



## Basic Petrochemicals Unit

 **Braskem**



#### Commercial and Administrative Offices

##### THE NETHERLANDS

##### UNITED STATES

Texas  
Pennsylvania

##### MEXICO

##### PERU

##### COLOMBIA

##### VENEZUELA

##### SINGAPORE

##### CHILE

##### ARGENTINA

##### BRAZIL

Bahia  
São Paulo  
Rio de Janeiro  
Rio Grande do Sul

##### GERMANY

##### AUSTRIA

#### Polymers Units

##### GERMANY

Wesseling  
Schkopau

##### UNITED STATES

Pennsylvania  
West Virginia  
Texas

##### BRAZIL

Bahia  
São Paulo  
Rio de Janeiro  
Rio Grande do Sul

#### Basic Petrochemicals Units

##### BRAZIL

Bahia  
São Paulo  
Rio de Janeiro  
Rio Grande do Sul



# Global Presence

Braskem has petrochemical complexes located strategically in Brazil, the United States and Europe.

## Vinyls Industrial Units

**BRAZIL**  
Alagoas  
Bahia

## Innovation & Technology Centers

**BRAZIL**  
**UNITED STATES**

- Commercial and Administrative Offices
- Basic Petrochemicals Units
- Polymers Units
- Innovation & Technology Centers
- Vinyls Units

2012

Gross revenue

US\$ **21.6** billion  
R\$ 42.1 billion

EBITDA US\$ **2** billion  
R\$ 4 billion

Net revenue

US\$ **18.2** billion  
R\$ 35.5 billion

US\$ **8** billion  
in exports

Over US\$ **870** million  
R\$ 1.7 billion  
invested in 2012

US\$ **100** million  
R\$ 188 million  
in research and development

Over US\$ **6** million  
R\$ 12.6 million  
in social projects

**650** patents

Clients in over  
**70** countries

## The largest thermoplastic resins producer in the Americas

Braskem has a strategic vision of becoming the world leader in sustainable chemistry by 2020, innovating to better serve society. To achieve this goal, the company strengthened its presence in research and development and increased its investments in innovation and technology. At the same time, it continues to invest in boosting its production capacity and expanding internationally, as well as gaining access to additional feedstock sources at competitive conditions.

Braskem's structure is divided into five Business Units and six Support Units. This division reflects the importance of the business areas and the support offered by the other areas to ensure that the objective of sustainable growth is achieved, while maintaining a strong focus on excellence in health, environment and safety. The Business Units are divided as follows: Basic Petrochemicals; Polyolefins, Comperj and Renewables; Vinyls; Latin America; and United States and Europe. Meanwhile, the Support Units are divided as follows: Financial, Planning and Investor Relations; Investments; Innovation and Corporate Technology; Legal and Corporate Governance; People, Organization, IT and Supply; Institutional Relations and Sustainable Development.

Braskem is the global leader in biopolymer production and the largest petrochemical producer in the Americas. This position was achieved in early 2010, when it acquired the Brazilian petrochemical producer Quattor and the polypropylene assets of the U.S. company Sunoco Chemicals. In 2011, it acquired the polypropylene operations of Dow Chemical, which included two units in the United States and two units in Germany. Today Braskem has the capacity to produce annually some 7.5 million tons of thermoplastic resins (Polyethylene, Polypropylene and PVC). Including basic petrochemical products, Braskem's annual production exceeds 16 million tons.

