

# Acquisition of PeroxyChem

**FUTURIZE PEROXIDE**

8 November 2018



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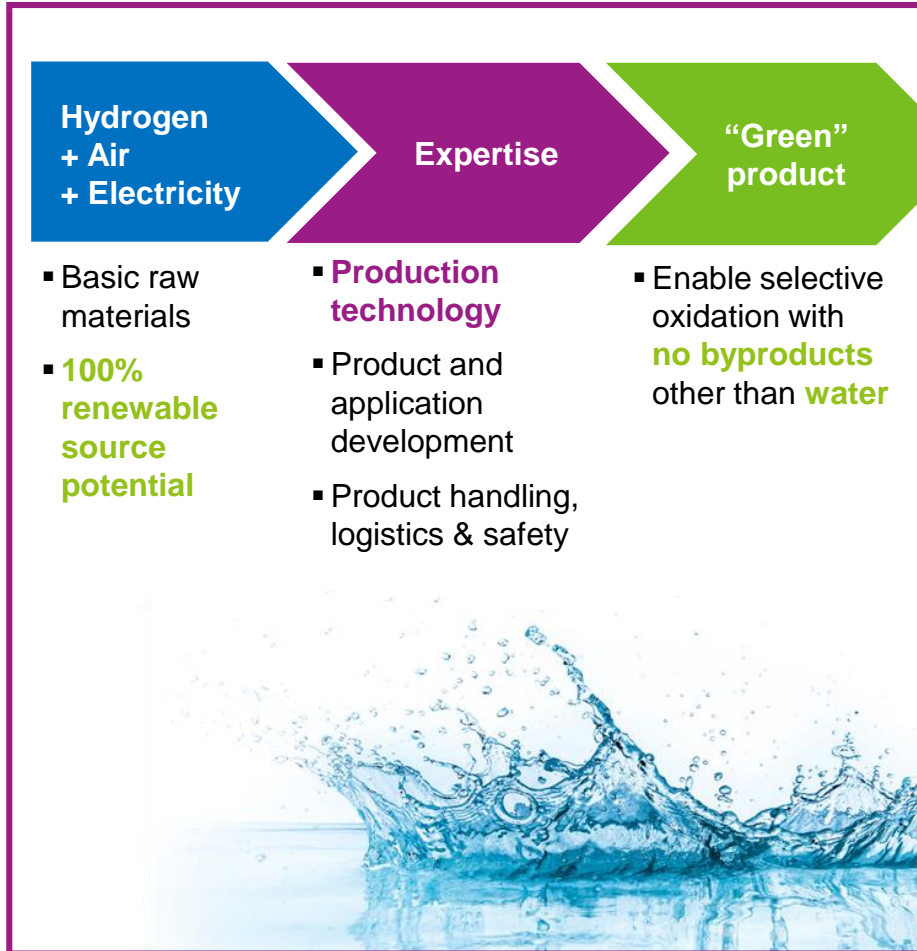
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# Acquisition highlights

- ✓ Strengthening of Evonik's growth segment Resource Efficiency
- ✓ Focus on environmentally-friendly specialty applications
- ✓ Attractive end-market growth with low cyclicalty
- ✓ Excellent fit with Evonik's peroxide portfolio – expansion of business in North America
- ✓ EBITDA margin of ~20% above Evonik's average group margin
- ✓ Strong FCF generation with sustainable FCF conversion >60%
- ✓ Fair valuation with EV / adj. EBITDA multiple 7.8x (incl. synergies)

# Strengthening growth segment Resource Efficiency

One of the most versatile and sustainable chemicals available



## Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and Peracetic acid (PAA)

- **Diverse applications and high importance of application development:** to commercialize new and enhanced products, technologies and services
- **Sustainability:** stricter environmental regulations as growth driver for environmentally-friendly peroxide applications
- **Highly contract-based business:** longstanding customer relationships with high share of revenue under contracts of >1 year
- **Resilience:** attractive margin profile with minimal raw material volatility or seasonality in demand
- **Asset set-up and logistics:** customer proximity, supply security and logistics as decisive factors

Resilient and attractive business profile

# PeroxyChem – Overview

A global manufacturer and supplier of peroxides

## PeroxyChem

- PeroxyChem is a global manufacturer and supplier of hydrogen peroxide ( $H_2O_2$ ), peracetic acid (PAA) and persulfates (PS)
- Headquarter in Philadelphia, Pennsylvania
- Ownership: Private equity (One Equity Partners)
- Founded: 1900s (Foret and Buffalo Electro-chemical Co.)
- Headcount: ~600 globally, thereof ~20% in application development, sales and marketing
- Locations: 8 manufacturing facilities (USA, Canada, Germany, Spain, Thailand), 2 distribution facilities, 5 regional offices, 3 R&D labs



