiative in Catalonia).

- Significantly innovating industry technology by introducing multiple leading solutions in 2012:
  - IntegraPac<sup>™</sup> is a pre-fabricated, highly concentrated ultrafiltration skid that significantly reduces footprint and water cost.
  - The IntegraFlo<sup>™</sup> module was also introduced, which is the industry's largest pressurized ultrafiltration module, with 100 m2 of surface area in a module. Based on its operation and cleaning research, Dow also reached and introduced the industry's lowest chemical consumption in an ultrafiltration system, using continuous equivalent concentrations lower than 1 ppm of cleaning chemicals and working at high productivity in the absence of coagulation.
  - DOW FILMTEC<sup>™</sup> ECO element, with new membrane chemistry is the first of a sustainable, higher-efficiency product series – offering up to 40% lower salt passage and 30% less energy consumption than industry standard RO elements. ECO elements offer excellent performance over a longer lifecycle resulting in operational savings of up to 20%. With 15+ patents pending, Dow is helping water treatment plants use less energy and reduce their stress and strain on the environment.
  - The TEQUATIC<sup>™</sup> PLUS fine particle filter combines the power of continuously cleaning, cross-flow filtration with centrifugal separation into one novel device that is specifically designed to handle a wide range of difficult-to-treat feedwaters much more consistently and cost-effectively than traditional technologies. Applications for membrane pretreatment and oilfield water are under development.

Dow is raising awareness of freshwater sustainability through its collaboration with The Nature Conservancy (TNC). Dow's Texas Operations in Freeport, TX, the first of three global pilot sites with The Nature Conservancy, has completed a future freshwater supply study as well as valuation of this critical ecosystem service. Read more about this result from our innovative collaboration at the TNC-Dow Collaboration website, <u>here</u>.

Read more in section <u>EN10</u> about how Dow is reducing water use at our largest site in Freeport, TX, including an <u>award</u> recently bestowed on Dow Texas Operations by the Texas Commission on Environmental Quality (TCEQ).

#### **EN8** Total water withdrawal by source

Water intake is from all water sources including seawater and includes water for cooling purposes.





## **EN9** Water resources significantly affected by withdrawal of water

Dow manufacturing facilities located in water-stressed regions (as defined by the World Business Council's Global Water Tool) are shown below. In Seadrift, Texas feasibility studies are examining ways to maximize water recycle incorporating a Zero Liquid Discharge mindset. Water stewardship activities in Terneuzen, the Netherlands include an effort by the European Chemical Industry submitted under a program identified as "Eco-efficient management of industrial water". Terneuzen is also demonstrating the effectiveness of developing low cost process water through "mild desalination".

Dow location	Source
Seadrift, Texas	Guadalupe River
Aratu, Brazil	Purchased freshwater
Bahia Blanca, Argentina	Purchased freshwater
Terneuzen, The Netherlands	Rivers Rhine and Meuse
Tarragona, Spain	Purchased freshwater supply, source is Ebro River diversion
Dow Central Germany	River Saale (Schkopau site), River Weisse Elster and Lake Witznitz (Bohlen site)
Freeport, Texas	Brazos River

## **EN10** Percentage and total volume of water recycled and reused

Recycle and reuse totals are not compiled for the total Company.

In an effort to save water, Dow's largest manufacturing site in Freeport, TX implemented several projects in 2012 that reduced the site's overall water usage by 10 percent in addition to a 10 percent reduction achieved the last half of 2011 through implemented water recycle and reuse projects. Most of the projects involved recycling water and modifying plant equipment to drop the amount of fresh water the Freeport site uses from the Brazos River. The Texas Commission on Environmental Quality bestowed one of its 10 Texas Environmental Excellence Awards to Dow Texas Operations in recognition for these water use reduction efforts. It marked the first time the Freeport site has received the state's top environmental honor.

Dow Terneuzen is integrated with local municipalities to source local wastewater treatment discharge water for industrial use. Combined, the projects to date bring about an 80% recycle rate of freshwater and annually reduce treatment chemicals by 500 tons, reduce CO<sub>2</sub> emissions by more than 57,000 tons, reduce energy sufficient to power 1,000 residences, and preserve the local freshwater supply. The municipal recycle achieves enhanced quality and reuses 9,600 m<sup>3</sup> of wastewater per day from the community.



#### **Aspect: Biodiversity**



The Dow Chemical Company appreciates the impacts we have on nature and our dependencies on the critical services that nature provides. 2012 marks the second year that Dow has compiled its global efforts related to Biodiversity and Ecosystem Services into one <u>report</u>, available online. We have a strong history of philanthropic giving focused on protecting and preserving nature. In alignment with the company's 2015 Sustainability Goals, it is common to see Dow volunteers active

in their communities and Dow nature preserves in regions where we do business. For years, Dow has been conserving land, donating property and supporting the efforts of local conservation groups and non-governmental organizations through generous grants and donations.



Tidal wetlands along the Scheldt River in Terneuzen, The Netherlands, where Dow funds conservation.

In 2012, we continued our collaboration with The Nature Conservancy to determine the business value of ecosystems services.

## EN11 Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas

Below is a list of Dow's global major manufacturing locations that are located within 15 kilometers of a protected area. The closest protected area is noted, ranked by IUCN Category. Size of land owned by the company by location is not available.

Major Production Site	Country	Protected Area Name	Туре	IUCN Category
FREEPORT, TEXAS	UNITED STATES	Río Pilcomayo	National Park	II
STADE	GERMANY	Los Glaciares	National Park	Ш
HAHNVILLE (ST. CHARLES), LOUISIANA	UNITED STATES	Ensenada de Utría	Natural National Park	II
SEADRIFT, TEXAS	UNITED STATES	Calilegua	National Park	II
ARATU	BRAZIL	Lanín	National Park	II
TEXAS CITY, TEXAS	UNITED STATES	Los Alerces	National Park	Ш
BOEHLEN	GERMANY	Laguna de los Pozuelos	Nature Monument	III
TERNEUZEN	THE NETHERLANDS	Сорі	Nature Reserve	IV
TARRAGONA	SPAIN	Sipaliwini	Nature Reserve	IV
LOUISVILLE, KY	UNITED STATES	Lago Puelo	National Reserve	VI
BOMLITZ	GERMANY	Telteca	Flora and Fauna Reserve	VI

Dow manufacturing locations within 15 kilometers of IUCN Protected areas classified as I, II or III are listed below. The closest protected area is identified.

Dow Site	Country	Closest - Name	Туре	IUCN Category
ALTONA	AUSTRALIA	Ravilevu	Nature Reserve	la
BARRANQUILLA	COLUMBIA	Tierra del Fuego	National Park	II
KASAOKA	JAPAN	Lago Puelo	National Park	II
JURONG ISLAND	SINGAPORE	Machalilla	National Park	Ш
LANDSKRONA	SWEDEN	Kakum	National Park	Ш
TEXAS CITY, TEXAS	UNITED STATES	Los Alerces	National Park	Ш
VARENNES, QUEBEC	CANADA	Jaua Sarisariñama	National Park	Ш
ERSTEIN	FRANCE	Macizo Acahay	Natural Monument	Ш
BRISTOL, PENNSYLVANIA	UNITED STATES	Abisu	Forest Reserve	Not listed
BUCHS	SWITZERLAND	Subin Shelterbelt	Forest Reserve	Not listed
NORTH ANDOVER, MASSACHUSETTS	UNITED STATES	Sekondi Waterworks	Forest Reserve	Not listed
GUARUJA	BRAZIL	lle du Salut	Natural Monument	Not listed
TOLUCA	MEXICO	Bemu	Forest Reserve	Not listed
MAP TA PHUT	THAILAND	Nkawanda	Forest Reserve	Not listed
PHILADELPHIA, PA	UNITED STATES	Southern Scarp	Forest Reserve	Not listed
PENNSAUKEN, NJ	UNITED STATES	North Fomangsu	Forest Reserve	Not listed
TERTRE	BELGIUM	Obotumfo Hills	Forest Reserve	Not listed
RANCHO CUCAMONGA, CALIFORNIA	UNITED STATES	Afram Headwaters	Forest Reserve	Not listed
ZWIJNDRECHT	BELGIUM	Dede	Forest Reserve	Not listed

# EN12 Description of significant impacts on biodiversity in protected areas and areas of high biodiversity value

The Company is not aware of events in 2012 causing significant impacts on biodiversity in protected areas or areas of high biodiversity value.

#### **EN13 Habitats protected or restored**

Philanthropic giving by The Dow Chemical Company to conservation activities and nature-related programs was collected by site from leaders globally. While every effort was made to capture activities initiated in 2012, there may be historic ongoing activities that were not re-submitted for inclusion in this report. The data received represents over 90% of Dow sites and is sorted into the following categories:

- Wildlife Preservation: Activities supporting the preservation of wildlife
- Education and Access: Activities supporting environmental education and/or access to natural areas
- Habitat Preservation and Enhancement: Funds donated for the preservation or enhancement of natural spaces and land set aside by Dow for the direct protection of natural spaces

## Summary Results by Category

#### Wildlife Preservation, \$80,791

- Six sites contributed to wildlife preservation projects to support a variety of species in Germany, The Philippines and The United States.
- At least three sites routinely have protected bird species return to nesting areas within the manufacturing sites.

#### Education and Access, \$542,240

• More than 16 sites contributed to projects in more than 5 countries to support environmental educational programs and/or improve access to natural areas

#### Habitat Preservation and Enhancement, \$1,103,361

- More than 850 acres of Dow land has been set aside for preservation as natural areas
- Dow facilities assisted in the preservation of more than 540 acres of non-Dow land.
- In addition, several sites participated in habitat improvement projects in multiple countries.

#### Methods Development and Valuation

- \$1,000,000 The Nature Conservancy
- \$100,000 World Resources Institute, Aqueduct Project
- \$900,000 in-kind resources from Dow Chemical

Selected highlights from this year are shown on the map below. They are representative of the types of conservation projects done around the world, but do not include all of the actions Dow has taken in this area.

#### Six sites have land currently certified by the Wildlife Habitat Council's Corporate Wildlife Habitat Certification /International Accreditation Program.

- Pittsburg, California
- Joliet, Illinois
- South Charleston, West Virginia
- Freeport, Texas
- Sault Ste. Marie, Michigan
- Fort Saskatchewan, Alberta, Canada
- Alberta, Canada

#### Dow in Pittsburg – The Dow Wetlands

- 471 total acres (172 acres is tidal wetlands, 30 acres is a beaver pond)
- Diverse range of habitats include freshwater/brackish tidal marsh, freshwater ponds and open water, mudflats, riparian zones, uplands/ grasslands.
- Three endangered species include Salt Marsh Harvest Mouse, Mason's Lileaopsis and Suisun Aster. Threatened species include Black Shouldered Kites and Northern Harrier.
- More than 130 species of birds have been sighted at the preserve, located along the Pacific Flyway migratory route.



## 2012 Selected Global Conservation Activities



Note: Locations denote the Dow sites responsible for the Conservation Activities.

- 1. Norfolk Wildlife Trust's Delft Project King's Lynn, UK The Norfolk Wildlife Trust's (NWT) Delft Project is an ambitious project that aims to create one of the largest nature reserves in the region and represent a flagship in Norfolk Wildlife Trust's Living Landscapes initiative. It proposes to restore a mosaic of very rare heath habitats, benefiting a range of precious wildlife and is designed to engage local people with the wildlife on their doorstep.
- 2. Bomlitz River Restoration Bomlitz, Germany

## 3. On-site Wildlife Habitat Enhancement and Nesting – Joliet, IL, USA

The Joliet Site has been certified as a Wildlife at Work Site by the Wildlife Habitat Council since 1990. Approximately 600 acres of the site are available for habitat enhancement projects. Among the grassland, woodland and wetland plant communities on-site is a substantial amount of rare dolomite prairie. The area provides habitat for Canada geese, eastern bluebirds, house wrens, mallards, wood ducks, screech owls and tree swallows.

- 4. Cass River Dam, Fish Passage Project Midland, MI, USA The existing dam in the Cass River will be replaced with a fish passage. The existing dam has kept fish from passing upstream for about 150 years. Opening up the river would allow walleye and endangered sturgeon to return to their natural spawning habitat that includes 73 miles of river and tributaries. The fish passage will span about 250 feet of the river down from the current dam. A series of rock steps will allow fish to meander through while maintaining water levels upstream.
- **5.** Fondo Unido, IAP Toluca, Mexico Supports promoting environmental education and conservation culture creation.
- 6. Habitat Conservation New Germany, South Africa
- 7. Philippine Eagle Adoption Makati City, Philippines Dow Philippines sponsors a rare Philippine Eagle in collaboration with The Philippine Eagle Foundation at Davao. This national symbol of the Philippines is one of the largest eagles in the world but unfortunately, is also one of the rarest due to habitat loss and poaching. The young female eagle that Dow Philippines adopted, "Sambisig", was hatched in 2002.

- 8. Horshoe Crab Museum Kasaoka, Japan The Horseshoe crab is famous as "living fossil". The Japan Horseshoe Crab Conservation Association was established to educate people the importance of horseshoe crab and its conservation.
- 9. Tree Plantation Map Ta Phut, Thailand
- **10. Peregrine Falcons Louisville, KY, USA** Over the last 4 years 12 Peregrine Falcon chicks have successfully fledged from the Dow nesting site. Dow's support of these birds has been important to Kentucky's conservation efforts for this species.

This year an early fledge attempt by a female chick resulted in a fracture to her wing. After several weeks of rehabilitation she was banded and released. The Louisville site was given the opportunity to name her and the name Olympia was chosen in honor of Dow's support of this year's Olympics.

#### 11. Eagle Days -Riverside, MO, USA

Provides education to ~1000 area-wide 5th grade students and teachers on birds of prey focusing on Bald Eagles.

**12.** Whooping Crane Recovery Program – Hahnville, LA, USA In 2011, Dow Louisiana announced a partnership with The Audubon Nature Institute in New Orleans for a Whooping Crane Recovery Program. In 2004 the Audubon Nature Institute was selected by the U.S. Fish & Wildlife to help increase the captive whooper population and to provide fertilized eggs for inclusion in Operation Migration. The Institute is one of the 11 organizations managing a captive population of cranes today.



#### EN14 Strategies, current actions, and future plans for managing impacts on biodiversity

At the start of 2011, The Dow Chemical Company and The Nature Conservancy embarked on a novel collaboration to help Dow and the business community recognize, value and incorporate nature into business decisions, strategies and goals. The collaboration embraces a theory of change that the inclusion of ecosystem service and biodiversity assessment models in business decisions have the potential to produce stronger business performance and improved conservation outcomes. The two global organizations are applying scientific knowledge and experience to develop and apply methods and tools for companies to use by examining how Dow's operations rely on and affect nature. Nature provides benefits, often called ecosystem services, which society depends on. However, activities can impact nature in ways that limit society's ability to rely on them. The collaboration is exploring opportunities to bring the value of nature into business decisions across Dow - at the corporate level and at sites around the world. Initial efforts have focused on large pilot analyses, where tangible examples are investigated in detail at Dow sites, starting in Freeport, Texas. The second collaboration pilot site is the Dow-Mitsui Joint Venture site, Santa Vitória Açúcar e Álcool (SVAA), in Santa Vitória, Brazil where the collaboration is advancing methods and providing a case study that will demonstrate how to produce biofuels in a way that benefits both businesses and conservation. The collaboration's work will ultimately be incorporated into a broader framework of decision support tools and modules to help address business decisions organization-wide.

The collaboration is committed to sharing results and tools publicly through various communications and peer-reviewed publications for other companies, scientists and interested parties to test and apply. Further, the collaboration has begun to share our experience with policymaking authorities and key resource stakeholders. As more companies use these methods and tools, greater investment in conservation should follow because such investment makes good business sense.

