Shaping our future

The strength to change

Solvay's position and strategy in hydrogen peroxide

London Investors Morning
September 30th, 2010

SOLVAY

Agenda

- Overview of Solvay Group
- Hydrogen peroxide
  - ✓ Main end markets
  - ✓ Solvay's leadership positions and geographical footprint
  - ✓ Solvay's key strengths

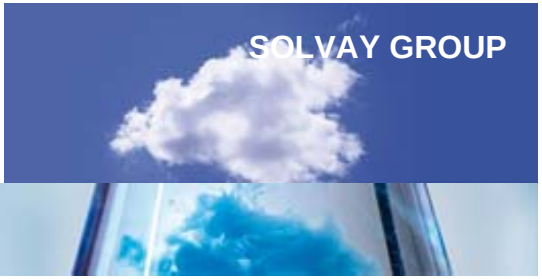
Overview of Solvay Group
Strategic refocus – Reinvestment process

- Solvay, a new industrial benchmark based on
  - ✓ Two existing strong pillars with clear leadership positions
  - ✓ World scale facilities
  - ✓ Global presence with significant Asian and Latin American exposure
  - ✓ Strong product development culture
  - ✓ Very strong financial structure

- With global ambition, aimed at improving Solvay's sustainability profile by focusing on investment in
  - ✓ High value added activities
  - ✓ Low energy footprint
  - ✓ Reduction of the cyclicality of the portfolio
  - ✓ Contribution to the geographic expansion
  - ✓ Sustainability targets of the Group

- Unchanged philosophy : sustained growth with leading positions; commitment to a conservative financial structure

Solvay's core competencies



- **Strong leadership positions across the portfolio**
- **Competitive cost structure** due to above industry-average plant capacities, cogeneration plants and raw material integration
- **Sound balance sheet and tight capital management**
- Solid track record of **successful portfolio management**

Overview of Solvay Group

Diversified customer base (CH & PL excl IAS)

in % of 2009 Sales (= EUR 5,250m)

Construction and architecture	**21%** of Group sales SBUs : Vinyls, Specialty Polymers, Fluor
Chemical industry	**11%** of Group sales SBUs : Electrochemistry, Soda Ash, Fluor
Glass industry	**9%** of Group sales SBUs : Soda ash
Water and Environment	**7%** of Group sales SBUs : Pipelife, Soda ash, Electrochemistry
Electricity and Electronics	**6%** of Group sales SBUs : Specialty Polymers, Vinyls
Detergents, cleaning and Hygiene products	**6%** of Group sales SBUs : Soda Ash, Electrochemistry, Hydrogen peroxide
Paper	**6%** of Group sales SBUs : Hydrogen peroxide, Electrochemistry
Packaging	**5%** of Group sales SBUs : Vinyls, Specialty Polymers
Automotive industry	**4%** of Group sales SBUs : Specialty Polymers

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Main end markets of hydrogen peroxide

Hydrogen peroxide, a green oxidant that decomposes in water and oxygen

BLEACHING

- ✓ PULP
- ✓ PAPER RECYCLING
- ✓ TEXTILE

DISINFECTION/ BIOCIDE

- ✓ ASEPTIC GRADES FOR BEVERAGES PACKAGING
- ✓ PERACETIC ACID
- ✓ WATER TREATMENT

INTERMEDIATE CHEMICAL SYNTHESIS

- ✓ PROPYLENE OXIDE
- ✓ CAPROLACTAME

CLEANING/ ETCHING

- ✓ ELECTRONIC GRADES

Main end markets of H_2O_2
Standard grades – Pulp & paper

- Hydrogen peroxide replaced chlorine for paper production in the 90's
- Main market for hydrogen peroxide
  > 50% of 2009 H_2O_2 sales volumes
  - ↳ Pulp bleaching = 85%
  - ↳ Paper recycling = 15%
- Expectations next 20 years
  1. Increase of global demand from pulp & paper industry for H_2O_2
  2. Consumption moving to emerging markets

