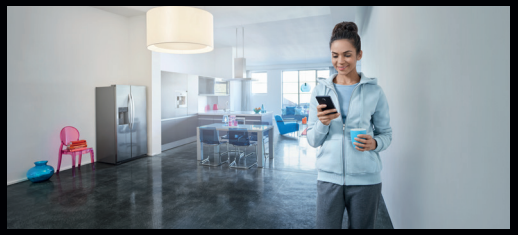
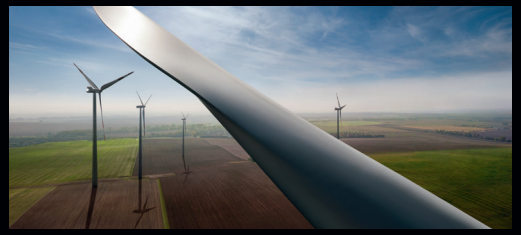
Investor Presentation

London, June 2018


#PushingBoundaries

covestro

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Dr. Markus Steilemann

Chief Executive Officer

Dr. Markus Steilemann has been Chief Executive Officer of Covestro since June 2018. His area of responsibility covers all commercial functions, including the three divisions Polyurethanes, Polycarbonates and Coatings, Adhesives, Specialties. In addition, central areas such as strategy, personnel and communications fall within his remit.

Born in Geilenkirchen, Germany in 1970, Steilemann graduated with a PhD in chemistry from RWTH Aachen University. He began his career with the Bayer Group in 1999. From 2008, Steilemann held various management positions in the Polycarbonates business unit at Bayer MaterialScience, the predecessor company of Covestro. Between 2013 and 2015, Steilemann headed the entire business unit headquartered in China, where he lived for several years.

Steilemann returned to Germany and joined the Covestro Board of Management in 2015 with responsibility for innovation. In addition to this role, he became head of the Polyurethanes business unit in the following year. From 2017 until his appointment as CEO, he was Chief Commercial Officer (CCO), responsible for innovation, marketing and sales.

Innovation and sustainability driving growth

Global leader in high-tech material solutions

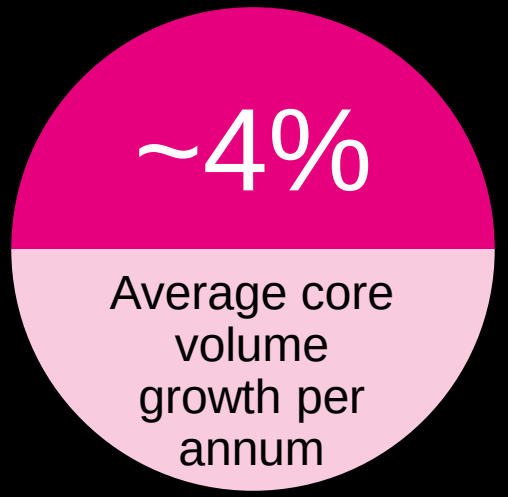
1. **Above GDP volume growth**
   driven by innovation and sustainability trends

2. **More than half of sales generated by resilient businesses**
   as global leader in highly attractive niches

3. **Balanced supply and demand outlook**
   for all our businesses

4. **Leading innovation in materials and operations**
   and pushing boundaries in digitalization

5. **Non-financial targets support growth strategy**
   aligned with UN Sustainable Development Goals

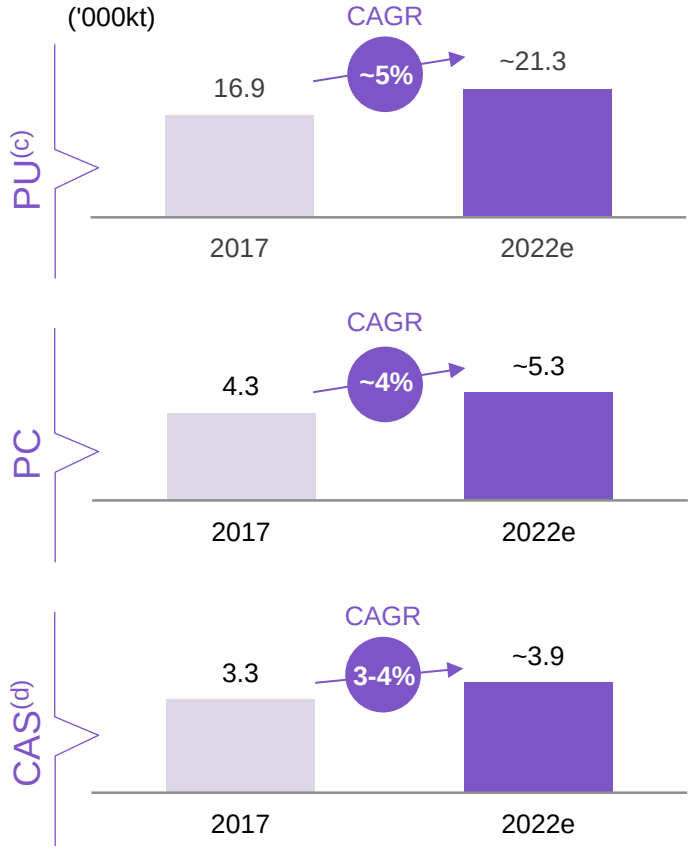

~4%
Average core volume growth per annum

Higher global GDP expectation leads to higher industry growth

Structural growth above GDP driven by sustainability trends

UN SDGs[a]	Needs to be served
related to climate change:	• Zero emission concepts • Low-energy buildings
related to increasing mobility:	• Energy-efficient mobility • Lightweight transportation • E-mobility, autonomous driving
related to growing population:	• Food preservation • Low-cost durable goods • Medical applications
related to increasing urbanization:	• Affordable housing • Living comfort • Public infrastructure

Industry demand outlook[b] 2017 – 2022e



Notes: (a) Most impacted goals out of 17 Sustainable Development Goals, set by the United Nations' "2030 Agenda for Sustainable Development"
(b) Assumes global GDP CAGR 2017–2022e of ~3%; (c) Comprises MDI, TDI and polyether polyols
(d) Shows PU raw materials industry demand in coatings, adhesives and sealants; additionally TPU, elastomers and PC/TPU films

Source: Covestro estimates

Refrigeration: Gaining share in a strongly growing market

Lower energy consumption and higher consumer satisfaction

Trend

Need

More and better cooling devices

Growth

Number of refrigerators[(a)]

CAGR: ~3%

Refrigeration insulation foam[(b)]

CAGR: ~8%

Covestro in 2015-2017

CAGR: 12%

Covestro contribution

Raw materials for particularly effective insulating foams

- 40% smaller pores allow up to 10% better insulation
- Support refrigerators with higher energy efficiency
- Less material cost and higher production speed

Sources: (a) Euromonitor Consumer Appliance Annual Report, 2017, for 2016-2021e based on retail units
(b) IAL PU Global Database, 2017, for 2016 -2019e based on consumption in kt

Auto: Benefitting from E-vehicles and autonomous driving

Significant outperformance of car industry growth

Trend

Increasing mobility

Need

Reduced weight, increased comfort and freedom of design

Market

Global car production[(a)]

CAGR: ~3%

Global hybrid and electrical car production[(a)]

CAGR: ~25%

Relevant car applications[(a)]

CAGR: ~5%

Covestro 2015-2017

CAGR: ~7%

Covestro contribution

Pioneering all-around material concept

- Efficient thermal management to reduce energy demand
- New lighting functions revolutionize design and safety
- Most stringent weight reductions
- Attractive alternatives to conventional materials: polymers to replace glass and metal

Source: (a) LMC 01/2017 for 2016-2021e and Covestro estimate

Wind power: Substitution drives growth

Novel materials replacing existing solutions

Trend

Climate change

Need

More durable and economical wind power plants

Growth

Energy consumption[(a)]

CAGR: ~3%

Offshore wind energy[(b)]

CAGR: ~19%

Covestro in 2015-2017

CAGR: 29%

Covestro contribution

Novel components for wind power plants

- Rotor blades: polyurethane resins for more stability and durability, to replace epoxy resins
- Towers: polyurethane materials for anti-corrosion coatings
- Sea cables: elastomers for protection systems

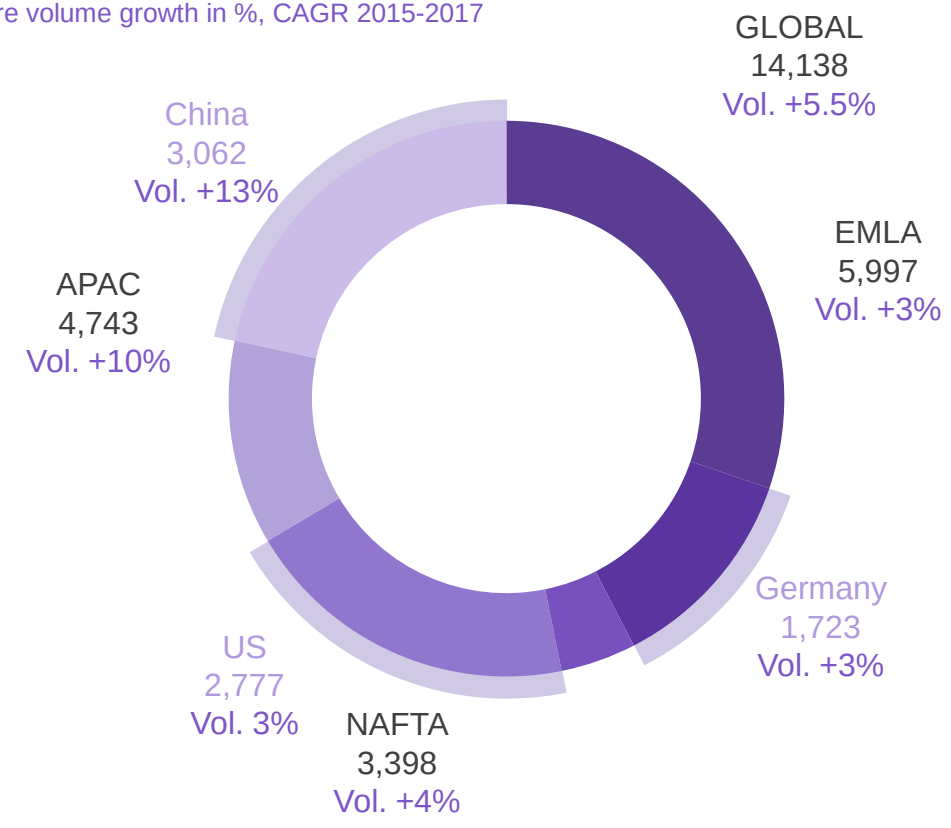
Sources: (a) BP, Energy Outlook, 2017, for 2015-2020e based on million tons oil equivalent
(b) Navigant, World Wind Energy Market Update, 2017, for 2016 -2021e based on mega watt

Strong growth track record

Broad-based core volume growth of +5.5% CAGR in 2015-2017

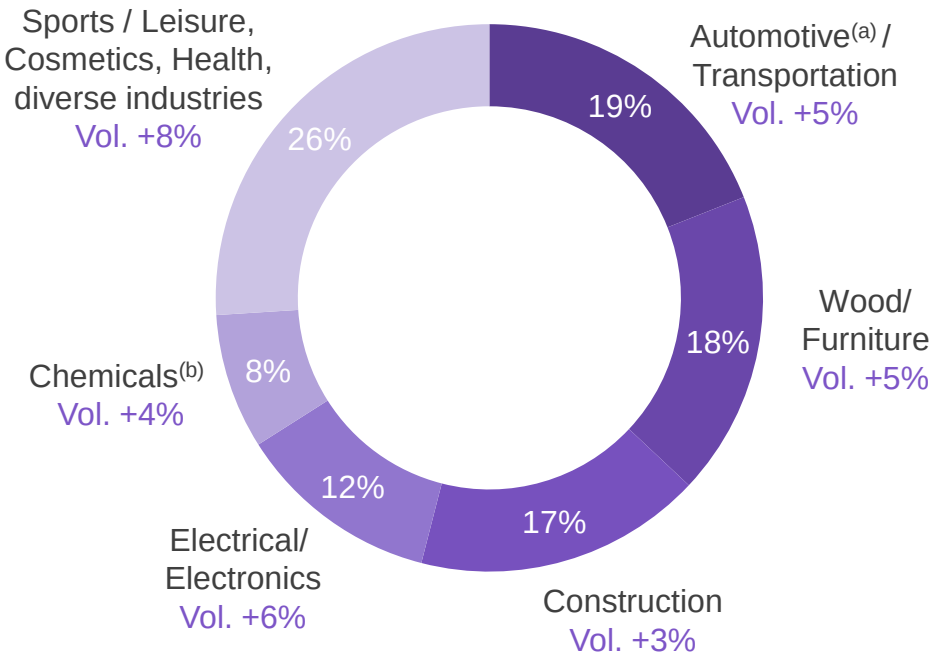
Sales split by regions

2017 Group sales in € million
Core volume growth in %, CAGR 2015-2017



Sales split by end-market

% of 2017 Group sales
Core volume growth in %, CAGR 2015-2017



Notes: Based on Covestro Annual Report 2017 ; EMLA = Europe, Middle East, Africa, Latin America; NAFTA = USA, Canada, Mexico; APAC = Asia, Pacific
(a) Automotive with core volume CAGR 2015-2017 of +7%
(b) Growth of core and non-core volumes

~4%

Average core volume growth per annum

>50%

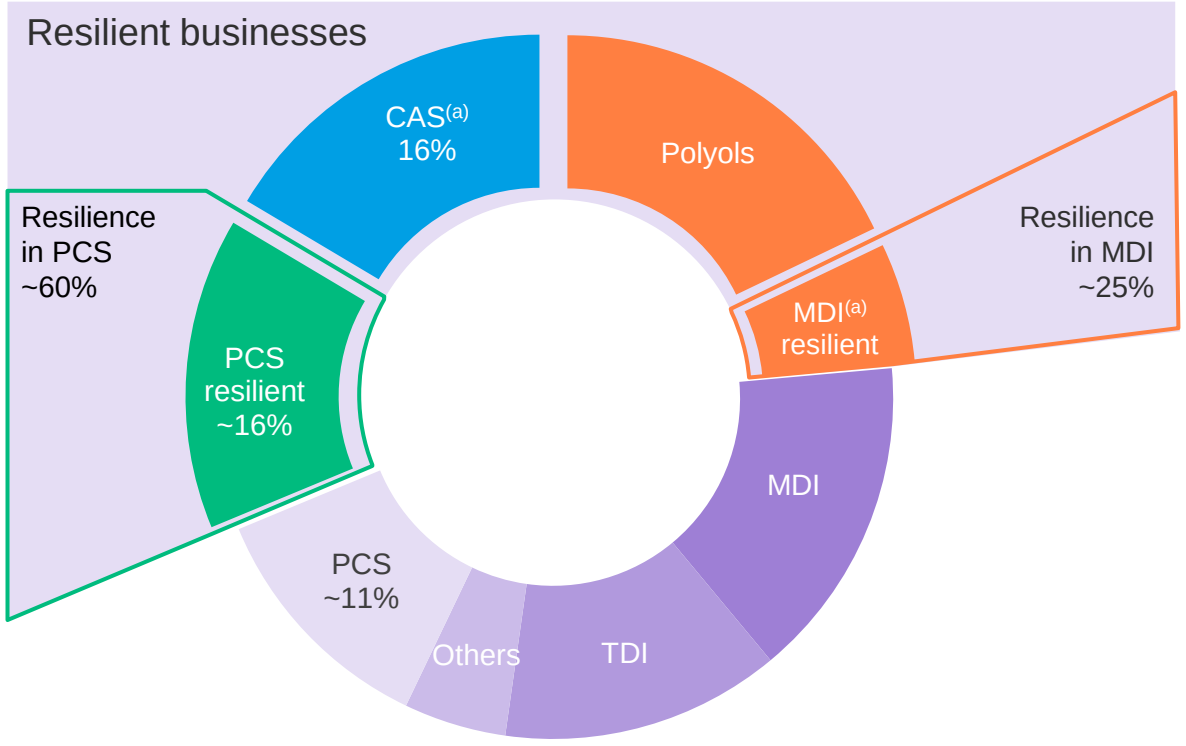
Group sales in resilient businesses

Over 50% of sales generated with resilient businesses

Resilient business contains highly differentiated products

Sales by segments

% of 2017 Group sales



Highlights

- Resilient portion of **PCS** business is driven by high-end industry applications e.g. automotive, electrical, healthcare
- **CAS** business is resilient in sales and earnings due to characteristics of niche ingredient chemicals
- **Polyols** business is resilient in sales and earnings as demonstrated over the last decade
- Resilient portion of **MDI** business consists of special grades for downstream products requiring formulation know-how and customer interaction along the value chain

Note: (a) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018
Resilience measured as standard deviation of contribution margin per kg versus respective average portfolio

CAS: Stable margins driven by differentiated product portfolio

Enabling high performance

#1

Producer of aliphatic isocyanates and PUD[(a)]

€2.3bn

Sales 2017[(b)]

20.9%

EBITDA margin 2017[(b)]

16%

of total Covestro sales 2017[(b)]

Ingredients for **surface coatings**

Ingredients for **adhesives and sealants**

Ingredients for **specialties**

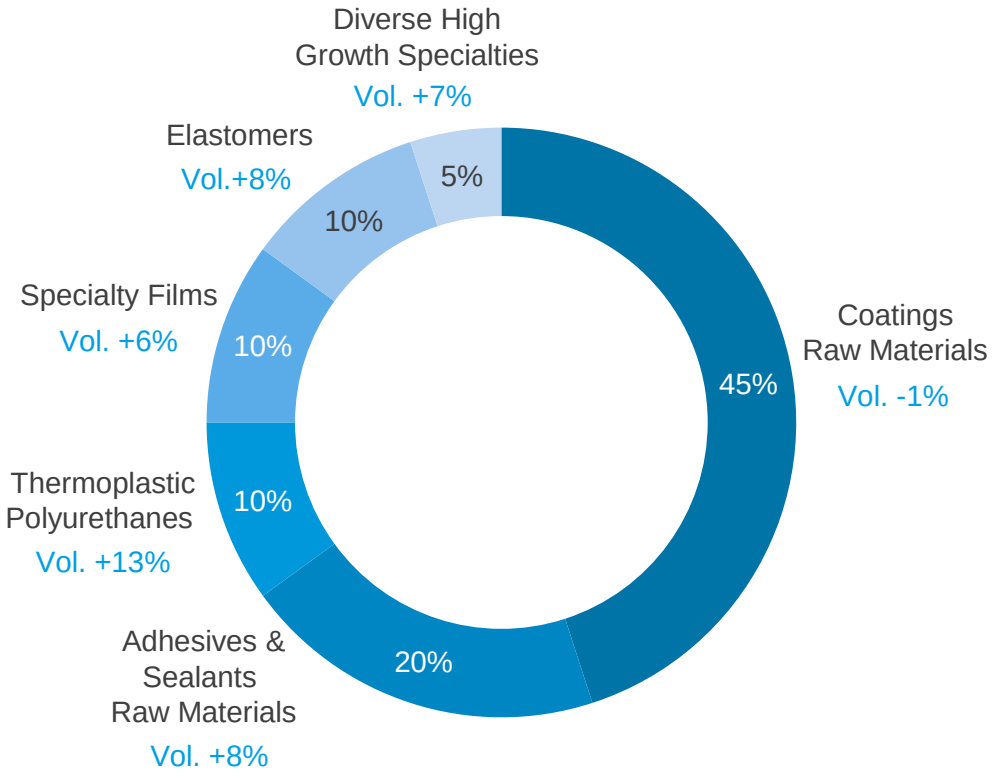
Notes: (a) Based on total aliphatic isocyanates volume in 2017 relative to competitors as per Covestro estimates and based on total polyurethane dispersions (PUD) volume in 2017 relative to competitors as per Covestro estimates
(b) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018

CAS demonstrated solid underlying growth of ~4% p.a.

Driven by High Growth Specialties businesses

CAS sales split by businesses

Covestro sales share FY 2017[(a)], rounded
Core volume growth, CAGR 2015-2017



Highlights

- Adjusted core volume growth of 3.7% CAGR in 2015-2017[(a)]
- Growth driven by all businesses but coatings
- High Growth Specialties businesses generate ~35% of sales: Thermoplastic Polyurethanes (TPU), Specialty Films and Elastomers
- Coatings Raw Materials businesses burdened by weak end markets like marine, oil and gas as well as refinishing

Notes: (a) All figures adjusted to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to Coatings, Adhesives, Specialties segment as of January 1, 2018 as well as planned termination of trading activities and reduced contract manufacturing

TPU: Leading supplier for high-performance resins

Core volume growth of 13% (CAGR 2015-2017)

Thermoplastic Polyurethanes (TPU) highlights

#3

Producer of Thermoplastic Polyurethanes

~6%

Market growth CAGR 2017-2022e[(a)]

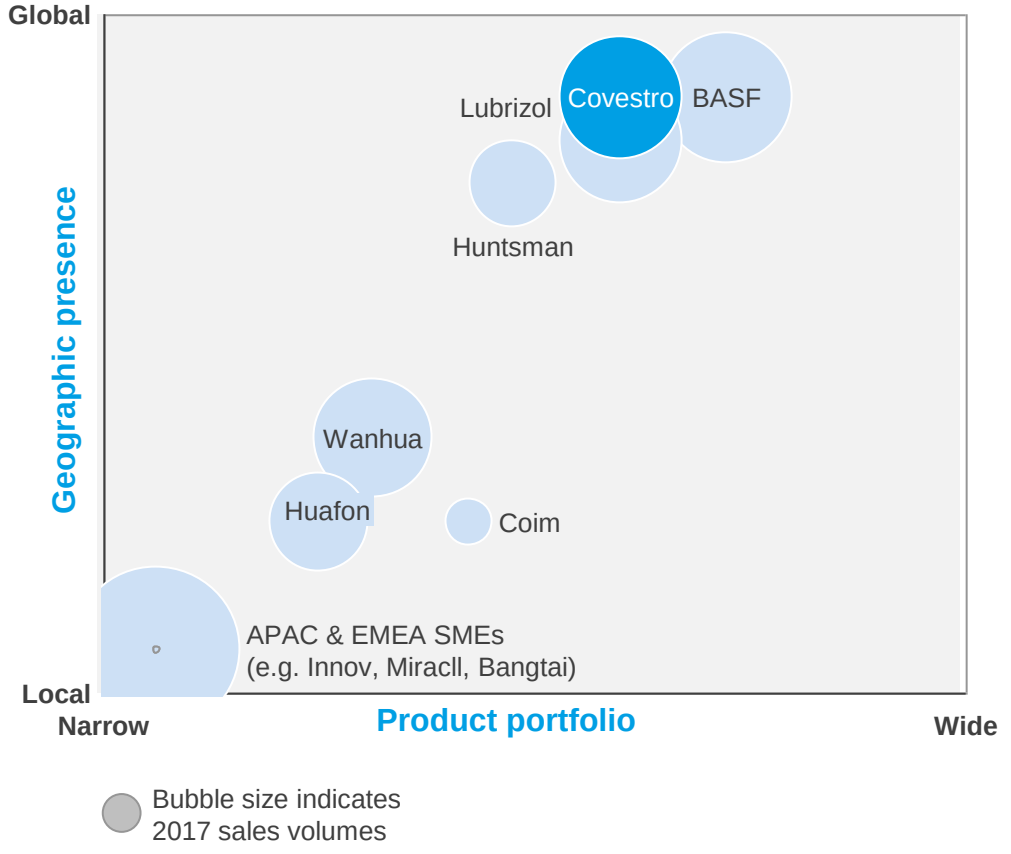
~10%

of total CAS sales 2017

6

Production facilities globally[(b)]

Competitive landscape of key TPU producers in 2017



Notes: (a) Global thermoplastic polyurethanes market
(b) Incl. 50/50 JV with DIC in Japan
Source: Covestro estimates

Specialty Films: Leading solution provider for PC- & TPU-films

Core volume growth of 6% (CAGR 2015-2017)

Specialty Films highlights

#1or #2

Producer of PC- and TPU-films, depending on region

6-7%

Market growth CAGR 2017-2022e[(a)]

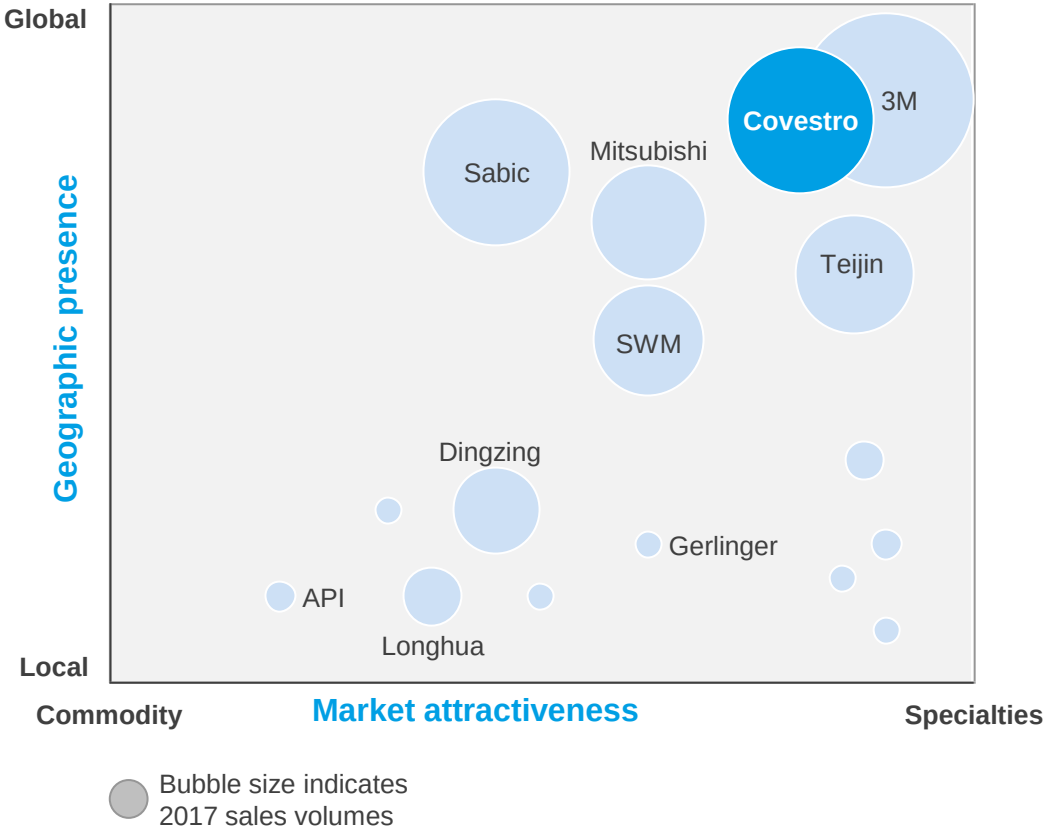
~10%

of total CAS sales 2017

5

Production facilities globally

Competitive landscape of key films producers in 2017[(a)]



Notes: (a) Global PC- and TPU-films market
Source: Covestro estimates

Elastomers: Leading supplier for PU cast elastomer systems

Core volume growth of 8% (CAGR 2015-2017)

Elastomers highlights

#2

Producer of
PU elastomer systems

3-4%

Market growth
CAGR 2017-2022e[(a)]

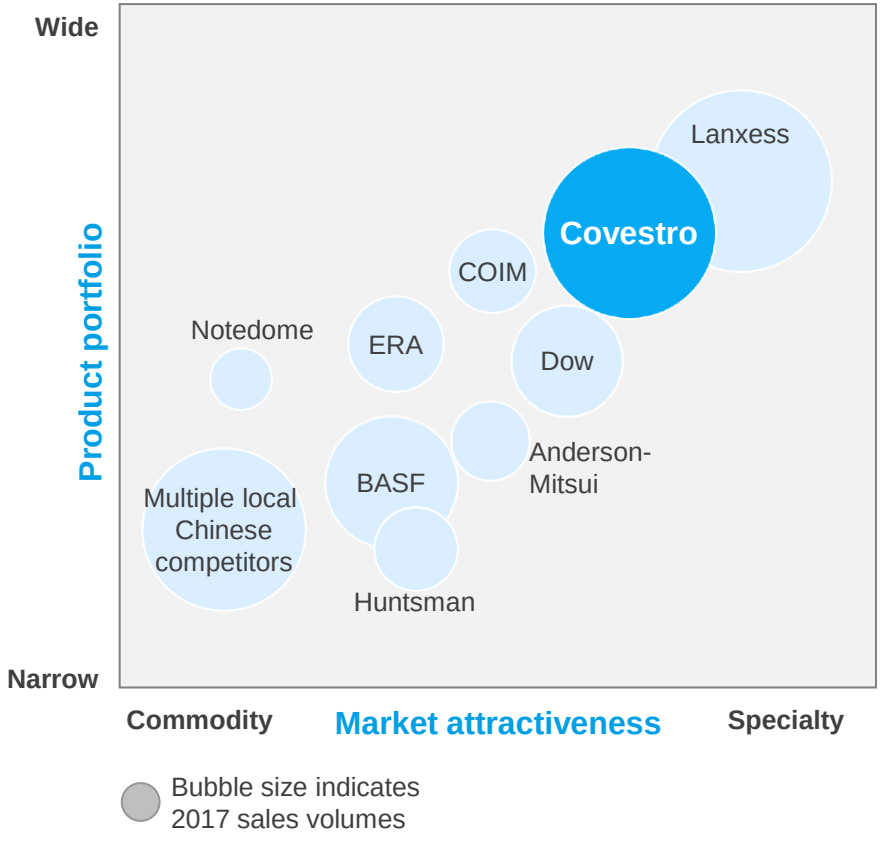
~10%

of total CAS
sales 2017

11

Production sites
globally

Competitive landscape of PU elastomer producers in 2017[(a)]



Notes: (a) Global PU elastomers market
Source: Covestro estimates

PCS: Strategic focus on increasing resilience

Global leading producer of polycarbonates

#1
Producer of PC globally[(a)]

€3.7bn
Sales 2017

22.8%
EBITDA margin 2017

26%
of total Covestro sales 2017

Mobility
Exterior

Electronics
Robot housing

Consumer electronics
Adapter

Electrical
LED street lamp

Mobility
Charging station

Healthcare
Drug delivery

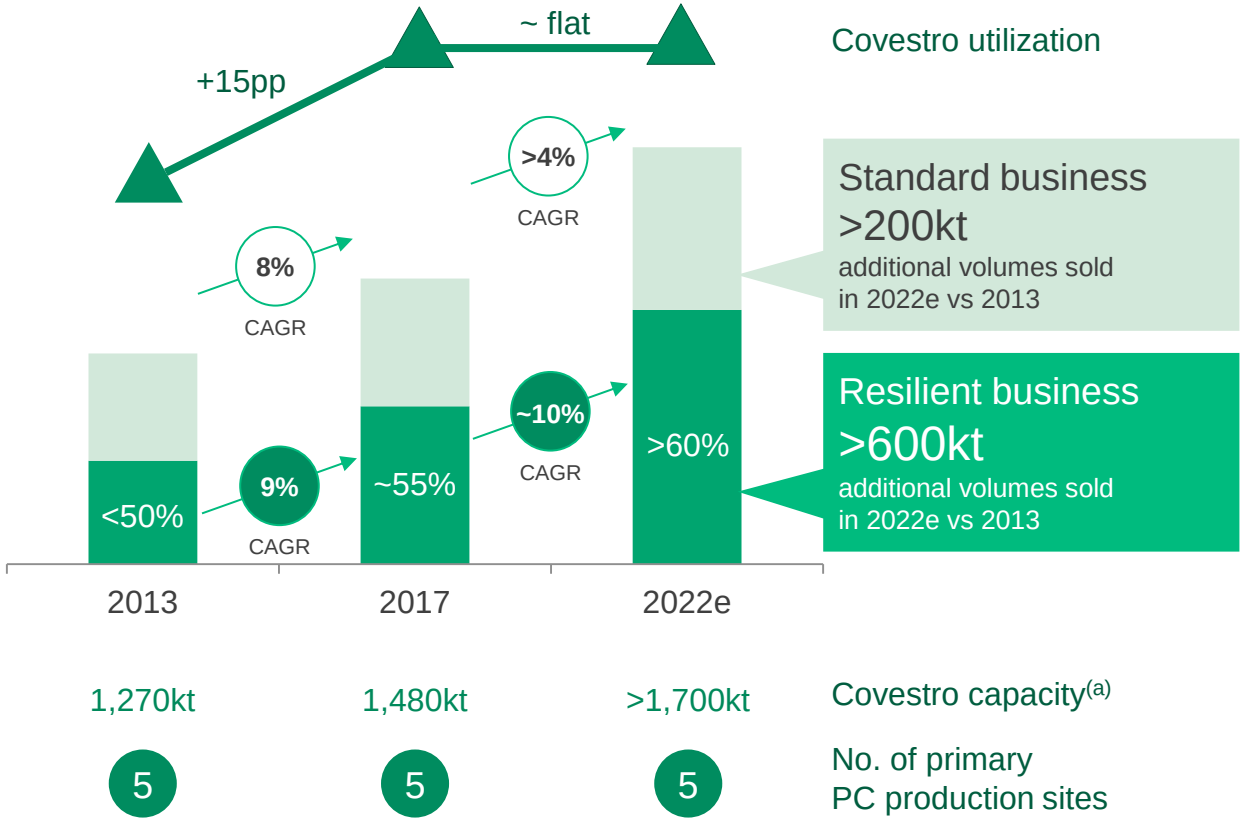
Notes: (a) Based on nameplate capacity at year end 2017 as per Covestro estimates

Growing share of resilient business

Covestro targets to outgrow PC industry in differentiated business

Development of resilient portion of PCS volumes

Covestro sales volumes in kt



Covestro highlights

Product portfolio improvement

- Goal to increase resilient portion of PC volumes to 65% long term
- Capacity growth and increasing share of resilient business result in significantly higher volumes in differentiated, high-requirement applications
- Structural improvement of average contribution margin

Higher asset utilization

- Volume leverage through significant improvement of capacity utilization by ~15 percentage points
- Significantly higher output from unchanged number of primary production sites

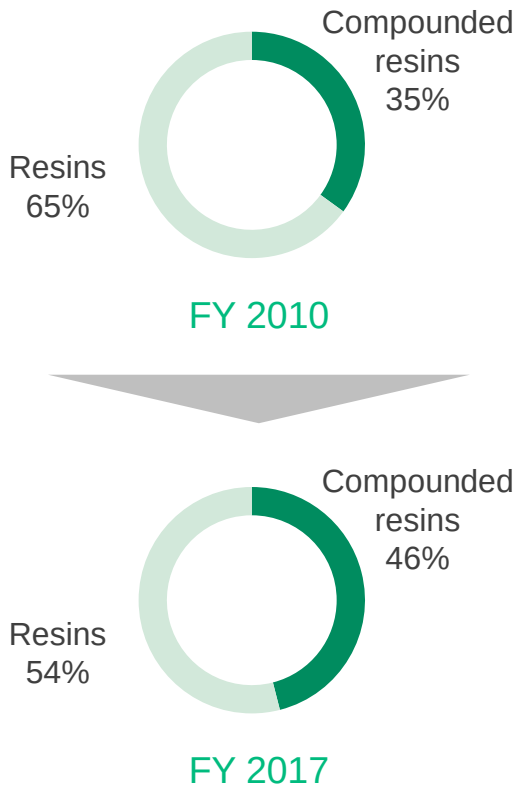
Notes: (a) Nameplate capacity for PC resins at year end

Growing share of compounded resins

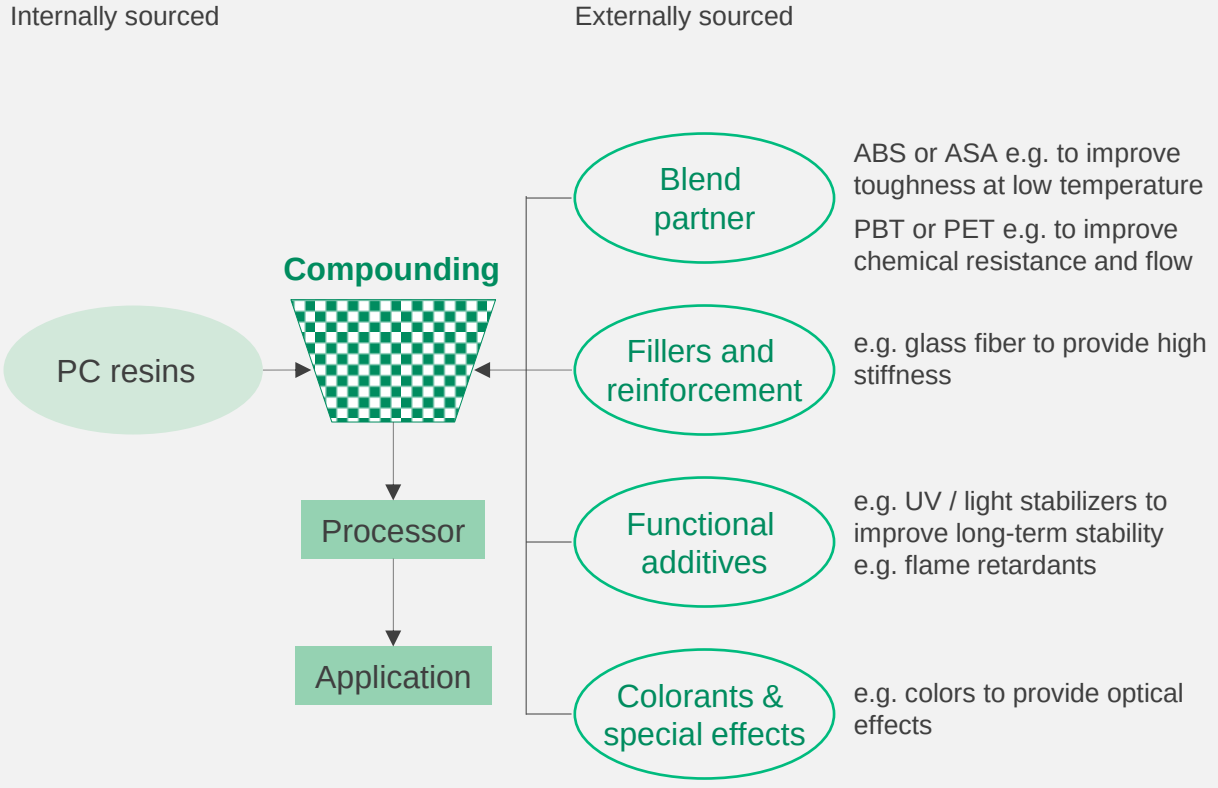
Formulations with tailored property profiles and significant added value for customers

Share of compounded resins

PCS sales split by product group



Concept of compounding

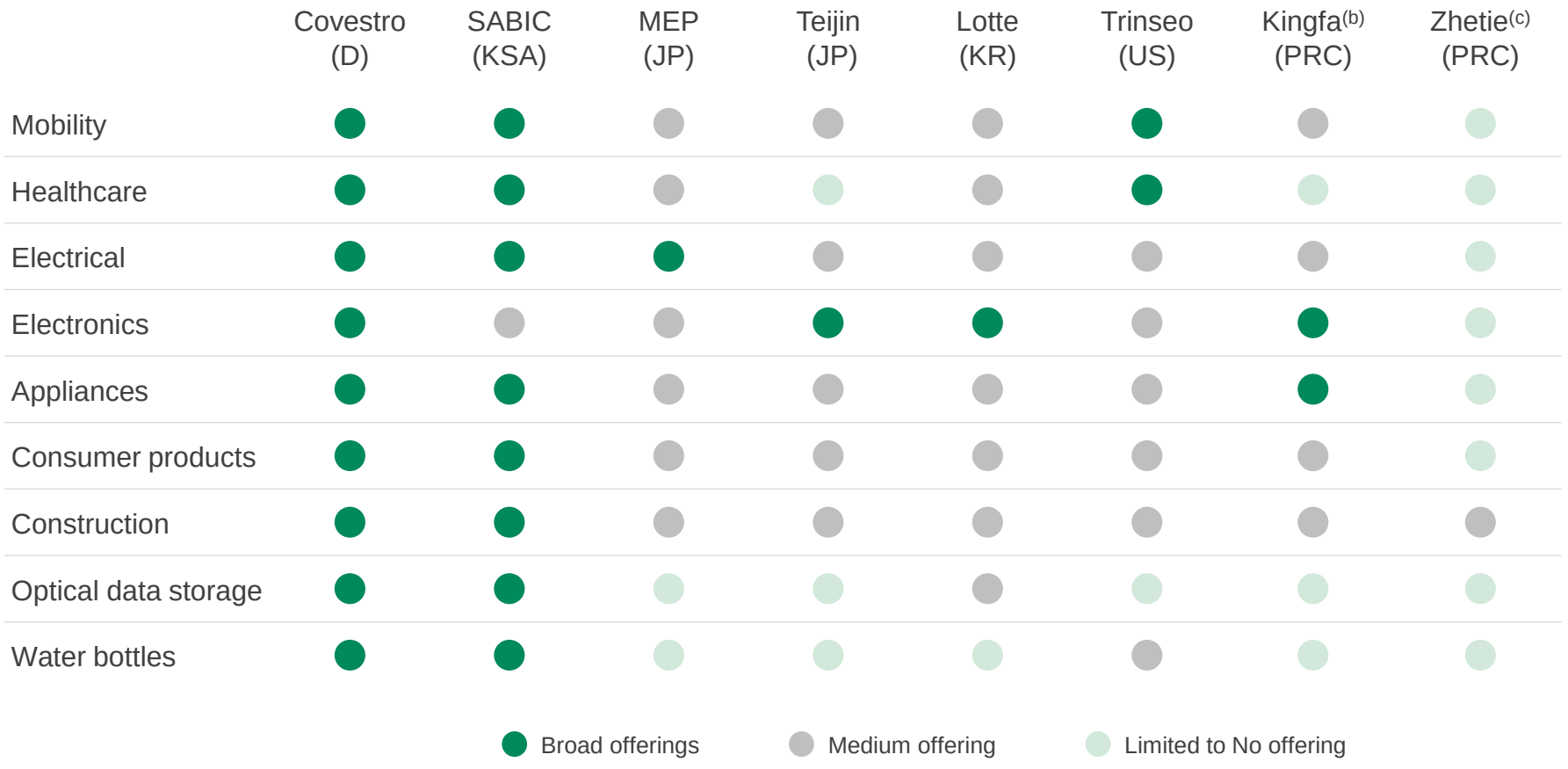


Notes: Majority of compounded resins are part of the resilient portion of PCS sales

