



The Chemical Company

**Statement of J.D. Purvis
Site Manager, BASF Wyandotte Facility
Michigan House of Representatives
Committee on New Economy and Quality of Life
June 10, 2009**

Mr. Chairman:

I am pleased to be here today as a representative of BASF Corporation to discuss the manner in which our company, in particular our site in Wyandotte, Michigan, sees business opportunities in the new economy and how these opportunities can improve the quality of life for the residents of Michigan, the people of the United States, and humanity around the globe. My statement today will focus on some of our products and their sustainability; how BASF products are being used to safeguard our environment and ensure a better future for generations to come. BASF thanks you, Mr. Chairman, for your invitation to testify, and for your leadership in promoting Michigan's innovation.

About BASF Corporation: BASF Corporation is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF is the world's leading chemical company: ***The Chemical Company***. Our portfolio includes chemicals, plastics, performance products, agricultural products and fine chemicals. As a reliable partner to virtually all industries, BASF's high-value products and intelligent system solutions help its customers to be more successful. BASF develops new technologies and uses them to meet the challenges of the future and open up additional market opportunities. We combine economic success with environmental protection and social responsibility, thus contributing to a better future. BASF presently operates facilities, including manufacturing sites, research facilities, and distribution centers, in more than 30 states, employing 15,000 people.

BASF in Michigan: BASF provides approximately 1,400 jobs in the state of Michigan. Our major Michigan facilities are located in Wyandotte, Livonia, Southfield, and Mattawan. They reflect the diverse aspects of our businesses, including construction chemistry, automotive, plastics, and products such as insulation that help make our homes safer and more energy efficient. Our employees are regular contributors to our sites' local communities.

About BASF in Wyandotte: Our facility in Wyandotte, is by far the largest of the BASF sites in Michigan. We employ approximately 1,000 people. Upon the completion of our new resins plant, we will have added approximately 150 jobs. Our facility is located approximately 10 miles south of downtown Detroit in Wyandotte and on the banks of the Detroit River. Chemicals have been manufactured on the site for more than one hundred years. BASF's ownership goes back to 1969. As with every BASF site around the globe, our primary focus is on the safety of our employees and on the safety of the communities

that surround our facilities. We work on a regular basis with our local governments on issues key to all our stakeholders.

BASF in Wyandotte consists of four manufacturing plants, business offices, R&D facilities, laboratories, and engineering and maintenance offices that service not only our site, but other BASF locations throughout the country. Among the products we make in Wyandotte are the following:

- Polyurethanes: Used in instrument panels, dashboards, carpet padding, seat cushions, insulation.
- Jounce Bumpers: Reduce vibration and "bottoming out" in automobiles.
- Specialty Plastics: Used to manufacture intake manifolds, electrical connections, headlight and mirror housings, oil pans.
- Thermo Plastic Urethanes: Used to make ski boots, in-line skates, industrial tubing.

BASF in Wyandotte supports many local charities and non-profit organizations. Our employees are also active in many community outreach activities. The site has also received the Southern Wayne County "Quality of Life Image Award," Henry Ford Wyandotte Hospital "Lifetime Achievement Award," and the Downriver Council for the Arts "Salute to Excellence Award."

BASF's Commitment to Sustainability: For a business such as ours to succeed in the new economy, its focus must be on sustainability, specifically the safeguarding of our climate and our environment. In the words of Dr. Jürgen Hambrecht, chairman of the BASF SE Board of Executive Directors, "A business cannot be successful in the long term if it does not act responsibly toward the environment and society. That is why sustainability is an integral part of our strategy." BASF spends globally about one-third of our total research and development budget in the areas of energy efficiency, climate protection, resource conservation and renewable raw materials.

Perhaps there is no better indication of BASF's ongoing commitment to climate protection and our desire to combine it with economic success than the fact that, globally our products save three times more CO₂ than is produced by the manufacture and disposal of all of these same products. This means that BASF has virtually a negative carbon footprint. The total impact of BASF products was determined through the use of eco-efficiency analysis – a widely accepted methodology certified by the U.S. National Science Foundation. As a rule, the eco-efficiency analysis covers the entire product lifecycle and measures a variety of ecological factors and impacts. The results demonstrating the emission reduction reality of our products were confirmed by the Öko-Institut, a leading European research and consultancy institution working for a sustainable future, at <http://www.oeko.de/home/dok/546.php>.