**Sales  
2018E:**

~\$300 m

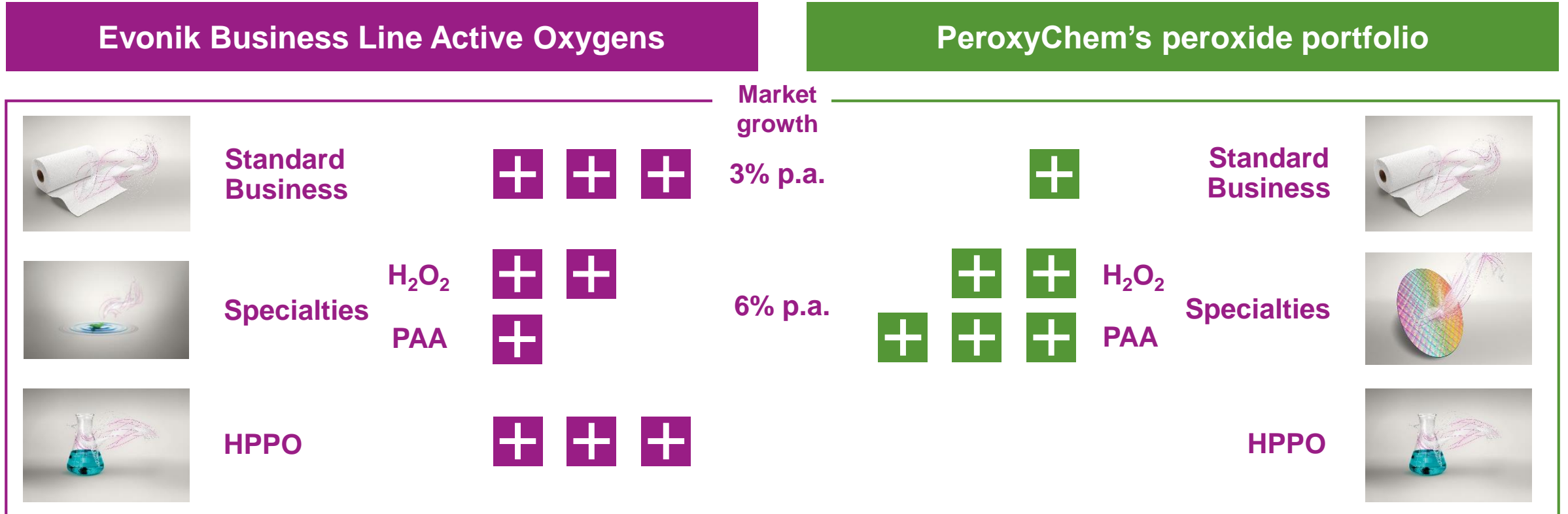
**adj. EBITDA  
2018E:**

~\$60 m

adj. EBITDA margin: ~20%

# Acquisition of PeroxyChem

Excellent complementary fit with Evonik's existing peroxide business


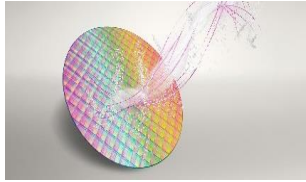





Combined sales<sup>1</sup>: > €700 m

1. Sales of Evonik Business Line Active Oxygen and PeroxyChem

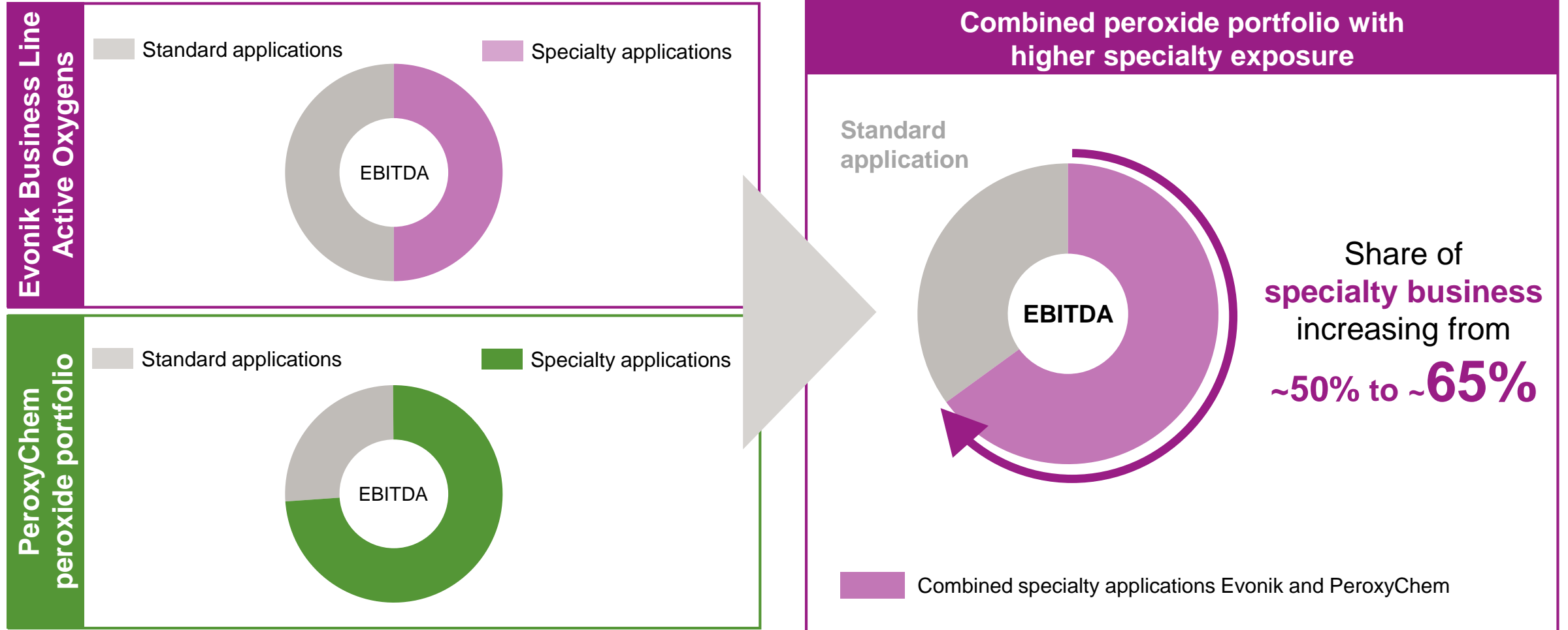
# Attractive peroxide applications

Focus on specialty applications with strong secular growth drivers

Specialties					
Industry	Environmental	Electronics	Food & Beverage	Other specialties	Process Chemicals
Application fields	<ul style="list-style-type: none"> <li>Solutions for waste water treatment, soil remediation and groundwater treatment</li> <li>H<sub>2</sub>O<sub>2</sub> and PAA as alternative to chlorine</li> </ul>	<ul style="list-style-type: none"> <li>Ultra-pure hydrogen peroxide as cleaning agent in semiconductor Fabs</li> </ul>	<ul style="list-style-type: none"> <li>PAA as disinfectant in poultry &amp; beef processing</li> <li>Aseptic packaging with H<sub>2</sub>O<sub>2</sub> and PAA</li> </ul>	<ul style="list-style-type: none"> <li>Medical, consumer and personal care applications such as sterilization of