	Mature markets	Emerging markets
Per capita consumption	**A few 100 kg/y but in decline**	**A few 10 kg/y but strong growth**
Population evolution	**Stagnation**	**Growth + urbanisation** ↳ **Packaging** ↳ **Magazine?**

Main end markets of H_2O_2
Standard grades – Textile

Hydrogen peroxide is used as bleaching agent in the textile industry

Growing and moving market

2000 global market

- ✓ H_2O_2 consumption: 190 kt/y
- ✓ China: 50%

⇨

2013 global market

- ✓ H_2O_2 consumption: 370 kt/y
- ✓ China: 70%
- ✓ Declining trend in the USA & in Europe

Main end markets of H_2O_2
Standard grades – Mining

Hydrogen peroxide is more and more used in mining applications (gold, silver, uranium, …)

- To enhance the recovery of metals
- To detoxify water effluents after metal extraction
- To generate superactive oxidants on site (caro's acid) when hydrogen peroxide is not active enough

⇨ **Entry point to develop industrial presence in remote locations**

Main end markets of H_2O_2
Specialties – Disinfection

1. H_2O_2 aseptic grade: special grade with low dry residue used as disinfectant
2. Peracetic acid: a molecule combining H_2O_2 and acetic acid = biocide

↳ Many applications stimulated by more stringent standards and legislations – food processing, aseptic packaging of beverages, animal farming, aquaculture, sewage, …

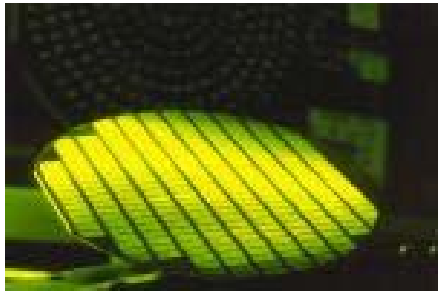
↳ Growth potential in developed countries / high growth potential in emerging countries

Main end markets of H_2O_2
Specialties – Electronics

Cutting edge purification technology for production of high purity electronic grades – down to 100ppt impurity level (0,1 mg/ton).

Used in the production of

- semiconductors with the most demanding applications in car, telecommunication, and consumer electronics industries
- photovoltaic cells
- LCD



Main end markets of H_2O_2
Specialties – Electronics

- Entry point to broaden portfolio with other key high purity chemicals
  - ✓ Fluorhydric acid,
  - ✓ Chlorhydric acid,
  - ✓ Phosphoric acid

- Objective: become a strong integrated player in ultra pure wet chemicals for the electronics industry