BASF Corporation has won a number of awards for its work in sustainability and climate protection, including the Presidential Green Chemistry Award, which was given by the U.S. Environmental Protection Agency for our Eco-Efficiency Analysis; and the New Jersey 2006 Governor's Environmental Excellence Award. BASF is also a member of the Clinton Climate Initiative.

Other Examples of BASF Sustainable Products: Here is just a small sample of BASF products that promote sustainability in the new economy:

- **Agriculture:** A nitrification inhibitor that allows the farmer to use fertilizer more efficiently and reduces N₂O emissions significantly.
- **Wind Power:** Epoxy resin-based composite materials that make for lighter rotor blades, which in turn increase the performance and output of modern wind turbines.
- **Automotive Emissions:** Catalysts that reduce emissions for both gasoline and diesel powered vehicles.
- **Transportation:** Plastics that make automobiles lighter, which improve fuel efficiency and reduce carbon emissions. Also, fuel additive packages reduce pollutant emissions by 20 percent and improved average fuel economy by 2 percent.

BASF Chemistry for the new economy is also moving into areas that were once restricted to science fiction.

- Organic solar cells, which instead of very costly high-purity silicon used in conventional solar cells, use organic compounds to trap the sunlight and turn it into electrical energy.
- Fuel cells that act like a small chemical factory and use a hydrogen and oxygen reaction to produce water vapor, thereby generating electricity and heat.
- Lithium ion batteries that can not only be recharged faster than other available batteries, they are also capable of storing electricity more efficiently, meaning they are also much lighter. The new lithium ion battery technology is intended mainly for transportation applications, such as hybrid automotive propulsion systems. The use of lithium ion batteries together with an internal combustion engine makes propulsion significantly more efficient in energy terms – a hybrid automobile can help save up to 20 percent fuel and the associated CO₂ emissions.



On September 30, 2008, at the Stuttgart airport, the German Aerospace Center (DLR) presented the first manned airplane that can take-off and fly exclusively with a fuel cell. The innovative fuel cell, based on a high temperature polymer electrolyte membrane (PEM), generates power for the electric engine of the motor glider Antares DLR-H2. The aim of the project is to evaluate the potential of the technology for future applications in commercial aircraft.

Wyandotte, the New Economy, and Quality of Life Products: I want to conclude with three specific examples of what we consider to be new economy products, demonstrating how our Wyandotte employees, people of the state of Michigan, continue to contribute directly to improving the quality of life.

(1) Elastocoast® - This product is a coastal protection system, made at Wyandotte. It is meant to help deal with the violent storms and flooding that have resulted from changes in our climate. BASF's Elastocoast® polyurethane (PU) bind rocks to form an open pore, composite structure that can be a solution to the problems faced by traditional materials. Rocks are coated with the PU mixture and placed in the desired location. The PU gels and quickly bonds the contact points of the rocks to each other. Within 24 hours the structure is resilient and stable. These coverings represent the first line of defense in the fight against the sea, protect the dike by absorbing the force of the breaking waves and slow down the water masses. The completed structure is open pore, which provides several advantages such as stability across freeze/thaw cycles, permeability and the dissipation of impact energy from waves. And, as an added bonus, the new structure can serve as a home to aquatic life. BASF Elastocoast® consists of more than 50% renewable components.

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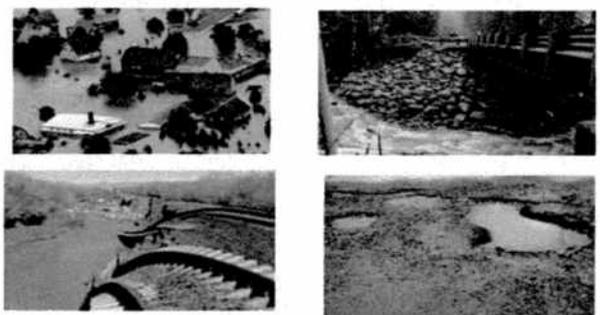
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The Need For Elastocoast

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Deichbruch bei Torgau

In the US and most other countries the infrastructure to manage water is ineffective, outdated or non-existent

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Elastocoast Polyurethane Project History

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- 2002 R&D project in Germany
- 2003 -2005 Demonstration projects in Germany
- 2006 Commercial Launch in Germany
- 2007 First North American Installation on Fighting Island
- 2008 Cooperative Research and Development Agreement with USACE
 - Develop design criteria for US
- 2008 Installation at BASF Waterfront Park



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The Elastocoast® technology can also be used in an number of other areas, including railroad tracks, pavement, and landscaping.

