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The Inseparability of safety and Business Success at The Dow Chemical Company

Submitted by:
The Dow Chemical Company

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The **Inseparability** of
Safety and Business Success
at The Dow Chemical Company

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Section I: Business Profile

The Dow Chemical Company is a diversified chemical company that combines the power of science and technology with the “Human Element” to innovate what is essential to human progress. Dow delivers a broad range of products and services to customers in approximately 160 countries, connecting chemistry and innovation with the principles of sustainability to help provide everything from fresh water, increased food production, renewable energy generation, and pharmaceuticals to paints, packaging, and personal care products. Dow had annual sales of \$45 billion in 2009.

Headquartered in Midland, Michigan, Dow employs approximately 52,000 people worldwide. Dow manufactures more than 5,000 products at 214 sites in 37 countries across the globe.

Our industry-leading portfolio is organized around five Global Businesses:

- Dow Advanced Materials, which includes the Adhesives and Functional Polymers, Coatings Materials, Dow Building and Construction, Electronic Materials, and Specialty Materials Business Groups.
- Health and Agricultural Sciences, which includes the Dow Agrosiences and Agrofresh Business Groups.
- Basic Chemicals, which includes the Chlor-Alkali, Chlorinated Organics, Ethylene Oxide Business Groups, as well as the EQUATE and MEGlobal joint ventures.
- Hydrocarbons and Basic Plastics, which includes the Licensing and Catalyst, Polycarbonate, Polyethylene, Polypropylene, and Styrenics Business Groups.
- Performance Products and Systems, which includes the Dow Automotive, Amines, Dow Haltermann, Epoxy, Emulsion Polymers, Oxygenated Solvents, Performance Fluids, Dow Polyurethanes, Dow Elastomers, Dow Fiber Solutions, Dow Formulated Systems, Dow Oil and Gas, Dow Wire and Cable, and Dow Specialty Packaging and Films Business Groups.

Consistent with Dow’s strategic theme of “Setting the Standard for Sustainability,” protecting human health and the environment is the foundation for everything that we do at Dow. We work continuously to drive injury and illness rates as well as loss-of-primary-containment (LOPC) incidents to our ideal metric – zero. At Dow, this Vision of Zero is a leadership attitude and a corporate culture that is committed to zero accidents, zero injuries and zero excuses.



Section II: Leadership

At Dow, commitment to EH&S excellence is driven from the highest levels of the company. From the corporate vision, “To be the most profitable and most respected chemical company in the world” – to the strategic theme of “Setting the Standard for Sustainability” – to Dow’s 2005 and 2015 Sustainability Goals, leadership demonstrates the fundamental importance of EH&S performance for the company.

CEO Andrew Liveris described this importance in a speech launching the 2015 Sustainability Goals:

“Ten years ago, we set important goals for improving our environment, health and safety performance. We have met most of those goals, exceeded some, and have come very close in most of the others. As a result, our workplaces are safer, our facilities are cleaner, our energy use is more efficient and our corporate governance is stronger and more vigilant. Indeed, we have become a recognized world leader in these areas and I am very proud of every Dow employee for his or her contributions toward that achievement. But, for all the work and dedication that went in to progress toward these goals, the goals themselves were, fundamentally, about us, about Dow, about putting our own house in better order. To be sure, it’s a job that never ends. Sustainability begins at home. And we will always have more work to do to make our company better. It was the right path for us in 1996, and it’s the right path to continue down over the next ten years.”

– May 6, 2006, “The Human Element: Dow’s Next Decade of Commitment to Sustainability,” Washington, D.C.

Leadership’s commitment to EH&S is reflected in internal awards that are presented annually to recognize projects that significantly address EH&S issues:

- The President’s and Vice President’s Awards honor sites and businesses demonstrating significant decreases in injury/illness rates, process safety incidents, and/or LOPCs.
- Waste Reduction Always Pays (WRAP) awards honor individuals and teams who find innovative ways to save money while reducing waste or emissions at Dow.
- Responsible Care® awards recognize Dow projects that protect people and the environment and are consistent with Dow’s 2015 Sustainability Goals.



Corporate EH&S and Sustainability Goals

Dow has a long history of leading EH&S performance in the chemical industry. In 1996, Dow set and publicly committed to the 2005 EH&S Goals, a set of 10-year breakthrough goals to aggressively reduce key EH&S performance metrics. These efforts resulted in significant improvements in the EH&S performance of the company and were continued with the 2015 Sustainability Goals. This current set of goals far exceeds the achievements of the 2005 EH&S goals and encompasses external goals of sustainable chemistry, a commitment to the planet, and product responsibility to ensure that Dow is having a strong positive impact on the communities and the world. Significant progress has already been made towards these goals, which has resulted in the best EH&S performance in company history in 2009. (Dow's 2005 and 2015 Sustainability Goals are described further in Sections IV, V, and VI.)

Active Leadership and Implementation

Dow leaders are expected to take an active role in the implementation of safety systems. Dow's Leadership Expectations Global policy requires that all leaders take a "visible and leading role" in establishing a management system that promotes business success, including EH&S. Leaders are expected to take an active role in Safety Meetings, and participate in plant Behavior Based Observations programs. This visible participation in the safety program highlights the importance of EH&S issues to all employees.

Additionally, all employees are required to set a personal safety goal in their performance metrics. Personal goals are not set against specific injury/illness target numbers. Instead, personal goals are tracked against items that have been identified as antecedents to injuries, such as safety observations, hazard assessment cards, or other similar safety-related items. Leaders are held to an even higher standard. Their personal performance as well as their work group's EHS performance is a key factor in the determination of compensation, promotions, and job assignments. Poor work group safety performance has led to the re-assignment and even termination of leaders in some cases.

Structure, Programs and Systems

The EH&S Committee of the Board of Directors oversees Dow's EH&S activities. Committee members assess the effectiveness of programs and initiatives supporting Dow's EH&S policy and advise the Board of Directors on matters affecting corporate social responsibility and Dow's public reputation. Corporate



EH&S goals are set by Dow's Sustainability Team, which serves as the company's governance body for EH&S, Public Issues, Sustainability, and Public Policy. This team, led by the Executive Vice President for Business Services and Chief Sustainability Officer, oversees Dow's performance in these critical areas. Dow's Sustainability Team, in turn, is supported by the Sustainability Program Management Office, which facilitates implementation of the 2015 Sustainability Goals through all regions and functions. Dow's EH&S Organization is divided into the EH&S Operations and the EH&S & Sustainability divisions. (The EH&S groups that fall under these divisions are shown in Figure 1.)

