## **Investor Presentation**

London, June 2017

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## Welcome & Strategy

Patrick Thomas June 29, 2017

covestro.com

CMD 2017 | Strategy

## Agenda Capital Markets Day Covestro, London



#### Thursday, 29<sup>th</sup> June 2017

10:30	Welcome & Strategy
11:00	New Growth Opportunities
11:30	Financial Performance
12:00	Q&A
12:45	Lunch break
14:00	Breakout session I – hosted by heads of business segments
15:00	Breakout session II – hosted by heads of business segments
16:00	Breakout session III – hosted by heads of business segments
17:00	Informal get-together & cocktail dinner
18:30	End

## The presentation team





## The breakout sessions team

#### Head of business segments





## Global leader in high-tech material solutions

Covestro key investment highlights

#### Favorable industry environment

with long-term, above GDP growth prospects in a diverse range of end markets

Portfolio with broad-based geographical and industry footprint with increasing share of differentiated, resilient business

3 Leading and defendable global industry positions as innovation and cost leader



2

Positioned to deliver future volume growth in line with industries through well-invested asset base and smart capex approach

5 Attractive cash flow growth outlook with use of cash focused on value creation



## 1. Favorable industry environment

### Long-term, above GDP industry growth supported by global trends





CMD 2017 Strategy

Notes:(a) Assumes global GDP CAGR 2016–2021e of 2-3% (b) Comprises MDI, TDI and polyether polyols<br/>(c) Shows PU raw materials industry demand in Coatings, Adhesives and SealantsSource:Covestro estimates and Orr & Boss 2016

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## 2. Portfolio with broad-based geographical and industry footprint Covestro core volume growth of +5.1% CAGR in 2014-2016

#### Sales split by regions<sup>(a)</sup>

2016 Group sales in % / Core volume growth, CAGR 2014-2016



#### Sales split by end-market

2016 Group sales in % / Core volume growth, CAGR 2014-2016



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Notes: (a) Based on Covestro Annual Report 2016; EMLA = Europe, Middle East, Africa, Latin America (without Mexico); NAFTA = USA, Canada, Mexico; APAC = Asia, Pacific (b) Automotive with CAGR 2014-2016 Vol. +5%

## 2. Portfolio geared towards differentiated products

Over 50% of sales and ~70% of earnings generated with resilient businesses



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## 2. Margin resilience in CAS

Focus on stable high margins in CAS business with defendable competitive advantages



PCS 31%

Global leading supplier of high performance materials to the coatings, adhesives and sealants industries



- ✓ Low volumes and large number of niche-customized products sold
- ✓ Products tailored to customer needs lead to significant switching efforts
- Product innovation and R&D critical to success

(a) Includes direct customers only
(b) Based on total aliphatic isocyanates volume in 2016 relative to competitors as per Covestro estimates
(c) Excluding contribution of "Other segments / Consolidation"

## 2. Margin resilience in polyols

### Polyether polyols demonstrate inherently stable margins

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#### Resilience of polyether polyols business confirmed in 2016, although at low end of historic band

Note:

#### % of 2016 group sales





- Non-integrated polyether polyols producers with limited competitiveness
- Single capacity addition with little influence on supply / 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 / demand dynamics create local pricing opportunities in the short-term

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## 2. Margin resilience in PCS

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#### Improving portfolio mix

High-value industry application (e.g. automotive, medical, electrical)

- · Greater technical specification requirement
- · Longer lifecycles, higher market growth
- Comprehensive innovation capabilities and technical service is key
- Premium pricing in selected segments

#### Limited disruptions from new capacity additions

- Niche applications with strong differentiation potential
- · Customer intimacy and distinct industry entry requirements
- Investment need for material switch

Resilient portion of PCS volumes improved from ~40% to ~50% in the last 5 years, supported by continuous progress of innovative offerings