#### BESTCAT Tool

Many companies have turned to tools like social and environmental impact assessments, biodiversity action plans, and environmental management systems to identify, assess and plan operations. But a company looking to make biodiversity and ecosystem services a key part of corporate strategy, or to include them within sustainability reporting, requires a broader perspective. It can be challenging for companies to make related regional and global strategic decisions, due to the limited amount of biodiversity and ecosystem services information available on a global scale, difficulty in accessing these global data, and working with data that is often not organized for business risk and opportunity analysis.

In order to address this challenge for businesses, the TNC-Dow collaboration has created a web map tool: the Biodiversity and Ecosystem Services Trends and Conditions Assessment Tool (BESTCAT). It will provide businesses open access to global data and a user interface that allows them to easily compare and prioritize their current or future portfolio of assets with regards to biodiversity and ecosystem services. It will increase usability of these metrics by offering online mapping technologies, simple data input requirements, and production of reports.

In 2012, the TNC-Dow collaboration completed the development of the biodiversity portion of BESTCAT and will release the tool for corporate use in 2013. The first version includes a set of five global biodiversity metrics: species diversity (both at the global and biome level), threatened species, habitat intactness, and habitat protection. The data sets contained within the tool were used to develop responses to <u>EN11</u> and <u>EN15</u> of this report.

## **EN15** Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk

The following Dow Major Manufacturing sites fall within the IUCN Red-Listed species range maps. The number of species by IUCN category per site has been summed.

Major Production Site	Country	Critical	Endangered	Vulnerable	Total Threatened Count
FREEPORT, TEXAS	UNITED STATES	0	0	4	4
PLAQUEMINE, LOUISIANNA	UNITED STATES	0	0	4	4
TERNEUZEN	THE NETHERLANDS	0	0	2	2
STADE	GERMANY	0	0	2	2
DOW CENTRAL GERMANY	GERMANY	0	0	2	2
ST. CHARLES, LA	UNITED STATES	0	0	4	4
FORT SASKATCHEWAN, ALBERTA	CANADA	0	0	3	3
TARRAGONA	SPAIN	0	1	4	5
BAHIA BLANCA	ARGENTINA	0	1	3	4
DEER PARK, TEXAS	UNITED STATES	0	1	4	5
SEADRIFT,TEXAS	UNITED STATES	0	1	4	5
ARATU	BRAZIL	1	1	4	6
TEXAS CITY, TEXAS	UNITED STATES	0	0	4	4
PRENTISS, ALBERTA	CANADA	0	0	3	3
MIDLAND, MICHIGAN	UNITED STATES	0	0	2	2
LOUISVILLE, KENTUCKY	UNITED STATES	0	1	2	3
BOMLITZ	GERMANY	0	0	2	2
MAP TA PHUT	THIALAND	1	1	10	12

The following Dow locations ranked highest in the number of IUCN critical and endangered species range maps that intersected the site location. They have been sorted by a weighted ranking of IUCN Critical and Endangered Species.

Dow Site	Country	IUCN Critical	IUCN Endangered	IUCN Vulnerable	Total Threatened Count
CANELANDS	SOUTH AFRICA	2	4	8	14
AUCKLAND	NEW ZEALAND	1	6	7	14
DONGGUAN	CHINA	0	7	16	23
GUANGZHOU	CHINA	0	7	15	22
GUARUJA	BRAZIL	1	4	11	16
MIN-HSIUNG	TAIWAN	0	7	7	14
NEW GERMANY	SOUTH AFRICA	1	4	7	12
TALOJA	INDIA	2	1	9	12
GEELONG	AUSTRALIA	1	4	4	9
ALTONA	AUSTRALIA	1	4	3	8
CILEGON	INDONESIA	2	1	5	8
NANKANG	TAIWAN	0	6	8	14
CAMACARI	BRAZIL	1	3	6	10

## **Aspect: Emissions, Effluents and Waste**

In several of the following Environmental Performance Indicators, a value for 1994 is provided for perspective because it was the base year that marked the beginning of our first 10-year EH&S Sustainability Goals. These 1994 values should NOT be used as an absolute for comparison purposes.

The emissions information reported in the following graphs includes data from heritage Rohm and Haas operations, unless noted otherwise.

## EN16 Total direct and indirect greenhouse gas emissions by weight



Dow uses <u>The Greenhouse Gas Protocol</u>: A Corporate Accounting and Reporting Standard for guiding the reporting of greenhouse gas emissions. Direct greenhouse gas (GHG) emissions are from sources controlled by Dow and include Kyoto and non-Kyoto GHGs. Our 2012 direct GHG emissions, expressed

as carbon dioxide equivalents, decreased about 2 percent from 2011 to 2012.

Indirect greenhouse gas (GHG) emissions are the consequence of Dow's consumption of energy but are emitted from sources controlled by another company, for example, by the supplier of purchased power. 2012 indirect emissions were about the same as in 2010.

During 2012, Dow's GHG emissions were 0.651 metric tons per metric ton of production, about a 3 percent increase from base year 2005. Kyoto GHG intensity is the sum of CO<sub>2</sub> equivalent direct and indirect emissions of the "Kyoto" family of greenhouse gases divided by unit of production.

## EN17 Other relevant indirect greenhouse gas emissions by weight

Avoided emissions resulting from the use of Dow products are important contributions to reduce the overall footprint of human activities. A Life Cycle Assessment documented that emissions saved by Dow insulation products are about seven times greater than total Company direct and indirect Kyoto and non-Kyoto GHG emissions. This calculation was made by quantifying the GHG emissions at all stages of the life cycle of the Dow insulation product and comparing these with the GHG emissions savings from the use of the insulation products in buildings and pipe systems.







#### Greenhouse Gas Emissions 55 \$ 38 37 36 5 8 5 2005 2006 2007 2008 2009 2010 2011 2012 1990\* 224 235 244 253 260 269 277 283 Direct and Indirect \* Estimate Avoided Emissions\* Attributable to Dow Absolute GHG Emissions from Operations Insulation in Service

Emissions from transportation of Dow products to customers for 2012 were estimated to be three million metric tons. The total  $CO_2$  equivalent indirect emissions resulting from commercial air travel were estimated to be 25,000 metric tons during 2012. The total  $CO_2$  equivalent indirect emissions resulting from rental car use were estimated to be 6,000 metric tons.

Dow has an ownership position in many joint ventures that are separately held corporations and are operated by the joint venture, not by Dow. Dow considers the emissions from joint ventures separately from scope under the GHG protocol.

## EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved

We have reduced the Company's absolute GHG emissions by more than 30 percent since 1990, representing a more rapid reduction than required by Kyoto Protocol targets. The energy savings resulting from increased efficiency from 2005 through 2009, as reported in <u>EN5</u>, can be converted to equivalent GHG emissions avoided equaling 4.1 million metric tons of CO<sub>2</sub>. The activities described in <u>EN6</u> and <u>EN7</u>, and implementing new processes that emit less GHGs compared to traditional routes will also be important to driving reductions in the future.

After review of our Climate Change goal, we determined to shift the primary focus for driving improvements from GHG intensity to a focus on absolute emissions. We continue to develop and improve the quantification of our net impact and have engaged the life cycle community in the discussion by presenting our perspective and first pass estimates at the American Center for Life Cycle Assessment - LCA XII Conference; September 26, 2012. In addition, we have chartered several projects to improve that ease and accuracy of data collection used in the estimation of our up and down stream scope 3 emissions. These new tools and resources will enable us to continue to improve both the scale and accuracy of our reporting. The scope of additional goals to soon be announced will include emissions from upstream (suppliers) and downstream through products in use, and will continue to be both Kyoto and non-Kyoto GHG emissions.

Dow is making significant financial investments in R&D to contribute to the slowing, stopping and reversal of the rate of GHGs being emitted. Dow participates in the EU emissions trading scheme (ETS) and advocates for government action to slow, stop and reverse the rate of greenhouse gas emissions.

For more information on Dow's position on addressing the issue of climate change, consult the Dow annual <u>Carbon</u> <u>Disclosure Project Report</u>.

## EN19 Emissions of ozone-depleting substances by weight

Ozone-depleting emissions were reduced from 2009 levels due to reformulation of insulating agents used in the Dow Building Solutions business.



## **EN20** $NO_x$ , $SO_x$ , and other significant air emissions by type and weight

Priority compounds are a category of chemicals defined by Dow. Priority Compounds are comprised of chemicals with persistent, bioaccumulative, and toxic hazards, and chemicals with carcinogenic, mutagenic, and reproductive hazards. The Priority Compounds total is down by 42% when compared to 2005.



#### **Priority Compound Emissions**

Between 1994 and 2005, Dow has achieved approximately 66 percent in NO<sub>x</sub> (nitrogen oxides) reduction. NO<sub>x</sub> emissions decreased from 2011 to 2012 by 9 percent. Dow utilizes the AP-42, Compilation of Air Pollutant Emission Factors in addition to on-line measurement systems, performance testing and industry standardized factors to determine emission rates.

Between 1994 and 2005, Dow achieved a 55 percent reduction in  $SO_x$  (sulfur oxides) emissions. Emissions of  $SO_x$ have continued to decrease each year since 2006 and are down 6 percent in 2012 compared to 2011.



Volatile Organic Compounds are organic chemicals with high vapor pressures and react photochemically with the atmosphere. The Volatile Organic Compounds total is down by 29 percent when compared to 2005. Emissions of VOCs have increased 10 percent from 2011 levels, but remain better than our goal line in 2012.

**Emissions of Volatile Organic Compounds (VOCs)** 



In addition to ozone-depleting substances, Dow tracks chemical emissions (excluding items such as NO<sub>x</sub>, SO<sub>x</sub>, CO, CO<sub>2</sub>, particulates, methane, hydrogen, nitrogen, oxygen, water, aluminum, and certain salts). Between 1994 and 2005, Dow reduced chemical emissions by approximately 56 percent. Dow has decreased chemical emissions by an additional 6 percent from 2011 to 2012. This metric is compiled for emissions to both air and water.



#### Chemical Emissions to Air and Water



#### EN21 Total water discharge by quality and destination

During 2010 information about the largest freshwater using sites was assessed. On average, more than 85 percent of the source water was returned to its source of origin at equal or greater quality than the quality at time of withdrawal. This indicator is a medium term objective for more detailed reporting in the future.

Wastewater is the amount of water sent for treatment before discharge. Wastewater intensity is the ratio of pounds of wastewater per pound of production. Dow is dedicated to implementing innovative ways to conserve water, which includes implementing source reductions as well as identifying creative ways to reuse water. Wastewater intensity remained flat from last year.



#### EN22 Total weight of waste by type and disposal method

The total treated waste in 2012 was 1.4 million metric tons. Approximately 61 percent of the waste is classified as nonhazardous and 39 percent as hazardous as defined regionally. Wastes are materials that receive treatment and exclude demolition, remediation and certain salts. Dow has placed ongoing emphasis on reducing waste and accomplished great savings through an internal WRAP program (Waste Reduction Always Pays). WRAP reduction includes waste avoidance, source reduction, Greenhouse gas emissions reduction, material reuse or recycling, by-product synergy, and water and energy conservation. Compared to 2005 the total waste from operations has been reduced by 15 percent.



A waste intensity metric allows Dow to compare progress from year to year as the Company grows. Waste intensity is the ratio of pounds of waste generated per pound of production. The weight of waste increased from 1.3 to 1.4 million metric tons from 2011 to 2012, and waste intensity increased from .026 to .027 lbs per pound of production compared to 2011.

#### Waste Treatment by Category


#### EN23 Total number and volume of significant spills

No spills were of a magnitude that required reporting in the organization's financial statement. Dow has long monitored and set goals to improve performance in the area of spill avoidance.

At the end of 2012, the company had experienced 225 Loss of Primary Containment incidents, under the target for the year and on track towards the 2015 Goal of 130 or fewer incidents. The 2015 Goal of no more than 130 incidents is a 90% reduction from 2005. This reflects our best annual performance. Loss of Primary Containment Events



#### EN24 Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII and the percentage of transported waste shipped internationally

Dow has a Right Waste, Right Place strategy with regard to management of all waste. This involves evaluation of waste situations to see if they can be eliminated or reduced in size. Then, we look for other uses for the streams – either internally or externally – as feedstocks or for reclamation purposes. As a last option, we develop a reliable way to dispose of materials that can't be utilized in any other way.

For hazardous waste, our first choice in most cases is to bring the wastes to one of our own disposal facilities. In some situations it is appropriate to use third-party facilities, but only after they have undergone a thorough audit conducted by a third-party auditor and been reviewed for safety and environmental concerns.

There were approximately 560,000 metric tons of hazardous waste managed in 2012 as defined by regional definitions. Approximately 27 percent of this amount was transported to locations where treatment by Dow or third parties was accomplished in compliance with all regulatory requirements. A majority of this amount was consumed by thermal treatment. Water content of aqueous hazardous wastewater was subtracted from this total.

#### EN25 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by discharges of water and runoff

There are no known bodies of water significantly affected by current discharges of runoff from operations.

As a member of the Greater Edwards Aquifer Alliance (an industry-government partnership), Dow provided funding for a study regarding the management and conservation of Greater Edwards Aquifer. The EPA recognizes the Edwards Aquifer Ecosystem as a "Sole Source" water supply. It is the only source of drinking water for millions of Texans.

Dow participated in a unique collaborative process to develop a plan to contribute to the recovery of federally-listed species dependent on the Edwards Aquifer. This process, referred to as the Edwards Aquifer Recovery Implementation Program (EARIP) was legislated and brought together stakeholders from throughout the region in late 2006 to prepare a Fish and Wildlife-approved plan by 2012 for managing the Aquifer to preserve the listed species. The Legislature directed that the plan must include recommendations regarding withdrawal adjustments during critical periods that ensure that federallylisted species associated with the Edwards aquifer will be protected. The plan was submitted in September 2011. Upon plan approval the Edwards Aquifer Habitat Conservation Plan (EAHCP) will oversee the plan implementation.

## **Aspect: Products and Services**

#### EN26 Initiatives to mitigate environmental impacts of products and services and extent of impact mitigation

Dow accepts the responsibility to be a good steward of the environment on behalf of current and future generations. Dow identifies chemicals and health as a priority issue. To learn more about our <u>Policy on Chemicals Management</u>, visit the Responsible Operations section on <u>dow.com</u>.

One initiative to mitigate the environmental impacts of products is through the 2015 Sustainability Goal of Product Safety Leadership. A primary focus of this goal is to develop Product Safety Assessments (PSAs) for all Dow products by 2015.

At the end of 2012, 470 Product Safety Assessments (PSAs) had been posted to <u>Dow's product safety website</u>. Dow's published Product Safety Assessments now cover products accounting for over 86% of Dow's annual revenue. Additionally 100% of Dow's 224 High Priority chemicals are now covered by a PSA. We are on-track to meet our 2015 Goal to have a Product Safety Assessment publically available for applicable Dow products. PSAs are written for the lay public and cover topics such as basic hazards, exposure potential and risk management measures. They complement other product safety, handling and stewardship documents, which are part of the product responsibility "package" Dow offers to strengthen relationships with communities and customers. This holistic approach enables Dow customers and the communities in which Dow does business to stay informed about the Company's products and the plants that produce them. Dow is dedicated to providing the public with accurate information and building trust as it uses technology to develop better products.

Other mitigation efforts include our Product Stewardship program (See <u>PR1</u> and <u>PR3</u>) and our commitment to implement the European Union regulation for the Registration, Evaluation, Authorization and Restriction of Chemicals known as <u>REACH</u>.



#### **Sales Covered by Assessments**



# **EN27** Percentage of products sold and their packaging materials that are reclaimed by category

Dow is a provider of a variety of products and <u>solutions</u> for packaging needs. Due to the highly varied uses of Dow products and the frequency of use as a raw material for another manufacturing process there is often no packaging for the Dow product. The Company does not measure this indicator. We do work to optimize packaging where it saves packaging and raw materials. Contracts incentivize suppliers to use reconditioned rather than new totes. In 2012, 209,624 reusable metal boxes were used for outbound shipments.