### Production Chain



Refinery



**Braskem**  
First generation  
Basic Petrochemicals



**Braskem**  
Second generation  
Polyethylene  
Polypropylene  
PVC



Plastic  
manufacturers

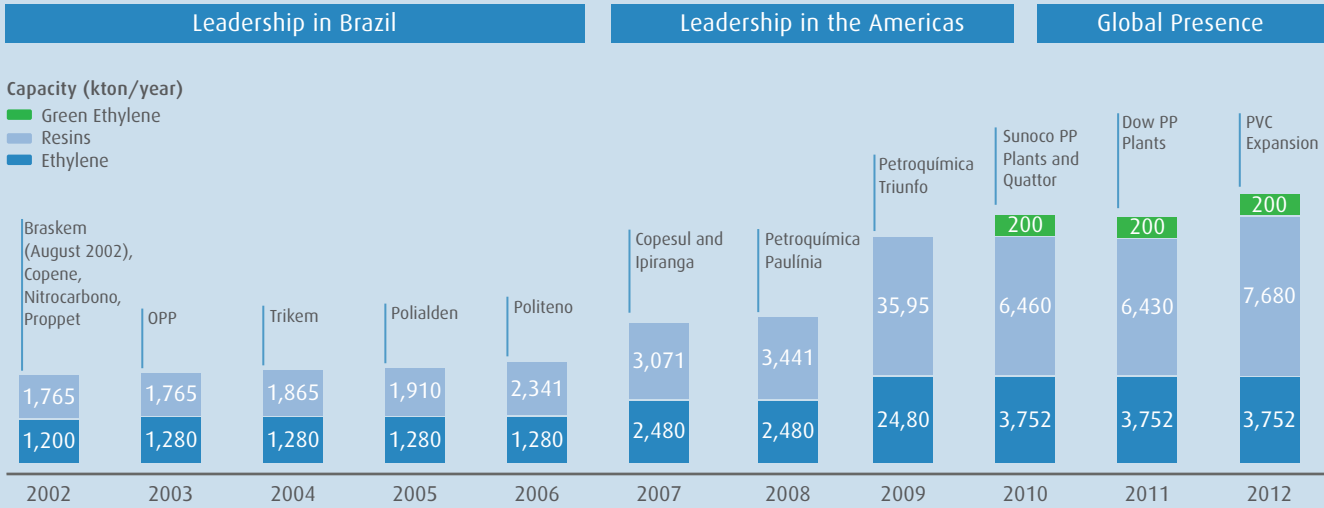
### R&D

Braskem's growth strategy is supported by the development of new technologies through research activities. The company maintains partnerships with the research entities Fapesp, Novozymes and CNPEM/LNBio. The Innovation & Technology area is continually conducting research into new chemical products made from traditional or renewable feedstocks, aiming to consolidate the company's leadership in the renewables segment and in keeping with the company's 2020 Vision of becoming the world leader in sustainable chemicals and innovating to better serve society. The team is formed by over 300 professionals, maintains Technology and Innovation Centers in Triunfo, Rio Grande do Sul, and in Pittsburgh, Pennsylvania, and has already filed 650 patents. In 2012, investments in innovation amounted to US\$ 100 million.

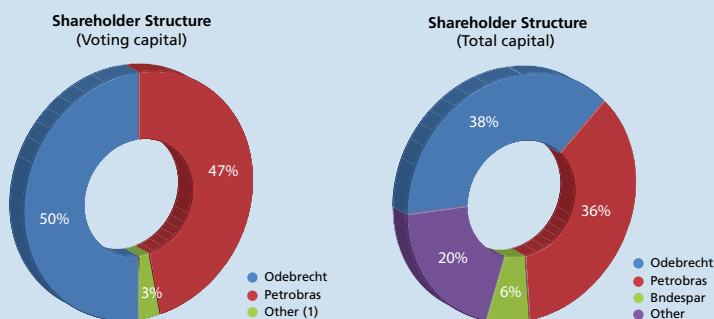
Braskem's international expansion process is also advancing. In addition to its industrial units in Germany and in the United States, where it maintains a unit of its Technology and Innovation Center, Braskem also maintains commercial offices in these countries, as well as in Argentina, Peru, Chile, Mexico, Venezuela, Colombia, The Netherlands and Singapore. This extensive reach allows Braskem to remain close to its Clients and markets and to offer technical and commercial support. Braskem has an feasibility studies in Peru, Venezuela and Bolivia, with this set of initiatives closely aligned with the company's strategy of diversifying its feedstock matrix by increasing the share of gas-based feedstocks.

## Success Case

### Consistent delivery of results: track record of organic growth and acquisitions



Braskem has Odebrecht as its controlling shareholder and Petrobras as one of its main shareholders. Created in 2002 from the merger of six Brazilian producers, Braskem has maintained a consistent path of growth in the chemical and petrochemical industries in Brazil and worldwide. Braskem is a company that invests in innovation and technology, believes in the potential of each human being and envisions its development based on a commitment to preserving life, as made clear in its strategic vision.



#### Main Petrochemicals Products

Ethylene	Bahia - 1,280 kton/y Rio Grande do Sul - 1,252 kton/y Rio de Janeiro - 520 kton/y São Paulo - 700 kton/y
Green Ethylene	200 kton/y
Propylene	1,585 kton/y
Butadiene	466 kton/y
Benzene	969 kton/y

## Basic Petrochemicals Production Capacity

Product	total kt(year)
<b>Olefins</b>	
Green Ethylene	200
Ethylene	3,732
Propylene	1,585
Butadiene	466
Butene-1	96
<b>Aromatics</b>	
Benzene	969
Toluene	195
Ortho-Xylene	126
Para-Xylene	203
Cumene	320
Carbon Black Feedstock	260
Toluene-Xylene stream	70
<b>Fuels</b>	
Automotive Gasoline (m³)	1,185
LPG	60
Fuel Oil	105
Gas Oil	34
ETBE	383
<b>Solvents</b>	
Mixed Xylene	169
Aliphatic C6 Solvent	52
Reformer Raffinate	130
Pygas Raffinate	63
AB9 solvent	59
White Spirit	44
Ciclohexane	7
<b>Specialties</b>	
Hydrocarbon Resins	19
Polyisobutylene	36
Isoprene	26
DCPD – Dicyclopentadiene	33
Piperylene	29
Nonene/Propylene Tetramer	52
High Purity Propane	16

More than **16** million t/year of production capacity in resins and petrochemical products

**18%** of the resins' revenue is generated by products launched in the last three years



## SUSTAINABLE DEVELOPMENT

# Braskem: the world's largest biopolymer producer

In September 2010, Braskem inaugurated in Triunfo, Rio Grande do Sul, its plant producing green ethylene, which is used to make green polyethylene. With production capacity of 200 kton/year, the plant has made Braskem the world's largest biopolymer producer.

Green PE, which is marketed under the brand I'm green™, is an innovative solution that is 100% renewable and combats the greenhouse effect and global warming. This is because it absorbs more CO<sub>2</sub> from the atmosphere than it emits throughout its production cycle, considering the entire process from the cultivation of sugarcane to the production of plastics at Braskem. For each ton produced, 2.5 tons of CO<sub>2</sub> are captured and sequestered.



1 ton  
of Green PE



captures up to  
2.5 tons  
of CO<sub>2</sub>

Green Ethylene makes use of the entire energy capacity of sugarcane, its raw material. Each kilogram of green polyethylene captures some 2.5 kilograms of CO<sub>2</sub>, which helps reduce the greenhouse effect and in turn global warming.



Green Polyethylene made from Green Ethylene has the same properties as petrochemical polyethylene.

### Same characteristics

Traditional

Green



Oil and Gas



Ethanol

[www.braskem.com](http://www.braskem.com)

 **Braskem**