



*Dow Corning*

# Sustainability

Summary Report

2002

*We help you invent the future.™*

**DOW CORNING**



Extending Our Reach ...

## The Start of Our Journey

Please allow me this opportunity to welcome you to the first Sustainability Summary Report for Dow Corning Corporation. In preparing this report, we have built on the natural foundation of our corporate Values and our solid history of product stewardship. Now we are extending our reach to more fully embrace and report on all three areas of the Triple Bottom Line – social, environmental and economic responsibilities.

We at Dow Corning fully believe in our responsibilities to deliver on the three pillars. In fact, those responsibilities are intricately interwoven with our Vision. As we work toward our customers' success, we also accept our responsibility as a corporate citizen to actively contribute to a sustainable future.

I have long considered myself to be an environmentalist, holding a grateful appreciation of nature that stems from childhood fishing trips taken with my father. As those trips continued through the years, I saw the natural habitat of our favorite fishing spots decay due to inappropriate practices of industry and individuals – a most unsettling experience.

Today, I understand that it takes capitalism to create opportunities for our world and its people. Industry is part of the solution to our sustainability challenges, and the science and technology we practice hold exciting answers. That's where Dow Corning fits into the picture.

In a historic move in the marketplace for performance-enhancing solutions, the New Dow Corning offers choices that are as dynamic as our customers' needs. From innovative solutions that bring new products to market ... to proven solutions that foster reliable growth ... to technology and service solutions that help customers reduce or eliminate waste to drive costs down, we can deliver what it takes to meet our customers' needs, exactly. In doing so, we are ever mindful of our responsibility to consistently capture benefits for our financial stakeholders while improving our global society and world environment.

In this reporting effort, we are striving for new levels of transparency, with honesty about our successes and our setbacks, our achievements and our challenges. We have started an important journey here, and we are asking that you travel it with us – in the pages of this report ... and in future reports.

Sincerely,



Gary E. Anderson, Chairman and Chief Executive Officer



# Dow Corning

## Corporate Profile

Dow Corning was established in 1943 specifically to explore the potential of silicones – a diverse family of materials combining the temperature and chemical resistance of glass with the versatility of plastics. The corporation was created as a joint venture between Corning Glass Works (now Corning Incorporated) and The Dow Chemical Company, which continue to own equal shares today.

From a pioneering role in the development of silicones for commercial applications, Dow Corning has grown to become a global leader in silicon-based technology and innovation. Headquartered in Midland, Michigan, we employ approximately 8,000 people globally. For more than 25 years, we have had a Code of Business Conduct in place setting expected standards of business behavior for our employees.

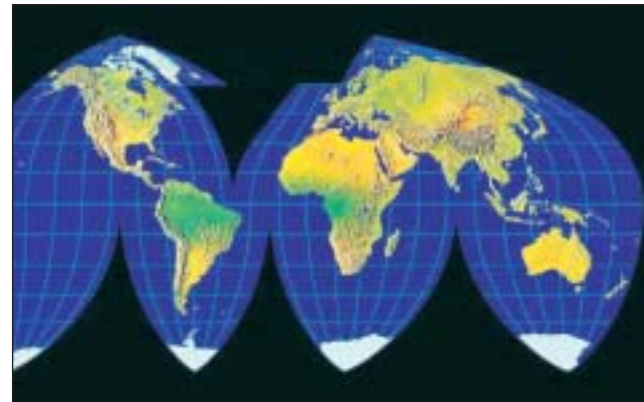


Together, our people offer more than 7,000 products and services to more than 25,000 customers around the world. Our products are working to enhance the performance of thousands of applications in virtually every major industry. Customers in these industries can choose from solutions tailored to their specific needs: whether for innovative, first-to-market products; proven and reliable, off-the-shelf offerings; or high-volume, lower-cost solutions.

Ultimately, these solutions improve people's lives in many ways: providing ozone-safe cleaning for computer chips ... protecting commercial buildings from the ravages of nature ... softening and waterproofing fabrics ... and literally greasing the wheels of industry.

Our 22 manufacturing locations are integral parts of the communities in which we operate. For decades, these facilities have opened their doors to offer neighbors a firsthand look at how our employees use ideas and technology to solve customer problems, and how our sites make safety and the environment a priority in everything we do.

We started with silicones, and now, as we celebrate our 60th anniversary, we are continuing with sustainability. Today's Dow Corning is working hard to deliver on our environmental and social responsibilities, while targeting economic performance that meets the needs of our customers, employees and stakeholders – helping to build a sustainable future for us all.



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## Our Values

Dow Corning's Values — all equal in importance — are the foundation on which our employees base their day-to-day business behaviors.

**Integrity** Our integrity is demonstrated in our ethical conduct and in our respect for the values cherished by the society of which we are a part.

**Employees** Our employees are the source from which our ideas, actions and performance flow. The full potential of our people is best realized in an environment that breeds fairness, self-fulfillment, teamwork and dedication to excellence.

**Customers** Our relationship with each customer is entered in the spirit of a long-term partnership and is predicated on making the customer's interests our interests.

**Quality** Our never-ending quest for quality performance is based on our understanding of our customers' needs and our willingness and capability to fulfill those needs.

**Technology** Our advancement of chemistry and related sciences in our chosen fields is the Value that most differentiates Dow Corning.

**Environment** Our commitment to the safe-keeping of the natural environment is founded on our appreciation of it as the basis for the existence of life.

**Safety** Our attention to safety is based on our full-time commitment to injury-free work, individual self-worth and a consideration for the well-being of others.

**Profit** Our long-term profit growth is essential to our long-term existence. How our profits are derived, and the purposes for which they are used, are influenced by our Values and our shareholders.

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# Integrity

EMPLOYEES

# Customers

QUALITY

# Technology

ENVIRONMENT

# Safety

PROFIT

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# About Dow Corning

## Responsible Care®

We made our initial commitment to the principles of Responsible Care® as a member of the American Chemistry Council in 1989. The Responsible Care® program serves as our framework to proactively manage environment, health and safety at Dow Corning.