#### EN28 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations

Fines paid in the year 2012 were \$224,559 which includes both amounts paid and the value of alternate pay amounts. Fines paid in 2011 were \$2,688,439. Fines and penalties are captured globally regardless of size or significance, and payment is reported based on the year paid. This incident reporting system does not classify whether a fine is related to product, the environment, or other focus of law.

The Company does not have non-monetary sanctions to report for 2012, nor is there awareness of a case or cases that should be disclosed as events brought through dispute resolution.



Responsible Care at Dow Winning Team: Rio Sustainable City – Dow's Cool Roof Solution



From left to right: Pedro Suarez, Fabio Richeti, Moises Freitas, Daniel Arruda, Ana Carolina Haracemiv, Gabriela Maravilhas, Tatiana Fernandez, Lauro Rebouças, Axia Sustainabilidade employee, Caio Sedeno.

Not shown: Julia Monteiro, Christianne Cannavero

The city of Rio de Janeiro has 968 underprivileged communities spread across its natural landscape, which are home to about 6.5 million people. Dow's goal is to help provide sustainable solutions to improve the quality of life, reinforcing its commitment to corporate social responsibility while supporting the city's goal to create a more sustainable, vibrant environment. Two communities were chosen for the project: Chapéu Mangueira and Babilônia, which are known for their strong local leadership.

After evaluating opportunities to provide assistance, Dow focused on sustainable construction solutions and paints to improve the well being of the communities' dwellers, settling on an advanced cool roof coatings technology from Dow to enhance energy savings. In addition to reducing the internal temperatures of homes, the cool roof coatings technology helps prevent the mold and infiltration issues commonly associated with climate conditions and poor construction materials.

# **EN29** Significant environmental impacts of transporting products and other goods and materials used for the organization's operations and transporting members of the workforce

Dow continues to support efforts that assist in rail safety and security. Information about the Dow TRANSCAER Training Tour can be found at <u>TRANSCAER Training Tours</u>.

To help minimize impacts resulting from transporting products, Dow tracks Hazmat Transportation Loss of Primary Containment (LOPC) count (Serious, Moderate & Minor incidents). During 2012 there were 25 events. The Company is striving to reduce the occurrence of Hazmat Transportation LOPC incidents to fewer than 14 per year, with no incidents involving Highly Hazardous Materials by 2015. A second metric to minimize the potential for impacts from transportation tracks the volumes of Highly Hazardous Materials transported. We have set a 2015 Sustainability Goal to reduce the number of tonne-miles (a measure of how much shipped and how far) by 50 percent from levels in 2005, which was 1,410 million tonne-miles. Dow will accomplish this by redesign our supply chain to reduce or eliminate shipments, or optimizing the distances products travel. (A tonne-mile is one metric ton of freight moved 1 mile or 1.6 km.)



#### **Highly Hazardous Material Tonne-Miles**



By reducing the number of tonne-miles of Highly Hazardous materials, Dow reduces the chance of in-transit incidents that could impact communities and areas through which Dow's products travel. In 2012, 746 million tonne-miles were shipped via road and rail. The goal for 2015 is to reduce these shipments to less than 705 million tonne-miles, which would be a 50% reduction from the baseline in 2005.

# **EN30** Total environmental protection expenditures and investments by type

The costs specifically identified as environmental operations were \$717 million during 2012. Significantly more related costs are incurred, but are not specifically accounted for as environmental expenditures. Dow invested \$145 million of capital identified specifically for environmental purposes. At December 31, 2012, the Company had accrued obligations of \$754 million (\$733 million at December 31, 2011) for probable environmental remediation and restoration costs, including \$69 million (\$69 million at December 31, 2011) for the remediation of Superfund sites. This is management's best estimate of the costs for remediation and restoration with respect to environmental matters for which the Company has accrued liabilities, although it is reasonably possible that the ultimate cost with respect to these particular matters could range up to approximately twice that amount.

Great Place to Work

A Premier Employer around the World

**Dow's People Vision** – The world's best people working together to make a difference – underscores our belief that a talented, engaged employee workforce is essential to our ability to deliver innovative solutions to our customers, markets and communities.

Our People Strategy is supported by four strategic pillars:

- Attract and Retain a Diverse Workforce
- Engagement of Employees
- Performance Culture
- Superior Leadership

Beneath each pillar is a set of strategies, action plans and metrics. Many of those metrics are included in this report.

Dow measures its progress toward being a great place to work by comparing its Global Employee Opinion and Action Survey (GEOAS) scores against benchmarks established by 40 premier employers in the Mayflower Group. This is a consortium of leading global companies representing a variety of industry sectors. They include 3M, Corning, Boeing, Royal Dutch Shell, Microsoft and Nike.

Our focus is improving our strategic alignment, recognition and employee development. Top quartile performance is noteworthy in regard to employee agreement that senior management gives employees a clear picture of the direction in which Dow is headed and employees are given a real opportunity to improve their skills in Dow.

#### **Our Values**

The Company highlights three overarching values. These values define our culture and create a focus to help make Dow a great place to work.

#### **Goals and Performance**

Dow's executive-level Global Inclusion Council, which is chaired by Gregory Freiwald, Chief Human Resources Officer, Aviation, Corporate Affairs, and Executive Vice President, provides oversight for the Company's Diversity and Inclusion agenda. Many of Dow's senior executives serve on this council. We report progress on our employee goals annually in <u>LA13</u>.

- **Goal 1:** To be the "Employer of Choice" in strategic markets where we recruit talent.
- **Goal 2:** Close gaps in underrepresentation of females and minorities in the leadership levels of the Company.
- **Goal 3:** Achieve top quartile inclusion confirming the Dow workplace is characterized by respect and diverse perspectives.

Integrity

We believe our promise is our most vital product—our word is our bond. The relationships that are critical to our success depend entirely on maintaining the highest ethical standards around the world.

Respect for People

We believe in the inherent worth of all people. We, the employees of Dow, are the engine of value creation; our imaginations, determination and dedication are essential to growth.

Protecting Our Planet

We believe in protecting the world's resources. Dow's sustainability journey involves the world's best problem solvers working on the world's biggest challenges. The decisions we make, the innovations we deliver and the goals we achieve are all driven by our intent to "Set the Standard for Sustainability," making the world safer, cleaner and greener for generations to come.

#### Labor Policies and Philosophies

Respect for human rights and dignity is a cornerstone of our business.

- We recognize and respect all labor and employment laws including those respecting freedom of association, privacy and equal employment opportunity - wherever we operate.
- We believe that working positively and directly with employees best serves their interests.
- We strive to work cooperatively with duly chosen employee representatives in the common pursuit of the interests of the employees and the Company's mission.
- We do not use forced or involuntary labor.
- We comply with all applicable child labor laws.

We maintain a safe and healthy work environment and are committed to eliminating work-related injuries and illnesses. Employees and the Company share the responsibility to make safety and health a daily priority. Each employee is accountable to take corrective action when an unsafe or hazardous situation is brought to their attention. This is an important part of the culture, which makes working at Dow about 14 times safer than working at the average manufacturer in the United States based on available statistics. Dow's Drive to Zero program drives Dow employees and contractors to exceptional safety performance. It reinforces Dow's vision for EH&S - zero injuries and illnesses, zero incidents, and zero environmental harm.

#### **Training and Awareness**

Dow's philosophy of continuous learning and development is supported by a robust curricula assigned to leaders and employees. Recognizing that effective leadership is a critical link to employee engagement, the Company's Leadership Development solutions target employees transitioning to people leader roles.

A smooth and successful transition is important for leadership effectiveness. That's why within the first 90-days, new leaders are expected to participate in training that establishes the 'rules of the road' for their new role. Policies and procedures are explained, with the purpose of guiding the new leader to support their new team and lead through inspiration and by example. In addition, the Company offers both structured learning courses and online reference portals for experienced leaders, enabling them to continue to develop their leadership skills.

In 2012, leaders across the Company completed 4,333 leadership training sessions.

Dow encourages continuous learning - in classrooms, on assignment, through mentoring and networking as a way of enabling employees to sharpen their knowledge, skills and abilities. In 2012, 3,611 employees participated in Great Start @Dow, an on-boarding development program critical to setting new employees up for success - immersing them in Dow's culture, strategy and structure.

For ongoing training, employees use a MyLearning system that helps them select and manage curriculum that aligns with their core role responsibilities and personal development interests. Required training is assigned to employees at this same MyLearning development tool. There are now more than 28,000 courses available on the MyLearning system.

#### The Dow Code of Conduct: The Diamond Standard

The Diamond Standard provides clarity on how to address Code and other policy violations using the Dow EthicsLine, which is available globally, with multi-lingual capabilities, 24 hours a day, seven days a week and is operated by an external vendor. All concerns are evaluated and all potential code violations are investigated. In addition to the EthicsLine, employees are encouraged to report their concerns to their own supervisors or other leaders, Legal Department Attorneys, Human Resources, Regional Ethics and Compliance Committee members or directly to the Office of Ethics and Compliance. Statistics regarding ethics complaints are published quarterly for employees on Dow's intranet homepage.

Dow's office of Ethics and Compliance works closely with the Dow Regional Ethics and Compliance Committees to conduct periodic Ethics and Compliance Risk Assessments to identify potential risk areas in the Dow regions around the globe and then respond with targeted education and corrective actions.

#### **Equal Employment Policy**

Dow is committed to creating and maintaining an environment in which all Dow people have an equal opportunity to reach their potential and contribute fully to the success of the Company. People living with disabilities are a unique source of talent who can deliver substantial value to our Company, our customers and our communities. Dow is committed to the recruitment and development of top talent, including individuals who happen to live with a disability.

#### **Diversity and Inclusion**

At Dow, Diversity & Inclusion means delivering a workforce that reflects the places we do business today and tomorrow and enabling a workplace where everyone is included and performing at their peak, know their contributions are valued.

#### Equal remuneration for women and for men: See <u>LA14</u> for more information.

The most senior position with responsibility for Labor Aspects is Gregory Freiwald, Chief Human Resources Officer, Aviation, Corporate Affairs, and Executive Vice President.

# Labor Performance Indicators

## **Aspect: Employment**

#### LA1 Total workforce by employment type, employment contract, and region, broken down by gender

Total Dow Workforce: 54,353 employees as of December 31, 2012, as reported in <u>Section 2.8</u>, based on full time equivalent persons as reported in the Dow 2012 10-K.

Personnel count was 54,353 at December 31, 2012, up from 51,705 at December 31, 2011. Headcount increased from yearend 2011 due to growth initiatives and the inclusion of 1,946 seasonal employees in the Agricultural Sciences operating segment as part of the Company's personnel count. This increase was partially offset by decreases related to the 1Q12 and 4Q12 Restructuring programs, which are expected to be completed by December 31, 2014. Personnel count at December 31, 2011 increased from 49,505 at December 31, 2010 primarily due to the hiring of additional employees to support the Company's growth initiatives.

#### Full and Part Time Employment, by gender, globally

	Full Time	Part Time
Male	71 percent	1 percent
Female	25 percent	3 percent
Total	99 percent	1 percent

#### Breakdown of Employees by Employment Contract:

		Male:	Female:
Regular:	95.0%	73.0%	27.0%
Temporary:	5.0%	66.0%	34.0%

Breakdown of Total Employee Population by Region: See <u>Section 2.8</u> for employees by geographic area and <u>LA13</u> for Gender By Region information.

## LA2 Total number and rate of new employee hires and employee turnover by age group, gender, and region

#### New Employee Hires, by Gender, by Region

	Male	Female
Globally	71.0%	29.0%
North America	76.0%	24.0%
Latin America	58.0%	42.0%
Europe	68.0%	32.0%
India	74.0%	26.0%
ME/Africa	53.0%	47.0%
Pacific ex China	74.0%	26.0%
China	64.0%	36.0%

Dow reports attrition for both voluntary exits (which includes retirements as well as employees separating for other reasons) and involuntary reductions. In 2012, the global voluntary attrition rate was 4.7% (up from 4.6% in 2011) and the involuntary rate was 3.0% (down from 3.4% in 2011).

The following information by category is based on a breakdown of voluntary attrition rates. Voluntary attrition rates are reported here, as they may be reflective of Company culture, working conditions and employee satisfaction or dissatisfaction. Involuntary reductions are primarily a reflection of business conditions.

The rates of attrition by gender:

- 4.4 percent for males
- 5.3 percent for females

#### Voluntary Attrition by gender, by region:

	EMEA	Latin America	North America	Asia Pacific	Global
Male	3.9%	3.4%	4.4%	4.9%	4.4%
Female	5.1%	5.1%	4.8%	6.9%	5.3%

Dow does not report attrition based on age, but rather on years of service. The rates of attrition for years of service, based on average headcount for these groups, are shown.

- 5.7 percent for 0-1 years of service
- 7.3 percent for 1-3 years of service
- 7.2 percent for 3-5 years of service
- 5.2 percent for 5-10 years of service
- 3.2 percent for 10-15 years of service
- 3.5 percent for 15+ years of service

The rates of attrition by region, based on average headcount for these groups, are:

- 4.7 percent Globally
- 4.5 percent for North America
- 4.2 percent for Latin America
- 3.9 percent for Europe
- 8.2 percent for India
- 9.9 percent for Middle East, and Africa
- 5.5 percent for Pacific excluding China
- 6.4 percent for China

#### LA3 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations

Dow makes a wide variety of benefits available to all eligible regular full-time and less-than-full-time employees that work 20 or more hours per week. Dow's benefit plans are designed to build on the social security benefits provided in each country and social security systems and as a result vary by country.

Dow offers the following benefits to employees in most of the countries where it does business:

- Pension plans either defined benefit or defined contribution plans
- Medical plans often including prescription drug coverage and dental
- Life insurance
- Disability protection
- Accident insurance
- Paid vacation, holiday and leave programs
- Business travel accident
- Stock purchase plan

## LA15 Return to work and retention rates after parental leave, by gender

Dow offers employees, both male and female, the opportunity to take leave for many reasons, including the birth or adoption of a child. Because of differences in global labor laws, the company's leave policies differ around the world. As a result, the table below includes employees who either took parental or other family leave, for any reason.

- Between 2009 -2012, 607 employees took parental or family leave. 30% were male and 70% were female.
- Of these employees, 77% returned to work, 15.6% remained on leave. 72% of females returned to work and 90% of males returned to work.
- Of the employees who returned to work following their leave, 9% are no longer with Dow. 65% of these employees are female and 35% are male.

### Aspect: Labor/Management Relations

## LA4 Percentage of employees covered by collective bargaining agreements

Twelve percent of Dow's workforce was covered by collective bargaining agreements in 2012.

#### LA5 Minimum notice periods regarding operation changes, including whether it is specified in collective agreements

Dow keeps employees well informed of operational changes through a variety of channels. Global, business and functional specific news is communicated through our global intranet that can be accessed by any Dow employee in a variety of languages. In addition, leaders cascade communications through the organization to Dow employees. These communications occur in a timely and effective manner.

While there is no global minimum time frame for notifying Dow employees of significant operational changes, Dow makes every effort to give a reasonable amount of notice to all employees in the event of a significant change. Dow has a proven history in recognizing and respecting all labor and employment laws in the countries in which it operates.

## Aspect: Occupational Health and Safety

LA6 Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs

Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.

Drive to Zero is a Journey and continues to be our vision. We will not accept injuries and illnesses; nor will we accept any adverse environmental impact on our operations or surrounding communities. As we approach 2015 our resolve to achieve our goals must intensify. But, Drive to Zero is not mostly about rates, statistics, numbers or metrics, although these are important ways to measure our progress. It is about people, and keeping our people, our facilities, our environment and our communities safe.

In 2005, Dow launched the 2015 Sustainability Goals and the Drive to Zero campaign. Between 2005 and 2012, such efforts prevented over 900 injuries and over 4000 spills. But lives are still being affected by injuries and incidents.