medical equipment and contact lens solutions</li> <li>Energy: Persulfates and PAA in hydraulic fracturing</li> </ul>	<ul style="list-style-type: none"> <li>Hydrogen peroxide for pulp and paper processing</li> <li>H<sub>2</sub>O<sub>2</sub> and PAA in chemical synthesis</li> </ul>
Growth driver	<ul style="list-style-type: none"> <li>Stricter environmental regulations</li> <li>Redevelopments of former industrial or military sites</li> </ul>	<ul style="list-style-type: none"> <li>Growth of mobile devices</li> <li>Automatization and digitalization</li> </ul>	<ul style="list-style-type: none"> <li>Stronger regulations for food safety</li> <li>Increased demand for convenient packaged food</li> </ul>	<ul style="list-style-type: none"> <li>Increased regulations on cosmetic and care products for high purity grades</li> <li>Rising domestic oil and natural gas production</li> </ul>	<ul style="list-style-type: none"> <li>Customer need for increased high product quality and supply security</li> </ul>
Growth	5-6% p.a.	>7% p.a.	4-6% p.a.	3-5% p.a.	3% p.a.

# Evonik and PeroxyChem specialty exposure

## Expansion of high-growth and -margin specialty applications

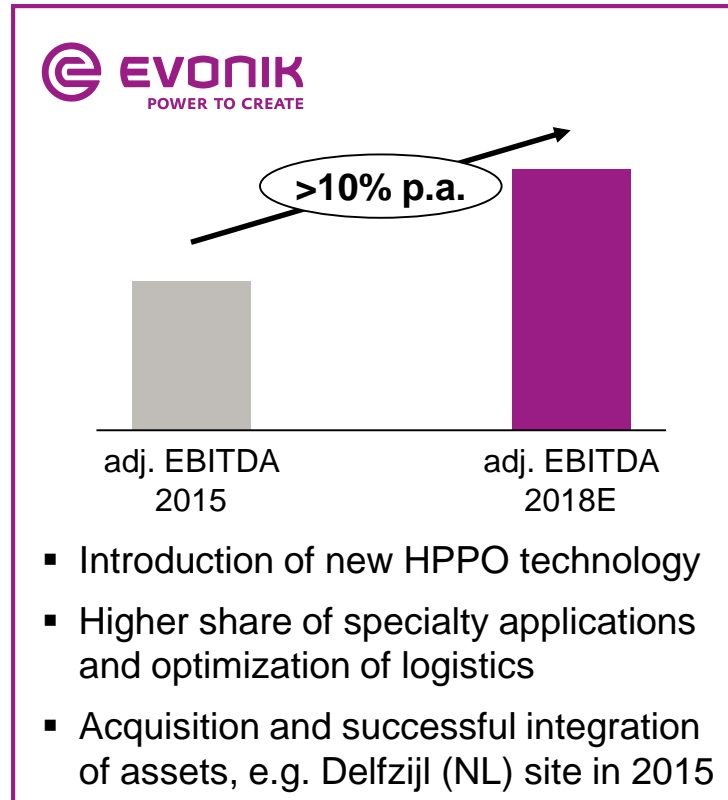
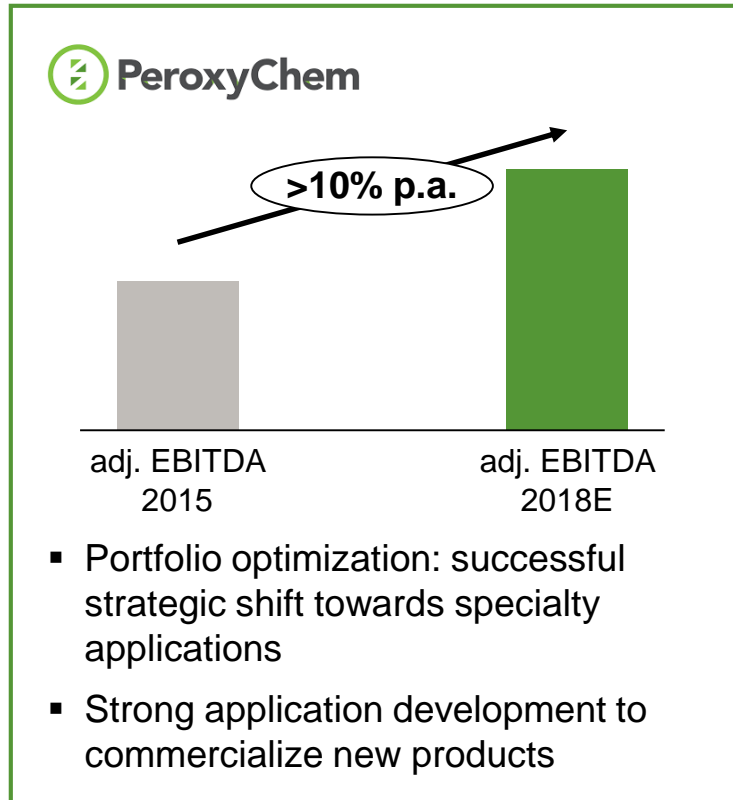