Dow has been a strong supporter of the Responsible Care® initiative of the American Chemistry Council (ACC), which encourages the safe handling of chemical products from inception, through manufacture and distribution, to ultimate reuse, recycle and disposal. Responsible Care® is a voluntary global initiative that goes above and beyond what is legally required in most countries. In January 2008, Dow signed on to the more stringent Responsible Care® Guiding Principles with other ACC members.

Dow's commitment to EH&S has also resulted in acceptance into the Voluntary Protection Program (VPP) Corporate Pilot of the Occupational Safety and Health Administration (OSHA). Dow was accepted following a comprehensive review of the company's safety and health management systems by the VPP Corporate Onsite Team. OSHA's program evaluation identified a number of systems at Dow as being particularly outstanding, including the company's process safety management program and its awareness of safety and health goals and results. (See Appendix 1).

Building Corporate Citizenship

Dow believes that it is important to have a positive influence on site communities, as reflected by our 2015 Goal of "Contributing to Community Success." Community goals are determined locally through Community Action Panels, which include Dow and community representatives. Panel members set targets for specific activities that will make significant contributions and improvements in the community.

One such project, completed in Terneuzen, Netherlands, was recognized with the 2007 Dutch National Responsible Care® Award and a 2007 Dow Responsible Care® Award. Dow site leaders worked with local municipal officials to re-direct the city's household waste water stream to Dow's production facility for purification and reuse. This process has proved to be much more efficient than desalination, which had



been used to provide drinking water in the past. The Terneuzen water project has conserved both fresh water and energy, while also reducing chemical usage for water purification.

Another example of corporate leadership is the LOMAX project in Dalton, Georgia, which was also recognized as a Dow Responsible Care® Award winner. In June 2008, through a joint venture with the local Dalton-Whitfield Regional Solid Waste Landfill Authority and involvement of the U.S. EPA's Landfill Methane Outreach Program, Dow's Dalton site began utilizing landfill gas as a renewable energy source. Gas from nearby landfill cells is compressed and piped to the Dalton site, replacing most of the natural gas used to fire the site boiler. This results in an overall reduction in greenhouse gas emissions for the local community by preventing landfill gas from escaping to the environment. The estimated amount of natural gas saved is equivalent to the electricity used in approximately 2,000 U.S. homes annually. Additionally, the annual reduction in CO₂ emissions – more than 17 million pounds – is comparable to keeping 13,500 cars off the road each year. (Additional local community projects and Dow Responsible Care® Award winners are summarized in Appendix 2).

Efforts to Solve the Global Drinking Water Crisis

Dow also sponsors events to focus on significant global EH&S issues, such as clean drinking water. In 2007, Dow sponsored the Blue Planet Run – a round-the-world running event to build awareness and funding to bring clean and safe drinking water to those in need. In 2010, Dow continued this emphasis with The Dow Live Earth Run for Water – the largest solutions-based initiative in history aimed at solving the global water crisis. The event consisted of a series of 6 km runs/walks – the average distance many women and children walk every day to secure water. Taking place over the course of 24 hours, the events featured water education activities in an effort to ignite a massive global movement to put an end to the epidemic of unsafe drinking water.

Product Stewardship

Dow believes it is critical to ensure that the products it manufactures are safe for their intended uses. This is the basis for Dow's Product Stewardship philosophy, by which the company assesses the safety, health, and environmental information on its products, and then takes appropriate steps to protect employee and public health and the environment. As part of these Product Stewardship responsibilities, Dow preferentially selects suppliers, contract manufacturers, and distributors that have excellent EH&S



policies, practices, and performance. Dow is committed to working with its customers to foster proper use, handling, recycle, disposal, and transmittal of appropriate information to downstream users. When Dow identifies improper practices with a product, it works with the downstream user to improve those practices. However, if we find that improvement is not evident, further measures are taken – up to and including termination of the business relationship – to ensure that all issues are resolved.

EH&S Priorities Driving Business Decisions

EH&S is an important consideration in all business decisions at Dow. As part of any decision to acquire a new plant or business, Dow conducts a Due Diligence review to identify significant issues that could affect completion of the acquisition. Items such as injury/illness rates, environmental emissions, and environmental liabilities are identified and assessed during this process, and, in some cases, Dow has chosen not to buy companies based on the results of these due diligence assessments. After deal closure, very detailed multi-year implementation programs are applied to all acquisitions and Joint Ventures that are under Dow operating control.

Safety is always the highest priority. This is frequently articulated as “Safety First, Pounds Second” within the company. During the annual capital authorization process, improvements to resolve EH&S issues have the highest priority for capital allocation. Capital improvements that are necessary for regulatory requirements or significant process safety concerns receive first priority in funding decisions. An example of a significant business decision that was driven by EH&S priorities is the shutting down of an acrylic acid plant in Deer Park, Texas for several months while investigating a process safety incident. Despite customer concerns and the declaration of “force majeure” in a tight supply market, Dow’s leaders kept the plant shut down until an extensive investigation was conducted into the incident and the resulting hazard mitigation plan was completed.

EH&S Communications – A Two-Way Street Between Leaders and Employees

The active role of Dow management and leadership in EH&S is further demonstrated through employee communications. Each Dow World News global broadcast from the CEO begins with highlights of current EH&S performance, including frequent discussions of significant improvement efforts. Each year, the Dow Annual Report contains a section on Sustainability to highlight the company’s performance



and progress toward EH&S goals. Dow's Intranet homepage contains a scorecard tracking our progress towards our EH&S goals. The CEO maintains a blog called "Access Andrew," which he uses to discuss business and safety issues, and allows employees to provide feedback. Leadership encourages employees at all levels of the company to begin internal meetings with a safety moment to share and discuss a safety topic. Updates on Dow's progress toward the 2015 Sustainability Goals are published quarterly, both internally and externally, to highlight our EH&S successes and communicate areas in which Dow is not performing as well as desired (Appendix 3).

At Dow, the opinions of all employees are highly valued, and this is especially true regarding safety. All employees are expected to take immediate actions to resolve any identified on-the-job safety issues. For issues that require more robust corrective actions, all sites have a "safety suggestion" system for employees to communicate safety issues to management and ensure that the issues are addressed and resolved. In addition, Dow conducts a company-wide survey, the Global Employee Opinion and Action Survey, every other year. This survey tracks employee opinions on a number of topics, including EH&S. In 2008, 92% of responders agreed that people in their work area are protected from health and safety hazards, and 97% of responders reported that they are accountable for doing their work in a safe manner.

At Dow, EH&S commitment and values are continuously demonstrated, taught, rewarded and communicated from the highest levels of the company – and are a frequent and essential part of employee communications.