The Elastocoast® Family of Products

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Elastotrack®

Elastocoast®

Elastopave™

Elastoscape™

- Open pore
- Allows water & air to flow through
- Strong, elastic thermo-set binder
- Color and pattern from aggregate
- 100% solids, no VOCs
- Binder is over 50% renewable
- Easy to install
- Stable to freeze-thaw cycles

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(2) Insulation – Energy efficiency starts at home. It happens by ensuring that a home has a tight building envelope, *i.e.*, the foundation, roof, walls, doors, and windows of a structure, which protect the indoor environment from the outside and allow for climate control. At BASF in Wyandotte, we make polyurethane foams. Properly applied, polyurethane foams can effectively control air leakage, and reduce drafts and noise between walls and floors. They outperform EPS and fiberglass, with an R-rating of 6.7 per inch, they increase the strength of composite building materials, and are resistant to moisture, mold, mildew and insects. Perhaps best of all, polyurethane insulation foams allow for downsizing of HVAC equipment (compared to conventional insulation), saving money and helping to reduce CO₂ emissions to the environment.

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Polyurethane For Building Insulation

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Buildings consume:

- 70% of all electricity
- 40% of all energy
- 28% of all water
- 30% of wood + materials

Buildings produce:

- 35% solid waste to landfills
- 40% CO₂ emissions
- 45% SO₂ emissions
- 19% NO_x emissions
- 10% fine particulate emissions



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Draw AutoShapes

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BASF Polyurethane Insulation Foam

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- Can be sprayed or poured
- Typically doubles the R-value vs. conventional fiberglass
- Serves as air barrier
- Mold resistant
- Increases structural strength



- Under consideration by U.S. Department of Defense

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Draw AutoShapes

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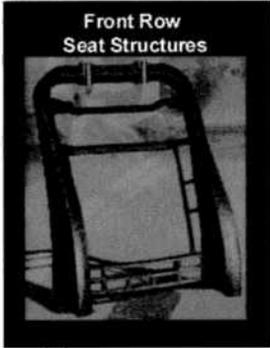
(3) Plastics in Automotives – BASF products made here in Michigan will help America reach the new automotive mileage standards recently announced by President Obama. We work closely with leaders in the automotive industry. Lightweight plastics that are used in automotive seating reduce the mass of the seat, which in turn makes the vehicle lighter. Thin profiles provided by innovative plastics also allows for the vehicle architecture to be redesigned potentially saving more mass by shrinking overall vehicle length. This has been estimated to be up to 10 lbs of additional mass reduction for a typical sedan. Due to the high potential for weight reduction, other components of the vehicle may also be reduced in size and mass (power train, vehicle body for example).

Plastics in Automotive Seating

Light-Weight, Low-Cost Construction



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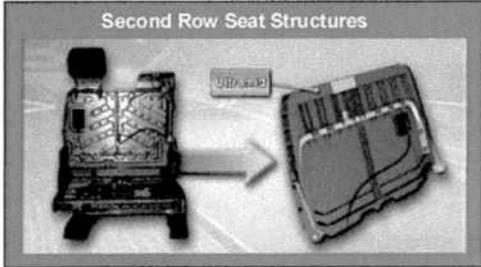
Front Row
Seat Structures

Benefits of Composite Seat Structures

- Weight Reduction - Up to 50%
- Thin Profiles – Space Savings
- Contoured Profiles – Foam Reduction
- Reduced Manufacturing Footprint
- Potential for Mass Decoupling



Seat Pans



Second Row Seat Structures

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Typical question for help

100%

Body Structural Weight Reduction
Compared to Metal Design
A Total of 15.8 kg (34.8 lbs)

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Brackets
0.9 kg X 2 = 1.8 kg
(50% reduction)
Ultramid®, Ultradur®

Pillars
1 kg X 2 = 2 kg
(50% reduction)
Ultramid® B3WG6 CR

Roof Bow
1 kg
(50% reduction)
Ultramid® B3WG6 CR

Bumper Beams
0.5 kg x 2 = 1 kg
(20% reduction)
Ultramid® B3WG6 CR

Structural Components
At least 10 kg
(35-50% reduction)
Ultramid® A or B CR

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BASF Design

English (U.S.)

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Conclusion: Thank you very much, Mr. Chairman, for the opportunity to appear before you and your colleagues on this committee. I've just given you a snapshot of how our products fit into the new economy and improve quality of life. BASF chemistry, chemistry made right here in Michigan is a solution to making our lives better, and we look forward to working with the State Legislature to make Michigan a better place to live and work.

