

Chemicals – Performance through chemical intelligence

 **BASF**

The Chemical Company



BASF Segment Day
Chemicals
July 2008, London

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1 | Chemicals

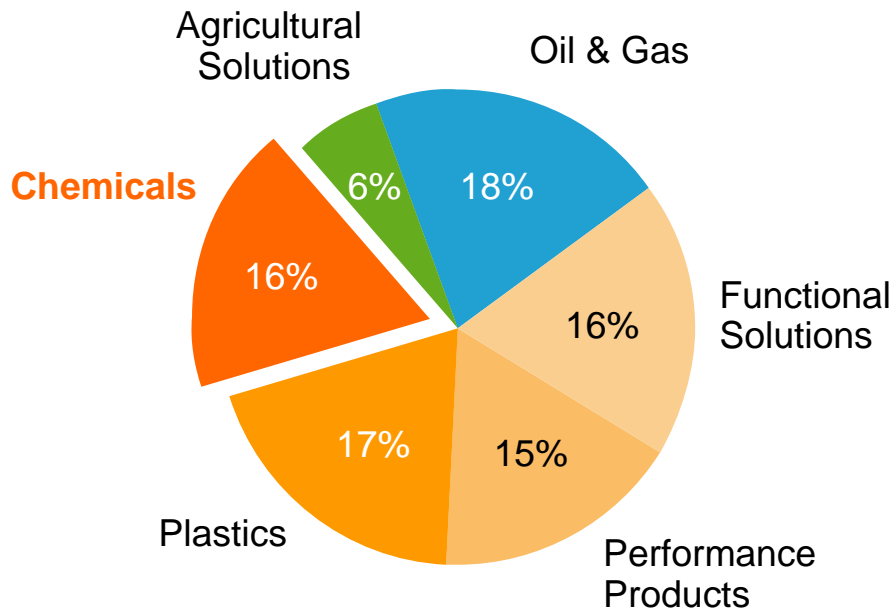
2 | Petrochemicals

3 | Inorganics

4 | Intermediates

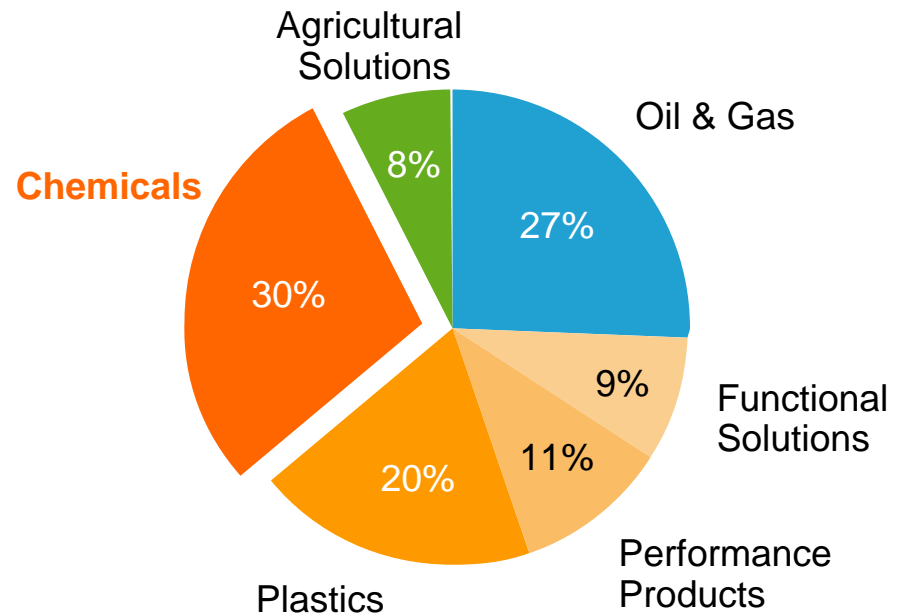
Chemicals – strong contribution to BASF’s profitability

Sales
to third parties



2007: €58 billion
(Incl. other: €6.6 billion (12%))

EBIT
before special items*



2007: €6.3 billion*
(Incl. other: €(361) million)

*excluding nondeductible oil taxes

Positioned at the heart of BASF's Verbund

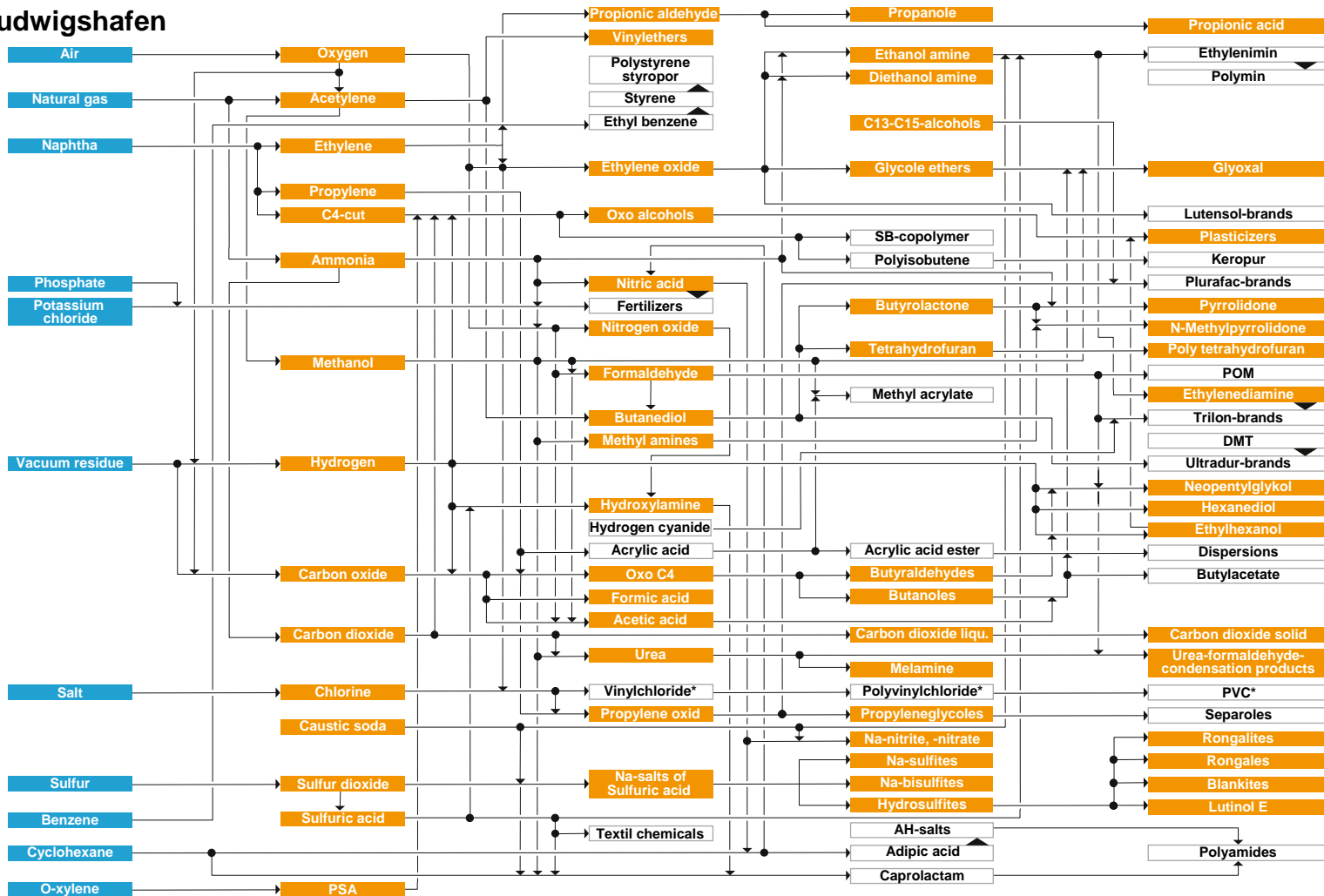
Supply the Verbund highly efficiently with competitive and reliable raw materials

Utilize plants with additional third party business

Grow value-added products to reduce cyclicity

Verbund is intelligence in chemistry

Ludwigshafen



- Raw materials
- Chemicals Segment

* Ludwigshafen only, within JV

Strong positions across chemical spectrum

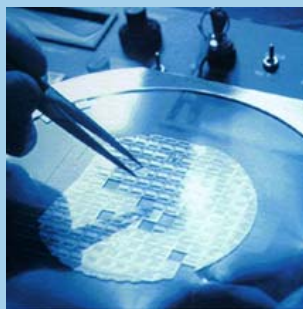
Petrochemicals

- Cracker products
- Industrial gases
- Alkylene oxides and glycols
- Plasticizers
- Solvents



Inorganics

- Inorganic chemicals
- Inorganic specialties
- Electronic materials
- Glues and resins



Intermediates

- Amines
- Butanediol and derivatives
- Polyalcohols and specialties
- Acids and special intermediates

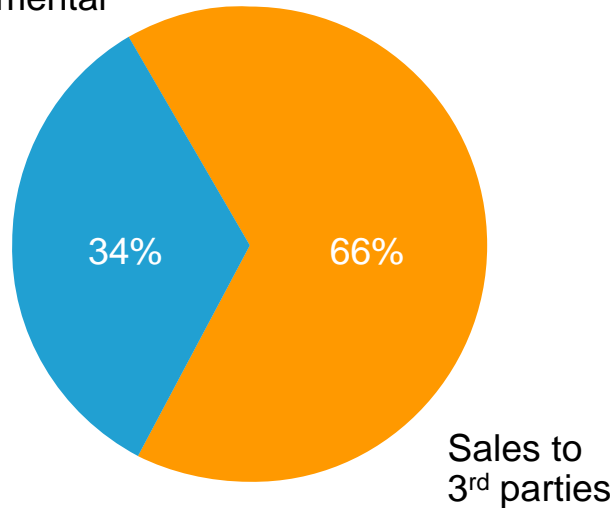


Balanced portfolio of internal and third party customers

Supply driven

- Cracker products
- Industrial gases
- Alkylene oxides and glycols
- Inorganic chemicals, Ammonia and Methanol

Intersegmental sales



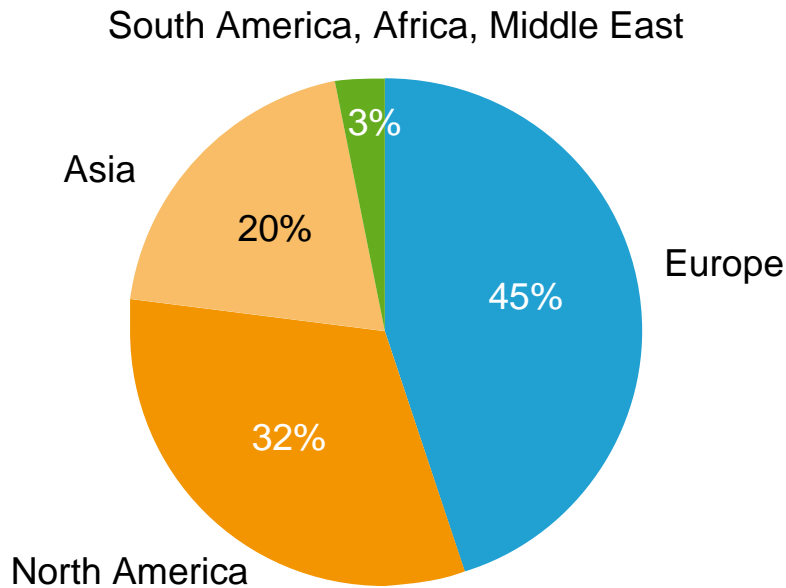
2007 Chemicals consolidated sales: €14.1 billion

Market driven

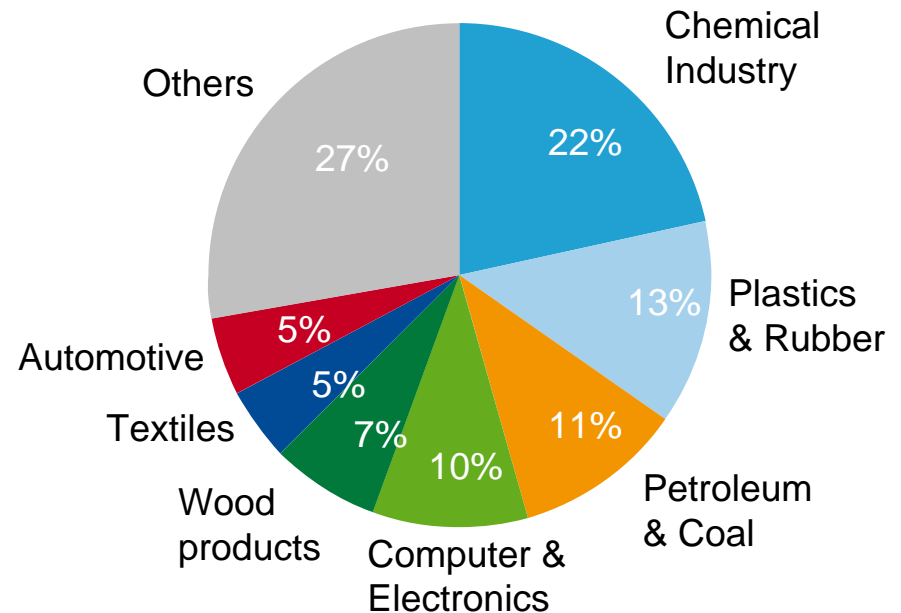
- Plasticizers
- Solvents
- Amines
- Butanediol and derivatives
- Polyalcohols and specialties
- Acids and special intermediates
- Inorganic specialties
- Electronic materials
- Glues and resins

Balanced regional and industry portfolio

by region

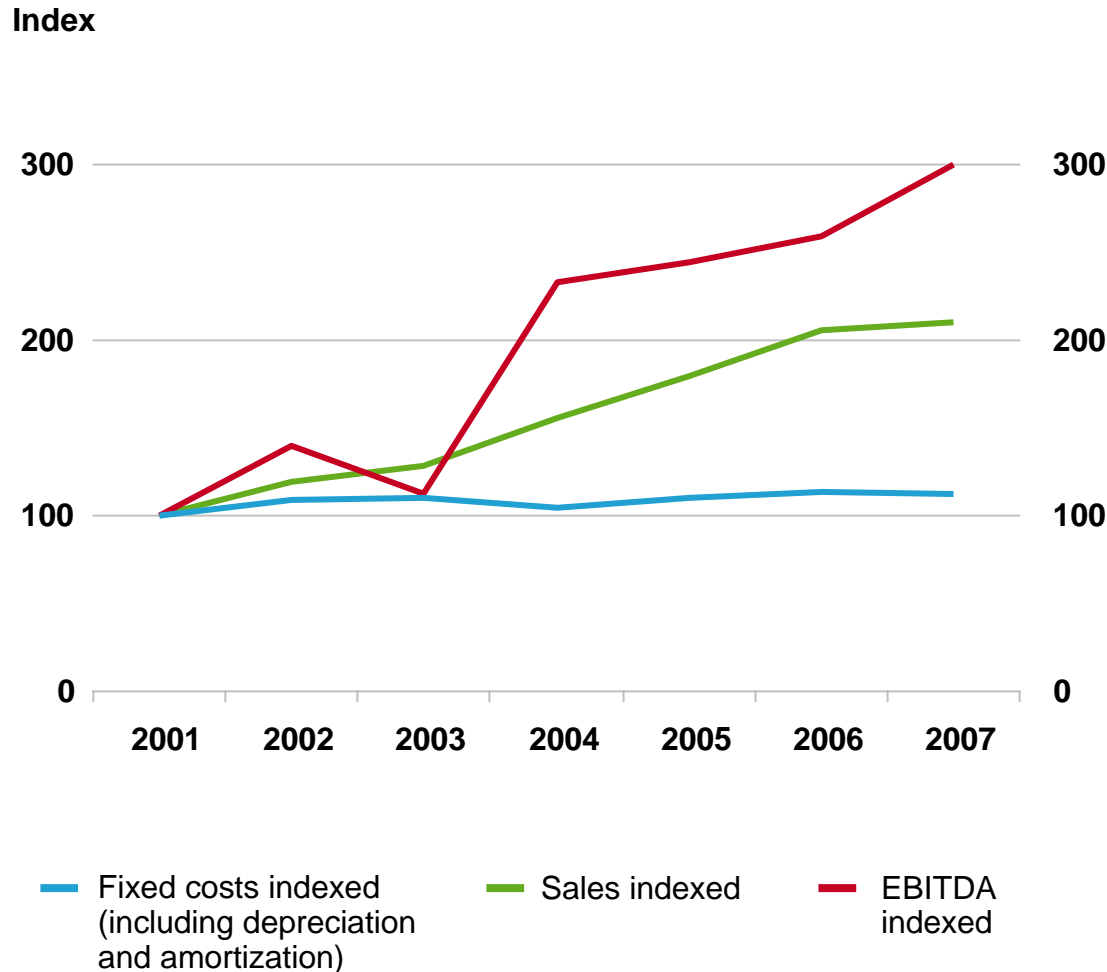


by industry



2007 Chemicals sales to third parties: €9.4 billion

Relentless focus on operational excellence drives profitability

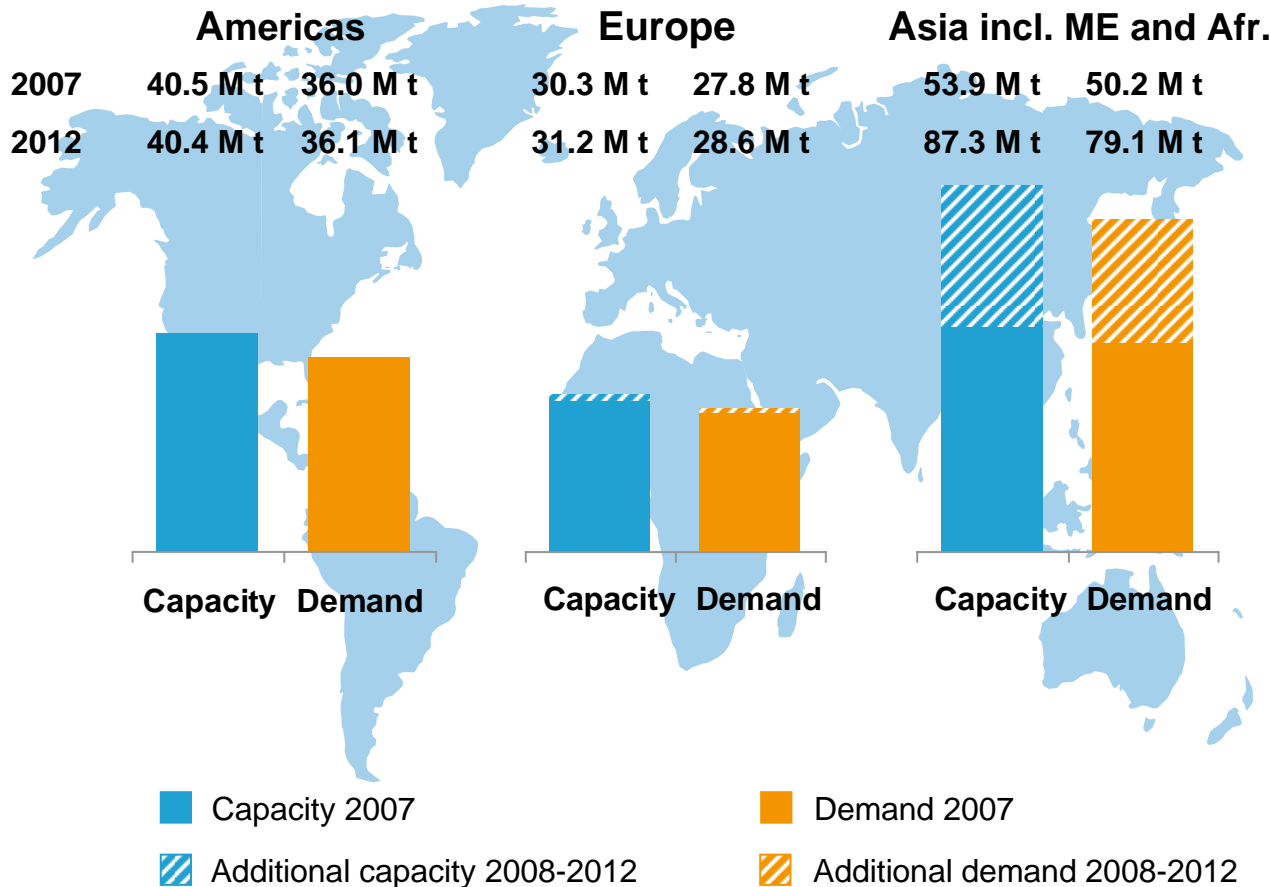


BASF's "asset right" strategy:

- High capacity utilization
- Integration into Verbund
- Rationalization of older plants
- Investments into state-of-the-art technologies
- Consequent economy-of-scale investments
- Increasing share of specialties
- Competitive raw material sourcing

A challenging environment in cracker products

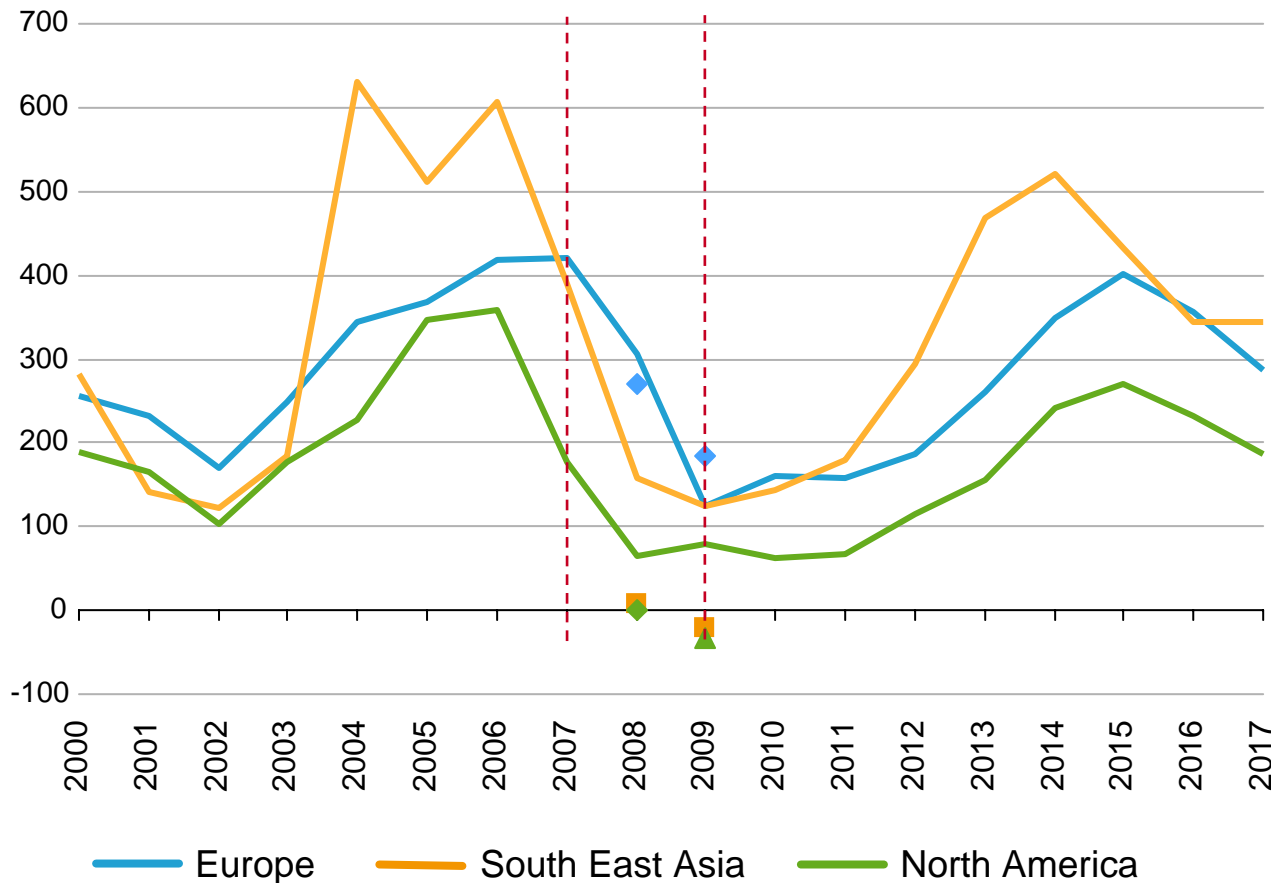
Ethylene 2008-12



- Global demand growth requires +6 million t/a ethylene
- New capacities announced of 7 million t/a ethylene (>50% in ME/Afr.),
- Global growth of prosperity and of energy markets will quickly absorb additional capacities starting 2012

Possible impact of cracker margin decline on BASF is limited

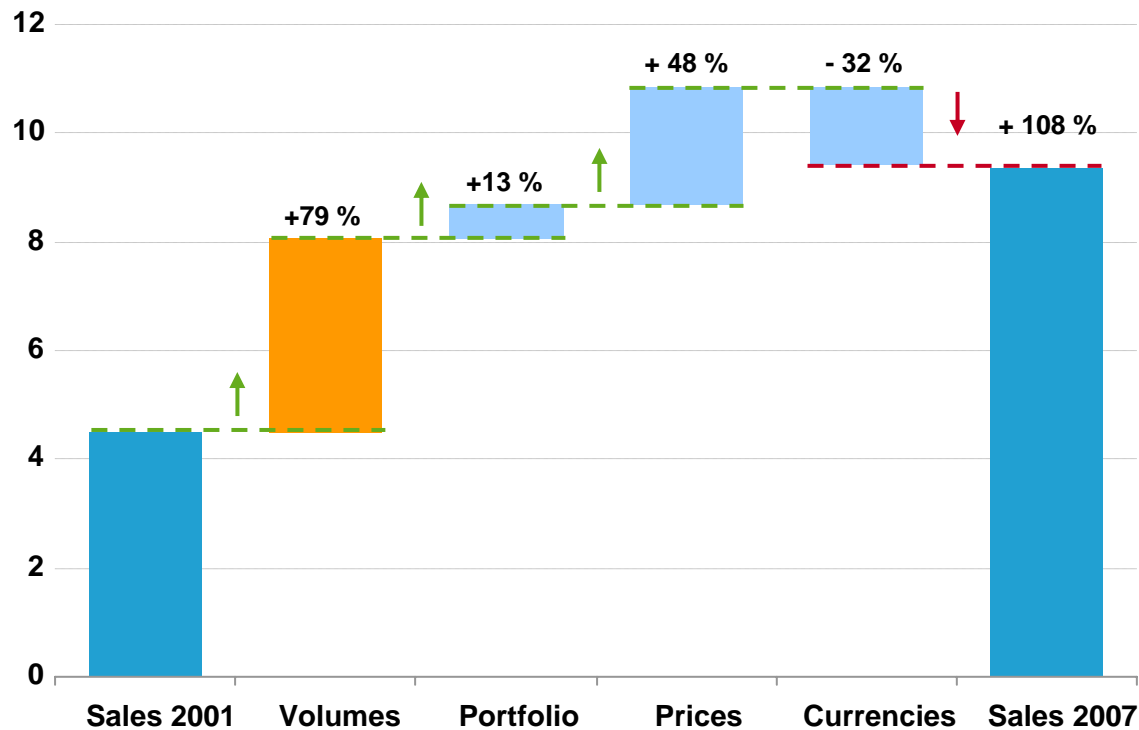
CMAI cracker margin outlook
in \$/t



- Forseeable margin squeeze 2008-2011 for cracker products
- Margin at risk for BASF is limited
 - Net effect: €400 million for BASF Group without Oil&Gas (~5% of BASF EBIT)
- Smart product spectrum reduces impact of margin decline on BASF performance

Growth of Chemicals mainly based on volume increases

In billion €



Changes since 2001:

- New Verbund sites in Nanjing, Port Arthur, Kuantan
- PolyTHF in Caojing
- Numerous debottleneckings
- Acquisitions in electronic chemicals, plasticizers etc.
- Sale of Ethane cracker in North America
- Consistant restructuring in butanediol, alcohols, solvents and plasticizers

Driving future growth

Strengthen position in growth markets

- Maintain profitability with strong value chains and technology leadership
- Extend into new products: Electronic materials, specialties
- Extend into growth market Asia
- Optimize supply to Verbund
- Capex budget 2008–2012: €2.1 billion

Active portfolio optimization

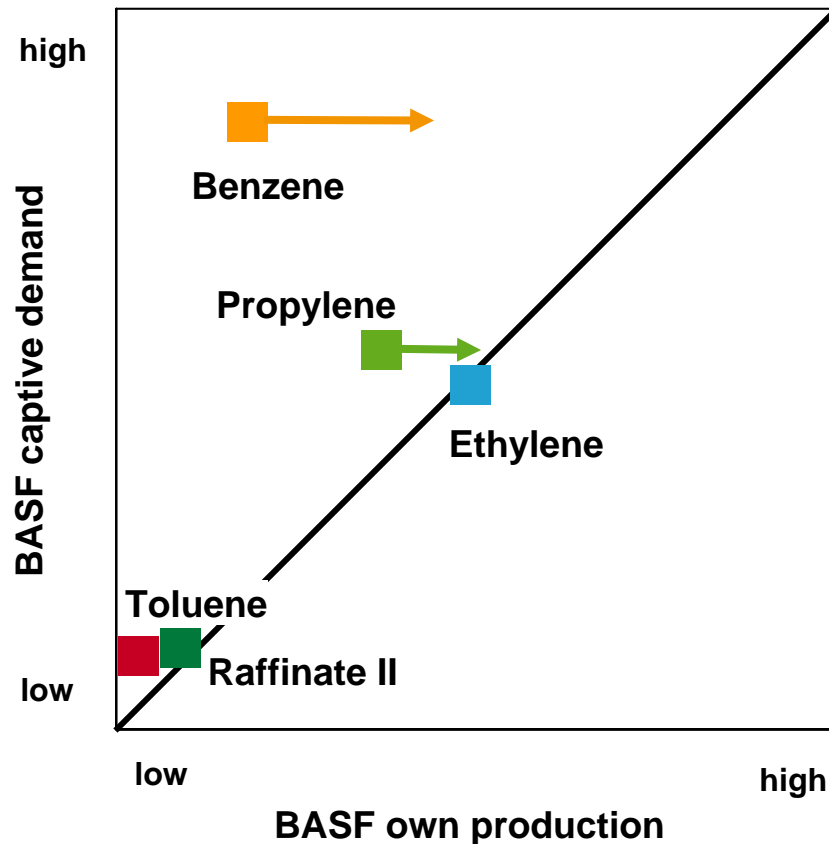
- Acquisitions in leading technologies and growth markets
- Closure and / or divestiture of underperforming businesses
- Strengthen and expand partnership portfolio (e.g. Sinopec/Nanjing, IBM/electronic materials)

Accelerate innovation

- Innovation pipeline filled with 200 promising projects (50% product innovation, 50% process innovation)
- R&D spending average 2008-2012: €140 million p.a..

Balancing supply with demand through innovation

Global position 2007



Benzene

Expanding the feedstock basis to take advantage of market fluctuations
e.g. **Benzene from natural gas**

Propylene Ethylene

Balancing production for captive supply and broadening of feedstock base
e.g. **Fischer-Tropsch to Olefins**

Raffinate

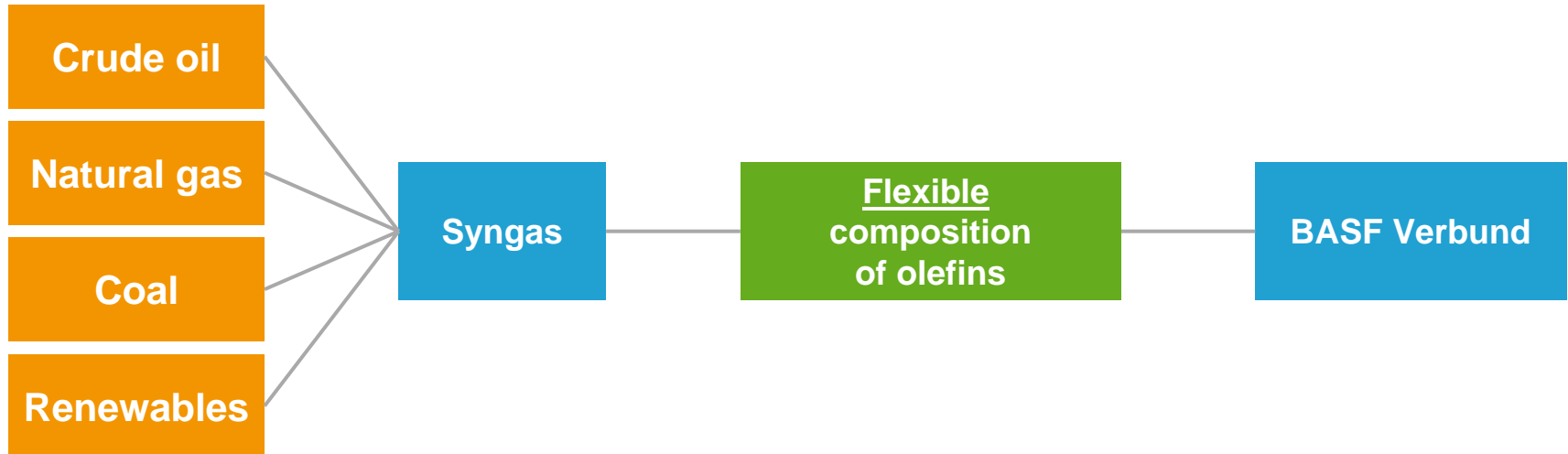
Feeding our value chains with alternative raffinate supply
e.g. **n-butenes from butane**