Section III: Integrated EH&S Management System

Implementation of EH&S at Dow centers around the company's Operating Discipline Management System (ODMS), an integrated, comprehensive corporate management system for Manufacturing, Quality, Environment, Health and Safety. ODMS specifies Dow's EH&S policies and requirements to ensure that these necessary elements are implemented consistently across businesses, functions, and geographies. (An outline of Dow's ODMS structure and its key areas is included in Appendix 4.)

Dow uses ODMS to meet the principles of ISO-14001 certification and the American Chemical Council's Responsible Care® requirements. In keeping with those requirements, ODMS defines a Plan-Do-Check-Act management system that is similar to ISO-14001, yet far more comprehensive.



ODMS sets performance expectations for managing not only environmental requirements, but also for community awareness, emergency preparedness and response, EH&S, distribution safety, process safety, security, and product stewardship. Dow sites that are in compliance with ODMS requirements will ensure compliance with ISO-14001, as well as with IS-9001:2008, ISO/TS 16949:2009, OHSAS 18001:2007, and Responsible Care Management System RCMS 101.03: March 2008.

In October 2002, Lloyd's Register Quality Assurance, Inc. (LRQA) carried out a review of Dow's ODMS documentation to compare the Environmental Management System components of ODMS against the requirements of these standards. LRQA concluded that ODMS addressed or exceeded all the requirements of these standards and provided the necessary direction for conformance at the operational level. (A copy of this letter of review and a cross-reference between the requirements of ISO-14001 and Dow's ODMS are available in Appendix 5.) Because Dow's ODMS system is consistent with and more comprehensive than ISO-14001, Dow does not require all sites to be ISO-14001 certified.

Development of EH&S standards at Dow follows the company's Requirements Management Work Process. This formal work process ensures that all new requirements will meet external regulatory requirements – it also allows affected leaders to review and provide input to new standards.

EH&S Organization and Division of Responsibilities

Implementation of Dow EH&S requirements is structured according to the Expertise/Delivery model. Dow EH&S experts have specialized training and are generally certified in their area(s) of expertise, forming internal Expertise Centers in Industrial Hygiene, Personal Safety, Process Safety, Health Services, and Environmental Technology. EH&S experts are responsible for developing Dow standards, interpreting regulations, recommending best practices and Most Effective Technologies (METs) developing tools allow Delivery personnel to implement the standards effectively, and auditing the implementation of the standards at the plant level. At the plant level, Dow's EH&S Delivery organization is responsible for the hands-on implementation of the standards developed by the Expertise Centers. Delivery personnel have more generalized training in the area of EH&S. They are aligned to the plants but report through the EH&S organization.



This division of responsibilities allows Dow to maintain a core group of experts who are able to keep up with changes in regulations, technologies, and industry best practices, while cost-effectively implementing EH&S standards to ensure protection for employees and the environment against workplace hazards.

Dow's Expertise/Delivery model has been benchmarked against peer companies, showing that Dow has the smallest 'expertise' resource group among similar companies, which makes their excellent EH&S performance even more impressive. (The results of a 2006 benchmark of Industrial Hygiene and Personal Safety expertise resources between Dow and peer companies are included in Figures 2 and 3.)

EH&S Involvement in Business Decisions

EH&S personnel are involved with all significant changes made by Dow's global business units. When a business is evaluating opportunities and changes to products that they produce, a Business Risk Review (BRR) must be conducted. This work process helps Dow employees identify, evaluate and manage EH&S risks to minimize risk to people, property and the environment throughout the life cycle of a product. Each BRR is conducted by a multi-functional team, which includes business and functional experts as well as representatives from Dow EH&S expertise centers. The team uses a standardized checklist to identify potential risks during the entire life cycle of the product to determine whether the change can be implemented without negative impacts.

EH&S personnel are also involved in reviewing smaller-scale changes to ensure that they are managed without incident. All significant changes at the plant level are required to be approved through Dow's Management-of-Change (MOC) work process to ensure that the changes are fully reviewed by appropriate personnel before implementation and appropriate notification and necessary training is conducted for personnel affected by the change. This work process also ensures that all documentation related to the change is created and managed. Specific checklists are utilized during the MOC review process to ensure that all potential impacts have been evaluated in the areas of personal safety, environmental releases, health & industrial hygiene, reactive chemicals, process safety, and quality.



Risk Assessment

Dow utilizes a number of risk assessment practices to identify areas of higher risk and proactively implement controls to prevent adverse incidents. Dow has established a Corporate Risk Management group to identify, evaluate, and manage unforeseen risks associated with all of Dow's operations. This group conducts risk assessments to estimate the likelihood and magnitude of consequences for potential catastrophic events (explosions, natural disasters, etc). Based on the group's assessments, mitigation measures are implemented in areas identified with unacceptable risks to ensure that operations can be conducted safely under all conditions.

In the area of Industrial Hygiene, Dow uses a proprietary "Qualitative Exposure Assessment" tool to identify the most significant chemical, physical, and biological hazards to employees in the workplace and ensure that controls are implemented to mitigate these hazards. This tool assesses hazards of plant operations by combining the degree of exposure, duration of exposure, and health effect rating of hazards in the workplace. This assessment is used to identify which tasks or jobs require additional controls for workers performing the task. (An example of the output from this risk assessment process is shown in Appendix 6.)

To protect against process safety incidents, Dow plants perform a Process Hazards Analysis for all significant changes in plants or projects, and for all mergers and acquisitions. This analysis includes a Reactive Chemical/Process Hazard Analysis to identify scenarios and potential controls. Hazard potentials for these scenarios are evaluated using several tools:

- The Fire and Explosion Index to evaluate fire and explosion risks.
- The Chemical Exposure Index to evaluate potential exposure risks during emergencies.
- Layers of Protection Analysis to quantify the number of Independent Protection Layers that are required to mitigate a given hazardous scenario.

Another risk assessment tool used at Dow is the Ergonomics hazard assessment, which is used to proactively assesses and mitigate ergonomic hazards before injuries occur. This tool calculates a risk



score for a task based on the posture, repetition, force involved, and duration of a task in order to identify and prioritize ergonomic risks within a facility. (An example of Dow's Ergonomic Evaluation Card is included in Appendix 7.)

Corrective and Preventative Actions

Dow has an extensive Corrective and Preventive Actions (CAPA) Work Process, which helps assure that plants are meeting Dow's EH&S requirements and avoiding the potential for adverse events. Identification of the need for corrective actions can be identified through a Root Cause Investigation, internal audits, or self-assessments by facilities. All corrective actions identified through one of these processes are documented and tracked in Dow's Event and Action Tool.