# Impressive growth track record and attractive growth perspective

## Earnings growth driven by portfolio shift to specialty business

### Resilient and strongly growing business (adj. EBITDA)

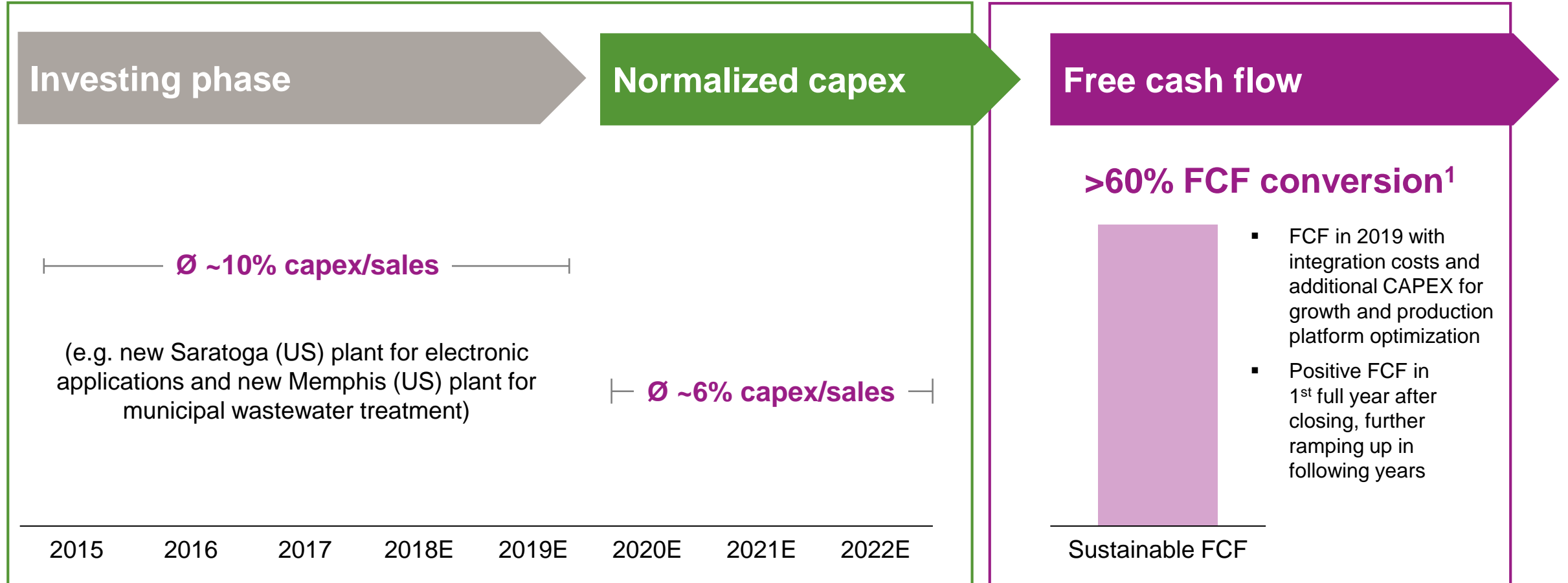


### Future growth drivers

- **Sustainability** drives growing demand for environmentally-friendly specialty applications
  - ▶ e.g. **new Memphis plant** with long-term **take-or-pay contract** with City of Memphis for municipal wastewater treatment
- Increased exposure towards **specialty applications**
- **Optimization** in combined **asset set-up** and **logistics**
- Realization of **synergies**

# PeroxyChem – capital expenditures and free cash flow

## Low capital intensity and attractive FCF conversion



1. FCF conversion: FCF / adj. EBITDA

# Synergies and integration costs

Tangible synergies driven by excellent strategic fit; low integration complexity

## Synergies

Cost Savings in Production, Logistic

Cross Selling

SG&A

Total synergies:  
**~\$20 m p.a.**  
fully realized by 2022

## Integration costs

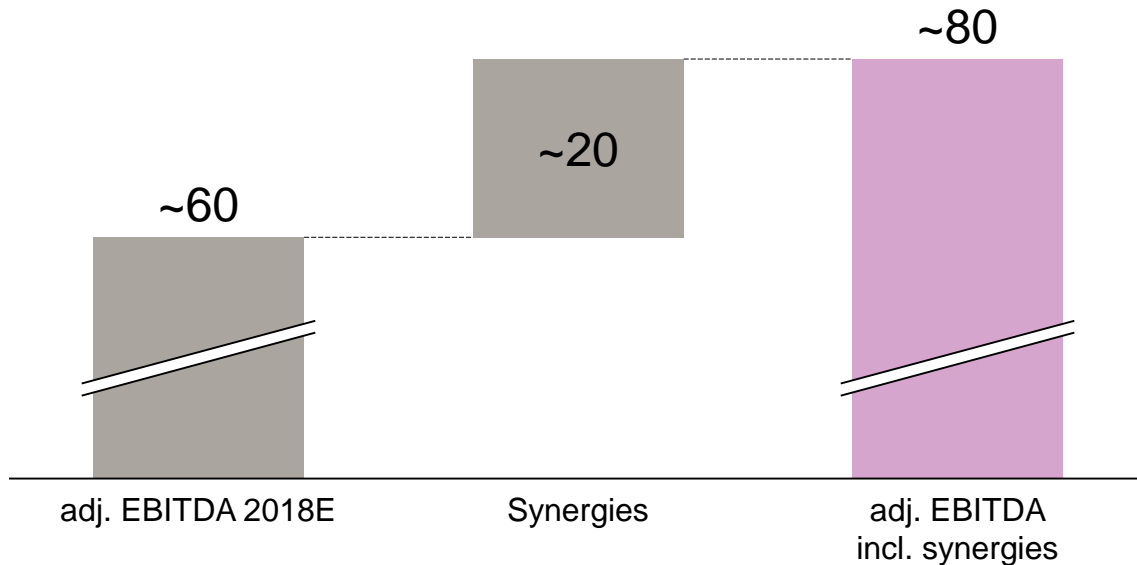
Integration costs  
(e.g. IT integration, consultants)