As the Responsible Care® program has grown in scope, so has Dow Corning's commitment to sustainable performance.

In 1997, we committed to global implementation, building on our successful efforts in countries such as Australia, the United Kingdom and Japan, as well as the U.S. By January of 2003, all three of our geographic regions (the Americas, Europe and Asia) had achieved practice-in-place status – one year ahead of our corporate goal. This means that all six of the Responsible Care® Codes of Management Practices are implemented to a globally consistent standard of expectation.

“Practice-in-place” is only the beginning, because Responsible Care® isn't just about implementation. It's about our commitment to building a sustainable future. We will continue to strive for higher performance, which will make us a better supplier to our customers, a better partner for our suppliers and a better neighbor within our communities.

[> Full Story](#)

## Sustainability Guiding Principles

Building on the Responsible Care® framework, Dow Corning recently developed its own Sustainability Guiding Principles to provide direction consistent with our Values. These Principles will enable the integration of sustainability into our business strategies, decisions and operations:

- ◆ Sustainability is fundamental to our future success. As we grow our business, we will be guided by our commitment to do so in an open, sustainable manner.
- ◆ To be sustainable and provide economic value to our shareholders we will:
  - Reduce the environmental impact and improve the health and safety aspects of our current and future operations, products and services.
  - Foster the well-being of our employees and the communities that contribute to our current and future success.
  - Bring new products and services to customers and markets that do not benefit from them today.



# Social

## Giving Back to Our Communities

Dow Corning is working to make a difference in the quality of life in our communities around the world. The Dow Corning Foundation makes financial grants in specific areas that result in sustainable improvements in facilities, programs and services – for our neighbors in communities where Dow Corning employees work and live, and for society at large.

Funding for community projects also comes from our local sites, which support community efforts, as well as scholarships for students. Overall, our community support and hands-on involvement are focused in the areas of education, enrichment and the environment.

### Educational Support

We support numerous programs that benefit education, because our future depends on having well-educated, skilled and motivated young people in our global society. Here are some examples ...

**Visions in Progress** – We were excited to support “Visions in Progress” in the Elizabethtown (Kentucky) Independent School System with a grant to the foreign language program. Students in the primary grades experience the opportunity to become proficient in a foreign language through regular instruction from a native speaker.

**University Activities** – Dow Corning supports a number of collegiate and university programs across the United States. Corporate and Dow Corning Foundation grants have contributed to construction of wetlands for student and community learning, improving the

effectiveness of public television broadcasting, funding for ecological research programs for students, and development of laboratories to provide deeper practical knowledge of chemical processes and scale-up operations.

**Student Interns at Seneffe** – Dow Corning Seneffe is associated with a number of education efforts including a European program, Leonardo Da Vinci, and a Walloon (Belgium) Program, Eurodyssee, which welcomes foreign students and allows local students to travel abroad. Students in these programs gain valuable technical and scientific experience working at the site.

**Barry Educational Initiatives** – Our site in Barry, Wales, provides support for several educational initiatives including training for the volunteer staff of a local playschool and an innovative “story sack” program, which encourages young children to read with their parents. Handmade story sacks are filled with a storybook and games, puzzles and toys that help to illustrate the story.

**Local Community Schools** – Dow Corning sponsors education through its subsidiaries CBCC in Brazil and Dow Corning India, Ltd. By contributing financial support to a school for the children of CBCC employees, and by providing monetary assistance to rebuild a school in the earthquake-affected state of Gujarat in India, Dow Corning enables young people to achieve an education and gain an opportunity for success.

# Social

**Technical Training** – Dow Corning is highly involved in helping residents in our communities to obtain the trade and technical training they will need for the jobs of tomorrow. Midland, Michigan; Carrollton, Kentucky; and Elizabethtown, Kentucky, all have forward-thinking programs to promote trade expertise.

## Community Enrichment

We work to ensure the strength and vitality of our communities, because they are the places that we call “home.” Examples include the following ...

**Junior Achievement** – Dow Corning co-founded the Midland Junior Achievement program with The Dow Chemical Company in Midland, Michigan, about 50 years ago. This program teaches young people how the free enterprise system works.

**Play Ball!** – The Barry, Wales, site contributed funding to upgrade the playing field of a local children’s football center. The field sports new turf, and improves the environment of the local area.

**Saginaw County Vision 2020** – The Dow Corning Foundation is contributing to this Mid-Michigan based program, which promotes the development of local leaders while addressing issues such as racism, economic development and education.

## Environmental Initiatives

We also work to protect our environment because it is the right thing to do. Dow Corning employees around the globe are eager to participate in environmental initiatives at the local level.

For instance, in 2002, employees at Dow Corning’s plant in Jincheon, Korea, volunteered to pick up garbage that had accumulated on the banks of an area river. Employee teams pitched in with groups from neighboring companies to collect cans, waste vinyl and glass bottles.

In the United States, similar efforts have been taking place in Carrollton, Kentucky, for several years.

Our Midland, Michigan, site has a unique partnership with Midland’s Arnold Center, a non-profit agency that works with physically and mentally challenged individuals. Beginning with the donation of a shredding machine several years ago, this relationship has evolved into a major recycling program that creates full-time employment and helps address recycling needs for more than 50 businesses.

The Dow Corning Foundation has been a supporter of BaySail in Mid-Michigan. BaySail is a non-profit organization that works to foster environmental stewardship of the Saginaw Bay Watershed and the Great Lakes ecosystem. It offers comprehensive, hands-on educational and skill-building programs while under sail on the Schooner Appledore.



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## Barry National Science Week

Each year, our site in Barry, Wales, celebrates National Science Week by inviting children from local schools to visit for hands-on science experiments. The students are challenged to imagine they are Dow Corning scientists working on a project to help one of our customers. All experiments are designed as a joint project between our employees and local teachers to ensure support for the National Curriculum for Science. Since this event began, we have welcomed more than 1,200 children to our workshops and given many teachers new ideas that they can use in their classrooms.