1000+ grades position Covestro with broadest offering

Covestro leads through innovations

Breadth of PC product offering by Covestro and key competitors across end markets[a]



Highlights

- Covestro has broadest product portfolio and continues to expand, especially in the resilient part
- PC is an innovation-driven industry and Covestro has largest innovation budget in industry[a]
- Differentiation increases earnings resilience and independence of single customer industry cycles
- Differentiation lowers exposure to new potential industry players with often limited product offerings of few low-end grades

Notes: (a) Covestro estimate
(b) Compounder in PRC
(c) 2015 industry entrant in PRC

PUR: Almost half of sales in resilient businesses

Inventor of and leader in polyurethanes

#1
PU producer globally[(a)]

€7.4bn
Sales 2017[(b)]

29.5%
EBITDA margin 2017[(b)]

52%
of total Covestro sales 2017[(b)]

Cold Chain
e.g. refrigerator

Construction
e.g. metal panel

Cost leadership
e.g. process technology

Comfort
e.g. furniture upholstery

Automotive
e.g. instrument panel

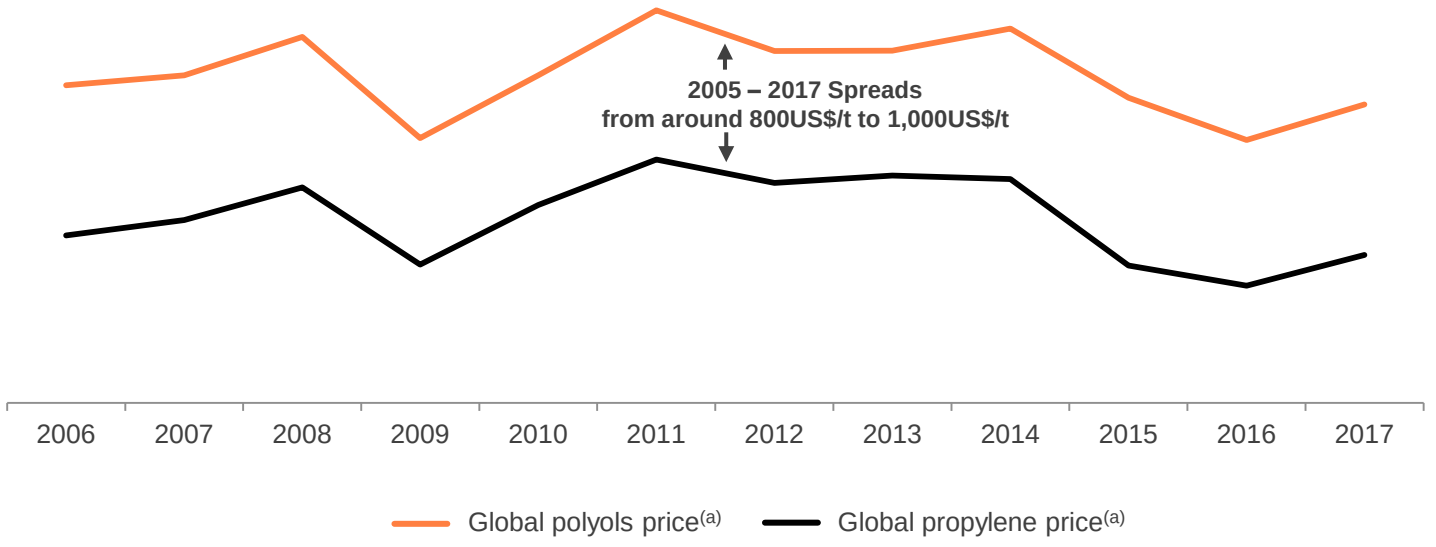
Sustainability
e.g. CO_2-based polyether polyols

Notes: (a) Based on total combined nameplate capacity for MDI, TDI and polyether polyols at year end 2017 as per Covestro estimates
(b) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018

Polyether polyols demonstrate inherently stable margins

Resilience of polyether polyols business confirmed in 2017

Spread development



Highlights

- Resilient industry margins over the last decade reflective of overall Covestro polyether polyols profitability
- Single capacity addition with little influence on supply and demand dynamics
- Spreads not materially impacted by high volatility of propylene prices, particularly during the financial crisis
- Propylene oxide supply and demand dynamics create local pricing opportunities in the short term

Notes: (a) The global average polyols / propylene prices have been calculated based on the polyols / propylene prices in Europe, US and China and weighting this average against the respective demand in those regions

Resilient portion of MDI business accounts for ~25% of sales

Consistently higher earnings than standard grades

Resilient MDI applications[(a)]

Resilient share of MDI volumes has ~20% higher gross margin (2006-2017 average)

Joint sales of polyols and MDI
e.g. CASE[(b)], automotive, construction, appliance

Specialty or downstream products
e.g. selected MDI grades (pre-polymers, blends, monomeric)

Formulations as market access requirement
e.g. automotive, appliances

Strong interaction with customers along value chain
joint projects for e.g. window frames, wind mills

Large-scale innovation

- Focus on three large-scale innovation hubs in Pittsburgh, Leverkusen and Shanghai
  - Formulation know-how and tailor-made systems
  - Full scope of application development
  - Cost-efficient business structures
- Centralized systems hubs in Europe and North America benefit from economies of scale and cost-efficient feed from world-scale MDI and polyether polyols assets
- Systems business in Middle East and APAC handled by local system houses

Notes: (a) Resilience measured as standard deviation of gross margin vs average portfolio
(b) CASE: Coatings, adhesives, sealants and elastomers

~4%

Average core volume growth per annum

☑

Solid overall industry margins outlook

>50%

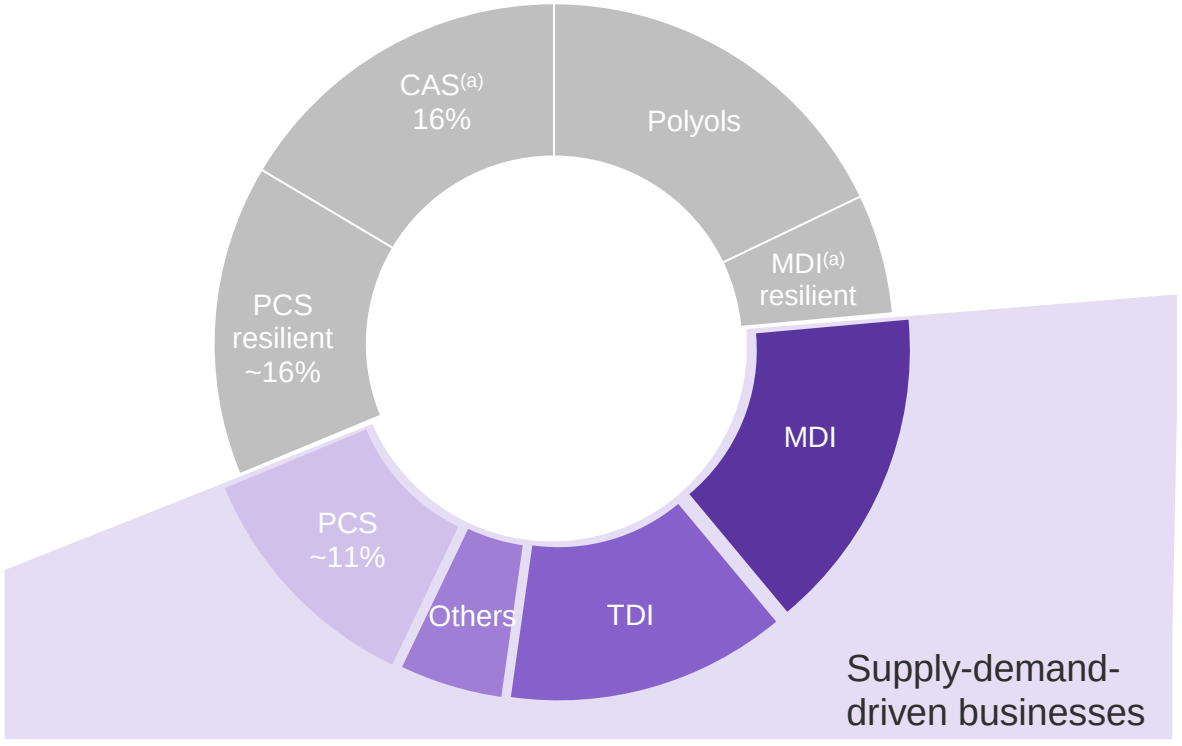
Group sales in resilient businesses

Less than 50% of sales are supply and demand driven

Normal global GDP growth to support a balanced outlook

Sales by segments

% of 2017 Group sales



Highlights

- **TDI** industry expected to rebalance to a normal supply and demand situation, fly-up margin expected to fade away short term
- **MDI** industry supply and demand expected to remain balanced
- **PC** industry supply and demand expected to remain balanced mid term

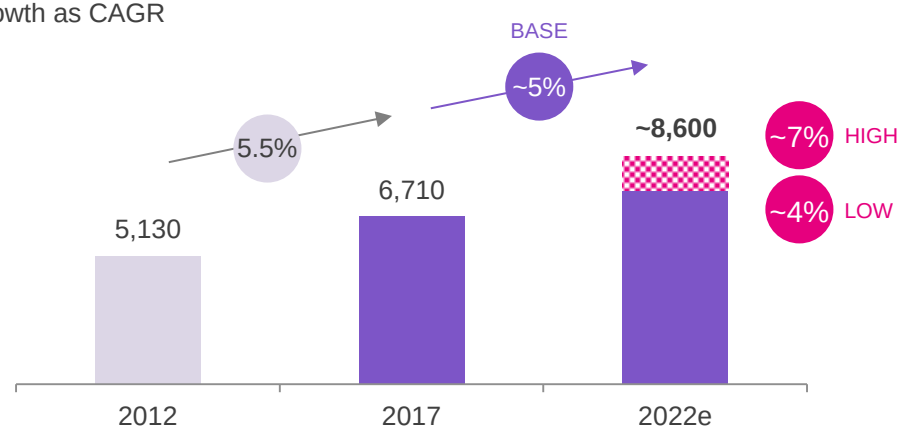
Note: (a) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018
Resilience measured as standard deviation of contribution margin per kg versus respective average portfolio

MDI industry supply and demand to remain balanced

Above GDP demand growth supports solid industry utilization

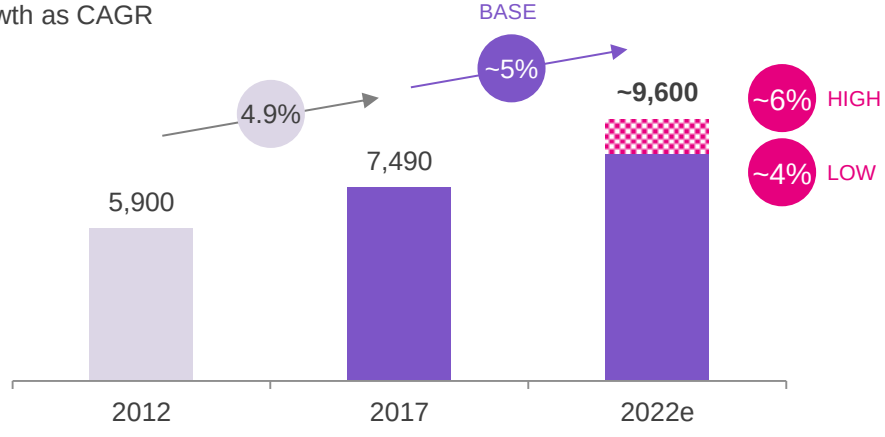
MDI demand development (2012 – 2022e)

(kt)[a]
% growth as CAGR



MDI supply development (2012 – 2022e)

(kt)[b]
% growth as CAGR



Industry highlights

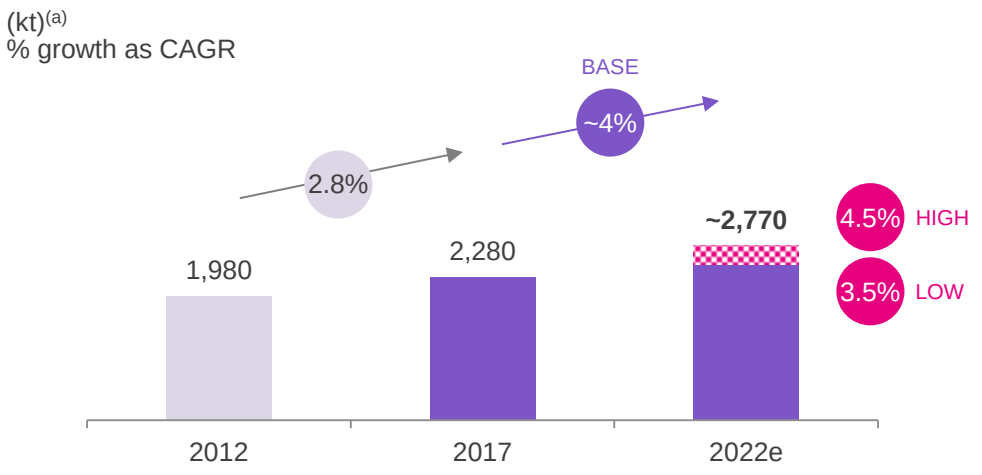
- Budgeted demand growth of ~5% may be conservative given strong demand trends
- Demand growth of 7% (high case) would require two additional world-scale plants compared to base case
- Structurally sound demand for the foreseeable future, driven by solid GDP growth and substitution trend
- Major additions expected until 2022e: BASF, Covestro, Dow/Sadara, SLIC and Wanhua

Notes: (a) Assumes global GDP CAGR 2017–2022e of ~3%
(b) Based on historical and announced future nameplate capacities
Source: Covestro estimates

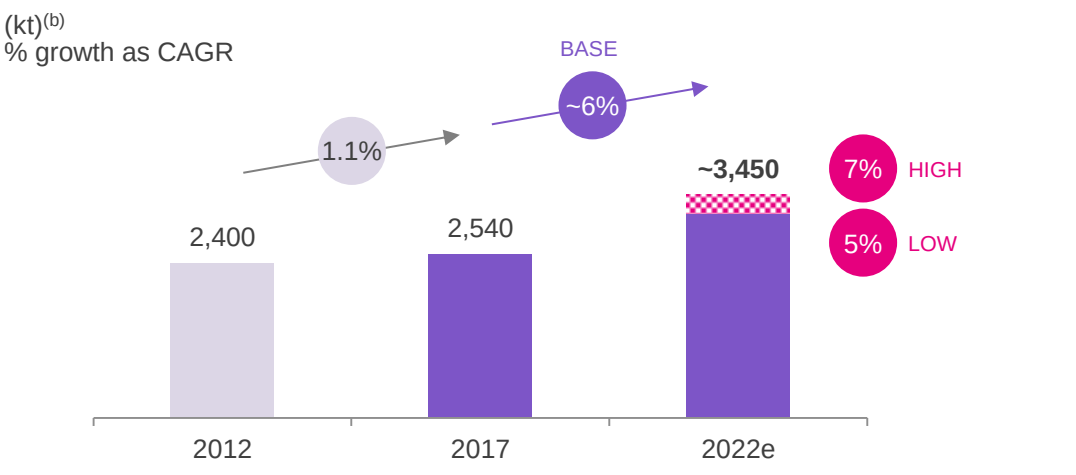
TDI supply additions to rebalance industry

Moving to a balanced industry with fly-up margin expected to fade away short term

TDI demand development (2012 – 2022e)



TDI supply development (2012 – 2022e)



Industry highlights

- Demand growth of ~4% may be conservative in light of 4.4% actual growth in 2017
- TDI margins currently above long-term average due to delayed start-up of major investments
- Margins expected to normalize mid 2018 based on new world-scale capacities
- Major additions expected until 2022e: BASF, Dow/Sadara, Wanhua
- Possible industry consolidation in APAC

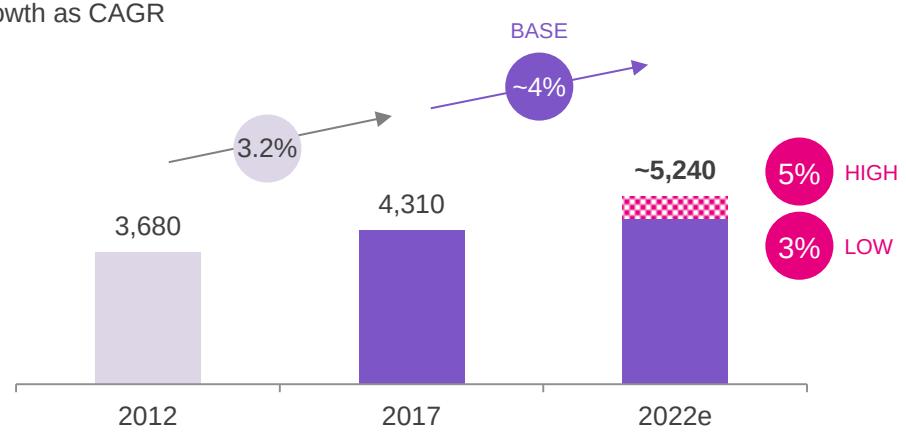
Notes: (a) Assumes global GDP CAGR 2017–2022e of ~3%
(b) Based on historical and announced future nameplate capacities
Source: Covestro estimates

PC industry supply and demand to remain balanced mid term

Capacity additions announced for end of forecasting period with high uncertainties

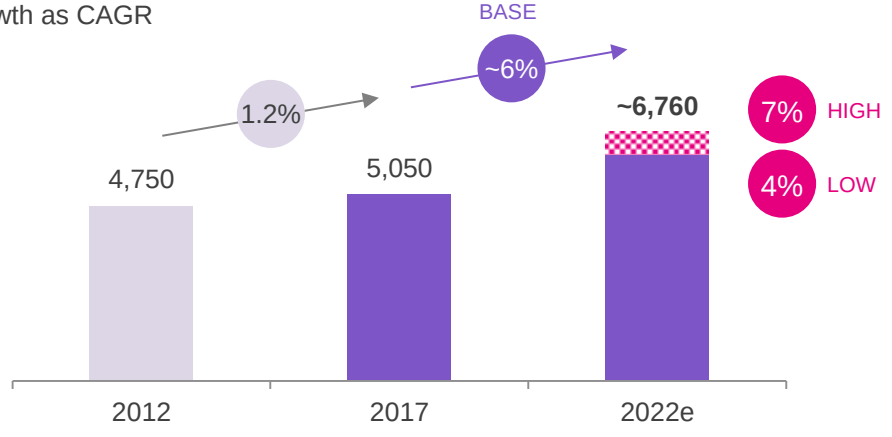
PC demand development (2012 – 2022e)

(kt)[a]
% growth as CAGR



PC supply development (2012 – 2022e)

(kt)[b]
% growth as CAGR



Industry highlights

- Electric mobility and autonomous driving could accelerate demand growth above base case
- Major additions expected until 2022e: Covestro, Heng Yuan, Lotte, Luxi, Ningbo Zhetie Dafeng, SABIC-Sinopec, Wanhua, ZPC
- Supply CAGR at 4-5% in 2017-2022e provided that announced capacity additions for 2022 would not materialize
- New industry players likely to penetrate low-end applications

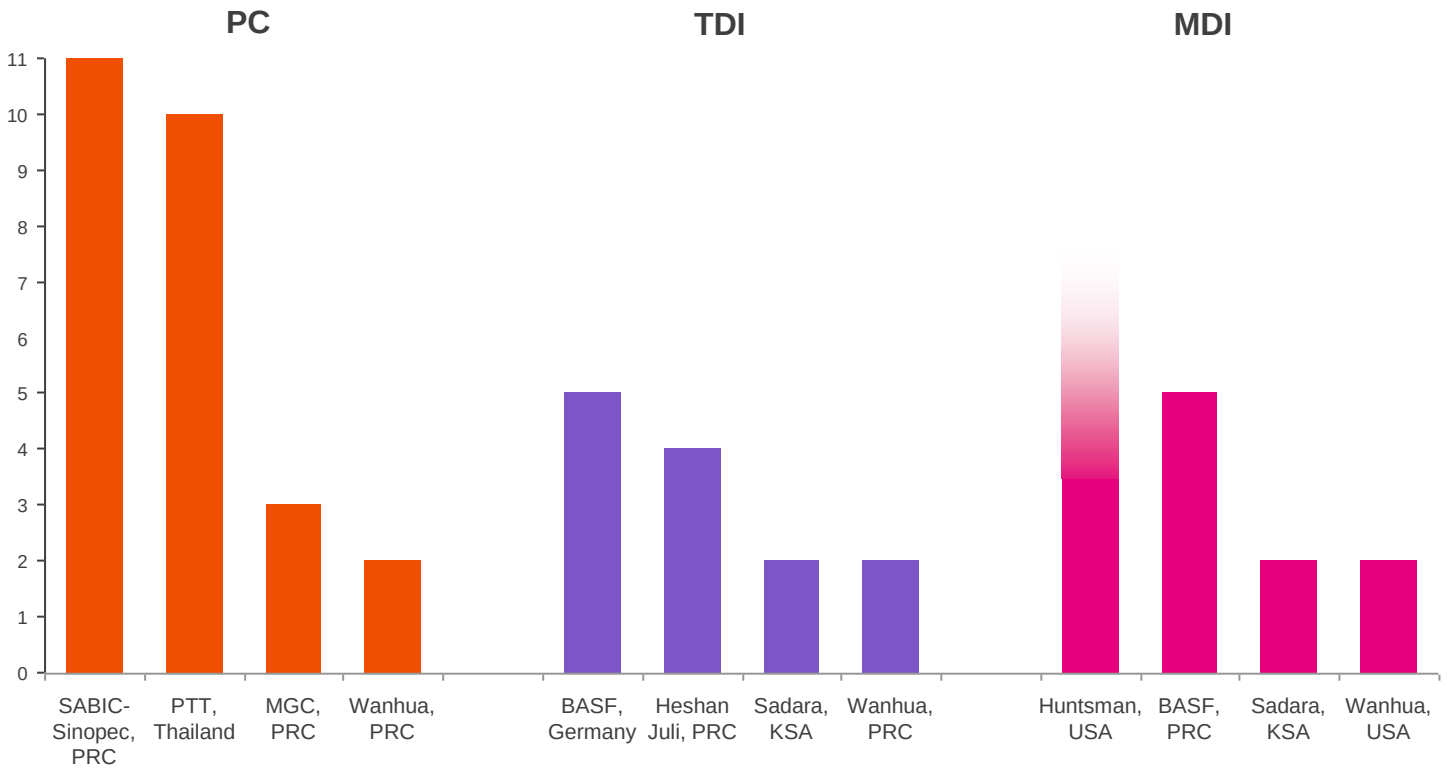
Notes: (a) Assumes global GDP CAGR 2017–2022e of ~3%
(b) Based on historical and announced future nameplate capacities
Source: Covestro estimates

Industry constantly witnesses delays and cancellations

Significant supply delays remain industry norm

Delays between initially announced start-up date and actual production start

in number of years



Highlights

- Long lead time for investments of up to a decade in PC, TDI and MDI makes delays the norm
- No of-the-shelf but individual plant designs prolong planning and construction process
- Highly sophisticated chemical processes requires long ramp-up times
- Long investment cycles increase chance of cancelations

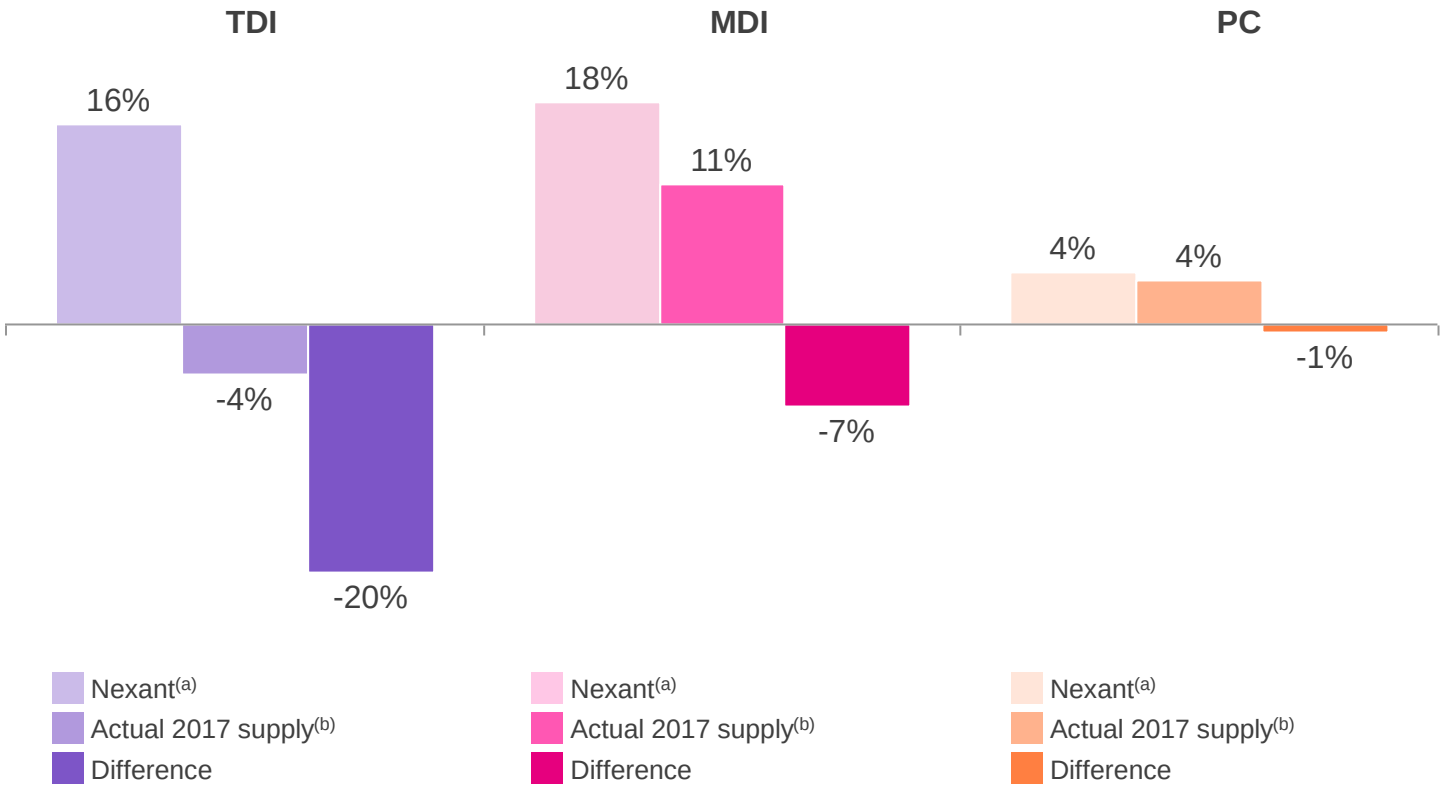
Source: Covestro estimates

Historic forecasts always overstated supply additions

Significant supply delays remain industry norm

Global net supply additions between 2014 and 2017

Industry supply growth 2017 versus 2014,
based on nameplate capacities (kt)



Highlights

- Delays and cancellations are commonly neither announced by companies nor publically available
- Difficult chemical production process like TDI, MDI and PC increase the likelihood of significant start-up delays
- A world-scale TDI plant represents ~10% of the overall industry supply
- Limited capacity additions in PC industry explain small difference

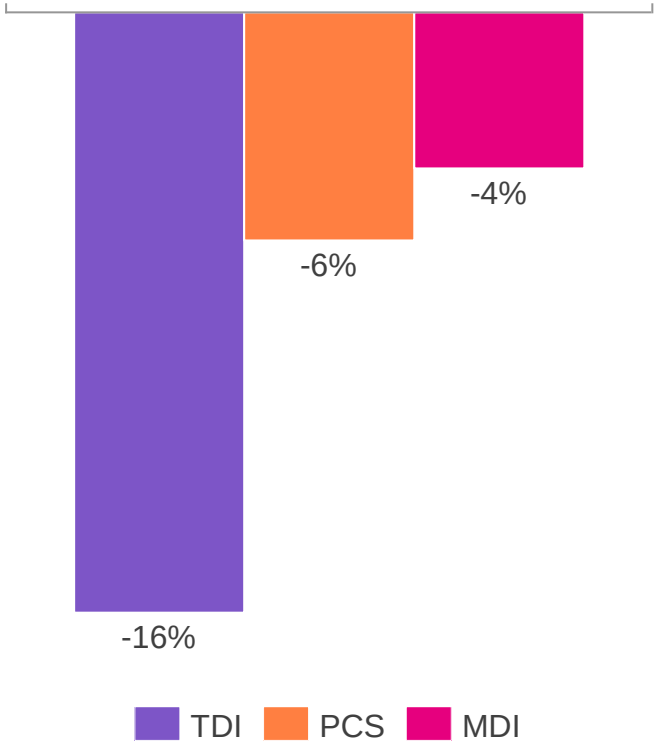
Source: (a) Nexant 2015 (at Covestro IPO)
(b) Covestro estimates

Plant closures considered as “wild cards”

Unrecognized plant closures lead to systematic supply overstatements

Plant closures between 2014 and 2017

Reduction of global nameplate capacity (in kt)



Highlights

- TDI industry with steepest cash cost differences shows highest decrease in industry capacities through closures
- PC industry with accentuated cash cost differences shows strong decrease in industry capacities through closures
- MDI industry with relatively small cash cost differences shows minor decrease in industry capacities through closures

Source: Covestro estimates

~4%

Average core volume growth per annum

☑

Solid overall industry margins outlook

>50%

Group sales in resilient businesses

#1

Global leader

Covestro is a leader across its entire portfolio

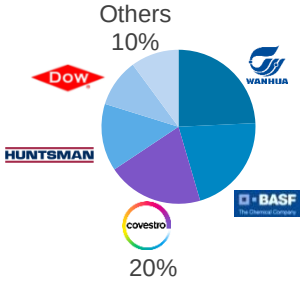
Global industry positions

Capacity share in 2017[a]

Polyurethanes

MDI

#1 in PUR

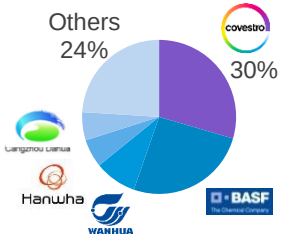


Top 5: 90%

2022e: Top 5 share expected to remain stable at 90%

TDI

#1 in PUR

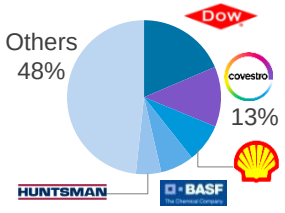


Top 5: 76%

2022e: Top 5 share expected to remain stable at 76%

Polyether polyols

#1 in PUR



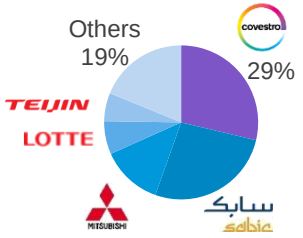
Top 5: 52%

2022e: Further consolidation expected, especially in China

Polycarbonates

PC

#1 in PC



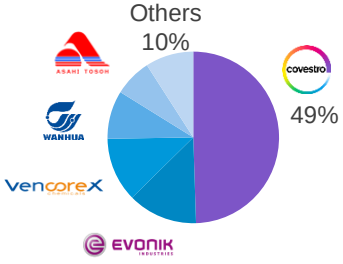
Top 5: 81%

2022e: Top 5 expected to account for ~70%

Coatings, Adhesives, Specialties

Aliphatic isocyanate derivatives

#1 in CAS

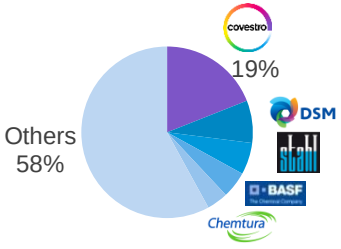


Top 5: 90%

2022e: Industry structure expected to remain stable

Polyurethane dispersions

#1 in CAS



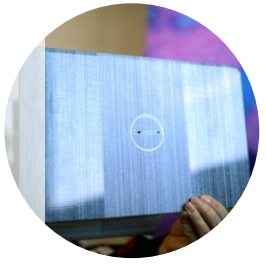
Top 5: 42%

2022e: Industry structure expected to remain stable

Note: (a) Based on total nameplate capacity at year end 2017 relative to competitors
Source: Covestro estimates

Pushing boundaries in polymer innovation

Innovation leadership in materials

Highlights		Benefits
Film solutions for forgery-proof ID cards		• Heat-resistant, tough and elastic PC film Makrofol® ID is designed for passport data page (inlay) that may carry other security features like a chip and antenna • The passport inlay is held securely by a thin hinge, made of multilayer composite TPU film Platilon®
CO_2-based polyols in first commercial application (market testing) by RECTICEL The passion for comfort		• Recticel manufactures KAPUA® foam mattresses with more than one-seventh of oil content replaced by CO_2-based chemicals (e.g. cardyon®) • Covestro is developing more CO_2-based products for applications in sport, appliances, construction and others
CFRTP commercial production inaugurated		• Mid double-digit million Euro amount invested in first commercial production in Germany • Commercial application in e.g. Haier's Casarte premium air conditioner housing

Notes: CFRTP: Continuous Fiber Reinforced Thermoplastics Composites

Pushing boundaries in making business

Innovation in business models

Highlights		Benefits
Digital marketplace for chemicals		• Customers can efficiently purchase standard products online at current market prices • Materials valued at up to €1bn to be sold via the platform by end of 2019 • Platform to be launched in 2018
Online business in Asia on Alibaba		• Reliable, simple and efficient purchasing experience for small- and medium-sized customers (with maximum quantity orders) • covestrochina.1688.com makes available polycarbonate as well as pre-products for polyurethane foams, coatings and adhesives
Digital technical services (DTS)		• Utilize digitalization to deliver customers real time analysis of their performance and enable operational decisions, e.g. real-time quality and performance improvements • Project using Covestro and customer data and self-learning AI algorithms in pilot phase

~4%

Average core volume growth per annum

☑

Solid overall industry margins outlook

5

Non-financial targets 2025

>50%

Group sales in resilient businesses

#1

Global leader

Non-financial ambition supports growth strategy

Covestro non-financial targets 2025

1. Our R&D project portfolio is aligned with UN Sustainable Development Goals
2. 100% of suppliers compliant with our sustainability requirements
3. Reduce specific greenhouse gas emissions by 50% by 2025
4. Ten million people in underserved markets benefit from our business solutions
5. Getting the most out of carbon

Target N°1: Sustainability-related R&D

Increase share of sustainability-related R&D projects to 80% by 2025

Key industries rely on sustainable solutions

- Aligned with the People, Planet, Profit (PPP) principle
- Strong focus on the UN Sustainable Development Goals (SDGs)
- Capture promising growth opportunities with innovative sustainable solutions

Notes: By 2025, 80 % of R&D project spending of Covestro will be targeted in areas that contribute to achieving these goals, either undertaken in partnership or endorsed by recognized institutions

Target N°2: External sourcing

100% of suppliers compliant with our sustainability requirements by 2025

Together For Sustainability

TOGETHER FOR SUSTAINABILITY

AkzoNobel, ARKEMA, BASF We create chemistry, BAYER, BRENNTAG, CLARIANT, covestro, DUPONT, DSM, EASTMAN, EVONIK, Henkel, IFF, LANXESS, MERCK, SANOFI, SOLVAY asking more from chemistry, syngenta, WACKER

Externally audited by

ecoVadis SUSTAINABLE SUPPLY MANAGEMENT

- Dynamic and collaborative initiative founded in 2011, currently 19 members
- Offers the infrastructure to support high-quality, third-party sustainability assessments and audits by EcoVadis

Notes All suppliers of Covestro with recurrent annual spending exceeding €100,000 will be assessed and have to achieve compliance with Covestro's sustainability requirements

Target N°3: Emissions

Reduce specific greenhouse gas emissions by 50% by 2025

Highlights		Benefits
Melt process in world-scale PC production		• Conversion cost advantage of around 20% vs. competitor technologies • Raw material cost on par or better than competitive technologies • Pushing economies of scale to new standard of 150kt/a per line in Caojing, China
TDI / HDI gas-phase phosgenation		• Capex reduced by 20%(a) • Reduced conversion cost due to lower energy demand and reduced solvent usage • Reduced phosgene hold-up by 40% and energy consumption by 60% vs liquid phase
NaCl electrolysis with ODC(b)		• Consumes 30% less electricity vs. conventional processes • Significant economic and ecological benefits vs conventional processes • World-scale ODC plant planned in Tarragona, Spain

Notes: Covestro aims to reduce specific greenhouse gas emissions –those generated per metric ton of product produced– by 50% compared to year 2005
(a) The plant size for a given capacity is smaller, because the reaction time for the gas-phase phosgenation process is shorter than the conventional process and results in a significantly higher throughput
(b) NaCl = Sodium Chloride; ODC = Oxygen Depolarized Cathode

Target N°4: Inclusive business

Help ten million people in underserved markets with sustainable solutions by 2025

Highlights		Benefits
Solar dryer domes		• Food security: PCS solutions for smallholder farmers • Avoid food wastage after harvest, benefitting farmers economically • Locations: Thailand, Vietnam, Myanmar, India
Affordable houses		• Based on polyurethane rigid foam (PIR) • With outstanding insulation and mechanical properties • Locations: Iraq, Malaysia, Philippines, India
Hygienic sanitation		• PIR technology based toilets • Community and school toilets as the next step • Locations: India, Malaysia

Notes: Covestro aims to help improve the living conditions of ten million people in underserved markets by the year 2025. Covestro focuses on affordable housing, sanitation and food security applications in which Covestro materials offer significant benefits

Target N°5: Return on carbon

Develop a significant and universally accepted metric to set a quantitative target for 2025

Highlights

Our vision is to drive a new perspective on value creation through carbon

- Improving carbon productivity along the value chain means generating more value from less fossil fuel carbon
- The alternative ROCE measures the return on carbon employed in making materials and products

Our role as initiator of the Carbon Productivity Consortium:

- Promote a group of like-minded organizations who want to seed the breakthrough idea of carbon productivity across industry and beyond
- Catalyse new insights about carbon at various stakeholder levels
- Support the collaborative creation of a tool, soon available as open source

Partners

CARBON PRODUCTIVITY

SYSTEMIQ

covestro

Future-Fit Business Benchmark

VOLANS

FUTERRA

InnovationArts

~4%

Average core volume growth per annum

☑

Solid overall industry margins outlook

5

Non-financial targets 2025

>50%

Group sales in resilient businesses

#1

Global leader

Dr. Thomas Toepfer

Chief Financial Officer

Dr. Thomas Toepfer is member of the Board of Management since April 2018. As Chief Financial Officer (CFO) at Covestro, he is responsible for Accounting, Controlling and Finance. He also oversees Investor Relations, Information Technology, Portfolio Development, Taxes and Law, Intellectual Property & Compliance.

Born in Hamburg, Germany, in 1972, Toepfer holds a PhD in Business Administration from Otto Beisheim Graduate School of Management (WHU), Koblenz. He worked as a consultant with McKinsey & Company, Inc. and in leading management positions for STILL GmbH, Karstadt Warenhaus GmbH amongst others. Before joining Covestro he was a member of the Executive Board, Chief Financial Officer and Labor Director of KION GROUP AG.

