



# “Invented to improve” Business Line Silica

Evonik Capital Markets Day 2014

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**Head of BL Silica**  
Hanau, 2 October, 2014



**EVONIK**  
INDUSTRIES

# Silica

Strong pillar in Evonik's specialty chemicals portfolio



Segment

## Resource Efficiency

Sales: ~€3.8 bn

Adj. EBITDA / margin: ~€800 m / ~21%



Business Lines

**Silica** (~25% of segment sales)



**Silanes** (~10%)



**Catalysts** (~5%)



**Active Oxygens** (~10%)



**Oil Additives** (~15%)



**Crosslinkers** (~10%)



**Coating & Adhesive Resins** (~10%)



**Coating Additives** (~5%)



**High Performance Polymers** (~10%)



# Silica

Tailored product properties for environmentally friendly and energy efficient solutions



**We help you save energy.**

**High silica content leads to low rolling resistance and excellent traction in tires**



**We empower wind energy.**

**Silica improve properties of adhesives, giving greater stability to large rotor blades**



**We make health affordable.**

**Silica make modern tablet and capsule manufacturing processes more efficient**



**We make resources available for future generations.**

**Silica improve free flow in solid and anti-settling in liquid agrochemical formulations**

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## Business at a glance

Leading silica supplier with full coverage



Top  
#1

Supplier for  
fumed and precipitated  
silica