[> Full Story](#)

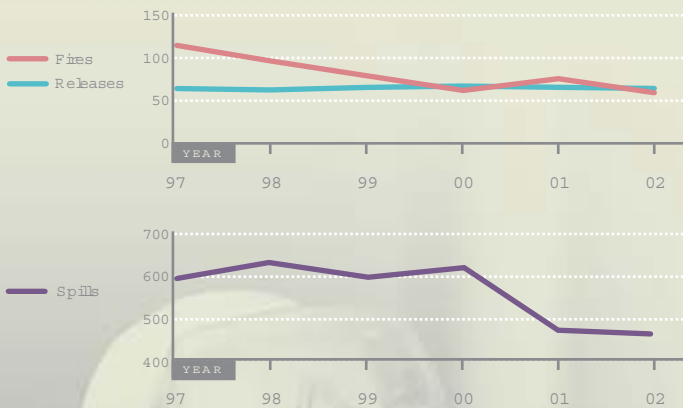


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# Social

## Acting on Our Commitment to Safety

Figure 1 Total Number of Incidents



Dow Corning is committed to the safety of our employees and the people in our communities.

We start by building process safety into our operations, with careful design and advanced technology. Then we track our progress, prioritizing and directing improvement efforts to reduce and eliminate incidents. Global data related to process safety is shown in Figure 1.

### Employee Health & Safety

Our Employee Health & Safety efforts are based on taking actions to prevent incidents that cause injury or illness, and on prompt reporting of all injuries and illnesses. Dow Corning is utilizing U.S. rules to track and define recordable cases, leading to calculations of Occupational Injury and Illness Rates (OIIR) and Lost Time Illness/Injury (LTI) rates globally (see Figure 2). We investigate LTIs to determine causes and take action to prevent similar incidents, sharing information with employees as appropriate to continuously improve our safety efforts.

Figure 2 Occupational Injury and Illness Rates and Lost Time Illness/Injury Rates

	1997	1998	1999	2000	2001	2002
OIIR *	3.25	2.48	2.48	2.54	2.56	2.38
LTI **	0.39	0.20	0.26	0.28	0.31	0.39

\* This measurement represents all injuries and illnesses, per 100 employees, that occur on the job and require more than first-aid treatment.

\*\* This measurement represents the number of people for a population of 100 that missed work for one or more days during a particular year due to a work-related injury or illness.

# Social

## Safety Brilliance

Historically, Employee Health & Safety at Dow Corning has required that the standards of the United States be adopted globally – a well-meaning approach that did not embrace cultural differences or empower employees to make improvements in safe practices. We have been developing a more performance-based approach to safety, which emphasizes the role of individual behaviors and attitudes within specific cultural contexts. We want to extend safety beyond our fence lines, by instilling a safety mindset within our employees – one that remains even after the workday is through.

We are calling our new approach Safety Brilliance. Our first step on the Safety Brilliance journey was the launch of our Safety Management System in November of 2001. Within this framework, Safety Brilliance will rely heavily on leadership involvement and individual commitment.

- ◆ Beginning in 2003, we will focus on specific quarterly safety topics, with online tutorials and hands-on learning experiences for all employees globally.
- ◆ Our first-year topics will be fall protection, emergency medical care, flammable liquid handling and local ventilation.
- ◆ By 2004, every employee will have a personal safety goal.

## Site Security

In 2002, a new Responsible Care® Security Code was added to help safeguard plants, property, products and information from terrorist or criminal attack and sabotage. The Security Code calls for implementation of 13 Codes of Management Practices by mid-year 2005. Dow Corning is working toward global implementation of those practices, and is conducting Security Vulnerability Assessments as called for by the code. These assessments are intended to minimize or eliminate any off-site impact resulting from a terrorist or other attack. The American Chemistry Council calls for independent third parties to verify implementation of any additional security measures identified.



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## Reaching Out with CAER

In accordance with the Responsible Care® Community Awareness and Emergency Response (CAER) Code, Dow Corning reaches out to local communities, promoting ongoing dialogue and conducting emergency response planning. These efforts include firefighting training, serving on Local Emergency Planning Committees, participation in business roundtables and active dialogue with community members on our Community Advisory Panels (CAPs).





# Environmental

## Reducing Our Environmental Footprint

Dow Corning is striving to reduce the environmental footprint of its operations, working largely from the framework of the Responsible Care® Pollution Prevention Code. This code is concerned with the ongoing reduction of waste generated at facilities, as well as the ongoing reduction of contaminants and pollutants released to the air, water and land.

### Waste Reduction

Dow Corning's external waste reduction goal – American Chemistry Council (ACC) Target – states: “Dow Corning will reduce by 40 percent the absolute annual volume of its wastes emitted to the environment. This will be

achieved by the end of the year 2004, using 1997 as the base year.” Our projections at this time indicate that we are likely to fall short of this aggressive goal.

Since 1997, Dow Corning's production output has increased by approximately 25 percent. With this growth – and assuming 5 percent growth in waste volume in 2003 and 2004 – Dow Corning anticipates that it will dispose of 35 percent less waste in 2004 than in 1997. This projected absolute reduction is based on the successful completion of numerous identified waste reduction projects by the end of 2004, as shown in Figure 3.

Figure 3 Forecasted Effect of Planned Projects on Waste Reduction



# Environmental

Dow Corning maintains its strong commitment to waste reduction and has made significant progress in specific areas:

- ◆ During 2001 and 2002, the company avoided disposal of more than 5,450 metric tons of silicone materials that did not meet our customers' needs, by selling them into the recycle marketplace. This is three times the amount of silicone recycle sales from 1999 and 2000.
- ◆ Waste reduction measures in the Global Healthcare Supply Chain reduced the amount of wasted material by two-thirds – from an average value of \$123,500 per month in 2001, down to an average of \$41,000 per month in 2002.