Attractive growth fuels solid cash generation

Covestro key investment highlights

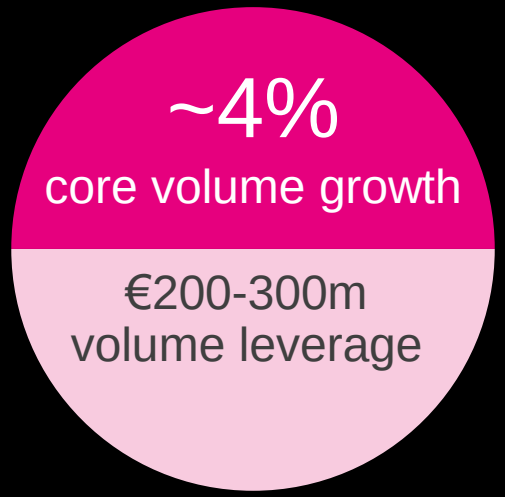
1. **Attractive volume leverage**
   driven by above GDP industry growth

2. **Capex with high ROCE**
   with mid-term debottlenecking and preparation of world-scale investment

3. **Continuous cost discipline**
   delivered through profitability enhancement program “PEP”

4. **Solid cash generation**
   volume leverage and cost discipline to counterbalance fading fly-up margins in TDI

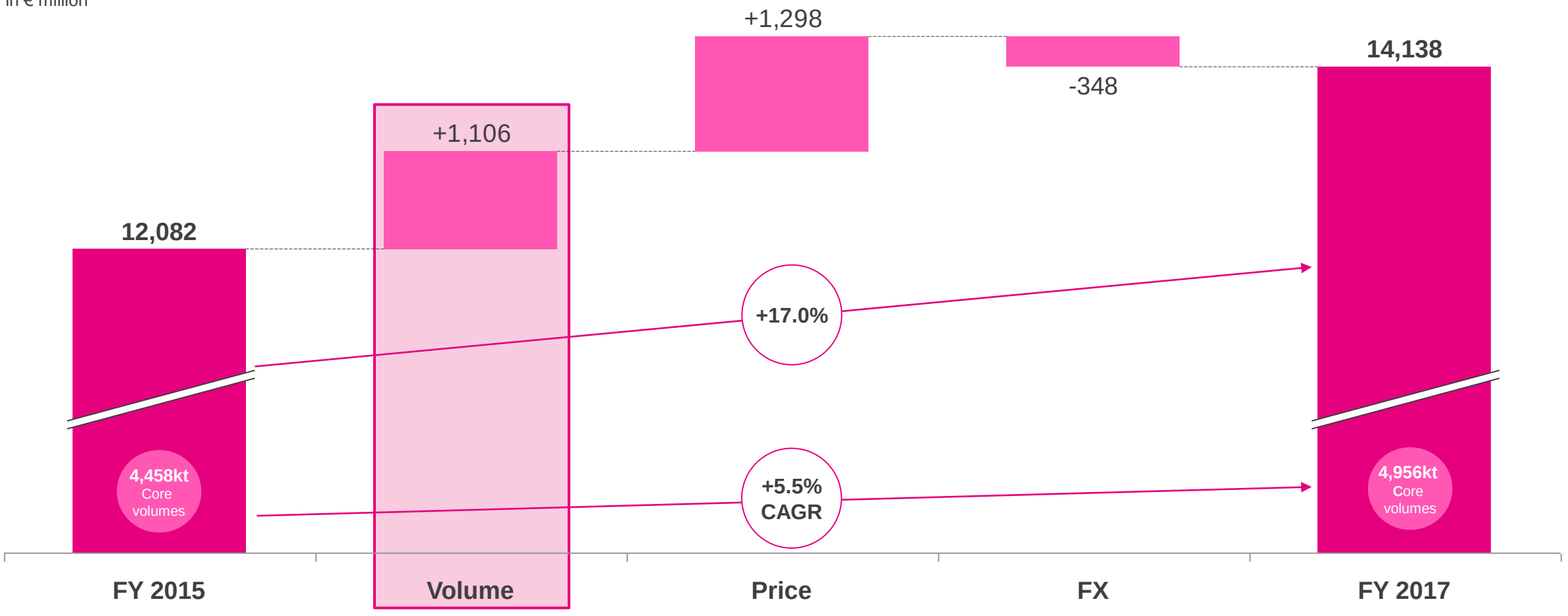
5. **Use of free cash with focus on shareholder value**
   with attractive dividend policy, return of excess cash and disciplined M&A strategy


~4%
core volume growth
€200-300m
volume leverage

Higher volumes generated €1.1bn additional sales

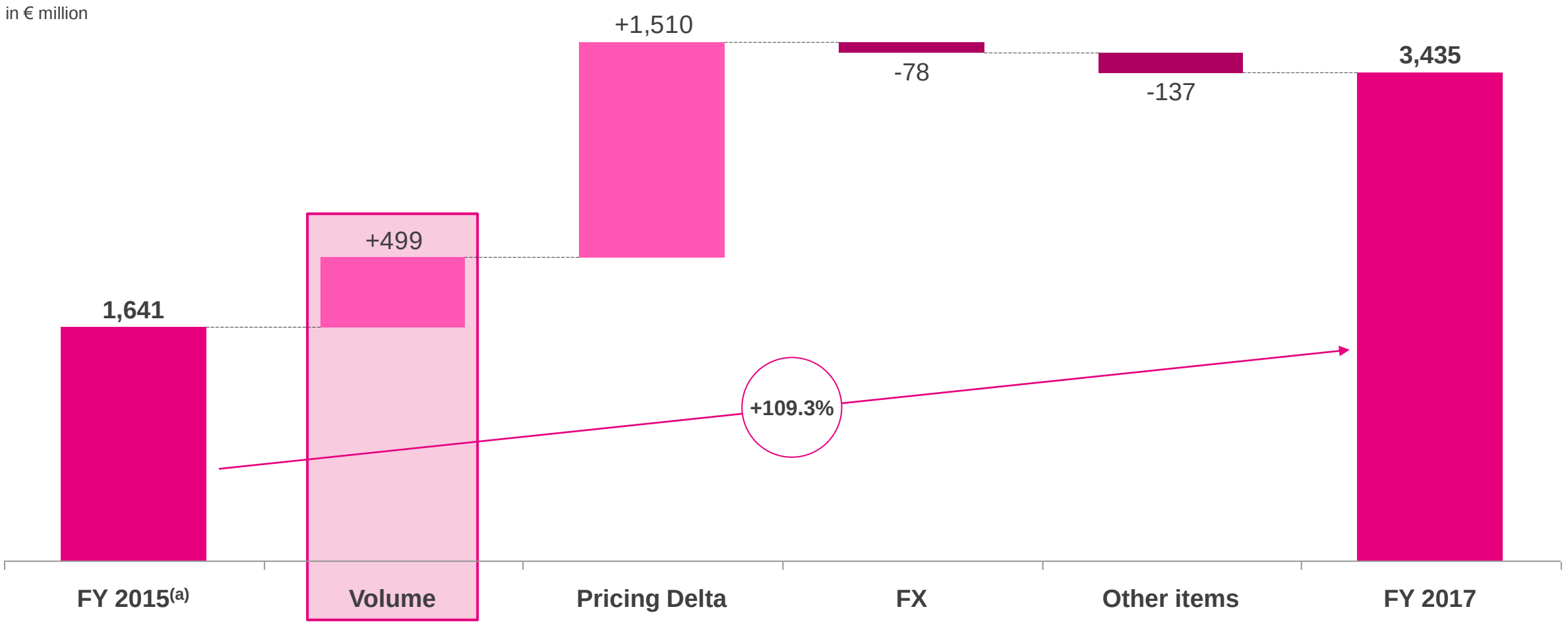
Covestro sales bridge 2015-2017

in € million



Sales volume growth translated into €0.5bn additional EBITDA

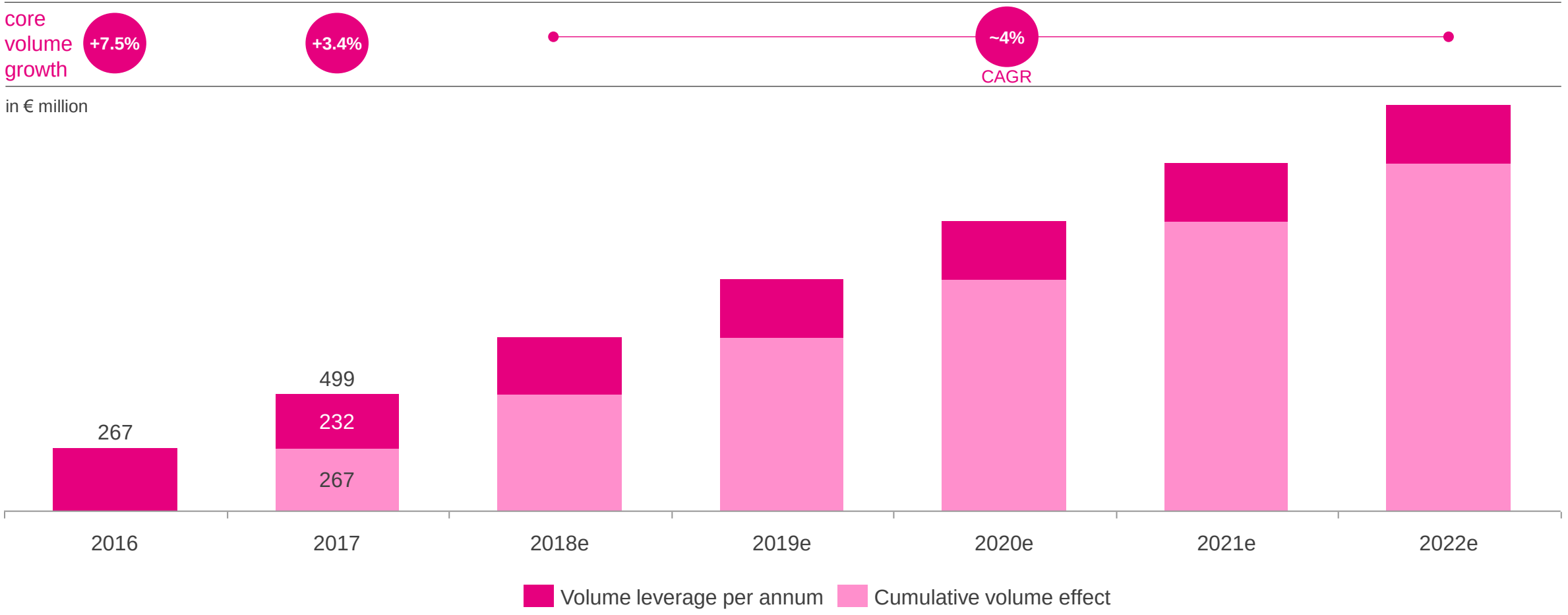
Covestro EBITDA bridge 2015-2017



Note: (a) Adjusted EBITDA

Core volume growth of 4% to contribute to EBITDA

Cumulative EBITDA volume leverage of more than €1bn in next 5 years



~4%
core volume growth

€200-300m
volume leverage

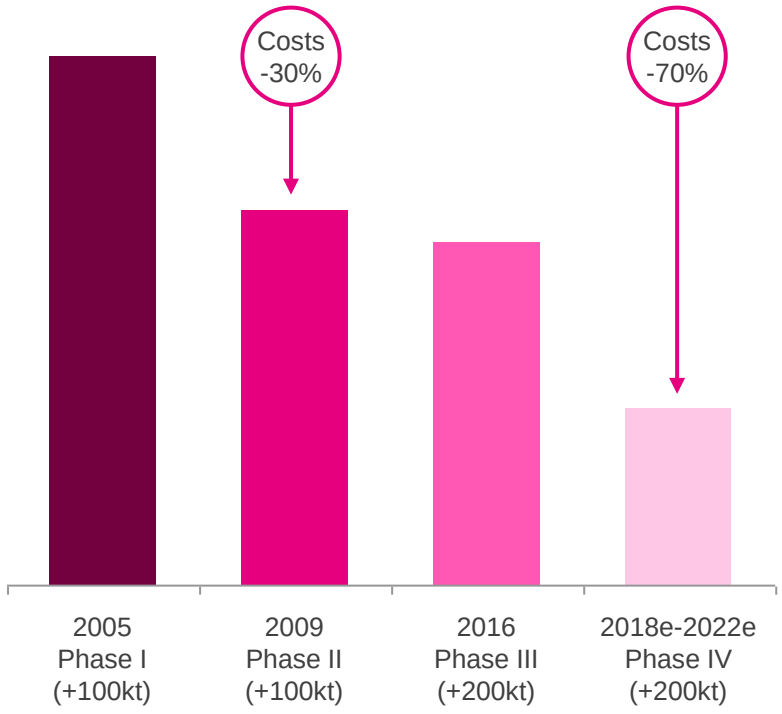
€650-700m
capex expected
in FY 2018

Mid-term debottlenecking projects

Highly competitive specific investment cost leads to high ROCE benefits

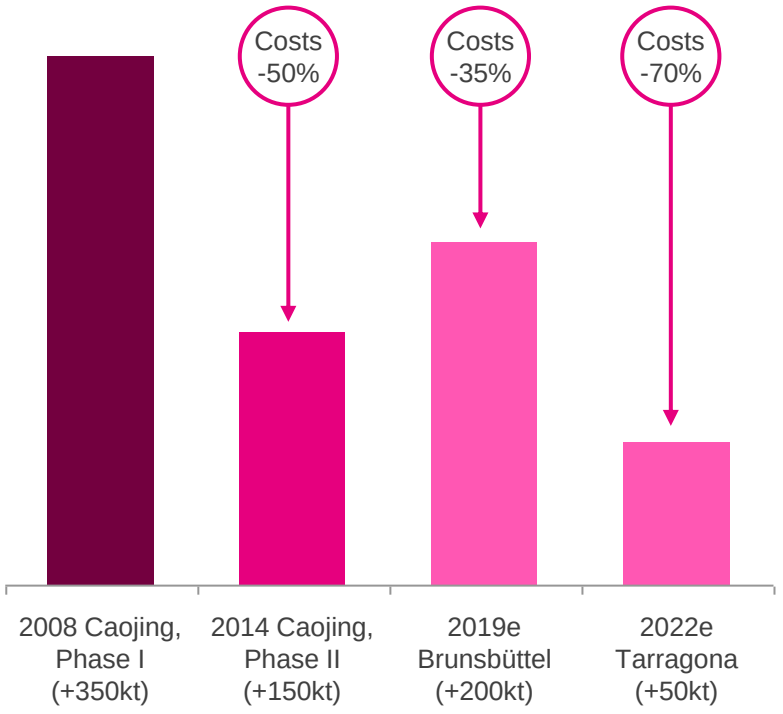
PCS capacity expansion – Caojing

Capex €/kt



MDI capacity expansions

Capex €/kt



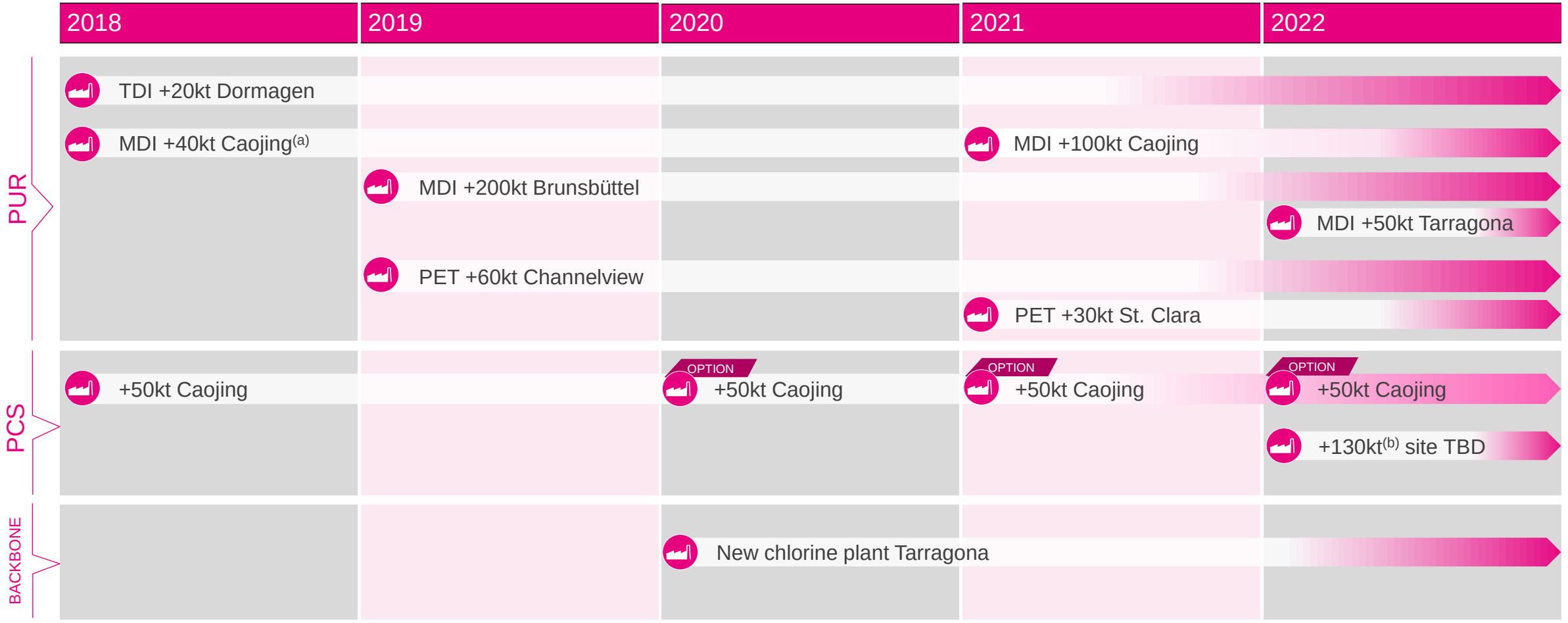
Advantages of debottlenecking projects

Lower specific capital investment required due to:

- Process improvement through progress on learning curve: technology progress enables higher throughput
- Only adjustment or replacement of selected equipment necessary, many parts of the plants suitable for higher load
- Site infrastructure existing and only to be adjusted to minor extent

Covestro planned capacity additions

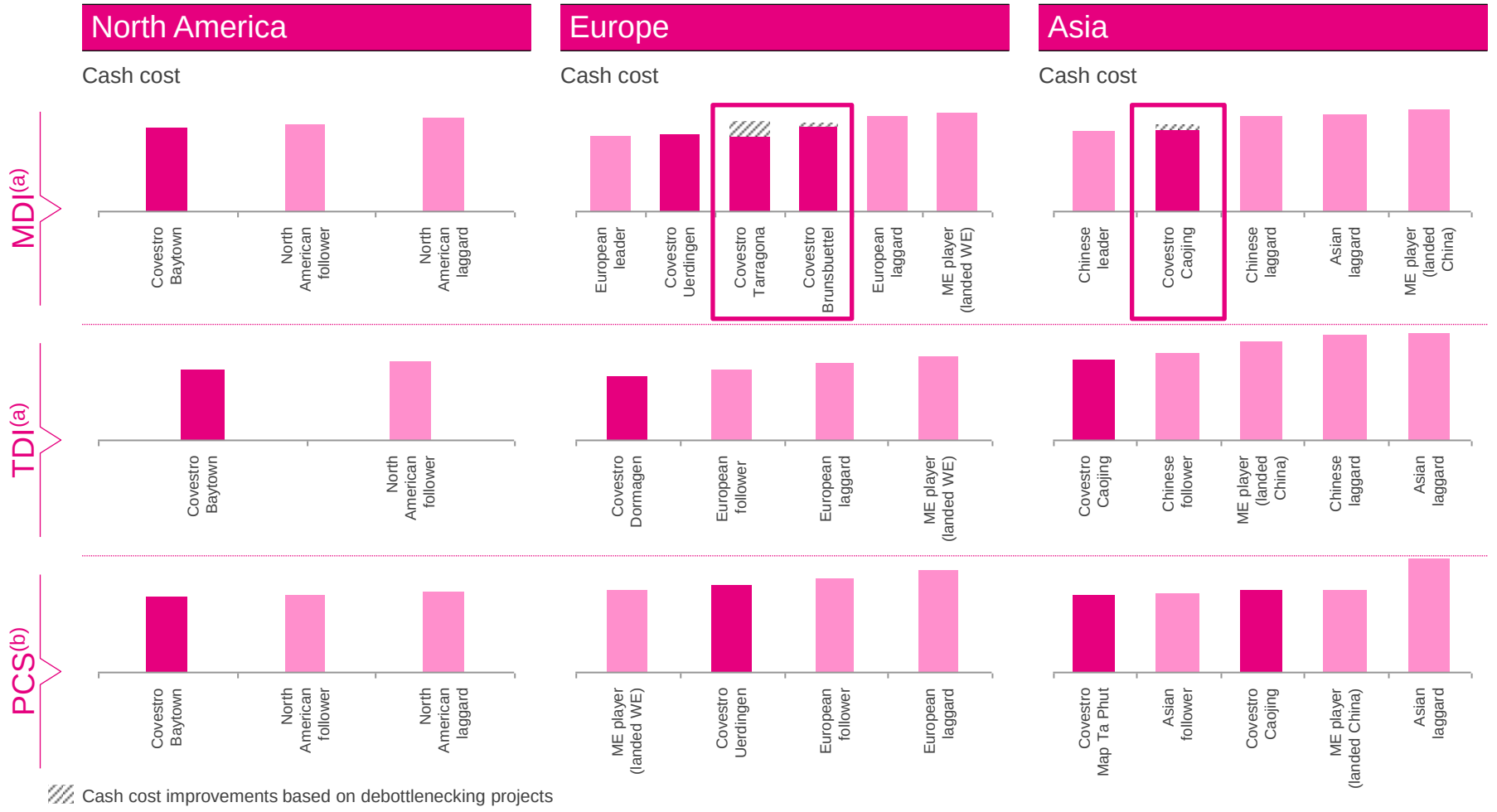
Mid-term growth through debottlenecking projects



Note: (a) Installed end of 2017
(b) New PC line

Leading cost positions across business segments and regions

Capex projects further improves competitive cash cost position



Highlights

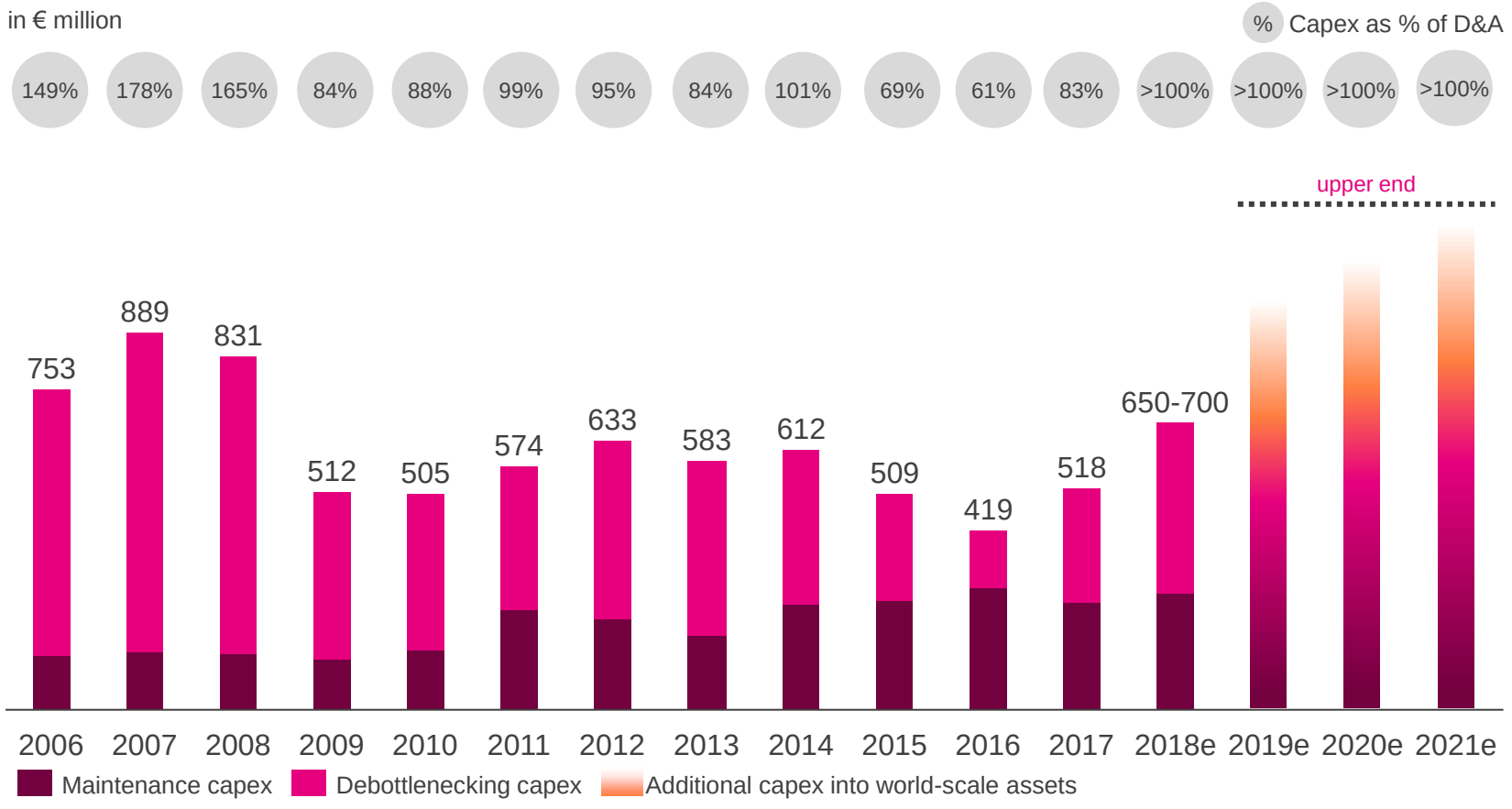
- Covestro is one of the low-cost producers in MDI
- Capex for ongoing MDI expansion projects reflected in significant cash cost improvements
- MDI industry with relatively flat cost curves reflected by cash cost advantage of ~20% between the best and the average of least competitive 5 plants
- Covestro is the global cost leader in TDI and PCS
- Covestro cash cost advantage of ~50% in TDI and ~30% in PCS compared to the average of least competitive 5 plants

Notes: (a) Cost of production based on total raw material costs less co-product credits, variable and fixed conversion costs at 100% utilization based on nameplate capacity for FY 2017
(b) FY2017 Cash cost ex gate, 82% utilization rate for all plants based on nameplate capacity. Integrated players are shown without any margins for BPA, phenol, acetone, etc.

Capex with high ROCE

Mid-term debottlenecking capex and preparation of world-scale investment

Covestro capex[(a)] development 2006-2021e



Highlights 2018-2021e

Disciplined decision process

- Financial fit (ROCE, NPV, POT[(b)])
- Prioritization with focus on value creation

Maintenance capex at €250-300 p.a.

- Risk assessment
- Financial impact from project delay

Debottlenecking capex

- Accompany industry growth by adding capacity through debottlenecking projects
- Capex with superior ROCE

Additional capex creates significant value

- New growth investment into world-scale plants on existing sites
- Capex with high ROCE
- Spending depends on projects and timing

Notes: (a) Cash-relevant capex, prior to initial application of new accounting standard IFRS 16 Leases, effective January 1st, 2019
(b) POT: pay-off time

~4%
core volume growth

€200-300m
volume leverage

~€370m

cost savings
until 2019e

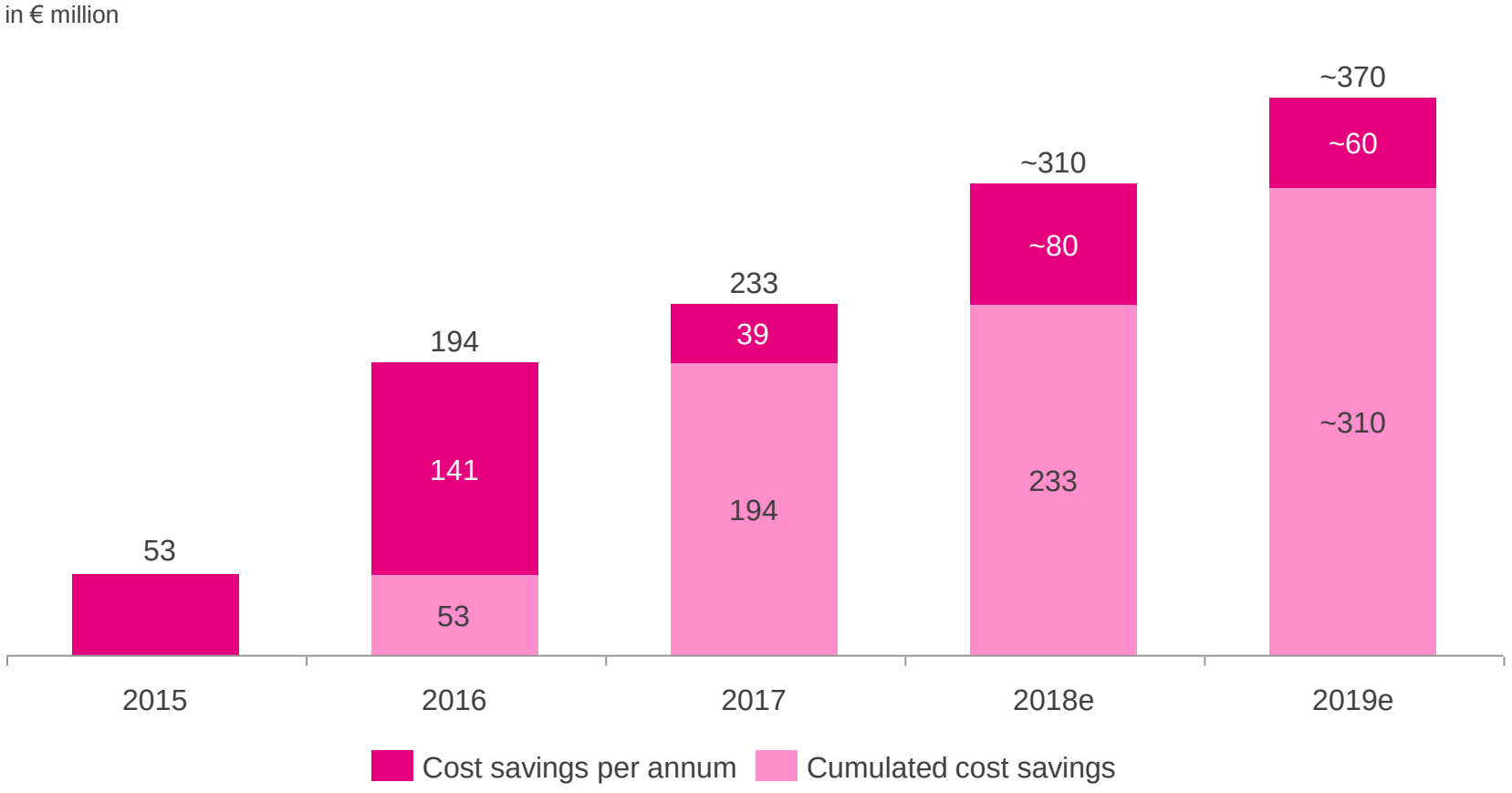
€650-700m

capex expected
in FY 2018

Successful execution of “PEP”

Profitability enhancement program delivered €233m until end of 2017

Cumulated savings achieved with “PEP”(a)



Highlights

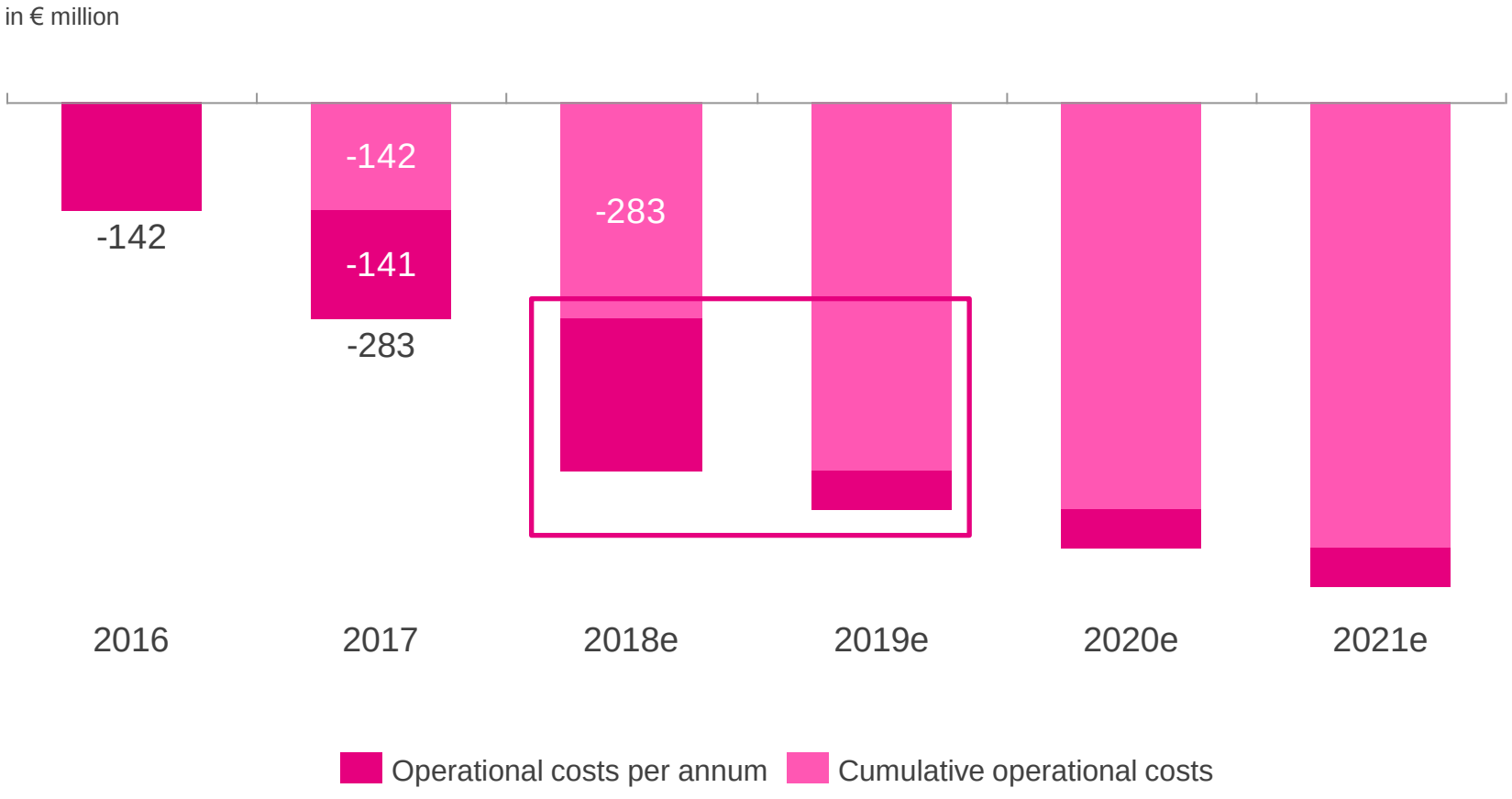
- Achieved savings of €233m until end of 2017
- Implemented projects expected to deliver additional savings of ~€140m until end of 2019
- Difference between original target of ~€420m and projected savings of ~€370m mainly due to decision to reverse the planned closure of Tarragona site

Note: (a) PEP: Profitability Enhancement Program

Commitment to limit additional operational cost

Counterbalancing operational cost increases with efficiency programs

Cumulative additional operational costs[(a)] impacting EBITDA



Highlights

- In 2016-2018e, higher operational costs due to:
  - Short-term incentive payments
  - Capex related operational costs (e.g. engineering expertise)
  - Digitalization related costs
  - Logistics (e.g. inter-regional transportation)
  - Inflation related costs (e.g. salaries)
- In 2019e-2021e, increased efforts of cost control limit operational cost increases

Note: (a) Excluding one-time items

~4%
core volume growth

€200-300m
volume leverage

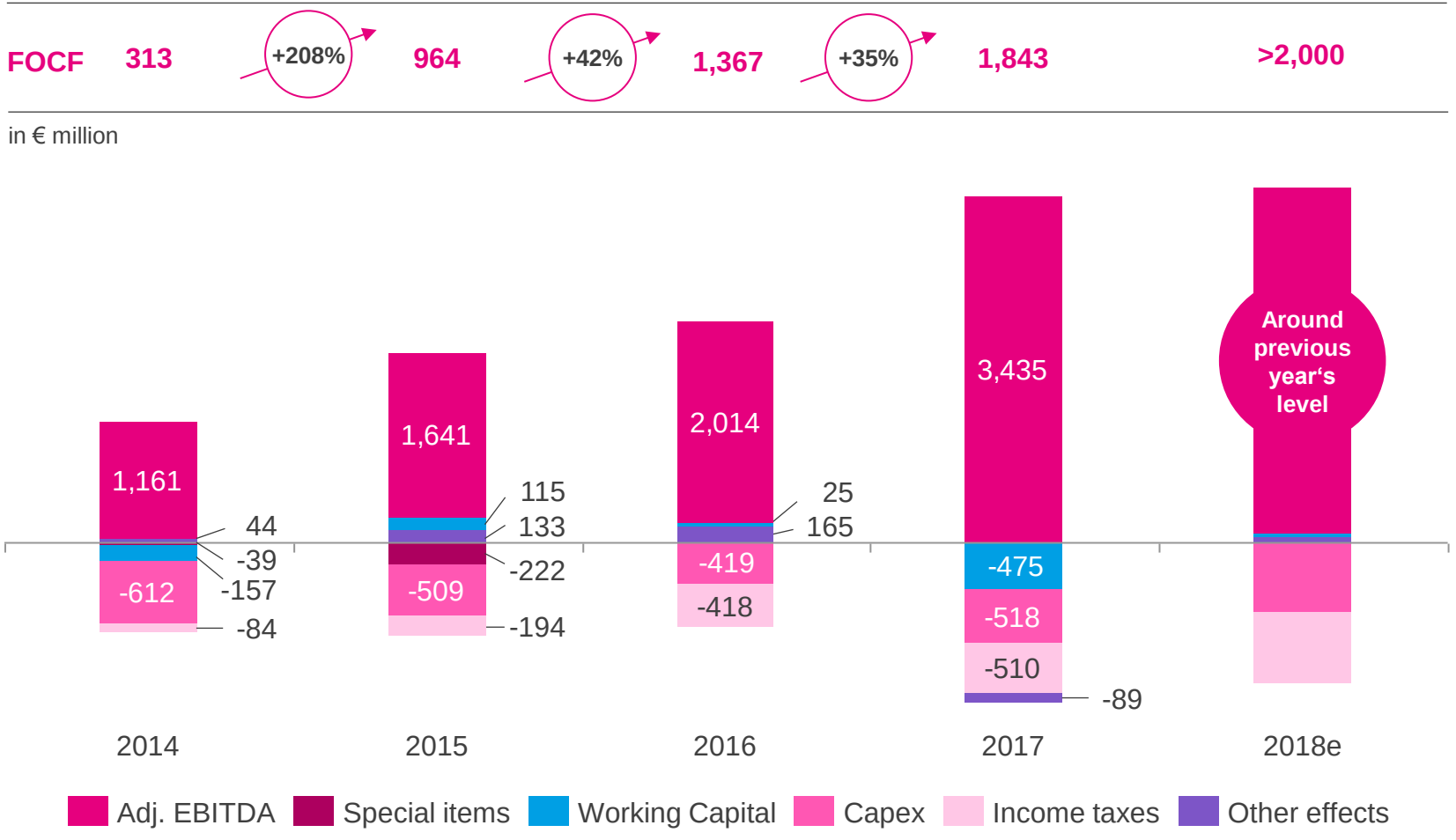
~€370m
cost savings
until 2019e

€650-700m
capex expected
in FY 2018

>€5bn
FOCF expected
2017-2019e

FOCF target of more than €2bn for FY 2018

Target for cumulative FOCF in 2017-2019e increased to more than €5bn



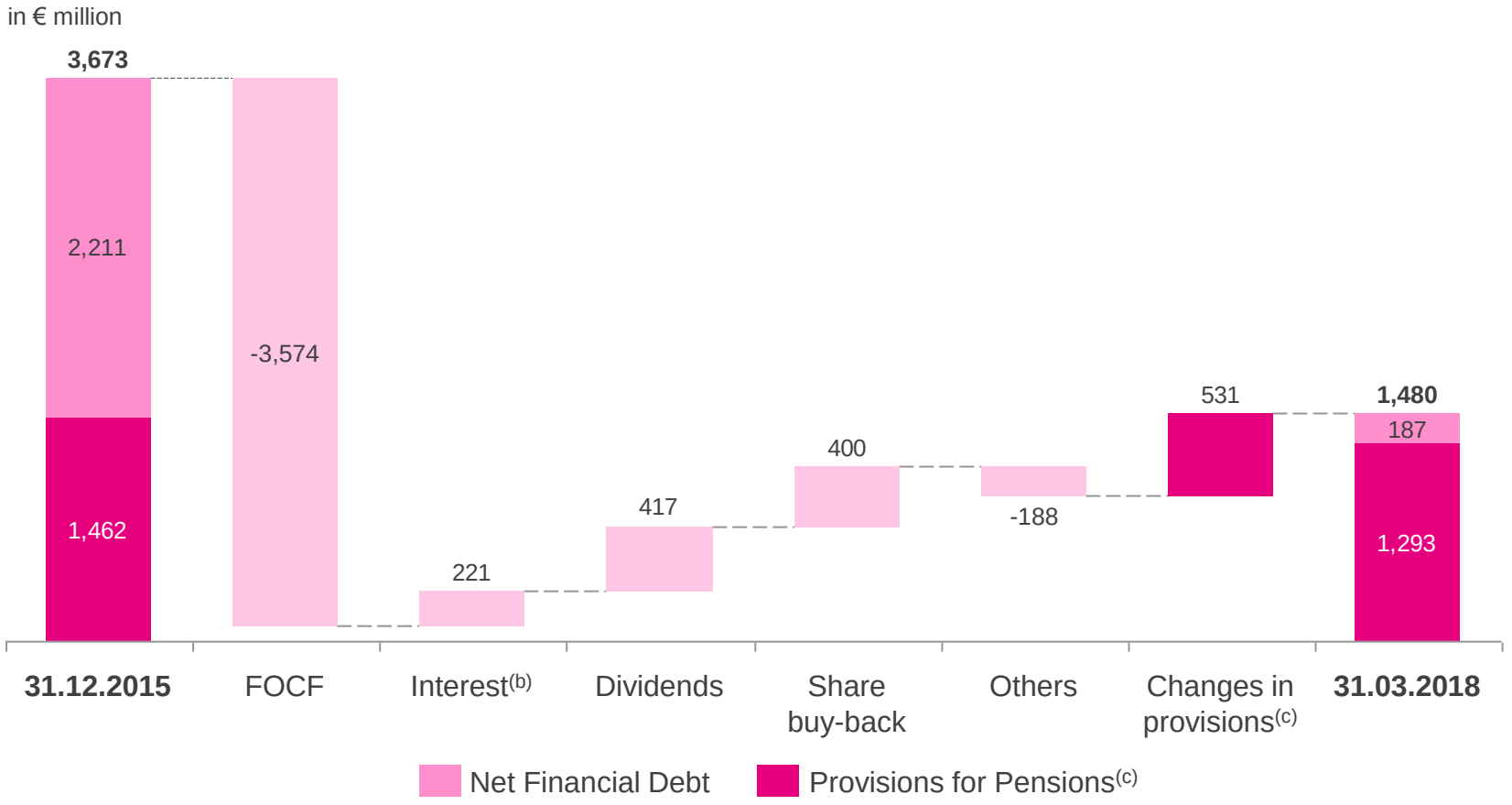
Highlights

- Increase of previous target of €5bn for cumulative FOCF in 2017-2019e to more than €5bn
- Sustainable high EBITDA to FOCF conversion rate
- Working capital to sales ratio in the target range of 15-17%, with limited expected impact on FY 2018
- Capex of €650m to €700m up Y/Y slightly up versus previous guidance in order to secure production reliability
- Tax rate expected at 25-27% for FY 2018