20

Production sites with  
global coverage

282

R&D and Applied  
Technology experts

32

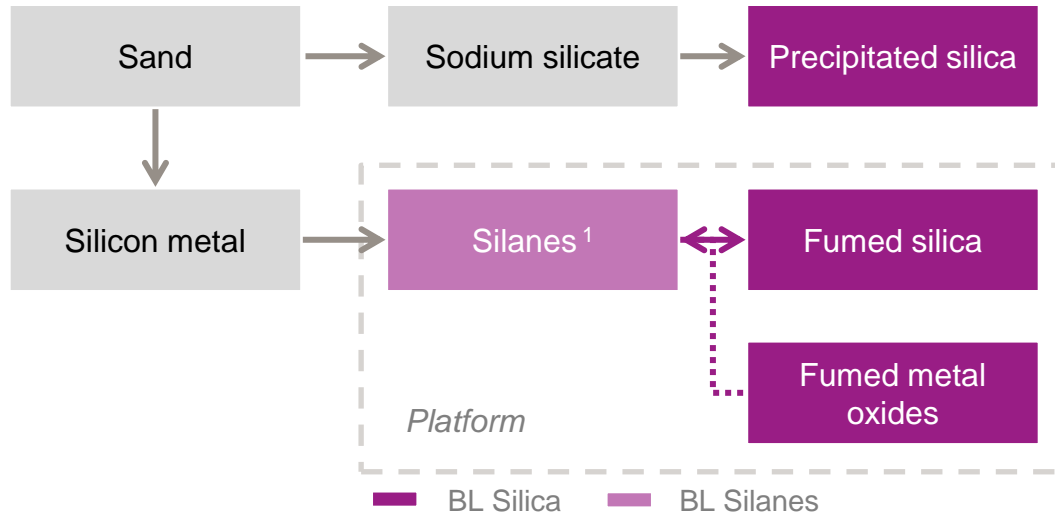
Industries served by  
industry experts

>100

Products to solve  
customer challenges

# Product portfolio capabilities

From sand to a broad range of tailor-made silica solutions



Particle design: Same weight of 25 g, different volumes of silica products



— Sand — Precip. Silica — Fumed silica

## Characteristics

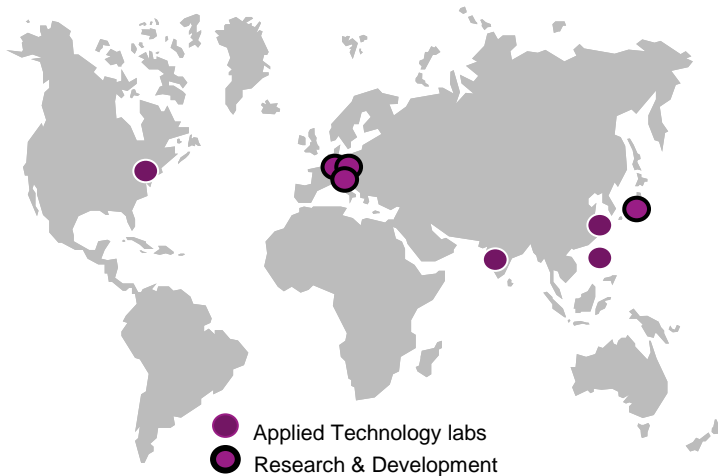
- Synthetic amorphous silica (SAS) with high surface and low density
- Particle size and structure, as well as surface characteristics the main differences between the two technologies – further optimization via particle design possible
- Available in powder form, as granules or dispersions

<sup>1</sup> Chloro-, Organo- & Rubber-Silanes



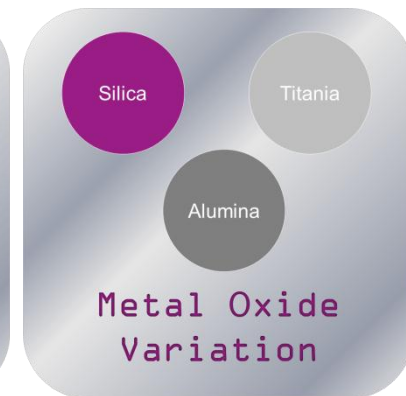
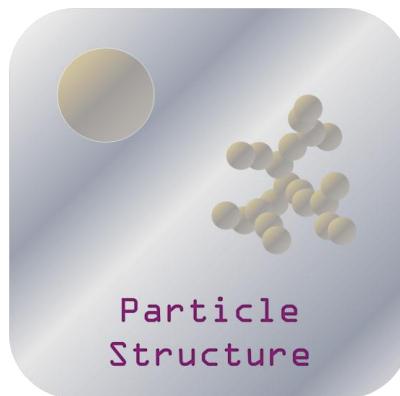
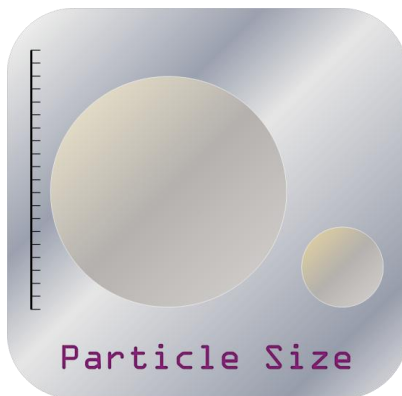
# Technological capabilities

Outstanding expertise in designing organic particles and surface properties



- Unique product portfolio of larger volume products as well as customized solutions
- Broad commercialized technology base
- Long-standing in-house cooperation within Resource Efficiency segment
- Worldwide setup of Research and Applied Technology Centers

**Market differentiation based on outstanding technological competences to design tailor-made particles and product properties**