Main end markets - Solvay's H2O2 sales

Sales volumes from 2005 to 2015

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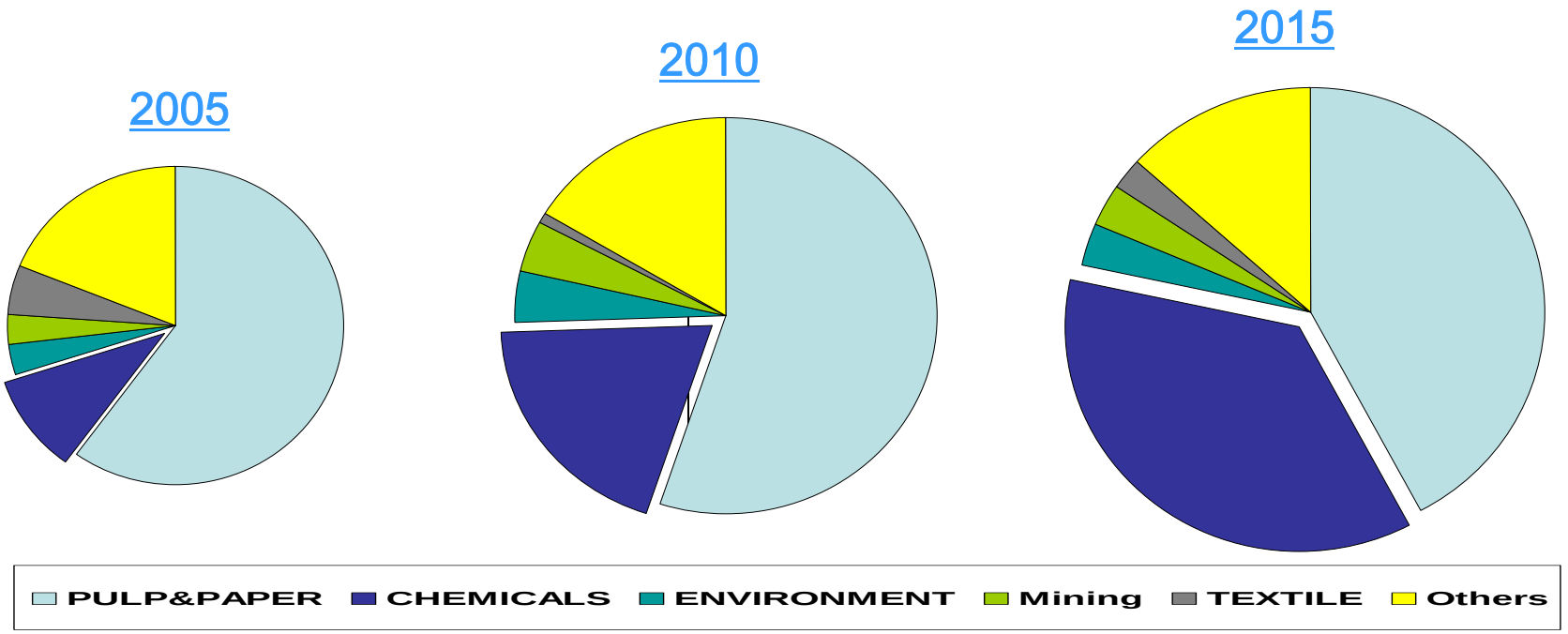
Strong growth of H_2O_2 consumption by chemicals sector (HPPO)[1]



