CSR und Umweltschutz in der Supply Chain der BASF

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Director Sustainability Center
BASF Aktiengesellschaft

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CSR Multistakeholder Workshop
BASF in brief
Facts and Figures

- BASF is the world’s leading chemical company with...
  - customers in more than 170 countries
  - production sites in 41 countries
  - more than 81,000 employees

- In 2004, BASF posted sales of Euro 37.5 billion and income before special items of approximately Euro 4.9 billion

### Sales by segment (2004)

<table>
<thead>
<tr>
<th>Segment</th>
<th>Sales (Million EUR)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chemicals</td>
<td>7,020</td>
<td>18.7</td>
</tr>
<tr>
<td>2 Plastics</td>
<td>10,532</td>
<td>28.1</td>
</tr>
<tr>
<td>3 Performance Products</td>
<td>8,005</td>
<td>21.3</td>
</tr>
<tr>
<td>4 Agricultural Products &amp; Nutrition</td>
<td>5,147</td>
<td>13.7</td>
</tr>
<tr>
<td>5 Oil &amp; Gas</td>
<td>5,263</td>
<td>14.0</td>
</tr>
<tr>
<td>6 Other</td>
<td>1,507</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Σ</strong></td>
<td><strong>37,537</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
## BASF’s products

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>Inorganic specialties; electronic-grade chemicals; glues; resins; petrochemical feedstocks; plasticizers; amines; diols; polyalcohols; carboxylic acids; specialty intermediates</td>
</tr>
<tr>
<td>Plastics</td>
<td>Styrene; styrene-based polymers and copolymers; caprolactam and nylon; engineering plastics; polyurethane basic materials and polyurethane systems; specialty elastomers</td>
</tr>
<tr>
<td>Performance Products</td>
<td>Raw materials for detergents, textile and leather chemicals; pigments; printing inks; fuel and lubricant additives; automotive OEM and refinish coatings; industrial coatings; monomers; superabsorbents; adhesive raw materials; paper chemicals</td>
</tr>
<tr>
<td>Agricultural Products &amp; Nutrition</td>
<td>Herbicides, fungicides and insecticides; vitamins; pharmaceutical active ingredients; UV absorbers</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>Crude oil and natural gas (exploration, production and trading)</td>
</tr>
</tbody>
</table>
BASF in brief

Our products: The „Chemis-tree”

approx. 8 000 sales products

major base and intermediate products
approx. 200

raw materials

- crude oil
- rock salt
- phosphate
- natural gas
- sulphur
- water
- air
- ores
### BASF’s sales by customer industry

Percentage of sales in 2003 from ongoing business including Oil & Gas

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 15%</td>
<td>Chemical (not for consumer goods)</td>
</tr>
<tr>
<td>10 – 15%</td>
<td>Automotive, Energy, Agriculture</td>
</tr>
<tr>
<td>5 – 10%</td>
<td>Construction</td>
</tr>
<tr>
<td>&lt; 5%</td>
<td>Carpets, Cosmetics, Detergents and cleaning agents, Electrical/electronics, Furniture, Health, Leather</td>
</tr>
<tr>
<td>Other industries</td>
<td>Packaging, Paper, Printing, Textiles</td>
</tr>
</tbody>
</table>

**Other industries: approximately 12% in total**
Global presence

- Geismar
- Antwerp
- Ludwigshafen
- Nanjing (Start-up in 2005)
- Kuantan
- Freeport
- Verbund site
- Major production site
“For us, sustainable enterprise means combining economic success with environmental protection and social responsibility, thus contributing to a high quality of life for coming generations.”