Broadening our feedstock base

Today: Cracker technology

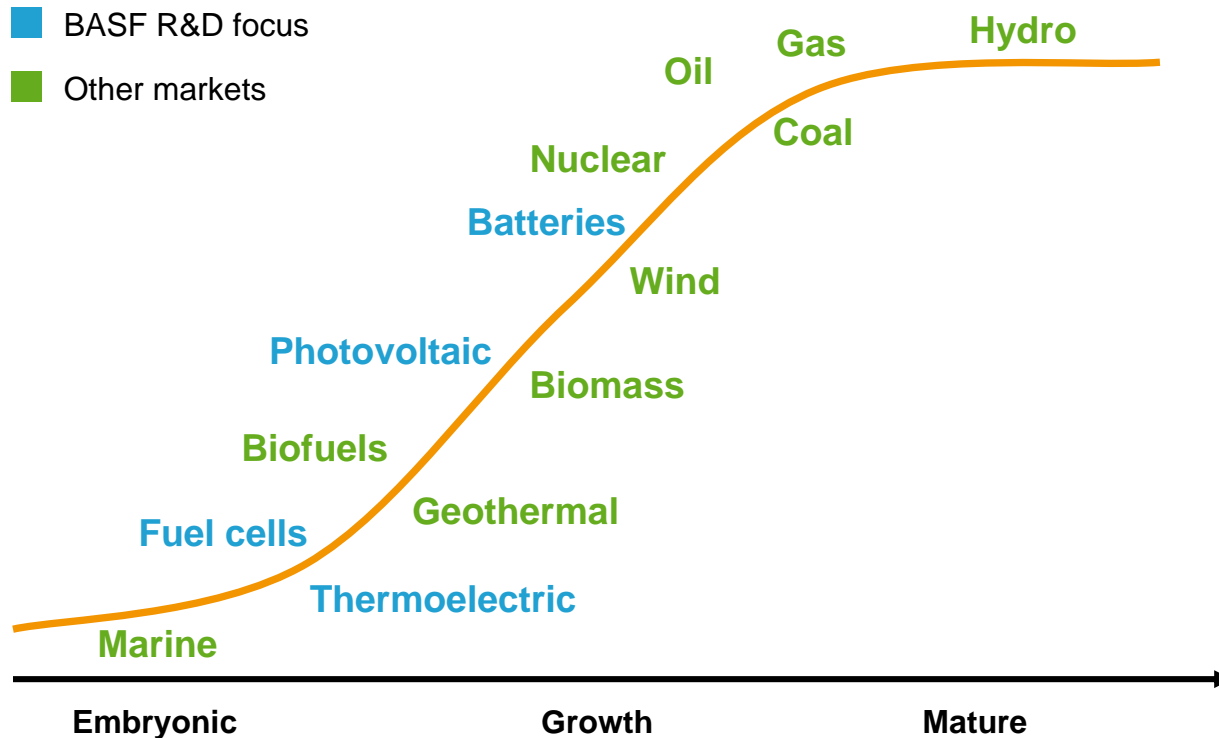


Tomorrow: direct Fischer-Tropsch technology



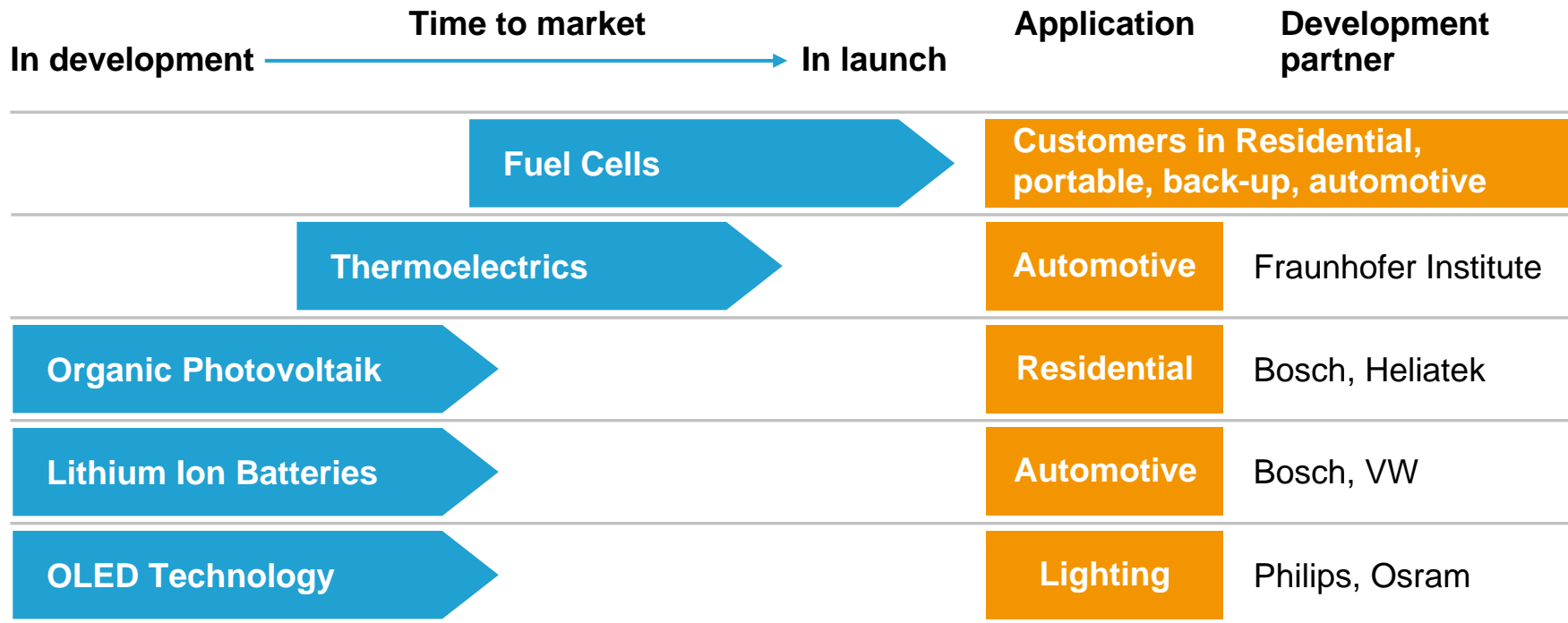
Changing energy markets create new demand

Life cycle of technologies for energy supply



- Increase of global primary energy demand from 84 billion to 128 billion boe in 2030*
- **Target:** Develop resource efficient materials to enable systems that meet demand for portable and sustainable energy supply

New chemicals for high growth energy markets



System market value by 2020: €50 billion

Driving future growth

2007

- Sales to 3rd parties of €9.4 billion
- EBIT after cost of capital of €1,358 million

2015

- Best in class in operational excellence
- Solidly balanced portfolio in major global markets
- Broadened feedstock technology
- Innovative chemicals for global megatrends
- Profitable growth above the respective market growth
- Earning a premium on cost of capital



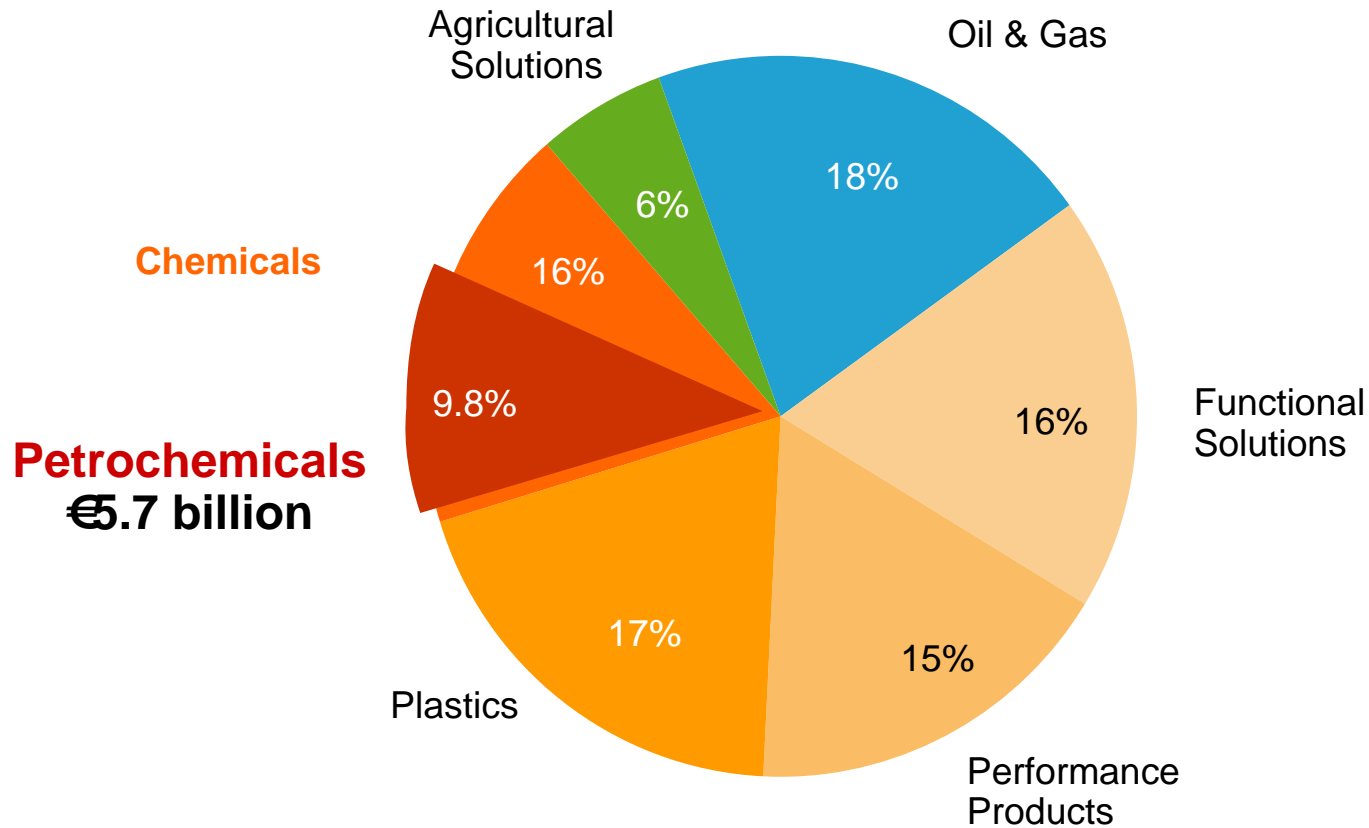
1 | Chemicals

2 | Petrochemicals

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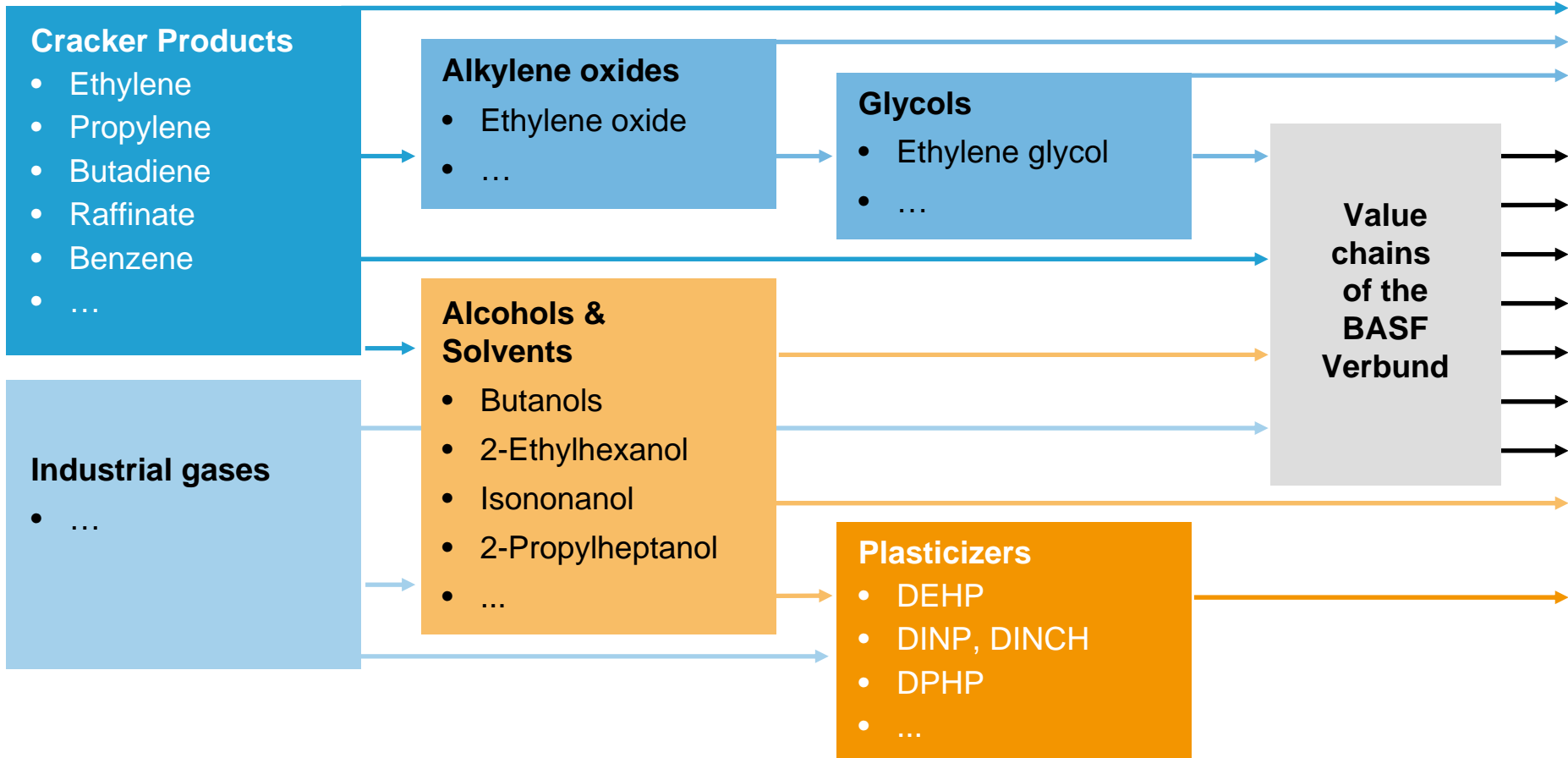
Petrochemicals – part of BASF's balanced portfolio



2007 Sales to third parties: €58 billion
(incl. other: €6.6 billion (12%))

Petrochemicals – the start of BASF's value chains

■ ■ ■ Supply driven
 ■ ■ Market driven



Petrochemicals is the global integrator at all BASF Verbund sites

Capacities of Verbund sites 2008 in kt/a



Antwerp

- Cracker products: 2400
- Oxo-Alcohols: -
- Plasticizers: -
- EO/MEG: 500
- Industrial gases: 100

Ludwigshafen

- Cracker products: 1500
- Oxo-alcohols: 700
- Plasticizers: 200
- EO/MEG: 300
- Industrial gases: 4200

Port Arthur*/Freeport/ Geismar/Pasadena

- Cracker products*: 2400
- Oxo-alcohols: 500
- Plasticizers: 200
- EO/MEG: 200
- Industrial gases: 600

Kuantan*

- Cracker products: -
- Oxo-alcohols: 300
- Plasticizers: 100
- EO/MEG: -
- Industrial gases: 200

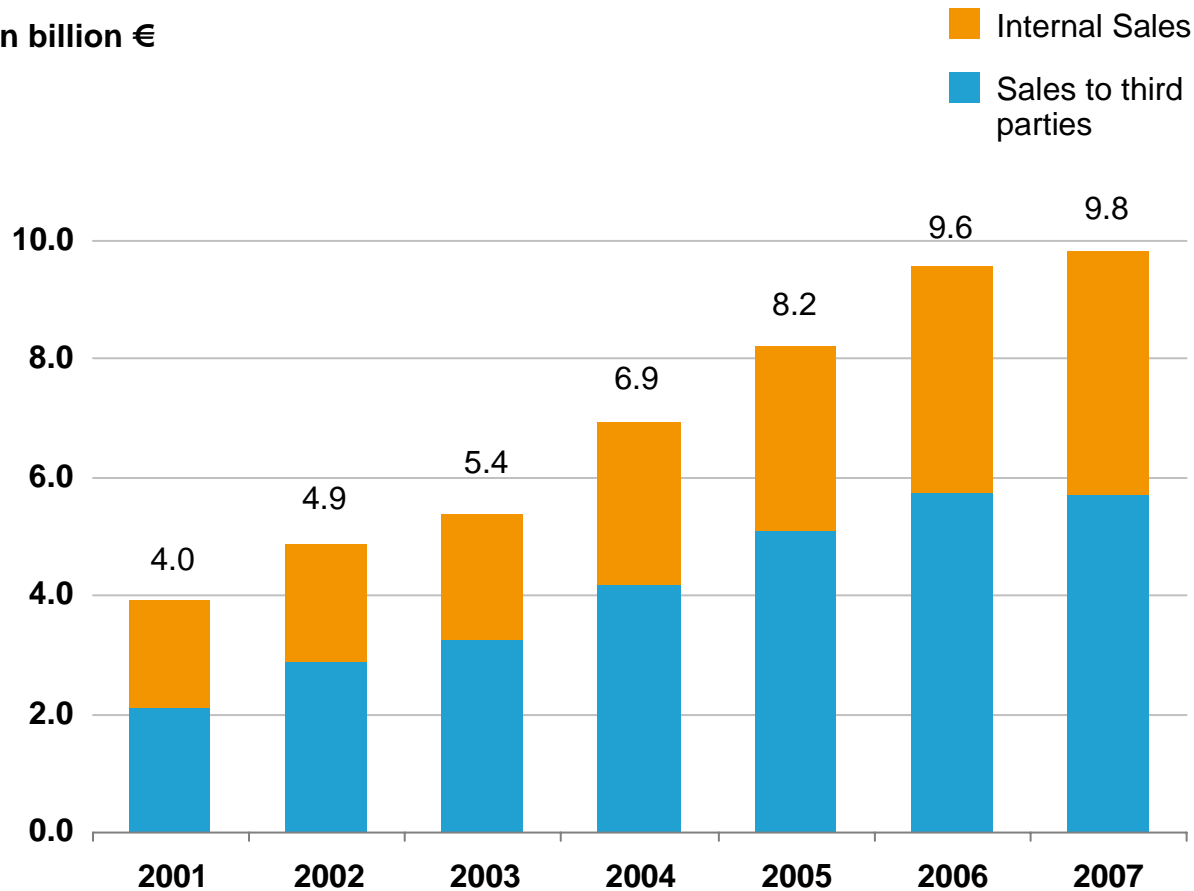
Nanjing*

- Cracker products: 1200
- Oxo-alcohols: 300
- Plasticizers: -
- EO/MEG: 300
- Industrial gases: 200

* Availability of volumes ex JV's for BASF depending on contractual situation

Petrochemicals grew faster than the market

In billion €

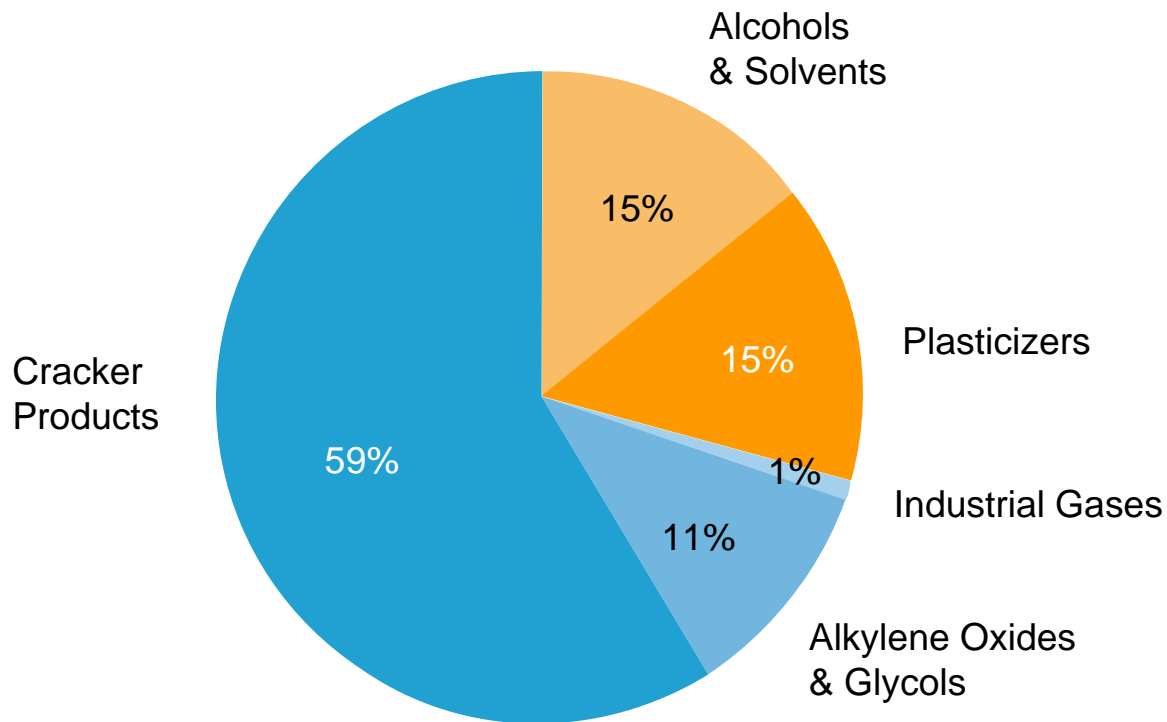


CAGR 2001 - 2007:

- GDP growth: 3.2%
- Chemical production growth*: 3.8%
- Petrochemicals BASF: 16.4%