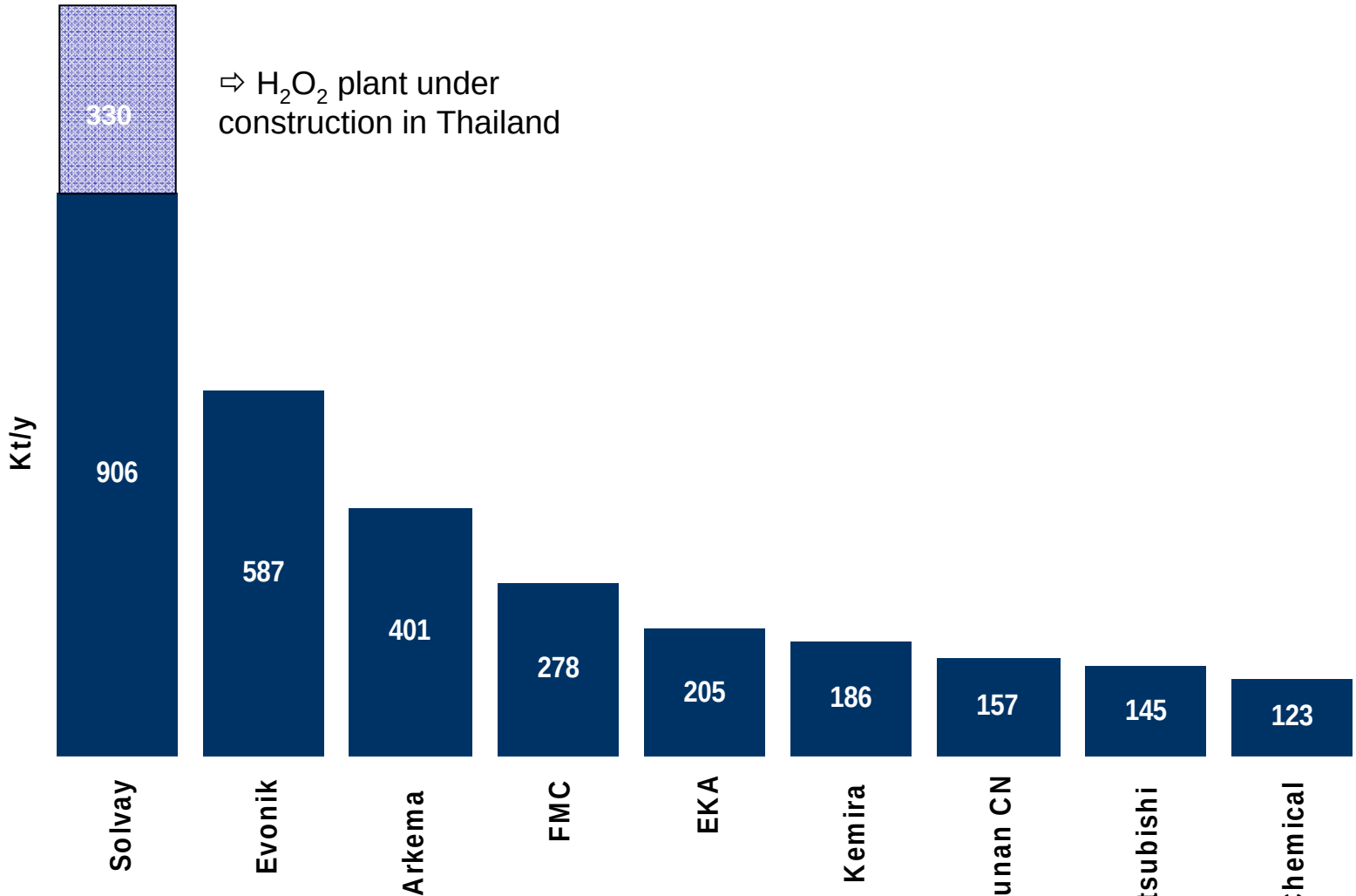
In 2015, H_2O_2 market will be based on two strong pillars:

- ✓ Pulp & paper
- ✓ Propylene oxide

[1]: HPPO considered at 50%

Leadership positions and geographical footprint

Solvay, the global leader in H_2O_2

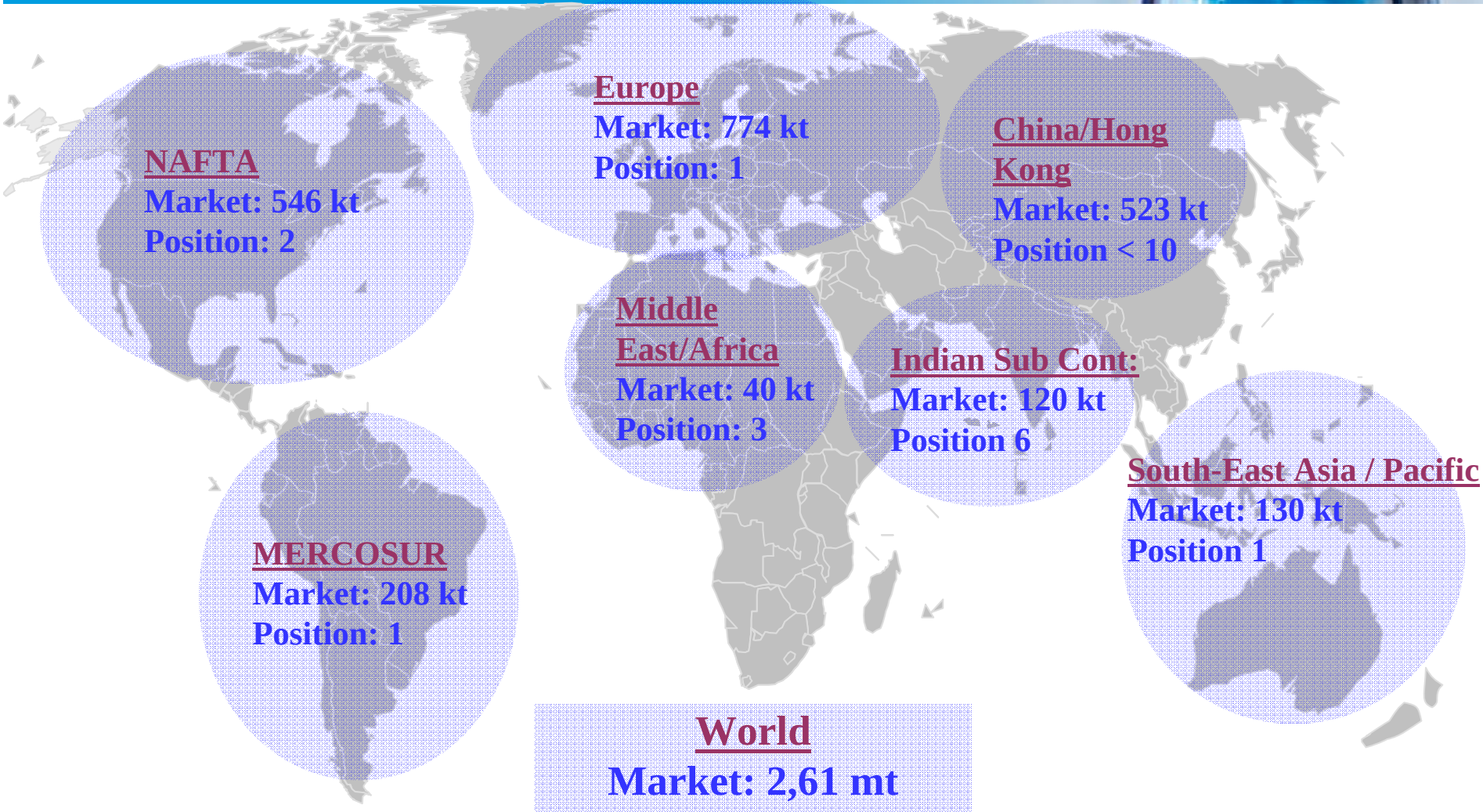


⇨ H_2O_2 plant under construction in Thailand

As of January 2010; capacities at 100%

Leadership positions and geographical footprint

Solvay, the global leader in H_2O_2



World
Market: 2,61 mt
Position: 1

Leadership positions and geographical footprint
Focus on China

- Hydrogen peroxide joint venture with Huatai Group, a pulp & paper player integrated in chemicals production
  - Build a new plant of 50 kt per year in Shandong province by 2011
  - Production of standard grades (pulp & paper, textile, chemicals, …) and specialties (high purity grades and peracetic acid)
- Project for a second plant in South of China focused on regional pulp & paper industry

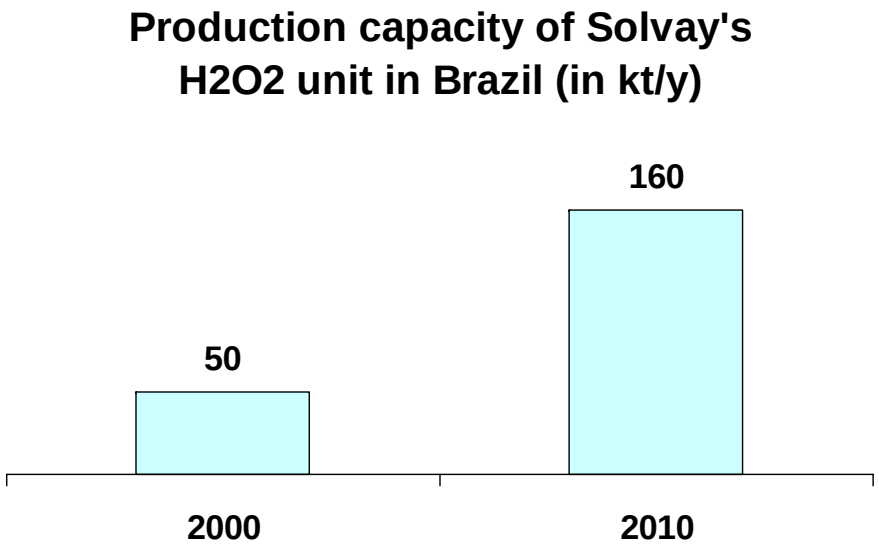
Leadership positions and geographical footprint

