



# Ion Exchange Resins – Purified water for the world

**Michael Zobel**  
Head of Business Unit Ion Exchange Resins

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## Agenda

- **ION – Business overview**
- Growth drivers
- New technologies and investments
- Outlook

## Ion Exchange Resins – The water business

Performance Chemicals	Applications Ion Exchange Resins
	    
Material Protection Products	
Inorganic Pigments	
Functional Chemicals	
Leather	
RheinChemie	
Rubber Chemicals	
Ion Exchange Resins	

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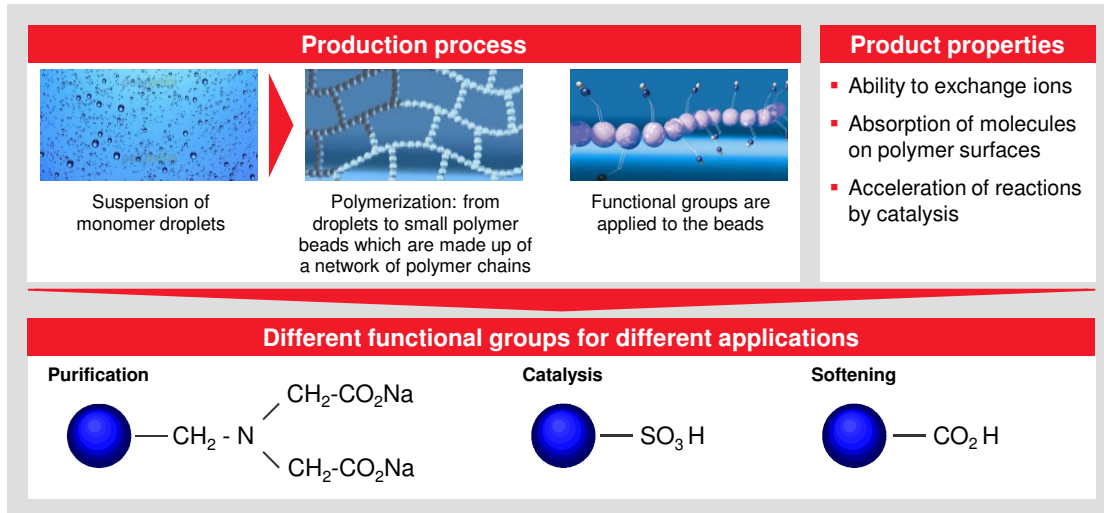
## ION – Business overview

<b>Facts</b>	<ul style="list-style-type: none"> <li>▪ Sales: &lt;€200 m</li> <li>▪ Employees: ~500</li> <li>▪ Customers: &gt;1,500</li> <li>▪ Customer industries: &gt;20</li> </ul>
<b>Products &amp; brands</b>	<ul style="list-style-type: none"> <li>▪ Products: ~250</li> <li>▪ Brand: </li> </ul>
<b>Markets &amp; competition</b>	<ul style="list-style-type: none"> <li>▪ Market position: among top 3 global players</li> <li>▪ Oligopolistic industry structures</li> <li>▪ Competitors: Dow/Rohm &amp; Haas, Mitsubishi Chemicals</li> </ul>

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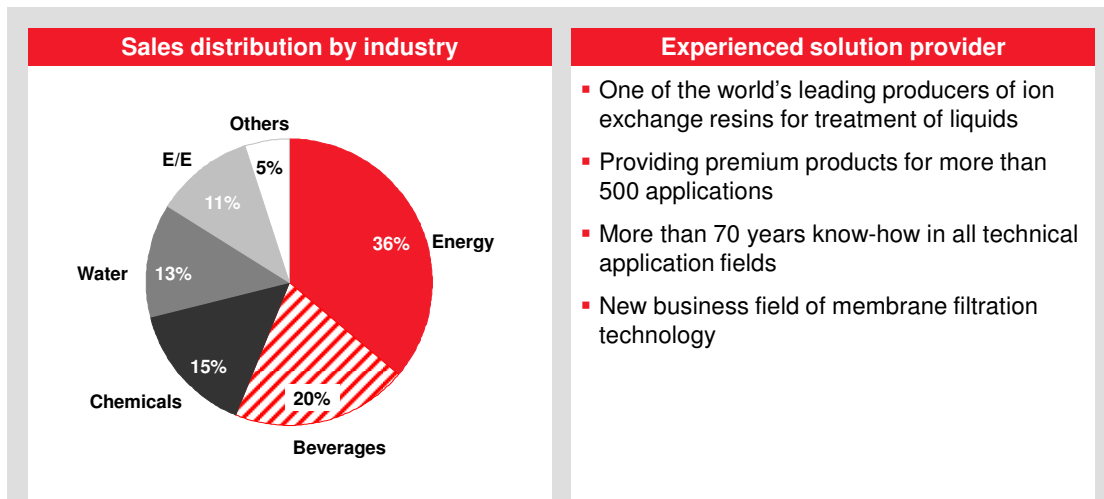
## ION production process for application variety