In 2012, the Drive to Zero campaign was revitalized with a new slogan "LIVE IT!" We are taking the strong foundation and organizational commitment of Drive to Zero to the next step with this new campaign and encouraging everyone to "LIVE" the commitments they have made.

Dow also has a well-developed health strategy focused on prevention, quality, health system management and advocacy. Employees are provided with the tools and information they need to take action to invest in their personal health and the health of their families, while the company works to establish a "culture of health" through additional policies and practices.

## Responsible Care at Dow Winning Team: EMEA Contractor Safety Improvement Project



Team Members: Roland Abel, Axel Altmann, Arno Bentschap Knook, Peter Coremans, Ignasi Canagueral, Antonella Cuppini, Dave Donovan, John Geeraerts, Danie Gous, Eicke Koehnen, Dagmar Krettek, Gerrit Lieske, Donald Mascarenhas, Rolf Nettersheim, Giuseppina Papagno, Sven Persson, Al Ribes, James Robins, Guillermo Ruiz, Arnd Thomas, Peter Schaub, Enver Senergun, Joey Singh, Nikla Urani, Stefan Vrijland, Roeland Adriaansens, Sophie Ascione, Eddy Bobelijn, Anna Lena Pettersson, Andrew Culshaw, Bruno del Molino, Christina Garcia, Norbert Goering, Klaus Kleinschmidt, Karlk Kraehling, Mariagrazia L'Abbate, Pep Llosses, Peter Missal, Dirk Noak, Patricia Pardo, Eric Renouf, Allessandro Risoluto, VVadim Rozhdestvenskiy, Henrik Harz, Eric Santa, Nils Schroeder, Debbie Shelton, Tony Small, Gianluca Vena, Patxi Mourente

At Dow, protecting Non-Dow Services employees ("contractors") is just as important as protecting Dow employees. Therefore, Dow's health and safety metrics, work processes and safety systems are designed to protect contractors and employees from workplace hazards. To improve the Contractor Personal Safety Rate in Europe-Middle East-Africa (EMEA), a two-day "EMEA Contractor Safety Workshop" was held in January 2011. Attendees included representatives from the affected functions and from most of the 40-plus Dow manufacturing sites in EMEA. The outcome was twofold: a comprehensive Site Contractor Safety Assessment was implemented to measure the status quo and future enhancements, and six fast-track Six Sigma projects were created to screen available tools and identify best practices. These improvements are expected to have a substantial positive impact on the EMEA Contractor Personal Safety Rate and the Contractor Severity Rate.

# LA7 Rates of injury, occupational diseases, lost days, and absenteeism and the number of work-related fatalities by region and by gender

The overall Injury and Illness rate is a highly visible 2015 Sustainability metric for the Company. The goal is to reduce by 2015 the reportable injury and illnesses to no more than 0.12 incidents per 200,000 hours of work time, representing a 75 percent reduction from the rate in 2005. Dividing incidents by a defined cumulative number of hours worked by the employee population is a standard way of viewing the rate of injury and illness for a specific population. The progress made in reducing our rate of injury and illness since 1994 has prevented more than 29,000 reportable incidents involving Dow employees and contractors.



The following information from the American Chemistry Council provides context for Injury and Illness performance (for U.S. operations):

#### The safety performance of Dow employees by region is illustrated in this graph. Variations in culture, employee make up, and regulatory drivers explain much of these differences.

#### **Safety Metrics by Region** 0.30 Recordable Injury Rate Per 200,000 hours of work 0.25 DAWC Rate 0.20 0.15 0.10 0.05 0.00 Latin North Europe, Asia Pacific America America IMEA

#### Comparative Injury/ Illness rate (incidents / 200,000 hours)

	Values for 2011	Values for 2012
Dow employees and contractors	0.30	0.20
Responsible Care® chemical companies	0.8	85
All U.S. manufacturing* (2010 most recent data available)	4.	41

Gender	2010 Recordable Injury Count	2011 Recordable Injury Count	2012 Recordable Injury Count	2010 Recordable Injury Rate	2011 Recordable Injury Rate	2012 Recordable Injury Rate
Male	70	75	48	0.39	0.40	0.27
Female	22	22	15	0.33	0.31	0.22

#### Safety by gender data for Dow employees in the United States

The contractor rate of Injury and Illness in 2012 was 0.22, while that of employees was 0.18 injuries per 200,000 hours.

Days Away from Work Injury and Illness Cases (DAWC) are included in the Dow Injury and Illness rate. In 2012, DAWC occurred at a rate of 0.047, down from 0.085 per 200,000 hours in the prior year.

The illness rate in 2012 was 0.007 per 200,000 hours.

In May 2012, there was a fatality in Mexico when a contingent staff contract employee died during a motor vehicle accident while driving to an agricultural field site. An investigation concluded that the vehicle lost control due to excessive speed, impacting another vehicle. In July, at Dow's Deer Park Operations site, an employee died when he was burned by hot chemical solution. The investigation concluded the accident was caused by a failure to follow established equipment isolation and opening procedures. There were a total of two work related fatalities for the year, which is up from one in 2011.

Information on absenteeism is not aggregated by the Company.

# LA8 Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families or community members regarding serious diseases

	Education	/ Training	Coun	seling	Prevention/	Risk Control	Treat	ment
Program recipients	Yes	No	Yes	No	Yes	No	Yes	No
Workers	x		x		x		x	
Workers' families	x		x		x		x	
Community members	x			x	x			x

#### **Assistance Programs**

Dow offers medical benefits that cover a range of preventive, diagnostic and treatment services. Programs vary by country and other criteria. Dow Health Services makes the following available in the area of Occupational Health and Health Promotion:

• Employee clinical treatment services are available on-site at approximately 83 Dow clinics globally.

- Periodic Employee Health Assessment examinations screening for a variety of diseases (including heart, lung, liver, kidney, blood, etc.) Specific counseling and follow-up are provided to assist in reducing any identified risks.
- Health Promotion programs are offered to all employees and often retirees and their dependent family members. These programs include education on important health risks such as tobacco use, inactivity, obesity and stress. Employees understand the opportunities to assess those risks and a variety of interventions they can pursue to reduce their risk.
- Active participation in an Institute for Healthcare Improvement, IHI- Triple Aim community health initiative across 14 counties in mid-Michigan, sponsored by the Institute for Healthcare Improvement and a regional collaborative the Michigan Health Information Alliance. This initiative is a broad community collaborative effort to improve population health, patient quality of care and control costs.
- Employee Assistance Programs are offered globally. These provide assistance for employees and families for issues such as general stress, anxiety, financial, and family relations.

Dow has participated in or provided a variety of targeted programs that impact health beyond our employee groups. Some examples include: dental health services in underserved areas, HIV/AIDS programs, women's health concerns, health presentations and health fairs.

Dow's health program is recognized internationally and during 2012 was featured in more than nine publications and took the opportunity to present information in many forums about its efforts and accomplishments. Some examples include: International Neurotoxicology Association, International Commission on Occupational Health, American Cancer Society, Workplace Health Initiatives, U.S. Environmental Protection Agency, California Office of Environmental Health Hazard Assessment, Dutch Health Council, Center for Disease Control, U.S. Alzheimer's Association and the Health Enhancement Research Organization. Dow efforts were recognized through several awards, including Excellence in Business Action on Health (Global Business Coalition - Africa), SESI Quality in the Workplace Award (Sao Paulo, Brazil), Asia Pacific Business Services Paragon Award (Japan), Bureau of Health Department's, Badge of Accredited Healthy Workplace (Taiwan), and the Alzheimer's Association's Mission Mover Award (U.S.).

General review of medical surveillance testing results for specific Dow workgroups has shown an improved health risk profile continuously since baseline of 2004. "Upholding our commitment to EH&S goals on a daily basis is the key to achieving the company's high standards for safety and environmental performance." said John Sampson, Vice President, EH&S Operations. "Employees are passionate about achieving 'zero injuries', with 'zero excuses', every time, and that was evidenced by 2012 results being the best ever performance in Dow's 116-year history, a metric we can be very proud of, and one that we will strive to surpass in subsequent years."



- John Sampson

## LA9 Health and safety topics covered in formal agreements with trade unions

Even though the Company does not collect this information at this time, all employees are covered by Dow's safety processes and work culture.

### **Aspect: Training and Education**

#### LA10 Average hours of training per year per employee, by gender, and by employee category

The Dow Sustainability Network, made up of employees from around the world, meets monthly to focus on educational topics related to sustainability. Often the topic is specific to addressing a sustainability challenge within the Company. The network also hosts external sustainability leaders who share their expertise to inform and inspire regarding sustainable solutions for tomorrow. The Sustainability Network provides the opportunity for any Dow employee to engage in an open dialogue on internal and external sustainability topics which promotes the integration of sustainability into day-to-day to actions.

Dow's training opportunities include both traditional classroom and virtual instructor-led training, hands-on training, blended training, and an extensive database of online training courses. Training and education varies by job role and responsibilities. On average, there were 56 hours of training per employee in 2012. Dow has extensive training programs for employees involved in every job category.

#### Training hours per employee by gender and category

	Male Avg	Female Avg
Admin	12	16
Professional	38	35
Tech	75	40
Other	122	62



#### LA11 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings

Dow employees have access to materials that support the entire employee life cycle, with the wealth of resources available on Dow's online people resource, My HR Connection. My HR Connection gives employees access to development resources, online internal job postings, compensation and benefit information, health and wellness programs among others, including late stage career planning. Employees take advantage of these offerings to develop their careers, enhance their employee experience and plan for career changes. Examples include:

- Employee worksheets exploring personal and career values, preferences and orientations
- Forms and guidelines to prepare for employee career development discussions
- Global Educational Assistance supports employees in pursuing external training/educational opportunities for career development
- Access to HR and retiree service call centers for personalized answers to HR questions
- Benefits counseling for employee retirement planning purposes
- Financial planning seminars for all employees
- Total health, nutrition and wellness centers and associated programs and counseling



# LA12 Percentage of employees receiving regular performance and career development reviews by gender

Dow's performance management process provides Dow with a consistent method of aligning employee goals with organizational goals and measuring the outcomes. We strive to maximize the connection between individual contribution and organizational performance through establishing performance expectations, encouraging ongoing feedback and dialogue between employees and leaders, and reviewing progress throughout the year.

The performance management cycle concludes with a formal review of annual performance. This discussion features feedback on highlights and areas for development from throughout the year, which employees use to craft personal development goals for the coming year. In preparation for that discussion, leaders gather multi-rater feedback to enhance the quality of feedback and ensure multiple inputs to performance ratings. This formality of the process is well known, and in combination with the talent of Dow leaders meaningful discussions occur across the wide diversity of roles in Dow.

Each employee's annual performance evaluation is recorded in Dow's performance management system to ensure the information remains available as employees change roles in the organization.

Based on the 2011 employee survey:

- 87 percent of employees (88 percent of females and 87 percent of males) report having an annual performance review with their leader. Geographic transfers, temporary leaves, recent hires, and job changes within the Company are factors that cause the number of reviews to be less than 100 percent.
- 75 percent of employees, with no difference between male and female employees, report having an Employee Development discussion with their leader in the past 18 months. This number increased by 4 percent over 2010. The rise is due to an emphasis on employee development in response to the global workforce survey.

### **Aspect: Diversity and Equal Opportunity**

## LA13 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership and other indicators of diversity

#### **Diversity and Inclusion Strategy:**

Simply put, in order to be the best, we must attract, develop and retain the best, regardless of national origin, gender, age, language, race, religion, disability, sexual orientation, or gender identity. Of course, having a diverse workforce isn't enough. We need to create a respectful and inclusive culture where diversity is truly valued.

The Company's Diversity and Inclusion agenda is stewarded by its executive level Global Inclusion Council, which is chaired by Gregory Freiwald, Executive Vice President of Human Resources and includes several of Dow's senior executives. The Council is responsible for improving the diversity mix in the corporation to drive business success. Several executive members of the Council also act as Executive Sponsors of our Global Employee Networks. In 2011, Andrew Liveris, Dow's Chairman and CEO, signed the United Nations (UN) Women's Empowerment Principles (WEPs), a partnership initiative of the United Nations, supporting the mission to promote gender equality and women's empowerment globally. Signing these principles has complemented Dow's internal efforts around women's advancement. As a result of the WEPs, Dow is reporting a broad range of data related to women's equality to create greater transparency around our efforts.

Dow's Diversity and Inclusion goals were established by Dow's executive leadership. Behind each goal is a set of metrics and actions to drive progress:



#### Goal 1: To be the "Employer of Choice" in strategic markets where we recruit talent

- Target "Best Employer" Awards
- Partnerships to enhance the diversity of the talent pipeline
- Diversity of Hiring Pools and Hiring Rates

#### Key Results:

Working closely with seven global Employee Diversity Networks, with more than 150 chapters worldwide, we have established a strategic list of "Best Employer" awards that are meaningful to various segments of our population. These awards establish criteria for what it means to be an Employer of Choice within various diverse communities and provide a competitive performance benchmark against "best practices" in the marketplace.

- Dow has received a 100 percent rating for nine consecutive years on the Human Rights Campaign's Corporate Equality Index, for best practices in creating an inclusive environment for people of all sexual orientations and gender identities.
- Recently, Diversity Inc. magazine named Dow to its "Noteworthy 25" Employers List
- The São Paulo State Government presented Dow Brazil with its Diversity Seal award for the third consecutive year.
- Dow Poland was named one of the winners of the Polish national contest "Mother at Work" organized by the Polish Saint Nicholas Foundation, together with Rzeczpospolita, a daily newspaper, and Millward Brown, research agency in Poland and Eastern Europe.
- In recognition of Dow's sustained support of its Equal Opportunity in Engineering (EOE) Program, the University of Texas (UT) at Austin has honored Dow with its 2012 EOE Partner of the Year Award.
- Mauri Schoby, regional engineering leader in Engineering Solutions in Freeport, Texas, received the 2012 Champion of Champions award on behalf of Dow from the National Society of Black Engineers (NSBE).
- Savoy magazine recognized Dow's Jeff Tate, who was Global Finance Director for Performance Plastics at that time and is now Corporate Auditor, as one of the Top 100 Most Influential Blacks in Corporate America in the 2012 issue. This magazine serves as a premier forum for issues of workplace diversity and lifestyle features.

Dow partners with several organizations, through both contributions and employee involvement, to increase the diversity of the talent pipeline, with an emphasis on empowering diverse populations and encouraging girls and underrepresented minorities to pursue Science, Technology, Engineering and Mathematics (STEM). Selected examples include:

- Dow is a member of the National Action Council of Minorities in Engineering (NACME) which works to increase the number of successful African American, American Indian, and Latino women and men in science, technology, engineering and mathematics (STEM) education and careers.
- Dow Europe has entered into a multi-year agreement with MyHandicap, with the goal to improve measures to integrate people with disabilities and promoting barrierfree work infrastructures.
- Dow recently announced a new partnership with the National Society of Black Engineers (NSBE)'s to bring Summer Engineering Experience for Kids (SEEK) to Detroit in summer 2012.

#### 2012 Diversity Hiring

	Females	Minorities
Entry-level Professional	37%	30%
Mid-level Profession	30%	31%
Leadership	32%	29%



# Goal 2: Develop a workforce that reflects the places we do business today and tomorrow

\* Global Leaders refers to approximately the top 200 positions within Dow.

In addition to working to ensure that women and ethnic minorities in the United States have equal opportunities, we also work specifically to create an inclusive work place for all employees including Lesbian, Gay, Bisexual, and Transgender (LGBT) employees, people with disabilities, veterans, and employees from all cultural backgrounds.