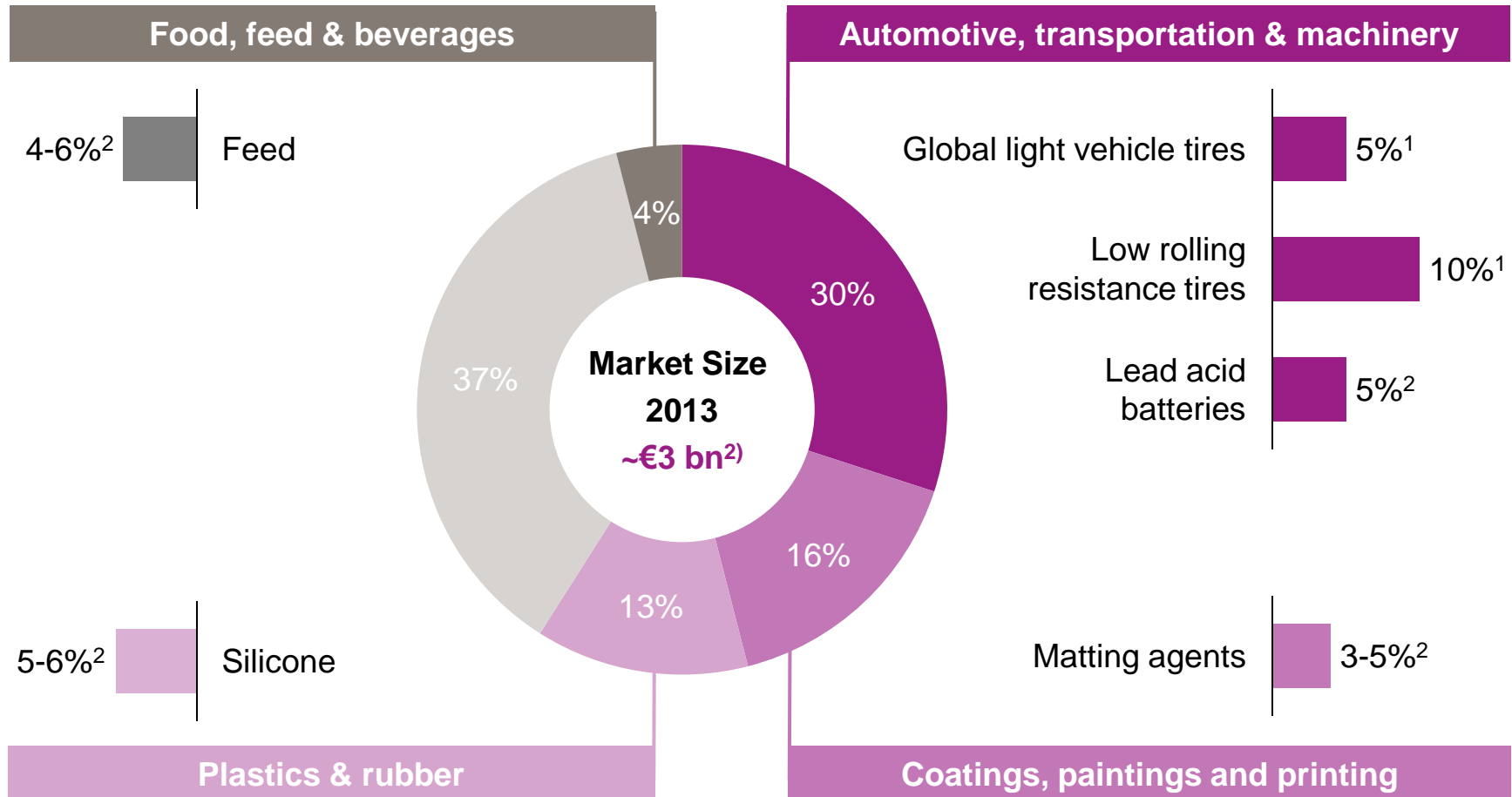
# Market focus

Well-balanced end market split with exposure to attractive growth markets



**Sales split by end market (2013) and expected market growth (2014 – 2019)<sup>3</sup>**

**% p.a.**

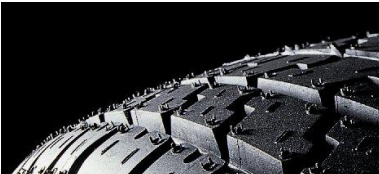






Sources: <sup>1</sup> Evonik estimate, LMC; <sup>2</sup> Evonik estimate, precipitated silica and fumed metal oxides; <sup>3</sup> Selective examples only  
October 2, 2014 | Evonik Capital Markets Day 2014 | Silica