Root Cause Investigation Process

The Root Cause Investigation (RCI) process at Dow is designed to identify the root causes of undesirable events, identify solutions that will prevent these root causes from reoccurring, and communicate these solutions so they can be leveraged across the company. RCIs are conducted whenever an event occurs that meets one of the global RCI triggers (see Appendix 8), or a business-specific trigger. All RCIs follow the Apollo Root Cause Process and are led by a trained investigator. For events involving an injury or significant chemical release, plant leaders, site Responsible Care Leaders, or business leaders participate in the investigation and are ultimately responsible for the completion of these RCIs.

Manage and Perform Audits

EH&S audits are conducted at all Dow plants on a recurring basis. Audits are typically conducted every 3-5 years, depending on a number of criteria, including plant risk, prior performance, and legal requirements. EH&S audits are conducted by subject matter experts and are led by a member of the Auditing Expertise Center. The Audit Work Process meets ISO-14001 and OSHA's PSM requirement for self-auditing. The audit process typically consists of a week-long review of the written programs and implementation of EH&S requirements at the plant. All findings are documented and presented to plant leadership at the end of the audit. Any violations of EH&S requirements are entered into a compliance plan to ensure that the gaps are closed. Compliance plans are reviewed by EH&S legal and approved by a Site Leader or Business Vice President.



Self-Assessments

In addition to corporate EH&S audits, self-assessments are conducted by facilities to examine their conformance with EH&S requirements. These assessments provide the means for a facility to evaluate management systems with a focus on improving a particular topic or sustaining good performance overall. Each facility is required to develop a self-assessment plan documenting the frequency of assessments, based on the facility's priorities and consistent with the required self-assessment frequencies in the Dow Mandatory Self-Assessment List. (See Appendix 9).

Event and Action Tool

The Event & Action Tool (E&AT) is a database that tracks the completion and effectiveness of correction actions. E&AT stores information related to the investigation of an event, and allows Dow personnel to quickly and easily look for trends in event information on facility, site, technology center, and business levels. E&AT is a web-based tool that tracks the required due dates for all identified actions and sends reminders to personnel responsible for completing them. It also sends notices of overdue actions to management to ensure that all actions are completed in a timely manner. E&AT tracks both the completion of action items and the validation of a solution's effectiveness, to ensure that all actions effectively solve the problems they were created to address. Timely completion of E&AT items is followed closely by Dow management.

Workforce Empowerment

Excellent EH&S performance requires the commitment and empowerment of all employees. Dow has a comprehensive empowerment process to drive and assess progress toward the goal of full employee engagement in plant management. The goal of all operating facilities is to achieve at least Stage 2 Empowerment. (See Appendix 10 for a summary of the stages of Empowerment.) Dow facilities use integrated safety teams, including members of operations, EH&S, and leadership to drive safety programs within the plant. These safety teams meet routinely to identify areas of concern, determine solutions, and track implementation of new initiatives to improve safety and environmental performance at the facility.

Dow uses a program called "Drive to Zero" to encourage increased employee vigilance and proactive identification, reporting, and/or correction of safety hazards or unsafe work practices within Site operations. A monthly "Drive to Zero" newsletter is published to communicate with employees about the



progress toward 2015 Sustainability Goals, as well as share learnings and best practices. (An example is included in Appendix 11.)

“Drive to Zero” includes several employee-driven safety systems to improve EH&S performance. One such process, the Continuous Hazard Analysis Technique (CHAT) elevates employee awareness of workplace hazards by requiring them to identify potential hazards and mitigation measures before starting a task. The CHAT process reinforces continuous communication between workers for the evaluation and control of work-related hazards. It also encourages workers to stop what they’re doing and re-assess hazards when conditions change. Workers trained in the CHAT process help reduce risks associated with spontaneous decisions. (An example of a completed CHAT card is included in Appendix 12.)

Behavior-Based Performance (BBP) is a work process through which work groups identify, measure, and change behaviors. In this process, a work group identifies desired EH&S performance results and determines critical behaviors that will lead to those results. The critical behaviors are communicated to the work group through trained employee observers. Observers monitor and interact with individuals or work crews to assess whether they are performing the critical behaviors in an appropriate manner, and provide positive feedback to reinforce safe behaviors and/or coaching to redirect at-risk behaviors. Observation data are collected, tracked, and communicated routinely to the work group. Once a critical behavior is consistently performed appropriately, it is determined to be at habit strength and is retired. New critical behaviors are then identified and corrected, until the desired EH&S performance results are met. (An example of a BBP Observation Form is included in Appendix 13.)

Near misses are reported and tracked using a Near Miss reporting tool. This tool allows workers to submit a near miss or safety suggestion for review by EH&S personnel and facility leadership. The Near Miss reporting process encourages employees to take actions to resolve issues, at least temporarily, until permanent controls can be implemented. (An example of a Near Miss reporting form is included in Appendix 14.)

Safe Work Permits

Dow’s Safe Work Permit system assures that all hazards associated with a task have been evaluated before work begins at a facility. This system identifies potential hazards in an area or associated with a



task, and communicates that information to Dow employees and contractors. Safe Work Permitting communicates the hazards of work areas and identifies safeguards that can be used to mitigate these hazards, thus addressing EH&S concerns. It also restricts access to work and/or equipment to people who have been properly trained and informed of the hazards and safeguards of the work and/or equipment. It assigns responsibility and accountability to the permit issuer to manage the work activity. (An example of a Safe Work Permit used at Dow may be found in Appendix 15.)

Employee Training

Dow maintains an extensive EH&S employee training program, including both computer-based and classroom training, to ensure that all employees remain familiar with the hazards of the work place as well as the safety precautions and procedures to protect people from these hazards. Computer-based training is conducted using the MyLearning training system, which stores learning modules, requires employees to complete a post-test at the end of a course, stores documentation of course completions, and tracks when refresher training is required. Training Needs Assessments are conducted for all employees, which identify training requirements for personnel by role. (A typical Training Needs Assessment for an operator role is included in Appendix 16.)

Employee Health and Off-the-Job Safety

Dow encourages the health and safety of employees, both on and off the job. The Dow Health Strategy recognizes that investing in the health of Dow people is essential to the long-term sustainability of the company. In keeping with this philosophy as well as distinguishing Dow as an employer of choice, the company has developed a comprehensive, global approach to health with an array of programs and services for employees, retirees, and dependents. Dow Health programs are designed to efficiently and effectively support health and financial outcomes for the benefit of employees, their families, and Dow's shareholders by focusing on four key elements: Prevention, Quality and Effectiveness, Health Care System Management, and Advocacy.