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## ION – Various customer industries for water treatment with energy and beverages as main application areas








Source: LANXESS estimates

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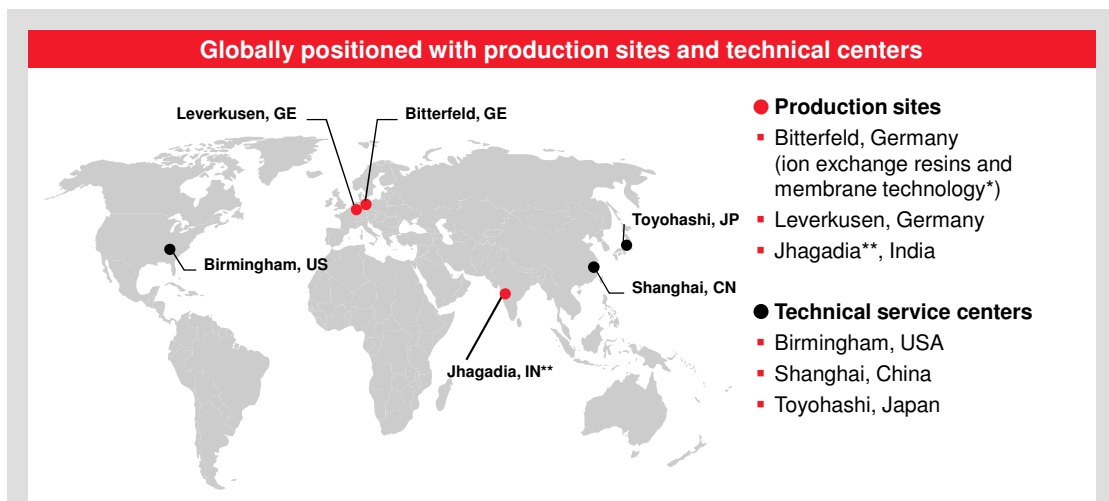
## Tailor-made solutions for over 500 applications

Applications in ION key industries	
<b>Energy (nuclear and other power plants)</b> <ul style="list-style-type: none"> <li>Softening and high purity demineralization for boiler feed water</li> <li>Prevention of calcium deposits, corrosion, incrustations and precipitation</li> </ul>	
<b>Beverages</b> <ul style="list-style-type: none"> <li><b>Softening:</b> reduction dissolved calcium, magnesium, etc. in water and replacing them with non-hardness ions (e.g. cartridges for household water pitchers)</li> <li><b>Decolorization:</b> e.g. removal of mineral salts from sugar and binding color impurities for creating pure-white granulated sugar for industrial use (others e.g. color free apple juice)</li> </ul>	
<b>Electric / Electronics</b> <ul style="list-style-type: none"> <li><b>Demineralization / polishing:</b> ultra pure water (UPW) for chip manufacturing</li> </ul>	
<b>Chemicals</b> <ul style="list-style-type: none"> <li><b>Catalysis:</b> ion exchange resins as catalysts used in production of plastics</li> <li><b>Mining:</b> recovery, purification and separation of metals like gold, copper, nickel and cobalt from liquids</li> </ul>	
<b>Water</b> <ul style="list-style-type: none"> <li><b>Ground water remediation:</b> removal of impurities like arsenic, chrome and uranium</li> <li><b>Cleaning industrial effluent:</b> removal of heavy metal ions and organic pollutants from waste water</li> </ul>	