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## Reducing Releases

For several years, Dow Corning has tracked its Toxic Release Inventory (TRI) in the U.S. (Figure 4). Compared with 1997, releases to the air and water declined by 54 percent and 31 percent, respectively, in 2001. Total TRI materials landfilled by Dow Corning declined 62 percent, and total TRI releases declined by 54 percent versus the 1997 baseline.

Figure 4 U.S. Toxic Release Inventory (kg)  
Releases to air, water and land

	1997	1998	1999	2000	2001	2001 Reduction vs. 1997
Air	223,900	197,850	167,050	127,700	103,500	54%
Water	910	1,010	370	655	625	31%
Landfill	7,740	6,220	4,950	2,060	2,920	62%
Total Releases	232,550	205,080	172,370	130,415	107,045	54%

# Environmental

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## GHG Emissions Performance

Any discussion of pollution prevention and reducing our environmental footprint would be incomplete without information on improving our Greenhouse Gas (GHG) emissions performance. Silicone production is an energy intensive process. More than 90 percent of Dow Corning's GHG emissions come from the fuel combustion used to power our processes, with the remainder represented by direct process emissions.

So, a focus on improving our energy efficiency should also lead to improved GHG emissions performance. In light of rising energy prices and dwindling fossil fuel reserves, such a focus is also economically beneficial.

Dow Corning is collecting and assessing GHG emissions data in three scopes:

- 1) Emissions within our fence lines.
- 2) Emissions from the energy we purchase.
- 3) Emissions from the manufacture of raw materials and the remainder of product life cycle and use.

Figures 5 and 6 show the performance related to Energy Efficiency and Greenhouse Gas Intensity for Scope 1 and Scope 2. We are currently benchmarking processes for future Scope 3 data collection efforts. Dow Corning is emphasizing continuous improvement in this important area, and will be evaluating product and process technology opportunities to improve our energy efficiency and further reduce our GHG emissions.

Figure 5 Energy Efficiency Performance

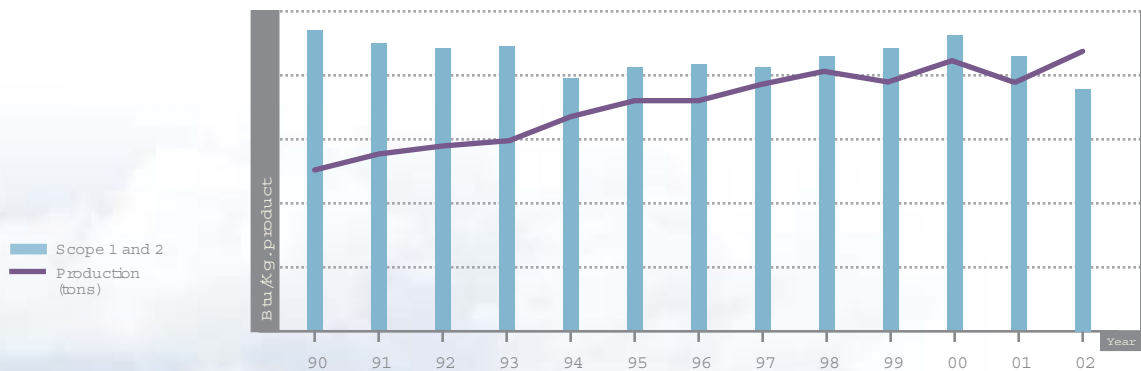
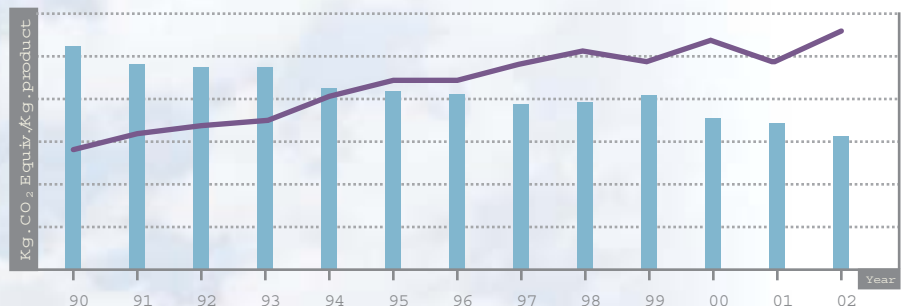


Figure 6 Greenhouse Gas Intensity Performance



# Environmental

## Global Carbon Balance

When sunlight heats up the earth's surface, that surface emits infrared radiation back toward space. Carbon dioxide (CO<sub>2</sub>) and other GHGs in the earth's atmosphere trap some of the outgoing infrared radiation, heating the climate and allowing the earth to maintain comfortable temperatures. However, there is concern that increases in atmospheric concentrations of CO<sub>2</sub> and other GHGs can result in even warmer surface temperatures (climate change), by increasing the amount of infrared heat radiated back toward the surface.

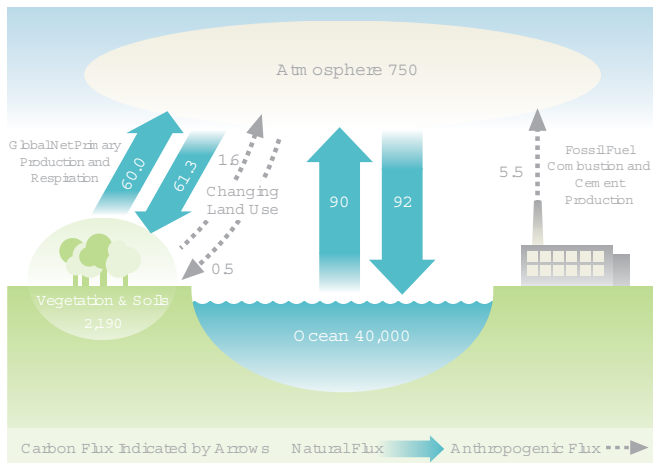
In Figure 7, the arrows that point up and those that point down represent conditions that need to be roughly equivalent to achieve "carbon balance" – a fairly stable relationship between the gases entering the atmosphere and those being absorbed through natural processes such as photosynthesis. Dow Corning is excited about

the potential benefits that carbon sequestration (efforts to capture and secure carbon) can provide to the carbon balance scenario.