* without pharma

Sales by product group



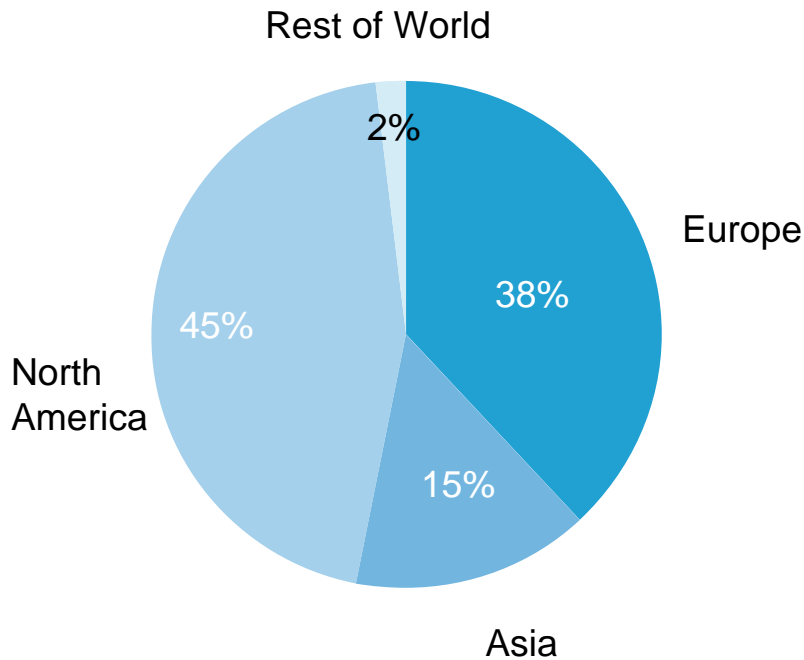
2007 Sales to third parties
€5.7 billion

Sales to third parties 2007:

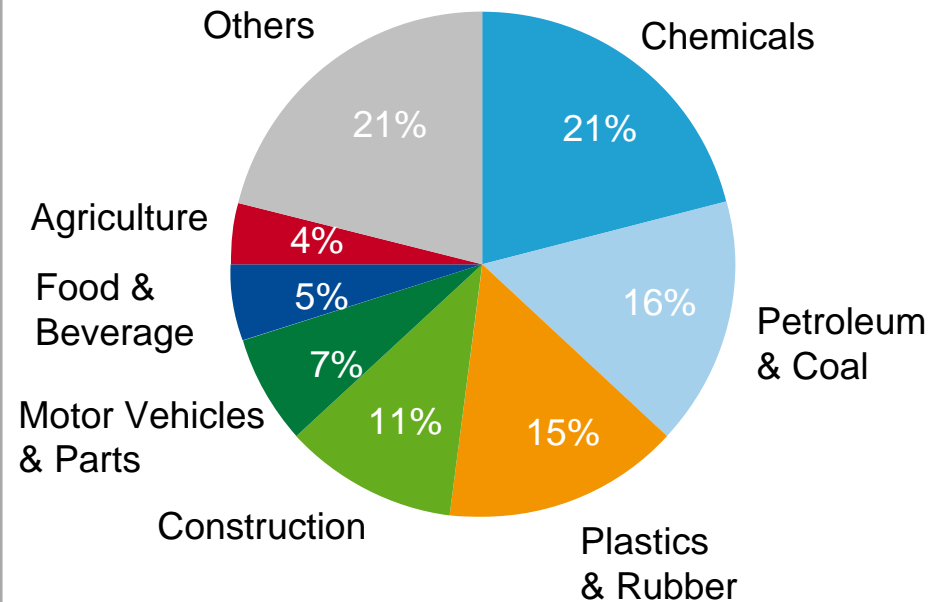
- Commodities 99%

Sales by region and industry

by region



by industry

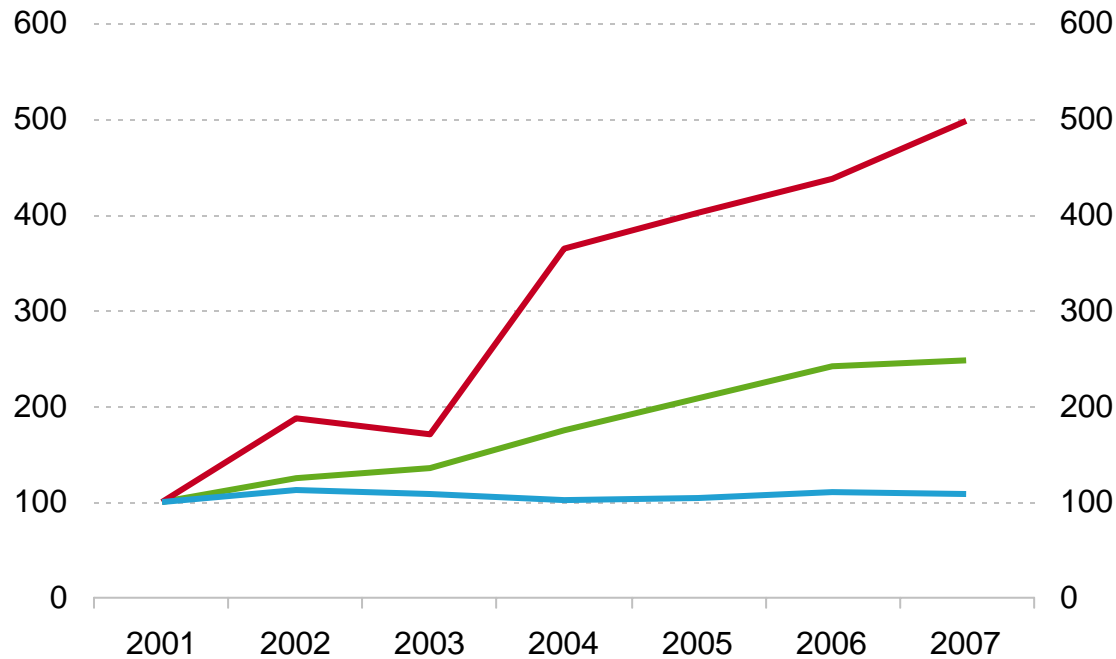


2007 Sales to third parties
€5.7 billion

Operational excellence drives profitability

Petrochemicals

Index (2001=100)



■ Fixed costs indexed (including depreciation and amortization)

■ Sales to third parties indexed

■ EBITDA indexed

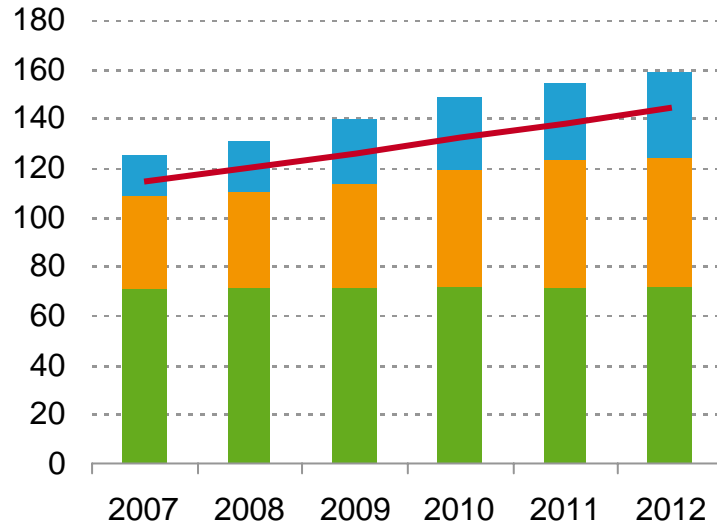
Petrochemicals “asset right” strategy:

- Integration into Verbund
- High capacity utilization
- Consistent fixed cost management
- Continuous improvement of state-of-the-art technologies

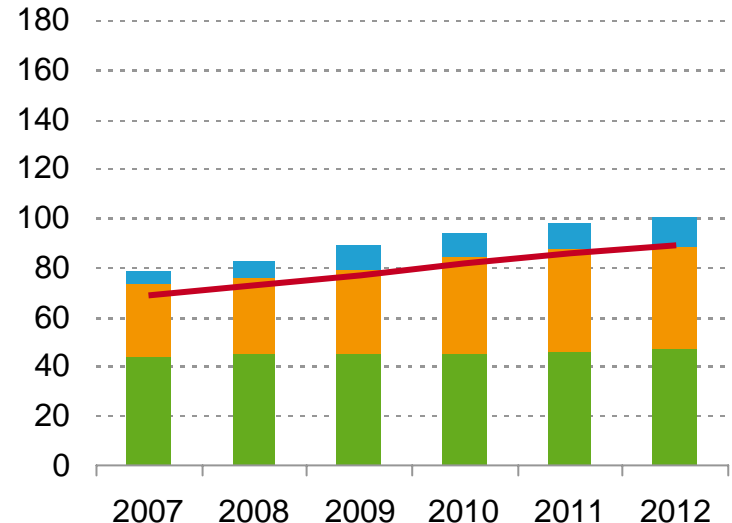
Temporarily global ethylene/propylene overcapacities result in margin reduction

ME + Africa Asia America + Europe Global demand

Ethylene capacity (in kt/a)



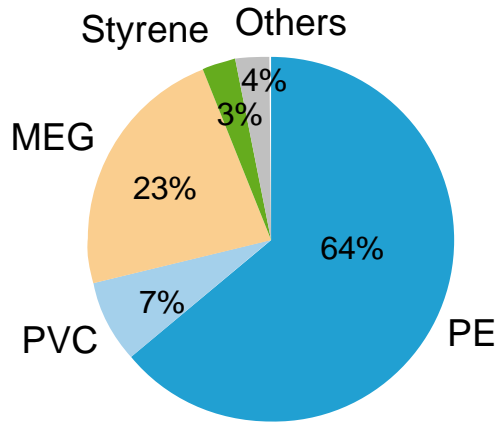
Propylene capacity (in kt/a)



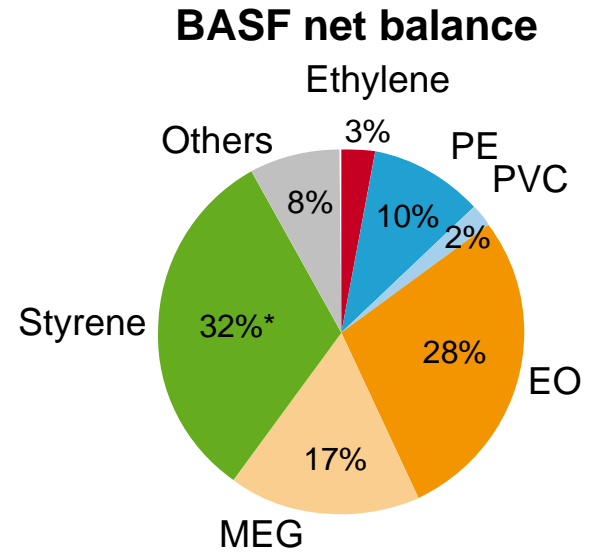
- Global demand growth requires +6 million t/a ethylene and +4 million t/a propylene
- New capacities announced of 7 million t/a ethylene (>50% in ME/Afr.), 4.5 million t/a propylene (>50% in Asia)
- Global growth of prosperity and of energy markets will quickly absorb additional capacities after 2012
- Dramatically increased investment cost and limited engineering resources limit capacity growth globally

BASF's captive olefins demand split is different to ME downstream products

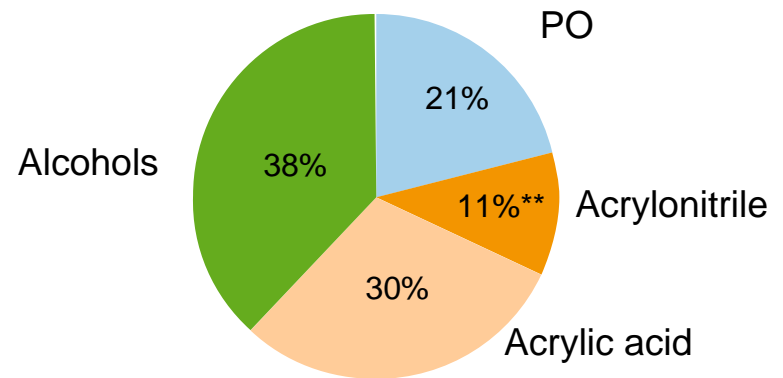
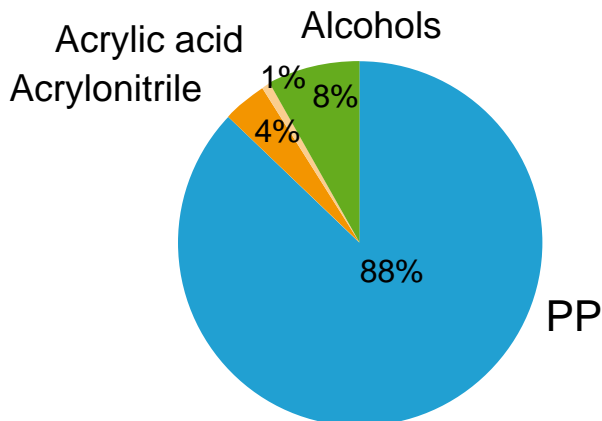
Middle East demand split



Ethylene 2007



Propylene 2007



Source: CMAI, BASF

* planned divestiture will reduce to less than half

** planned divestiture will reduce to zero

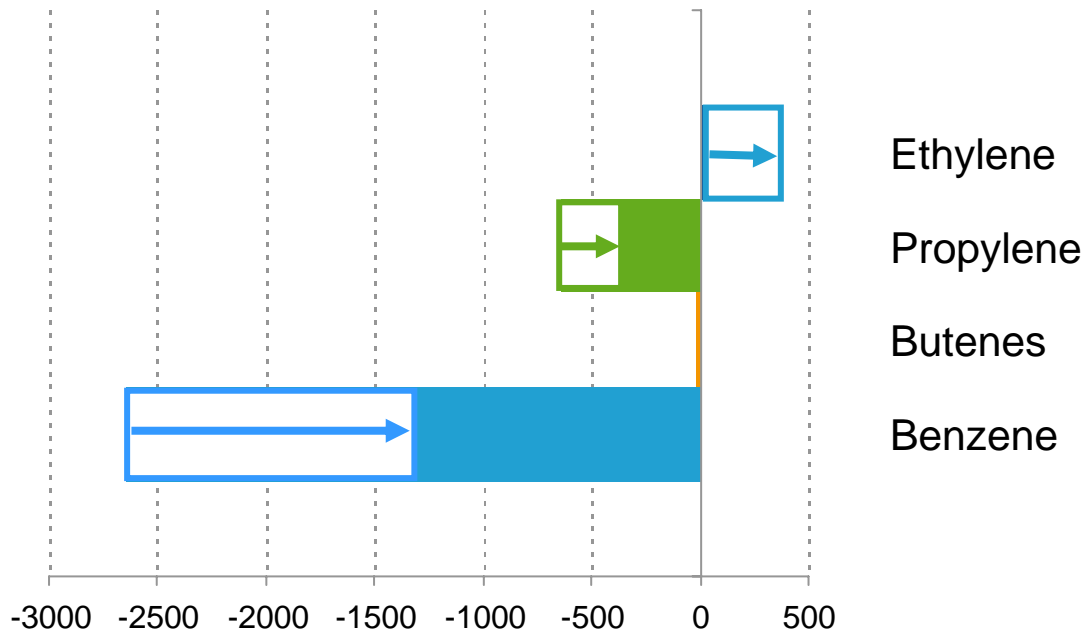
Naphtha-based cracker provides full slate of cracker products


to/to Ethylene	Typical cracker output		BASF demand 2007
	Ethane (1.3)	Naphtha (3.0)	
Feedstock	Ethane (1.3)	Naphtha (3.0)	2007
Ethylene	1.0	1.0	1.0
Propylene	0.02	0.55	1.09
Butenes	<0.01	0.10	0.13
Benzene	0.01	0.25	1.74

Naphtha cracker matches BASF's broad demand for cracker products much better than an ethane-based cracker

Active portfolio management to improve cracker products balance

BASF supply / demand balance 2007
in kt



 changes due to divestitures in progress

Measures to improve the cracker products balance:

Technology

- Conversion of ethylene to propylene in world-scale metathesis units (e.g. Pt. Arthur)

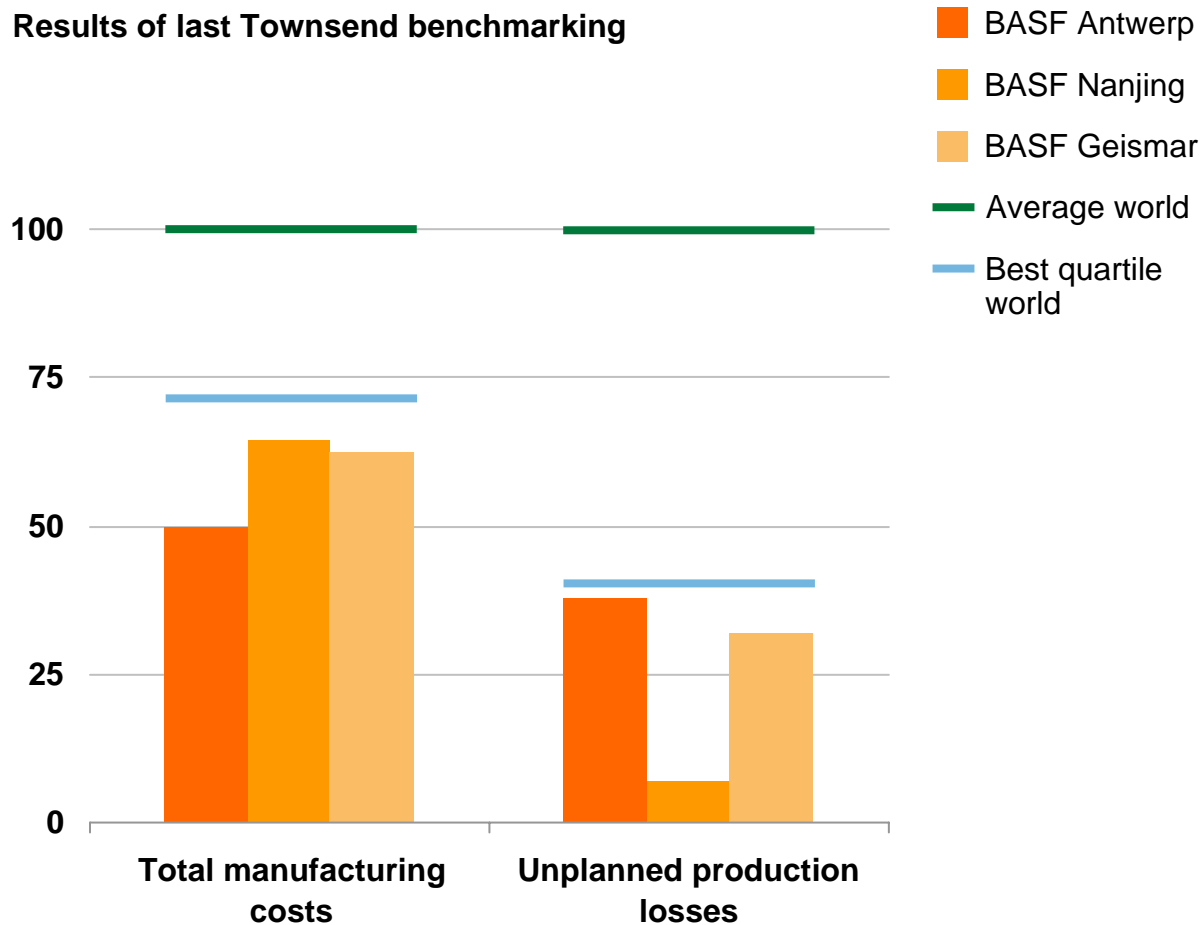
Portfolio optimization by divestiture

- Ethane cracker share in Geismar
- Acrylonitrile business in Seal Sands (in progress)
- Styrenics business (in progress)

Industry leading production know-how

Example: Ethylene oxide

Results of last Townsend benchmarking



- Cost leadership through consequent process innovation (incl. catalyst)
- Enhanced technology: Increased selectivity by optimized feed gas
- Best in class in specific EO yield
- Significant ethylene savings
- New catalysts with superior performance in pilot phase

excluding Antwerp site power outage effect

Integration of cracker products is essential for BASF's profitability

Mission

„Make“ to cover optimum of captive use, and
„Trade“ to balance surplus and deficit volumes

Strengths

- Verbund synergies
- World scale assets with excellent to best in class benchmark position
- Strong partnerships (Asia, North America)

Measures to mitigate challenges

- Strive for operational excellence
- Enhance feedstock flexibility
- Maintain high reliability

Petrochemicals strongly positioned in market driven activities

Alcohols & Solvents

- Butanols
- 2-Ethylhexanol
- Isononanol
- 2-Propylheptanol (2-PH)
- ...