## 2. Margin resilience in MDI

#### MDI product portfolio leads to increased resilience in earnings





- Differentiated - Standardized

#### Differentiation potential beyond standardized products

#### Joint sales of polyols and MDI

• Examples: CASE<sup>(c)</sup>, soft furniture, automotive seating

#### Specialty or downstream products

 Examples: Selected MDI grades (pre-polymers, blends, monomeric), TPU

#### Formulations as market access requirement

• Examples: Automotive, appliances

#### **Customized solutions**

Example: Window frames

Differentiated business with ~0.25€/kg higher gross margin

Notes: (a) Contribution margin per kg (b) Resilience measured as standard deviation / average (c) CASE – Coatings, Adhesives, Sealants and Elastomers

Volatility<sup>(b)</sup>

## 3. Global industry positions

#### Covestro is a leader across its entire portfolio





Operation of global platform essential

## 3. Innovation leadership

#### Pushing boundaries in use of alternative raw materials





## 3. Leading process technologies

Competitive advantages based on world-class chemical engineering





## 3. Competitive cost position

#### Leading cash costs across business segments and regions



#### Highlights

 MDI / TDI are mainly regional industries due to relatively high transportation costs, whereas PC is a rather global industry

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- In the US, there are only 2-4 producers, whereas APAC is most fragmented with around a dozen players for each product
- Covestro is the global low-cost producer in TDI / PCS with a cash cost advantage of ~50% / ~30% compared to the average of the 5 least competitive plants
- Covestro is one of the low-cost producers in MDI, which has a relative flat cost curve given the limited cash cost advantage of only ~20% between the average of the best and worst 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 on nameplate capacity for FY 2016
  - (b) Cost ex gate, 82% utilization rate for all plants based on nameplate capacity for FY 2016. Integrated players are shown without any margins for BPA, phenol, acetone, etc.

## 4. Historical industry development and outlook

Above GDP growth driving industry capacity utilization and supporting stable margins





## 4. World-scale production assets – timing

## Sample timeline for industry-typical, green-field project planning and construction process



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## 4. World-scale production assets – announcements

Delayed execution to be considered with every announcement



Current examples for delayed projects:								
Business	Project	Country / Region	1st public reference	Initial start-up plan	Delayed by	Expected start-up		
MDI	Project S	KSA	2011	2016	~2 years	Expected mid 2017		
MDI	Project H	US	2014	2018	>2 years	Beyond 2020		
MDI	Project W	US	2015	2020	~1 year	Expected 2021		
MDI	Project B	China	2007	2010	~5 years	~50% capacity in 2015 / full in 2017		
TDI	Project S	KSA	2011	2016	~2 years	Expected H2 2017		
TDI	Project B	Germany	2011	2014	~4 years	2016 / full capacity in 2018		
TDI	Project W	China	2010	>2014	~4 years	Expected 2018		
TDI	Project HJ	China	2011	2015	~3 years	Expected 2018		
PCS	Project SS	China	2008	2009	>10 years	Beyond 2019		
PCS	Project N	China	2011	2013	~2 years	2015		
PCS	Project P	Thailand	2007	2010	>10 years	Beyond 2020		

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## 4. Modeling future supply additions

Illustrative example of the wave effect in supply models



#### Typical supply model assumes oversupply in the coming year



- Supply models are usually based on public information
- · Delays and / or cancellations are commonly not announced by companies or publically available
- In models, delayed capacities are moved to the next year, thus add up and create an unreal, inflated level of supply additions in the following years

## 4. World-scale production asset – investments

#### Industry-typical investments for green-field plants





Notes: Chart contains key feedstock only (a) via Deacon or HCI-ODC technology and / or Chloralkali Electrolysis, (b) Interface process, (c) Melt process

## 4. Planned and optional Covestro capacity additions

Young asset base allows growth through smart capex approach





## 4. Smart capex approach: Caojing capacity expansions

Examples for specific investment cost developments







Commitment to deliver free operating cash flow





## Leverage industry leadership to capture growth Covestro strategy



#### Capture market growth

over the next years with existing world-scale assets and our smart capex approach