Total net debt reduction of more than €2bn

Focus on solid investment grade rating

Total net debt – from end of 2015 to Q1 2018



Highlights

- Total net debt to EBITDA ratio(a) reduced to 0.4x end of Q1 2018
- Mid-term target of 1.5x achieved earlier than previously assumed, driven by strong cash flow generation
- Strong decrease of net financial debt of more than €2bn to €187m
- Provisions for pensions decreased to €1,293m due to CTA funding of €700m
- Equity ratio further improved to 50%
- Long-term commitment to a solid investment grade rating
- End of 2017, credit rating outlook lifted from stable to positive(d)

Notes:
(a) Method of calculation: Total net debt (net financial debt plus pension provisions) on 31.03.2018 divided by EBITDA of last four quarters
(b) 2016 figures adjusted retroactively to reflect the change in the accounting treatment of forward exchange contracts
(c) Including CTA funding of €450m in Q4 2016 and €250m in Q4 2017
(d) Credit rating “Baa2 with a positive outlook” by Moody’s

~4%
core volume growth

€200-300m
volume leverage

~€370m
cost savings
until 2019e

€
Use of free cash
focused on
shareholder
value

€650-700m
capex expected
in FY 2018

>€5bn
FOCF expected
2017-2019e

Use of free cash with focus on shareholder value

Decision for cash return to shareholders or portfolio based on best value creation

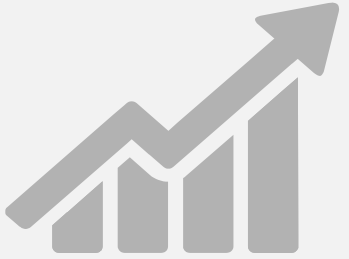
Dividend policy

- Progressive dividend policy: increase or keep at least stable
- FY 2017 dividend of €2.20 per share, 63% above prior year
- Total payout amount of €436m

Return to shareholders

- Policy to return excess cash either as share buy-back or special dividend
- Share buy-back for up to €1.5bn[(a)] in execution, with completion targeted by mid 2019

Portfolio



- Disciplined and focused approach
- Acquisitions with focus on high margin and differentiated business areas
- Ongoing portfolio optimization including evaluation of potential disposals

Note: (a) Either up to €1.5bn or up to 10% of stock capital, whichever is reached first

Disciplined M&A approach

Clear strategic direction, defined process and strict financial criteria

Portfolio

- Disciplined and focused approach
- Acquisitions with focus on high margin and differentiated business areas
- Ongoing portfolio optimization including evaluation of potential disposals

Multiple criteria scorecard

Disciplined financial impact evaluation	• Positive NPV based on ramp-up of risk-adjusted synergies • ROCE after synergies above WACC • Positive contribution to FOCF through the cycle • Maintain credit rating
“Walk, run, fly”	• Focus on further upgrading internal M&A capabilities • Limit risks on post-merger integration
Strategic fit	• High revenue share in industries of the future • Contributing to sustainable development goals • Growth rate above GDP • Increasing resilience
Operational fit	• Cultural fit • Limited need for restructuring

Well on track

Updated 2018 guidance on FOCF and capex

	FY 2017	Guidance FY 2018
Core Volume Growth	+3.4%	Low- to mid-single-digit percentage increase Y/Y
FOCF	€1,843m	>€2bn
ROCE	33.4%	Approaching previous year's level
Additional financial expectations	**FY 2017**	**Guidance FY 2018**
EBITDA FY	€3,435m	Around previous year's level
EBITDA Q2	Q2 2017: €848m	Above previous year's level
D&A	€627m	€600-620m
Financial results	€-150m	€-100 to -120m
Effective tax rate	24.1%	25-27%
Capex	€518m	€650-700m

Note: Basic assumptions FY 2018: Exchange rate of EUR/USD ~1.20 and a similar macroeconomic environment as in 2017

~4%
core volume growth

€200-300m
volume leverage

~€370m
cost savings
until 2019e

€
Use of free cash
focused on
shareholder
value

€650-700m
capex expected
in FY 2018

>€5bn
FOCF expected
2017-2019e

Daniel Meyer

Head of Business Unit Polyurethanes

Daniel Meyer is Head of the Polyurethanes (PUR) Business Unit from Covestro since September 2017. Between July 2011 and August 2017, he was Head of the Coatings, Adhesives, Specialties (CAS) Business Unit.

Meyer was born in 1967 in Strasbourg, France. He graduated in International Trade & Commerce at the German-French school for Commerce and Industry (EFACI - Paris) and at the Industrie- und Handelskammer Aachen (IHK).

He entered the International Trade Department of Bayer France S.A. in 1992. In 1995, he took over the responsibility of Bayer's titanium dioxide and lightfast pigment business in France. In 1997, he transferred to Bayer AG in Germany where he occupied several sales manager functions. Later, Meyer joined the Coatings and Adhesive business group as Global Key Account Manager and worked as Regional and Global Product Manager.

During his career he spent a total of eight years in Asia Pacific starting 2004. In 2007, he became Country Group Representative CAS Greater China. Two years later, Meyer took over as Head of Marketing and Business Development APAC. Afterwards, he headed the Coatings Adhesives and Specialties Business Unit in the Asia Pacific region.

Meyer is married and has two children.

PUR key investment highlights

Global leader in a growth industry

1. **Attractive industry growth and outlook**
   based on robust structural demand drivers

2. **Volume growth supported by mid-term debottlenecking**
   and ongoing evaluation of investment options to capture long-term market growth

3. **Global #1 producer of PU**
   with leading and defendable industry positions

4. **Cost leadership in TDI and competitive cost positions in MDI and polyols**
   due to competitive process technologies, integrated production model and leading scale assets

5. **Strong cash generation**
   and target to achieve positive FOCF in any year across the cycle

PUR at a glance

Inventor of and leader in polyurethanes

#1

PU producer globally[(a)]

€7.4bn

Sales 2017[(b)]

29.5%

EBITDA margin 2017[(b)]

52%

of total Covestro sales 2017[(b)]

- Inventor and producer of polyurethane raw materials and formulations mainly for rigid and flexible foams[(c)]
- Broad portfolio spanning MDI and TDI (isocyanates) and polyether polyols
- Competitive integration from key feedstock chlorine, aniline and propylene oxide to formulations
- Global production platform comprising 18 facilities located in Europe, USA and Asia[(d)]
- Total production capacity of ~3.5 million tons globally
- Solid cash conversion: €1.1bn FOCF from €2.2bn EBITDA

Cold Chain
e.g. refrigerator

Comfort
e.g. furniture upholstery

Construction
e.g. metal panel

Automotive
e.g. instrument panel

Cost leadership
e.g. process technology

Sustainability
e.g. CO_2-based polyether polyols

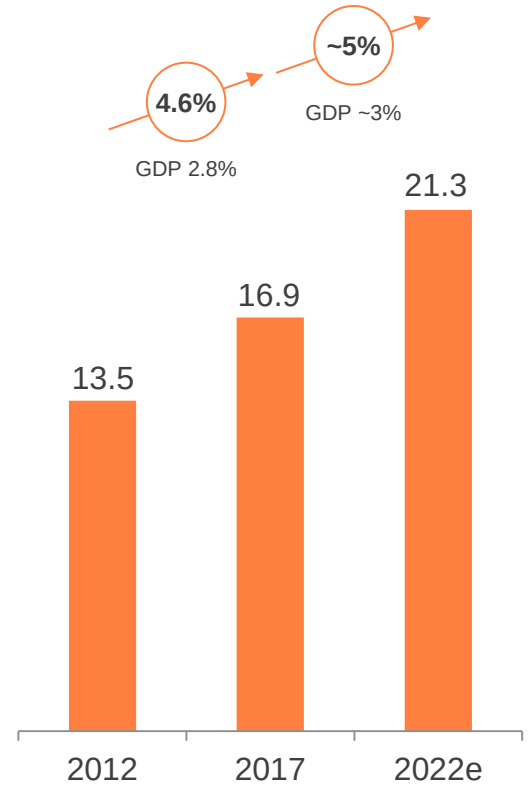
Notes:
(a) Based on total combined nameplate capacity for MDI, TDI and polyether polyols at year end 2017 as per Covestro estimates
(b) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018
(c) As well as integral foam, semi rigid foam, RIM, TPU and CASE (Coatings, Adhesives, Sealants and Elastomers) applications
(d) Includes all MDI, TDI and polyether polyols facilities that partially reside at one site; feedstock and systems houses are excluded

PU industry demand and growth drivers

PU industry expected to grow ~5% annually until 2022

Global PU industry[(a)]

Demand ('000kt)
CAGR in %



Macro trend	Impact on industries	Covestro solution example	
Resource depletion	Increasing focus for sustainable solutions	**Closing carbon cycle**	cardyon® CO_2-based polyols Bio-aniline (Bio-based MDI) Infusion technology for wind
Urbanization	New industry regulations on efficiency Material for comfort adapted to higher standard of living	**Affordable appliance & comfort**	Baytherm® Microcell (high-efficient microcellular foam) Bed in box
Population growth	Increasing need for more intelligently insulated buildings	**Enhanced insulation**	Energy-efficient insulation based on Desmodur®
Mobility	Material for lightweight vehicles and enhanced consumer driving experience	**Smart mobility**	Baypreg® composite material for load floor Baynat® headliners with improved acoustic
Digital revolution	Unleash the power of artificial intelligence to improve efficiency	**Intelligent solutions**	BayCap® digital production optimization and formulation support

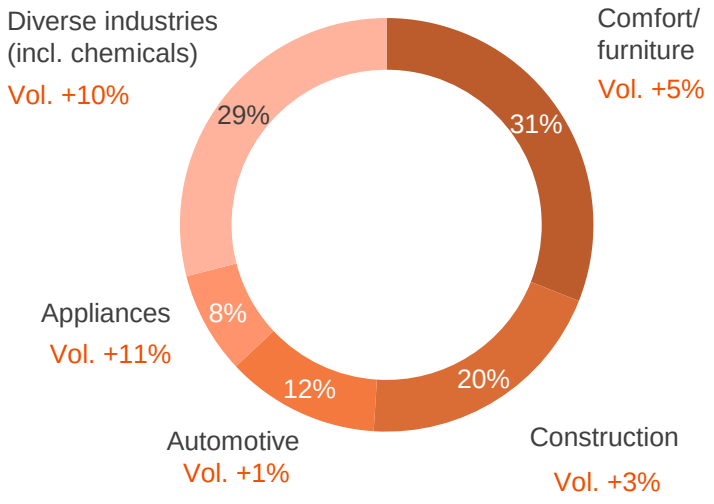
Notes: (a) Global PU market comprises combined MDI, TDI and polyether polyols industry demands as per Covestro estimates
Source: IHS, UN, OECD, IPCC

PUR volume growth

Core volume growth of 5.3% CAGR in 2015-2017

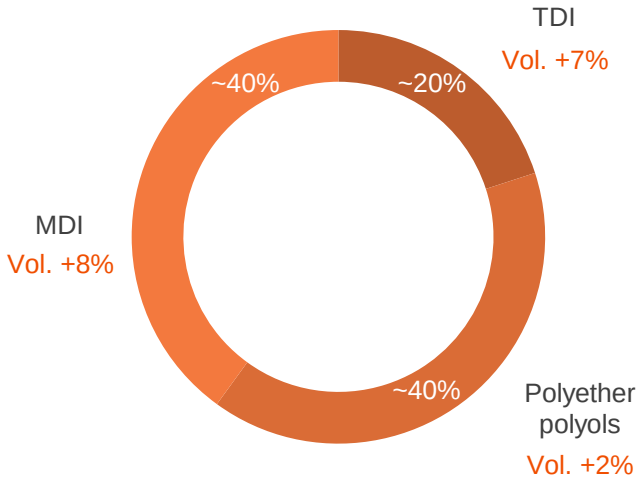
PUR sales split by end-markets

% of 2017 sales
Core volume growth, CAGR 2015-2017



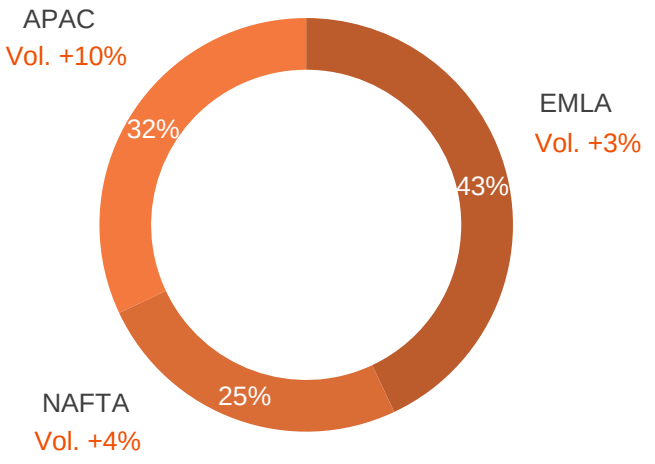
PUR volumes split by business

% of 2017 core volumes
Core volume growth, CAGR 2015-2017



PUR sales split by regions

% of 2017 sales
Core volume growth, CAGR 2015-2017



Growth driven by several industries

Growth driven by MDI and TDI

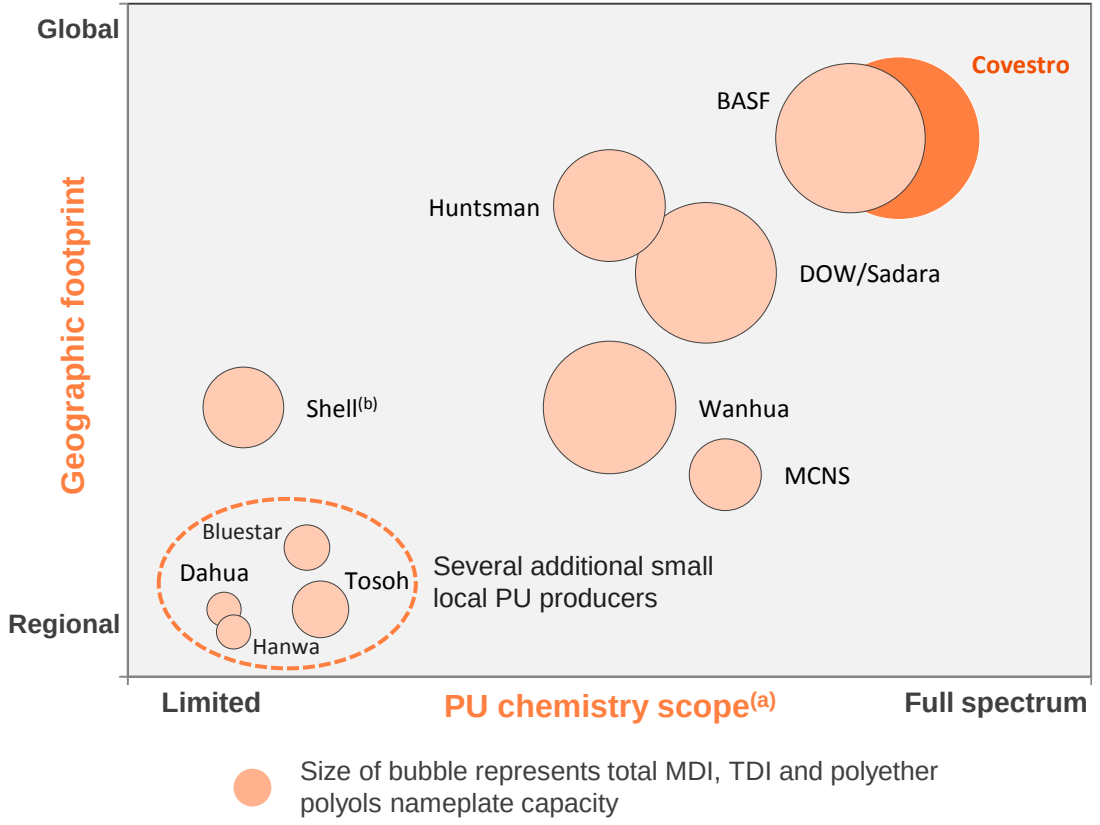
Growth driven by APAC

Notes: Based on Covestro Annual Report 2017; EMLA = Europe, Middle East Africa, Latin America; NAFTA = USA, Canada, Mexico; APAC = Asia, Pacific
Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018

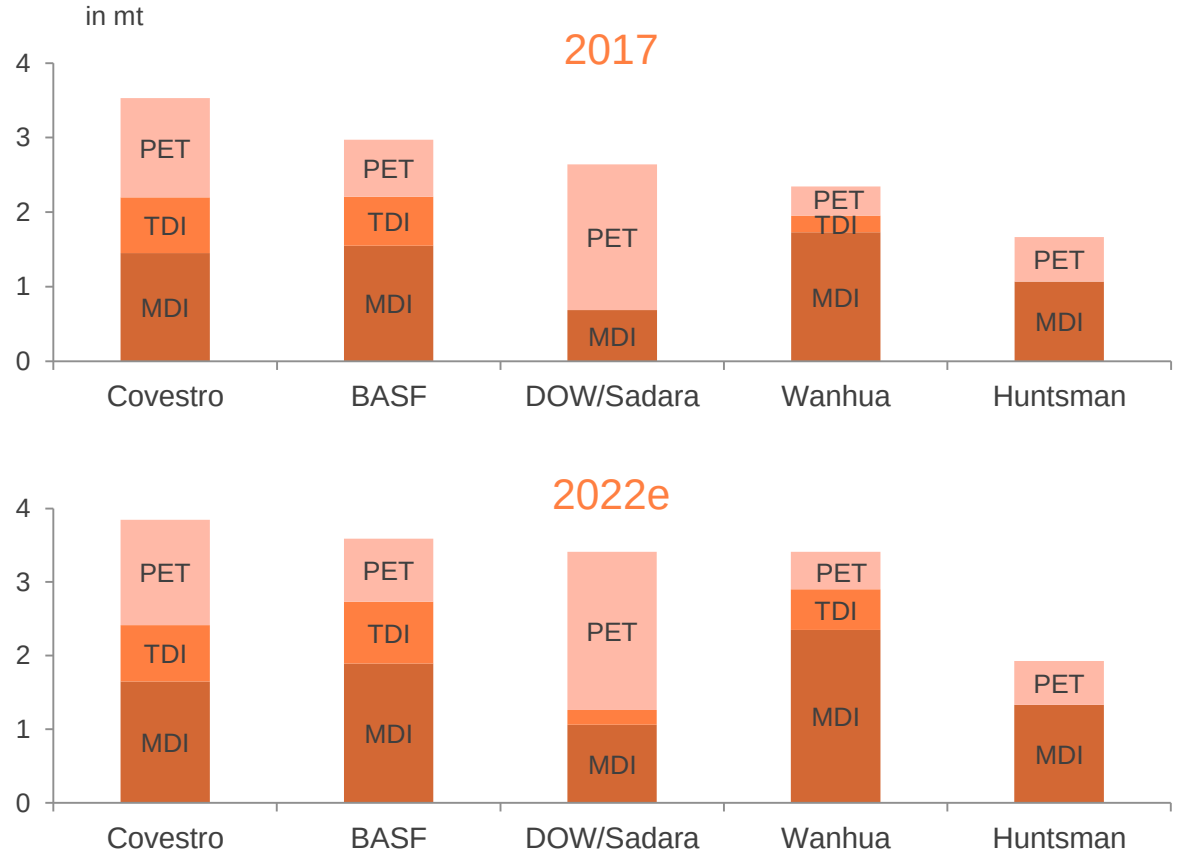
PUR competitive landscape

Global #1 with full scope advantage and ability to shape the industry

Competitive position of key PU players in 2017



Top 5 PU competitors by name plate capacity



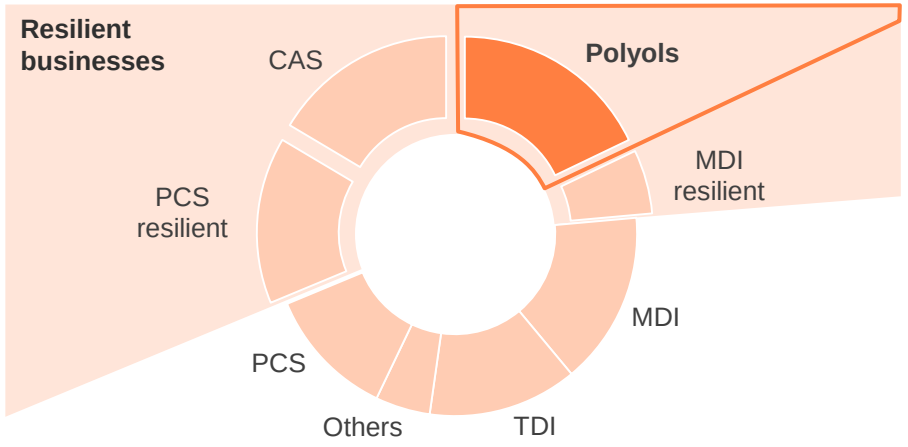
Notes: (a) Excluding CASE - Coatings, Adhesives, Sealants and Elastomers
(b) Including JV
Source: Covestro estimates; nameplate capacities based on year end figures

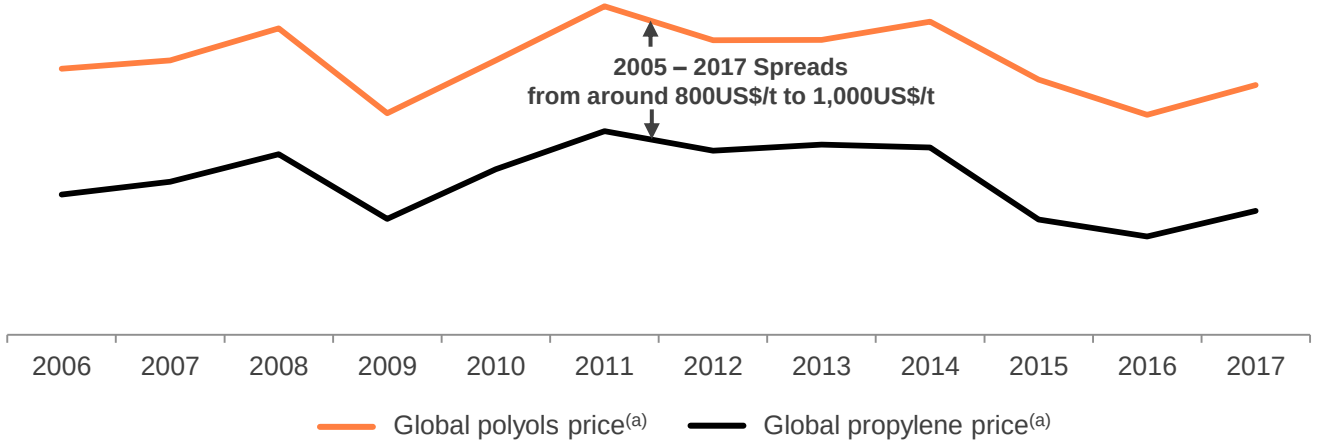
PUR margin resilience

Polyether polyols demonstrate inherently stable margins

Resilience of polyether polyols business confirmed in 2017

% of 2017 Group sales





- Non-integrated polyether polyols producers with limited competitiveness
- Single capacity addition with little influence on supply and demand dynamics
- Distinct entry requirements for new players, e.g. capex and technology

- Resilient industry margins over the last decade reflective of overall Covestro polyether polyols profitability
- Spreads not materially impacted by high volatility of propylene prices, particularly during the financial crisis
- Propylene oxide supply and demand dynamics create local pricing opportunities in the short term

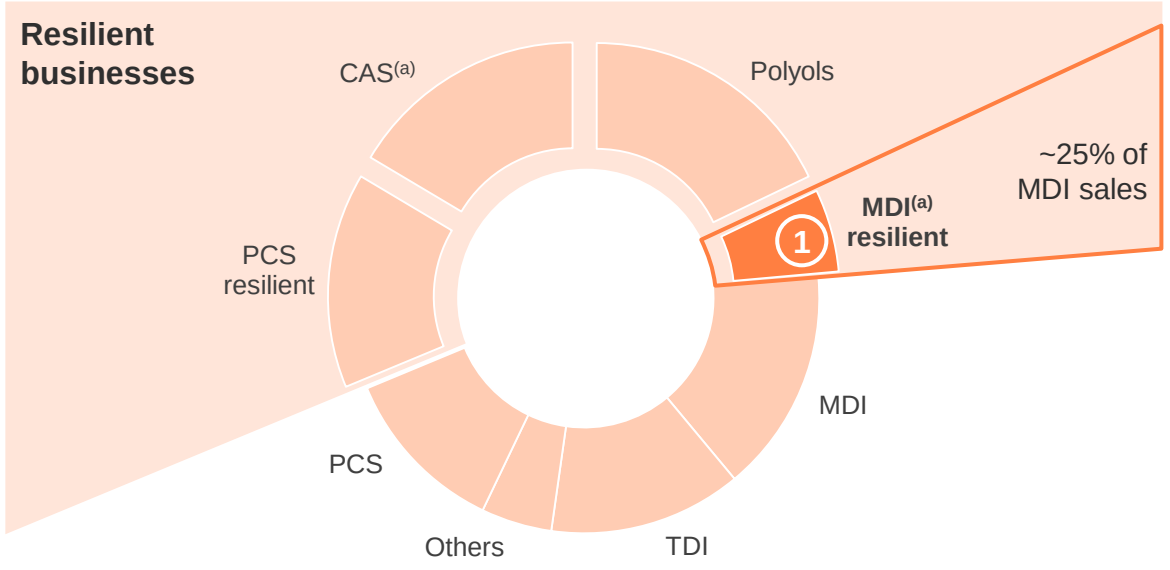
Notes: (a) The global average polyols / propylene prices have been calculated based on the polyols / propylene prices in Europe, US and China and weighting this average against the respective demand in those regions

PUR margin resilience

Resilient portion of MDI business accounts for ~25% of sales

Sales by segments

% of 2017 Group sales



1	**Joint sales of polyols and MDI** e.g. CASE(c), automotive, construction, appliance	**Specialty or downstream products** e.g. selected MDI grades (pre-polymers, blends, monomeric)
	Formulations as market access requirement e.g. automotive, appliances	**Strong interaction with customers along value chain** joint projects for e.g. window frames, wind mills

Resilient MDI applications(b)

- Resilient share of MDI sales has ~20% higher gross margin (2006-2017 average)
- Shift of elastomers business from MDI / PUR to CAS lowered resilient part of MDI by ~5%-points to ~25% of total MDI sales

Large-scale innovation

- Focus on three large-scale innovation hubs in Pittsburgh, Leverkusen and Shanghai
  - Formulation know-how and tailor-made systems
  - Full scope of application development
  - Cost-efficient business structures
- Centralized systems hubs in Europe and North America benefit from economies of scale and cost-efficient feed from world-scale MDI and polyether polyols assets
- Systems business in Middle East and APAC handled by local system houses

Notes: (a) Adjusted prior-year figures to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to the Coatings, Adhesives, Specialties segment as of January 1, 2018
(b) Resilience measured as standard deviation of gross margin vs average portfolio
(c) CASE: Coatings, adhesives, sealants and elastomers

PUR R&D highlights 2017

Market-driven innovation as key value driver

125 Mio €
R&D spend

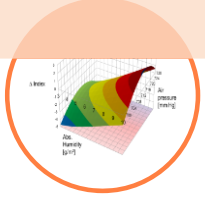
172
official approvals for product launches

~80%
of R&D spend going into product innovation

90
patent applications

R&D project examples

Digital technologies enable new ways of production optimization by Covestro customers



40% smaller cells allow up to 10% better insulation: BAYTHERM® Microcell

Replacing epoxy resins by PU resins in wind turbine rotor blades

Bio-based aniline: biomass used as alternative raw material to benzene

Innovative technology enables use of up to 20% CO_2 as feedstock in polyether polyols production

Polyurethanes (PUR)

MDI

TDI

Polyether polyols

MDI at a glance

Leading global player with growth ~2pp above GDP

#3

MDI producer globally[(a)]

1,450kt

Capacity 2017[(a)]

~40%

of PUR core volumes 2017

6

Production facilities globally[(b)]

- Leading supplier in all key regions for MDI consuming industries
- Attractive industry growth of ~2pp above GDP supports stable industry utilization and margin outlook
- Covestro to grow volumes in line with industry growth supported by debottlenecking
- World-scale integrated production facilities support competitive cost position
- Proven track record of cost discipline with asset restructuring potential in Europe to deliver further efficiency upsides

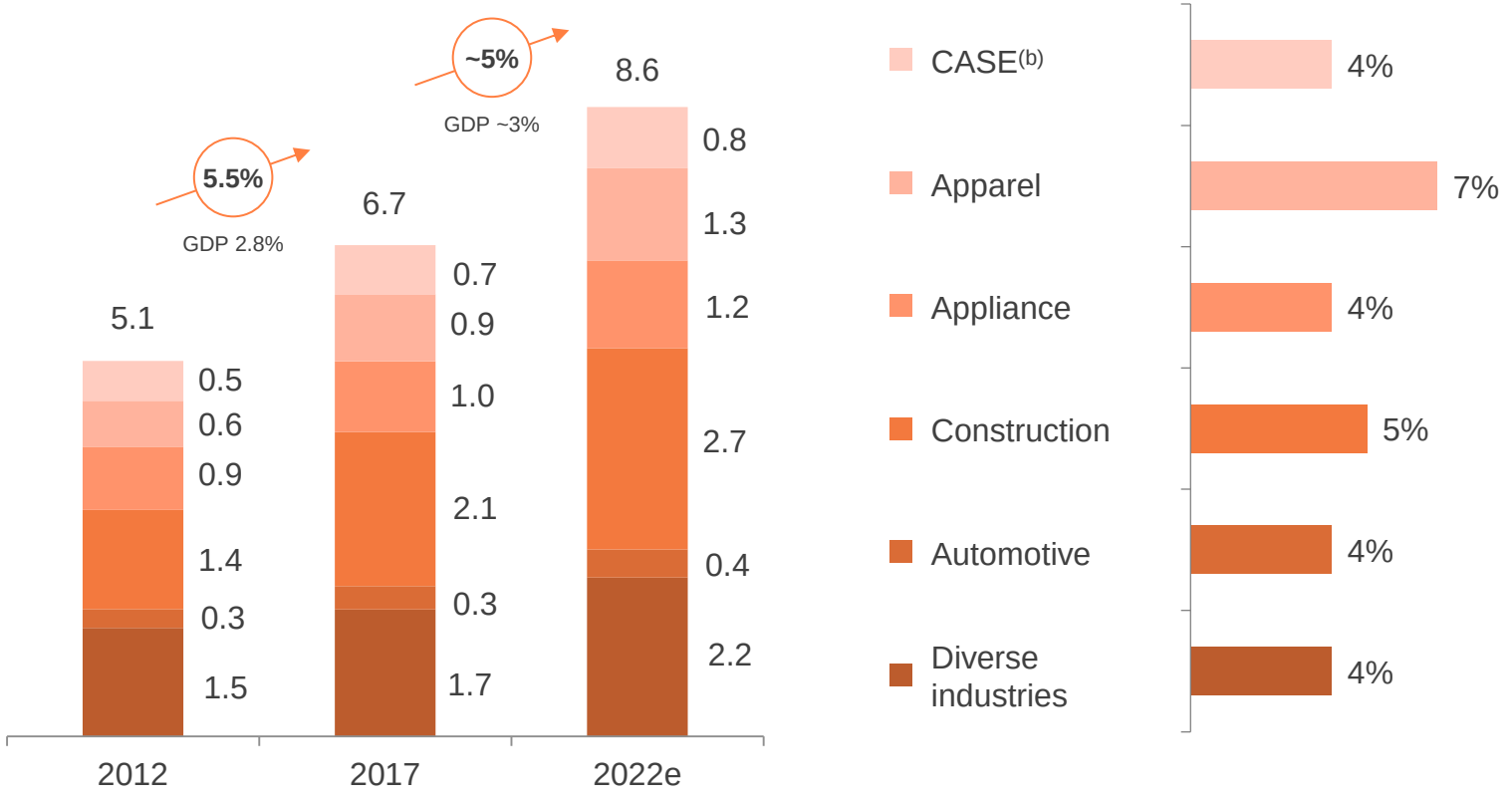
Notes: (a) Nameplate capacity based at year end 2017 as per Covestro estimates

MDI industry demand

Diverse end-markets in all regions support robust growth

MDI demand by application

Demand ('000kt)
CAGR in %



CAGR 2017 – 2022e

Underlying regional growth(a)

Global	**~5%**
APAC	~6%
EMEA	~4-5%
NAFTA	~5%
LATAM	~3%

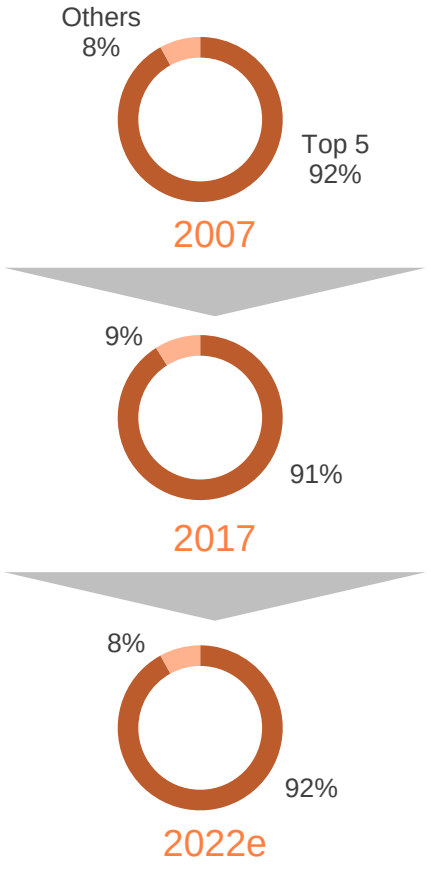
- Growing demand for insulation foam to comply with regional energy efficiency directives, particularly in developed economies
- Increase in global construction activity
  - broader macro upturn
  - high growth in emerging economies
- Higher consumption of appliances (refrigerators)
- Steady GDP-driven growth in other applications, e.g. CASE(b), textiles and footwear

Notes: (a) Figures represent CAGR 2017-2022e
(b) CASE: Coatings, adhesives, sealants and elastomers
Source: IHS, Covestro estimates

MDI competitive landscape

Strong industry position supported by distinct entry requirements

Global capacity by producer



	Industry	Covestro position
Capital intensity	• Considerable investment required to develop world-scale plants[a] – Around €1.5bn investment for full train – Approx. 5 years to full operation after completed environmental impact assessment	• Well-invested, large- to world-scale asset base • Economies of scale • Total capacity 1,450kt[b]
Process technology	• State-of-the-art technology along the process chain of high importance	• Competitive process technology • Cost leader in NAFTA and advantageous position in Asia • Efficiency improvements in EMLA underway
Feedstock integration	• Security of precursor supply essential • Backward integration as major value lever	• Favorable backward integration • Long-term supply contracts for important precursors
Technical capabilities and expertise	• Systems demanding greater knowledge and expertise • Permits required to handle hazardous feedstock, e.g. phosgene	• Superior expertise and know-how in application development and customer insight • Reputation cemented through 60+ years' experience
Proximity to customer markets	• Importance of proximity to customer markets • Global asset base critical to support ambitions of global customer base	• Diverse, global footprint • Plants in all core regions • Ability to service all key areas of demand

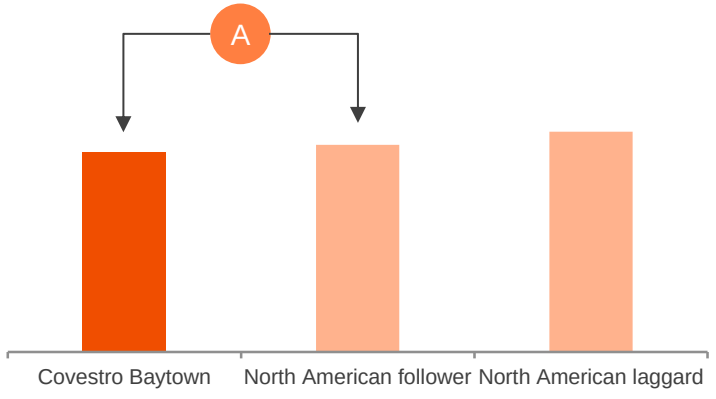
Notes: (a) World-scale defined as MDI facility with capacity of 400-500kt p.a.
(b) Nameplate capacity based on year end 2017
Source: Covestro estimates

MDI industry cost curves

Leading cost position in US, efficiency improvements in other regions underway

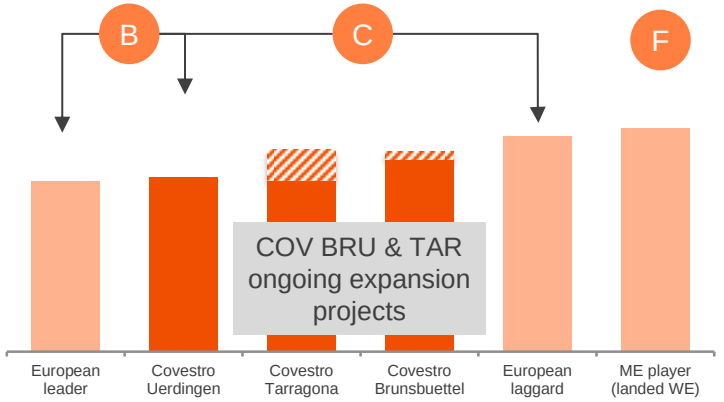
North America

Cash cost[a]



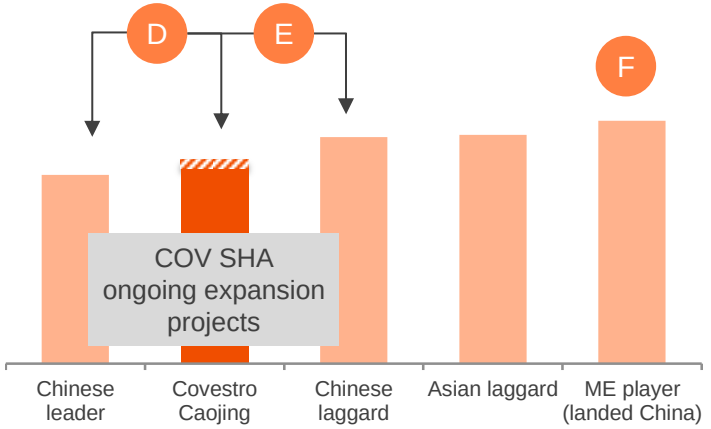
EMEA

Cash cost[a]



Asia

Cash cost[a]



- **A** Covestro cost leadership through backward integration
- **B** European leader with large and energy-efficient MDI capacity plus cost-efficient raw material supply
- **C** Uerdingen more cost efficient relative to other Covestro facilities in Europe due to level of backward integration; expansion projects for BRU and TAR
- **D** Chinese leader with very strong backward integration including energy supply
- **E** Covestro ahead due to larger MDI train capacity and energy efficiency, further specific cost reduction through expansion projects
- **F** Benefits from low energy and natural gas prices, suffers from high investment level and required costly HCl recycling via ODC[b] electrolysis (no benefit from caustic soda by-product sales); plus estimated 90-140 $/t bulk freight plus 6.5% import duty to WE and China

Notes: (a) Cost of production based on total raw material costs less co-product credits, variable and fixed conversion costs at 100% utilization based on nameplate capacity for FY 2017
(b) ODC: oxygen-depolarized cathode
Source: Covestro estimates

MDI global operations

Covestro MDI operations increase long-term ROCE through debottlenecking

Notes: All current nameplate capacities based on year end 2017

MDI capex projects

Low specific investments due to established infrastructure and existing supply networks

Brunsbuettel
Germany

Caojing
China

Tarragona
Spain

Brunsbuettel expansion of 200kt p.a.