Dow's 2015 Sustainability Goals include a metric called the "Healthy Workplace Index," to ensure that sites around the world are providing resources for employees to maintain a healthy lifestyle. This encourages sites to create a supportive environment or "culture of health" for their employees, including:



- Smoking cessation support and exercise programs
- Healthy nutrition habits and food choices
- Case management following injuries or illnesses
- Reducing hazards in the workplace
- Stress management
- Medical Surveillance Examinations and Health Surveillance and Screening Exams

Another intrinsic part of the Dow culture is starting all internal meetings with a safety moment, many of which are provided by employees about off-the-job topics. Manufacturing facilities also hold a weekly safety tailgate to communicate and discuss a variety of safety information and issues.

Contractor Management

Dow believes that the protection of contractors performing work at Dow sites is just as important as the protection of Dow employees. Therefore, health and safety goals are measured against total Injury and Illness rates at all Dow sites, which include both employees and contractors. Work processes and safety systems are set up to ensure that contractors are protected from all workplace hazards. In order to be considered for work on a Dow site, contractors are pre-qualified to confirm that they have adequate EH&S systems in place. Before arriving at a Dow site, all contractors are provided with the most recent copy of all applicable Dow requirements. All contractors receive a site EH&S orientation, and, each facility or work group is required to provide a facility orientation discussing facility-specific rules and PPE requirements, emergency assembly points and details of the facility emergency plan, facility-specific chemical hazards, and the Safe Work Permitting process of the plant. Contractor EH&S performance is reviewed and evaluated periodically.

Cross-Cultural Values

Dow believes that excellent EH&S performance is good for business performance in any geography, whether required by local regulations or not. Dow's policy is to identify a minimum set of EH&S standards that is sufficient to meet the principles of Responsible Care® and applicable to all geographies. Where local regulations require more stringent EH&S standards, additional policies and controls are



implemented to meet these standards. However, even if local regulations are less stringent, the Dow EH&S standards will continue to be applied. Dow applies the “Most Effective Technology” for EH&S systems globally to ensure a consistent standard of care at all Dow plants across the globe.

Dow’s high standard of care in EH&S systems and standards is recognized by governments in many countries across the world. For example, in 2008, Dow joined the United Nations Environment Program (UNEP) and China’s Ministry of Environmental Protection to launch a program supporting development of a safer production and chemical safety management system in China’s chemical industry value chain. A crucial component of this program was a pilot event held in 2009 at the Zhangjiagang Chemical Industrial Park, attended by approximately 30 chemical and petrochemical companies. (A news release describing this event is included in Appendix 17.)

Integration of EH&S Performance Measures in Business Performance Metrics

All Dow sites and business units are required to set annual goals in injury/illness reductions, environmental releases, process safety incidents, and motor vehicle accidents in order to make continuous progress toward the 2015 Sustainability Goals. Progress in these areas is reported monthly. Sites and businesses that aren’t making adequate progress toward these goals are identified and provided with assistance to improve their performance.

Dow’s New Business Leader EH&S Orientation Process demonstrates the importance of EH&S issues to new business leaders in the organization. When a new senior leader (General Manager, Vice President, Business Director) takes on a new leadership role within a business, Dow believes that it is critical for that individual to understand the pertinent EH&S, Process Safety and Sustainability issues for the business, within the context of prior decisions and commitments. The orientation process requires new leaders to understand the key EH&S issues facing the business, including EH&S vulnerabilities, process safety vulnerabilities, and sustainability business opportunities. New business leaders are required to make a presentation to senior EH&S Leadership to review current issues and commitments, discuss findings from the orientation, and discuss any further issues.) A detailed checklist of the items that must be covered during this process is included in Appendix 18.) New plant leaders also perform a similar safety review when they take responsibility for a plant.



At Dow, EH&S is a fundamental part of doing business – supported by standards, expertise, tools, systems and communications to assure continuous improvement and progress toward the company's 2015 Sustainability Goals.

Section IV: Performance Measurements and Information Management

2015 Sustainability Goals

When CEO Andrew Liveris announced Dow's 2015 Sustainability Goals in May 2006, the company effectively set a new stake in the ground. The drive from 1996 through 2005 had already set Dow apart in the field of EH&S performance, but the new 10-year goals broadened the commitment far beyond the traditional EH&S scope. In setting the 2015 Sustainability Goals, Dow had thoughtfully considered how the company could use science and technology to make ambitious contributions to stakeholders, to the chemical industry, and to the world.

Dow's 2015 Sustainability Goals are centered around seven areas: Local Protection of Human Health and the Environment, Product Safety Leadership, Sustainable Chemistry, Breakthroughs to World Challenges, Energy Efficiency, Addressing Climate Change, and Contributing to Community Success. The company's progress towards these goals is tracked publicly on www.dow.com.

1. Local Protection of Human Health and the Environment

The 2015 Sustainability Goals include a continuation of the improvements in EH&S performance in the 2005 EH&S Goals. The goal for Local Protection of Human Health and the Environment is to achieve on average a 75% improvement of key indicators for EH&S operating excellence from the 2005 baseline by 2015. Dow will also collaborate with communities to set and commit to local sustainability goals:

- **Injury and illness rate:** Achieve a rate of 0.12 per 200,000 hours of work, including both Dow employee and contractor injuries.
- **Severity rate:** Reduce the injury severity rate by 75%. The severity rate is a similar measure to the injury and illness rate, but weights incidents according to injury severity in order to focus prevention efforts on minimizing the real impacts of injuries.
- **Severe motor vehicle accident rate:** Reduce the rate of motor vehicle accidents causing or likely to cause injuries for all Dow employees to 0.28 incidents per million miles driven.



- **Loss of Primary Containment incidents:** All sites/businesses combined will have fewer than 130 LOPCs (leaks, breaks and spills), with no more than 15 Category 2 incidents, eliminating Category 1 incidents.
- **Transportation incidents:** Dow will reduce the number of hazardous material transportation LOPCs by 75%, and eliminate highly hazardous (toxic inhalation hazard and flammable gas) material releases.
- **Process Safety incidents:** All sites will reduce process safety incidents by 75% and the severity rate by 95%, based on the 2005 baseline.
- **Environmental Releases:** Dow will reduce company-wide emissions of volatile organic compounds (VOCs) by 30%, nitrogen oxide compounds (NOx) by 30%, and priority compounds by 30%. Dow will also re-use 300 million pounds of by-products as raw materials, instead of disposing as waste.

2. Product Safety Leadership

Dow believes it is the company's responsibility to ensure that its products are used responsibly throughout their entire life cycles. The intent of the product safety leadership goal is to increase the public transparency of this work in order to raise public confidence. By 2015, Dow is committed to providing public product safety assessments for all of its products globally, and addressing relevant gaps in hazard and exposure information. This commitment extends beyond requirements specified in the European REACH legislation by requiring all products sold to have a completed product safety assessment regardless of locations of manufacture and sale or quantities of materials produced. Results of these product safety assessments are accessible to the public on the internet at www.dowproductsafety.com.

