BASF – a sustainable investment

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President Environment, Health and Safety

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1 | BASF – The Chemical Company

2 | Sustainability – an integral part of our strategy

3 | Sustainability organization and issue management

4 | Our strategic goals

5 | Innovation for a sustainable future
We create chemistry for a sustainable future

Positioning

- Ludwigshafen, Germany
- Antwerp, Belgium
- Nanjing, China
- Kuantan, Malaysia
- Geismar, USA
- Freeport, USA
- Verbund site

Performance

- 10 years of strong sales and earnings growth
- 16% average annual dividend increase, >3% yield in every single year**
- ~€71 bn. market capitalization***

Perspective

- Chemistry as an enabler
- BASF has superior growth opportunities:
  - sustainable innovations
  - investments
  - emerging markets
- Ambitious financial targets

The #1 chemical company
- €72.1 bn. sales, €6.6 bn. EBIT bSI in 2012*
- ~€7.2 bn. sales from climate protection products 2012
- 6 integrated Verbund sites, production in 60 countries

* Restated numbers, reflecting IFRS 10/11 changes  ** for 2003-2012  *** as of December 30, 2013
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Sustainability will become even more important

Nine billion people in 2050 but only one earth

**SUPPLY**

Annual regenerative capacity of the planet

**DEMAND**

Human beings now demand more from the earth than can be regenerated

Earth’s resources

Consumption of Earth’s resources

1976

2010
Strategy – Our purpose
Sustainability is an integral part of our strategy

We create chemistry for a sustainable future
Unique Verbund concept
Sustainability through Verbund

<table>
<thead>
<tr>
<th>Energy Verbund</th>
<th>Logistics Verbund</th>
<th>Infrastructure Verbund</th>
</tr>
</thead>
<tbody>
<tr>
<td>€300 million annual cost savings</td>
<td>€600 million annual cost savings</td>
<td>€100 million annual cost savings</td>
</tr>
<tr>
<td>Verbund concept leads to a reduction in carbon emissions of 3.4 million metric tons per year</td>
<td>In Ludwigshafen we avoid transporting 7 million metric tons of freight every year</td>
<td>Verbund sites benefit from shared use of on-site facilities such as fire department, security, waste water treatment and analytics</td>
</tr>
<tr>
<td></td>
<td>This would equal roughly 280,000 fewer truckloads</td>
<td></td>
</tr>
</tbody>
</table>
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Strategy and management
Sustainability – a board-level responsibility since 2002

**Integrated steering body to leverage sustainability**

- **Board of Executive Directors of BASF SE**
- **Corporate Sustainability Board**
  - Chair: Margret Suckale
- **Sustainability Core Team**
  - Chair: Vice President Sustainability Strategy

**Corporate Sustainability Board (CSB)**
- Cross-functional steering committee
- Decides on the implementation of the sustainability strategy and cross-divisional initiatives
- Defines sustainability goals and approves corporate position papers on sustainability topics

**Sustainability Core Team**
- Supports the CSB to drive the implementation of CSB decisions
- Supervises the approved sustainability initiatives and performance measures
Strategic issue management
Systematic identification of important sustainability issues

* Study conducted in 2010
For more information see www.basf.com/materiality
Energy and climate
Helping our customers shrink their carbon footprint

Avoidance of emissions:
320 mn t CO$_2$e/a

**Emissions along the entire value chain [mn t CO$_2$e/a]:**

- **Raw materials:** 50
- **BASF production:** 25
- **Use of BASF end products:** 57
- **Disposal:** 16
- **Transport:** 4
- **Further sources:** 2

We help our customers to shrink their carbon footprint.

**Corporation Carbon Footprint 2012**

- BASF’s climate protection solutions sold in 2012 enable customers to reduce their CO$_2$ footprint by 320 mn t CO$_2$e/a
- Reduction in CO$_2$ emissions from own production by ~1 mn t CO$_2$e/a (25 mn t CO$_2$e/a in 2012, 26 mn t CO$_2$e/a in 2011)
- Climate protection products account for 9% of BASF Group sales (€7.2 billion in 2012, €6.7 billion in 2011)
- Ambitious goal for reducing specific GHG emissions in chemicals production: -40% (2002 to 2020)