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## ION – Global set up for direct access to customers worldwide



\* Production starts 2011; \*\* Production starts end of 2010

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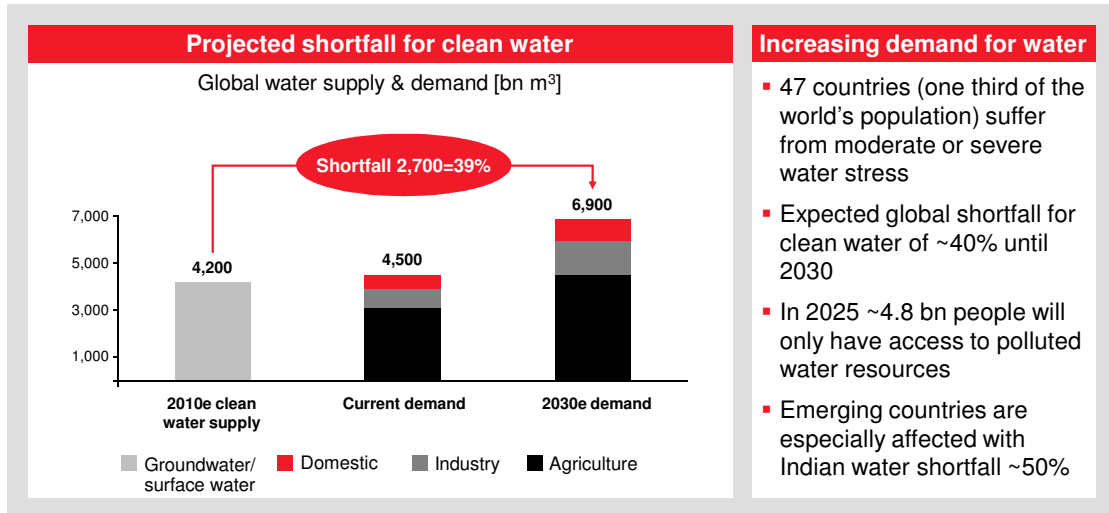
## Growth driver megatrend water: Ion Exchange Resins ensures access to limited resource water

Megatrend Water	LANXESS ION products	
 <p>⚡ Growing world population and environmental pollution will further limit access to clean water</p>	<p>LANXESS ion exchange resins</p> 	<p>LANXESS membrane technology</p>  <ul style="list-style-type: none"><li>✓ Better ground and waste-water decontamination</li><li>✓ Ensure access to drinking water</li><li>✓ Ensure availability of water for special applications</li></ul>
<p>➔ Safe and clean water and sanitation declared as a human right (United Nations, 2010)</p> 		

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## Expected scarcity of clean water as essential global challenge

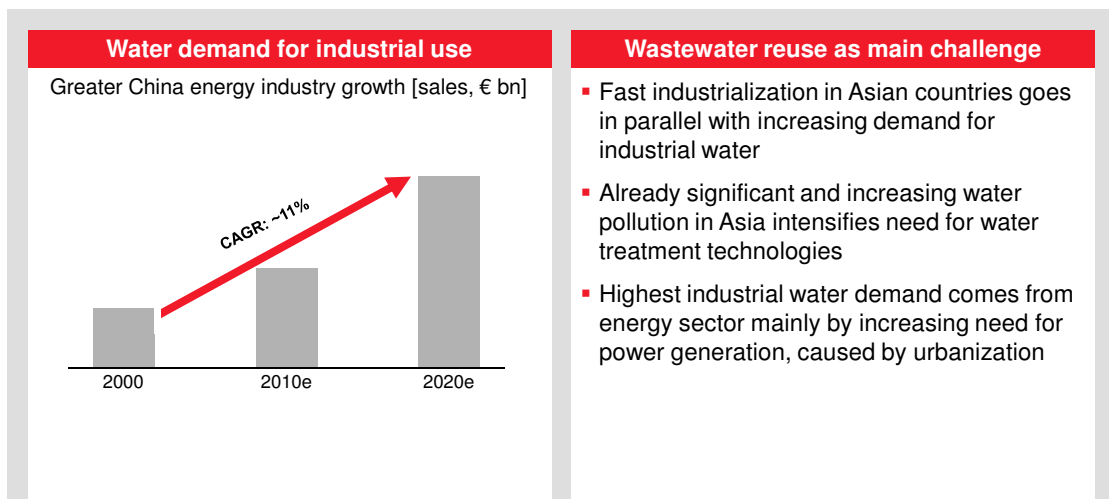


Source: Charting our water future, McKinsey 2010; The 2030 World Water Resource Group; UNESCO Hydrologic Program