#### 2 Improve cost position align overall costs

align overall costs with best-in-class chemical industry benchmarks

#### Protect and build profitable competitive positions through focused R&D

Embed sustainability in every element of the strategy





# New Growth Opportunities (Innovation)

Dr. Markus Steilemann June 29, 2017



CMD 2017 New Growth Opportunities



## Polymers – ubiquitous in modern life

The material of the 21st century

Indispensable in our daily lives

Cars Buildings Electronic devices

#### Used in key fields

**熱 価格** 

Sporting goods Medical technology And much more Attractive niche markets

## Right answers for big challenges

Covestro set to outpace global growth





## Covestro - driving growth through innovation leadership Innovation highlights





Product innovation is long-term driver of above GDP growth addressing ever-changing customer needs for new material solutions



based on newly introduced marketing led stage gate process



Focused R&D to build and protect profitable competitive positions with ~20% of budget allocated to process R&D, critical to maintain cost leadership position



Innovation leadership in the industry with continuous break-through contributions as the inventor of polyurethanes and polycarbonates

## Long tradition of research

#### 80 years of ideas and inventions at Covestro



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2015

# Focused R&D to build and protect profitable competitive positions covestrol Stage gate funnel

**Progress of product and process innovation projects**<sup>(a)</sup>



- Harmonized process across all regions & BUs
- Best allocation of resources aligned with Marketing Process
- Fully implemented in 2016

## Making wind power plants more efficient

Climate change: renewable energy



#### Trend Need Market Covestro contribution More durable and economical wind Climate change power plants Novel components for Energy wind power plants consumption<sup>(a)</sup> CAGR: ~3% Rotor blades: • Polyurethane resins for more stability and Offshore wind durability energy<sup>(b)</sup> CAGR: ~19% Towers: • **Polyurethane** materials for anticorrosion coatings Undersea cables: • **Elastomers for** protection systems

## Enabling highly efficient insulation



#### Climate change: lower energy buildings



## Fostering LED technology

#### Urbanization: energy-efficient lighting





#### CMD 2017 | New Growth Opportunities

Sources: (a) CSIL January 2017 for 2017 - 2021 (b) Covestro estimates

Eco-friendly produced furniture

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## Lowering CO<sub>2</sub> footprint

#### Urbanization: sustainable living

Urbani

zation

Need

New bio-based hardener Coating industrial for water-based wood furniture market<sup>(a)</sup> coatings CAGR: ~3% **Furniture surface** • protection in demanding Waterbased environments like industrial furniture bathrooms and kitchens market<sup>(b)</sup> CAGR: ~5% •

Covestro contribution

Market

- Biomass content of 66% and improved carbon footprint
- High hardness and chemical resistance



Trend
# Replacing harmful by water-based ingredients

### Population & prosperity growth: functional clothing





Sources: (a) IAL PUD market report 2015 for 2014 – 2019 (b) Covestro estimates

# Lower energy consumption and higher consumer satisfaction Population & prosperity growth: food preservation





# Solutions for growth in temperature-controlled shipments



### Increased mobility: goods transport



Sources: (a) World Cargo News (Feb 2017), Drewry Maritime Research (Feb 2016), for 2016 – 2021 based on No. of "normal" container in Units or TEU (2 TEU ≈ 1 FEU)

(b) All four global reefer manufacturers, World Cargo News, Drewry Maritime Research, Sextant Consultancy, Irish Shipbrokers, in units or FEU

# In the sweet spot of replacing traditional materials

### Increased mobility: focus on light-weight and quality





Sources: (a) LMC 01/2017 for 2016 – 2021 (b) Covestro estimates for 2016 – 2021

# Conventional car: exterior

Lightweight and aerodynamic





### CAS

Metal body coatings, bumpers, body panels

### PCS

Panoramic roofs, tailgates, roof panels, pillar covers, rear mirrors, filler flaps, headlamps, rear lamps, fog lamps, radiator grills