CBCC, a Dow Corning subsidiary in Brazil, sequesters about 1.2 million metric tons of CO<sub>2</sub> annually from its extensive eucalyptus tree reforestation program. This huge carbon sink makes an important contribution to offset much of Dow Corning's total global Scope 1 and Scope 2 GHG emissions. To learn more, read the sidebar, "Reforesting the Brazilian Countryside."



Figure 7 Global Carbon Cycle (Billion Metric Tons)  
Source: Intergovernmental Panel on Climate Change



### Reforesting the Brazilian Countryside

Dow Corning has been involved in reforestation efforts through CBCC, a Dow Corning subsidiary located in Brazil. CBCC is a significant ferroalloys producer, with unique capabilities to become one of the largest producers of chemical-grade silicon metal. It uses charcoal made from locally harvested trees to reduce oxides in its manufacturing furnaces.

CBCC has partnered with the Forest Farmer Program in the reforestation of specific areas inadequate for growing crops or raising cattle. More than 17,000 acres of forests have been planted in 60 counties near CBCC facilities. CBCC provides administration, technical assistance, financing and consultation, while rural landowners provide the land and labor.

This pioneering program, which promotes economically and environmentally responsible practices among rural landowners, is considered a model by the Brazilian Forest Authorities.

[> Full Story](#)



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## Distributing Solutions – A Triple Win

A number of years ago, Dow Corning began working to maximize the efficiencies in its distribution processes. A carrier was chosen to partner with Dow Corning based on an evaluation of its safety record, equipment availability, financial health and innovation. Together, the two companies developed several solutions to increase distribution efficiencies, including:

- ◆ Redesigned, lighter weight tank trucks that conserve thousands of gallons of fuel annually.
- ◆ Dedicated trucks with reusable containers, which eliminate quality concerns and save cleaning costs.
- ◆ Relay loop routes utilizing a central, approved meeting location that allows both drivers to return home to their families each evening without a layover.

The end result of these solutions is a triple win. Environmentally, continued safety is emphasized, while less fuel and energy are used. Economically, both Dow Corning and the carrier benefit from the cost efficiencies of eliminating layovers. And socially, drivers experience a better work-life balance, while customers receive continued timely delivery.

## Assuring Product Stewardship

Dow Corning's Product Stewardship program was established in 1975. Today, our employees demonstrate our continued commitment to ensuring health, safety and environmental protection throughout the life cycle of our products. From design, raw materials and manufacture ... to marketing, distribution and use ... to recycling and disposal, each employee plays a crucial role in our product stewardship efforts.

Some employees conduct life cycle impact analyses that help us to further develop our thorough understanding of silicon-based materials. These analyses are integrated into our formal commercialization process. Employees who interact with customers have been trained to help extend and promote stewardship awareness beyond our fence lines, improving the responsible management of Dow Corning products even after they leave our facilities.

Dow Corning has designated Global Chief Product Stewards aligned with each business. Together, these stewards form a global network for leveraging learning and sharing best practices. They also guide us through a standardized decision-making model that helps us to take advantage of the value that active product stewardship brings.

This decision-making model allows for evaluation of both potential concerns and opportunities from environmental, social and business perspectives. Consistent use of this approach helps us determine where and how our products can be used – preserving the commercial freedom of our businesses, enabling our Values and Sustainability Guiding Principles, and protecting human health and the environment.

At Dow Corning, product stewardship is not a separate initiative of an EH&S function or regulatory personnel, but rather the responsibility of every employee. It is deeply rooted in how we do business around the globe – every day.

Environmental

# Economic

## Tracking our Economic Performance

Despite a challenging global economic environment in 2002, Dow Corning was successful in growing revenues by offering customers innovative solutions to meet their needs, exactly. Year-end financial results reflected growth and strong performance. Here are some highlights:

- ◆ 2002 sales were \$2.61 billion, a 7 percent increase over 2001.
- ◆ 2002 net income was \$58.7 million, compared with a net loss of \$27.5 million for 2001.



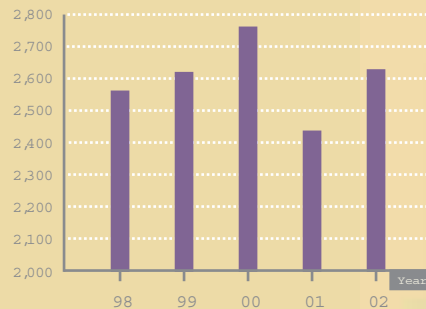
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**Figure 8** Dow Corning Annual Sales  
In millions of U.S. dollars



**Figure 9** Key Financial Data  
In millions of U.S. dollars

Year ended December 31	2000	2001	2002
Net Sales	2,750.9	2,438.5	2,610.1
Operating Income	141.3	48.9	142.5
Income (Loss) before Income Taxes	165.9	(35.2)	102.9
Net Income (Loss)	100.8	(27.5)	58.7

# Innovation

## Inventing the Future

At Dow Corning, we are not only developing novel silicon-based products and technologies, but also providing material and market development services and solutions expertise to support customer innovation efforts.

Innovative services, processes and product solutions have great potential for positively impacting the Triple Bottom Line – by promoting business growth, improving the environment and touching the lives of the people in our global society. Here are some examples ...

### Rolling Out More Fuel-Efficient Tires

Dow Corning is applying its silane manufacturing capabilities to help major tire manufacturers grow the market for environmentally friendly tires. These low-rolling-resistance tires incorporate precipitated silica and Dow Corning's polysulfidosilanes.

By decreasing the rolling resistance of the tires, a vehicle consumes less fuel and produces fewer emissions. Tires with low rolling resistance can contribute up to a 5 percent increase in fuel efficiency. They also provide better traction in wet or snowy conditions, and contribute to a safer driving experience.