# Applications and functionalities

## Broad application spectrum in diversified end markets

Applications	Functionality examples	
<b>Tire and MRG<sup>1</sup></b>	<ul style="list-style-type: none"> <li>• Reduced rolling resistance of “Green Tires”</li> <li>• Increased tensile strength and hardness of e.g. belts</li> </ul>	
<b>Silicones and Adhesives</b>	<ul style="list-style-type: none"> <li>• Tear resistance in silicones</li> <li>• Flow control of bonding pastes in windmill production</li> </ul>	
<b>Coatings</b>	<ul style="list-style-type: none"> <li>• Matting agent of choice for waterborne coatings</li> <li>• Rheology control additive in automotive coatings</li> <li>• White extender for paints</li> </ul>	
<b>Health care and Home care</b>	<ul style="list-style-type: none"> <li>• Tableting aid and carrier for drugs</li> <li>• UV-filter for suncreams</li> <li>• Thickening agent for toothpaste</li> </ul>	
<b>Agriculture, Food and Feed</b>	<ul style="list-style-type: none"> <li>• Anti-settling in liquid agrochemicals</li> <li>• Carrier for liquid ingredients (e.g. vitamins)</li> <li>• Anti-caking during food processing</li> </ul>	

<sup>1</sup> Mechanical rubber goods

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# Key success factors

Tailor-made solutions based on deep understanding of customers' needs



## Broad product & industry portfolio

- Precipitated silica and fumed metal oxides
- Broad variety of specialties
- Options to customize



- Unbiased advising
- Cross-selling potential
- Innovation leader



## Strong customer intimacy

- Future winner concept and industry teams
- Strong brands
- (Technical) service orientation



- Long-term relationships with key customers
- Communication and support on par level

## Global production network

- Production platforms in all major regions
- High quality standards
- Global coordination and cross-regional support



- Preferred partner for global businesses
- Supply security
- Customer proximity



# Spotlight food and feed

Broad portfolio enables to act as advisor for the best customer solution



## Industry needs



- Silica as free flow aid in food and feed processing
- Customer specific formulations

## Evonik offering

- Fumed and precipitated silica products manufactured under food additive regulations (HACCP)<sup>1</sup>
- Industry experts and applied technology team promotes both products in parallel
- Customer gets an objective advise on the optimal solution for his requirements

The Evonik Industries logo, featuring a stylized 'e' in a circle followed by the word 'EVONIK' in a bold, sans-serif font, with 'INDUSTRIES' in a smaller font below it.

**SIPERNAT® and AEROSIL®**  
in the Food Industry

Industry Information 2129

A woman in a white lab coat is shown in a kitchen setting, pouring a white powder from a can into a bowl. There are bananas and a bouquet of yellow flowers on the table.

**SIPERNAT® AEROSIL®**

Evonik. Power to create.

<sup>1</sup> Hazard analysis and critical control points

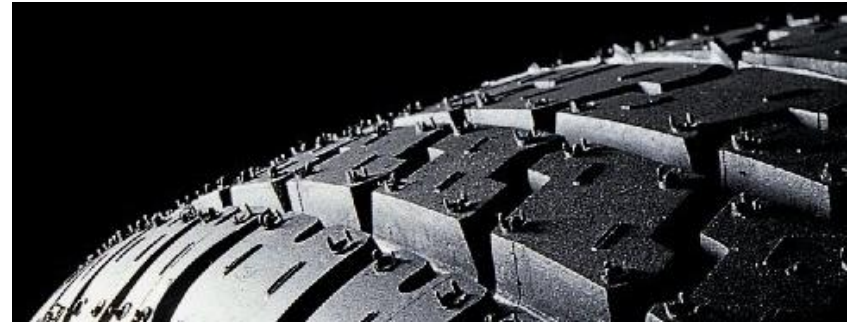
# Spotlight tire industry

Customer intimacy has to be re-earned day per day



## Industry needs

- Just-in-time deliveries and full supply security
- Consistent quality with growing requirements
- Easy-to-disperse products for fast processing
- Local supply with global quality also in emerging growth markets



## Evonik offering

- Strategic alignment on top management level
- Global key account managers as internal voice of the customer
- Customer and market driven innovation projects incl. joint innovation projects
- Handling and applied technology experts to solve process challenges
- Global quality standards and production network to support regional expansion