Focus on Thailand

- Construction of hydrogen peroxide for propylene oxide (HPPO) mega plant (330 kt per year) in Joint Venture with Dow Chemical
  - To supply H_2O_2 to adjacent propylene oxide plant of Dow Chemical
  - Start-up expected in 3Q 2011
- Synergies of large integrated site
- Strong basis to support Solvay's growth in the region

Leadership positions and geographical footprint
Focus on South America

- Strong expansion of production capacity of Solvay's hydrogen peroxide unit in Brazil over the 10 last years



- Continuous investments in distribution / terminals network in South America (Chili, Argentina, Colombia, Peru, …)

Solvay's key strengths in H_2O_2

- Strong leadership position in:
  - ✓ Standard grades
  - ✓ Specialty grades
- Global presence ⇨ follow the consolidation of two major industries: pulp & paper and chemicals
- High productivity technology
- Intensive R&D programs

Solvay's key strengths in H_2O_2
High productivity technology

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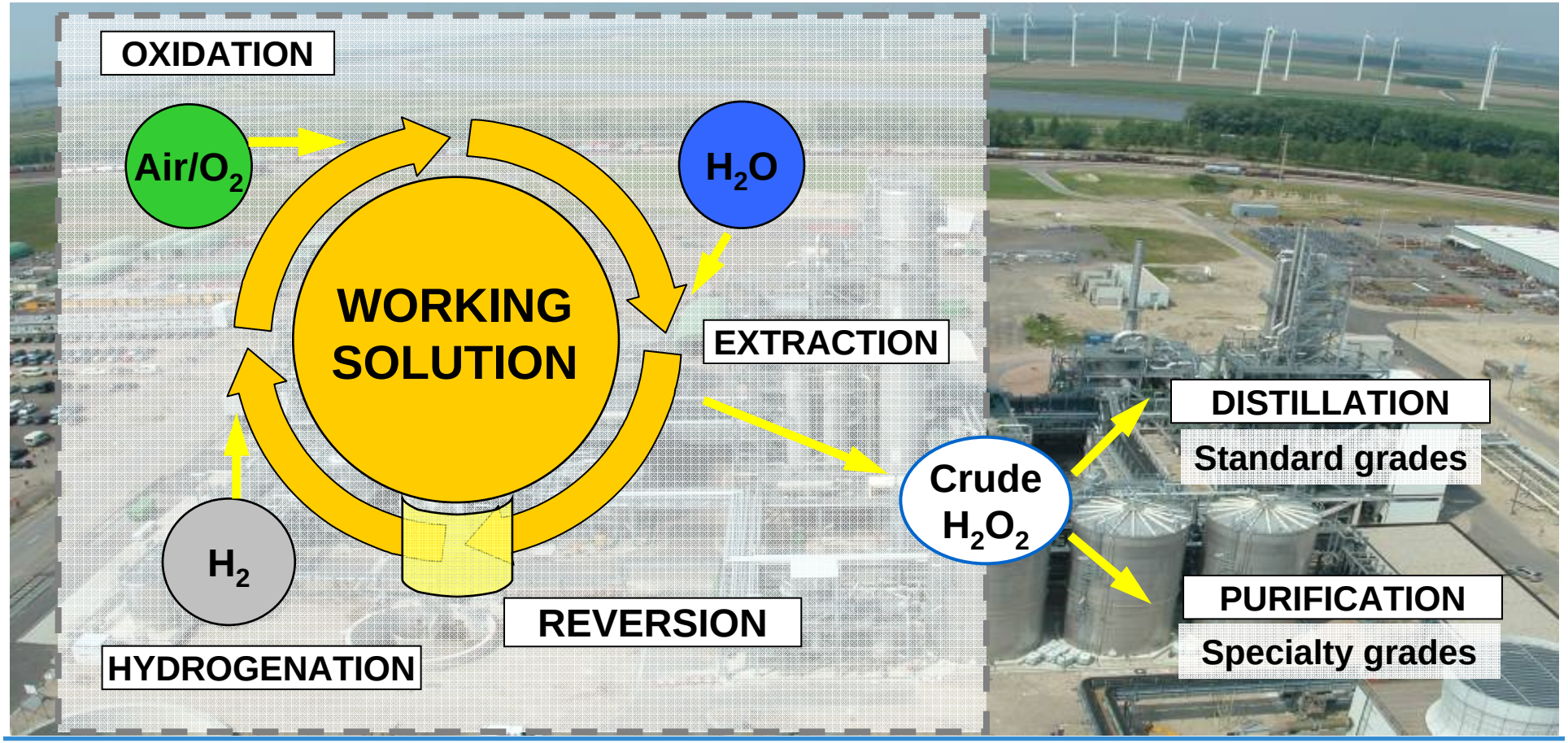
Anthraquinone auto-oxidation process