Dow Corning is contributing to the market success of low-rolling-resistance tires, by helping tire manufacturers to lower their production costs. Through increased manufacturing efficiencies and development of less costly silane delivery systems, Dow Corning is making an impact.

[> Full Story](#)

### Helping Wounds to Heal

Silicone products from Dow Corning are being used in innovative solutions that help people to heal. Dow Corning is partnering with leading manufacturers of wound management products, and has helped to deliver various commercial applications to-date. Two of these applications are:

- ◆ Wound dressings coated with a soft, silicone adhesive help maintain a moist wound environment for more effective healing. The silicone layer seals around the wound, while preventing the absorbent gauze pad from sticking to the wound. And best yet, it makes dressing changes easier, with less pain for the patient and minimal damage to fragile surrounding skin.
- ◆ Scar care dressings made from self-adherent, soft silicone are used to manage the appearance and reduction of old and new scars.

Wound management with silicones ... just another example of Dow Corning innovation.

[> Full Story](#)



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AMBRI/AMBRI

# Innovation

## harnessing the Power of Plasma

Often called the fourth state of matter, plasma is a gas that is ionized through an energy source such as heat, radio frequency or electrical discharge. Although the sun, stars and flames are plasmas, not all plasmas are hot. In fact, cool plasmas are finding increasing use in industry. And Dow Corning's Plasma business is providing innovative, globally integrated solutions to help customers in many industries harness the power of plasma.

Dow Corning Plasma combines specially developed Atmospheric Pressure Plasma (APP) equipment with patented process know-how to help deliver solutions to customers – using less energy than other processes and avoiding harmful chemicals.

In industry, Dow Corning's plasma technology is used to:

- ◆ “Activate” the surfaces of plastics, ceramics and other materials, preparing them for better “wetting” and coverage of paint, glue or ink.
- ◆ Deposit highly specialized coatings in a variety of applications – from water-repellent treatments for fibers, to soil-resistant coatings on fabrics, to corrosion-resistant finishes on metal foils.

[> Full Story](#)

## Working for Our World – Silicon Biotechnology

While it may sound like something from a science fiction novel, Silicon Biotechnology™ is a very real innovation that may soon be working for our world. As part of their SiBio Tech Alliance to create a new, proprietary Silicon Biotechnology platform, Dow Corning and Genencor International, Inc., have established a business venture to pursue biosensor market opportunities.

By detecting minute chemical changes in the environment, biosensors show potential as sophisticated tools for bio-warfare threat analysis. Development of biosensors by the SiBio Tech Alliance is expected to progress quickly, because of a technology license acquired from the Australian company AMBRI, Ltd. AMBRI developed a biosensor device for use in professional medical diagnostics, which the alliance will investigate for possible commercialization in its target markets. These not only include bio-warfare threat analysis, but also consumer in-home medical tests, drug discovery, veterinary diagnostics, and environmental and home monitoring of air, water and food.

[> Full Story](#)

*We help you invent the future.™*



AMBRI/AMBRI

# Challenges

On our journey to sustainability, there will inevitably be challenges – some that we have already identified and others that will be uncovered along the way. These are some that we know we will be addressing ...

**Managing American Chemistry Council (ACC) performance metrics** – To manage the collection and reporting of enhanced performance metrics from the ACC in a way that complements global data collection regarding our environmental footprint.



**Tracking social investment** – To meaningfully track and report on our social involvement and the investments we are continually making in our communities, beyond the scope of the local press release.

**Integrating sustainability company-wide** – To integrate sustainability into a corporate culture that is spread over varying geographies with unique positions and perspectives, as well as into the strategies of our individual businesses.

**Extending Safety Brilliance** – To extend this new program to develop a safety mindset within our employees ... a mindset that pervades our entire corporate culture while also emphasizing and honoring attitudes and practices of specific geographic cultures.

**Collecting emissions data** – To manage the process of GHG emissions collection to capture emissions experienced at the end of the value chain (Scope 3), during product use, waste management and recycling.

**Monitoring waste reduction** – To monitor the results of myriad waste management projects occurring throughout this global corporation.

## Keeping the Promise

In this report, we have presented an overview of our sustainability performance and activities at Dow Corning. But this is only a beginning. Sustainability will remain at the core of our visioning process, playing a central role in our decision-making in the days and years ahead. I am personally committed to assuring that this happens.

As we look to the future, we will be working to create new opportunities for growth that will also drive us toward heightened levels of social and environmental performance. This will include exploring solutions to today's world challenges – such as alternative energy. It will mean expanding in new geographies, bringing life-changing technology to evolving nations. And, it will involve a continued focus on the breadth of the markets we serve, each one bringing new benefits to the people of our global society.

We will be engaging our employees to embrace the importance of sustainability as we continue to grow. We believe that a focus on behaviors will create the broadest possible foundation for a sustainable approach to business. To ensure that our commitment moves forward, we will integrate sustainability into our business strategies, day-to-day activities and each individual leader's responsibilities.

Together, the people of Dow Corning will continually renew the promise of sustainability as we live our Values. We will push toward increased levels of transparency and openness, fostered by meaningful feedback from our stakeholders and candid dialogue with our communities.

I look forward to such dialogue and wish to thank you for joining us in these pages.

Sincerely,



Stephanie A. Burns, President and Chief Operating Officer



### To learn more

More detailed information on some of the entries in this report are provided in our online Sustainability Summary. Check out [dowcorning.com](http://dowcorning.com) to learn more.

## 2002 Dow Corning Sustainability Summary Report

This is the first Sustainability Summary Report for Dow Corning, providing information on our economic, environmental and social performance. Wherever possible, information and data were included up to the time of report preparation (December 2002). Data in this report may change, however, due to updated information received after publication.

This report has adopted some aspects of the Global Reporting Initiative (GRI), 2000 version. Through our involvement in the World Business Council on Sustainable Development, Dow Corning has been closely tracking the development of GRI standards. For more information on the GRI, see [www.globalreporting.org](http://www.globalreporting.org).