- #1 worldwide in alcohols
- Sole producer of 2-PH
- Market leader oxygenated solvents in Europe
- Proprietary technologies
- New proprietary catalysts in the pipeline

Plasticizers

- DEHP
- DINP
- DINCH
- DPHP
- ...

- #2 worldwide
- Sole producer of Hexamoll DINCH
- Well backward integrated
- Proprietary technologies for PA, Phthalic esters and Hexamoll DINCH
- New proprietary catalysts in the pipeline

Alcohols & Solvents and Plasticizers: The right levers to success

Consolidation

- Closures in Europe
- Acquisition in North America

Portfolio management and rationalization

- Exit 2-EH, DEHP (Europe)
- Focus on innovative Plasticizers DINCH, DPHP

Investments Expansions

- Pasadena, Nanjing
- Ludwigshafen, Freeport, Kuantan

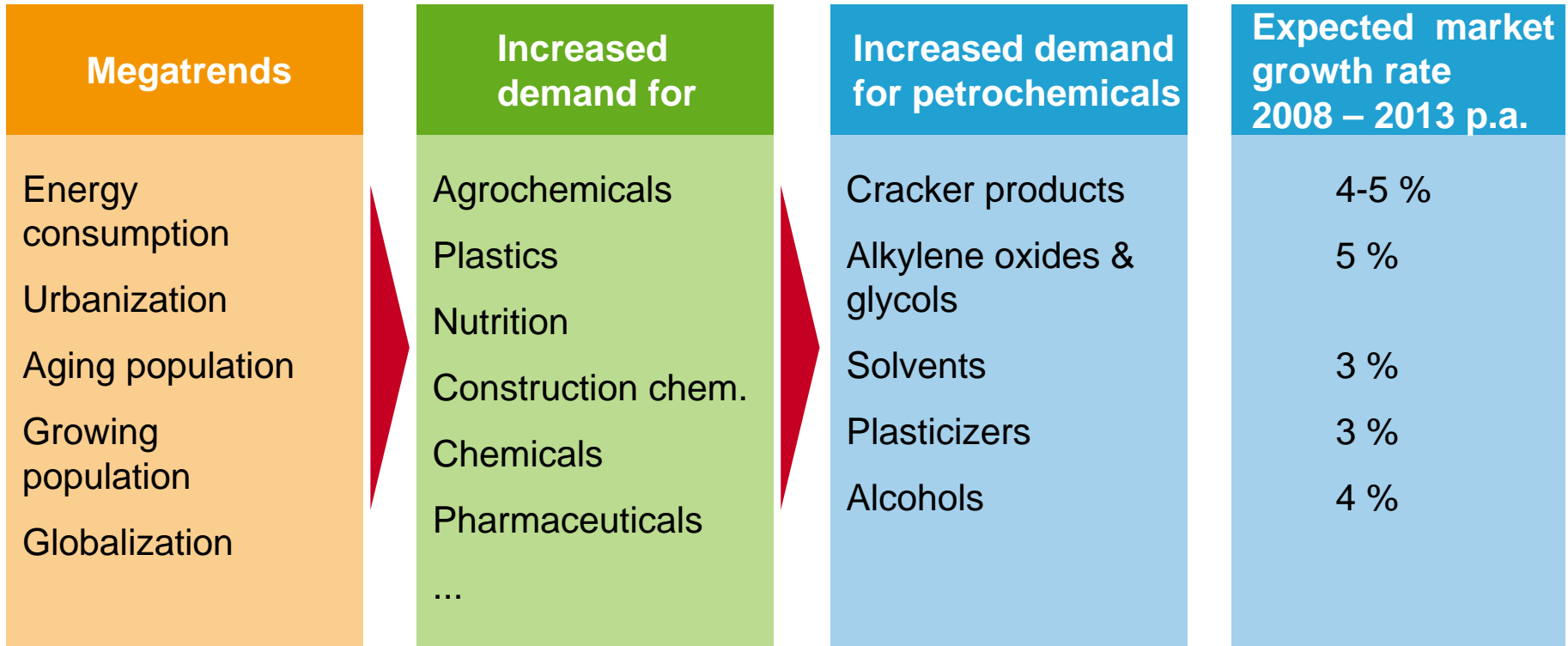
Innovation

- 2-Propylheptanol
- DINCH, DPHP

Operational excellence

- Reliability improvements in Kuantan
- Restructuring of plasticizers in Europe, North America

Growth drivers for Petrochemicals



Strategy for Petrochemicals

Strengthen position in growth markets

- Develop strong **C4-value chain in Asia**
- Continuously improve **operational excellence** for a sustainable and competitive supply
- Grow cracker profitability by increased **feedstock flexibility** and improved **logistics** (pipelines)

Active portfolio optimization

- Strongly grow business with **innovative products** (Oxo-C5 alcohols and DINCH)
- **Divestiture** of non-strategic businesses
- **Restructure** outdated facilities in core businesses

Accelerate innovation

- New technologies based on **alternative raw materials**
- New **dedicated technologies** to match captive demand
- **Improvement** of core technologies through new catalysts and processes
- **New applications** for alcohols and plasticizers

Essentials Petrochemicals

At the heart of the Verbund

Agility, flexibility and deep knowledge of markets

Continuously develop new processes and optimize existing ones

Positioned to manage upcoming capacity increases

Relentless focus on operational excellence
Dedicated, creative and global team

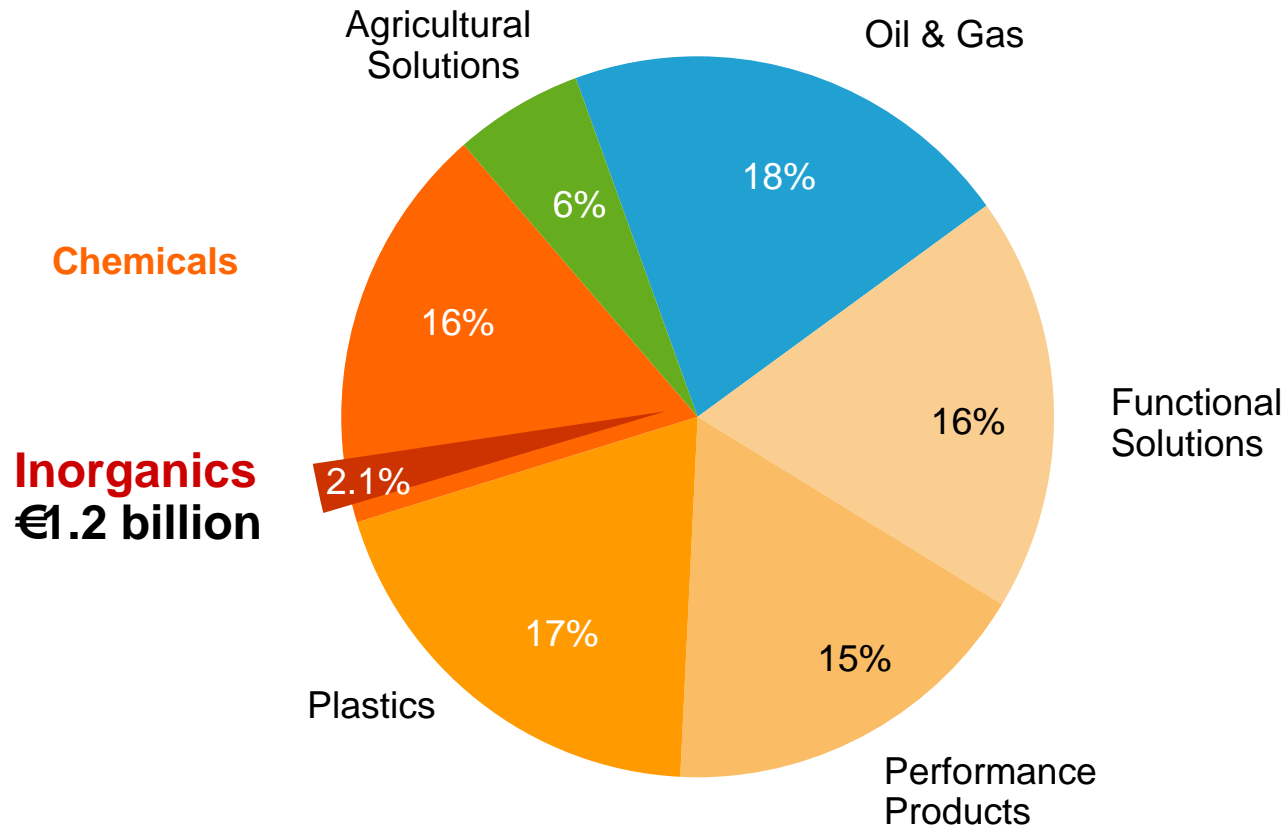
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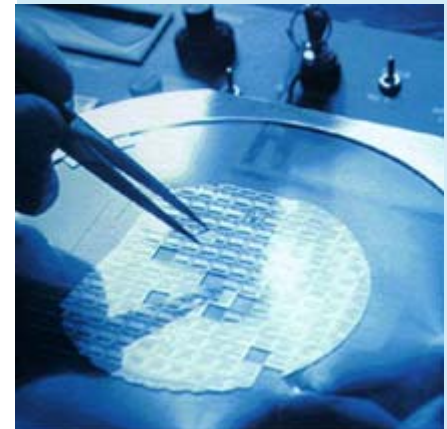
Inorganics – Part of BASF's balanced portfolio








2007 Sales to third parties: €58 billion
(incl. other: €6.6 billion (12%))

Inorganics at a glance

- Total sales of €2.3 billion; highly profitable
- Good business mix of commodities and specialties
- Commodities:
 - Strong know-how base in chemical Verbund
 - Mainly for captive use in Verbund
- Specialties:
 - Strong market expertise and innovation focus
 - Characterized by unique products with high market shares, e.g. hydroxylamine free base, boranes

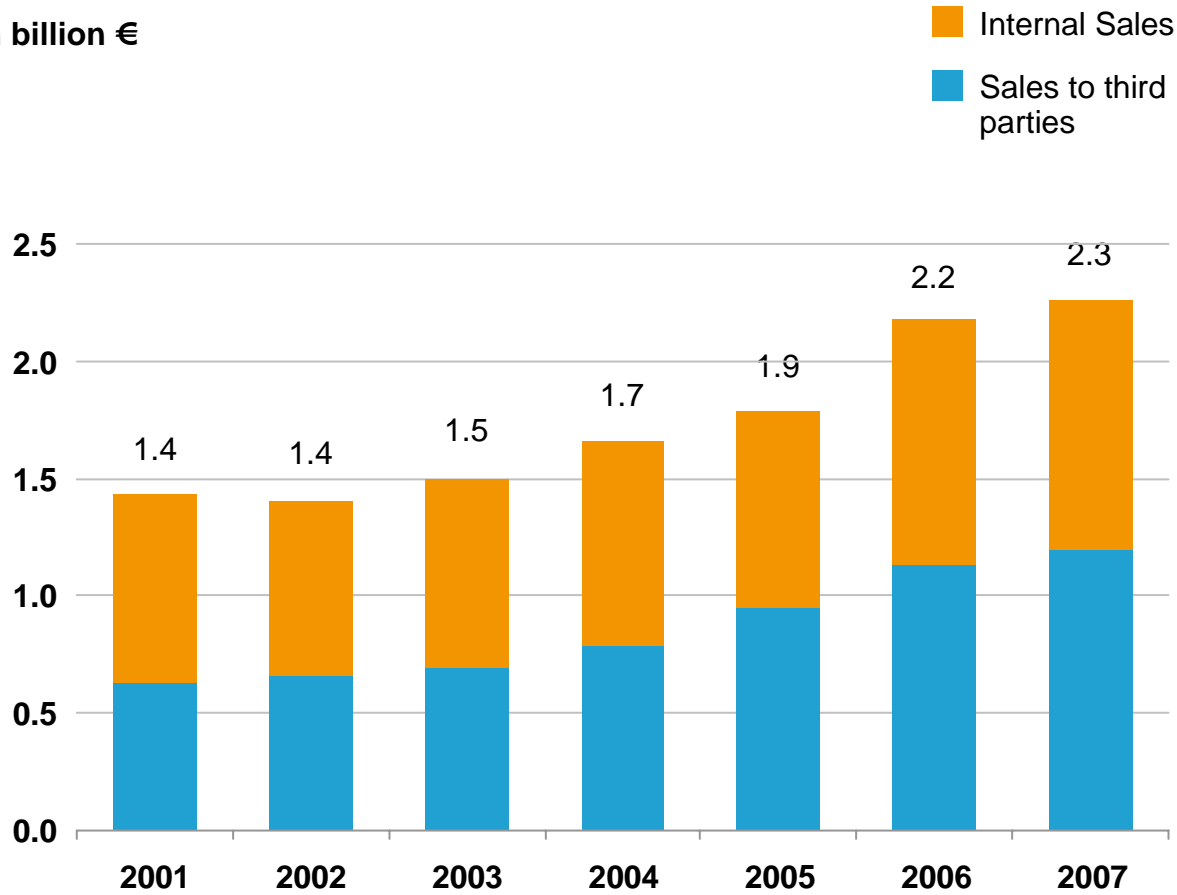


Inorganics at BASF

Electronic Materials	Inorganic Specialties	Inorganic Chemicals	Glues & Impregnating Resins	Fertilizers
<ul style="list-style-type: none"> • Electronic grade chemicals • Formulations and materials 	<ul style="list-style-type: none"> • Alcoholates • Boranes • Hydroxyl-amine free base • Carbonyl iron powder • Metal injection molding 	<ul style="list-style-type: none"> • Chlorine/ caustic soda • Nitric acid • Sulfuric acid • Inorganic salts 	<ul style="list-style-type: none"> • Ammonia/ urea • Methanol/ formaldehyde • Melamine • Glues and impregnating resins 	<ul style="list-style-type: none"> • Reported under „Other“ • Organizationally part of Inorganics Division • Contract manufacturing for K+S 

Inorganics grew faster than the market

In billion €

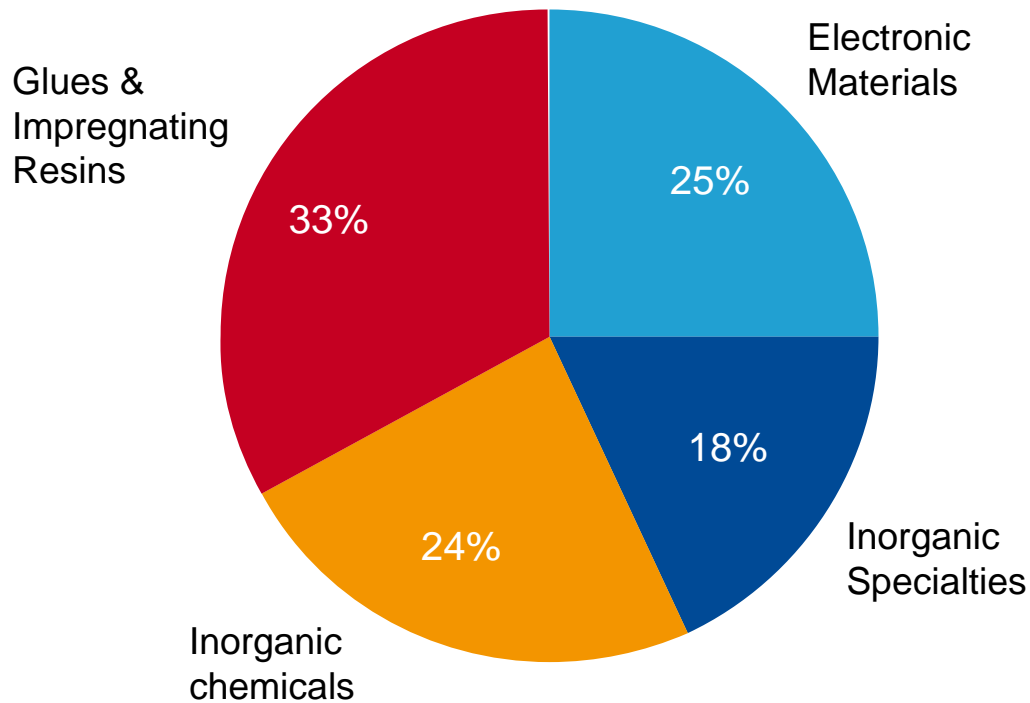


Total Sales CAGR 2001 - 2007:

- GDP growth: 3.2%
- Chemical production growth*: 3.8%
- Inorganics growth: 8.1%

* without pharma

Sales by product group



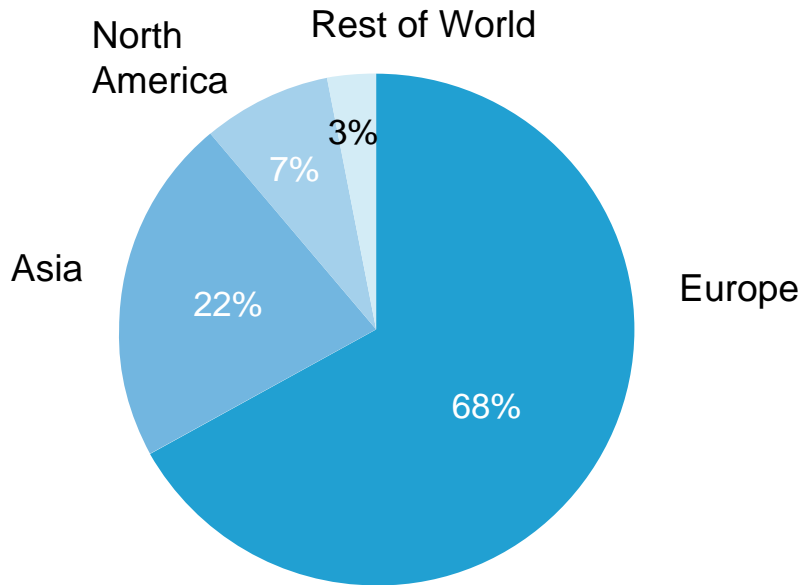
**2007 Sales to third parties:
€1.2 billion**

Split of sales to third parties 2007:

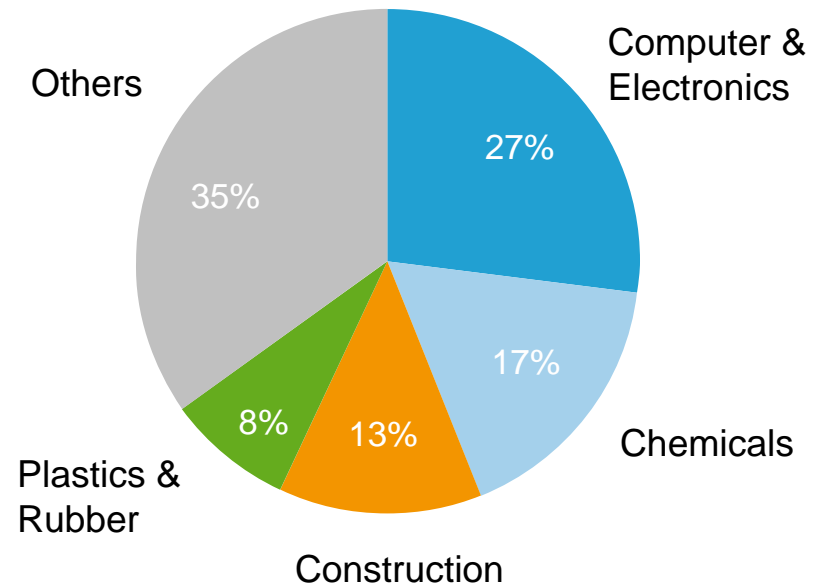
- Commodities 58%
- Specialties 42%

Sales by region and industry

by region



by industry

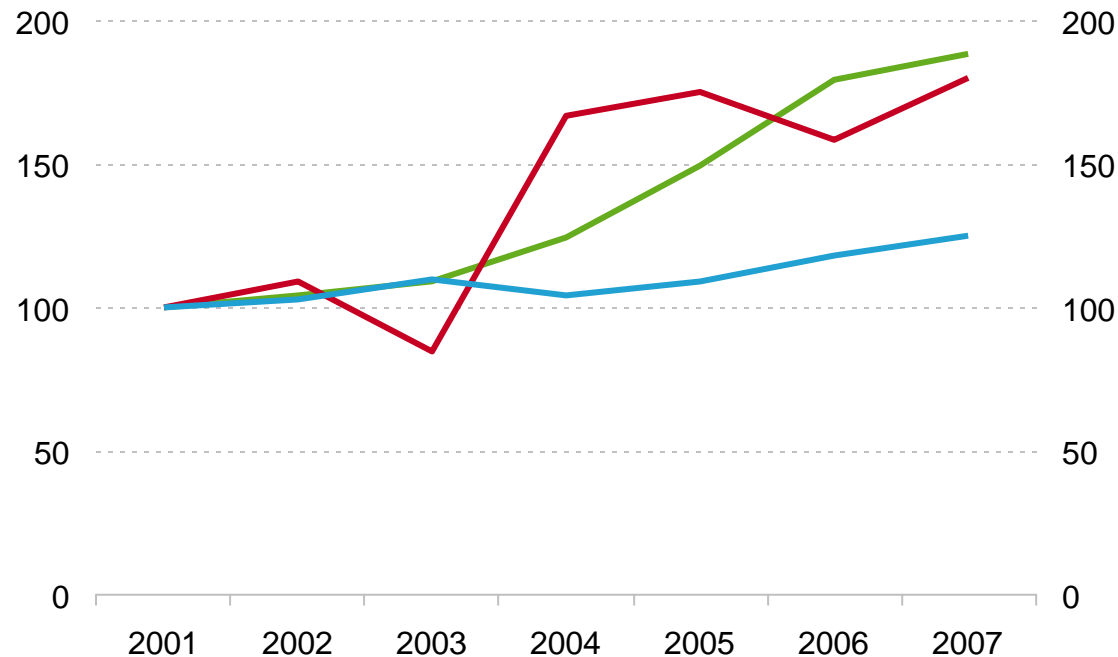


**2007 Sales to third parties:
€1.2 billion**

Contributing consistently high margins

Inorganics

Index (2001=100), excluding catalysts



■ Fixed costs indexed (including depreciation and amortization)

■ Sales to third parties indexed

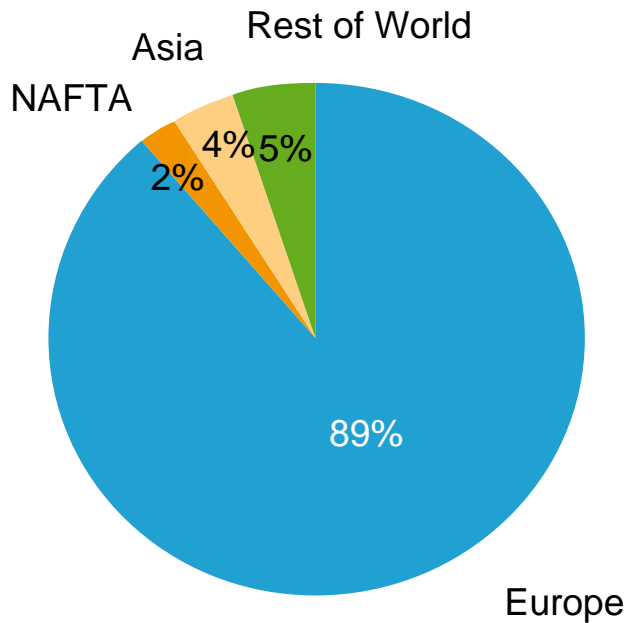
■ EBITDA indexed

BASF's "asset right" strategy:

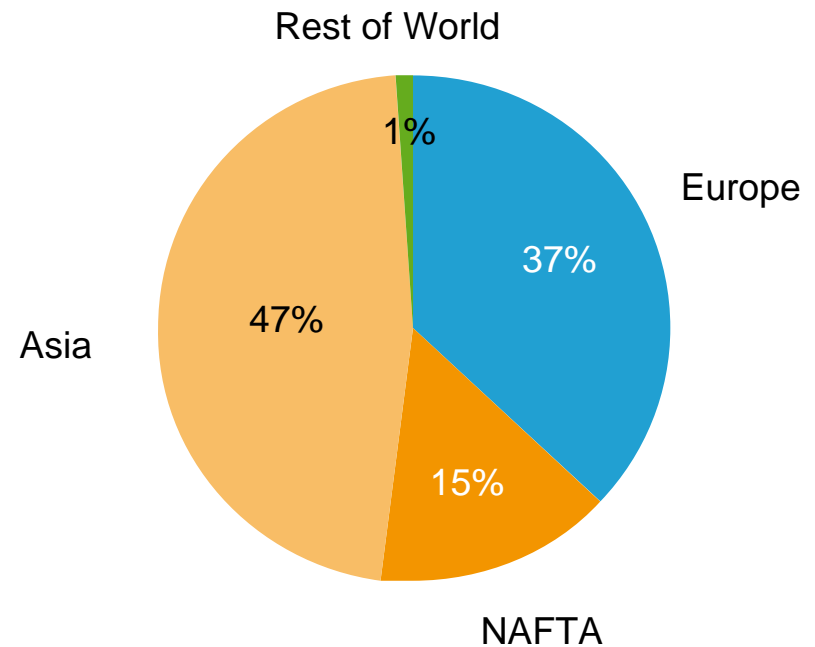
- Competitive raw material sourcing
- Integration into Verbund
- High capacity utilization
- Rationalization in older plants
- Profitable growth in specialties

Strong European platform in commodities and global focus on specialties

Commodities (58%)



Specialties (42%)



**2007 Sales to third parties:
€1.2 billion**

Clearly differentiated strategies for commodities and specialties

Commodities

“Keep cost leadership“

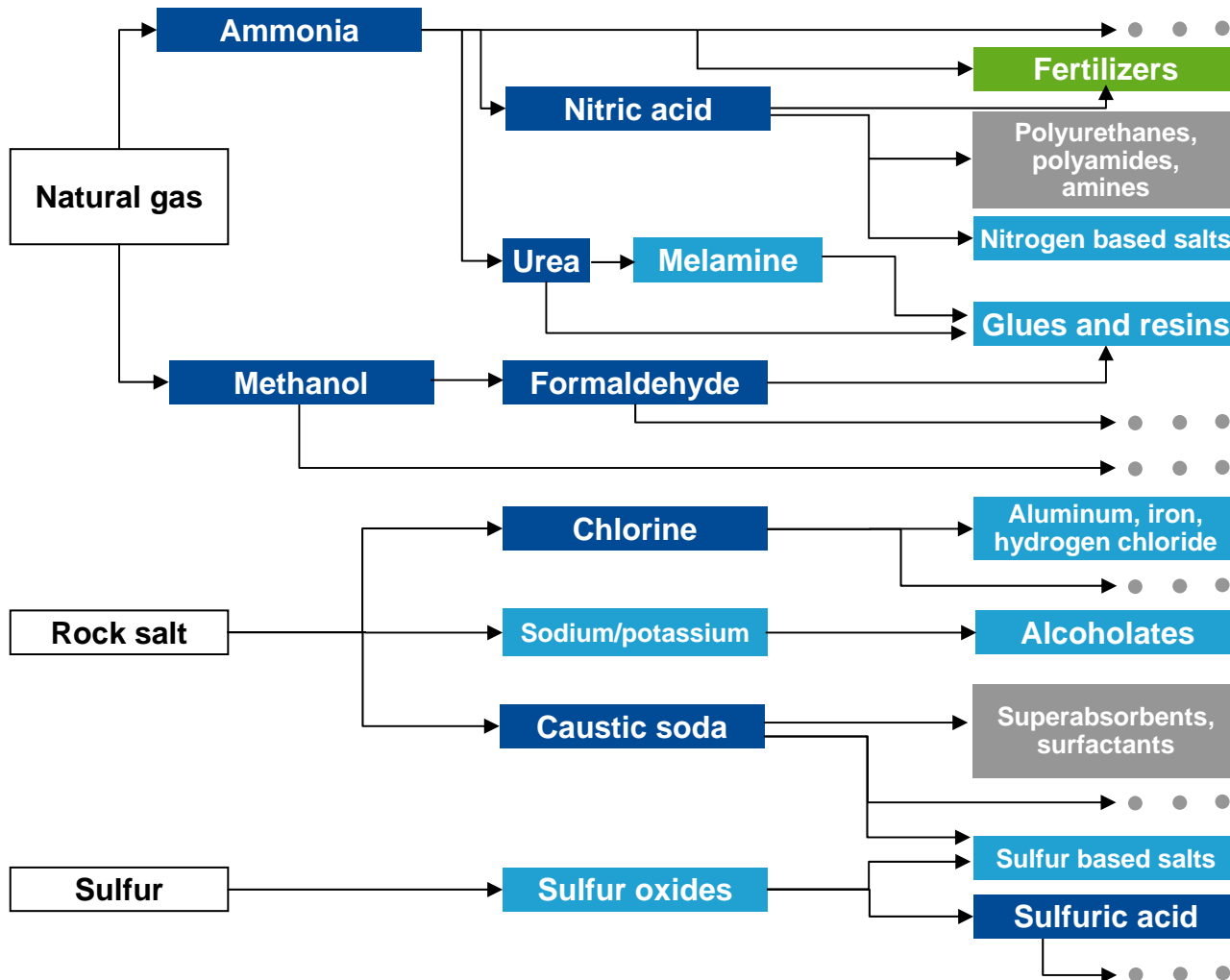
- Competitive raw material sourcing
- Verbund integration
- World scale plants
- Process innovation including catalysts
- Operational excellence

Specialties

“Grow profitably“

- Market and product driven innovation
- Strong customer orientation/interaction
- Technical service
- Selective globalization through acquisitions

Inorganics is one of the basic pillars of the Verbund



- Many products are building blocks for the Verbund
- Inorganics is a significant steam producer
- Inorganics provides economic opportunities for the utilization of waste streams and by-products

- Building blocks
- Other Inorganics products
- Other BASF products

Ammonia and caustic soda are main drivers of profitability

Ammonia

- Mainly captive use (>95%)
- Top 3 internal customers (90% of demand):
 - nitric acid (for fertilizers, polyurethanes and polyamide)
 - urea (for melamine, glues and resins)
 - amines
- Stable demand due to fertilizers for agriculture

Caustic Soda

- Mainly captive use (>95%)
- Top 3 internal customers (50% of demand):
 - sulfur based salts
 - surfactants (for detergents)
 - crop protection chemicals
- Anti-cyclical profit pattern due to couple-production chlorine/caustic soda

Organic and external growth as main imperatives for specialties

Innovation

- New products
- New applications
- New business models

- Example: Recently developed applications of Carbonyl iron powder (CIP)

Acquisitions

- Established portfolio areas
- New portfolio areas

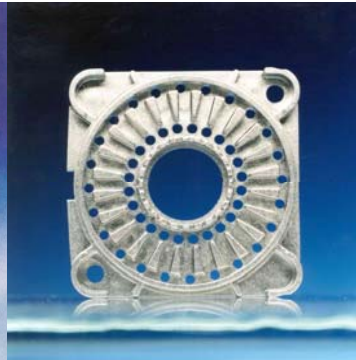
- Example: Acquisition of Merck Electronic Chemicals (MEC) in 2005

Expansion into new applications for carbonyl iron powder

Inductive
Components



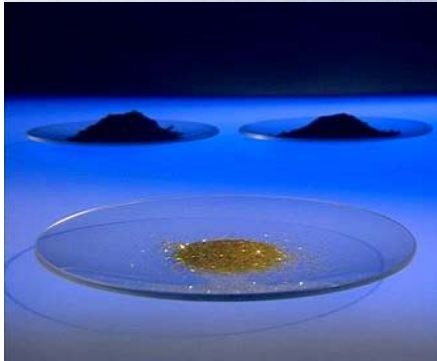
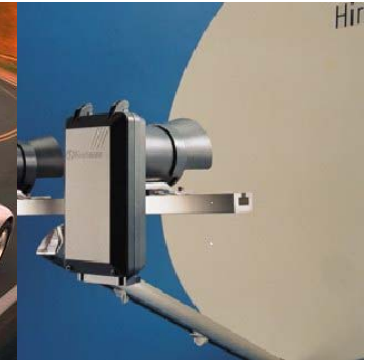
Metal Injection
Molding



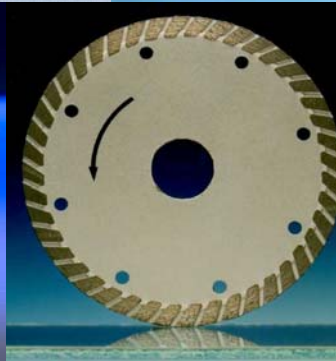
Magnetorheological
Fluids (MRF)