- Re-usage of idle TDI infrastructure and precursors enables economic doubling of MDI capacity to 400kt p.a.
- Leverage existing site infrastructure and share of precursors
- Low triple-digit Euro million investment, start-up expected in first half of 2019e

Caojing gradual debottlenecking

- World-scale plant with currently 490kt capacity to gradually reveal its full potential of 600kt p.a. by 2021e
- Mid-single digit Euro million investments backed by additional market demand
- Further dilute specific fixed costs

Tarragona debottlenecking of 50kt p.a.

- Competitive debottlenecking from 170kt to 220kt p.a. by 2022e
- Investment of around €200m in own chlorine production by 2020e based on leading ODC[(a)] technology ensures a highly efficient, sustainable and independent supply

Various options for additional MDI growth under investigation

- New world-scale plant investments operational approx. 5 years after initiated environmental impact assessment
- Debottlenecking can be realized with approx. 3 years lead time

Notes: All current nameplate capacities based on year end 2017
(a) ODC: oxygen-depolarized cathode

Polyurethanes (PUR)

MDI

TDI

Polyether polyols

TDI at a glance

Global leader in long-term growth industry

#1

TDI producer globally[(a)]

750kt

Capacity 2017[(a)]

~20%

of PUR core volumes 2017

3

Production facilities globally

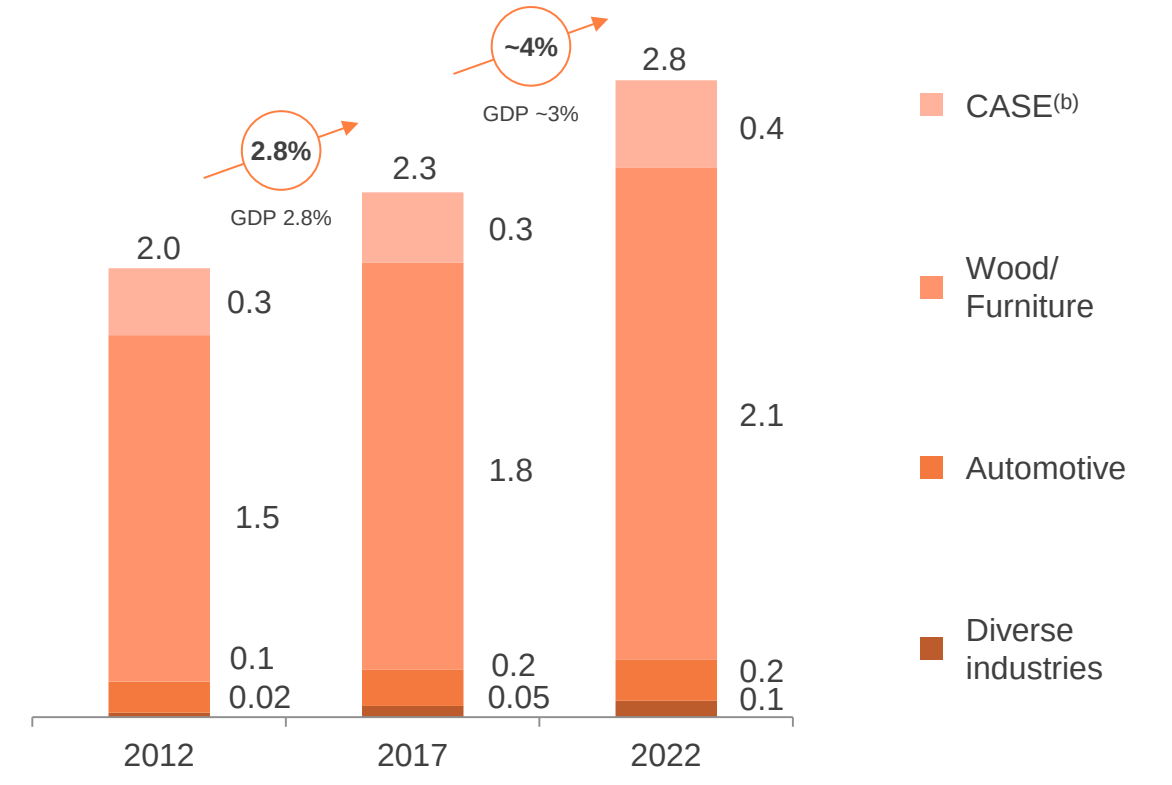
- Globally leading producer of TDI with number one positions in all major regions
- Industry demand growth above GDP driven by all key end markets and regions, particularly APAC
- TDI margins volatile and currently above sustainable level due to temporary capacity constraints
- Superior cost position through backward integration, proprietary gas-phase phosgenation technology and integrated, world-scale production assets

Notes: (a) Nameplate capacity based at year end 2017 as per Covestro estimates

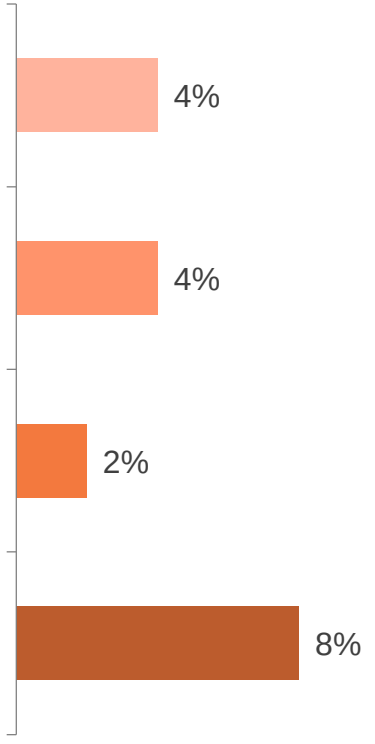
TDI industry demand

Diverse end-markets across all regions support robust growth

TDI demand by application



CAGR 2017 – 2022e



Underlying regional growth(a)

Global	**~4%**
APAC	~5%
EMEA	~3%
NAFTA	~3%
LATAM	~1%

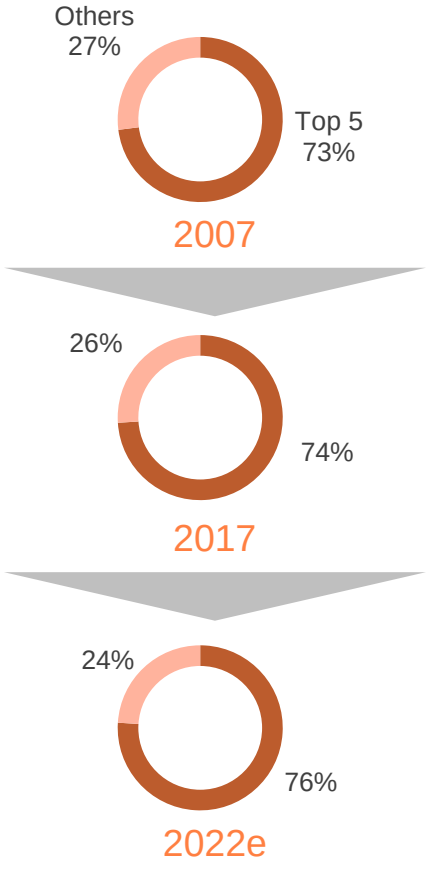
- Solid growth across all major applications
- Higher consumption of mattresses and furniture by emerging middle class in developing economies
- Favorable substitution trends in CASE(b) owing to relative advantages vs. competing materials

Notes: (a) Figures represent CAGR 2017-2022e
(b) CASE: Coatings, adhesives, sealants and elastomers
Source: IHS, Covestro estimates

TDI competitive landscape

Strong industry position supported by distinct entry requirements

Global capacity by producer



	Industry	Covestro position
Capital intensity	• World-scale plant[(a)] requires: – €0.8-1.1bn investment for full train – Approx. 5 years to full operation after completed environmental impact assessment	• 3 world-scale production facilities and total capacity of 750kt • Benefits from economies of scale
Process technology	• Advanced technology along the process chain important particularly in high cost locations • Limited options for licensing	• State-of-the-art gas-phase phosgenation (GPP) technology leading to global cost leadership – highly cost efficient and high environmental standard
Feedstock integration	• Supply contracts as standard option • Backward integration advantageous	• Long-term supply contracts for important precursors • Favorable backward integration
Technical capabilities and expertise	• Permits required to handle hazardous feedstock, e.g. phosgene • Track record and suitable infrastructure important	• World-class expertise and know-how in customer-oriented application development • Proven reputation with 60+ years' experience • Impeccable safety record
Proximity to markets	• Benefits for established global players • Required to service large global companies with diverse operations	• Global footprint and customer insight • Facilities in all core regions

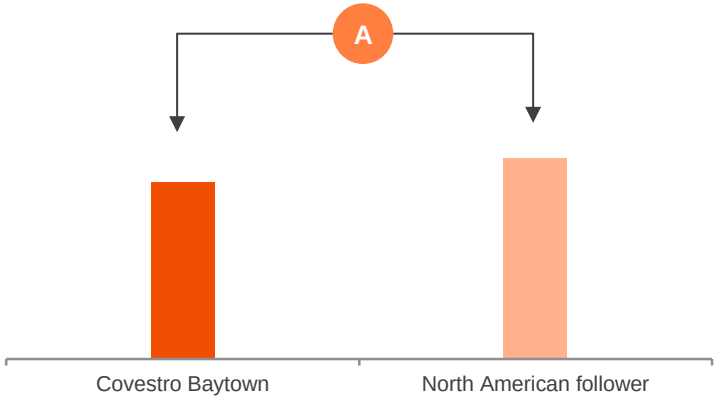
Notes: (a) World-scale defined by company assessment as TDI facility with capacity of 250-300kt p.a
Source: Covestro estimates

TDI industry cost curves

Global cost leadership by scale, integration and technology

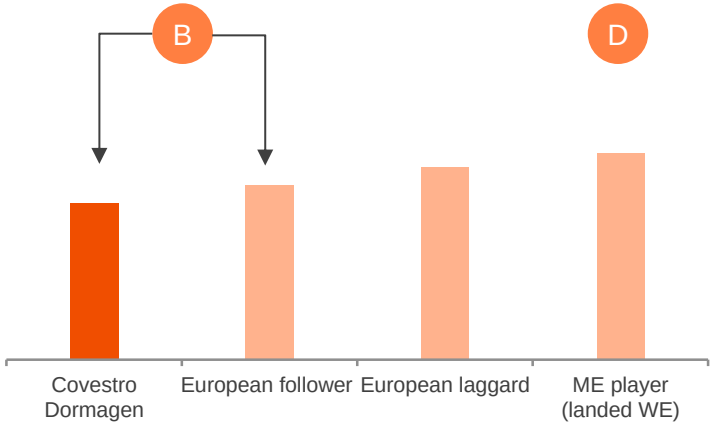
North America

Cash cost[a]



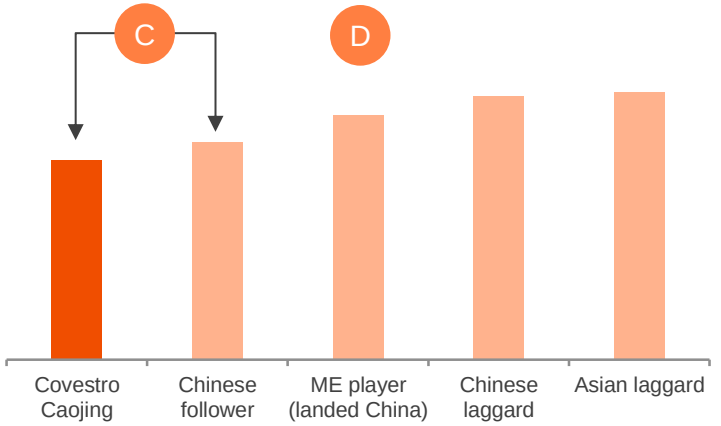
EMEA

Cash cost[a]



Asia

Cash cost[a]

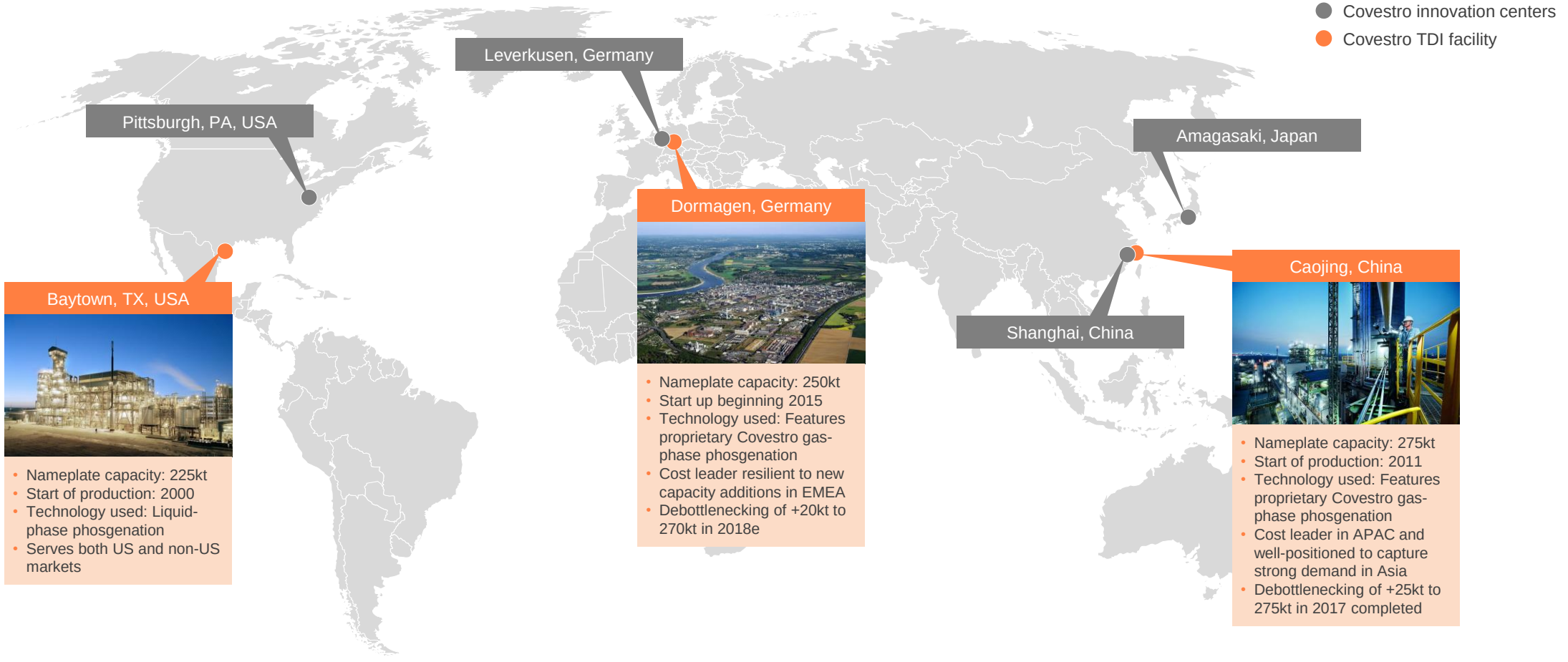


- **A** Covestro cost leadership through backward integration
- **B** Covestro advantages from superior process technology
- **C** Process technology advantages and larger TDI train capacity driving superior cost position for Covestro
- **D** Benefits from low energy and natural gas prices, suffers from high investment level and required costly HCl recycling via ODC[b] electrolysis (no benefit from caustic soda by-product sales); plus estimated 90-140 $/t bulk freight plus 6.5% import duty to WE and China

Notes: (a) Cost of production based on total raw material costs less co-product credits, variable and fixed conversion costs at 100% utilization based on nameplate capacity for FY 2017
(b) ODC: oxygen-depolarized cathode
Source: Covestro estimates

TDI global operations

Leading production network by technology and global footprint



Notes: All nameplate capacities based on year end 2017

Polyurethanes (PUR)

MDI

TDI

Polyether polyols

Polyether polyols at a glance

Leading position in polyether polyols as distinctive component

#2
Polyether polyols producer globally[(a)]

1,330kt
Capacity 2017[(a)]

~40%
of PUR core volumes 2017

9
Production facilities globally

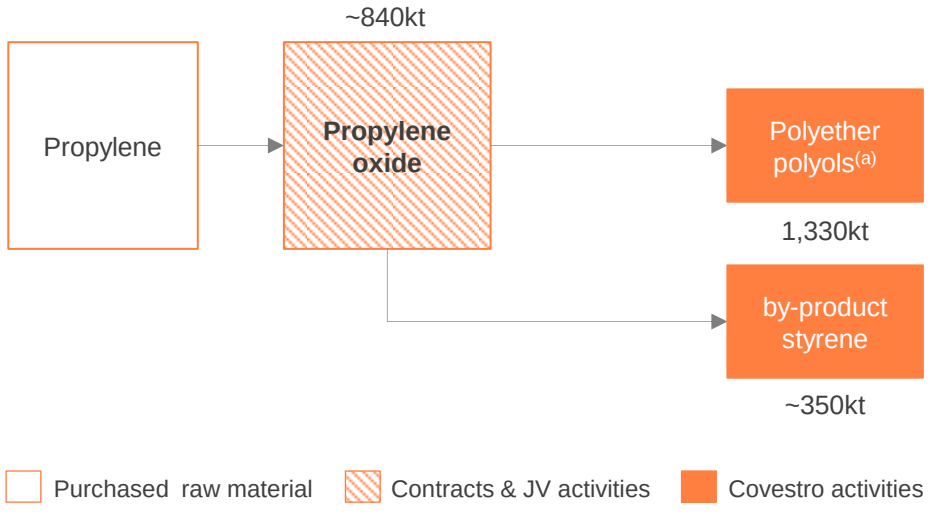
- Leading global supplier of polyether polyols with broad range of products and focus on NAFTA and EMEA
- Resilient profitability and cash generation backed by stable historic and forecast industry margins
- Key source of distinction and critical enabler in terms of providing market access and driving product innovation in polyurethanes
- Sustainable cost position through backward integration into propylene oxide and best-in-class process technology in polyether polyols
- Covestro polyether polyol growth limited in the short term, yet strategy remains to grow in line with portfolio

Notes: (a) Based on nameplate capacity 2017 at year end as per Covestro estimates

Role of polyether polyols in Covestro portfolio

Key enabler for innovation in core applications

Covestro production chain



Polyether polyols reaction with isocyanates leads a broad range of applications

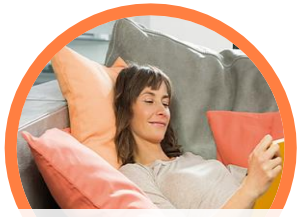
Rigid foam Average mix = Molecular ratio: 1 **MDI** to ~0.7 polyether polyols

Building insulation
- space and energy efficient
- flexible processing

Cold chain
- affordable temperature preservation

Automotive parts
- strong, durable and light
- noise and heat insulation

Flexible foam Average mix = Molecular ratio: 1 **TDI** to ~2 polyether polyols



Furniture
- durable and supportive cushions

Automotive parts
- padding for auto seating

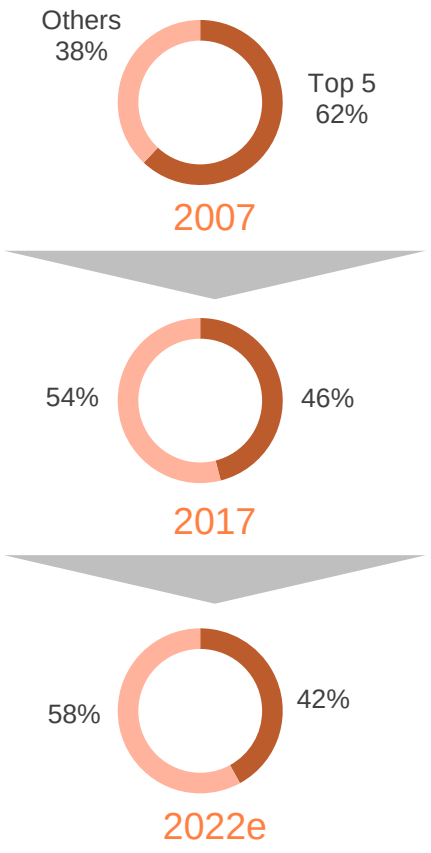
Bedding
- design and comfort driven mattress material

Notes: (a) Based on nameplate capacity at year end 2017

Polyether polyols competitive landscape

Competitive industry position based on PO backward integration

Global capacity by producer



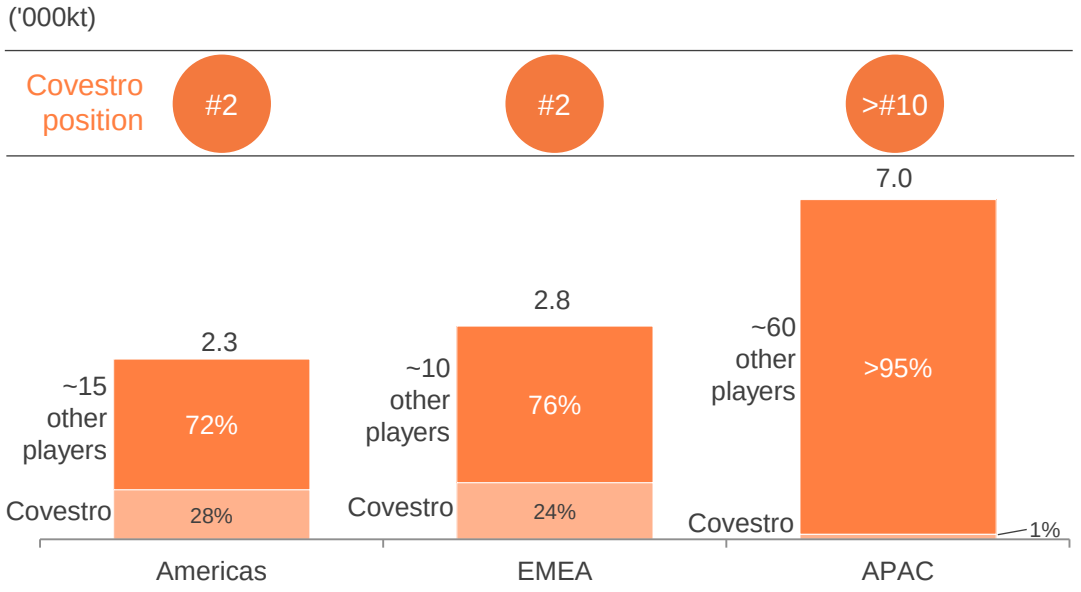
	Industry	Covestro position
Capital intensity	• World-scale 300kt p.a. propylene oxide / polyether polyols plant requires approx. €1bn investment	• PO production in USA and Europe and 9 polyether polyol production sites in NAFTA, Europe and Asia • Cost benefits and secured access from JV with leading PO producer LyondellBasell
Process technology	• PO technology relatively complex with limited options for licensing • Polyether polyol technology available through own innovation or licensing	• JV based on cost competitive PO/TBA and PO/SM technologies of LyondellBasell • Leading proprietary polyols technology position, licensor of IMPACT technology to major competitors
Feedstock integration	• Propylene backward integration for propylene oxide production advantageous • PO backward integration for polyether polyols production advantageous	• Long-term supply contract for important precursors, e.g. ethylene oxide • Backward integration on propylene oxide through LyondellBasell JV
Technical capabilities and expertise	• Few players with broad product portfolio based on deep polyols chemistry know-how • Handling of propylene oxide and ethylene oxide require high safety standards	• Leading position in long- and short-chain polyether polyols as well as polymer polyols covering broad range of applications • World-class expertise in application development providing innovative industry solutions
Proximity to markets	• Application know-how and competitive product offering to support customer • Global customers, e.g. in appliance, prefer global suppliers • Low cost supply chain set-up requires regional production	• Global footprint of production assets and resources • Deep customer and market insights

Source: Covestro estimates

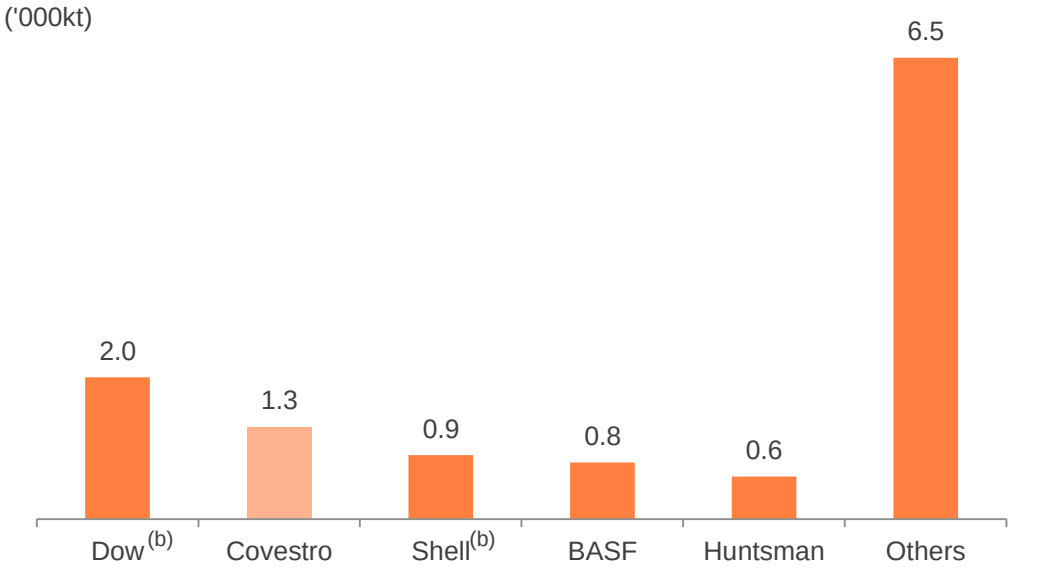
Polyether polyols competitive landscape

Global #2 producer with strong positions in NAFTA and EMEA

Polyether polyols industry capacity share by region in 2017(a)



Top polyether polyols producers globally in 2017(a)



- Polyether polyols landscape comprising 4 major players; Covestro is #2 producer globally with strong positions in NAFTA and EMEA
- APAC is highly fragmented based on a large merchant propylene oxide market with > 25 producers
- Higher margins and distinct entry requirements for the business model of propylene oxide backward-integrated polyols vs. stand-alone
- Distinct entry requirements: capital intensity, propylene oxide access, advanced polyols process technology, R&D and technical infrastructure

Notes: (a) Based on nameplate capacity as of year end 2017
(b) including JVs
Source: Covestro estimates

Polyether polyols operations

Global production network with proximity to propylene oxide supply

Joint venture with LyondellBasell

Competitive cost position through propylene oxide backward integration

LyondellBasell agreements

US propylene oxide joint venture

- Started in 2000
- Long-term off-take of propylene oxide from JV plants

EMEA propylene oxide joint venture

- 50 / 50 manufacturing JV for world-scale facility in Rotterdam
- Propylene oxide output used captively by Covestro as feedstock; sells styrene monomer in merchant market

Key benefits to Covestro

- Secure access of propylene oxide in Europe and US
- Producer cost economics vs. market price in a limited merchant market for propylene oxide
- Opportunity to explore debottlenecking options with LyondellBasell
- US propylene oxide JV not exposed to propylene oxide co-product volatility (TBA / MTBE or styrene monomer)
- Covestro responsible for certain styrene monomer sales from EMEA joint venture

Michelle Jou

Head of Business Unit Polycarbonates

Michelle Jou is Head of the Polycarbonates (PCS) Business Unit from Covestro since January 2016. Jou has more than 20 years of experience in Sales, Marketing and Supply Chain functions in the chemical industry in Asia.

She started her career within Bayer Material Science (BMS) in 2003 in Shanghai and assumed various management positions within the Regional Supply Chain Center, China Corporate Management and the Business Unit Polycarbonates. She was notably the Managing Director of Bayer MaterialScience Trading (Shanghai) Co., Ltd. where she was responsible for the local distribution of Bayer MaterialScience products. She also served as PCS Country Representative for China where she was in charge of overseeing the whole polycarbonates business in China. Afterwards, she was promoted to head of Strategic Marketing for Consumer & Industrial Solutions APAC. In 2012, she joined the PCS leadership team as senior vice president.

Prior to joining Bayer, Jou worked for a leading French petrochemical company for about 10 years in Hong Kong and Shanghai. She holds a Bachelor degree from Fu-Jen University in Taiwan and a Master's degree in Management from EMLYON Business School in France and the INSEAD.

She is married with two children.

PCS key investment highlights

Growth business with increasing product differentiation

1 **Opportunity to outgrow the industry**
taking shares for four consecutive years, outgrowing in high value-added applications

2 **Increasing share of high-value, differentiated business**
with more than 1,000 different PC grades with prices ranging from ~€2.0 to ~€15 per kg

3 **Leading global player**
with broadest range of applications

4 **Well-invested, young and highly efficient global production network**
allows cost-efficient and safe production as well as expansion through debottlenecking

5 **Pushing boundaries through innovation**
creates access to new applications and new product offerings

PCS at a glance

Global leading producer of polycarbonates

#1
PC producer globally[(a)]

€3.7bn
Sales 2017

22.8%
EBITDA margin 2017

26%
of total Covestro sales 2017

- Global leader and inventor of polycarbonates
- Offers products and solutions for a wide range of applications
- Integrated production processes along the value chain, including wet sites (resins) and dry sites (compounded resins)
- Global platform with 5 production sites, 5 innovation centers, 7 compounding centers and business unit headquarters in Shanghai, China
- Total production capacity of 1,480kt[(a)]

Mobility
Exterior

Electronics
Robot housing

Consumer electronics
Adapter

Mobility
Charging station

Healthcare
Drug delivery

Electrical
LED street lamp

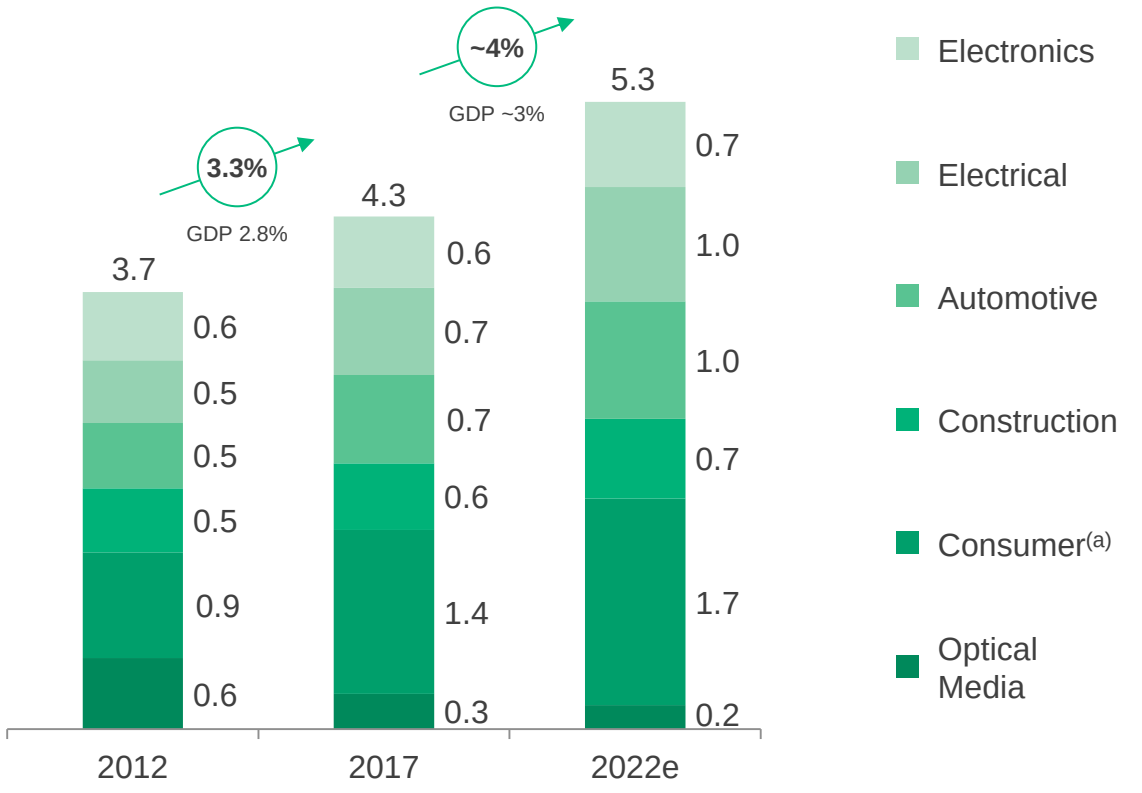
Notes: (a) Based on nameplate capacity at year end 2017 as per Covestro estimates

1. Polycarbonates industry demand and growth drivers

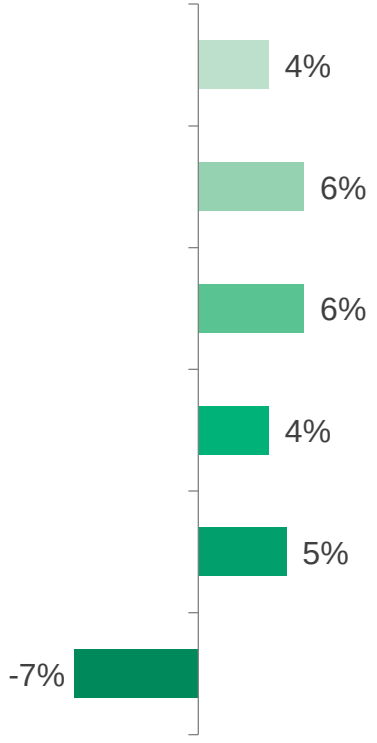
Macro trends support above GDP demand growth

Polycarbonates demand by application

Demand ('000kt)
CAGR in %



CAGR 2017 – 2022e



Accelerated growth 2017-2022e

CAGR in %

APAC	~5%
EMEA	~3%
NAFTA	~3%

Continuous upgrades, substitution and new application development; selected examples:

- Trend towards design and aesthetics in devices
- New revolutionary technologies, e.g. wearables, audio devices, AR and VR, sensors, robotics, drones
- Electric vehicles and autonomous driving
- Increasing healthcare access in emerging markets
- Ageing population with longer life expectancy requiring healthcare solutions

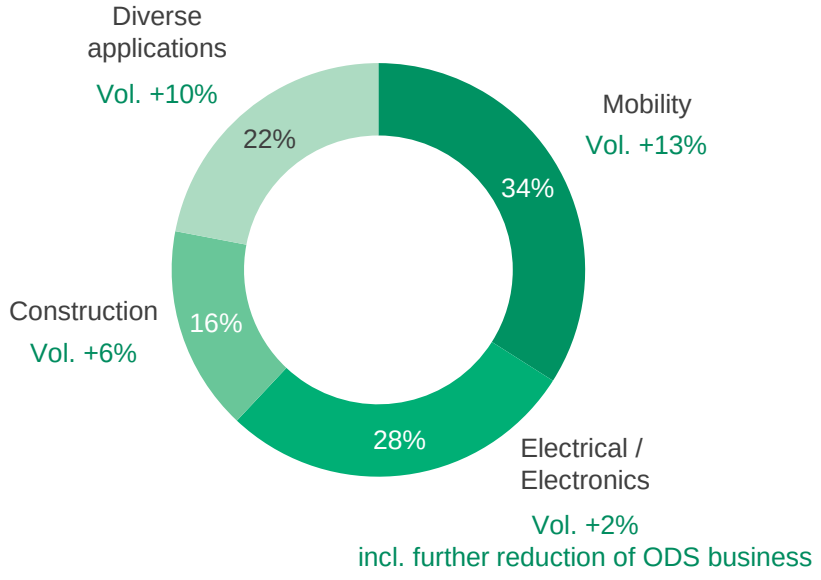
Notes: (a) Appliance, medical, packaging
Source: IHS; Covestro estimates

1. PCS volume growth

Strong core volume growth of 7.6% CAGR in 2015-2017

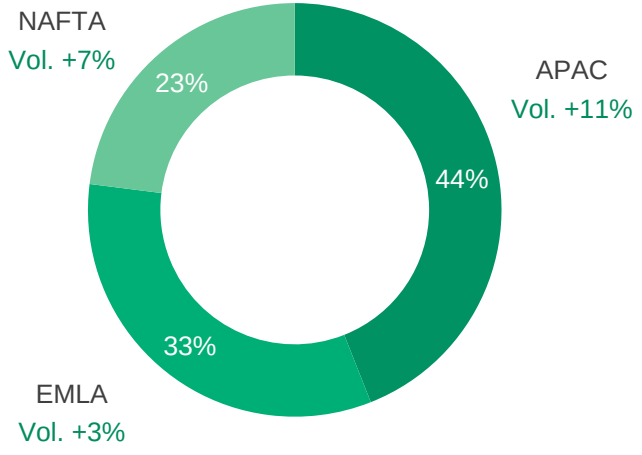
PCS sales split by end markets

Covestro sales 2017
Core Volume Growth, CAGR 2015-2017



PCS sales split by regions

Covestro sales 2017
Core Volume Growth CAGR 2015-2017



Growth driven by mobility and diverse applications

Growth driven by APAC

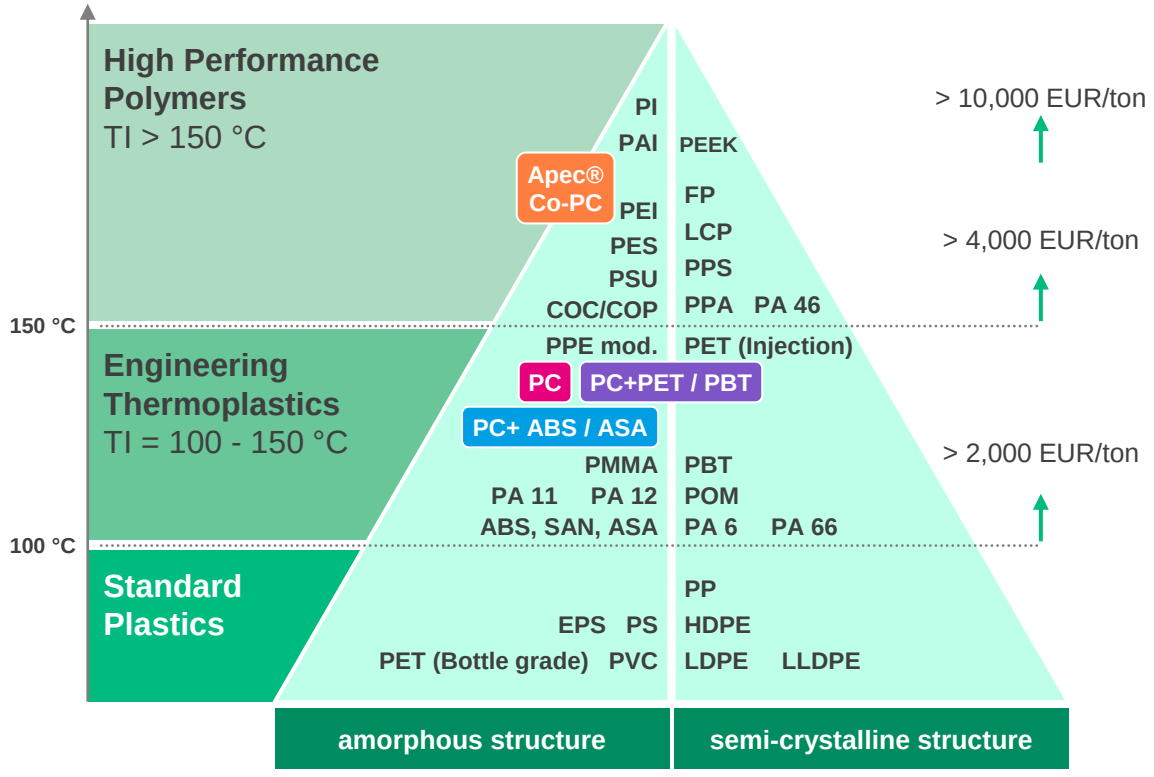
Notes: Based on Covestro Annual Report 2017; EMLA = Europe, Middle East Africa, Latin America; NAFTA = USA, Canada, Mexico; APAC = Asia, Pacific