Expected cash-out of  
**~\$20 m**  
in first 2 years

Integration costs excluding transaction costs

# Attractive valuation

**Enterprise Value**  
**\$625 m**



EV / adj. EBITDA 2018E

**7.8x**

including synergies

EV / adj. EBITDA 2018E

**10.4x**

excluding synergies

**EPS accretive**

in 1<sup>st</sup> full year after closing

# Transaction summary

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## Structure

- 100% acquisition of PeroxyChem
- On a cash- and debt-free basis

## Financing

- Financing secured via cash and committed credit facilities

## Timing

- Approved by PeroxyChem Board and Evonik's Supervisory Board
- Aiming for closing by mid 2019, subject to approval by responsible authorities

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**EVONIK**

**POWER TO CREATE**

# Evonik portfolio strategy

## Healthy mix of growth & financing businesses

### Strengthen leading positions in attractive markets

- Strong growth profile
- Above-average returns
- Focus of capital allocation (capex, R&D, acquisitions)
- **Examples:**  
High Performance Polymers, Comfort & Insulation

**Growth  
businesses**

**Financing  
businesses**

### Generating financing power

- Attractive market growth
- Below average capex allocation
- Stable returns and high FCF contribution
- **Examples:**  
Perf. Intermediates (C4), Active Oxygens, Oil Additives



# PeroxyChem – Business overview

## PeroxyChem Business Overview

Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> )	Peracetic Acid (PAA)	Persulfates (PS)
<ul style="list-style-type: none"> <li>▪ Environmentally-friendly oxidizer and disinfectant, replacing chlorine derivatives</li> <li>▪ Hydrogen and oxygen as primary raw materials</li> <li>▪ H<sub>2</sub>O<sub>2</sub> is purified and diluted to various concentrations depending on the end use application</li> <li>▪ Purity grades range from standard grade for numerous industrial applications to ultra-high purity grades for electronics and propulsion</li> <li>▪ Decomposes to yield only oxygen and water</li> </ul>	<ul style="list-style-type: none"> <li>▪ PAA is an equilibrium mixture of hydrogen peroxide, acetic acid and water that is available in various grades</li> <li>▪ Broad-spectrum sanitizer, disinfectant and sterilant, primarily used as an antimicrobial</li> <li>▪ Easily dilutes in water and decomposes into non-toxic by-products</li> <li>▪ Purified and diluted to various concentrations, ranging from 5% to 35% PAA in equilibrium solution</li> <li>▪ Exceptional product stability, ensuring reliability and safety in production, transportation and usage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Oxidizing agents manufactured as solid salts in an electrochemical process</li> <li>▪ Ammonium, sodium and potassium persulfates used in a wide number of applications</li> <li>▪ Key application for persulfates are in polymer initiation, soil and groundwater remediation and as a viscosity breaker in oil and gas fracking</li> </ul>
<p><b>Applications</b></p> <p>Electronics, Food Safety, Environmental, Medical, Energy, Process Chemicals</p>	<p><b>Applications</b></p> <p>Food Safety, Environmental, Medical, Energy, Process Chemicals</p>	<p><b>Applications</b></p> <p>Electronics, Environmental, Personal Care, Energy, Process Chemicals</p>

# Specialty Application Example (1): Wastewater disinfection

## PAA is expected to enjoy robust growth in the near future

### Industry Overview and Growth driver

- Chlorine, sodium hypochlorite (NaOCl) or UV are today's most commonly used technologies to disinfect wastewater
- PAA as “green” alternative gaining more and more relevance, with the following advantages:**
  - vs Chlorine: low-capital alternative, eliminating safety risks
  - vs NaOCl: lower operating costs and elimination of by-products
  - vs UV: performance improvement, lower maintenance and capex spending
- PAA introduced in U.S. municipal wastewater market by PeroxyChem in 2013, as of today already approved by 14 U.S. states

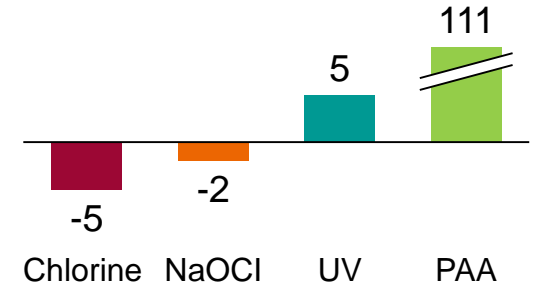
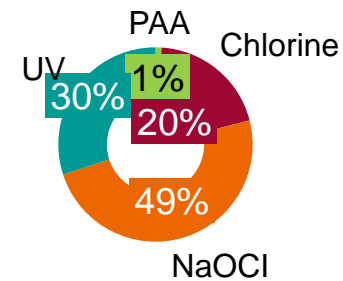
**Long-term take-or-pay contract with City of Memphis for municipal wastewater treatment, start of product delivery late 2018**