Electro Magnetic
Interference Shielding



Diamond
Synthesis



Diamond
Tools



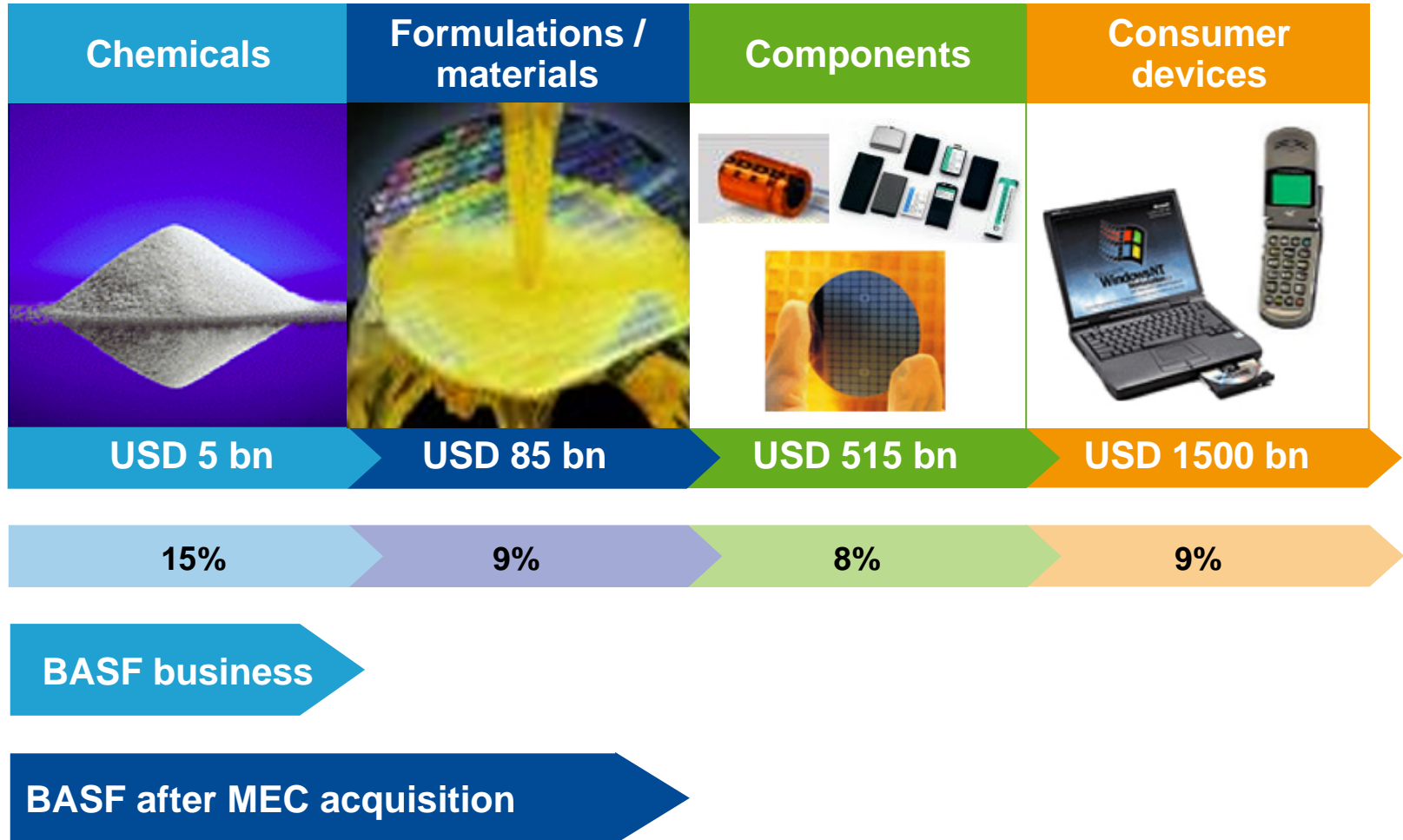
Radar
Absorption



Miscellaneous
Applications

Expected additional sales in 2015: €500 – 750 million

Significant size and growth in electronic chemicals value chain



Expanded positioning in electronic materials through MEC acquisition

Stronger footprint in established areas

Products

- Chemicals

Applications

- Semiconductors

Regions/countries

- Germany
- Japan
- South Korea
- USA

Expansion into new areas

Products

- Formulations and materials

Applications

- Displays
- Photovoltaics

Regions/countries

- Taiwan
- China
- Malaysia
- Singapore

Strategy for Inorganics

Strengthen position in growth markets

Investigating competitive raw material sources (esp. for natural gas)

Investing in additional production capacities for carbonyl iron powder

Investing in sodium methylate plant for biodiesel in Brazil

Active portfolio optimization

Acquiring activities in inorganic specialties and electronic materials (both in established and new portfolio areas)

Forward integration for carbonyl iron powder into new applications and business models

Focussing in commodities on Europe to further reduce complexity

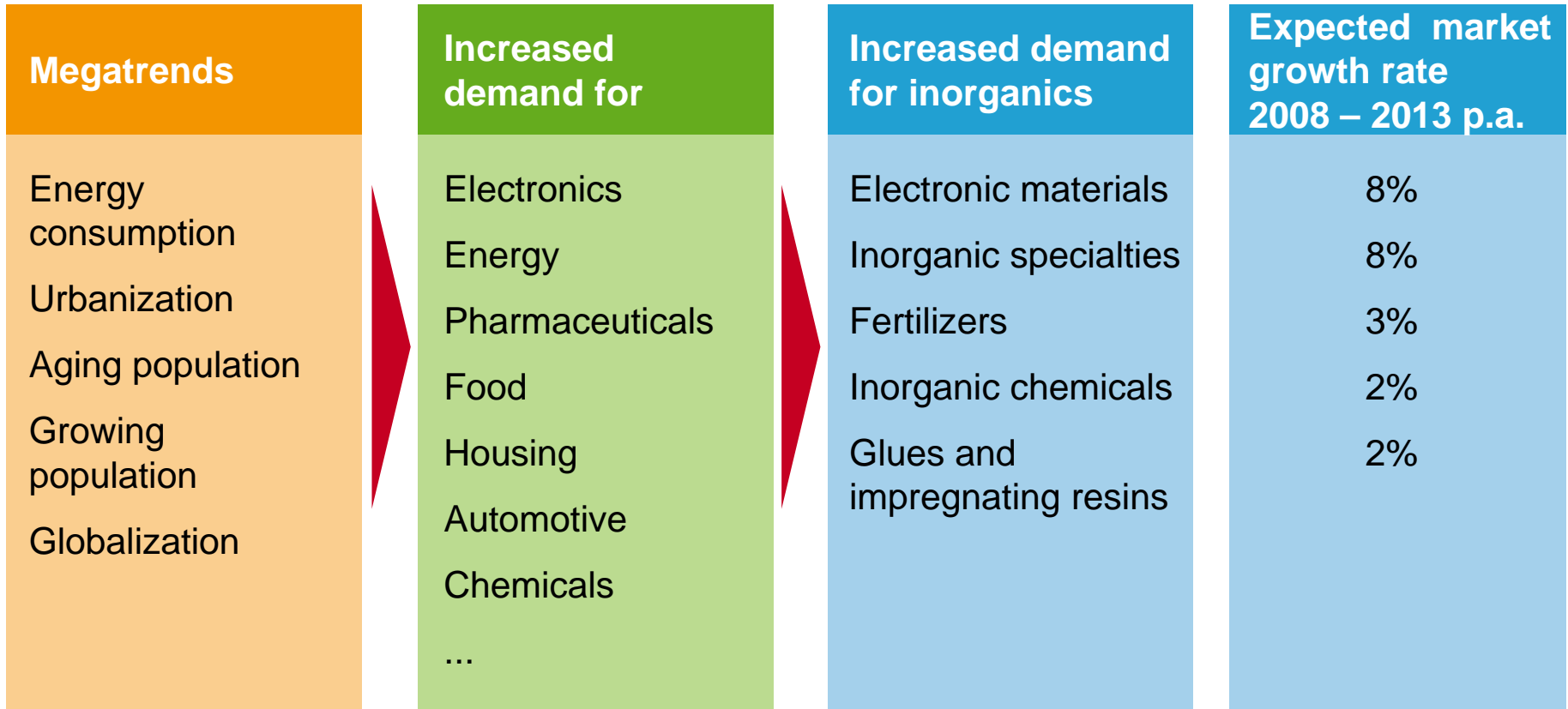
Accelerate innovation

R&D spendings 3% of sales to third parties p.a.

Innovation focus on inorganic specialties and electronic materials

New chemicals and formulations for the next generation of microchips (e.g. "flash memories")

Growth drivers for Inorganics



Our path to profitable growth

Strongly positioned and highly profitable both in commodities and specialties

Successfully managing a complex portfolio

Utilizing competitive advantages in commodities based on the Verbund

Exploiting significant growth potential with specialties

Continued sales growth and high margins expected

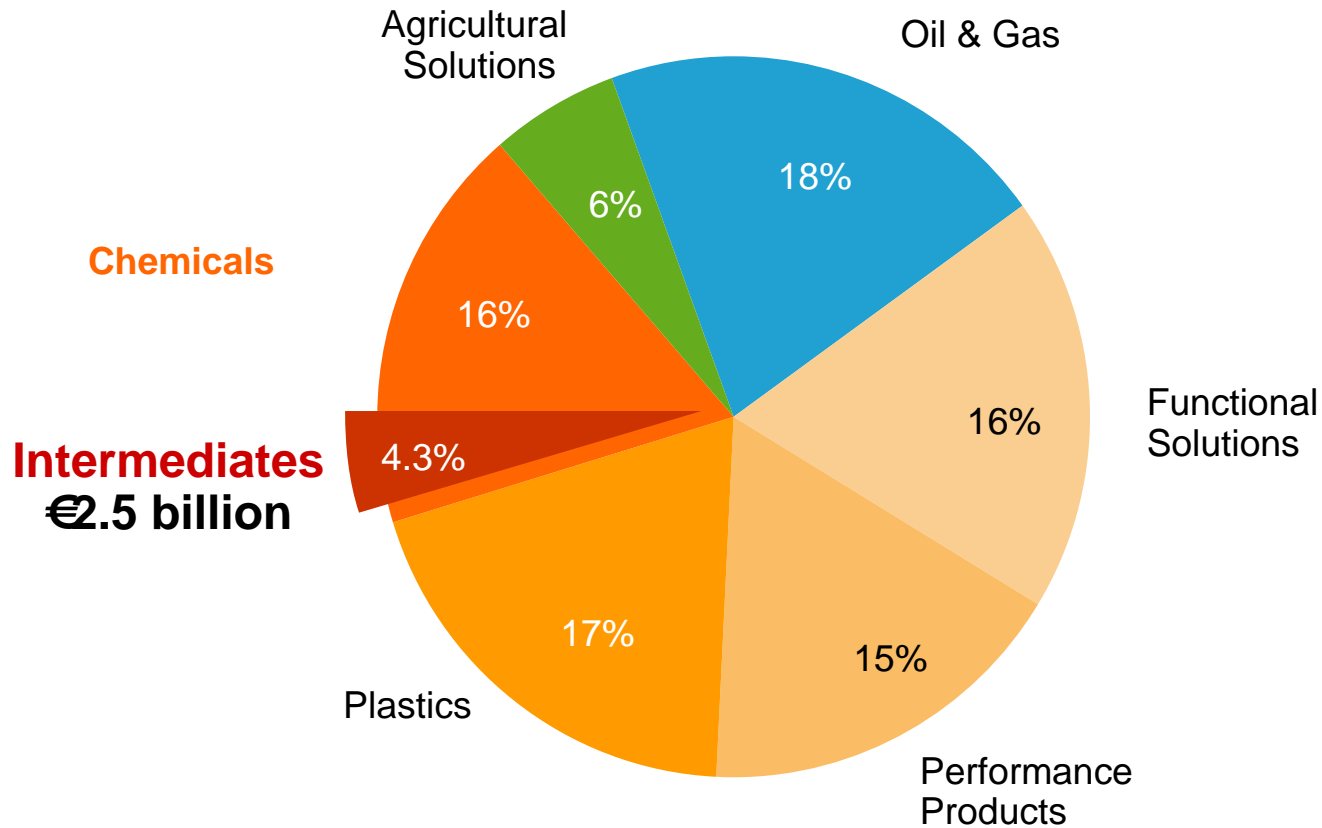
1 | Chemicals

2 | Petrochemicals

3 | Inorganics

4 | Intermediates

Intermediates – Part of BASF's balanced portfolio



2007 Sales to third parties: €58 billion
(incl. other: €6.6 billion (12%))

Intermediates at BASF

Amines

> 200 different amines

Key products:
Ethanolamines
Methylamines
Alkylethanolamines



Butanediol & Derivatives

Entire butanediol value chain

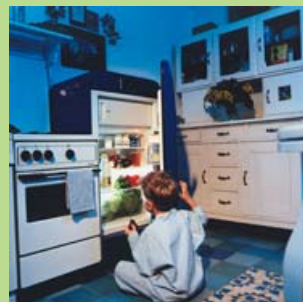
Key products:
Butanediol
THF/PolyTHF
Maleic Anhydride



Polyalcohols & Specialties

Broad range of coatings building blocks

Key products:
Hexanediol
Neopentylglycol
Vinylmonomers



Acids & Specialties

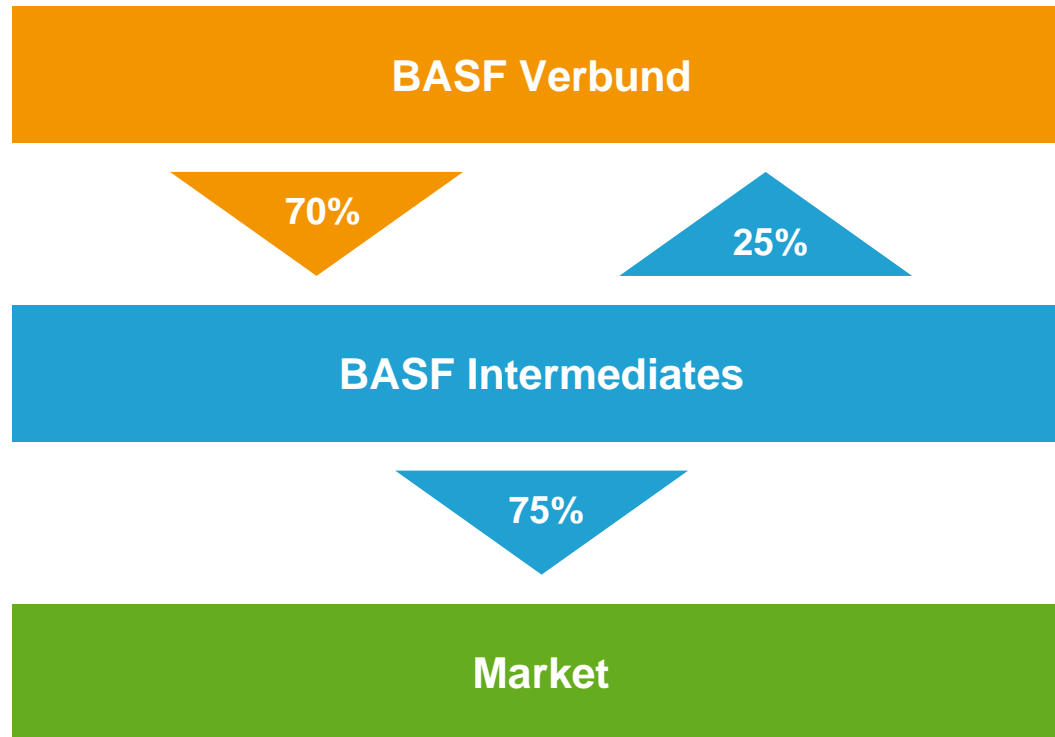
Commodity and specialty in one product

Key products:
Formic Acid
Propionic Acid
Glyoxal



Versatile chemical building blocks/performance enhancers

Rooted in BASF's Verbund – Facing the market



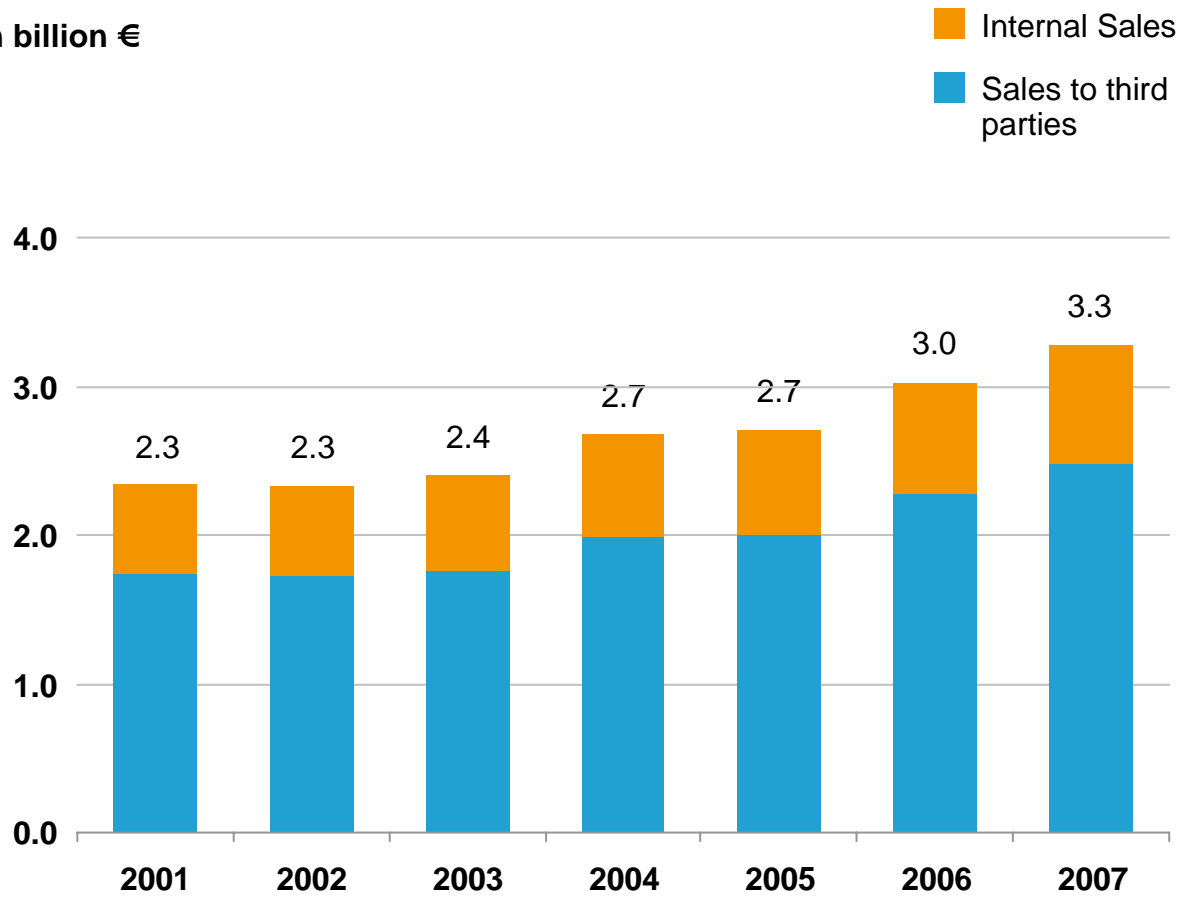
Right setup:

- Benefit from the Verbund
- Add value to the Verbund
- Add value to our customers