**CO$_2$e emissions at customers [mn t CO$_2$e/a]:**

- Without the use of BASF products: 1,772
- With the use of BASF products: 1,452

**CO$_2$e emissions BASF production (GHG Protocol Scope 1&2):**

- 25 mn t CO$_2$e/a in 2012, 26 mn t CO$_2$e/a in 2011

**CO$_2$e emissions along the value chain (GHG Protocol Scope 3):**

- Without the use of BASF products: 1,772
- With the use of BASF products: 1,452
Global analysis of production sites conducted
- ~ 22% of sites are located in regions with high water stress
- These sites account for around 6.9% of BASF’s total water demand (but less than 1% of fresh water use)

Ongoing projects and partnerships
- Strategic partnership with the European Water Partnership
- Participation in the roundtable Water Supply and Agricultural Chemistry Cooperation since 2009

European Water Stewardship certificate
- BASF is the first chemical company to achieve gold-level certification according to the European Water Stewardship standard for its production site in Tarragona, Spain

Ambitious water goals for 2020
for the use of drinking water in production & sustainable water management at sites in water stress areas
Human capital development
Example: Employee center for work-life-management

Comprehensive expertise – Under one roof

- **LuKids – Combining career and family**: The nursery for children from 6 months to 3 years will be upgraded from currently 70 to 250 places until year-end 2014

- **LuFit – Health promotion and fitness**: A fitness and activity center with professional guidance and counseling services is established

- **LuCare – Employee assistance program**: A wide range of services such as debt and psychological disorders counseling are offered
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### Key financial targets 2015 / 2020

#### Growth targets
- Grow at least 2 percentage points above chemical production
- Sales ~€80 billion
- Sales ~€110 billion

#### Profitability targets
- Earn a premium on cost of capital of at least €2.0 billion on average p.a.
- EBITDA ~€14 billion
- EPS ~€7.50
- EBITDA ~€22 billion
## Ecology & social responsibility
### Targets overview

<table>
<thead>
<tr>
<th>Category</th>
<th>Status 2012</th>
<th>Target 2020</th>
<th>Safety, health and security</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy &amp; climate protection</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenhouse gases*</td>
<td>-31.7%</td>
<td>-40%</td>
<td>Occupational accidents</td>
</tr>
<tr>
<td>Energy efficiency *</td>
<td>+19.3%</td>
<td>+35%</td>
<td>Transport accidents</td>
</tr>
<tr>
<td>GHG emissions from gas transport</td>
<td>-22.1%</td>
<td>-10%</td>
<td>“Safety check” of products</td>
</tr>
<tr>
<td></td>
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<td>Health Performance Index**</td>
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<tr>
<td><strong>Emissions to air &amp; water</strong></td>
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<td></td>
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<tr>
<td>Air pollutants*</td>
<td>-63.1%</td>
<td>-70%</td>
<td></td>
</tr>
<tr>
<td>Organic substances*</td>
<td>-76.4%</td>
<td>-80%</td>
<td></td>
</tr>
<tr>
<td>Nitrogen*</td>
<td>-87.3%</td>
<td>-80%</td>
<td></td>
</tr>
<tr>
<td>Heavy metals*</td>
<td>-56.8%</td>
<td>-60%</td>
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<tr>
<td><strong>Water</strong></td>
<td></td>
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<tr>
<td>Drinking water for production</td>
<td>-23.2%</td>
<td>-50%</td>
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</tr>
<tr>
<td>Sustainable water management in water stress areas</td>
<td>+3.1%</td>
<td>100%</td>
<td>Establishment of personnel development</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td></td>
<td></td>
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<tr>
<td>Increase the number of:</td>
<td></td>
<td></td>
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<tr>
<td>Female executives***</td>
<td>11.9%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Non-German senior executives</td>
<td>33.8%</td>
<td></td>
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<tr>
<td>Senior executives with international experience</td>
<td>80.4%</td>
<td>&gt;80%</td>
<td></td>
</tr>
<tr>
<td>Establishment of personnel development</td>
<td>30,000</td>
<td></td>
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</tr>
</tbody>
</table>

*excluding oil and gas production  ** Highest possible score 1.0  ***Goal for Germany
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BASF growth fields focus on enabling technologies