Solvay's key strengths in H_2O_2
High productivity technology

- One of the key ingredients of the working solution, the anthraquinone (AQ), determines the productivity of the process
  - ✓ Solvay has developed a proprietary AQ (AMYL AQ) which gives a higher productivity than the AQ used by the industry (ETHYL AQ)
- The high productivity technology allows to build the largest capacities with
  - ✓ The lowest specific investment cost
  - ✓ Reduced fixed costs
  - ✓ Optimized variable costs

Solvay's key strengths in H_2O_2
High productivity technology and HPPO

- SOLVAY has the capability to engineer and build mega plants
  - ✓ HPPO mega plants, the largest H_2O_2 plants in the world (Antwerpen: 230 kt/y; Thailand: 330 kt/y)

- HPPO in partnership with BASF and Dow Chemical
  - ✓ Alliance between leaders
  - ✓ The quality of H_2O_2 has been developed and adapted to the HPPO process during many years
  - ✓ BASF, Dow Chemical and Solvay have a privileged relationship to build future projects

Solvay's key strengths in H_2O_2
Research and development

- Being the technology leader in H_2O_2, Solvay innovates in
  - ✓ Technical solutions for the AO process, adapted to the different levels of plant sizes (from mini to mega)
  - ✓ The next generation technology with a strong focus on sustainability (direct synthesis, H_2O_2 production in fuel cells, …)
  - ✓ New markets through application developments and privileged customer relationships

- Strong internal and external R&D partnerships (a.o. in Asia)

Conclusion
Strategic alignment of hydrogen peroxide activity

- **Sustainability targets & low energy footprint**
  - ➔ H_2O_2 as a green oxidant ⇨ by-product is water
  - ➔ Environmental benefits of HPPO technology: 70% less waste water, 35% less energy consumption, 25% lower CAPEX
- **High value added activities**
  - ➔ Development of high value added special grades
- **Reduction of the cyclicality of the portfolio**
  - ➔ HPPO ⇨ 45% of 2011 capacity downstream integrated; less exposure to cycles
- **Geographic expansion**
  - ➔ High growth expected in Asia ; major ongoing investments there
  - ➔ Asia ¼th of 2015 sales

Questions & Answers

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