CEO, Jürgen Hambrecht

CSM is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis (EU Commission)
Shaping the future – Strategy BASF 2015

- Earn a premium on our cost of capital
- Help our customers to be more successful
- Form the best team in industry
- Ensure sustainable development

BASF – The Chemical Company
Sustainability Management

Sustainability Council
8 division presidents

Regional Steering Committees
(Asia, North-America, South America, Europe)

Project team
Project team
Project team
Project team
Long-term global environmental goals

**2012 goal**
- Greenhouse gases per metric ton of sales product: $-10\%$
- Air pollutants: $-40\%$

**2012 goals**
- Emissions of nitrogen to water: $-60\%$
- Emissions of organic substances to water: $-60\%$
- Emissions of heavy metals to water: $-30\%$

**2008 goal**
- Lost time accidents: $-80\%$
- Transportation accidents: $-70\%$

By 2008, we want to extend our data even further so that we will have all relevant information on all substances that we handle worldwide in volumes of more than one metric ton per year.
Example: Greenhouse Gas Emission Savings through BASF Products

- CO₂ savings through innovative products are higher than emissions

BASF emissions 2003: 24 million t (CO₂ equivalents)
Savings through BASF products: -138

Bar chart showing savings through BASF Group, EPS in heat insulation, fuel additives, and plastics in automotives.
New technology “Integrated Process II” eliminates entire primer application section of coating line while retaining all of primer’s function

• Performed by a new water-based paint system

Benefits:
• Shortens the coating line
• Less solvents used
• Reduces volatile organic compound emissions
• Can be seamlessly integrated into existing plants
• Delivers a finish nearly identical to that of conventionally applied coatings
• Offers cost savings
Social Goals

- Increasing the proportion of non-German senior executives from a current figure of 30 percent to 35 percent by 2005
- Significantly increasing the number of female senior executives (currently around 5%)
- Establishing internationally recognized labor and social standards at all sites
- Establishing a monitoring system to measure all sites according to these standards
Global Standards

“Our goal is to build and operate plants in such a way that malfunctions are as unlikely as possible”

- Same stringent standards worldwide through a global binding process safety guideline
- Compulsory five-step review system for Safety, Health and Environmental Protection when planning plants
- A plant only starts up, when all protection concepts are implemented correctly
- Proper operation of plants controlled through our Groupwide RC Audit
Group-wide audits to ensure a high standard worldwide

Strategic tool to manage local, regional and global efforts in safety and environmental protection.

Audits in 2004:

- 88 environmental and safety audits carried out at 56 BASF sites
- 38 occupational medicine and health protection audits at 38 sites

Certified by Deloitte
Reporting & Transparency

- Reporting on targets and progress
- All-in-one Corporate Report
  - according to GRI
  - externally verified by DELOITTE Global Environment & Sustainability Services
- Up-to-date sustainability website www.basf.de/sustainability
- Sustainability newsletter three times a year

http://www.basf.de/en/corporate/sustainability
→ Strategic instrument for internal decisions.
→ Economic and ecological advantages and disadvantages of products and processes are jointly considered and compared.
→ Entire lifecycle taken into account.
→ Higher eco-efficiency means greater customer benefits with respect to costs and environmental burden.

**Example:** Production of vitamin $B_2$

<table>
<thead>
<tr>
<th></th>
<th>Costs</th>
<th>Environmental burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Chemical synthesis</td>
<td>0.4</td>
<td>Low eco-efficiency</td>
</tr>
<tr>
<td>2.  Biotechnological process</td>
<td>1.0</td>
<td>High eco-efficiency</td>
</tr>
<tr>
<td>3.  Low eco-efficiency</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>4.  High eco-efficiency</td>
<td>1.6</td>
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The BASF Eco-Efficiency Analysis
### Supply Chain: From Raw Material to Customer

<table>
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<tr>
<th>Supplier:</th>
<th>Contractor:</th>
<th>Logistic Partner:</th>
<th>Customer</th>
</tr>
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<tbody>
<tr>
<td>Raw Material</td>
<td>Repair Work</td>
<td>Tank Trucks</td>
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</tr>
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<td>Technical Goods</td>
<td>Transportation</td>
<td>Rail</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Installation</td>
<td>Bark</td>
<td></td>
</tr>
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- **Purchase** -> **Produce** -> **Transport** -> **Sell**
Our suppliers:

- Comply with our Safety Matrix Concept
- Meet safety, health and environmental protection requirements in accordance with Responsible Care® guidelines
- Do not use child labor and forced labor as required by the principles of the Global Compact
- Comply with our quality management requirements

<table>
<thead>
<tr>
<th>Product risk</th>
<th>Supplier risk</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>safe area I</td>
</tr>
<tr>
<td>B</td>
<td>safe area II</td>
</tr>
<tr>
<td>C</td>
<td>potentially high risk</td>
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Supplier Risk

**Category 1: OECD countries**

**Category 3: non-OECD countries**

As a result of stringent regulations and state verification measures, suppliers from OECD countries are initially allocated a low supplier risk (risk class 1). Suppliers from non-OECD countries are normally initially allocated to risk class 3, reflecting potentially the highest risk. Suppliers allocated to risk class 1 may, however, be downgraded to class 2 or 3 if there are reasons to suspect a higher risk or if the risk is increased by specific circumstances. Conversely, responsible suppliers maybe upgraded to a class indication a lower risk.
Product Risk: International standard classification

**Category C**
- **E**: explosive
- **T+**: very toxic
- **T**: toxic
- **C**: corrosive
- **F+**: extremely flammable

**Category B**
- **Xi**: irritant
- **O**: oxidizing
- **N**: environmentally harmful
- **Xn**: harmful to health
- **F**: highly flammable
C3: Decision Process

Supply important? (only supplier, advantages in costs)

Yes: indication of potential risk environment-/security-certificates plant inspection

Doubts eliminated?

Yes: better classification

No: detailed analysis plant inspection audit for environment support by environmental division (DU) catalogue of measures

No: Other supplier
Factory visit: First viewing

Evaluation of:

- Production: Status of plant and buildings, cleanliness and hygiene, employment protection...
- Environmental protection: effluent treatment, emissions to environment, waste management...
- Quality management: lab equipment, control of processes, documentation....
- Quality of management: knowledge of provisions, safety trainings, ...
- Logistics: stock-keeping, acquisition of raw materials, water and energy...
## Supply Chain:
**From Raw Material to Customer**

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Process</th>
<th>Transport</th>
<th>Sell</th>
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- Each construction area and contractor were individually assessed in the criteria agreed between General Contractor and BASF.

- There were also two overall assessments:
  - across all construction areas
  - average rating of the contractors

- Ratings ranges from 1: very good to 5: very weak
# Example of EHS Assessment

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating</th>
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<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td>PPE</td>
<td>2.0</td>
</tr>
<tr>
<td>Housekeeping</td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td></td>
</tr>
<tr>
<td>Working at height</td>
<td></td>
</tr>
<tr>
<td>Electrical safety</td>
<td>3.0</td>
</tr>
<tr>
<td>Rigging</td>
<td></td>
</tr>
<tr>
<td>Confined space/Hot work</td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Assessment</strong></td>
<td></td>
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Overall: 1.5  (previous: 1.9)

Improvement vs last audit
Deterioration vs last audit
Supply Chain: 
From Raw Material to Customer

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Purchase | Process | Transport | Sell
By 2012, we want to reduce transportation accidents by 70 percent compared with the value for 2003.

- Group-wide „Transportation and Distribution Safety Guidelines“ that go beyond legal requirements

- Global network of distribution safety officers. They ensure that national and international procedures are observed for all shipments

- Online Training Tools for employees and logistic partners
Global high standards also apply to China.

- Groupwide „Transportation and Distribution Safety Guidelines“ were translated into Chinese and implemented
- Regional and local TDS advisers trained and qualified
- Online training tool for staff and contractors developed
- Accident reporting tool implemented
- First audits along the lines of SQAS with transport companies performed
Global high standards also apply to China.

- Assessment tool for road safety implemented, first audits performed
- "Safety Concept China" for domestic transports by sea/inland waterway
- Installation of 24 hrs Emergency contacts