1. Based on PeroxyChem estimates and number of wastewater treatment plants served (2013-2017)

### Technologies

#### Water Treatment Technology

#### Water Treatment Technology Growth Rate (in %)<sup>1</sup>



### Wastewater Disinfection Alternatives

	Chlorine	NaOCl	UV Light	PAA
Safe transportation and storage	XX	✓	N/A	✓
Low toxicity to aquatic life	X	X	✓	✓
No harmful disinfection by-products	X	X	✓	✓
Effectiveness in low water quality	✓	✓	X	✓✓
Low complexity of operation	✓		X	✓
Low operating costs	✓	✓	✓	✓
Low capital costs	✓	✓	XX	✓

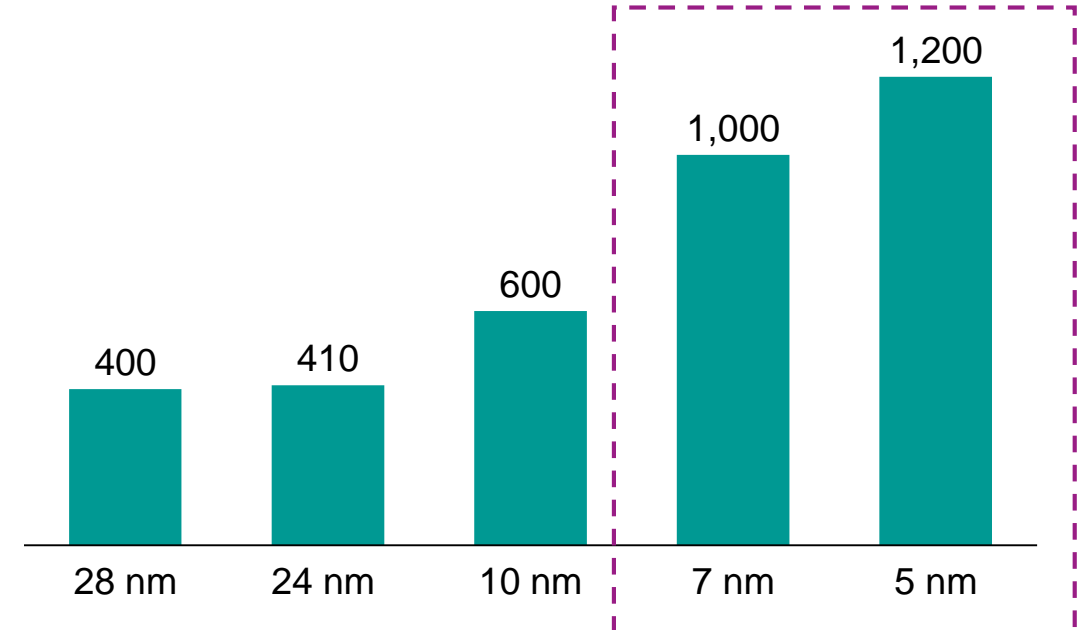
# Specialty Application Example (2): Electronics

## Ultra-high purity H<sub>2</sub>O<sub>2</sub> essential in manufacturing of electronic devices

### Industry Overview and Growth driver

- Growing trend towards smaller electronic device geometries results in increasing number of process steps
- This requires ultra-high purity cleaning agents in semiconductor manufacturing - driving more demand for ultra-high purity H<sub>2</sub>O<sub>2</sub>
- High-purity, electronics-grade H<sub>2</sub>O<sub>2</sub> is preferred because of their **low cost, effectiveness and reduced waste disposal**
- Electronic-grade H<sub>2</sub>O<sub>2</sub> difficult to transport, as maintaining high quality requires specialized transportation equipment
  - Geographic proximity is key to cost and reliability

### Manufacturing Process Steps



**PeroxyChem with dedicated electronic-grade H<sub>2</sub>O<sub>2</sub> plant in Saratoga Springs close to end customer with long-term supply contract**

1. Long-term 2017-2023E growth rate, according to Gartner, Mercury Research and Barclays Research | “nm” represents nanometers

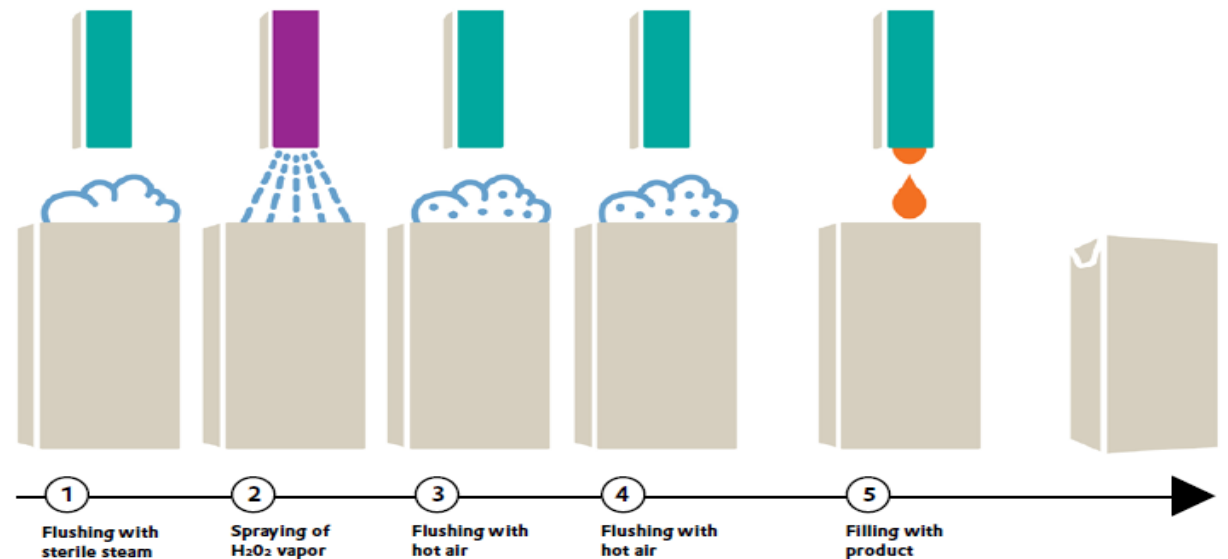
# Specialty Application Example (3): Food & Beverage