3. Sustainable Chemistry

Sustainable Chemistry is the "cradle-to-cradle" concept that drives Dow to use resources efficiently, 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. The Sustainable Chemistry goal is to double the percentage of sales of products that have sustainable chemistry advantages to 10%.

4. Breakthroughs to World Challenges

Dow's "Breakthroughs to World Challenges" goal is to achieve at least three breakthroughs that will significantly improve the world's ability to provide adequate food and water supplies; decent housing;



energy and climate change; or improved personal health and safety to the world's population. This goal is heavily influenced by the United Nation's Millennium Development Goals.

5 & 6. Energy Efficiency and Climate Change

Dow believes that addressing climate change is a critical step in sustainability efforts, and the reduction in energy usage contributes significantly to that goal. Dow is setting a number of goals to utilize alternative energy sources, to improve energy efficiency and reduce the emissions of greenhouse gases, both within the company and externally. These 2015 goals include:

- Reducing energy intensity by 25% and the greenhouse gas emission intensity by 2.5% per year.
- Leveraging our advantaged biofeedstocks to reduce global reliance on fossil fuels.
- Researching and developing alternative energy and less carbon-intensive raw material sources, especially photovoltaic methods.
- Developing products that deliver improved energy efficiency and greenhouse gas reduction.
- Leading in Joint Implementation/Clean Development Process and technology transfer, by actively engaging in the creation and use of project offsets through this process.
- As a long term goal, by 2025, stopping the growth of absolute emissions of GHG within the company and reduce our absolute emissions below the 1990 baseline.

Leading Indicators

Dow utilizes a number of measures as leading indicators to identify areas where injuries and illnesses are likely to occur in order to proactively take action to reduce the potential for incidents. Dow tracks the lower part of the "injury pyramid" (see Figure 4), which include medical First Aid cases, precautionary medical visits, and near misses, to help predict areas where more significant injuries are likely to occur. Identifying areas that have larger numbers of these less significant incidents is used to focus efforts to correct these problems and avoid the occurrence of more significant incidents.

Additionally, Dow utilizes a unique method to analyze trends in EH&S metrics using an internally-developed method called "Reder Plot Analysis". This tool analyzes ongoing trends in historical lagging indicators, such as injury rate, allowing rapid identification of changes in these trends to enable quick response to such changes. (This technique is fully described in Appendix 19.)



Data Tracking and Analysis

Reporting of incidents tracked in the 2015 Sustainability Goals is required by the Dow Employee Health and Safety Reporting Standard. All incidents and their classification are entered into the Dow Global Incident Reporting Database (GIRD), including:

- All potential injuries and illnesses that require treatment at Health Services.
- Any spill/unplanned event that results in a loss of primary containment (LOPC) of a chemical or dry inert solids to any media, whether captured in a secondary containment or not, and that meets any of the LOPC severity matrix criteria.
- Any Process Safety Incident

GIRD data entry is completed by a trained GIRD coordinator. Data in the GIRD database are accessible by all employees and are tracked by incident classification, business, site, type of employee, and other key information to allow easy reporting and analysis of the data. The requirements for reporting all types of incidents are the same across businesses and geographies to ensure that consistent data is available for tracking and analysis of these incidents.

Dow's 2015 Sustainability Goals encompass the company's commitment to improving EH&S performance – as well as a host of other initiatives that address global sustainability concerns. The company's internal and external tracking and reporting systems assure that Dow's progress toward these goals is well-known and understood by employees – and available to the public.

Section V: EHS Results

Summary of Results and Impacts

In 1996, Dow made a public commitment to significantly improve EH&S performance with the 2005 EH&S Goals. As ambitious as the goals were, the results were even more impressive. Injury and illness rates (including contractor incidents) were reduced by 84%. Loss of Primary Containment incidents and process safety incidents were reduced by over 70%. Emissions of priority chemicals were reduced by 84%. Solid waste generation was reduced by 1.6 billion pounds – enough to fill 415 football fields one meter deep. Water usage was reduced by 183 billion pounds – enough to supply water for 170,000 U.S. homes for one year. Energy intensity was reduced by 21%, saving 900 trillion BTUs of energy, which is enough to power 8 million U.S. homes for one year.



Local Protection of Human Health and the Environment

Significant improvements continue to be made against Dow's goals for the Local Protection of Human Health and the Environment. The 2009 Injury/Illness rate at Dow was 0.29 per 200,000 hours worked – a 40% reduction from 2005 injury rates. This means that nearly 500 fewer Dow employees and contractors were injured in 2009 compared with 2005 injury rates – and that there were 2,000+ fewer injuries compared with 1994 injury rates. The company's severity rate has dropped by 50% since 2005, indicating that not only are injury rates falling, but those that do occur are less severe. The number of process safety incidents in 2009 was also 50% less than in 2005, reducing the number of events with the potential for significant injuries and releases of chemicals to the environment. Severe motor vehicle accident rates have been reduced, and the 2009 severe motor vehicle accident rate of 0.26 per million miles driven is already less than the 2015 goal of 0.28 per million miles driven (Figures 5 - 8).

Environmental releases have been significantly reduced since 2005. In 2009, the number of LOPC incidents was 65% lower than in 2005 and transportation LOPCs have been reduced by 45%. Absolute greenhouse emissions within the company have been reduced every year since 2006, and 2009 emissions were 17% less than 2005 emissions. Air emissions of priority compounds, VOCs, and NOx have all been reduced by more than 27% compared with the 2005 baseline, although this number is positively influenced by lower operating rates. Scaling 2009 emissions to 2005 operating rates shows that at comparable production levels, 2009 air emissions of VOCs and NOx would have been 12% lower than in 2005, and priority compounds would have been 22% lower (Figures 9-12).

Energy Efficiency and Addressing Climate Change

Dow continues to find additional ways to reduce the amount of waste generated through by-product synergy projects. Dow's waste intensity (pounds of waste per pound of production) has been reduced by 2% since 2005, and as of year end 2009, has avoided the generation of more than 200 million pounds of waste since 2005 (Figure 13). Projects contributing to these gains include:

- Recycling used corn husks generated at seeds production plants as fertilizer.
- Reuse of spent process broths at Spinosad plants in cement manufacture.
- Recovery and resale of acetic acid from the Midland Polyglycols and Surfactants acetate capping process to reclaim customers.