You can find this report, with expanded sustainability information and comprehensive information regarding many aspects of Dow Corning's business, on our corporate website, [www.dowcorning.com](http://www.dowcorning.com).

Contact Us:

For additional information or questions:

Attn: Corporate Sustainability  
Dow Corning Corporation  
P.O. Box 994  
CO 1252  
Midland, MI 48686-0994

Or fax to:

Attn: Corporate Sustainability  
989-496-4393

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## **Integrating Responsible Care into Our Business Strategies**

At Dow Corning, our commitment to Responsible Care<sup>®</sup> has remained strong since our initial involvement in the late 1980s. Our expression of that commitment, however, has changed – growing from a simple response to the program to become an integral, proactive part of our business strategies.

Today, Dow Corning has not only achieved practice-in-place (PiP) status for all three of our geographic areas, but also for seven business units: Core, Engineered Elastomers, Advanced Materials, New Ventures, Specialty Chemicals, Life Sciences and Semiconductor. Newly acquired businesses, including Multibase, each have integration plans identifying their Responsible Care<sup>®</sup> transition activities.

An assessment of PiP status is performed annually, with a Business Unit or Region considered to be PiP if its overall score is 90 percent or greater. Overall scores are an average of the scores for each of the six Responsible Care<sup>®</sup> Codes. These are:

- Community Awareness and Emergency Response
- Product Stewardship
- Distribution
- Pollution Prevention
- Employee Health and Safety
- Process Safety

With PiP achieved, our continuous improvement efforts are expected to improve any individual codes that are at less than 90 percent, and maintain performance in those individual codes that have achieved the 90 percent or greater standard.

## **Sites Recognized for Responsible Care<sup>®</sup> Achievements**

As we grow globally, Dow Corning is also able to help extend the reach of the Responsible Care<sup>®</sup> ethic. The following sites have recently received recognition for their work in this regard:

- In 2002, the Tarapur Management Association in India recognized our Tarapur, India, plant for its EH&S best practices, including safety audit practices/formats, a new process audit system, safety meetings and overall housekeeping.
- As a founding member of the Korea Responsible Care<sup>®</sup> Council, our Jincheon, Korea, plant is supporting other sites that want to understand the program benefits and implementation routes. In 2001, the site took a lead role in a Responsible Care<sup>®</sup> training session held in Yosu.
- The Barry Site received the United Kingdom Chemical Industries Association (CIA) Responsible Care<sup>®</sup> Award in 2000, in recognition of outstanding EH&S performance. From 300 CIA members, only 32 were selected as contenders for the award. Dow Corning was then named the top recipient from among three finalists, based on employee safety records, chemical releases, distribution performance, energy consumption, communications with employees and surrounding communities, and other measured criteria.

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## **Dow Corning Science Week Building Children's Love for Learning – In the Lab**

Each year, more than 200 local schoolchildren converge on the Dow Corning site in Barry, South Wales, for a week of specialized learning. There, these eager young students have the opportunity to become “scientists for the day” as part of Dow Corning’s participation in National Science Week in the United Kingdom.

Dow Corning employees from all areas of the site work with the students, leading a variety of hands-on activities and real-life scientific experiments. A team of employees from research, quality assurance and community relations has taken on the important job of planning the experiments and activities.

The practical experiments give children insight into how a company handles projects, and provides them with valuable experience in solving a realistic problem for an imaginary customer. In line with Dow Corning’s commitment to high standards of safety and health performance, the children receive safety instructions and are required to wear full protective clothing.

Dow Corning representatives work with education advisers and teachers to design the National Science Week activities, which are aimed at children ages nine and 10. The theme changes each year, focusing on an element of the UK’s National Curriculum. In the past, and as part of National Science Week, the site has also donated science equipment to the schools so they can conduct their own activities.

### **A History of Care**

Dow Corning has organized National Science Week events for five consecutive years, in coordination with the British Association for the Advancement of Science and supported by the Office of Science and Technology. This involvement has brought praise from teachers and politicians, and was a factor in the decision of the UK Chemical Industries Association to award its 2000 Responsible Care Award to the Barry site. The judges commented that Dow Corning “... *had established an outstanding relationship with its local community.*”

The site’s National Science Week program was born after a survey of the community indicated the residents’ interest in increased support for local education. In follow-up discussions with educators, Dow Corning representatives learned that teachers wanted help in improving students’ understanding of science, overcoming negative perceptions and encouraging science as a future career.

Dow Corning’s involvement in National Science Week provides teachers and parents with insight into the company and has become a focal point within a broader program supporting local schools, teachers and students. But perhaps the biggest benefits of the program can be seen in the young students it reaches ... the excitement generated as they make discoveries in the lab, and the pride that they feel in the skills they have learned as “scientists for the day.”

*The Dow Corning site at Barry, South Wales, is part of Dow Corning Corporation. Approximately 600 people work at the site, making it one of the area’s major employers. Dow Corning ([www.dowcorning.com](http://www.dowcorning.com)), which develops, manufactures and markets diverse silicon-based products, currently offers more than 7,000 products and services to customers around the world. Dow Corning is a global leader in silicon-based materials with shares equally owned by The Dow Chemical Company and Corning Incorporated.*

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## **CBCC Partners with Landowners to Help Reforest Brazil**

An innovative partnership in Brazil is working to promote reforestation in rural farmland areas. CBCC, a subsidiary of Dow Corning Corporation in Brazil, has been working with local landowners and the Brazilian Forest Authorities to manage the Forest Farmer Program.

The Forest Farmer partnership utilizes economically and environmentally sound practices to manage the growing, nurturing and harvesting of trees. Rural landowners are taught these sustainable forestry practices and work to grow trees in areas that are inadequate for growing crops or raising cattle. In this way, they can earn an income without compromising the land, and the area is provided with an abundant growth of trees.