<table>
<thead>
<tr>
<th>Customer industries</th>
<th>Chemistry as enabler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>Batteries for mobility</td>
</tr>
<tr>
<td>Construction</td>
<td>Heat management</td>
</tr>
<tr>
<td>Consumer Goods</td>
<td>Enzymes</td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td>Medical</td>
</tr>
<tr>
<td>Electronics</td>
<td>Organic electronics</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Plant biotechnology</td>
</tr>
<tr>
<td>Energy &amp; Resources</td>
<td>E-Power management</td>
</tr>
<tr>
<td>Water solutions</td>
<td>Wind energy</td>
</tr>
</tbody>
</table>

Growth Fields*

- Batteries for mobility
- Heat management
- Enzymes
- Medical
- Organic electronics
- Plant biotechnology
- Functional crop care
- E-Power management
- Wind energy
- Water solutions

Technology fields

- Raw Material Change
- Materials Systems & Nanotechnology
- White Biotechnology

* Including growth fields still under evaluation
Strong commitment to innovation
~€7.2 billion in sales from climate protection products

- Approx. 1/3 of our R&D expenditures is principally invested in projects for increased energy efficiency and climate protection.
- ~€7.2 billion in sales from climate protection products in 2012.
- ~10,500 employees in R&D.
- Research Verbund: About 1,950 partnerships with universities, start-ups and industry partners.

R&D expenditures in € billion

Key facts for sustainability

- 2012
- 2011
- 2010
- 2009
- 2008

Corporate Research - 23%
Oil & Gas - 2%
Agricultural Solutions - 25%
Functional Mat. & Sol. - 20%
Performance Products - 20%
Chemicals - 10%
Products and solutions for a sustainable future

- Biodegradable Plastics: Ecovio® and Ecoflex®
- Schizophyllan for enhanced oil recovery
- Insulation Material: Neopor®
- Hardening accelerator for concrete: X-Seed®
- Light-weight plastics for mobility
- Green Sense® Concrete Technology
BASF’s Green Sense® Concrete Technology supports a lower carbon footprint.

- BASF’s Green Sense® Concrete service optimizes concrete mixes which can reduce the ecological footprint, conserve resources and meet or exceed performance targets.

- The Green Sense® Concrete technology can utilize recycled materials like slag or fly ash with BASF chemical admixtures to replace cement clinker in concrete mixes.

- The following environmental savings were quantified for the construction of One World Trade Center:
  - ~15.8 million kg of CO₂ eq
  - ~25.4 million KWh of energy
  - ~860 tons of solid waste
  - ~1.17 million ½ liter bottles of water
Schizophyllan – Biopolymer for enhanced oil recovery

Key facts

- Schizophyllan – proprietary biopolymer
- Produced by a fungus in a pilot scale plant at BASF
- General principle:
  - Polymer added to injection water, which then becomes more viscous
  - Remaining oil is then more effectively pushed towards production well
  - Increased incremental oil recovery of up to 10% on waterflooding
Cross-divisional approach: ‘Smartforvision’
Technology competencies combined with customer know-how

- Lightweight tridion cell
- High performance foams
- Infrared-reflective film
- Infrared-reflective coating
- Solar roof with transparent organic solar panels and OLED modules
- E-textiles
- Multifunctional seat
- All-plastic wheel

Daimler & BASF concept car ‘Smartforvision’
One liter house with Neopor®

**CO₂ emissions of households**

- 24 million out of 36 million residential units were built before 1979 in Germany
- If modernized to a 7 L house the consumption of heating oil can be significantly reduced for a 100m² house:
  - 2000L (old) to 700L (modernized)
  - 6 ton CO₂ emissions (old)
  - 2 ton CO₂ emissions (modernized)
- Currently residential households consume ~ 14% of total CO₂ emissions in Germany or 120 million tons p.a.

**Best practice example with Neopor®**

- The BASF townhouse consumes only 1 L of heating oil per m² p.a.
- This can be achieved by applying:
  - 30 cm thick Neopor® boards to the walls
  - 50 cm thick Neopor® boards on the roof
  - Triple glazed windows
Eco-efficiency with Neopor®

Eco-efficiency analysis

- Looks at the entire life cycle
- Analysis gives equal weight on two aspects:
  - Environmental burden
  - Costs
- Compared with alternative products Neopor®:
  - Uses less energy in the production
  - Offers high insulation properties
  - Is very cost efficient
- Neopor® demonstrates very high eco-efficiency
Worldwide public recognition for sustainability and transparency

FTSE4Good

SUSTAINALYTICS

oekom research

Global ESG Leaders Indices