2. Polycarbonates in the world of plastics

Attractively positioned as engineering thermoplastics

Triangle of thermoplastics by structure, capabilities and price

Capability by temperature index (TI)



Highlights

- Plastics are clustered by some basic properties that define application areas, price and market volumes
- PC is clearly positioned as engineering plastic that serves applications with specific mechanical and temperature requirements
- If applicable, PC typically competes with other amorphous resins like PMMA, ABS (low end) or PEI (high end)
- Covestro brands its PC as Makrolon®
- Covestro blends PC with other resins to deliver tailored performances and to broaden the range of applications:
  - PC plus PET or PBT Makroblend®
  - PC plus ABS or ASA Bayblend®
- In the ‘High Performance Polymers’ range, Covestro offers a special high-heat co-polycarbonate Apec®
- Further specialty PC polymers including co-polymers in development

Source: PlasticsEurope Market Research Group (PEMRG) and Covestro estimate

2. Polycarbonates as engineering thermoplastics

Serving numerous industries with a unique combination of properties

Polycarbonates (PC)	Key properties	Key applications
Resins	• Impact resistant • Heat resistant • Transparent	 • Automotive interior and exterior panels • Bodywork parts • Lighting systems • Glazing • Outer door panels • Radiator grills  • IT equipment • Housing for mobile devices and consumer electronics • Chargers • Switchbox and other electrical systems • Diffusion panel of LCD monitors • LED parts
Compounded Resins	• High dimensional stability • High flame retardancy • Good aesthetics	
Composites (CFRTP)	• High stiffness • Light weight • High-tech look and feel	 • Medical devices • Robotics • Personal safety, e.g. helmets, headgear, eyewear • Packaging, e.g. water bottles, pitchers  • Windows • Conservatories • Roof structures • Partition walls

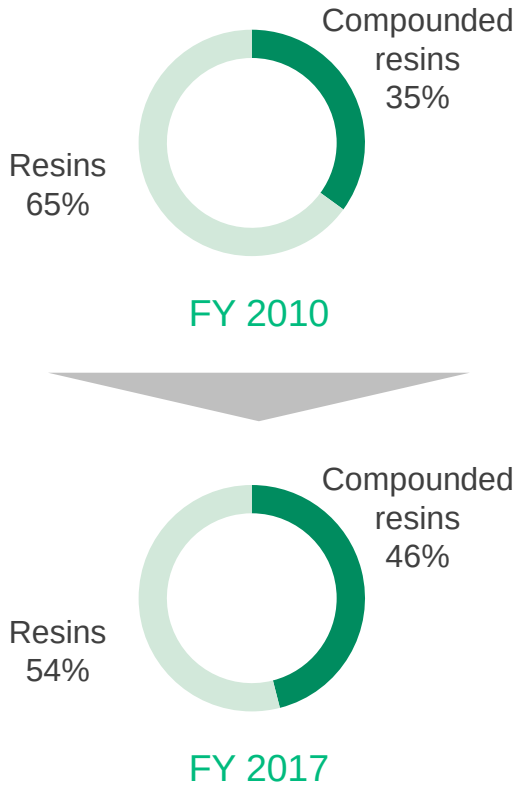
Notes: CFRTP: Continuous Fiber Reinforced Thermoplastics Composites

2. PCS compounding

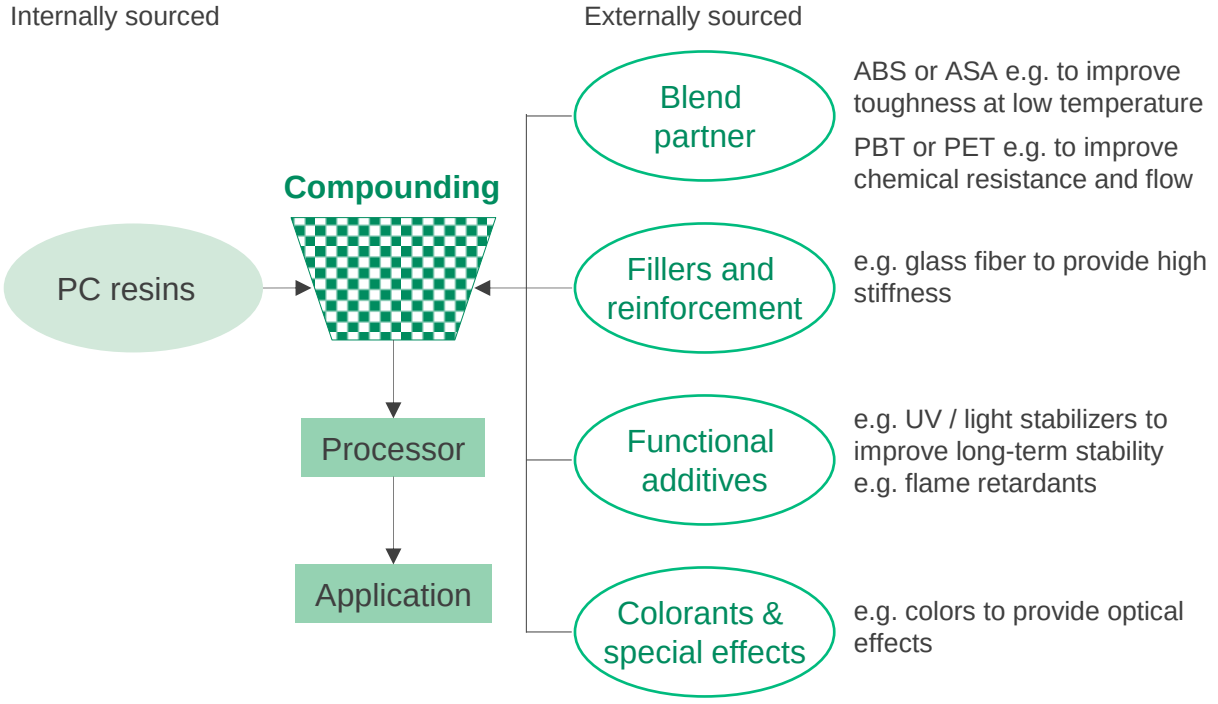
Increasing demand for value-enhanced PC grades

Share of compounded resins

Covestro PCS sales split by product group



Concept of compounding



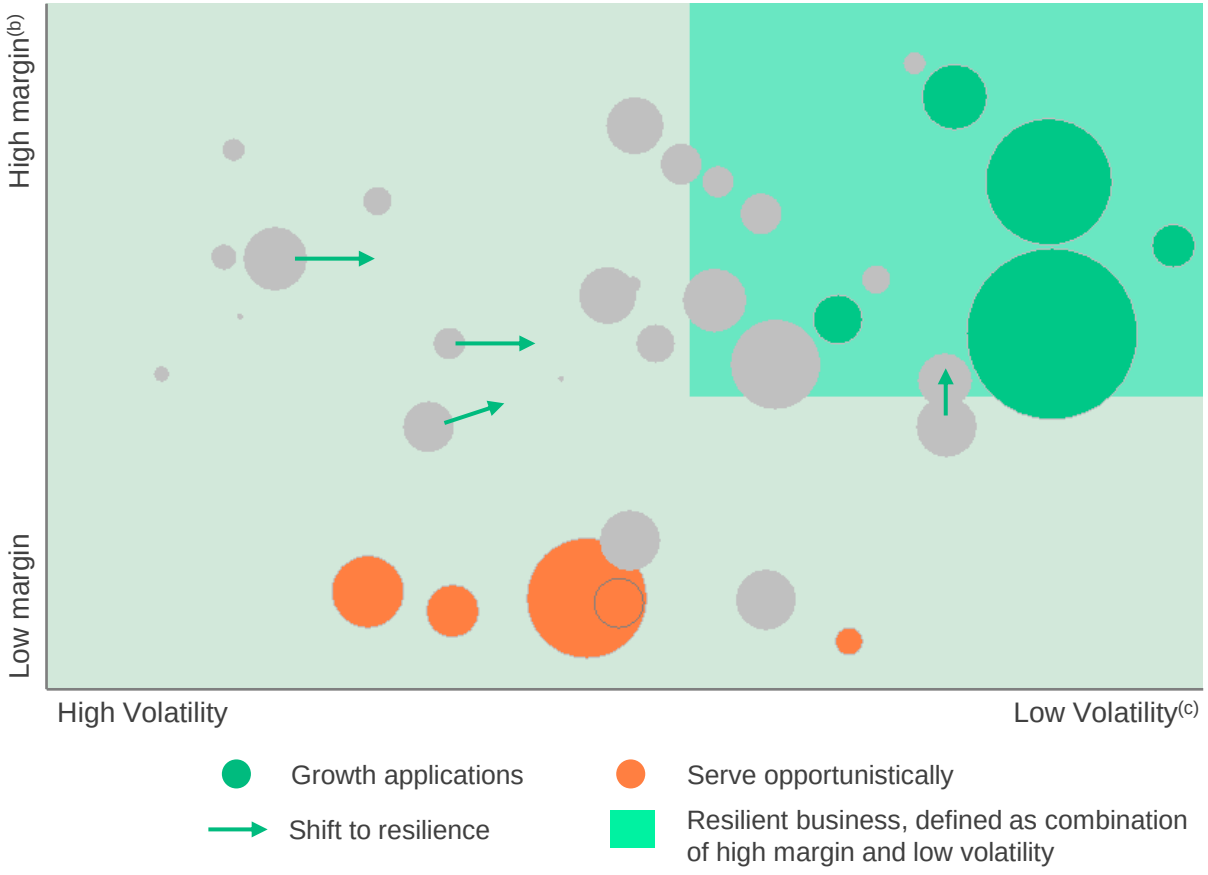
Compounding of PC resins creates formulations with tailored property profiles and significant added value for customers

Notes: Majority of compounded resins are part of the resilient portion of PCS sales

2. PCS margin resilience

Benefits from global market access, innovation capabilities and high-quality product portfolio

Resilient portion of PCS volumes at ~55% in 2017[a]



Goal: grow resilient portion of PCS volumes to ~65% long-term

Resilient volumes increased from ~40% in FY 2011 to ~55% in FY 2017

- Focus on high-value and high-growth industry applications
- Greater technical requirements and longer lifecycles
- Comprehensive innovation capabilities and technical services are key
- Mobility, electrical and electronics as main drivers

Focus to further grow in resilient end markets

- Healthcare as additional future key driver
- High differentiation potential
- Opportunistically serve low-requirement applications, exit sheet operations
- Broaden portfolio toward higher margins and earnings resilience
- Distinct entry requirements in resilient portion of PCS portfolio for potential new industry players

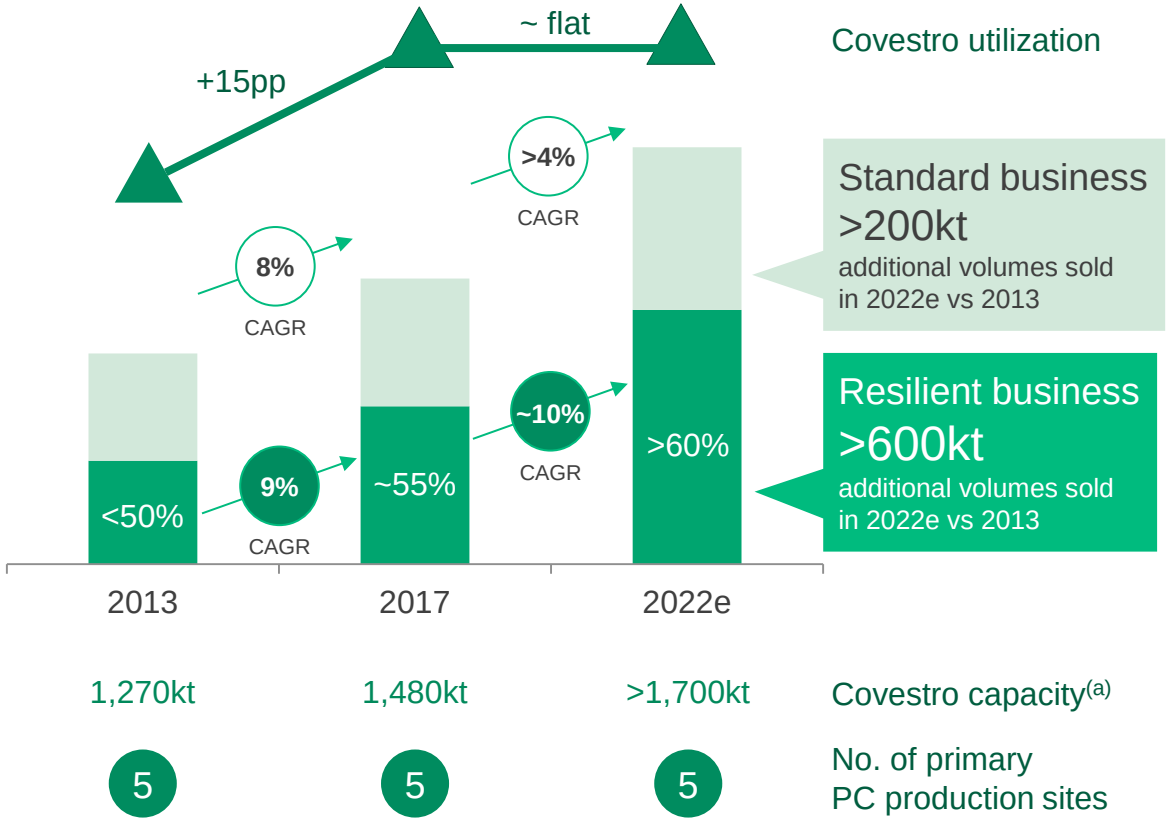
Notes: (a) Bubble size represents PC volumes in one specific application in 2017
(b) Contribution margin per kg
(c) Volatility measured as standard deviation of contribution margin

2. PCS product portfolio

Covestro targets to outgrow PC industry in differentiated business

Development of resilient portion of PCS volumes

Covestro sales volumes in kt



Covestro highlights

Product portfolio improvement

- Capacity growth and increasing share of resilient business result in significantly higher volumes in differentiated, high-requirement applications
- Structural improvement of average contribution margin

Higher asset utilization

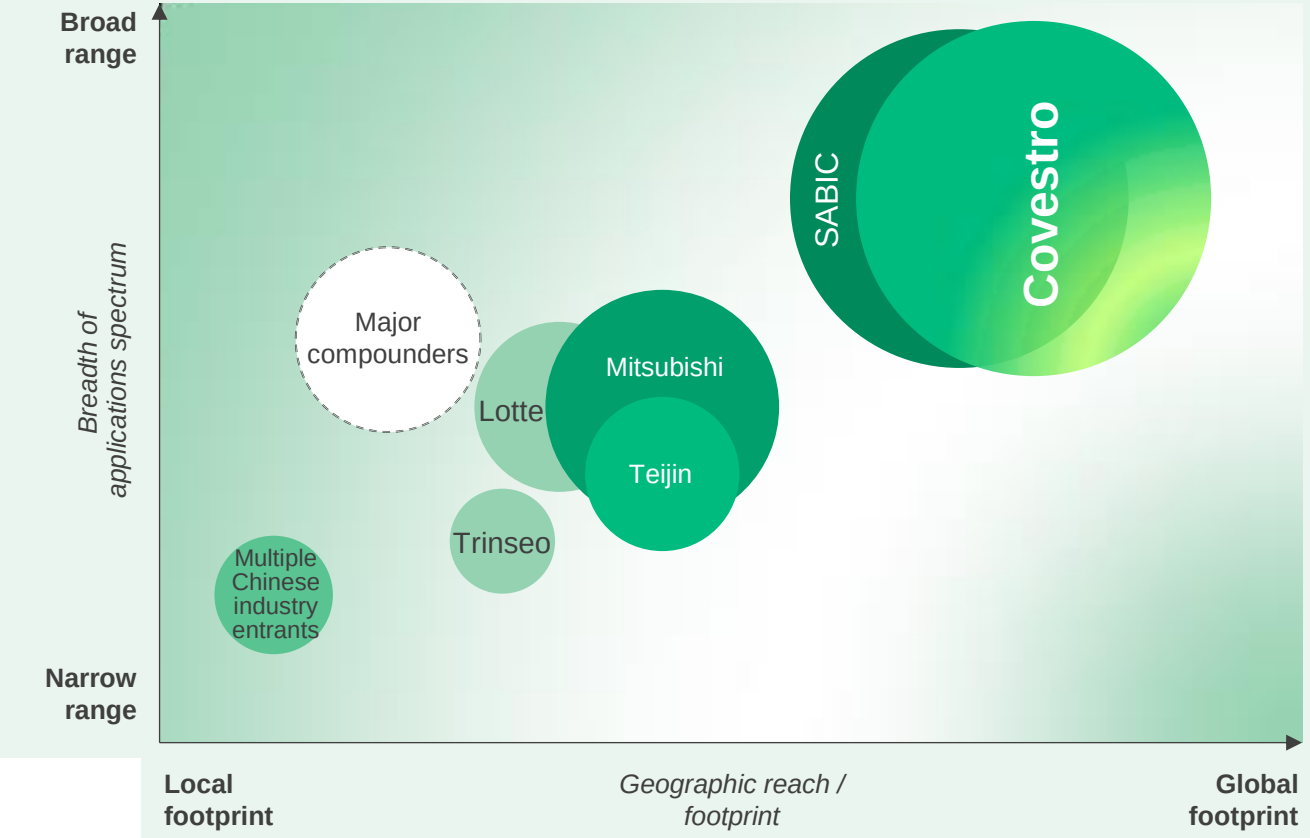
- Volume leverage through significant improvement of capacity utilization by ~15 percentage points
- Significantly higher output from unchanged number of primary production sites

Notes: (a) Nameplate capacity for PC resins at year end

3. PCS competitive environment

Global leader with growing share of business generated with global customers

Positions in the industry 2017(a)



Covestro advantage of broad play

- Covestro and SABIC are the only true global players – important to serve global customers in e.g. electrical/electronics and automotive
- Reduced exposure to cyclicality of single customer industries
- Higher flexibility in portfolio management
- Optimized risk distribution
- Optimized asset utilization

Key changes by 2022e

- No significant change among top 5 industry leaders expected
- New potential industry players expected mainly in China, likely to increase competition in local markets with narrow application spectrum
- Number of Chinese industry entrants may increase from two in 2017 to announced ~10 by 2022e
- Potentially one Chinese industry entrant with long-term ambition to enter high-requirement applications

Notes: (a) Bubbles represent 2017 global nameplate capacity, only largest competitors and competitor groups included
Source: Covestro estimate

3. PCS competitive positioning

1000+ grades position Covestro with broadest product offering

Breadth of PC product offering by Covestro and key competitors across end markets[a]

	Covestro (D)	SABIC (KSA)	MEP (JP)	Teijin (JP)	Lotte (KR)	Trinseo (US)	Kingfa[b] (PRC)	Zhetie[c] (PRC)
Mobility	●	●	○	○	○	●	○	◌
Healthcare	●	●	○	◌	○	●	◌	◌
Electrical	●	●	●	○	○	○	○	◌
Electronics	●	○	○	●	●	○	●	◌
Appliances	●	●	○	○	○	○	●	◌
Consumer products	●	●	○	○	○	○	○	◌
Construction	●	●	○	○	○	○	○	○
Optical data storage	●	●	◌	◌	○	◌	◌	◌
Water bottles	●	●	◌	◌	◌	○	◌	◌

● Broad offerings ○ Medium offering ◌ Limited to No offering

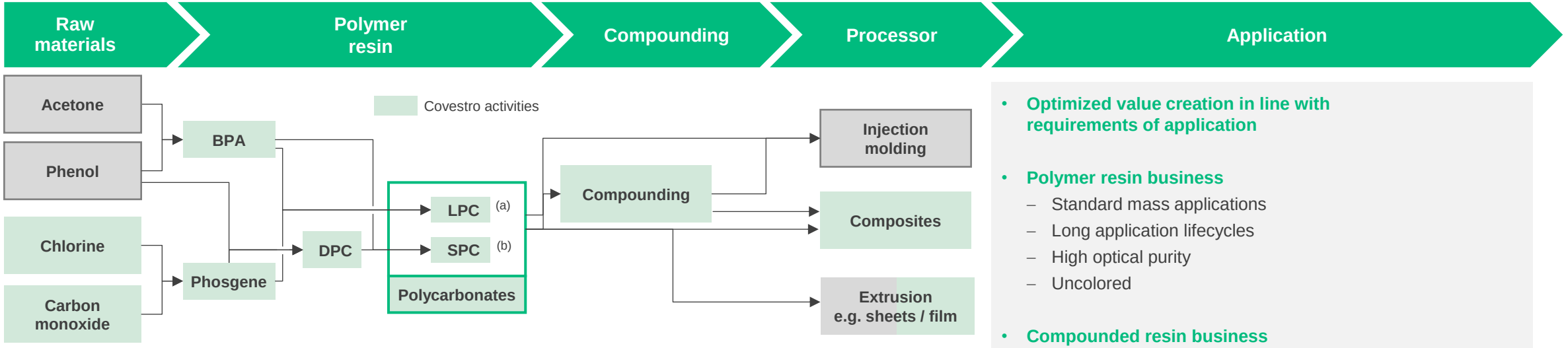
Highlights

- Covestro has broadest product portfolio and continues to expand, especially in the resilient part
- PC is an innovation-driven industry and Covestro has largest innovation budget in industry[a]
- Differentiation increases earnings resilience and independence of single customer industry cycles
- Differentiation lowers exposure to new potential industry players with often limited product offerings of few low-end grades

Notes: (a) Covestro estimate
(b) Compounder in PRC
(c) 2015 industry entrant in PRC

4. PCS value chain

Selective backward and forward integration captures best value



Phenol / Acetone

- Easy to transport
- Dedicated production lines for phenol, by-product acetone
- Long and highly liquid merchant market

Chlorine / Carbon monoxide

- Preferably on site due to safety, transport logistics and economies of scale
- Used by multiple on-site consumers, ability to leverage economies of scale
- No merchant market

- **Optimized value creation in line with requirements of application**
- **Polymer resin business**
  - Standard mass applications
  - Long application lifecycles
  - High optical purity
  - Uncolored
- **Compounded resin business**
  - Tailored property profiles
  - Value-added applications
  - Dynamic application lifecycles
  - Special colors and optical effects

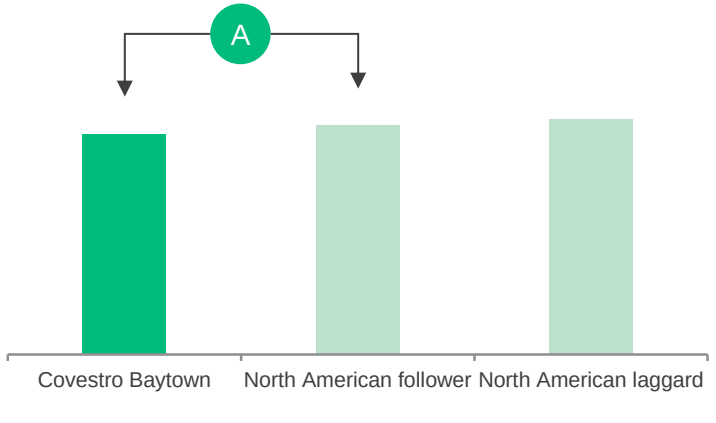
Notes: Indicative product flow
(a) LPC: Interface process
(b) SPC: Melt process

4. PCS regional industry cost curves

Leading cost positions in key regions

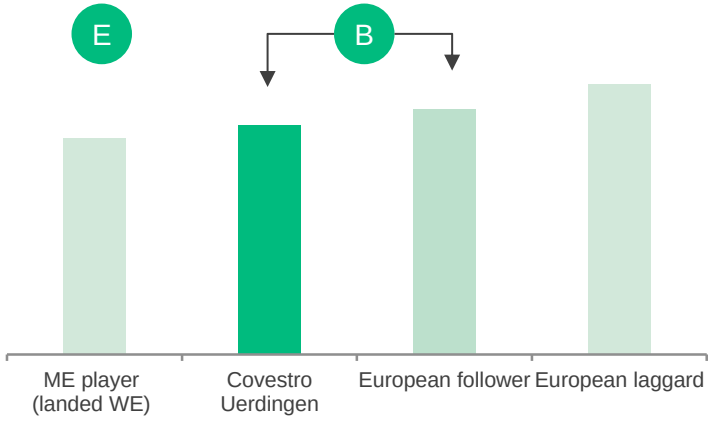
North America

Cash cost[(a)]



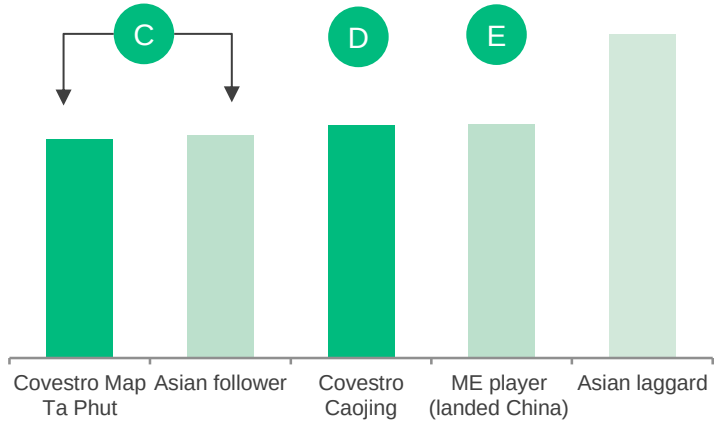
Europe

Cash cost[(a)]



Asia

Cash cost[(a)]



- A Covestro is cost leader in North America mainly based on backward integration and technology
- B Covestro is cost leader in Europe-based production, mainly due to backward integration and technology
- C Covestro is cost leader in Asia mainly based on scale, backward integration and technology
- D Covestro is cost leader in China mainly based on scale, backward integration and technology
- E Benefits from feedstock integration as well as highly advantageous utility costs, suffers from bulk freight plus 6.5% import duty to WE and China

Notes: (a) FY2017 cash cost ex gate, 82% utilization rate for all plants based on nameplate capacity. Integrated players are shown without margin contributions from sales of BPA, phenol, acetone, etc.

Source: Covestro estimate

4. PCS in China

Caojing production complex to become scale and cost leader in industry

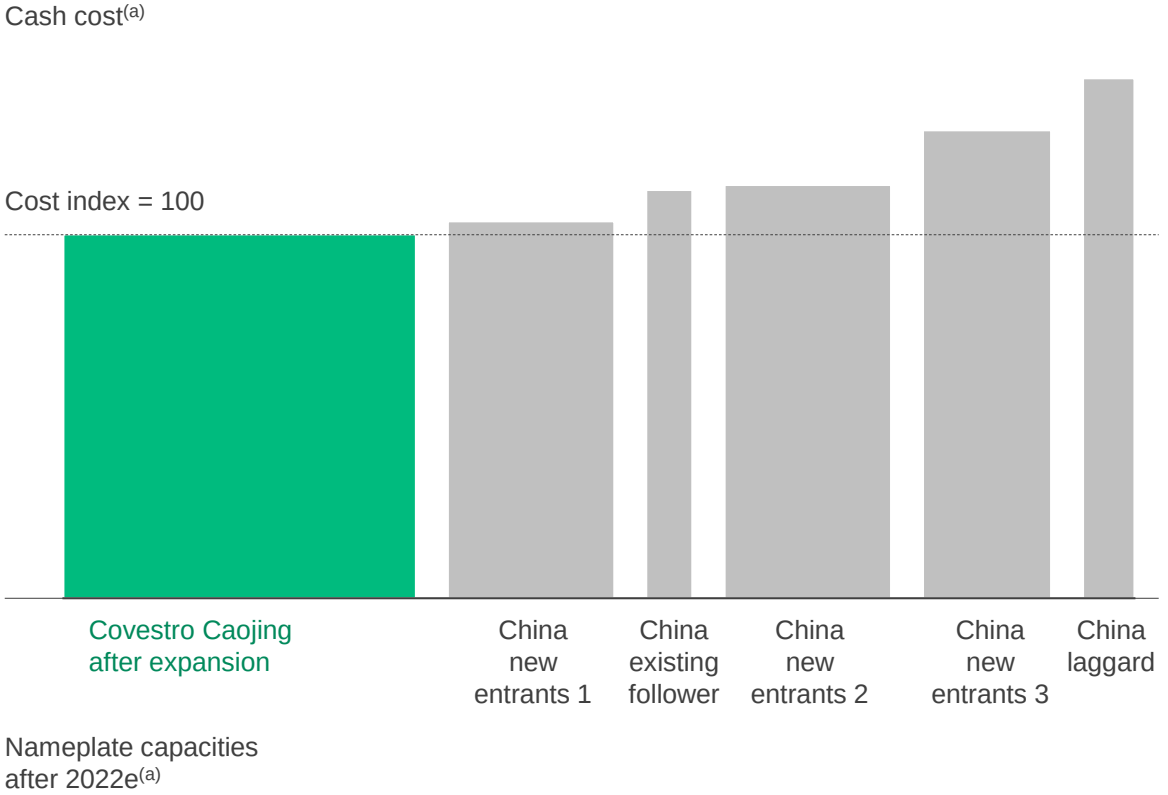
Nameplate capacity

Currently 400kt with planned expansions to 600kt, coming on stream in several stages from 2018 to 2022 through debottlenecking existing production lines

Differentiating factors

- ✓ **Economies of scale:**
  - Currently the only PC plant in China operating single lines with 100kt or more,
  - Becoming world's largest PC site after debottlenecking
- ✓ **Benefit from raw material integration:**
  Fully integrated into BPA and partially into chlorine
- ✓ **Process technology advantage**
  - Benefit from lower cost melt technology, compared to interfacial technology
  - Solvent-free product for key industries

Covestro future cost advantage versus Chinese competitors

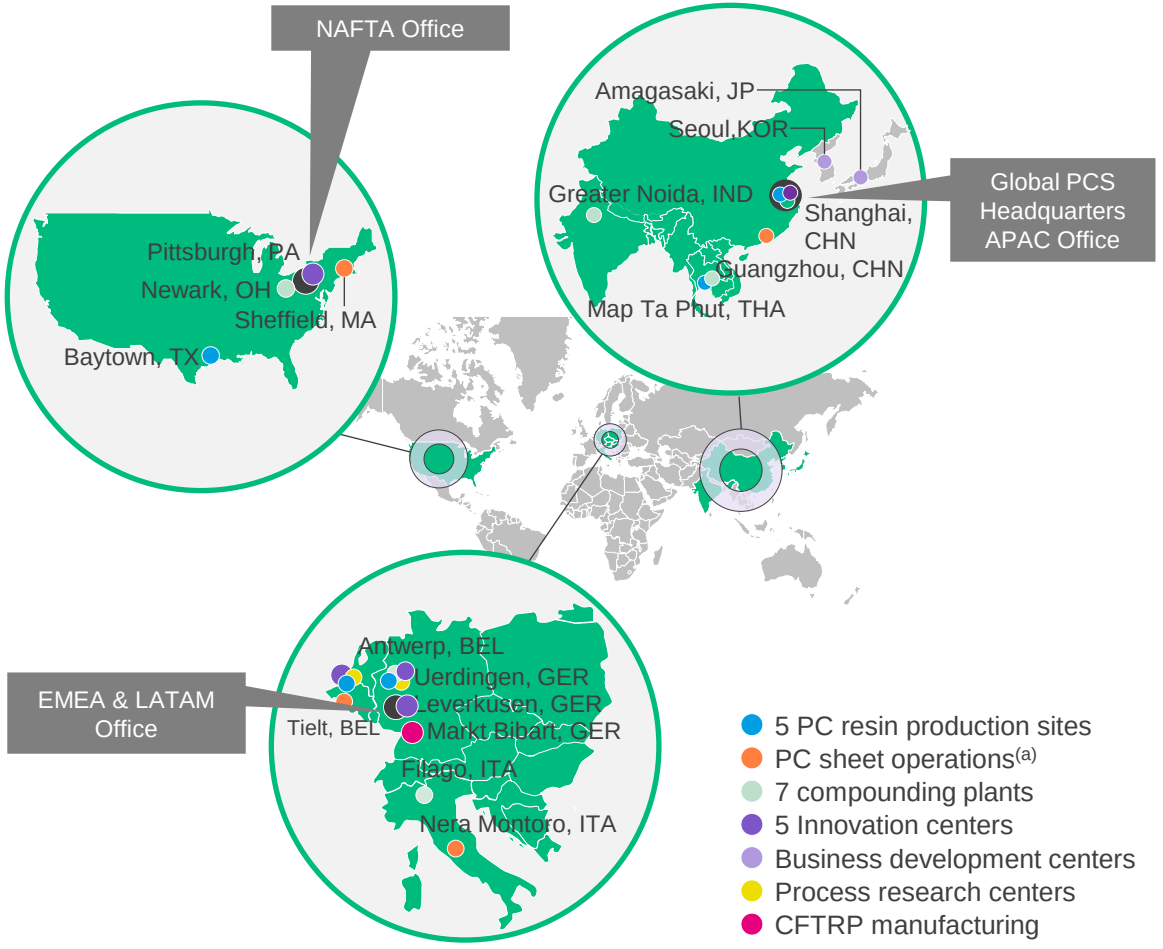


Notes: (a) Cash cost after 2022e: Covestro Caojing capacity expansion to 600kt p.a. completed, 82% utilization rate for all plants based on nameplate capacity. Integrated players are shown without margin contributions from sales of BPA, phenol, acetone, etc.

Source: Covestro estimate

4. PCS global operations

Reach and customer access is key competitive advantage



Primary production plants

- Production of polycarbonate resin for either external sales or internal feedstock for compounding and sheet plants(a)
- Nameplate capacity as of year end 2017: Covestro 1,480kt, including Baytown (USA) 230kt, Antwerp (BE) 240kt, Uerdingen (D) 300kt, Map Ta Phut (THA) 310kt and Caojing (PRC) 400kt

Compounding plants

- Refinement of polycarbonate resin through blending with other polymers or addition of colorants, fillers or other functional additives
- Color matching, technical service and small-scale production capabilities

Composites

- Production and sales of Continuous Fiber Reinforced Thermoplastics (CFRTP) as tapes and sheets for further processing by customers

Notes: (a) Covestro to sell its PC sheets outlet in the USA, closing expected to be completed in the third quarter of 2018

5. PCS R&D highlights 2017

Market-driven innovation as key value driver

€74m

R&D spend

22%

of PCS sales with new products not older than 5 years

50

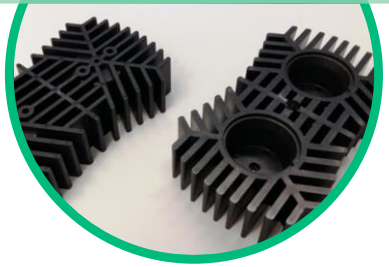
new grades, thereof around 90% compounding grades

39

patent applications

R&D project examples

Thermoconductive heat sink



Seamless glass-like appearance exterior parts – sensor transparent

Flame retardant materials for electric vehicle battery packing

High-end materials for connected devices for medical drug delivery

5. PCS innovation example

Material, application and production know-how drive market access and development

Example of customer product development lifecycle

Definition of customer requirements	Material and concept development	New application technologies	Scale up and customer production
			

Customer needs

- Distinctive and innovative automotive interior design
- Specialized material solutions providing function integration and safety
- Optimized and highly integrated manufacturing process
- Global competitive offerings
- Comprehensive and competent product support

Covestro solution

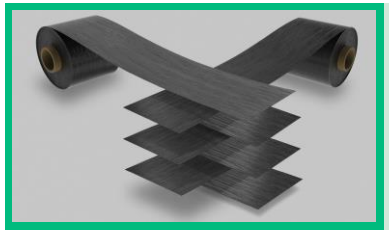
- ✓ High-end interior solutions with best-in-class product and technology portfolio
- ✓ Creative concepts based on profound understanding of materials and applications
- ✓ Support along the whole value chain
- ✓ Innovative polycarbonate grades, e.g. for infotainment display solutions
- ✓ New designs for lifestyle colors, surface finish and soft touch and feel
- ✓ Ductile materials for crash safety
- ✓ Best-in-class expertise in thermoplastics and processing technologies
- ✓ Reduction of cost and complexity
- ✓ First choice development partner for leading OEM, component suppliers and design houses
- ✓ Cutting-edge material and process innovation
- ✓ Global manufacturing, supply and support network

5. Continuous Fiber Reinforced Thermoplastics Composites

Innovative composite material provides potential for future growth

Example of customer product development lifecycle

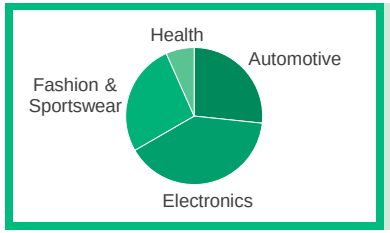
The world needs light-weight materials for next-generation applications offering powerful sustainability opportunities



Covestro combines continuous fibers (e.g. carbon) with thermoplastic resins (e.g. polycarbonate, TPU) to offer tapes and sheets

Strong, light and aesthetically attractive product with fast cycle times compared to thermoset composites

Example of customer product development lifecycle



A diverse pipeline portfolio of commercial projects with some of the largest consumer brands in the world

Commercial scale production inaugurated in March 2018.
Further scale-up planned based on market success

Haier

Strong resonance with industry's needs: Haier, the world's largest appliance manufacturer, uses our CFRTP materials for its Casarte premium air conditioner housing

Michael Friede

Head of Business Unit Coatings, Adhesives, Specialties

Michael Friede is Head of the Coatings, Adhesives, Specialties (CAS) Business Unit of Covestro since September 2017.

Friede was born in 1980 in Gronau (Leine), Germany. He holds an MBA from Instituto de Empresa, Madrid, Spain, completed his undergraduate studies in business as Diplom-Kaufmann (FH) at the Fachhochschule für Oekonomie & Management in Essen, Germany and studied at the Rotman School of Management at the University of Toronto, Canada. He holds the degree of Industriekaufmann from the Industrie- und Handelskammer Cologne (IHK).

He entered the Bayer Group as a trainee in 2001. Upon completion of the trainee program he worked in the Bayer AG Holding in Corporate Auditing. In 2008, he moved to Covestro (then Bayer MaterialSciene) as a Board Assistant. He then moved into the Procurement team of Covestro from 2009 until 2012, initially working as Head of Global Procurement Intelligence out of Leverkusen, moving to the USA to lead Procurement & Trading for the Americas region and global Procurement for energy, technical gases and basic chemicals including the global sales of chlorine, caustic soda and hydrochloric acid. In 2012, he moved back to Germany to lead the Global Key Accounts team in sales for the Business Unit CAS. In 2014, he took over the responsibility of Covestro's global Elastomers business moving to France to become CEO & President of Covestro Elastomers SAS.

Since 2017, Friede moved back to Germany and is leading the Business Unit CAS of Covestro.

Friede is married and has two children.