#### Diversity indicators for the overall employee population

By gender, globally:					
Male	73%	35918			
Female	27%	13361			
By age:					
Under 30	14%	7966			
30 to 50	58%	27228			
Over 50	28%	14085			

#### By U.S. ethnic minority (data are gathered only for U.S.)

Minority	21%	4990
Non minority	79%	19047
By age:		
Under 30	12%	760
30 to 50	53%	2828
Over 50	35%	1402

Progress toward Dow's goal of increasing the representation of women and ethnic minorities in leadership roles has been achieved:

#### Several initiatives support this goal:

- External partnerships with organizations such as the National Society of Black Engineers, Society of Hispanic Engineers, Society of Women Engineers, and the National Council on Business and Disability.
- Active Employee Diversity Networks that help champion an inclusive workforce. Dow currently has almost 150 chapters of its seven Employee Networks around the world.
- Mentoring programs.
- World-class Leadership Development and Executive Education programs, each of which include an emphasis on inclusive leadership and cross-cultural competency building.

# Goal 3: Create a workplace characterized by respect and where people value diverse perspectives

Dow's Global Employee Opinion and Action Survey (GEOAS) includes a Diversity & Inclusion index that enables Dow to monitor the degree to which its working culture is marked by inclusion and respect. The overall index was 72 percent in 2011, up 4 percent from the previous year.

We are committed to driving these scores higher, and achieving top quartile performance as benchmarked against the Mayflower Group.

#### Several initiatives support this goal:

- Diversity and Inclusion-oriented training that reaches all levels of the organization and is embedded within our new employee orientation and leadership development programs.
- Specialized workshops to meet emerging needs covering gender norms and unconscious bias, disability etiquette, and on-demand learning resources around LGBT issues and generational differences.
- Efforts to raise cross-cultural awareness and understanding, ranging from lunch-time language classes to access to an on-line Cultural Navigator.

Progress on all three goals is tracked at the corporate level and reported quarterly to the Company's executive leadership, through the Global Inclusion Council.

Diversity of Dow's Board of Directors: At year-end 2012, Dow had 10 Directors; 2 are female and 1 is a U.S. ethnic minority.

Sixty percent are between the ages of 51 and 60 and forty percent are between the ages of 61 and 70.



# The regional distribution, of Dow's global female workforce:



#### Global workforce, by gender by job family

	Female	Male
Administrative	88%	12%
Professional/ Manager	31%	69%
Global Leader/ Executive	12%	88%
Technical Employees	27%	73%

#### Representation, by job family and gender, regionally

	Europe, Middle East & Africa		La Ame	tin erica	North America Asia Pacific		Pacific	
	F	м	F	м	F	м	F	М
Administrative	92%	8%	68%	32%	92%	8%	93%	7%
Professionals & Managers	30%	70%	36%	64%	31%	69%	32%	68%
Global Leaders & Executives	3%	97%	0%	100%	16%	84%	0%	100%
Technical Employees	17%	83%	8%	92%	16%	84%	17%	83%



Mid-level Female Leaders	22%
Senior Female Leaders/Executives	18%

#### Representation of US minorities in leadership roles, US

Mid-level Minority Leaders	15%
Senior Minority Leaders/Executives	14%

#### The distribution, of Dow's global workforce by age



#### Diversity indicators for the 23,262 employees in Professional and Management job positions

By gender:	
Male	69%
Female	31%
By U.S. ethnic minority:	
Minority	20%
Non minority	80%
By age:	
Under 30	14%
30 to 50	62%
Over 50	24%

# Diversity indicators for the 226 employees in the Global Leader category

By gender:				
Male	88%			
Female	12%			
By U.S. ethnic minority:				
Minority	15%			
Non minority	85%			
By age:				
Under 30	0%			
30 to 50	47%			
Over 50	53%			

#### U.S. Workforce, by ethnic minority

Minority	21 percent
Non minority	79 percent



#### LA14 Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation

Dow conducts pay equity studies to verify that the Company is compensating employees fairly. The most recent analysis confirms that the basic salary for men and for women is not statistically different when differences for months in grade, age, highest education, years of service and performance rating are considered.



#### The following provides the unadjusted data by comparing the ratio of male to female base salary within three example grade levels for three job families.

It is important to note that in these tables no adjustment is made for months in grade, age, highest education, years of service and performance rating. The differences in pay are driven by these factors, not by gender.

Family Grade	Gender	Average Base Salary (USD)	Ratio of Male to Female	
Drofossionall	Male	63,983	99%	
Professional I	Female	63,428		
Drofossional	Male	121,906	98%	
Froiessional II	Female	119,792		
Drofossional III	Male	201,096	95%	
Froiessional III	Female	191,109		



Human Rights

## Human Rights Summary

Dow believes that respect for a person's dignity, rights and aspirations should be the cornerstone of any business's ethics. Integrity, Respect for People, and Protecting Our Planet have always been the core of the way we do business. Global enforcement of Dow's Code of Business Conduct is fundamental to our <u>human rights position</u> and performance.

- We recognize and respect all labor and employment lawsincluding those respecting freedom of association, privacy and equal employment opportunity-wherever we operate.
- We believe that working positively and directly with employees best serves their interests.
- We strive to work cooperatively with duly chosen employee representatives in the common pursuit of the interests of the employees and the Company's mission.
- We do not use forced or involuntary labor.
- We comply with all applicable child labor laws.
- Dow will not tolerate acts of violence, including verbal or physical threats, intimidation, harassment and coercion.

The complete Dow <u>Code</u> of Conduct is available in 25 languages and can be found on Dow's website. Information about relevant training can be found in <u>HR4</u>.

In order to deploy people effectively Dow identifies competency needed to successfully fill specific job roles. The essence of the Code of Conduct is embedded in most of the competency descriptions. For example, included in the description of competent to lead courageously is: we have the self-confidence to lead by example and listen to a diversity of views.

Regarding investments, Dow recognizes the need to prudently select with whom we choose to enter into business. During 2011 Dow formed a joint venture with Saudi Aramco, one of the leading energy suppliers to the world. The resulting entity, Sadara Chemical Company, now being built in the Eastern Province of Saudi Arabia, will be one of the world's largest integrated chemical facilities, and the largest ever built in a single phase.

Indicators <u>HR1–HR3</u> provide information about efforts to assure investment opportunities are managed to avoid compromise of our position on human rights and our expanding activities to define expectations of our suppliers. Dow accepts the responsibility incumbent on manufactures that directly or indirectly involve personal risk to utilize well designed and effective security practices. Dow has been a leader in helping the United States design risk based strategies in several ways and is now helping leverage best practices throughout the rest of the world. See the introduction to <u>Product Stewardship</u> on page 111 and new GRI 3.1 indicators <u>SO9</u> and <u>SO10</u> for more information. Also relevant is the collective effort of the chemical sector (<u>Responsible Care</u> <u>Security Code</u>) to employ security practices that help protect people and the communities in which they live.

See the <u>Dow Code of Business Conduct for Suppliers</u> for more information about how we assess and manage risk to human rights violations related to our purchasing activities.

GRI 3.1 guidelines nominate other potential management approach information be reported, but consistent with our understanding of what is material and of interest to our stakeholders, we point to the performance indicators for information material to our readers. Some reporters who have operations with significant physical labor involvement, or wherein they depend upon suppliers based in countries (or in activities) where labor has a high potential to be at risk will find such topics to be more material. For example, see the indicators <u>HR9–HR11</u> for indigenous rights, assessment and remediation comments.

The most senior position with responsibility for Human Rights Aspects is the chief sustainability officer, which is held by David E. Kepler II.

Use the <u>index</u> to see indicators that you may find of most interest in this section.

## Human Rights Performance Indicators Aspect: Investment and Procurement Practices

#### HR1 Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening

Dow has an established process for due diligence and implementation phases of mergers, acquisitions and joint venture formations, which includes a review of all human rights risks prior to the completion of an acquisition or the formation of a new entity. This review includes the topics of ethical and human rights practices and policies.

#### HR2 Percentage of significant suppliers, contractors and other business partners that have undergone screening on human rights and actions taken

From Code of Business Conduct for Suppliers: HUMAN RIGHTS & LABOR Respect for People is a core Dow Value. As signators of the UN Global Compact, we adhere to these principles and expect our suppliers to respect the human rights of their employees and treat them fairly, in accordance with all applicable laws.

The Supplier Code, launched in 2011 to 43,000 suppliers, is now in all global contract templates helping accomplish adoption with each new contract negotiated. In 2011, Dow worked with Maplecroft, a leading consultant in measurement and management of risk, to create a custom tool that measures supplier risk based on all social and environmental elements of the Supplier Code of Conduct. All Dow suppliers were screened through the tool in 2011. The results from the screening did not identify areas of pronounced risk within our current supply base. Based on these results, Dow adjusted the strategy from auditing to strengthening Supplier Relationship Management across the globe, with specific initiatives to improve collaboration in those world areas that in general could have higher risk like Asia and Latin America. In 2012, the Purchasing group reached out to suppliers across the globe to help them understand the criticality of Sustainability and Dow's position. In Shanghai, this included conducting a Supplier forum, two workshops for suppliers on Sustainability and Innovation and a talk at the Global Supply Chain Council Annual Conference. In Latin America, the team inaugurated the School of Sustainability which works with Suppliers to help define the way forward for them as they understand Sustainability and Dow's position better. The school has now completed training for around 40 Dow suppliers in 2 batches.

Refer to translations at the website <u>Code of Business Conduct</u> for Suppliers (available in multiple languages). Refer to <u>Supplier</u> <u>Responsibilities</u> and this <u>FAQ</u> document for more information.

#### HR3 Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained

Dow has taken steps to ensure all employees are aware of and understand the Company's Values of Integrity, Respect for People, and Protecting Our Planet and the Company's commitment to human rights. In 2012, all employees were required to complete Dow's Respect & Responsibility module and all new employees were required to complete the Code of Business Conduct course.

## **Aspect: Non-Discrimination**

#### HR4 Total number of incidents of discrimination and actions taken

Based on available records, there were no substantiated incidents of illegal discrimination in 2012. Dow defines incidents of discrimination as substantiated findings of a violation of local law and/or Dow's internal policies, which state:

It is Dow's global policy that employees be provided a work environment which is respectful and free from any form of inappropriate or unprofessional behavior, such as harassment including sexual harassment, pestering or bullying and any form of unlawful discrimination. Discrimination is defined in the policy as "employment related actions that adversely impact an employee, have no legitimate business purpose, and are based on unwarranted individual differences or prejudice, such as sex, gender, race, sexual orientation, gender identity, disability, age, ethnic origin or other inherent personal characteristic protected by law." The application of this policy in any particular country will conform to applicable local laws, directives, regulations and/or labor agreements. Retaliation of any kind against an individual who, in good faith, exercises his or her rights under this policy, makes a complaint, or cooperates in an investigation is prohibited.

Dow actively encourages reports of potential policy violations through ongoing communications and training and offers employees several different avenues to report. They may raise concerns with leaders, Human Resources, the Legal Department or through the Dow EthicsLine. The EthicsLine is a safe, reliable and convenient alternative to reporting ethical concerns in person. It is available globally, with multi-lingual capabilities, 24 hours a day, seven days a week. The EthicsLine is operated externally by EthicsPoint (EP), a professional vendor located in Lake Oswego, Oregon, that specializes in providing similar services to global companies. No call tracing or recording devices are ever used, and callers may remain anonymous if they choose as permitted by the governing jurisdiction. Employees also have the option of reporting to the EthicsLine through the web. Concerns are promptly reviewed, investigated and depending upon the findings, appropriate actions are taken to address violations and other issues in the work environment. In reviewing concerns raised during this period, Dow did take actions to support a productive work environment. Such actions have included:

- Specific training or communications for particular work groups.
- Individual coaching, communications or counseling as required for leaders and employees.

These case-by-case, as-needed actions supplement our global initiatives around Diversity and Inclusion that include, but are not limited to:

- Training
  - Global workshops on Diversity and Inclusion, as well as on-line training regarding our policies. [Note: Both of these are embedded into our New Employee Orientation globally, ensuring all employees are aware of Dow's expectations as they join the Company.]
- Inclusive Leadership training for new people leaders.
- Employee Diversity Networks
- Dow now has approximately 150 chapters of its seven Employee Diversity Networks operating around the world. These networks provide support for employees as they pursue personal and professional development and provide insights to the Company on how to become more inclusive.



# Aspect: Freedom of Association and Collective Bargaining

HR5 Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be at significant risk and actions taken to support these rights

No operations are identified that put collective bargaining at risk. Dow's position on freedom of association is included in our Code of Business Conduct Labor Policy. Under this policy, employees are free to form collective bargaining agreements in all areas of operation. As noted in <u>LA4</u>, about twelve percent of the employees globally are covered by collective bargaining agreements.

### **Aspect: Child Labor**

#### HR6 Operations and significant suppliers identified as having significant risk for incidents of child labor and measures taken to contribute to the elimination of child labor

Dow prohibits unlawful child labor and child exploitation and we comply with all applicable child labor laws. Dow's Position Statement on Child Labor states:

Dow complies with all child labor laws. Dow understands that children may legitimately perform tasks, which do not interfere with their education, do not negatively affect their health, safety, and development, and are in compliance with applicable local, state, national, provincial, and international laws and regulations. Dow will endeavor to make its contractors, vendors and suppliers aware of its expectations and commitments to this policy.

Dow has identified no significant risks for incidents of child labor that would be contrary to our position statement, including young workers exposed to hazardous work either as a function of our type of operations or of the locations where we operate.

### **Aspect: Forced and Compulsory Labor**

HR7 Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor and measures to contribute to the elimination of forced or compulsory labor

Dow's position on forced or compulsory labor is included in our Labor Policy in our Code of Business Conduct. See <u>HR5</u> for Labor Policy.

We have identified no operations with a significant risk for forced or compulsory labor in either operations or based on geographies with operations that might be more inclined to be at risk.

### **Aspect: Security Practices**

#### HR8 Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations

Reporting processes and response plans are in place to identify and respond to alleged abuse or violence against employees and contractors. Dow employs several hundred employees and contractors in its Emergency Services and Security department worldwide.

Security personnel, whether proprietary or contract company employees, fully comply with the Company's training requirements, policies and procedures concerning human rights. This training is a condition of employment and is conducted on a repetitive basis. This training includes reinforcing an operating discipline to protect the personal information of our all employees and contractors.

In addition to this baseline training requirement, security personnel are subject to additional functional and situational training in areas relative to human rights. The Company has many secure and anonymous communication methods (as permitted by the governing jurisdiction) for reporting human rights violations, and any reports of such violations are fully investigated and appropriately addressed.

## **Aspect: Indigenous Rights**

# HR9 Total number of incidents of violations involving rights of indigenous people and actions taken

No incidents of violations of indigenous people were reported for the reporting period.

# HR10 Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments

Dow's Regional Ethics and Compliance Committees (RECCs) are in a position to become aware of any human rights violations and review and assess the impacts of alleged violations. They operate regionally in all geographical areas where Dow conducts business. There were no human rights reviews or assessments initiated due to an alleged violation in 2012. All regions had active compliance activities.

# HR11 Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms

No incidents of grievances related to human rights were filed in 2012.

Society

Dow is deploying its research and development skills to help solve the world's most pressing challenges through the lens of the United Nations Millennium Development goals and four market defined <u>megatrends</u>. By focusing on the needs of society, Dow creates solutions that are both far-reaching and broad in benefit. From the food on the table to the technology in our homes, Dow science is making it possible for people everywhere to live better and more sustainably.

## Dow AgroSciences: Delivering Solutions for Sustainable Agriculture

	Mat	erial	ity	
	High		Very High	
with and Decision	Product Safety Leadership	Water Sustainable Chemistry	Chemical Security Local Protection of Human Health & the Environment Energy	Very High
te ho ki er s Assess	Environmentally Preferred Punchasing	Community Success Biodiversity and Ecception Services		
importance to Stat	Breakthroughs to World Challenges*	Climate Change Trade Policy	Suttainable Agriculture	High
	SI	philicance of Impa	cts	₽

By 2050, the world's food production systems must support an estimated 9 billion people, with a shrinking base of agricultural land and limited water resources. Dow AgroSciences combines science and technology to discover and develop innovative agricultural solutions for a more sustainable world. We are committed to increasing crop productivity through higher yields, better varieties, and more targeted pest management control. We use innovative chemical and biotechnology solutions to meet the food, feed, and fiber needs of the world.