Dow's gains in energy efficiency and greenhouse gas emissions have been negatively impacted by reductions in demand and low operating rates caused by the recent global economic recession. The energy intensity and greenhouse gas emission intensity metrics are based on measurements per pound of material produced, so reductions in operating rates negatively impact progress toward these goals. From 2005 to 2007, reductions in energy intensity averaged about 2.5% per year and reductions in greenhouse gas emission intensity averaged 5% per year. However, due to lower operating rates in 2008 and 2009, energy intensity and greenhouse gas emission intensity increased, and was only 1.5% lower than the 2005 baseline in 2009 and greenhouse gas emission intensity increased by 1%. Improvements in energy efficiency have continued during this time, such that if 2009 operating rates had been similar to 2007, Dow estimates that energy usage would have been 7% lower in 2009 (Figure 14).

Sustainable Chemistry

Dow continues to deliver breakthrough improvements to existing products, processes and technologies, as measured by Dow's Sustainable Chemistry Index (SCI). The sales of products that have sustainable chemistry advantages were also negatively impacted by the global economic recession, but still constituted 3.8% of total sales in 2009 (Figure 15). Products included in this measurement include:

- Building Integrated Photovoltaics, which will enable solar energy generation materials to be incorporated directly into the outer protective surface of buildings, helping to supply clean, renewable energy.
- Production of polyethylene from sugar cane, reducing the emission of greenhouse gases by 85% and utilizing an annually renewable resource.

Product Safety Leadership

Dow is also on target to meet the Product Safety Assessments (PSAs) goal for all of the company's products by 2015. At the end of 2009, there were 231 PSAs posted on Dow's Internet site, which covers over 25% of all Dow products (Figure 16).

Breakthroughs to World Challenges

Dow continues to make solid progress in addressing the world challenges of water, health, housing, food, energy and climate change. As part of this goal, Dow is working to deliver improvements for existing products and technologies, such as steps taken by the Dow Water & Process Solutions business



to reduce the energy requirements and capital needed to install and maintain water purification systems. Since 2005, the number of people who rely on Dow FILMTEC™ water purification systems for their drinking water has increased fourfold, and is expected to exceed 50 million by 2015.

Comparison of Measures to Peers in the Chemical Industry

Pursuit of our 2005 and 2015 Goals has resulted in The Dow Chemical Company having among the lowest injury and illness rates in the chemical industry. Dow's 2009 injury/illness rate of 0.29 is substantially lower than the chemical industry average of 2.7, and the average rate for major manufacturing companies of 1.62 (Figure 17). Dow's quest to continuously improve EH&S performance, as reflected in the 2015 Sustainability Goals, will ensure that we remain among the leaders in the chemical industry in this area.

Improvements in EH&S Performance of Acquired Companies

The effectiveness of Dow's EH&S processes is clearly demonstrated by the improvements in the EH&S performance of companies acquired by Dow – once Dow's work processes are implemented at acquired facilities and sites. Dow has consistently driven the injury and illness rates of acquired companies to record low levels and improved overall environmental performance. For example, the Dow Wolff Cellulosics business acquired two sites in Germany (Bomlitz and Bitterfeld) in July 2007. In that same year, the plants had 21 injuries and 22 incidents involving a loss-of-primary containment (LOPCs). But following the implementation of Dow EH&S processes, the sites had a total of only 7 injuries and 5 LOPCs in 2008 and 2009 combined – a reduction of more than 80%. A similar improvement in performance was seen in the Hyperlast business site in Birch Vale, UK and the Epoxy Systems Business following their acquisitions by Dow in late 2007: neither company had a single reportable injury in 2009.

This trend toward improvement in injury/illness rates and LOPCs doesn't apply only to the acquisition of small sites. In February, 2001, Dow acquired the Union Carbide Corporation, which was one of the largest chemical companies in the world at the time. The EH&S results of the former Union Carbide site in Seadrift, Texas, demonstrate the impact of implementing Dow EH&S systems. In 2001, the Seadrift site had an injury rate of 0.98 per 200,000 hours worked. In 2009, the injury rate had dropped to 0.15 – a reduction of 85% – or an average of over 10% per year. LOPCs also were reduced significantly during that time, dropping from 28 in 2001 to 10 in 2009.



In April 2009, Dow acquired the Rohm and Haas company, another large chemical company, with a history of excellent EH&S performance. Following acquisition by Dow, the heritage Rohm and Haas (hROH) plants have had three of the best quarters in their history, and the 2009 injury/illness rate dropped 26% from the 2008 rate to a record low of 0.54 per 200,000 hours worked.

Charts of the injury/illness rates and LOPC performance over time for these acquired businesses and plants can be found in Figures 18 - 26.

Influence on EHS Practices outside Dow

Dow's leaders are committed to working with industry and governments wherever we operate to share the company's safety best practices and to help improve the EH&S performance of all chemical manufacturers. To accomplish this, Dow takes an active role in many industry associations and professional societies throughout the world. This participation not only enables Dow to improve our own EH&S programs, but also allows us to share our knowledge and expertise to improve the EH&S programs of other manufacturers, in part through education and partnerships with regulatory communities.

Dow and its senior executives are especially active with the global and regional associations and professional societies that are most influential in the chemical industry. Chief among these leading associations in which Dow participates are:

- The International Council of Chemical Associations (ICCA), the world-wide voice of the chemical industry, representing chemical manufacturers and producers the world over with representation from 53 regional chemical industry associations around the globe.
- The American Chemistry Council (ACC), which represents leading U.S. companies engaged in the business of chemistry.
- The European Chemical Industry Council (CEFIC), which represents approximately 29,000 large, medium and small chemical companies that employ about 1.7 million people and account for nearly a third of world chemical production.

One final example of Dow's outside influence is the company's role as a co-founder and leader of TRANSCAER® (Transportation Community Awareness and Emergency Response), a voluntary national outreach effort of chemical-related companies, carrier/transport companies and industry associations that



was formed as part of a shared commitment to the safe and secure transportation of chemical materials. The program is part of a long-term commitment by Dow to provide improved community awareness and preparedness along chemical transportation routes, in coordination with the transportation industry; national, regional and state TRANSCAER programs; and training cars from the Firefighters Education and Training Foundation. Through TRANSCAER, free emergency preparedness training is provided to local and regional emergency response organizations, as well as education to communities near major rail routes about rail equipment, chemical transportation, and the importance of planning for potential hazardous material transportation emergencies. In the United States, Dow has trained nearly 3,000 first responders through this program.