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## Asian energy sector with high water demand for industrial use

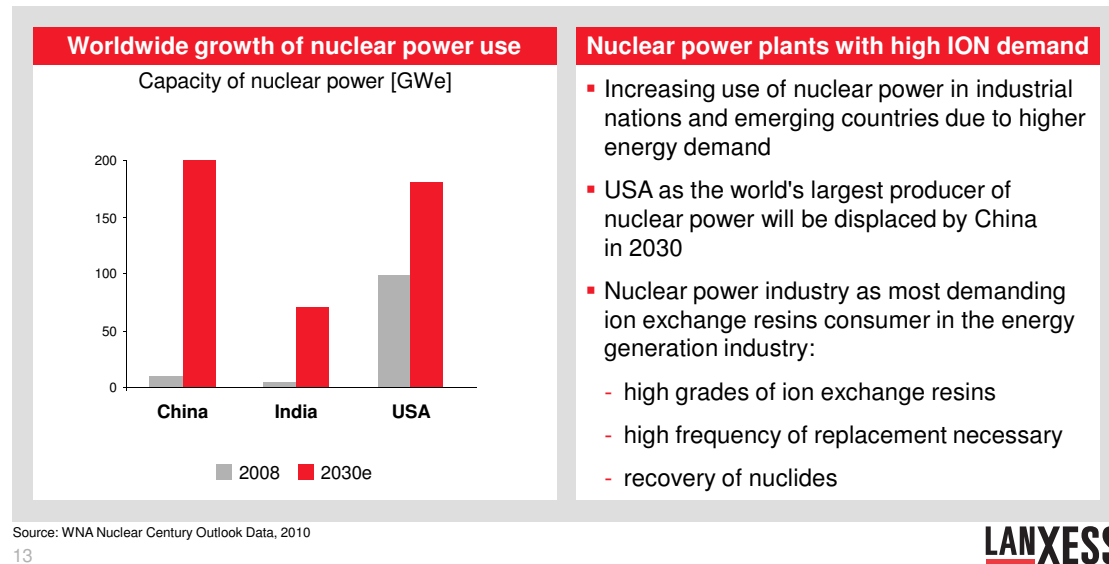


Source: Global Insight, 2010

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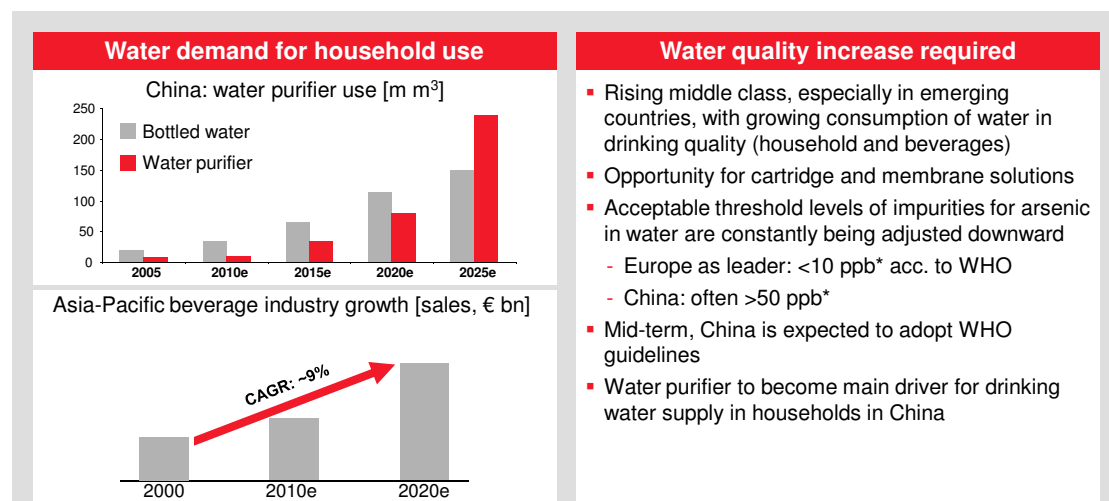
## Expansion of nuclear power triggers risen need for water treatment in plants