The world will have to produce **<u>70 percent more food</u>** for an additional **2.3 billion people by 2050**.

#### **Our Commitments**

We focus on the discovery and development of greener and more sustainable solutions. As a result of this focus, Dow AgroSciences has been awarded four U.S. EPA Presidential Green Chemistry <u>Awards</u> and two U.S. EPA Stratospheric Ozone Awards for solutions that meet market needs while minimizing the environmental impact.

Our innovative products and solutions provide positive contributions to the lives of farmers, ranchers and consumers. Dow AgroSciences has a diverse portfolio of leading-edge insecticide, herbicide, fungicide, fumigant and seed technologies for customers around the world. Sulfoxaflor, our newest insecticide for use in multiple crops and geographies, controls sap-feeding insects, such as aphids and whiteflies, yet has minimal effect on beneficial insects. Like many products in development, it's effective at low use rates and is an excellent fit in integrated pest management systems, which provide economically and environmentally sensitive approaches to insect control. As part of a healthy oils platform, we also develop seed used in Omega-9 Canola Oils that have zero trans fat and the lowest saturated fat among currently available vegetable oils and new Omega-9 Sunflower Oils that will be the first vegetable oils to qualify for a claim of "zero grams of saturated fat per serving."

#### **Prioritizing STEM Education**

Dow's vision is to advance interest in, access to, and quality of science, technology, engineering and mathematics (STEM) education globally. The Company believes that successful efforts in this space will lead to an innovative and competitive workforce and create a knowledgeable society that values science and technology. Dow advocates for improvements to the quality of STEM education at all levels, and is locally active at Dow sites around the world to achieve such improvements. Dow spends \$10-15 million per year on education-related efforts at the corporate and local level. Since 2008, our programs have impacted more than 11,500 teachers and 1.5 million students per year in the U.S. alone.

Dow also supports the voluntary state adoption of the Next Generation Science Standards in K-12. These standards assess not only content mastery, but also "inquiry" competence. These inquiry competencies include skills required for a 21st century workforce: problem-solving and critical thinking, data-based argumentation, and others.

As part of the Company's commitment to STEM education, Dow sponsors the National Science Teachers' Association New Science Teacher Academy. The program invites science teachers from across the United States who are in their second through fifth year of teaching to apply to become an NSTA Fellow. Nearly 50 percent of beginning teachers leave their jobs in the first five years. The Academy endeavors to use mentoring and other professional development resources to support science teachers during the often challenging, initial teaching years and to help them stay in the profession.

For more information about the NSTA New Science Teacher Academy or to learn how to apply to become a fellow, please visit the Academy website – <u>www.nsta.org/academy</u>. Jobs training for adults is another priority focus for Dow. Since 2007, Dow has been a key partner in the Buen Trabajo (translation: Good Job), a training program in Bahia Blanca and Ingeniero White, Argentina. The collaborative program is the creative and effective solution developed to meet a basic community problem: matching qualified employees to available jobs. With high unemployment rates, especially among young people, jobs are a key to improving people's lives, the local economy and the strength of the community. To date, more than 600 students have graduated from the program, a 90 percent graduation rate.

#### Corporate Citizenship is expanding through Dow Sustainability Corps

Dow Sustainability Corps: Skills-Based Volunteerism

One way Dow exercises its role as citizen of the world is through Dow Sustainability Corps (DSC). DSC matches qualified Dow employees with critical global causes through technical volunteerism projects. In this role, employees use their skills and expertise to address some of society's most pressing needs. DSC is in its fourth year in 2012, and to date has contributed more than 6000 hours to non-profit organizations from across the globe, from Bahia Blanca, Argentina to Port au Prince, Haiti.

DSC projects put "action" behind the company's global citizenship commitment and support corporate business strategy through increased insight into communities and potential business opportunities, as the following examples demonstrate.

#### **Tanzania Beyond Tomorrow**

Another DSC effort addressed the crucial need to enhance education in Tanzania, Africa. Dow joined with others in "Tanzania Beyond Tomorrow," a national initiative of the Tanzania Ministry of Education and Vocational Training. Dow's Steve Popovich, an I/T architect, took on the monumental challenge of helping to create a virtual network of schools. With an average student to teacher ratio of 56 to 1, the most critical need was to make quality learning available to some of the most remote areas on the planet.

Steve worked with a multi-faceted team to identify ways to provide low power information/technology infrastructure capabilities to schools across the country. Dow Electrical and Telecommunications got engaged, helping with wire and cable solutions to address the arid climate that causes cables to erode quickly, and the hungry rodent population that can rapidly chew through freshly laid cable.

#### **Rebuilding in New Orleans**

In New Orleans, Louisiana, the non-profit St. Bernard Project (SBP) is addressing another need. The organization was founded a few months after Hurricane Katrina ravaged the U.S. in 2005 by individuals who wanted to help the community recover. SBP's founders were especially troubled by widespread contractor fraud. The group organizes volunteers into work crews that have so far repaired 475 homes for families who couldn't afford to do it themselves, and rebuilt dozens of abandoned properties for sale at belowmarket prices to deserving people. Part of SBP's objective is to provide employment and career skills to people of the area.

Dow had already provided various forms of support for SBP when one of the company's building scientists, Mike Mazor, hit upon the idea of training veterans of the U.S. military to install FROTH-PAK<sup>™</sup> foam insulation made by the Dow Building and Construction business. FROTH-PAK<sup>™</sup> is ideal for the heat and humidity in New Orleans because it is a spray foam that seals tight against air and water. The veterans who were trained gained newfound skills that can be used for years to come.

#### **Recycling in Haiti**

Haiti was one of the world's poorest countries even before a 2010 earthquake tore it apart.

The earthquake's impact was staggering. More than 250,000 Haitians died, 2 million lost their homes and everyone suffered from a shattered economy. Adding to the tragedy, millions of pounds of garbage, much of it plastic, washed across the Caribbean island nation, clogging canals, fouling landscapes and harboring disease.

To address the problem, Dow joined with Executives Without Borders, a nonprofit group based in Boston, to help Haiti Recycling Inc., based in the Haitian capital of Port au Prince, and other corporate sponsors to set up recycling stations around the country. Through the effort, hard-working Haitians collect waste plastic and take it to local recycling centers, where it is processed and sold.

They call it Ramase Lajan, which means "picking up money." It generates income for the people gathering the material as well as the people who work in the recycling centers. It also produces a supply of usable material for local production of consumer goods, offering the prospect of even wider economic benefits. And Ramase Lajan unquestionably results in a cleaner, healthier environment.

#### **Doing More**

Ramase Lajan and all of the examples demonstrate that collaboration is fundamental to the success of DSC projects. The Company also works with the U.S. Chamber of Commerce's Business Civic Leadership Center (BCLC) to addressing complex, societal challenges. Dow engages with BCLC as a leader in bringing together resources and expertise to affect change.

#### Learn more at

http://www.dow.com/sustainability/commitments/corp\_cit.htm or join the conversation by finding Dow on Facebook and Twitter @DowChemical.

#### Making a Global Impact

Dow is a member of the United Nations (UN) Global Compact, the world's largest voluntary corporate citizenship initiative. The Compact is comprised of more than 8,700 corporate participants from more than 130 countries, working to achieve advances in the areas of human rights, labor, environment and anti-corruption. As a part of Dow's Global Compact involvement, the Company also supports the UN CEO Water Mandate and Caring for Climate initiatives. The CEO Water Mandate is a private-public initiative with a focus on developing strategies and solutions to contribute positively to the emerging global water crisis. Caring for Climate is a voluntary action platform for those UN Global Compact participants who seek to demonstrate leadership on the issue of climate change.

Another way Dow contributes to society is through The Dow Chemical Company Foundation. The Foundation provides charitable gifts to eligible non-profit organizations that contribute to community success and support sustainability, while fostering science in society and stimulating innovation. In 2012, Dow and The Dow Chemical Company Foundation contributed \$43.5 million to support a wide range of programs around the world. See <u>EC8</u> for more information.

#### **Taking Action in Government**

Dow Government Affairs professionals, located around the world, offer expertise in essential areas of the public and international policy process, including policy development, process expertise and relationships. They identify legislative issues of importance to Dow and develop strategies to positively affect the outcome for our Company. Dow's Government Affairs professionals build relationships with key government stakeholders, policy influencers, lawmakers, coalitions, and trade and business associations that impact Dow's interests and business concerns.

The most senior position with responsibility for Society Aspects is the chief sustainability officer, which is David E. Kepler II.

Use the <u>index</u> to see indicators that you may find of most interest in this section.



# Society Performance Indicators Aspect: Community

# SO1 Percentage of operations with implemented local community engagement, impact assessments, and development programs.

Guided by the materiality principle as defined in GRI Reporting Guidelines, Dow focuses attention on the sites within the Company where community engagement is most important to the future of the community and to the Company. As part of our 2015 Community Success 10 year Goal, we are implementing custom Community Success plans in the following locations:

- Pittsburg, California, United States
- Zhangjiagang, China
- Plaquemine, Louisiana, United States
- Midland, Michigan, United States
- Rhine Center, Germany
- Terneuzen, The Netherlands
- Freeport, Texas, United States
- St. Charles, Louisiana, United States
- Stade, Germany
- Aratu, Brazil

These sites represent only 5 percent of Dow's manufacturing locations as defined in <u>Profile Disclosure 2.8</u>, but they represent about 70 percent of the product output of the Company. Progress in our Community Success Goal is reported <u>quarterly</u>.

Additional sites are following the Contributing to Community Success method in developing their own plans and actions.

- Philadelphia, Pennsylvania, United States hub sites (various)
- Map Ta Phut, Thailand
- Tarragona, Spain
- Several sites throughout Europe
- Bahia Blanca, Argentina
- U.S. Independent Sites

In 2013, an updated approach to allow for any site to engage in Community Success Planning will be implemented and made available for use throughout the Dow world. We are encouraging the use of these concepts and tools where there is a need, but we are not tracking overall implementation. In addition to customized plans to help create successful communities, Dow has been a long time user of Community Advisory Panels (CAPs) to understand issues and foster engagement. The purpose of a CAP is to:

- Provide a means for open, honest, two-way communication in order to build trust and credibility
- Enable community members to ask questions or comment upon the Company's operations and activities
- Provide a way for Company representatives to learn about community concerns
- Provide information and get feedback about Company goals and operations

CAP members represent a well-rounded cross-section of the community and may include business persons, local government representatives, retirees, and homemakers. CAPs are active in 20% of the communities where Dow has operations.

"Dow needs to collaborate with key stakeholders in order to positively impact the entire value chain. We are building strategic partnerships and together discovering innovative ways to improve global sustainability."

#### - Christianne Canavero

#### SO9 Operations with significant potential or actual negative impacts on local communities.

Dow implements the American Chemistry Council (ACC) Responsible Care Guiding Principles (<u>http://responsiblecare.americanchemistry.com/Responsible-Care-Program-Elements/Guiding-Principles</u>) at all Dow sites globally. This process identifies the potential for negative impacts on communities, the characteristics of most risk within the individual location, the points of vulnerability and leads to an improvement plan where needed to reduce the potential for negative impacts. For security reasons information about specific sites is not reported. More information can be found in the <u>Responsible Care® Security Code</u> at the American Chemistry Council website.



#### SO10 Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.



Public and political attention continues to be placed on the protection of critical infrastructure, including the chemical industry, from security threats. Terrorist attacks and natural disasters have increased concern about the security and safety of chemical production and distribution. Many, including Dow and the

American Chemistry Council, have called for uniform riskbased and performance-based national standards for securing the U.S. chemical industry. The Company is complying with the requirements of the Rail Transportation Security Rule issued by the U.S. Transportation Security Administration ("TSA"). Dow continues to support uniform risk-based national standards for securing the chemical industry.

The focus on security is not new to Dow. A comprehensive, multi-level security plan for the Company has been maintained since 1988. This plan, which has been activated in response to significant world and national events since then, is reviewed on an annual basis. Dow continues to improve its security plans, placing emphasis on the safety of Dow communities and people by being prepared to meet risks at any level and to address both internal and external identifiable risks. The security plan includes regular vulnerability assessments, security audits, mitigation efforts and physical security upgrades designed to reduce vulnerability. Dow's security plans also are developed to avert interruptions of normal business work operations that could materially and adversely affect the Company's results of operations, liquidity and financial condition.

Dow played a key role in the development and implementation of the American Chemistry Council's Responsible Care® Security Code, which requires that all aspects of security – including facility, transportation and cyberspace – be assessed and gaps addressed. Through the Company's global implementation of the Security Code, Dow has permanently heightened the level of security – not just in the United States, but worldwide. Dow employs several hundred employees and contractors in its Emergency Services and Security department worldwide.

Through the implementation of the Security Code, including voluntary security enhancements and upgrades made since 2002, Dow is well-positioned to comply with the new U.S. chemical facility regulations and other regulatory security frameworks. In addition, Dow was the first chemical company to receive coverage under the Support Anti-terrorism by Fostering Effective Technologies Act ("SAFETY Act") from the DHS in 2007 for Responsible Care at Dow Winning Team: Dow Soma Nagaya Apartment for Elderly Victims



The Dow Water and Process Solutions plant in Soma, Fukushima, Japan, has been part of the Soma community since 1993. After the city sustained significant damage from the earthquake and tsunami on March 11, 2011, Dow built the apartment complex Dow Soma Nagaya – also known as My Home – to provide safe harbor for elderly victims and donated it to the city. The project utilizes Dow technology and expertise, features many elements of traditional Japanese housing and is designed to reduce feelings of isolation while creating a sense of companionship and community. Dow Soma Nagaya was proposed to the Dow Corporate Contribution Committee in June 2011, and completed in May 2012. It is not only the first model of an apartment complex for the elderly victims of disaster-hit regions, it is also designed to function as an evacuation center for Soma city and the concept is spreading across Japan. Dow Soma Nagaya is filled with tenants and Dow continues to monitor the value to the community.

the Company's MTSA regulated sites, and the first to receive coverage under the SAFETY Act in 2008 for the Company's Rail Transportation Security Services. This unprecedented certification helps validate Dow's efforts and provides additional liability coverage in the event of a terrorist attack.

Dow has been <u>a leader</u> in chemical industry security assessment and preparedness and participates in regular independent third-party Responsible Care management system reviews to ensure compliance. Included under the Responsible Care umbrella are site-based initiatives such as the Community Awareness and Emergency Response (CAER) and TRANSCAER initiatives which engage in awareness and training for local community advisory panels, the general public and emergency response organizations. In addition Dow has signed the Responsible Care Global Charter (<u>http://www.dow.com/sustainability/debates/respcare/index.htm</u>) which expands and sustains this effort on a global basis. Dow has specifically implemented the ACC Responsible Care Security Code including repetitive security vulnerability assessments at all Dow sites globally, and has included security scenarios in all emergency plans. All sites, businesses and geographies are fully integrated in the corporate crisis management process.

<u>This document</u> published by the Department of Homeland Security is an example of how a Chemical Security Vulnerability Assessment (SVA) is accomplished.

Further, Dow's Distribution Risk Review process that has been in place for decades was expanded to address potential threats in all modes of transportation across the Company's supply chain. To reduce vulnerabilities, Dow maintains security measures that meet or exceed regulatory and industry security standards in all areas in which the Company operates.