## Stricter regulations in food & beverage processing offer further growth potential

### Industry Overview and Growth driver

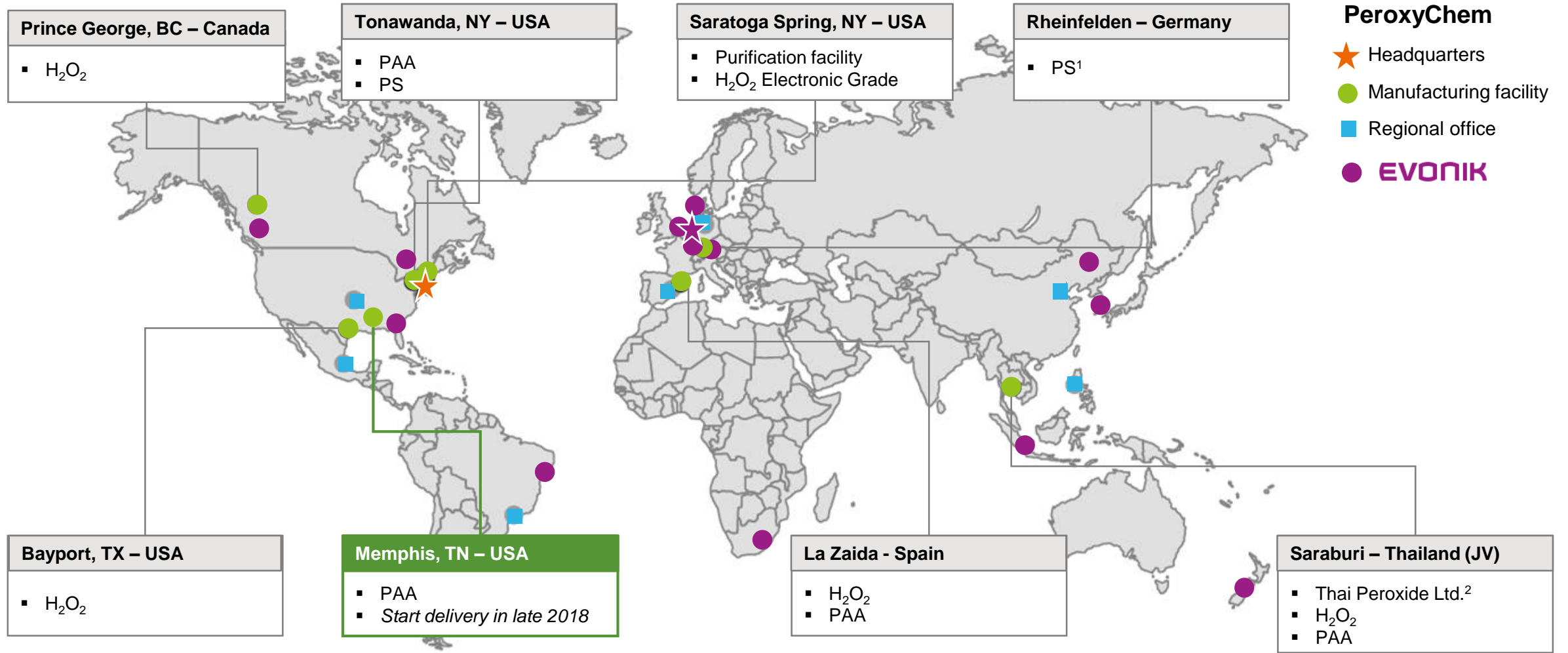
- Increased demand for food safety as well as stricter regulations
- **Poultry and meat processing:**
  - PAA replacing chlorine as primary treatment method for poultry due to superior efficacy
- **Beverage industry:**
  - Rising hygienic requirements for dairy products, juices or nutritional natural drinks
  - Aseptic packaging utilizes H<sub>2</sub>O<sub>2</sub> or PAA for the sterilization of packaging material and machines
  - Extends shelf life and preserves flavor and taste
  - Can work with both polyethylene bottles and paperboard containers