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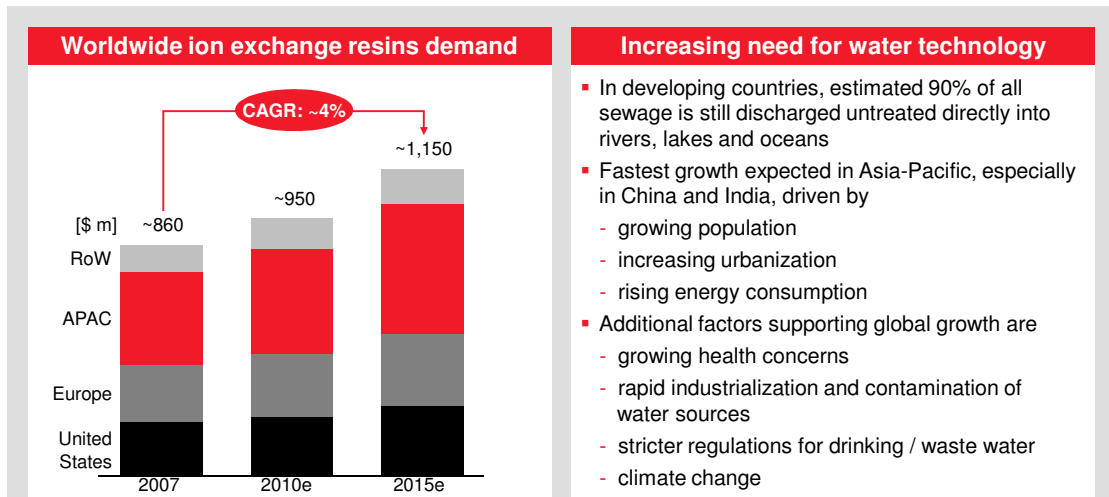
## China with strong increase for cartridge solutions



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## Strong demand for water treatment with Asia driving growth