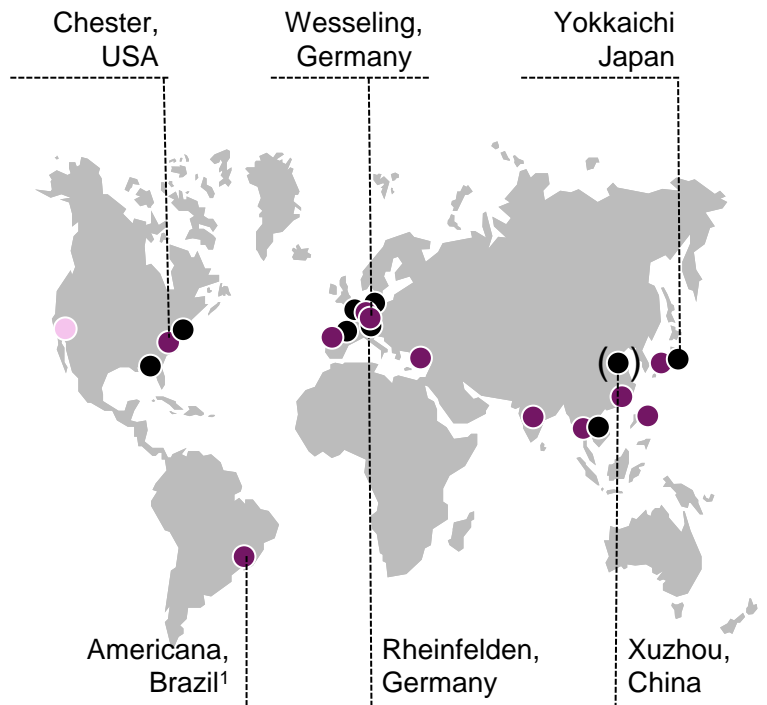
# Global production network

Global production platform combined with regional customer proximity



## 20 silica plants globally

- Evonik precipitated silica plants
- Evonik fumed silica plants
- Evonik colloidal silica plants
- ( ) Planned



- **Global production network** with presence in all major silica markets
- Combination of
  - World scale production plants to realize economies of scale
  - Medium-sized plants close to customers
  - Flexible setup for further expansion steps
- **Global marketing & sales organization** with ~180 employees and presence in 96 countries
- **Superior process technology** due to integrated silica-silane production platform

<sup>1</sup> Under construction



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# Targeted investment strategy

Flexible and stepwise approach  
for expansion of global silica platform



## Selective investment approach depending on the situation in the respective markets

1

Diluting fixed costs by  
stepwise **expansion**  
of existing sites



**Example:**  
Chester, USA

2

Tapping strong growth markets  
by **new production facilities**



**Example:**  
Americana, Brazil

3

**Partnering** with strong local  
players to achieve beneficial  
cost position



**Example:**  
Xuzhou, China

Regular review of investment decisions according to market developments

# 1 Stepwise expansion of existing sites

## Example: Chester (USA)

- **Existing Evonik site** since 1984
- Stepwise expansions tripled capacity until today
- **Broad production platform**, ranging from larger volume rubber grades to high end matting agents



Chester, Pa., September 9, 2014



### Latest example:

- Additional 20,000 mt capacity for precipitated silica on-stream in Q3 2014
- Strengthens presence in NAFTA market

## 2 New production facilities

### Example: Americana (Brazil)

- First production plant for **highly dispersible (HD) silica** in South America
- Tapping **Latin American growth markets** by new production facility currently mainly served by imports
- **Attractive specialty segments** in South America's food, feed, and agricultural industries
- **Tire labelling in Brazil** from 2016 onwards as additional growth driver
- Investment: mid-double-digit million € range
- Plant scheduled to go on stream in 2016



### 3 Partnering with strong local players

Example: Xuzhou (China)

- New site for **fumed silica** and **ultrapure silicon tetrachloride** in China
- **Attractive cost position** via fence-to-fence partnership with leading silicon producer (CGL)
- **>20,000 mt total capacity** to be built in Xuzhou
- LOI Evonik-CGL signed in July 2014
- Commissioning scheduled for 2016
- Basic engineering has started

#### Main applications



#### Ultra-pure silicon tetrachloride:

Fiber optics needed to expand China's broadband networks (optic fiber cable)



#### Fumed silica:

Silicone industry, adhesives & sealants, gel batteries (E-bikes)