CAS key investment highlights

Global industry leader with high and resilient profitability

1. **Above GDP growth**
   based on solid demand from diverse customer industries
2. **High-end solutions for added-value materials**
   support high margin resilience
3. **Global leading and defendable position**
   in industries with distinct entry requirements
4. **High level of backward integration**
   and leading, proprietary technologies provide sustainable competitive cost advantage
5. **External growth opportunities**
   focused on value-creating, differentiated business areas

CAS at a glance

Enabling high performance

#1

Producer of aliphatic isocyanates and PUD[(a)]

€2.3bn

Sales 2017[(b)]

20.9%

EBITDA margin 2017[(b)]

16%

of total Covestro sales 2017[(b)]

- Global leading supplier of high-performance materials to the coatings and adhesives industry and other high-growth specialties
- Inventor of and technology leader in isocyanate derivatives for coatings, adhesives, sealants and specialties
- 2,700+ products based primarily on six monomers, serving 10+ high-end industries and 5,000+ customers
- Product pricing driven by added value to end-customers as CAS materials are critical to the final product performance but form a small part of the overall cost
- Market-driven innovation in close collaboration with all partners in the value chain, developing customized solutions for specific problems
- Efficient production processes benefitting from low-cost technology and high level of backward integration
- High margin resilience and strong cash flows

Ingredients for **surface coatings**

Ingredients for **adhesives and sealants**

Ingredients for **specialties**

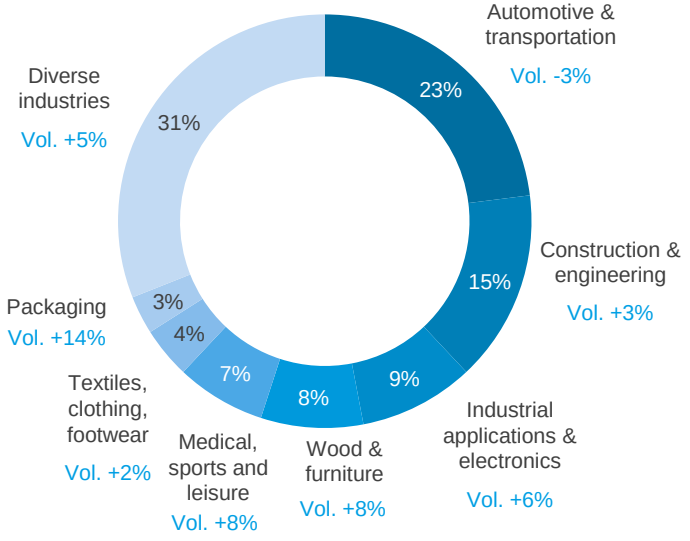
Notes: (a) Based on total aliphatic isocyanates volume in 2017 relative to competitors as per Covestro estimates and based on total polyurethane dispersions (PUD) volume in 2017 relative to competitors as per Covestro estimates
(b) All figures adjusted to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to Coatings, Adhesives, Specialties segment as of January 1, 2018

CAS above GDP volume growth

Adjusted core volume growth of 3.7% CAGR in 2015-2017[(a)]

CAS sales split by industry groups

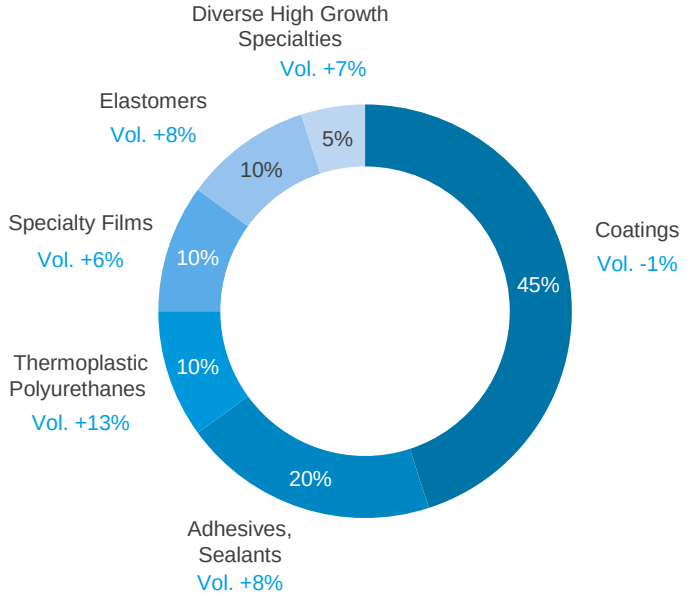
Covestro sales share FY 2017[(a)]
Core volume growth, CAGR 2015-2017



Growth driven by almost all industry groups

CAS sales split by businesses

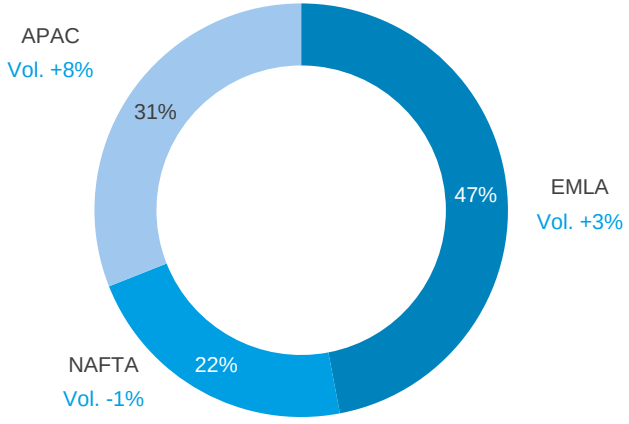
Covestro sales share FY 2017[(a)], rounded
Core volume growth, CAGR 2015-2017



Growth driven by almost all businesses

CAS sales split by regions

Covestro sales share FY 2017[(a)]
Core volume growth, CAGR 2015-2017



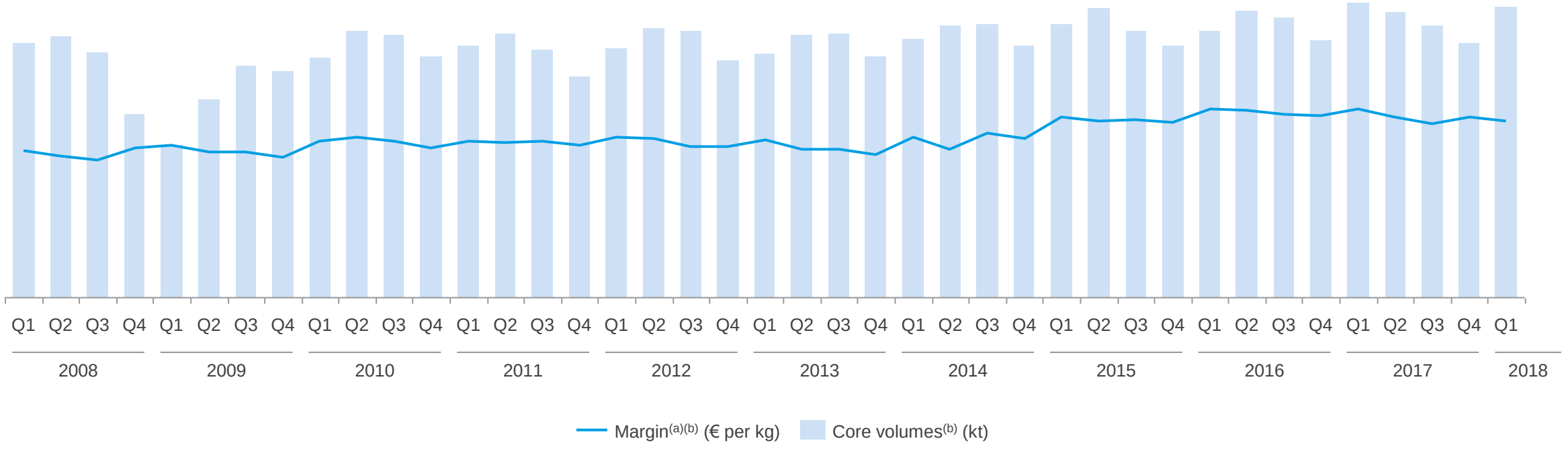
Growth driven by APAC and EMLA

Notes: (a) All figures adjusted to reflect the transfer of the specialty elastomers business from the Polyurethanes segment to Coatings, Adhesives, Specialties segment as of January 1, 2018 as well as planned termination of trading activities and reduced contract manufacturing

CAS financial performance

High margin resilience reflects specialty character

Resilient margin level



- Added value to customers and diversified applications secure stable margins
- Gross margin driven by high-value product portfolio as well as low-cost technology

Notes: (a) Defined as net sales proceeds less variable product costs per kg
(b) Including specialty elastomers business transferred from Polyurethanes segment to Coatings, Adhesives, Specialties segment as of January 1, 2018

CAS product innovation 2017

Continuously creating new application spaces and competitive differentiation

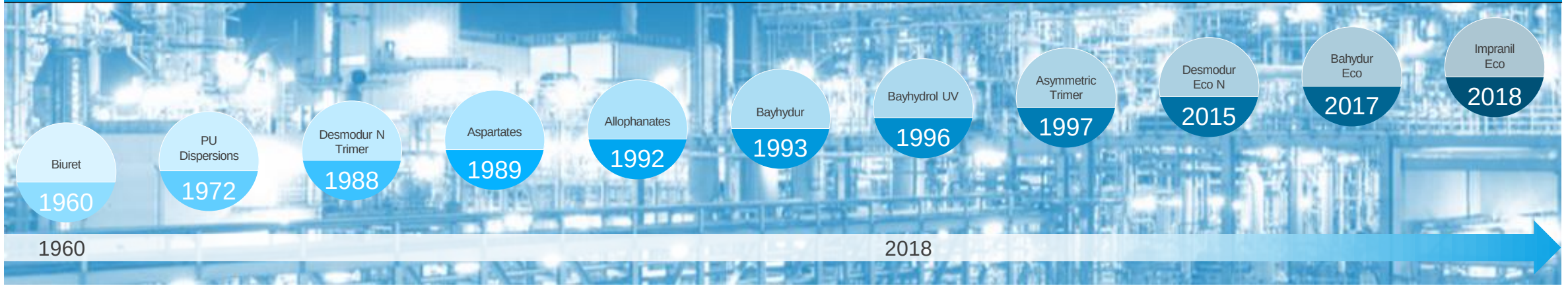
€95m
R&D spend

22%
of CAS sales with new products not older than 5 years

~90%
of R&D spend going into product innovation

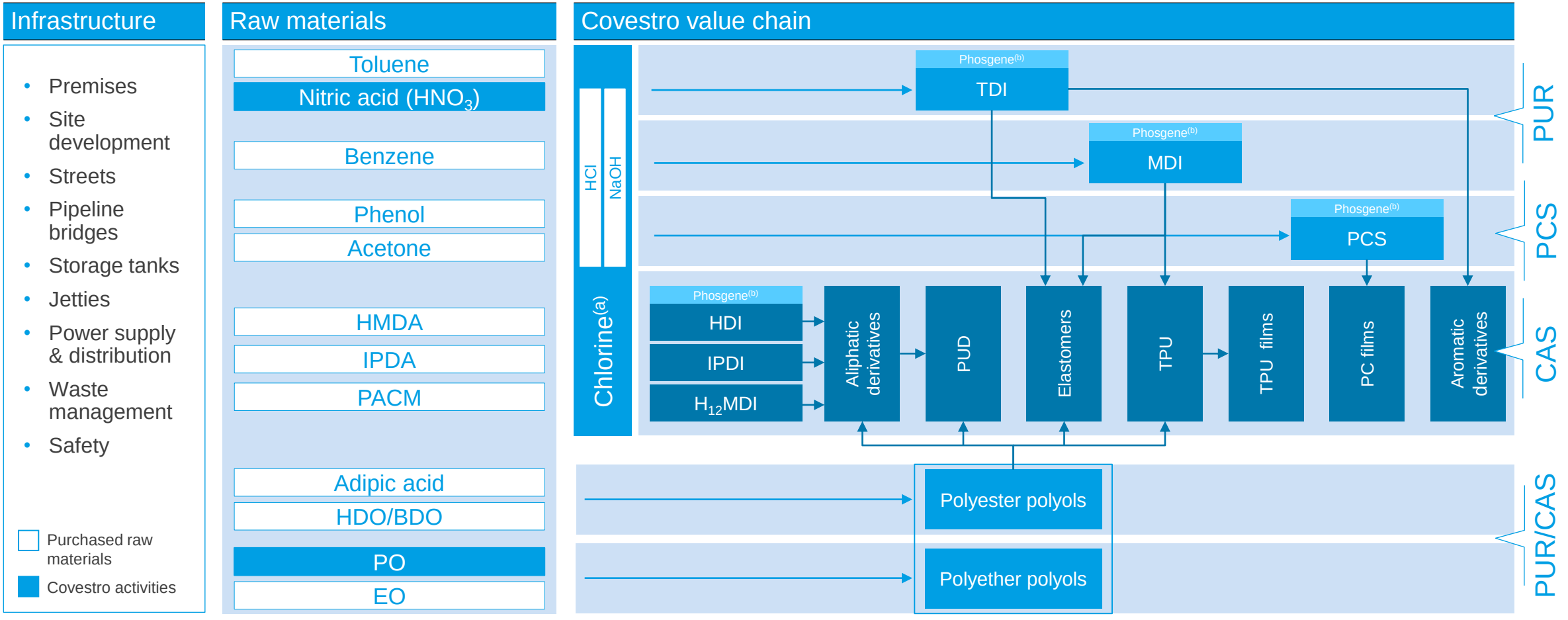
73
patent applications

R&D project examples



CAS backward integration

Significant synergies from Covestro chemical backbone



Notes: Simplified illustration
(a) via Deacon or HCl-ODC technology and/or chloralkali electrolysis
(b) produced from CO and Cl_2

Coatings, Adhesives, Specialties (CAS)

Coatings
Raw Materials

CAS Coatings raw materials at a glance

High-performance polyurethane chemistry for coatings

#1

Producer of PU coatings raw materials[(a)]

3-4%

Market growth[(b)]

~45%

of total CAS sales 2017

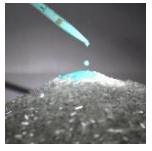
>800

Customers globally

- Coatings raw materials are used in a wide range of end market applications
- Applications require high-performance products that enable distinct characteristics like abrasion resistance, durability or gloss retention
- Focus on higher-value components in the coatings market by providing added-value solutions
- Global network to reliably supply customers, combined with leading formulation know-how and technical expertise in coatings applications
- Innovation in coatings raw materials as core competency, enabling competitive differentiation and growth
- Product portfolio offers sustainable materials like water-borne and bio-based polyurethanes as well as materials that improve the industrial hygiene for applicators

Automotive

Transport & vehicles



Industrial coatings

Corrosion protection

Construction

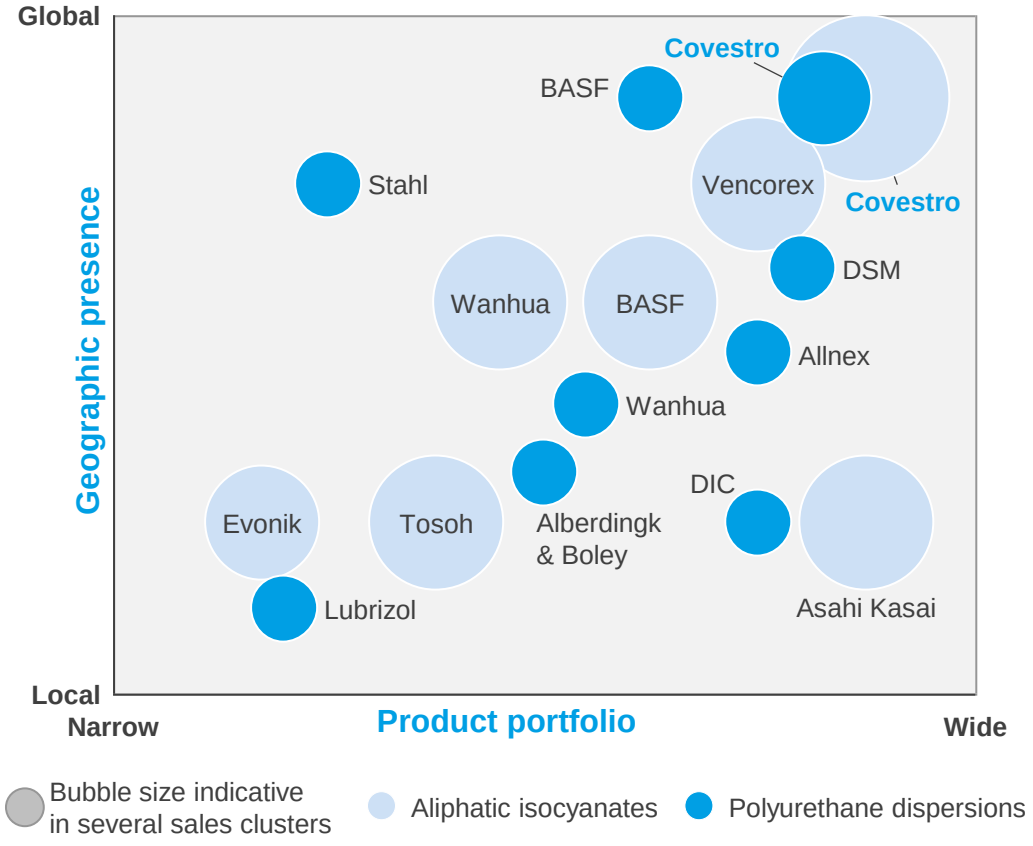
Wood & furniture

Notes: (a) Polyurethane coatings raw materials
(b) CAGR 2017-2022e for polyurethane coatings raw materials excl. solvent-borne polyacrylates
Source: Orr & Boss 2017 and Covestro estimates

Coatings raw materials competitive landscape

Covestro well positioned for success in differentiated markets

Competitive position of key raw material producers[(a)] in 2017



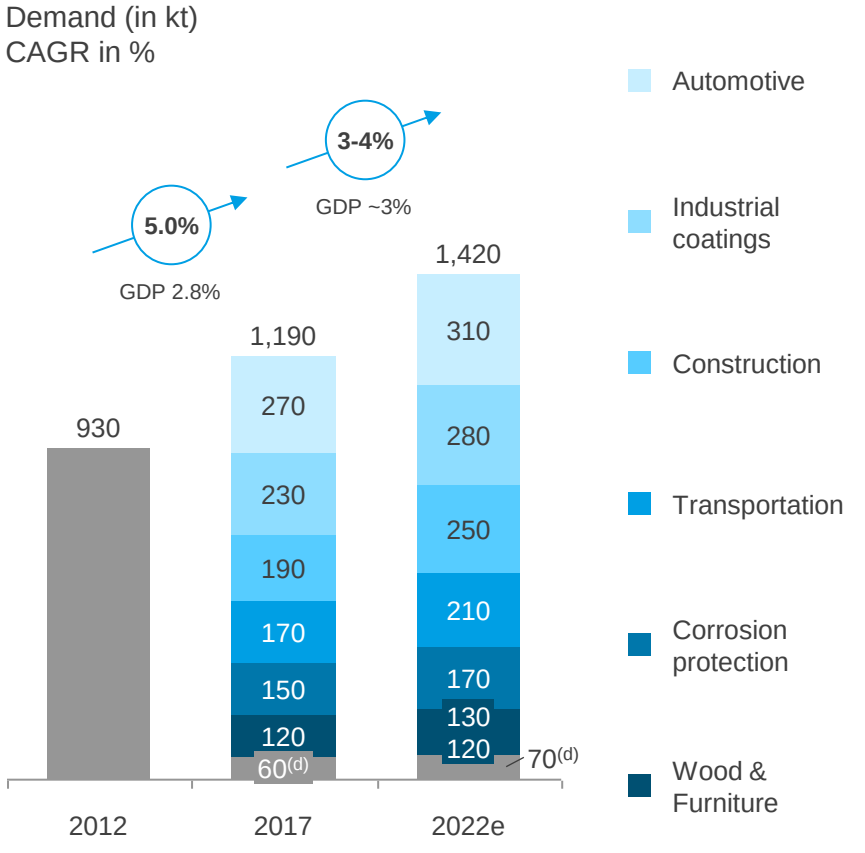
	Industry	Covestro position
Production economies of scale	• Cost efficiencies achieved by benefitting from global assets	• Large scale production in all regions • Efficient production processes benefitting from low-cost technology and integration
Production know-how and expertise	• Experience in isocyanate and PUD production required to develop necessary know-how	• Long history of process technology and reliability • Global network of process technology expertise
Portfolio diversification	• Diverse array of end markets and applications requiring a wide product offering	• Inventor of and technology leader in isocyanate derivatives for coatings • Focus on high added-value products
Technical know-how and expertise	• Expertise required to address specific customer needs with formulation and processing know-how built over years	• Unique global experience in formulation and application development • Market-driven innovation in close collaboration with all partners in the value chain
Long-term customer relationships	• Long-term relationships with customers and responsiveness to customer needs are critical	• Proximity and long established customer relationships • Developing customized solutions for specific problems (forward marketing)

Notes: (a) Producers of aliphatic isocyanates and polyurethane dispersions coatings raw material
Source: Covestro estimates

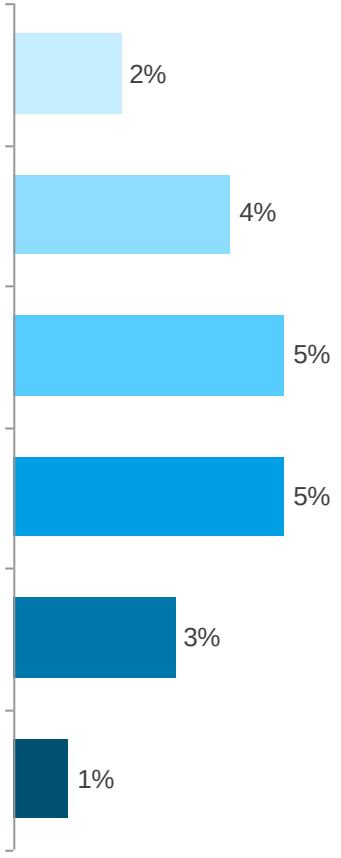
Coatings raw materials industry growth

CAS coatings raw materials serve growing end-use markets

Global PU coatings raw materials industry[a]



CAGR 2017-2022e



Growth drivers

+ Conversion of auto OEM painting lines from other chemistries to high quality 2K PU[b] technology; refinish with lower growth expectation due to assistant systems
+ Participation in accelerated composites market growth through glass fiber sizing (water-borne fiber pretreatment)
+ Emerging markets growth favors water-borne PU solutions; durability against graffiti removal agents and low-temperature curing
+ New infrastructure requirements for mobility; Implementation of workplace VOC[c] regulations favor new PU systems
+ Fast-curing PU systems meet market need for fast return to service
+ China governmental push: Faster shift from solvent- to water-borne and UV-cured coatings products

Innovation example

Desmodur® Ultra N

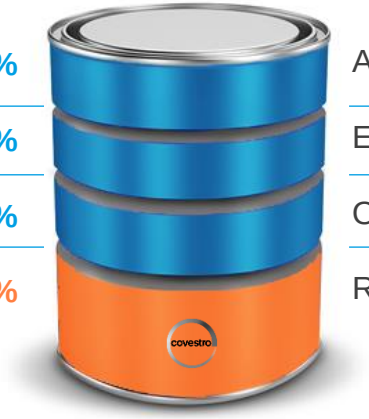
- Isocyanate with reduced content of residual monomers through continuous process improvements in our production plants
- Improving intrinsic safety of flagship product line started in 2018
- Significant improvement of industrial hygiene for coating applicators
- Identical high performance as replaced product lines

Notes: (a) Polyurethane coatings raw materials market excl. solvent-borne polyacrylates
(b) 2K PU: Two-component polyurethane
(c) VOC: volatile organic compounds
(d) Diverse industries
Source: Orr & Boss and Covestro estimates

Covestro in the coatings value chain

Resins and film formers enable distinct performance of final product

Share of Covestro products in average coatings formulation

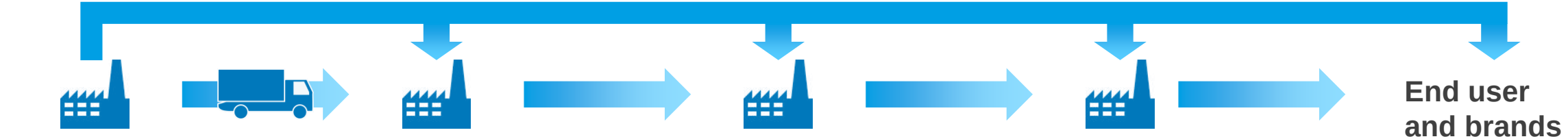


3-5%	Additives
15-25%	Extender and pigments
20-30%	Organic solvents or water
60-70%	Resins and film formers

Characteristics of PU-based coatings raw materials

- Unique properties in high-performance coatings:
  - Abrasion resistance
  - Outdoor weathering
  - Corrosion and chemical resistance
  - Durability
  - Gloss retention
- Superior combination of performance and price compared to other coatings technologies, e.g. epoxy-based coatings

CAS delivers tailored solutions and has contact with all partners in the value chain



Covestro operations for coatings, adhesives and sealants

Best-in-class world-scale technologies combined with unique global production setup

Coatings, Adhesives, Specialties (CAS)

Adhesives & Sealants Raw Materials

CAS Adhesives & Sealants at a glance

Polyurethanes as attractive niche in adhesives and sealants industries

#1
Producer of aqueous PU ADH/SEA[(a)]

~3%
Market growth[(b)]

~20%
of total CAS sales 2017

>500
Customers globally

- Adhesives and sealants raw materials are used in wide range of end market applications
- Applications require high-performance products with unique characteristics like high flexibility or compliance to environmental standards like VOC[(c)] regulations
- Focus on higher-value components in the adhesives and sealants industries by providing added-value solutions
- Tailored solutions are adapted to substrate, environment, industry specifics, application method and curing
- Filled innovation pipeline ensures future competitiveness and business growth

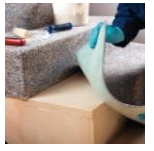

Automotive

Packaging


Footwear


Wood & furniture


Construction

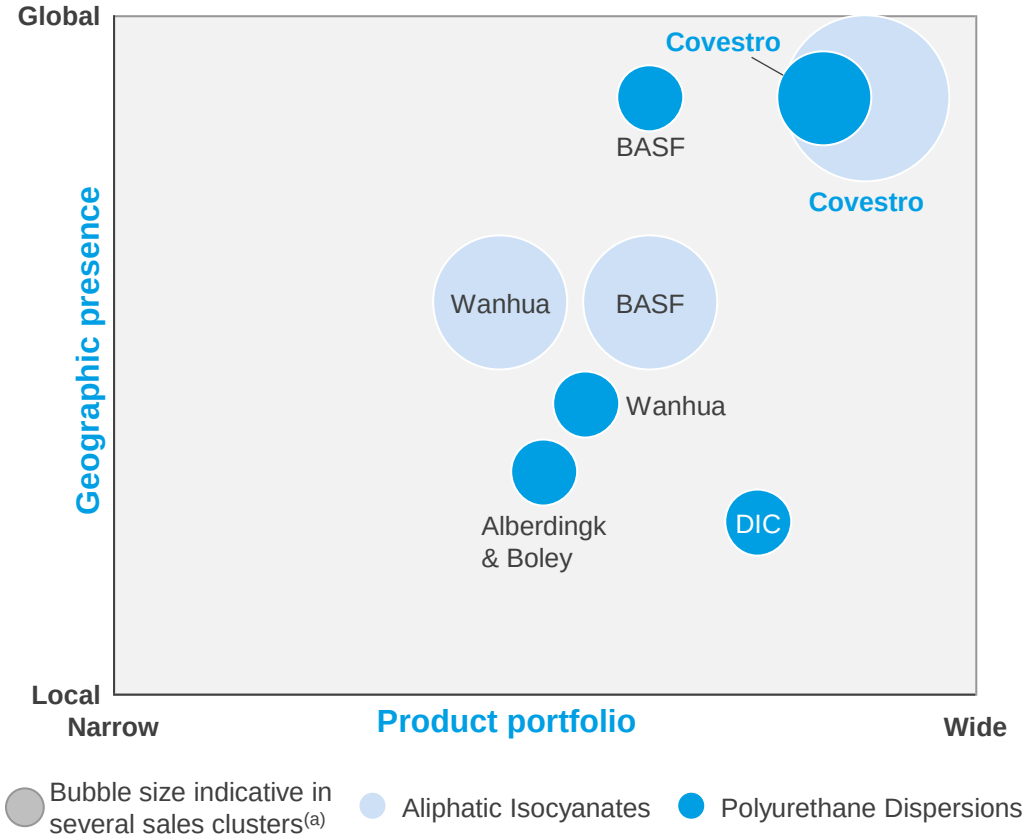

Industrial adhesives

Notes: (a) PU ADH/SEA: Polyurethane adhesives and sealants raw materials
(b) CAGR 2017-2022e for polyurethane adhesives and sealants raw materials excl. solvent-borne polyacrylates
(c) VOC: volatile organic compounds
Source: Orr & Boss 2017 and Covestro estimates

Adhesives and sealants supplier competitive landscape

Covestro well positioned for success in differentiated markets

Competitive position of key raw material producers[(a)] in 2017



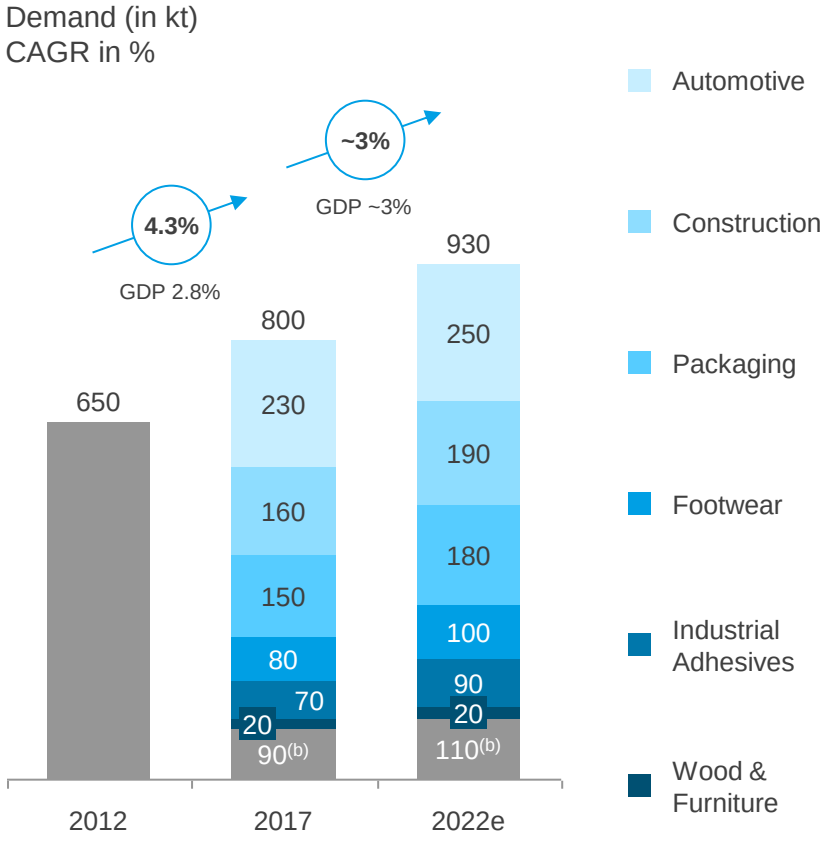
	Industry	Covestro position
Production economies of scale	• Cost efficiencies achieved by benefitting from global assets	• Large scale production in all regions • Efficient production processes benefitting from low cost technology and integration
Production know-how and expertise	• Long term experience in isocyanate and PUD production required to develop necessary know-how	• Long history of process technology and reliability • Global network of process technology expertise
Portfolio diversification	• Diverse array of end markets and applications requiring a wide product offering	• Inventor of and technology leader in isocyanate derivatives for adhesives and sealants • Focus on high added-value products
Technical know-how and expertise	• Expertise required to address specific customer needs with formulation and processing know-how built over years	• Potential for wide variety of solutions in an diverse field of applications • Market-driven innovation in close collaboration with all partners in the value chain
Long-term customer relationships	• Long-term relationships with customers and responsiveness to customer needs are critical	• Proximity and long established customer relationships • Developing customized solutions for specific problems (forward marketing)

Notes: (a) Producers of aliphatic isocyanates and polyurethane dispersions adhesives and sealants raw materials
Source: Covestro estimates

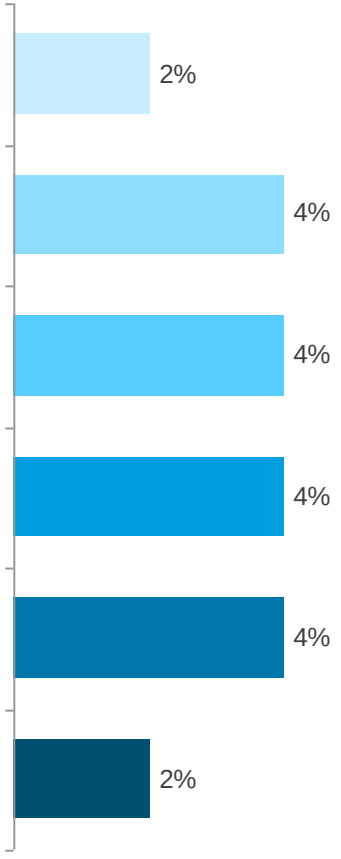
Adhesives and sealants industry growth

CAS adhesives and sealants raw materials serve growing end-use markets

Global PU ADH/SEA raw materials industry[(a)]



CAGR 2017-2022e



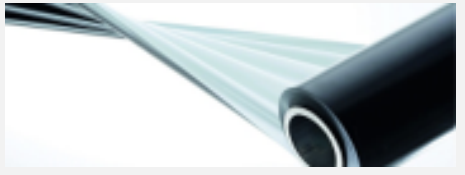
Growth drivers

+ Low-temperature curing favors PU adhesives, fast growth of exterior segment due to light-weight construction
+ Trend towards wood-based laminated construction materials
+ PU-based solution for flexible food packaging enabling faster throughput production process and food safety
+ Increased need for high-performance materials, functionality and design; automated production in “speed factories”
+ Trend towards wind energy requires new bonding solutions
+ Increased lamination adhesive demand; China consumption tax favors the use of water-based products

Innovation example

Latently reactive adhesive films

- Superior performance of water-borne polyurethane adhesives for high-performance durable adhesive films, which are resistant against heat, water and chemicals
- Allows separation of adhesive application and assembling and bonding step
- Simple, clean and easy handling of adhesive films: no liquid adhesive, no metering, no overspray, no drying
- Uniform and defined layer thickness
- Established in recent years and growing in various industrial applications, e.g. electronics, textile and construction



Notes: (a) PU ADH/SEA: Polyurethane adhesives and sealants raw materials
(b) Diverse industries
Source: Orr & Boss and Covestro estimates

Covestro in the adhesives and sealants value chain

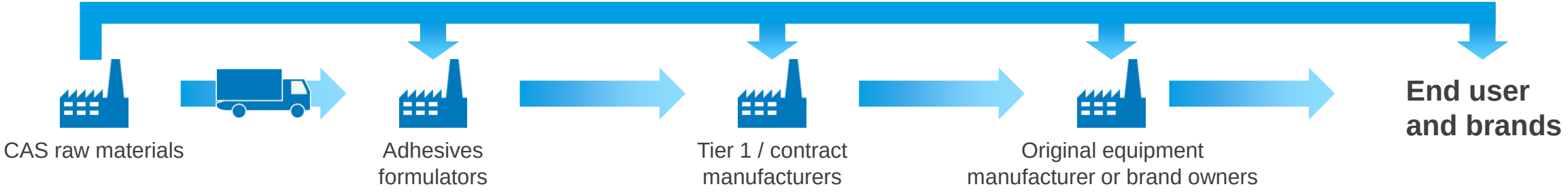
Highly versatile chemistry enables tailor-made adhesives and sealants formulations

Covestro products in average adhesives and sealants formulation

Characteristics of PU-based adhesives and sealants raw materials

- Unique properties in high-performance adhesives and sealants:
  - High flexibility
  - Low-temperature curing
  - Hydrolytic stability
- Offers solutions for environmental challenges, e.g. low VOC[(a)]

CAS delivers tailored solutions and has contact with all partners in the value chain



Notes: (a) VOC: volatile organic compounds

Coatings, Adhesives, Specialties (CAS)

High Growth Specialties

Thermoplastic Polyurethanes (TPU)

Thermoplastic Polyurethanes (TPU) at a glance

Leading supplier for high-performance resins

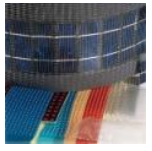
#3
Producer of TPU[(a)]

~6%
Market growth[(c)]

~10%
of total CAS sales 2017

6
Production facilities globally[(b)]

- High-performance resins covering diverse markets from hard plastics to soft elastomers and rubber
- Core volume growth of 13% (CAGR 2015-2017)
- Opportunity to outgrow industry by constant re-specifications and innovative market extension
- Covestro as global top 3 producer with leading positions in all major regions and commitment to growth
- Leverage of formulation and processing know-how across global production network as basis for planned capacity expansions
- Attractive internal synergies via backward integration in MDI and polyester polyols as well as broad access to diverse customer industries
- Well-filled innovation pipeline including path to lower production costs with CO_2-based polyols


Textiles


IT & electronics


Sport & leisure


Agriculture


Automotive

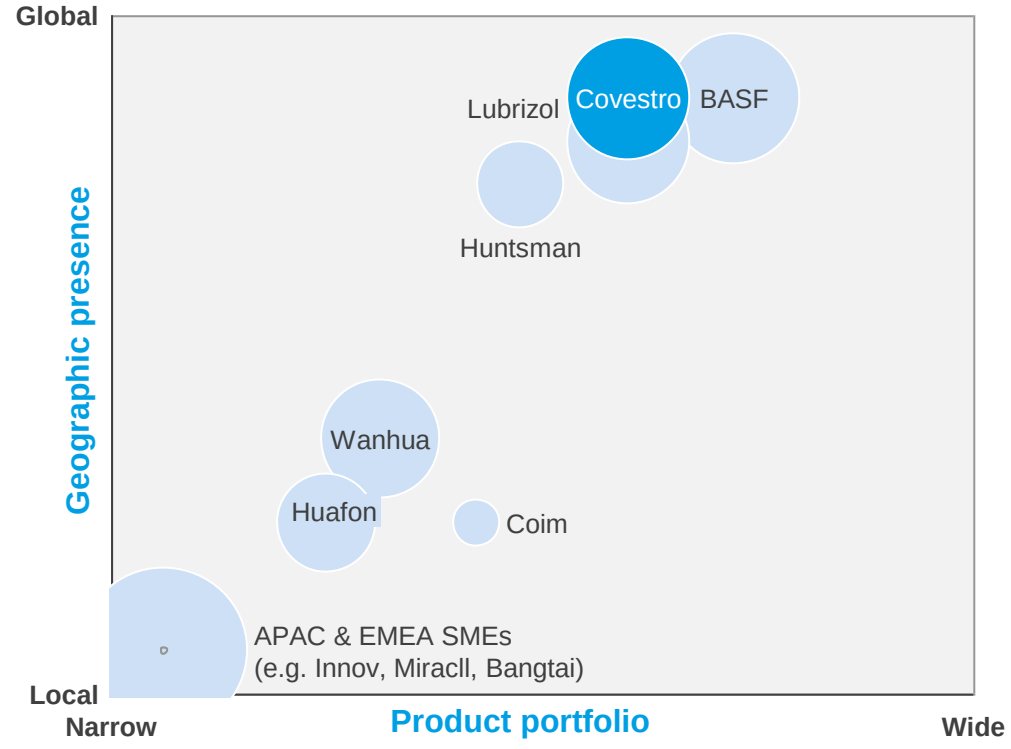

Industrial

Notes: (a) Thermoplastic polyurethanes
(b) Incl. 50/50 JV with DIC in Japan
(c) CAGR 2017-2022e for global thermoplastic polyurethanes market
Source: Covestro estimates

TPU competitive landscape

Covestro well positioned for success in differentiated markets

Competitive landscape of key TPU producers in 2017



Bubble size indicates 2017 sales volumes

	Industry	Covestro position
Production economies of scale	• Cost efficiencies achieved by benefitting from global assets and backward integration	• Large scale production in all regions • Backward integration and global supply agreements on raw materials
Production know-how and expertise	• Long term experience in TPU production required to develop necessary know-how	• History of process technology experience and know-how in reactive extrusion • Global network of process technology expertise
Portfolio diversification	• Diverse array of end markets and applications requiring a wide product offering	• Greater than 100 end markets with over 400 products • More than 700 primarily solution-based customers
Technical know-how and expertise	• Expertise required to address specific customer needs with formulation and processing know-how built over years	• Technology and know-how leader for injection molding • Unique global experience in formulation and application development
Long-term customer relationships	• Long-term relationships with customers and responsiveness to customer needs are critical	• Diverse, global footprint with resources in each region to support local market • Proximity and long established customer relationships