## **Aspect: Corruption**

## SO2 Percentage and total number of business units analyzed for risks related to corruption

Risk reviews are an integral part of Dow's Ethics and Compliance program. Dow's CEO has appointed key Dow personnel to serve as members of Dow's Regional Ethics and Compliance Committees (RECCs) to address all the geographical areas where Dow conducts business. Dow's Office of Ethics and Compliance maintains an ongoing dialogue with all RECCs regarding the potential risks in the regions, including the risk of corruption. In addition, the Office of Ethics and Compliance stresses the importance of an ongoing risk analysis in each of the RECCs. The efforts of the Office of Ethics and Compliance and the RECCs are in addition to the Dow Enterprise Risk Management

Process and the ongoing efforts of the Dow Legal Department

to counsel the businesses on potential risks.

#### SO3 Percentage of employees trained in the organization's anti-corruption policies and procedures

Dow periodically requires all employees to complete an on-line Code of Business Conduct training module that includes two anti-corruption-related sections: "Bribery and Corruption" and "Business and Financial Records." In addition, Dow's Office of Ethics and Compliance and Dow's Legal Department conduct on-going training for employees at all levels of the Company who may encounter the potential for bribery or corruption. Finally, Dow requires online corruption and anti-bribery training for a certain subset of employees based on a perceived elevated risk of corruption due to by the type of role and the region where the employee works. In 2012, approximately 7700 employees were required to complete the online course. In addition to this training, Dow's Office of Ethics and Compliance periodically provides the Regional Ethics Compliance Committees (RECCs) with highlights of major/noteworthy FCPA/Anti-bribery enforcements actions as an additional means of education and awareness.

Beginning in 2012, the Office of Ethics and Compliance rolled out the "Annual Ethics and Compliance Certification" which includes questions employees are required to answer relating to potential conflicts of interest and questionable payments. The Certification also allows employees to report any conduct which may be inconsistent with the Code or the law.

#### SO4 Actions taken in response to incidents of corruption

A review of the complaints and completed investigations in 2012 revealed that:

- No Dow employees were terminated for corruption-related behavior.
- No Dow employees were formally disciplined for corruption-related behavior.

For the purposes of this Section SO4, Dow is defining "corruption" as any form of bribery involving private parties or government officials. Dow continues with its internal control practices, training and due diligence to identify potential risk areas and to implement risk-mitigation practices within the Company. Examples of such risk-mitigation practices include, but are not limited to: FCPA and anti-bribery training, acquisition due diligence, internal financial controls, an Ethics and Compliance program that includes a strong local presence through the Regional Ethics and Compliance Committees (RECCs), and intermediary review processes.

## **Aspect: Public Policy**

#### SO5 Public policy positions and participation in public policy development and lobbying



#### Global Commitment, Local Responsiveness

Public Policy at The Dow Chemical Company is based on an unwavering commitment to solving global problems while effectively responding to regional and local needs. As the world's largest chemical company, Dow is actively

engaged in public policy in a number of ways:

- Global industry leadership demonstrating a relentless focus on excellence, innovation and sustainable performance.
- External focus conducting business with responsiveness to public issues and concerns.
- Community commitment strengthening relationships within the countries, regions and cities where we operate.
- Public and organizational engagement building relationships with governmental and non-governmental organizations dedicated to trade, sustainability and various other humanitarian issues around the world.

Dow is uniquely positioned to provide innovations that lead to energy alternatives, less carbon-intensive raw material sources. Our products are used in solar power photovoltaics, concentrated solar power thermal systems, wind turbines and in energy saving building systems.

Information related to how these products are part of a more sustainable world can be found at: <u>Dow's Position on Energy &</u> <u>Climate Change</u>.

	Materiality				
ents and Decisions	High Product Safety Leadership	Water Sustainable Chemistry	Chemical Security Local Protection of Human Health & the Environment Energy	Very High	
nations Assessments	Environmentally Prefamed Purchasing	Community Success Biodiversity and Ecosystem Services			
limp or fair ce to \$1a	Breakthroughs to World Challenges*	Climate Change Trade Policy	Sustainable Agriculture	High	
	51;	nificance of Impa	ta		

#### Trade

Sound trade and investment policies help to raise standards of living and increase consumer choice. Trade liberalization supports advanced manufacturing by reducing operations costs, expanding investment opportunities, and opening access to rapidly-growing consumer markets around

the world. Good trade policy establishes a level playing field and supports commitment to a global, rules-based, transparent trading system so that businesses can all compete fairly.

Dow products are made in a range of countries and shipped to markets all over the world – products that are used by customers to make finished goods are also shipped all over the world. Trade and global supply chains enable access to products around the world – raising the standard of living, quality of choice and opportunities for consumers.

Additionally, countries with open trade policies benefit from foreign direct investment which brings new technologies, high standards of working safety and practices and job creation. Foreign investments in emerging countries create new local enterprises, but also open new opportunities into the global value chain. Suppliers and partners in emerging economies frequently become new exporters and innovative partners, in cooperation with foreign suppliers.

Dow is an advocate of free trade. The company supports all trade liberalization activities, including the continued implementation of a global, rules-based trading system to foster economic growth and sustainable development around the world.

#### Energy

A sustainable energy future requires us to all rethink the energy equation - working together as individuals, governments and businesses to develop breakthrough solutions for clean, sustainable and affordable energy. No one energy source can be viewed in isolation and a comprehensive approach is best. Dow's integrated approach to energy is represented through the acronym COAT. We should:

- Conserve energy by aggressively pursuing energy efficiency and conservation;
- Optimize, increase and diversify domestic hydrocarbon energy resources;
- Accelerate development of clean and renewable energy alternatives; and
- Transition to a sustainable energy future.

#### **Natural Gas**

Innovation has made it possible for us to reach previously uneconomic natural gas reserves, and now natural gas prices are competitive or advantaged in North America versus other major competing regions in the world. Dow believes that hydraulic fracturing, which has allowed for access to this vast supply, can be done safely and sustainably.

As a major manufacturer, Dow is a significant consumer of natural gas for use as a raw material in the high-value products we make and for energy to power our operations. Abundant, affordable natural gas has lowered our energy and raw material costs and, therefore, has a positive impact on our business and creates jobs across the economy.

However, it is not only manufacturers that are benefiting from this newly available resource. The recent discovery and development of domestic shale gas will help to contain energy costs for individuals and businesses. More energy companies are adding affordable natural gas to their energy mix of traditional and renewable energy sources which is helping to limit cost increases and is reducing green house gas emissions. Lower energy bills benefit all consumers, particularly low income families, and ultimately the overall economy. This has also improved the trade balance of the US and for the first time in several decades fossil fuel import dependency is rapidly declining.

Dow believes affordable and abundant natural gas, which has been brought about by shale development, is vital to a renaissance in the manufacturing sector, lowering greenhouse gas emissions, reducing energy costs for consumers, and increasing overall energy security for the USA and indeed the global economy.

#### **Chemicals and Health**

The public is increasingly interested and concerned about the presence of chemicals in people and the environment due to NGO allegations that certain 'chemicals of concern' have potential to cause harm at low levels. To address these challenges, Dow is engaged in collaborative work with industry, academics and government scientists to understand human and environmental risk. Leading the industry in endocrine screening, development of predictive toxicology capabilities and risk assessment of mixtures, Dow understands that historical testing and risk assessment methodology is not sufficient to address the questions being raised in the 21st century. We are investing more time in outreach to our downstream value chain partners to confirm our understanding of their use/exposure and to ensure that we are in a position to support them in addressing questions from consumers. With the increasing focus on Green Chemistry and more sustainable products to replace 'chemicals of concern', Dow is investing significantly in research to develop alternatives with an improved environment and health profile. We use comprehensive sustainability screening to ensure that alternative materials are indeed improved over existing products. Dow believes these collective efforts have the potential to increase consumers' confidence in our materials and result in a competitive advantage.

#### Biotechnology

By 2050, the world's food production systems must support an estimated 9 billion people, with a shrinking base of agricultural land and limited water resources. Visit Dow AgroSciences to learn more about how innovative chemical and biotechnology solutions are helping to meet the food, feed, and fiber needs of the world. <u>Dow AgroSciences</u> has adopted <u>principles to guide</u> decision-making using biological knowledge and techniques to develop products and services for the benefit of our customers, shareholders and society.

Dow AgroSciences is a Founding Member of Excellence Through Stewardship (ETS), a non-profit educational organization established to promote the responsible management of plant biotechnology. As a member of ETS, Dow AgroSciences is committed to the ETS Stewardship Objectives, Principles and Management Practices and having independent third-party audits of its plant biotechnology activities. In addition, Dow AgroSciences participates in the USDA-APHIS Biotechnology Quality Management System (BQMS) Program whereby the organization's BQMS has been verified by thirdparty audits as conforming to the USDA-APHIS BQMS Program Audit Standard for the import, interstate movement, and field release of regulated materials.
### **Historical Issues**

While collaboration with external stakeholders will continue to help Dow build a sustainable future, Dow also recognizes the need to engage stakeholders in the ongoing public debate around historical issues and challenges. These issues and challenges include Agent Orange, asbestos, Bhopal and dioxin. Although we are committed to engaging in dialogue with others who are similarly dedicated to respecting diversity of opinion and constructive exchange of ideas, our ability to engage is oftentimes limited by the existence of pending litigation. To learn more about these issues and challenges, visit <u>Issues and Challenges on dow.com</u>.

### SO6 Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country

Political Action Committees (PACs) provide for United States employee participation in the U.S. election process. In 2012 DowPAC contributed \$238,600 to 86 federal candidates, \$24,000 to 5 leadership committees, \$20,000 to 4 PACs; \$35,000 to 3 national political party committees, and \$55,750 to 64 state, statewide candidates and state parties in Ohio, Texas and Pennsylvania. Contributions from DowPAC totaled \$373,350. In 2012, Dow's corporate political contributions (non-PAC related) totaled \$400,550 going to state political candidates, parties and political advocacy organizations (where allowed by law).

In 2012 DowPAC Michigan contributed \$1,000 to 1 leadership PAC; \$5,000 to 3 judicial candidates, and \$9,500 to 3 state political party committees, and \$5,200 to 6 state, statewide candidates. Contributions from DowPAC Michigan totaled \$20,700.

### **Aspect: Anti-Competitive Behavior**

### SO7 Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes

See <u>Dow 2012 10-K</u> for the fiscal year ending December 31, 2012–PART II, Item 8, Note 14 – Commitments and Contingent Liabilities.

### Aspect: Compliance

# SO8 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations

We did not identify any material events which were not covered by <u>EN28–29</u> and <u>PR9</u> after an internal review for the reporting period. See these sections for more information.

Additional information is also provided in <u>Dow's 2012 10-K</u> for the fiscal year ending December 31, 2012 –Note 14 – Commitments and Contingent Liabilities.

Product Stewardship

Three of the 2015 Sustainability Goals (Sustainable Chemistry, Product Safety Leadership, Breakthroughs to World Challenges) help us drive our product offering to be the supplier of solutions that will help the world meet needs in a sustainable way. Progress during 2012 can be found in the Sustainability Summary section.

### Materiality High Very



Dow Product Stewardship standards and practices cover all stages of a product's life cycle and are closely monitored via Dow's governance program through a combination of self-assessments, annual management system reviews, and corporate audits to ensure continuous improvement. Detailed guidelines are in place for addressing the complicated challenges of research, development, manufacture, quality assurance, transportation, distribution and marketing of Dow products and services. See Product Stewardship Management Standards on dow.com for more detail. Dow, as part of our 2015 Product Safety Leadership goal, contracted with a 3rd party to conduct an independent assessment of its product safety program and to make recommendations for improvement, which will be finalized this summer. Dow is addressing the identified

improvement opportunities as part of the actions being taken to enhance our Business Risk Review work process. Dow will make public a summary of the findings and its actions to respond.

During 2012, Dow finalized a multi-year project to enhance our Global Product Stewardship Management Standard. The updated Standard aligns with the American Chemistry Council's new Product Safety Code. It strengthens our hazard communication and risk assessment programs by establishing differing information requirements depending upon the risk tier. Our Standard also provides further focus on increasing transparency across the value chain. Improvements in our Business Risk Review work process will ensure more consistent utilization of the process and leveraging of best practices on assessment and documentation.

Dow strongly supports the United Nations Environment Programme (UNEP) Strategic Approach to International Chemicals Management (SAICM) and its vision that "By the year 2020, chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health." Dow contributes to SAICM through its own EH&S and Sustainability improvement initiatives, and especially through its leadership at the International Council of Chemical Associations (ICCA). During the "Rio+ 20" summit in June 2012, world leaders convened to discuss achievements and remaining challenges. For the first time, the contributions of the chemical industry to sustainability were positively acknowledged by other stakeholders. ICCA demonstrated its ability to share and scale up best practices for sound chemical management. Moreover, the Rio+20 conference, and later the Third session of the International Conference on Chemicals Management (ICCM-3) called for a strengthening and more effective implementation of SAICM which we fully endorse.

#### **Training and Awareness**

Dow has programs to ensure that employees who have a role in product safety are regularly trained so that they have the knowledge and skills necessary to successfully carry out their responsibilities. Such training includes topics such as toxicology and environmental sciences, risk assessment and management, and regulatory requirements. Concepts of sustainability are included in this training. During 2012, a multi-functional group including representatives from our Product Regulatory and Product Stewardship organization updated, refreshed, and in a few cases, developed new training materials for our entire Product Stewardship, Product Regulatory and Hazard Communication organizations. These programs will be made available to both new and existing employees via classroom sessions and through Dow's electronic MyLearning training program.

#### **Customer Health and Safety**

Dow offers training for customer employees so that they understand the hazards and safe-handling practices necessary to prevent harm to human health and the environment with respect to the products they purchase. During the past several years, Dow has made a concerted effort to train our distributors based in Asia Pacific and Latin America on Dow's product stewardship expectations for them, regulatory requirements, and Dow's commitment to sustainability. In 2012, Dow updated its Distributor Agreements to include more definitive product stewardship requirements for distributors.

#### Monitoring and Follow Up

Dow's internal product stewardship management standard requires our businesses to monitor the effectiveness of their programs and to promptly respond to any evidence that customers may be having difficulty handling their products. Dow sales representatives have been trained to ask their customers about product stewardship issues. In updating our Product Stewardship Management Standard, we have further clarified responsibilities of various business roles and developed training to ensure responsibilities are understood. Dow sales representatives call on Dow's Product Stewardship organization to assist customers when further information is needed or to resolve any issues. If, in Dow's opinion, the customer is not making sufficient progress to address any health and safety issues, Dow reserves the right to stop sales until the situation has been remedied. Dow also maintains emergency response numbers in every country where we sell products that are published on our Safety Data Sheets sent to every customer with the shipment. In addition, Dow web sites contain up-to-date technical and health and safety information on each product.

The most senior position with responsibility for Product Aspects is the vice president, Sustainability and EH&S, which is currently held by Neil Hawkins.

Use the <u>index</u> to see indicators that you may find of most interest in this section.



## Product Stewardship Performance Indicators Aspect: Customer Health and Safety

# PR1 Life cycle stages in which health and safety impacts of products and services are assessed for improvement and percentage of significant products and services categories subject to such procedures

All products are assessed in an appropriate manner – depending upon EH&S profile, application, and exposure potential, for improvement opportunities as part of the Dow EH&S management approach at each of the stages of the product life cycle shown below.

	yes	no
Development of product concept	x	
R&D	x	
Certification	x	
Manufacturing	x	
Marketing and promotion	x	
Storage distribution and supply	x	
Use and service	x	
Disposal, reuse, or recycling	x	



Dow businesses use the Business Risk Review process to assess and minimize possible adverse impacts on people, property and the environment as a result of Dow's business activity, including minimizing EH&S impacts associated with new and existing operations, products, applications and services throughout the products' life cycle.

Businesses are required to conduct risk reviews when material new information is received, including material changes in product uses, regulations, raw materials, etc., or when triggered, in certain cases, by the passage of time. Improvement opportunities have been identified to clarify and strengthen these triggers. In the process, and through use of supporting processes and tools, health and safety impacts are assessed with respect to new product development, manufacture of product, transportation and distribution, use of product at customer facilities, and recycle, reuse or disposal. Risk mitigation measures are identified and implemented as a direct result of the Business Risk Review work process. Various Product Stewardship efforts such as distributor and customer qualifications and industry advocacy work are just a couple examples of involvement in the storage, distribution, supply and use steps of product life. With increasing interest of the value chain in chemical identity and use, working with these stakeholders to support their users and address their questions is a priority.