Along with the benefits already mentioned, the Forest Farmer initiative is working to:

- Conserve soil, air and water quality; wildlife and fish habitat; and beautiful land
- Promote more productive land use
- Create employment opportunities and improve the economy in areas where the farms are located
- Integrate rural and industrial concerns

CBCC is a significant producer in the ferroalloys industry, with unique capabilities to become one of the largest producers of chemical-grade silicon metal. The company uses charcoal made from locally harvested trees to reduce oxides in its manufacturing furnaces. Within the reforestation project, CBCC provides administration, technical assistance, financial support and consultation.

“This pioneering program, developed by CBCC, is considered a model by the Brazilian Forest Authorities. More than 17,000 acres of forests have been planted through more than 800 projects in 60 counties near our plants,” said Marco Antonio Jordão, president of Cia. Brasileira Carbureto de Cálcio, CBCC. “We take the program very seriously, as we believe sustainable development is key not only to the financial health of our company, but also to the environment and future generations.”

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## **Low Rolling Resistance for High Performance Tires – How Dow Corning is Making a Difference**

The ability to grip the road in wet conditions... dependable braking... good tread wear... reasonable life... these are the things that make a good tire. Also on the list these days is rolling resistance – the force generated by the tire that hinders the forward movement of a vehicle.

Low rolling resistance is a critical factor in a tire's performance, equating to a smoother, more energy-efficient ride. Dow Corning is applying its silane manufacturing capabilities to help tire manufacturers lower their production costs for these environmentally friendly tires, which incorporate precipitated silica and Dow Corning's polysulfidosilanes.

Back in 1998, a major tire manufacturer sought Dow Corning's assistance in commercializing new technology for making polysulfidosilanes. Naturally, we embraced the opportunity, forming a multi-functional team to tackle several analytical, chemistry and process issues and meet aggressive commercialization timelines.

Team members applied a combination of creativity and fundamental science to optimize the technology and address quality and efficacy issues, moving from lab to pilot to batch scale in about six months (excluding a delay for regulatory approval). Since that time, Dow Corning has entered into commercial supply agreements, trials and negotiations with other major tire producers and specialty rubber companies, as well.

Consumer awareness is growing regarding the importance of tires and their role in the safety, performance and fuel efficiency of a vehicle. And now, with concerns about oil and gasoline prices high in our global consciousness, low rolling resistance tires will no doubt just keep rolling off of the production line – and onto the world's highways.

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## **Why Silicones Work for Wound Care**

Silicones maintain a moist environment that helps prevent wounds from drying out, while also letting oxygen in to encourage healing. This helps to create the appropriate environment to facilitate healing when used in wound care products.

Some of the silicone adhesives used in wound dressings can be repositioned without losing their adherent properties. Removal of dressings with these types of silicone adhesives doesn't strip cells away from the epidermal layer of the skin, allowing for gentle removal.

Silicone promotes patient comfort, because it is soft and comfortable, non-irritating and non-sensitizing. It can be used in dressings for a wide range of traumatic wounds, tears, abrasions and burns.

Of course, wound care is just one example among many healthcare applications of silicone technology. Dow Corning has always been a healthcare innovator ... for the sake of our customers and the patients they serve. In medical devices, Dow Corning pioneered the use of silicone in hydrocephalic shunts and as a coating for pacemaker leads. In pharmaceuticals, our technology has proved its worth in the development of antigas products, transdermal drug delivery systems and tubing used in drug manufacturing.

As we look toward a sustainable future, Dow Corning sees countless opportunities to use our proven materials and service expertise to help pharmaceutical and medical device companies improve the quality of life around the world.

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## Plasma as a Sustainable Solution

Back in October of 2001, Dow Corning acquired the plasma-related assets of Plasma Ireland Ltd. This acquisition led to the creation of a new business entity, Dow Corning Plasma Solutions, which offers a package of technology, licensing, equipment, service and materials in the field of Atmospheric Pressure Plasma (APP). Dow Corning Plasma Solutions is providing real Triple Bottom Line benefits today, and promises exciting developments for tomorrow.

### Social

- Dow Corning's investment in County Cork, Ireland, demands highly skilled people and is very much in line with the Irish Government's strategy of attracting technologically advanced investments to the country.
- The new Plasma R&D Center is expected to create approximately 60 new jobs by 2006.

### Environmental

- Plasma processes deliver high performance with very thin coatings, so only very small quantities of coating raw materials are required.
- The process is dry and solvent free, with virtually no waste.
- Energy consumption is limited to electrical power for production of the plasma, which is typically much less than the power requirements of conventional drying ovens.

### Economic

- Dow Corning has invested more than 3 million dollars in developing APP technology.
- We believe our technology has the capability to revolutionize surface engineering, ensuring competitive advantage and creating value for our customers in many industries.
  - We are working with customers in the textiles industry to increase the adaptability of materials – for instance, textiles that once could only *absorb* humidity can now be modified to *repel* it instead, and vice versa.
  - In the electronics industry, we are creating adhesion priming for incompatible materials.
  - In the films industry, we are interested in enhancing barrier properties to gases and humidity, while providing potentially significant cost benefits over currently used processes.

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## **The Science and Opportunity of Silicon Biotechnology**

While the first business venture of the SiBio Tech Alliance is pursuing commercialization opportunities for biosensors, this is only one part of the work being done under the new Silicon Biotechnology™ platform created by Dow Corning and Genencor International, Inc.

The alliance between the two companies combines Dow Corning's materials science expertise as the world's largest manufacturer of silicon materials with the biotech expertise of Genencor to tap into exciting new opportunities. Products developed by the Alliance will be commercialized jointly, with the partners sharing the profits.

The possibilities in this area are vast, including:

- Innovative personal care, fabric care and cleaning products with unique attributes seem a likely fit for Silicon Biotechnology innovations.
- Delivery systems in which silicon and biological materials are combined to deliver active ingredients for application in various markets are possible – for instance, controlled drug delivery systems and new biopolymers.
- Silicon Biotechnology may also help researchers to understand the molecular biology of marine organisms and microorganisms that generate energy, respond to light, and move toward or away from specific molecules. By better understanding the molecular biology behind these characteristics in natural organisms, it may be possible to model them and harness them for use in nanoscale devices.

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