€2.5 billion sales to third parties 2007
3.000 customers globally

Intermediates grew faster than the market

In billion €

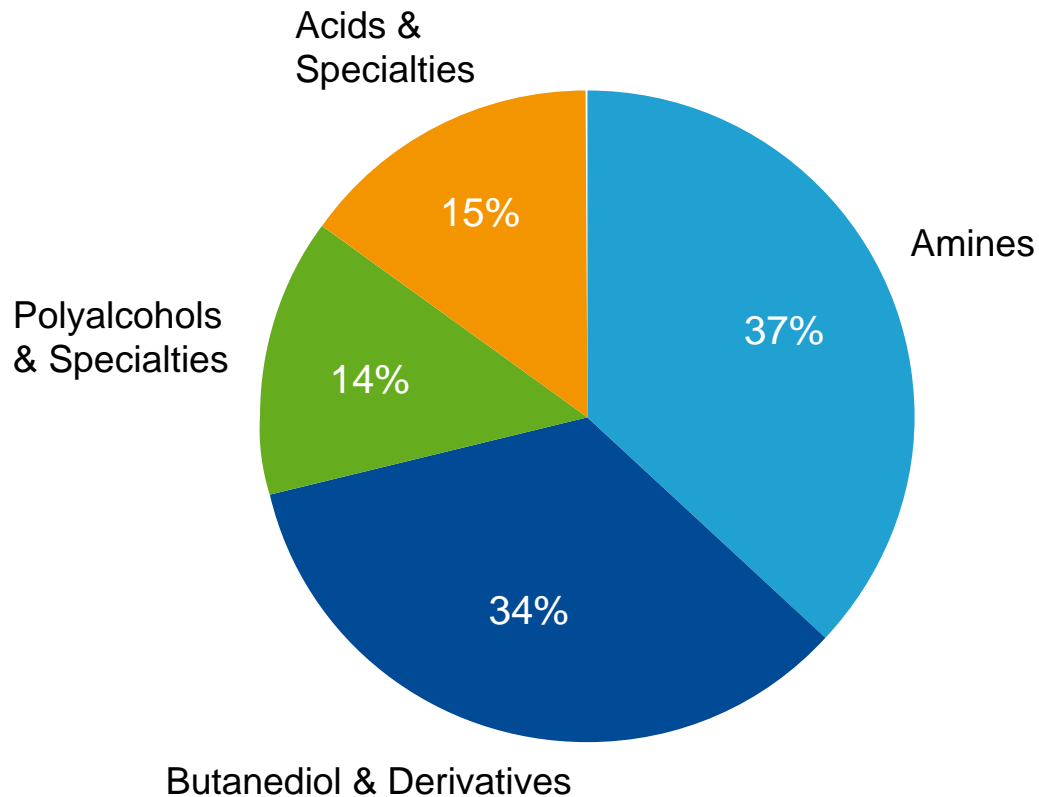


CAGR 2001 - 2007:

- GDP growth: 3.2%
- Chemical production growth*: 3.8%
- Intermediates: 5.8%

* without pharma

Intermediates is a market-driven business



2007 Sales to third parties
€2.5 billion

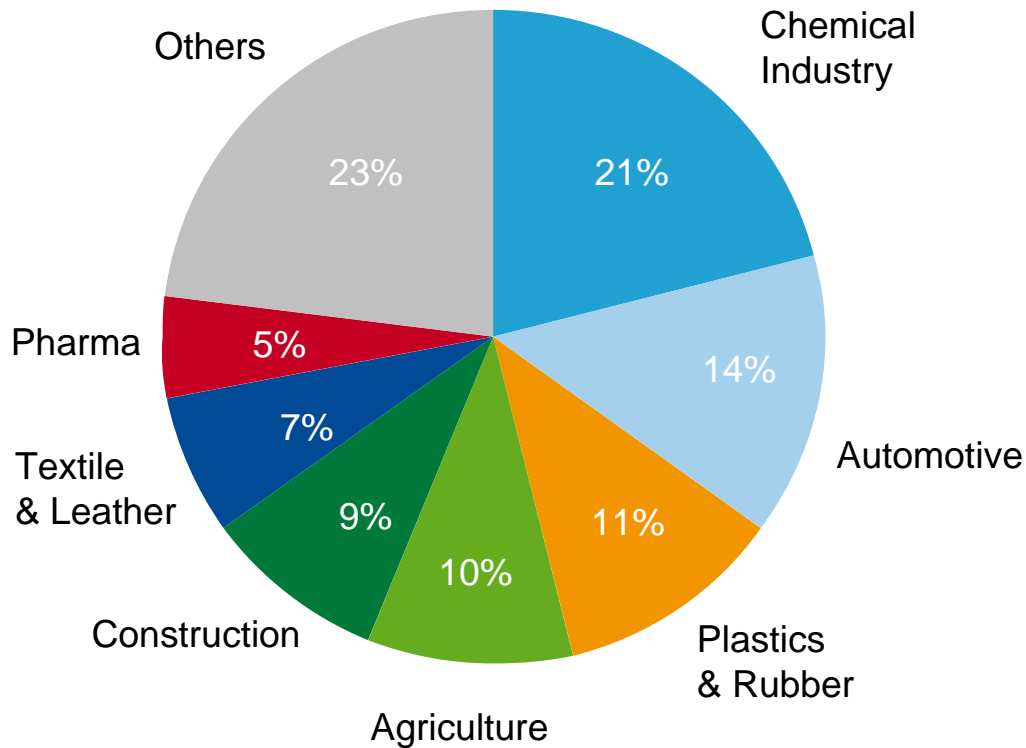
Sales to third parties 2007:

- Commodities 40%
- Specialties 60%
- Market leader in 70 % of product lines

Focusing on growth markets

Growing above GDP in major industries

**Sales 2007
by industry**

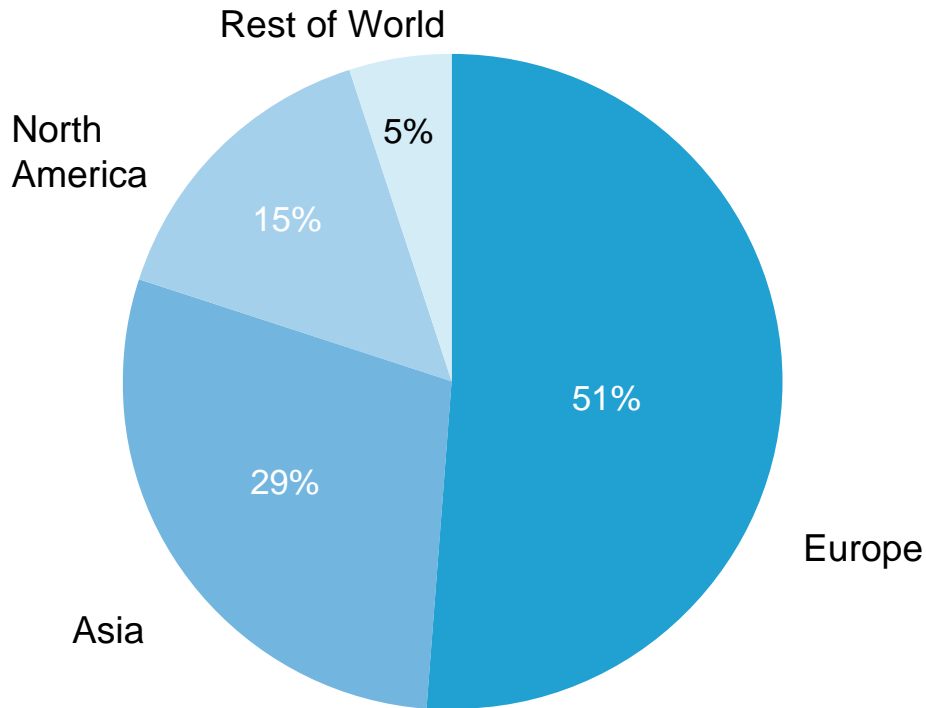


Industries	Annual growth BASF Intermediates 2003 – 2007
Chemical Industry	8%
Automotive	19%
Plastics & Rubber	6%
Agriculture	22%
Construction	27%
Textile & Leather	1%
Pharma	5%

Focusing on growth markets

Growing above GDP in all regions

**Sales 2007
by region**

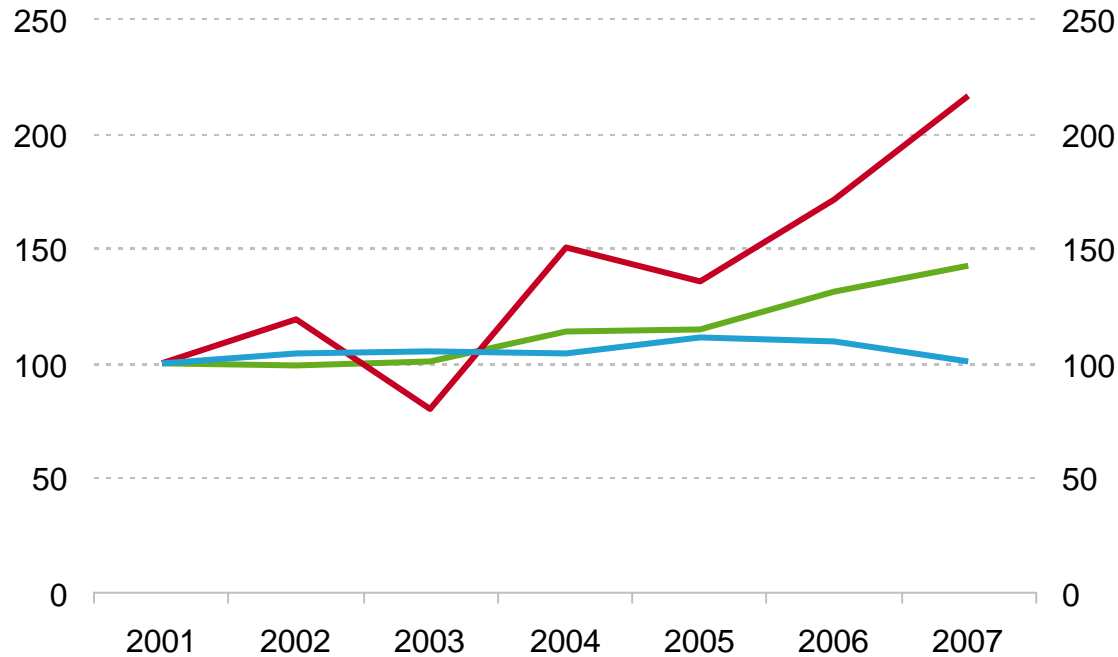


Region	Annual growth BASF Intermediates 2003 – 2007
Europe	7 %
Asia	17 %
North America	6 %
ROW	15 %

Intermediates business re-energized

Intermediates

Index (2001=100)



■ Fixed costs indexed (including depreciation and amortization)

■ Sales to third parties indexed

■ EBITDA indexed

Key changes since 2001:

- Business revamped in past 5 years
- Radical shift in commodity strategy
- Restructuring of assets
- Significant increase in margin and profitability

Strongly positioned to grow above GDP

Right tools

- Unique portfolio of Intermediates
- Appropriate set-up in commodities and specialties
- Focus on value and growth
- Established innovation process and pipeline

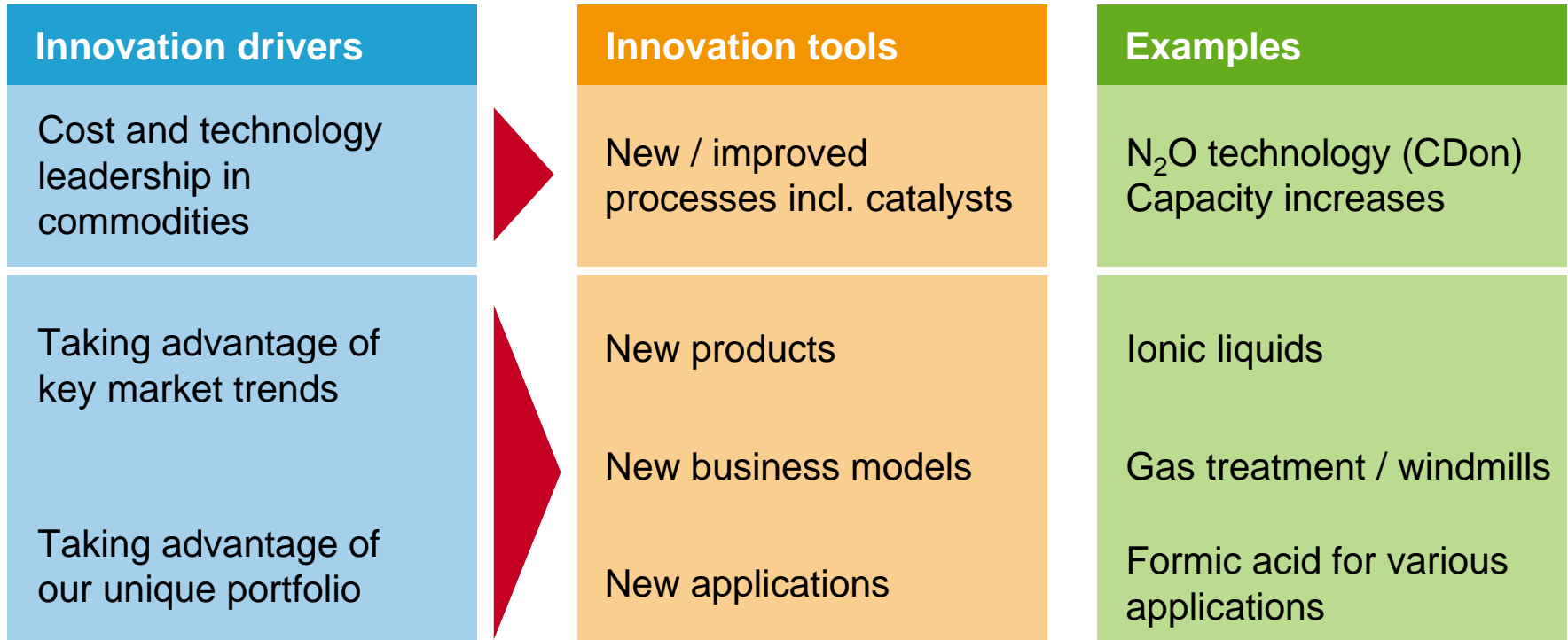
Strong levers

- Integral part of BASF Verbund
- Leading market positions
- Active in strongly growing markets



BASF Intermediates has grown and will grow profitably above GDP

Innovations are key for commodities and specialties



3% of sales to third parties spent for R&D

Excellence in commodities and specialties

Ethanolamines

- Commodity
- 4 product types
- 1,800 kt/a market demand
- Main industries: Agro, detergents, gas treatment

Alkylethanolamines

- Specialty
- 17 product types
- 200 kt/a market demand
- Main industries: Gas treatment, water treatment, coatings

Ethylene oxide

Ethylene

One value chain – two different businesses

- Maximizing value by portfolio extension
- Leading market positions in both segments
- Ethanolamines and Alkylethanolamines representing > 10% of sales to third parties

From product to systems provider

Intermediates
producer

Solution
provider

Systems
provider

Single amine

Amine blend

2 component system
amine blend
plus epoxy resin



BASF 1997

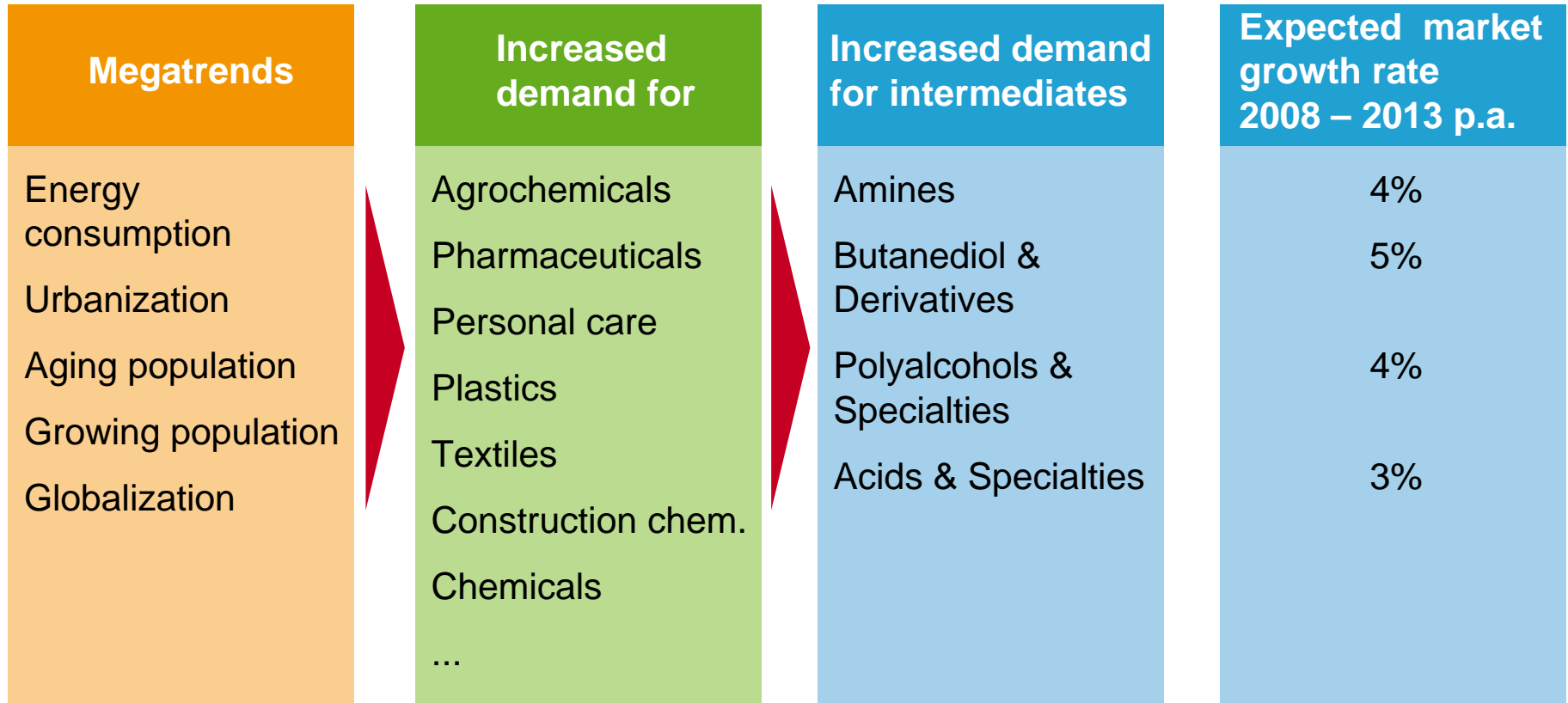
2005

today

Epoxy systems for windmills:

- Installed capacity for wind energy will grow by more than 500 % until 2015
- Amines are key chemicals for production of windmill blades
- 1.5 tons of amines for each MW of new wind energy capacity

Growth drivers for Intermediates



Strategy for Intermediates

Strengthen position in growth markets

- Investment focus in growth region Asia
- Business focus on high growth market segments in growth industries

Active portfolio optimization

- Enhance development of system solutions and new business models
- Permanently reflect portfolio and market trends
- Acquisitions to close strategic gaps

Accelerate innovation

- Advance leading technology positions by
 - improving existing processes
 - radical new processes for key products
- Open up new applications in close customer cooperation

Our path to profitable growth

Increasing demand for more and new **Intermediates** will fuel our growth

We are well positioned to make best use of that

- **in Commodities** by our world-class processes, our Verbund-integration, our leading market positions and our know-how
- **in Specialties** by our unique portfolio, our innovative solutions and our strong customer co-operations



The Chemical Company