### Aseptic packaging – Spraying Technology

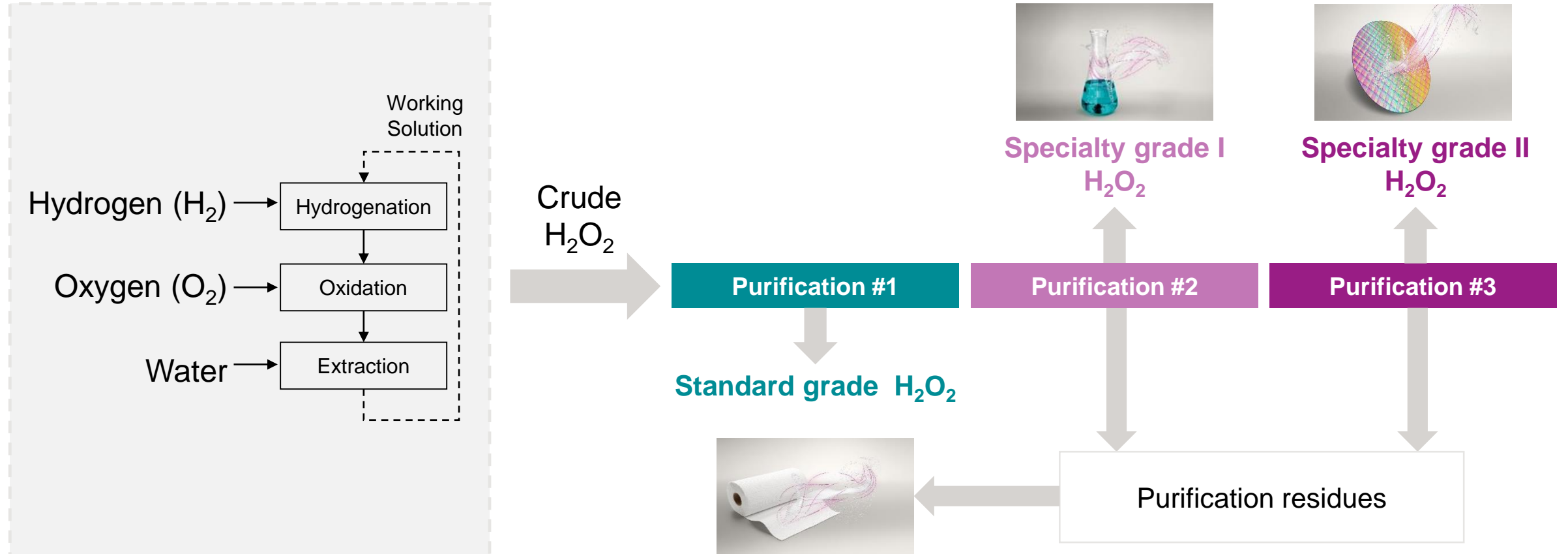


# Combined production set-up

## Strengthening of global position and stronger footprint in North America and Europe



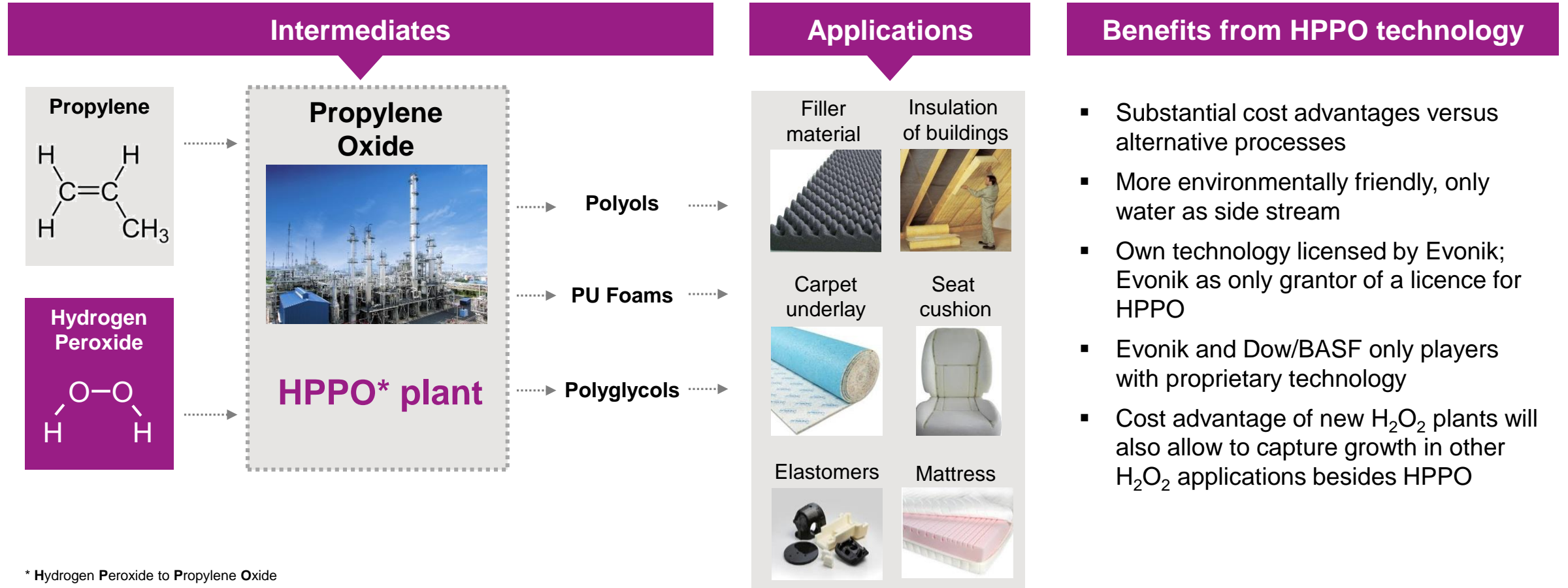
# Hydrogen peroxide is purified in a sequential process leading to different specialty grades for various applications



# HPPO Technology

## HPPO process as more favorable process to produce propylene oxide

HPPO: Technology to manufacture propylene oxide (PO), a polyurethane (PU) precursor, on basis of H<sub>2</sub>O<sub>2</sub>



\* Hydrogen Peroxide to Propylene Oxide