At Dow, our never-ending pursuit of EH&S performance is demonstrated in the company's Sustainability Goals and performance results. When Dow EH&S systems are applied in acquired companies and sites, these best practices have been shown to further improve the EH&S performance of top tier chemical companies, as shown recently in the Rohm and Haas acquisition. And Dow actively shares these best practices with numerous industry groups and associations across the world to raise EH&S performance throughout the chemical industry.

Section VI: Linkage Between EH&S and Business Performance

EH&S is part of everything we do at Dow. EH&S considerations are factored into all business processes, and no business decision is made without considering the EH&S impacts of that decision. EH&S is well-integrated into all areas of Dow's Operating Discipline Management System, and is a critical part of the design, operation, and shutdown of all plants. EH&S is incorporated in Dow's corporate vision, strategic theme, and significant public goals.

Dow's excellent track record of EH&S performance is driven by the EH&S organization – but requires the commitment of all employees, from operators to upper management. At Dow, we've cultivated a corporate culture that does not accept any unsafe actions or practices, and that continuously drives to reduce environmental emissions and energy use.



EH&S Improvements Contribute to Dow's Bottom Line

Dow's pursuit of the 2005 Goals has demonstrated that EH&S performance can drive better economic performance. A thorough cost-benefit analysis of the changes made to meet the 2005 Goals showed that \$1 billion invested in improvements to reduce energy usage, wastewater, and chemical emissions resulted in an overall value to the company of more than \$5 billion. A Total Business Cost Assessment of the improvements in process safety, personal safety, environmental releases, and transportation incidents has revealed in an additional \$950 million in savings. (See Figure 26 for a breakdown of these benefits and savings.)

Since 2005, Dow's improvements in these areas have continued to pay dividends, and more than \$4 billion in additional savings have been realized from our reductions in energy usage, wastewater, and chemical emissions – with an additional \$100 million from further reductions in injuries, LOPCs, and process safety incidents. Projects to reduce and reuse waste in new and innovative ways return a Net Present Value of more than \$2 billion per year. Especially in the challenging economic times in 2008-2009, these savings due to EH&S improvements have been critical to Dow's success and bottom line.

Excellence in EH&S has yielded tangible and non-tangible benefits for Dow. Tangible benefits include reductions in workman's compensation premiums, which have dropped by 75% between 2005 and 2009. Less tangible, but still significant, are the improvements in communications with local communities, business allies, regulators, customers, and other stakeholders. Strong EH&S systems help us to be able to conduct business successfully.

Improving Environment, Health and Safety Worldwide with Products and Technologies

In addition to these benefits, Dow has a number of business units that provide products and services to support the environment through energy efficiency and conservation, as well as human health and safety. For example, Dow Building Solutions has been producing STYROFOAM™ Brand Extruded Polystyrene Insulation for more than 60 years, making homes and buildings more energy-efficient to conserve energy, save on energy costs and reduce CO₂ emissions. Dow has recently improved manufacturing practices for STYROFOAM® Insulation and air sealing products in North America with a more sustainable technology to further reduce environmental impacts. The new manufacturing process also reduces greenhouse gas emissions during production of STYROFOAM™ Brand Insulation by 50% at all of the



converted production facilities. Dow Building Solutions has also developed DOW POWERHOUSE™ Solar Shingles, which make solar power an attainable, clean energy possibility for consumers.

In the automotive business, Dow has invested in a joint venture, Dow Kokam, to develop next generation battery technology for power hybrid and electric vehicles, which will help reduce the country's reliance on fossil fuels. Dow Kokam was established in 2009 to develop and manufacture technologically advanced and economically viable battery solutions for the transportation, defense, industrial and medical industries.

The Dow Water and Process Solutions Business provides a number of products designed to provide clean drinking water around the globe. In countries such as Australia, Saudi Arabia and India, this Dow business unit is helping to provide adequate clean water supplies so that more children stay in school, workers are more productive, and industry flourishes.

In all of these ventures, Dow has shown that EH&S not only contributes to business success, EH&S performance leads to business opportunities and growth.

Section VII: Other Factors

Dow has been recognized by numerous organizations in many geographies for excellence in EH&S. These awards are a tribute to the hard work of our employees and the dedication of our Company's ongoing commitment to safety. (Appendix 20 contains a list of the EH&S awards received by Dow since 2008.)

Like many other companies, Dow's business has been significantly affected by the global economic downturn. But recent years have truly been some of the most challenging in the company's century-long history. In July 2008, The Dow Chemical Company began the process of acquiring Rohm and Haas in an \$18.8 billion transaction. Before closure of the deal in 2009, a large joint venture that Dow had planned with a Kuwaiti state-owned company collapsed, severely straining Dow's ability to complete the Rohm and Haas acquisition. Because of these events, combined with the global recession in 2009, Dow faced its most daunting economic period ever. Throughout those trying months, Dow still maintained company focus on EH&S performance and continued to strive toward the commitments of the 2015 Sustainability Goals. As a result, 2009 turned out to be the best year in company history for EH&S performance at Dow.



Dow's continued commitment to EH&S, the Drive to Zero and the 2015 Sustainability Goals throughout the last two years have proven that protecting human health and the environment can be achieved even in the worst of times – and can lead the way to better times ahead.

Section VIII: Conclusions and Path Forward

“Setting the Standard for Sustainability” is more than a philosophy at Dow. It has become one of the four pillars of Dow's corporate strategy, and is just as important as achieving financial success or hiring the best people. For all of us at Dow, sustainability means making every decision with the future in mind. It's all about Dow's relationship with the world – helping to create economic prosperity and social value while contributing to the preservation of the planet.

With Dow's public commitment to the 2005 Goals, Dow invested more than \$1 billion to make great strides in EH&S performance. We made it a business priority to find innovative ways to continually reduce waste and energy, and to protect human health and the environment. The company has been successful because we changed the way every employee at Dow thinks about EH&S. These efforts not only paid off in remarkable improvements in Dow's EH&S metrics, they also demonstrated that improvements in EH&S performance do not conflict with business performance. In fact, the EH&S improvements drove significant net cost savings and helped to improve overall business performance.

As impressive as these results have been, Dow recognizes that we have only completed a step in the journey of our “Drive to Zero” effort. This journey continues in Dow's 2015 Sustainability Goals. These goals do not intend to duplicate past success with the 2005 EH&S Goals, but to surpass them by addressing an even broader, more significant set of challenges. The 2015 Sustainability Goals provide the framework for Dow to demonstrate CITIZENSHIP through stronger, safer communities, offer SOLUTIONS that will make a lasting, positive improvement on the world, and reduce our FOOTPRINT by understanding our impact on global ecosystems and working toward the efficient and effective use of the planet's precious resources. These 2015 Sustainability Goals will change the game. They will help us achieve that part of our vision that says we will be the “most respected chemical company” in the world.