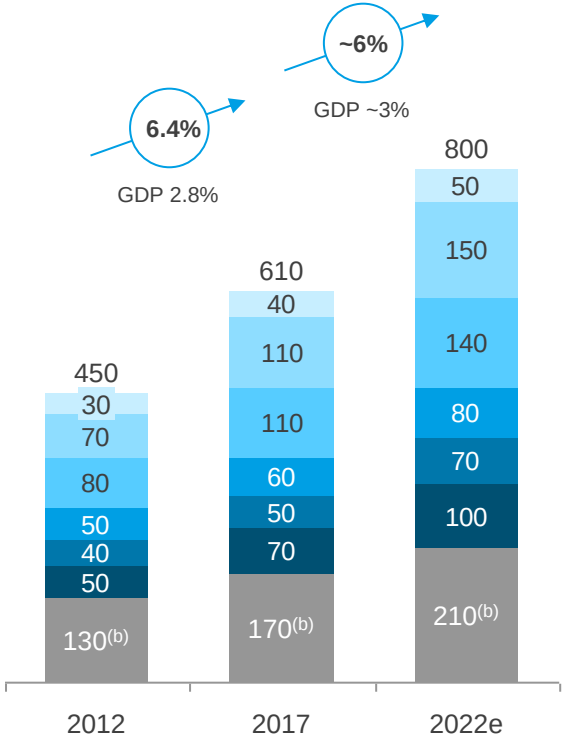
Source: Covestro estimates

TPU industry growth

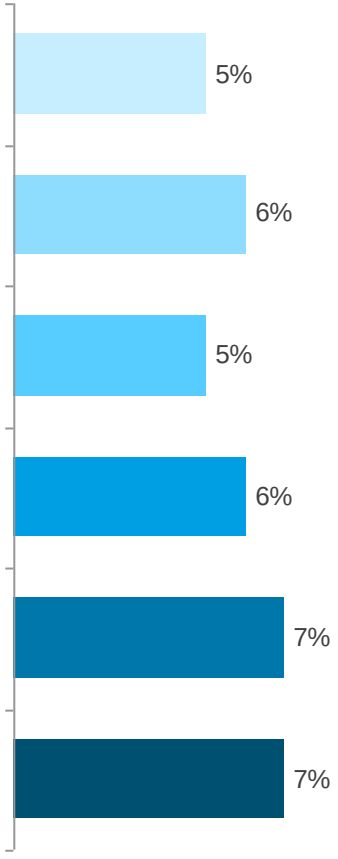
Attractive growth based on multiple drivers and segments

Global TPU industry[a]

Demand (in kt)
CAGR in %



CAGR 2017-2022e



Growth drivers

+ Growth in electric cars and electronic products worldwide

+ Urbanization in emerging regions
+ Resistance against hydrolysis and grease make TPU a material of choice for hoses in oil industry

+ Driven by desire for water resistance and breathability in fabric for fashion industry
+ Increasing demand in specialty and protective films in electrical/electronics and auto applications

+ Rising income and desire for better living standards in emerging regions
+ Increasing demand for comfort in mature regions

+ Driven by growth of mobile and wearable devices
+ Wide range of hardness and good bonding with other polymers make TPU a popular choice for various IT components

+ Urbanization in emerging regions
+ Superior durability of TPU over other materials in heavy-duty environment (e.g. castor, animal tag)

Innovation example

cardyon™

- Polyol for the production of high-performance TPU
- Innovative Covestro technology enabling carbon capture and utilization by partly substituting oil-based raw materials with CO_2
- Helps to close the carbon loop by bringing CO_2 back into the value chain and reducing carbon footprint
- Enables manufacturers to look at alternative and more sustainable raw materials while reducing their reliance on fossil fuels
- First small lots produced in 2018 and global sampling to selected accounts initiated

Notes: (a) Covestro estimates
(b) Diverse industries including healthcare, transportation, compounding, coatings & adhesives and off-grade
(c) HTBP: Hoses, Tubes, Belts, Profiles

Covestro TPU operations

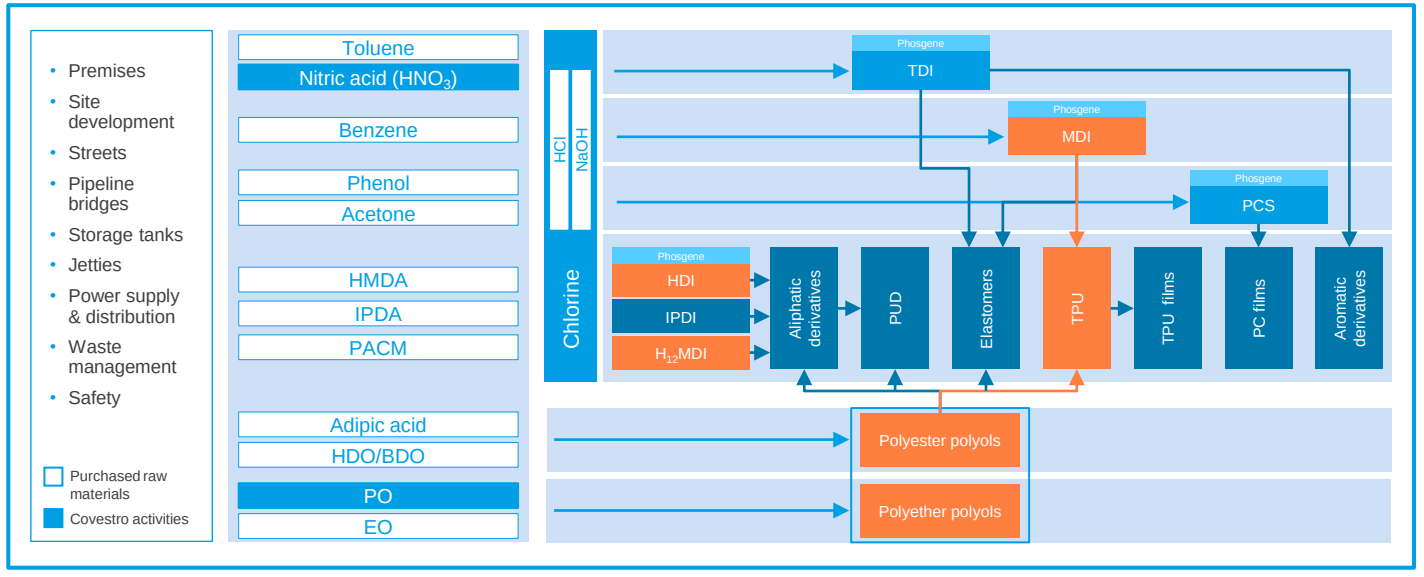
Global asset footprint provides excellent market access and customer proximity

Notes: (a) DCP: DIC Covestro Polymer, a JV of Covestro and DIC, Japan

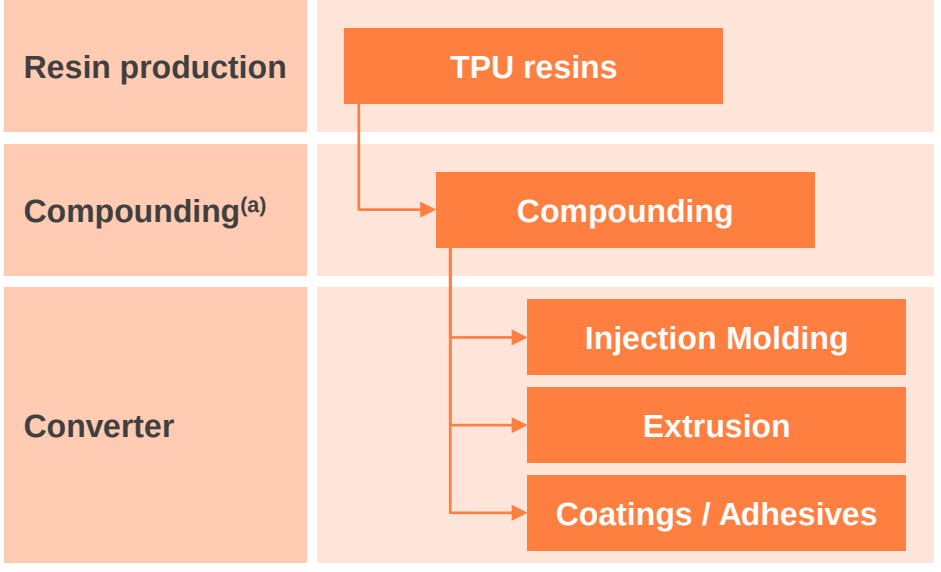
TPU backward integration

Significant synergies from Covestro chemical backbone

Upstream of resin production (recap)



Extended TPU value chain



Applications

Notes: Simplified illustration
(a) by Covestro or Covestro customer

Coatings, Adhesives, Specialties (CAS)

High Growth Specialties

Specialty Films

Specialty Films at a glance

Leading film solution provider focused on PC-, TPU- and holographic films

#1or #2

Producer of PC- and TPU-films, depending on region

6-7%

Market growth[(a)]

~10%

of total CAS sales 2017

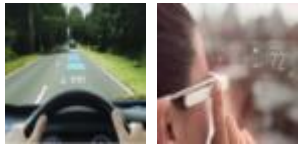
5

Production facilities globally

- Leading supplier in all key regions for PC- and TPU-films
- Supplying diverse, regional markets with customized films solutions
- Core volume growth of 6% (CAGR 2015-2017)
- Robust future growth expectation significantly above GDP supported by innovative product portfolio
- Strong technology background in extruded films production, surface modification and coatings technology
- Strong innovation pipeline offering solutions to future industry trends

TPU films

PC films



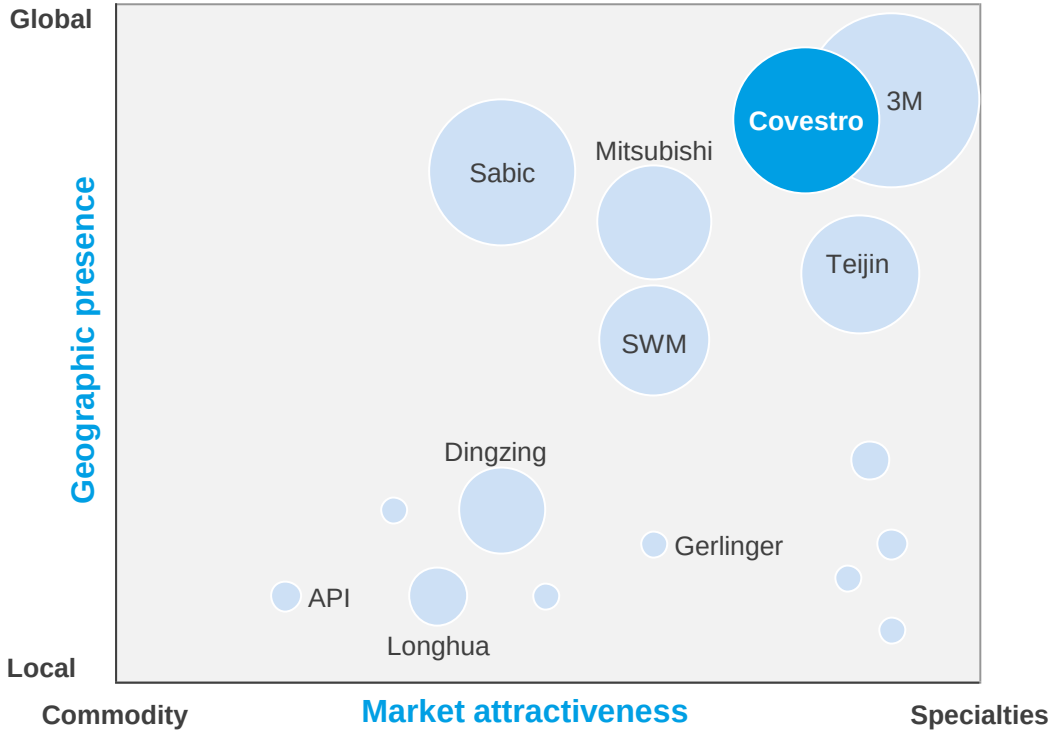
Holographic films

Notes: (a) CAGR 2017-2022e of global PC- and TPU-films market
Source: Covestro estimates

Specialty Films competitive landscape

Leading films producer with focus on high-end films applications

Competitive landscape of key films producers in 2017[(a)]



Bubble size indicates 2017 sales volumes

	Industry	Covestro position
Process technology	• State-of-the-art technology along the process chain of high importance • Ability to combine different technologies and offer multilayer solutions	• IP-protected, competitive process technology • Ability to offer multilayer solutions and combine PC- and TPU-Films
Integration	• Backward integration as major value lever • Conversion capabilities important to offer broad product portfolio	• Favorable backward integration • Long-term supply contracts for important precursors • Conversion capabilities in all regions (slitting and sheeting)
Technical capabilities and expertise	• Systems demanding greater knowledge and expertise • Technical centers in all regions to develop custom solutions • Innovation capabilities to offer solutions to industry	• Superior expertise and know-how in application development • Technical centers in main regions • Strong R&D backbone based on films and coatings know-how
Proximity to customer markets	• Importance of proximity to customer markets • Global asset base critical to support ambitions of global customer base	• Diverse, global footprint • Production plants in all core regions (except for TPU films in APAC)

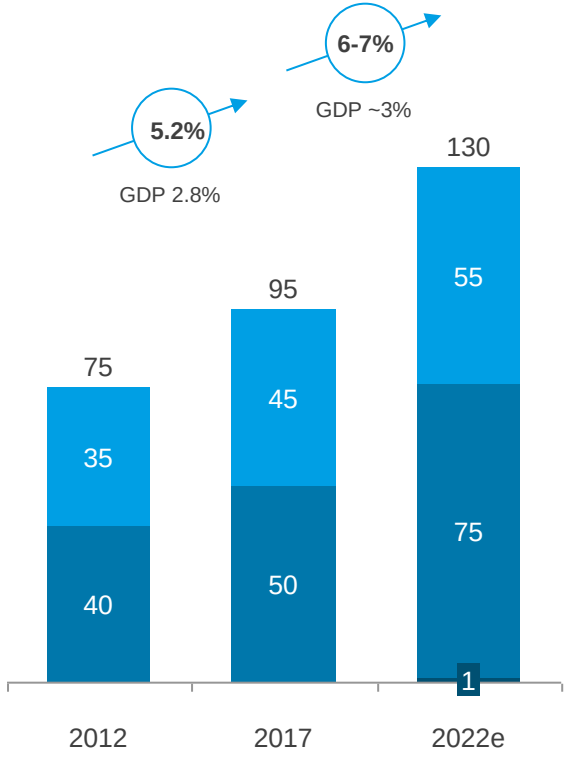
Notes: (a) Global PC- and TPU-films
Source: Covestro estimates

Specialty Films industry growth

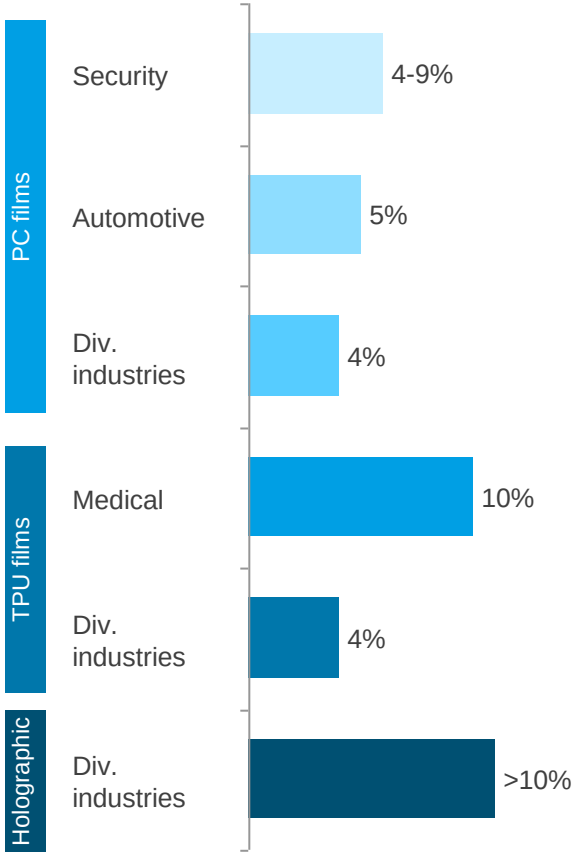
Strong growth in core segments supported by future industry trends

Global films industry[(a)]

Demand (in kt)
CAGR in %



CAGR 2017-2022e



Growth drivers

- \+ Growing population and increased demand for state-of-the-art identification
- \+ Upside potential by new PC-based identification projects
- \+ Integration of new display concepts and head-up displays combined with design freedom in automotive interior
- \+ Overall trend towards roll to roll manufacturing processes
- \+ Demographic change, trend towards highly sophisticated wound care solutions
- \+ Strong trend towards wearable solutions
- \+ TPU technology of choice for niche applications in textile, packaging, construction
- \+ Electronics: Strong market need for holographic films in head-mounted glasses
- \+ Strong value proposition for other industries (e.g. head-up displays for automotive)
- \+ New market to be developed for holographic films

Innovation example

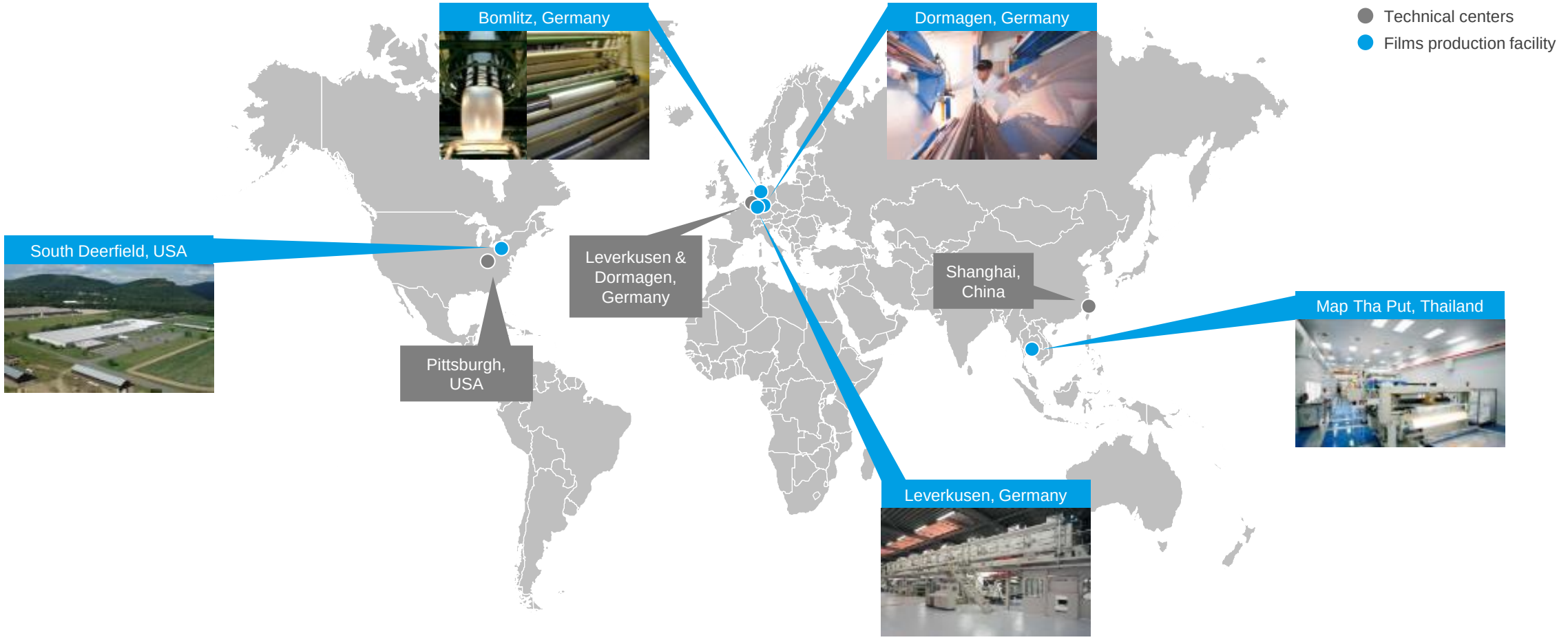
Holographic filters

- Laser strikes on commercial aircrafts are rising globally: lasers can distract pilots during critical phases of flight and can cause temporary visual impairment
- Transparent laser protection filters developed by Canadian company Metamaterial Technologies Inc. together with Covestro and partners of the aircraft industry
- The filters are based on IP protected photopolymer films (Bayfol HX) of Covestro
- Start of production is planned for 2019e; additional potential is seen for police visors

Notes: (a) Global PC- and TPU-films market as per Covestro estimates

Covestro Specialty Films operations

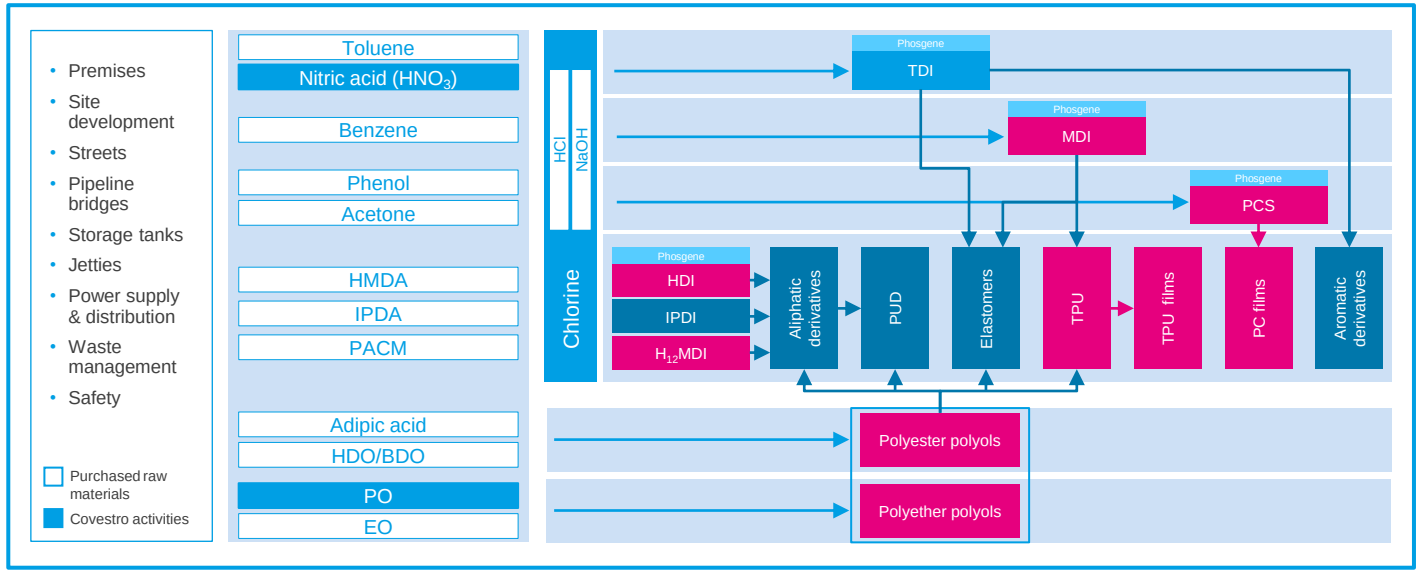
Global footprint with strong technical capabilities



Specialty Films backward integration

Significant synergies from Covestro chemical backbone

Upstream of resin production (recap)



Extended Specialty Films value chain

Resin production	**TPU resins** **PC resins** **Other resins[a]**
Film production	**TPU Films** **PC Films** **Other Films[b]**
Coater	Coating may be applied to add additional functionalities to the film

Applications

TPU films

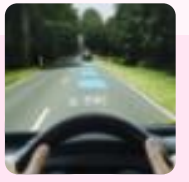
- Medical
- Construction

PC films

- Automotive
- Security

Holographic films

- Electronics
- Automotive



Notes: Simplified illustration
(a) Other resins may include CO-PET, ABS, PEI, PA, TAC, PC and TPU
(b) Monolayer or combined

Coatings, Adhesives, Specialties (CAS)

High Growth Specialties

Elastomers

Elastomers at a glance

Leading supplier for PU cast elastomer systems and equipment

#2
Producer of
PU elastomer systems

3-4%
Market growth[(a)]

~10%
of total CAS sales 2017

11
Production sites
globally

- Globally leading supplier for elastomers systems with a comprehensive portfolio based on NDI, MDI, TDI and aliphatic isocyanates
- Global number one position for casting equipment
- Core volume growth of 8% (CAGR 2015-2017)
- “One-stop shop” aiming for efficient customer support, particularly in growth markets
- Target to capture market growth and to ensure growth above GDP, based on already available production capacities
- Production plants in main regions for optimized supply chain and to ensure cost efficiency

PU casting machines

Pipeline cleaning device for oil and gas industry

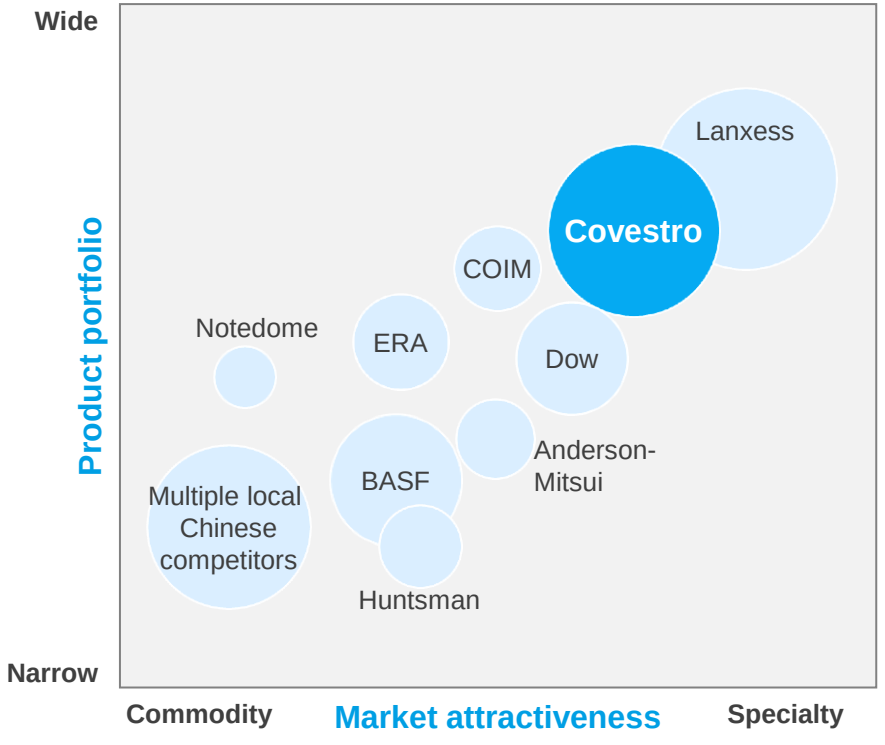
Cyclone equipment for mines and quarries industry

Notes: (a) CAGR 2017-2022e for global PU elastomers market
Source: Covestro estimates

Elastomers competitive landscape

Globally #2 position with a strong focus on growth

Competitive landscape of PU elastomer producers in 2017



Bubble size indicates 2017 sales volumes

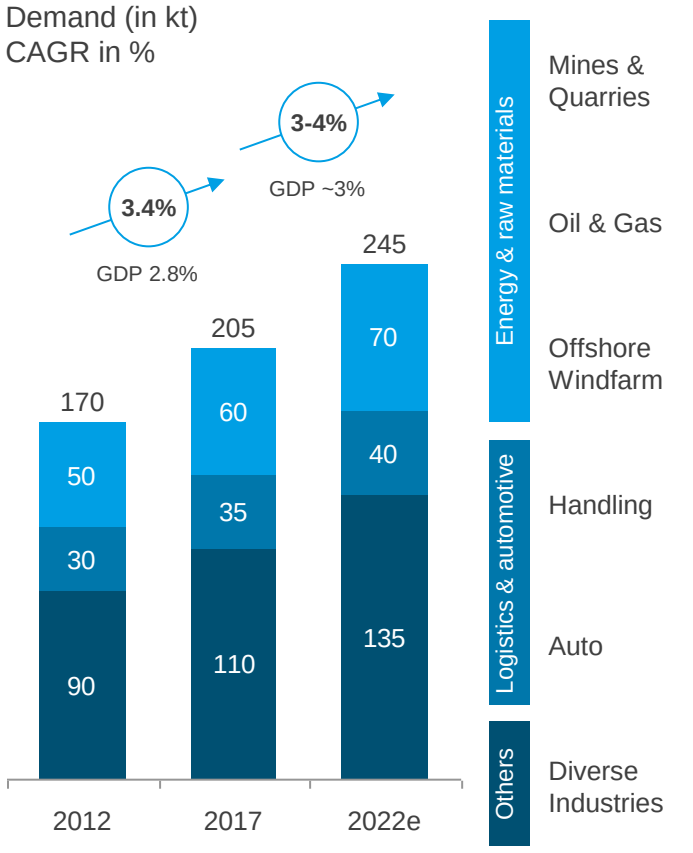
	Industry	Covestro position
Capital intensity	• Intense investments required relative to market size, especially for highly technical product manufacturing (e.g. low-free isocyanates technology)	• Combination of large Covestro manufacturing sites and dedicated production units in main markets
Process technology	• Beside low-free isocyanates technology, relatively limited process complexity	• Covestro owns key technologies: low-free isocyanates, lower reactivity amine-cured MDI-based prepolymers, NDI-based stable prepolymers, etc.
Feedstock integration	• Security of precursor supply essential • Backward integration as major value lever	• Favorable backward integration • Long-term supply contracts for important precursors
Technical capabilities and expertise	• Systems processing demand special knowledge and expertise • Suppliers have to provide molders not only with products but with full technical support	• Superior expertise and know-how in application development and processing • Combined chemistry and equipment solution • Valued and recognized hands-on expertise thanks to the heritage of past molding activity
Proximity to customer markets	• Proximity to customer markets important • Global asset base critical to support ambitions of global customers	• Global presence in more than 80 countries • Production plants in all core regions

Source: Covestro estimates

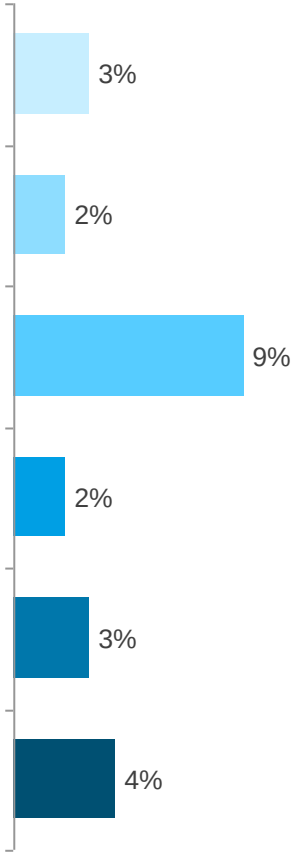
Elastomers industry growth

PU elastomers outperform GDP by addressing key needs like durability and performance

Global PU elastomers industry



CAGR 2017-2022e



Growth drivers

+ Cyclical but continuous growth driven by Chinese needs (> 50% of demand)
+ After years of lower activity and consolidation, market recovery started 2017
+ PU elastomers replace other materials like rubber

+ After a period of excess capacity and low oil price, forecasts return to growth until 2040e (despite lower oil share in future energy mix)
+ PU elastomers potential in maintenance and in new field investments

+ Renewable energy incl. off-shore wind farms expected to grow significantly
+ Covestro well positioned in Europe and China, foreseen to become the global number one

+ Fragmented market, strongly linked to the overall economy
+ Covestro with leading position in the high-end performance segment with Vulkollan® brand

+ Bumpers are a key element for cars, also for e-mobility and car-sharing models
+ Covestro with leading position in the market for jounce bumpers

+ Fragmented market for industrial, sports, leisure and other applications
+ Covestro is well positioned due to a comprehensive product and application portfolio as well as an extensive global distribution network

Innovation example

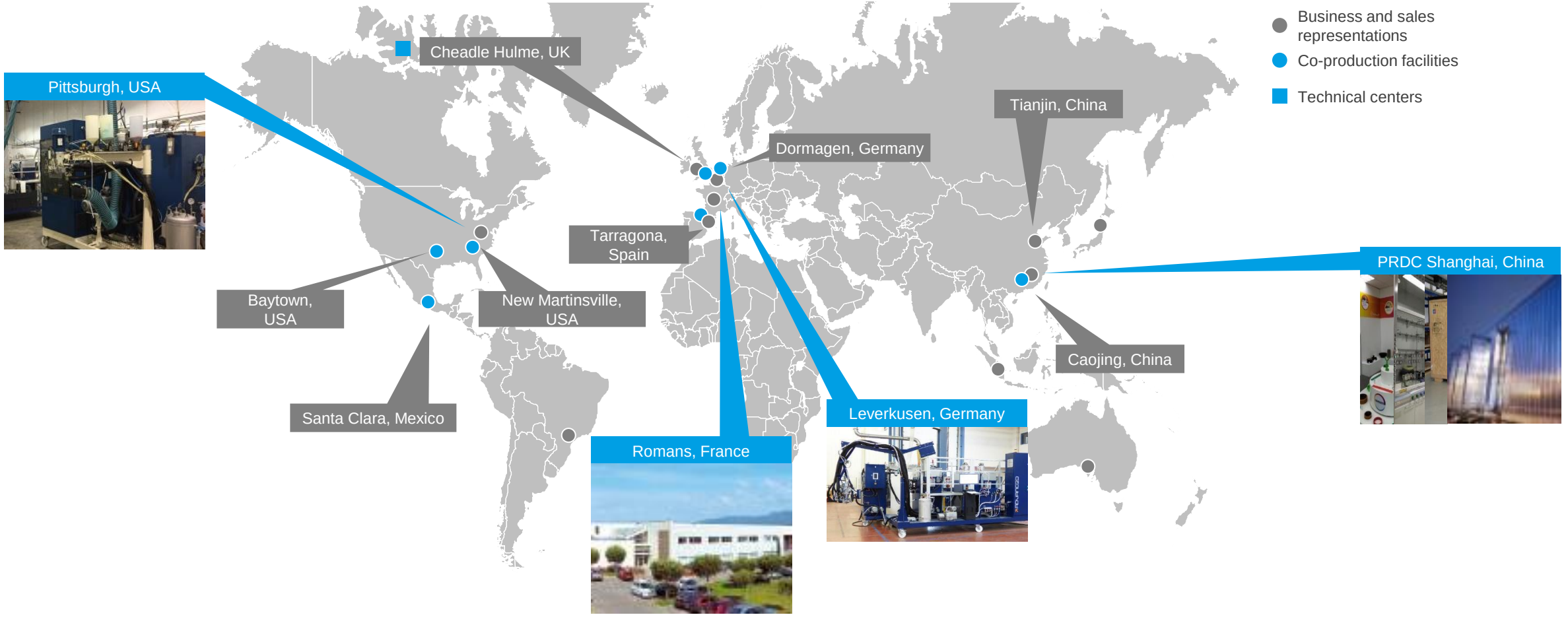
New Baule® machine range: customized added value with modularization and digital Baule® Easy Services

- Individualization, low invest and future-proof require a flexible and upgradable modular platform approach
- Reduced downtime and higher performance are met by Digital Baule® Easy Services
  - online tech support and maintenance
  - online spare part order
  - digital processing data analysis, documentation and optimization
- Launched in 2018, patents pending

Source: Covestro estimates

Covestro Elastomers operations

11 production sites and five dedicated technical centers support customers globally



Elastomers backward integration

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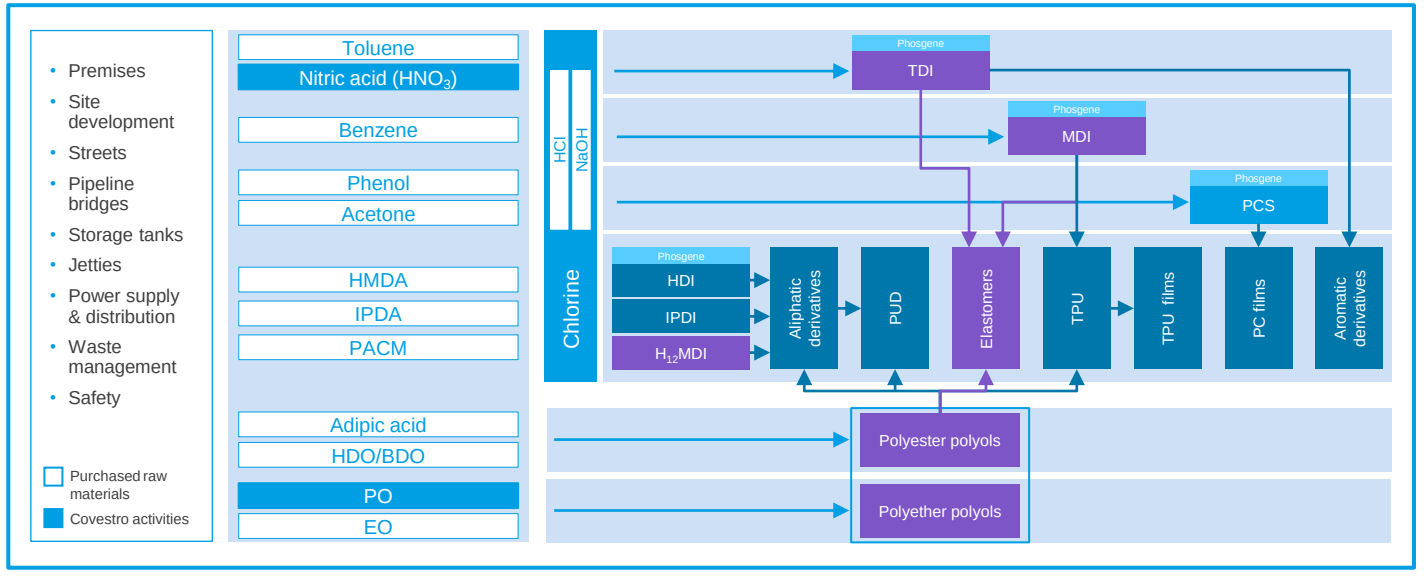


Extended Elastomers value chain

Elastomer production

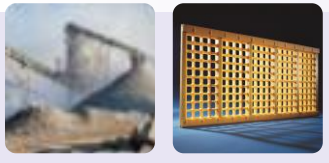
- **Desmodur® Systems**
  - **Prepolymers** (Desmodur®)
  - **Polyols** (Baytec®)
  - **Chain extenders** (Baytec®)

Machine Manufacturing[a]

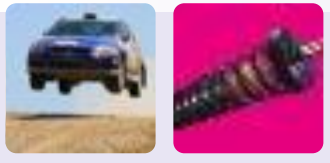
- **Casting equipment**
  - **Baulé® machines**

Applications

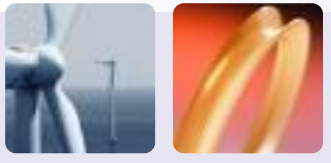
Mines and quarries



Automotive

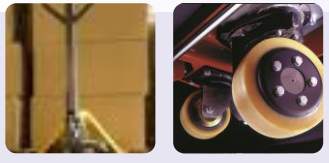


Renewable energies



Oil and gas

Material handling



Notes: Simplified illustration
(a) by Covestro

Coatings, Adhesives, Specialties (CAS)

High Growth Specialties

Textile Coatings
Medical
Cosmetics
Additive Manufacturing

CAS High Growth Specialties

Developing above-average growth niches in adjacent industries

Textile Coatings

High-quality polyurethane dispersions and isocyanate crosslinker materials for various textile coating applications

Market size 2017[(a)]: ~60,000 tons (~200m€)
Market growth CAGR 2017-2022e[(a)]: ~7%
Covestro growth target CAGR 2017-2022e: ~10%

Applications

- For automotive interior: polyurethane synthetics for car seats, dashboards, door panels, etc.
- For sports and outdoor: coated textile with functions such as water-proof and breathable; sports shoes; printings on shoe upper and sports wear; digital printing on textiles
- For technical textiles: polyurethane dispersions dipping for protected gloves; conveyor belts

Medical

New polyurethane-based materials for wound care and wearable devices

Market size 2017[(b)]: ~24,000 tons (~250m€)
Market growth CAGR 2017-2022e[(b)]: ~5%
Covestro growth target CAGR 2017-2022e: >20%

Applications

- New two-component PU adhesives and PU prepolymers for foams allow improved moisture management and higher efficiency in wound care
- Combination products and functionalization with active ingredients are feasible
- Patches in wearable devices as strong growth area

Notes: (a) Sources IAL / M&M / GVR / CPPIA and Covestro estimates
(b) Covestro estimates

CAS High Growth Specialties

Developing above-average growth niches in adjacent industries

Cosmetics

Sustainable film formers as waterproofing as well as conditioning and fixative agents for cosmetic formulations

Market size 2017[(a)]: ~49,000 tons (~500 m€)
Market growth CAGR 2017-2022e[(a)]: ~5%
Covestro growth target CAGR 2017-2022e: >40%

Applications

- High-performance polyurethanes for make-up, nail polish, hair, sun and skin applications
- Baycusan® polymers achieve significantly higher bio-degradability rates than benchmark film formers, reducing the impact on the environment
- Baycusan® Eco line based on renewable raw materials allows customers to formulate cosmetic products with high natural origin content

Additive Manufacturing (3D Printing)

Innovative material solutions for additive manufacturing

Market size 2017[(b)]: ~13,000 tons (~800 m€)
Market growth CAGR 2017-2022e[(b)]: ~20%
Covestro growth target CAGR 2017-2022e: >50%

Applications

- Tailor-made materials for core 3D printing technologies
- In-house expertise and partnerships to enable industrial production
- Strong potential in automotive, medical, sport and electronics sector

Notes: (a) Covestro estimates
(b) Additive manufacturing material; Source: Wohlers Report 2017 by Wohlers Associates; Covestro estimates

»Nobody can turn 80 years of experience into new perspectives.«

»Why not?«

#PushingBoundaries