Source: Estimated demand based on SRI data; UNEP 2010

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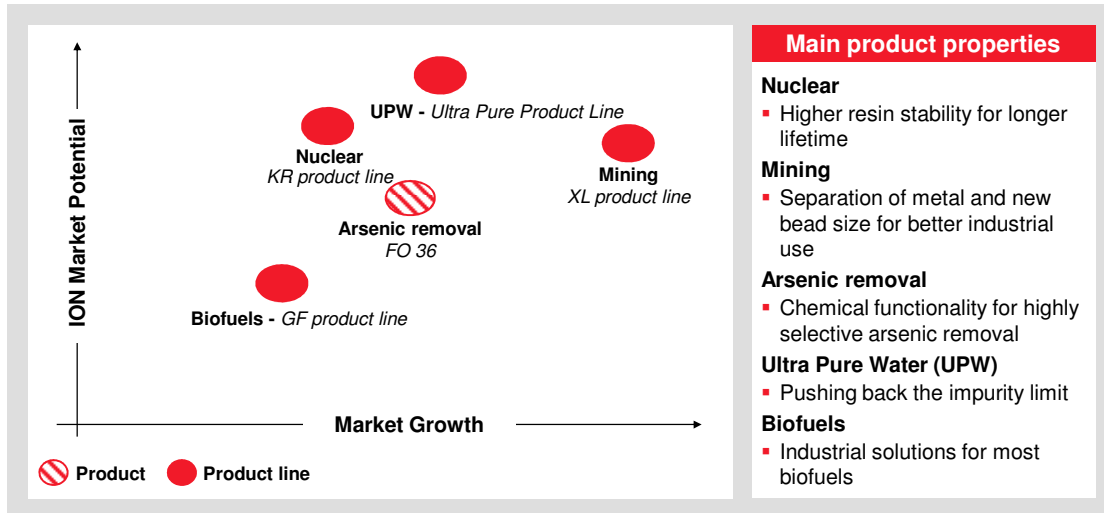
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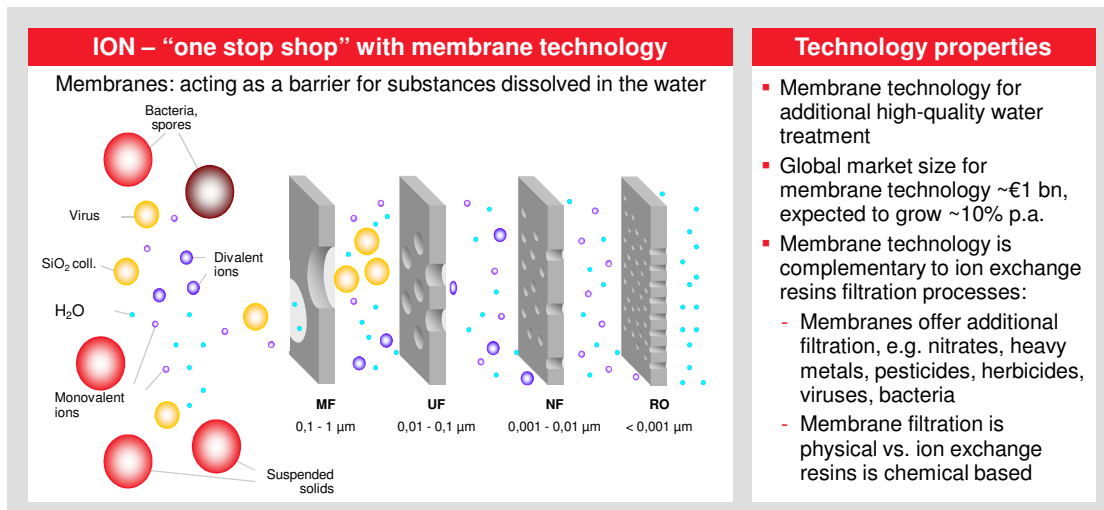
## ION – Driving innovations for new standards in water technology



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## Membrane technology for high-quality water treatment fits perfectly in ION portfolio



MF: Micro Filtration, UF: Ultra Filtration, NF: Nano Filtration, RO: Reverse Osmosis

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## ION – Investment in membrane technology for access to market with high growth potential

### New plant in Bitterfeld, Germany

- €30 m investment in new, 2nd ION facility in Bitterfeld, Germany
- Development and production of new membrane filtration technology
- Creation of 200 jobs on a long-term basis
- Groundbreaking January 2010; new plant taken into operation for pilot and development phase end of 2010; first products to be launched end of 2011



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## ION – Investment in India for direct access to strong growing emerging markets

### New plant in Jhagadia, India

- First mover in India; no western ion exchange-company with production sites in India so far
- €35 m investment in plant in Jhagadia, Gujarat, India
- Construction well on schedule, start-up in Q4 2010
- 250 workers employed by LANXESS on site
- Most modern plant of its kind in Asia
- German standards regarding sustainability, safety and product quality on Jhagadia site



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## ION – Leading technologies and excellent market position enable profitable growth in important water market

<b>Growth perspectives</b>	<ul style="list-style-type: none"><li>▪ Megatrend water in emerging countries drives long-term growth of ION</li><li>▪ Targeted investments in attractive markets further strengthen ION global position</li><li>▪ Value generation through strategic positioning as a full service provider with “one stop shop”</li></ul>
<b>Markets</b>	<ul style="list-style-type: none"><li>▪ Knowledge and technology leadership as a main competitive advantage and base for strong long-term customer relations</li><li>▪ Focus on premium application areas with premium products</li></ul>
<b>Products / technology</b>	<ul style="list-style-type: none"><li>▪ High-quality, balanced specialty and consumer product portfolio</li><li>▪ Strong R&amp;D and innovation driver in further product diversification</li></ul>

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