PR2 Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes

This indicator requests the number of non-compliance events identified for products that are ready for use and therefore subject to regulations concerning health and safety. A review of Dow's compliance tracking mechanism did not reveal incidents during the 2012 period for a product ready for use, in use, or in disposal.

One of the ways in which Dow strives to protect human health and the environment throughout the life cycle of its products is through Responsible Care<sup>®</sup>. Dow's commitment to this voluntary initiative has led to the implementation of Dow's Responsible Care<sup>®</sup> Management System, which has been certified externally regarding adherence to the principles of Responsible Care<sup>®</sup>. For more information about health and safety management over the life cycle of products, see guiding principles at the <u>Responsible Care<sup>®</sup> website</u>. Responsible Care at Dow Winning Team: Dow TERC Predictive Toxicology Center



In Picture (left to right): Rob Ellis-Hutchings, Ed Carney, Dan Wilson, Amanda Wood, Darrell Boverhof, John Davis, Raja Settivari. Not Shown: Yunzhou (Joe) Chai, and Jeff Hafer

The Dow Toxicology and Environmental Research and Consulting (TERC) laboratory has created a Predictive Toxicology Center that uses novel computational and in vitro models of toxicity to support risk-based chemical safety assessments and improve product safety earlier in the life cycle. This new predictive toxicology effort represents Dow's continued focus on product safety leadership and scientific advancements – key tenets of Dow's commitment to sustainable chemistry. Predictive toxicology is already being applied in partnership them to quickly and inexpensively evaluate new molecules and chemical formulations for potential toxicity, thus enabling them to identify chemicals with improved safety profiles at earlier stages of the product will serve as a catalyst to transition toward a future in which more toxicity testing is conducted in human cells or cell lines, further enhancing product safety.

## **Aspect: Product and Service Labeling**

**PR3** Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements

The following information is provided for all significant products where subject to national laws or the OECD Guidelines.

	yes	no
Sourcing of components	х	
Content that might produce environmental impact	x	
Safe use of product	х	
Disposal of product and impacts	x	

Dow's products must comply with all applicable hazard communication program requirements, including appropriate labeling and Material Safety Data Sheets, for all countries in which Dow sells them. The content of the label and safety data sheet is specified in local laws and regulations and includes such information as product composition, safe use recommendations, and appropriate disposal practices.

In addition, Dow provides direct customer support when additional handling or safety information is requested; including information that supports the use of product in critical applications (food contact, pharmaceuticals, biocidal applications, etc.) and for customs purposes. For certain products, Dow requires that customers be qualified through inspection of their operations and training of their employees before we support first shipment of product. We provide technical data (physical properties, performance in application) and recommendations for safe handling and storage and give specific guidance regarding product uses that Dow supports.

Dow is in compliance with numerous country chemical inventory control laws, including the REACH regulations promulgated by the European Union (EU), which does require information on the chemical properties, hazard profile, and uses of all products manufactured in or imported into the EU that have met the criteria for inclusion. Dow has a significant program underway to ensure compliance with the Globally Harmonized System for Classification and Labeling, which has been implemented in many countries across the globe.

Dow's 2015 Sustainability Goal for Product Safety Leadership commits the Company to make Product Safety Assessments (PSAs) publicly accessible for all saleable products globally and to address relevant gaps in information. Dow has completed PSAs on all high priority products and has made significant progress in developing PSAs across all of our businesses. PR4 Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes

The company is aware of several product labeling inspections in 2012 that resulted in fines. Each incident occurred upon importation and principally due to the presence of dual FIFRA and GHS labels, which were viewed to be in conflict with U.S. regulations. These labels were requirements of U.S. law and the country of manufacture. Ultimately, and at Dow's insistence, EPA issued guidance by Memorandum acknowledging that dual labels upon importation will not be a violation provided that corrective labeling occurs promptly after import. Dow is managing consistent with that policy for subsequent shipments.

# PR5 Practices related to customer satisfaction, including results of surveys measuring customer satisfaction

Customer Service Organization satisfaction metrics are used to evaluate and improve the customer's experience in doing business with Dow. Key Performance Metrics are now visible to all employees and are updated each quarter to track performance. The overall Ease of Doing Business is tracked through survey instruments that gain insights about customer experience with different aspects of doing business with Dow. During 2012, the Ease of Doing Business indicator of Customer Satisfaction was 8.5, exceeding Dow's target of 8.0 (scale of 1 to 10). The survey includes the question: "Overall, how satisfied are you with the performance of Dow as a supplier?" Seventy six percent of the customers who responded to this question reported being satisfied in 2012.

## **Aspect: Marketing Communications**

**PR6** Programs for adherence to laws, standards, and codes related to marketing communications, including advertising, promotion, and sponsorship

Marketing communications programs and materials are reviewed by Dow Legal and regulatory specialists to ensure that they are compliant with local laws and regulations as well as Dow's Ethics and Compliance policies. Dow employs, via its Product Safety and Supply Chain organization, systems designed to understand and assist with compliance with regulatory restrictions regarding its products. Dow also employs, via its Product Safety organization a risk recognition and response system that incorporates societal concerns as one endpoint. Dow does sell products about which stakeholders have concerns. However, Dow believes these products are safe for their intended uses when used in accordance with Dow's instructions and pursuant to applicable laws.

PR7 Total number of incidents of non-compliance with regulations and codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes

No incidents of non-compliance concerning marketing communications were identified for the reporting period.

## **Aspect: Customer Privacy**

PR8 Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data

We have internal controls to prevent the release of customer information. To the best of our knowledge, there were no customer privacy complaints raised or pending against Dow in 2012.

## Aspect: Compliance

PR9 Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services

We did not identify any material fines resulting from our product's use in 2012. We are working to enhance our existing regulatory tracking systems to include product events in the future. Our internal auditing is used to ensure that internal and external requirements are met.

Additional information is also provided in <u>Dow's Form 10-K</u> for the fiscal year ending December 31, 2012 – Note 14 – Commitments and Contingent Liabilities.



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## Introduction

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Introduction and Other Reporting References	5
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## Strategy & Profile of The Dow Chemical Company

Profile	Description	Page No.	Reporting Level	Comment
1.1	Statement from CEO presenting overall vision	19	Reported	
1.2	Key Impacts, Risks, and Opportunities	21	Reported	
2.1	Name of reporting organization	22	Reported	
2.2	Primary brands, products and/or services	22	Reported	
2.3	Operational structure of the organization	22	Reported	
2.4	Location of organization's headquarters	22	Reported	
2.5	Countries of operation	22	Reported	
2.6	Nature of ownership and legal form	23	Reported	
2.7	Markets served	23	Reported	
2.8	Scale of reporting organization (year-end 2012 data)	24	Reported <u>See Proxy</u> <u>2013</u>	
2.9	Significant changes during the reporting period	24	Reported	
2.10	Awards during 2012	26	Reported	
3.1	Reporting Period	26	Reported	
3.2	Date of most recent previous report	26	Reported	
3.3	Reporting cycle	26	Reported	Assurance for the report has been provided by ERM.
3.4	Contact for questions regarding the report or its content	26	Reported	
3.5	Process for determining report content	27	Reported	
3.6	Boundary of the report	28	Reported	

Profile	Description	Page No.	Reporting Level	Comment
3.7	Limitations on the scope or boundary of the report	28	Reported	
3.8	Basis for reporting that can significantly affect comparability from period to period or between organizations	28	Reported	
3.9	Data measurement techniques and the bases of calculations	29	Reported	
3.10	Explanation of any re-statements of information provided in earlier reports	29	Reported	
3.11	Significant changes from previous reporting	29	Reported	
3.12	Table identifying the location of the Standard Disclosures in the report	29	Reported	
3.13	Policy and practice with regard to external assurance for the report	30	Reported	Assurance for the report has been provided by ERM
4.1	Governance structure of the organization	32	Reported	
4.2	Is the Chair of the Board of Directors also an executive officer?	33	Reported	
4.3	Number of members of the Board of Directors that are independent and/or non-executive members	33	Reported	
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	33	Reported	
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives, and the organization's performance	34	Reported	
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	34	Reported	
4.7	Process for determining the qualifications and expertise of the members of the Board of Directors	35	Reported	
4.8	Statements of mission or values, codes of conduct, and principles	35	Reported	
4.9	Procedures of the highest governance body for overseeing economic, environmental, and social performance, including risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	36	Reported	
4.10	Process for evaluating the highest governance body's performance, particularly with respect to economic, environmental, and social performance	36	Reported	
4.11	Explanation of how the precautionary approach or principle is addressed by the organization	37	Reported	
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	37	Reported	
4.13	Memberships in associations and/or advocacy organizations	39	Reported	
4.14	List of stakeholder groups engaged by the organization	40	Reported	
4.15	Basis for identification and selection of stakeholders with whom to engage	41	Reported	
4.16	Approaches to stakeholder engagement	41	Reported	We do not report engagement by type and stakeholder group. Examples give readers context for the extent of engagement. We will report number of engagement events by 2014.
4.17	Key topics and concerns raised through stakeholder engagement and how the organization has responded to those key topics and concerns	43	Reported	

## The Economic Impact of Sustainability

Profile	Description	Page No.	Reporting Level	Comment
EC1	Direct economic value generated and distributed including revenues, operating costs, employee compensation, donations and other community investments, retained earnings and payments to capital providers	46	Reported	
EC2	Financial implications and other risks and opportunities due to climate change	46	Reported	
EC3	Coverage of the organization's defined benefit plan obligations	47	Reported	
EC4	Significant financial assistance received from government	48	Reported	
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	49	Reported	
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	49	Reported	
EC7	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation	50	Reported	
ASPECT	Indirect Economic Impacts	50	Partially Reported	Fully reporting on indirect economic impacts globally is not applicable because we provide examples and believe we meet stakeholder's expectations in this area.
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	50	Reported	
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts	51	Partial Response	Fully reporting on economic impacts globally is not applicable because we provide examples and believe we meet stakeholder's expectations in this area.

## Taking Responsibility for Our Impact on the Environment

Profile	Description	Page No.	Reporting Level	Comment
EN1	Materials used by weight	56	Reported	
EN2	Percentage of materials used that are recycled input materials	56	Reported	
EN3	Direct energy consumption by primary source	57	Reported	
EN4	Indirect energy use by primary source	57	Reported	
EN5	Energy saved due to conservation and efficiency improvements	57	Reported	
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services	57	Reported	
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	58	Partial Response	Reporting for EN7 in regard to the details of reduction by category are not available. We address energy initiatives for direct and indirect energy col- lectively. We plan to continue to expand our reporting for indirect energy annually.

Profile	Description	Page No.	Reporting Level	Comment
EN8	Total water withdrawal by source	60	Reported	
EN9	Water resources significantly affected by withdrawal of water	61	Reported	
EN10	Percentage and total volume of water recycled and reused	61	Partial Response	Not all recycled or reused water is currently measured. A long-term goal.
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	62	Partial Response	We do not report on the size of land because land owned by the company is not always contiguous, and is not an accurate measure of impact.
EN12	Description of significant impacts on biodiversity in protected areas and areas of high biodiversity value	63	Reported	
EN13	Habitats protected or restored	63	Reported	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	67	Reported	
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	68	Reported	
EN16	Total direct and indirect greenhouse gas emissions by weight	69	Reported	
EN17	Other relevant indirect greenhouse gas emissions by weight	69	Partial Response	The indirect GHG emissions related to inbound shipment of raw materials is not available. We plan to report this by the 2013 reporting cycle.
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	70	Reported	
EN19	Emissions of ozone-depleting substances by weight	70	Reported	
EN20	$NO_{x}$ , $SO_{x}$ , and other significant air emissions by type and weight	70	Reported	
EN21	Total water discharge by quality and destination	72	Partial Response	Information is not available to provide a complete answer because metering is not widely used to measure water discharge. We plan to improve our EN21 reporting by the 2013 reporting cycle.
EN22	Total weight of waste by type and disposal method	72	Reported	
EN23	Total number and volume of significant spills	73	Reported	
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII and the percentage of transported waste shipped internationally	73	Reported	
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by discharges of water and runoff	73	Reported	
EN26	Initiatives to mitigate environmental impacts of products and services and extent of impact mitigation	74	Reported	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	75	Partial Response	This indicator is not available. See EN27.
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	75	Reported	
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations and transporting members of the workforce	76	Reported	
EN30	Total environmental protection expenditures and investments by type	77	Reported	

# Great Place to Work: A Premier Employer around the World

Profile	Description	Page No.	Reporting Level	Comment
LA1	Total workforce by employment type, employment contract, and region, broken down by gender	81	Reported	
LA2	Total number and rate of employee turnover by age group, gender, and region	81	Partially Reported	Attrition is reported by years of service rather than by age. This provides a similar indica- tor consistent with Company approach. Data by age is not applicable and we plan to continue to report based on years of service. Total number of new employees and em- ployees leaving employment details by gender/age/region are not provided and this has been identified as an element for future reporting.
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	82	Reported	
LA15	Return to work and retention rates after parental leave, by gender	82		
LA4	Percentage of employees covered by collective bargaining agreements	82	Reported	
LA5	Minimum notice periods regarding operation changes, including whether it is specified in collective agreements	82	Reported	
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	83	Reported	
LA7	Rates of injury, occupational diseases, lost days, and absenteeism and the number of work-related fatalities by region and by gender	84	Reported	Reporting absenteeism is not material because expectations about attendance are clear and sufficient.
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families or community members regarding serious diseases	85	Reported	
LA9	Health and safety topics covered in formal agreements with trade unions	86	Not Applicable	This is not applicable because all employees are covered by our safety processes and culture.
LA10	Average hours of training per year per employee, by gender, and by employee category	86	Reported	
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	87	Reported	
LA12	Percentage of employees receiving regular performance and career development reviews by gender	87	Reported	
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership and other indicators of diversity	88	Reported	
LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	93	Reported	

# Human Rights

Profile	Description	Page No.	Reporting Level	Comment
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	96	Reported	
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	96	Reported	
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	96	Reported	
HR4	Total number of incidents of discrimination and actions taken	97	Reported	
HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be at significant risk and actions taken to support these rights	98	Reported	
HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor and measures taken to contribute to the elimination of child labor	98	Reported	
HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor and measures to contribute to the elimination of forced or compulsory labor	98	Reported	
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	98	Reported	
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	99	Reported	
HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments	99		
HR11	Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms	99		





# Society

Profile	Description	Page No.	Reporting Level	Comment
S01	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	104	Reported	
SO9	Operations with significant potential or actual negative impacts on local communities.	104	Reported	
SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	105	Reported	
SO2	Percentage and total number of business units analyzed for risks related to corruption	106	Reported	Dow assesses and manages risk issues through a regional approach. All business units are within the management scope.
SO3	Percentage of employees trained in the organization's anti-corruption policies and procedures	106	Reported	
S04	Actions taken in response to incidents of corruption	107	Reported	
SO5	Public policy positions and participation in public policy development and lobbying	107	Reported	
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	109	Reported	
S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	109	Reported	
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	109	Reported	



# Product Stewardship

Profile	Description	Page No.	Reporting Level	Comment
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement and percentage of significant products and services categories subject to such procedures	112	Reported	
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	113	Reported	
PR3	Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements	114	Reported	
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	114	Partial Response	The information is not aggregated at this time. We plan to report on PR4 by the 2014 reporting cycle.
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	114	Reported	
PR6	Programs for adherence to laws, standards, and codes related to marketing communications, including advertising, promotion, and sponsorship	115	Reported	
PR7	Total number of incidents of non-compliance with regulations and codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes	115	Reported	
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	115	Reported	
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	115	Reported	





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