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# Summary

## Silica well-positioned to write the story of tomorrow



- Leading silica producer with superior portfolio of larger volume products and specialties
- Outstanding particle design competence as technical differentiator
- Well-balanced end market split in attractive growth markets
- High customer intimacy and innovation partnerships with industry leaders
- Flexible and stepwise approach for expansion of unrivaled global silica platform





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Business Line Silica

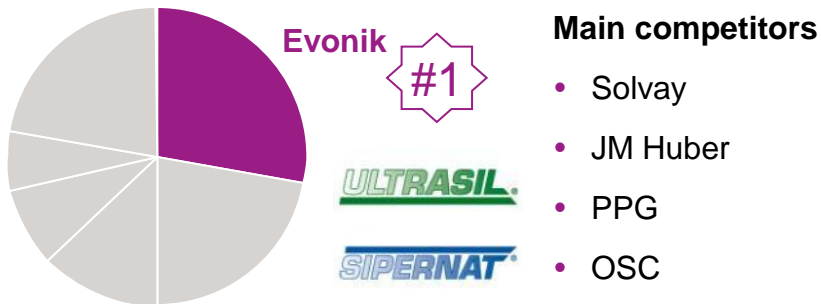
Backup

# Facts & figures

Largest producer of amorphous silica with more than 70 years experience

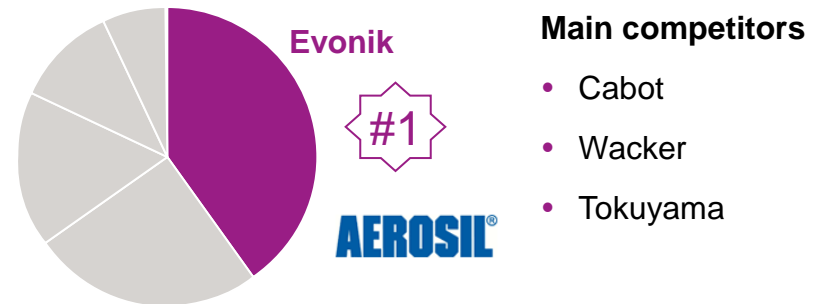


## Precipitated Silica



- Close customer relationships, esp. with tire manufacturers
- Broad range of end markets with strong established brands
- Ongoing global expansion program

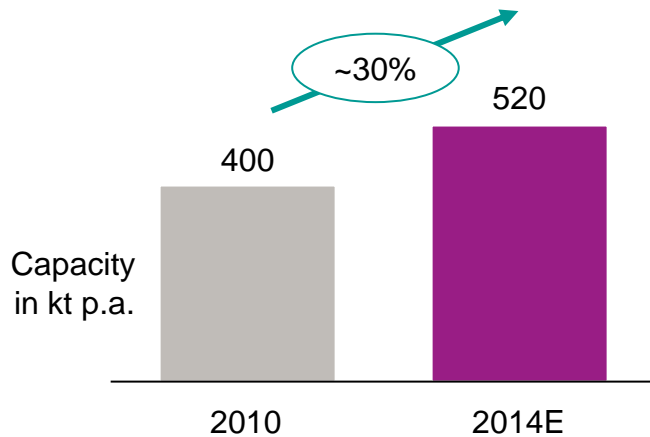
## Fumed Silica



- Broadest product offering
- High brand awareness
- Strong process and applied technology (> 70 years of experience)
- Fence-to-Fence partnerships

# Silica master plan supports #1 position globally

## Capacity expansion steps since 2010



- Evonik precipitated silica capacity expansion by ~30% over last 4 years
- Targeted and selective expansion steps across all major regions
- Meeting strong customer demand

### Expansion steps<sup>1</sup>

#### Asia

- India 2011/2012
- Taiwan 2011/2012
- Thailand 2014
- Japan 2015<sup>2</sup>

#### Americas

- USA 2014
- Brazil 2016<sup>2</sup>

#### Europe

- Turkey
  - Germany
  - Spain
- 2010 – 2012

<sup>1</sup> Date of commissioning

<sup>2</sup> Under construction