### PUR

Car body parts, noise insulation, under the hood applications

# Conventional car: interior

### Individual and comfortable



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### CAS

Airbags, door panels, window shields, leather & topfinish, coatings, cockpit

### PCS

Cockpit, pillar covers, middle consoles, seat covers, glove boxes air vents

### PUR

Seatings, headliners, instrument panels, load floors, head rests

# Technology enabler

## Increased mobility: E-vehicles and autonomous driving





# Future car: exterior

### Materials inspiring autonomous E-vehicles



# **Design freedom** Unique aesthetic Good aerodynamics Holographic lighting Integrated light and signal elements, sensors, antennas Vehicle to environment communication Entirely new possibilities in design Wrap-around glazing Improved visibility Enhanced safety Less weight Better thermal management

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# Future car: interior

Materials inspiring design and functionality



### Interactive 3D displays

Innovative rear projection solutions

# Surfaces with integrated features

Displays, touch screens for multiple styling options and brand differentiation

### Efficient manufacturing

Direct Coating, a cost efficient lean onestep process of coated polymer components covestro

# Covestro - driving growth through innovation leadership Innovation highlights





Product innovation is long-term driver of above GDP growth addressing ever-changing customer needs for new material solutions



based on newly introduced marketing led stage gate process

# 3

Focused R&D to build and protect profitable competitive positions with ~20% of budget allocated to process R&D, critical to maintain cost leadership position



Innovation leadership in the industry with continuous break-through contributions as the inventor of polyurethanes and polycarbonates



# Financial Performance

Patrick Thomas June 29, 2017

CMD 2017 | Financial Performance

# Attractive cash flow profile

Key financial highlights



#### Strong cash generation history and future commitment

driven by volume growth, operational leverage and profitability enhancement measures

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#### Smart capex approach

balances required capacity additions and capital-efficient growth investments



# Disciplined M&A strategy with focus on value creation

follows clear strategic direction, defined process and strict financial criteria



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#### Commitment to return excess cash to shareholders after 24 months without significant M&A activity

### Attractive dividend policy

with focus on increasing or at least stable dividends going forward

# FY 2014-2016 – Sales bridge

### Dynamic volume growth



#### Sales bridge in € million +911-1,529 11,904 +761Volume 11,761 FX **Price** +1.2% 4.794mt 4.342mt +10.4% Core volumes Core volumes 2014 2016

#### Highlights

#### Dynamic volume development

- Core volumes (in kt) expanded by +10.4% since 2014
- Sales volumes (in €) expansion of +7.7% since 2014
- Core volume growth above sales volume expansion due to declining non-core volumes

#### Prices and FX effects

- Selling price decline driven by lower raw material prices
- Lower selling prices negatively impacted sales by 13.0% since 2014
- FX effects contributed +6.5% since 2014 mainly due to stronger USD

### Volume 1,161 Pricing Delta +73%

### **Highlights**

#### Positive volume leverage

- Driven by all segments
- Ongoing growth expected to deliver €100-150m volume leverage p.a.

#### Improved cash margin

- Positive pricing delta driven by all segments
- PCS contributed approx. 2/3 of pricing delta effect, after industry emerged from optical media decline

#### Other items driven by FM & STI

Higher costs from force majeure (FM) and bonus provisions (STI: short-term incentive)

EBITDA bridge

Adi

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FY 2014-2016 – Adj. EBITDA bridge

Positive pricing delta and volume leverage drive earnings growth



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# Adj. EBITDA per ton development

Current earnings levels are not excessive by historic standards



#### EBITDA per ton<sup>(a)</sup> development Highlights Adi Several years of high earnings levels recorded prior to 2008 financial crisis Global corrections of GDP Index: 2006 level = 100 growth assumptions in 2008/ 2009 resulted in oversupply for many years Adjusted industry supply assumptions are now aligned with adjusted GDP growth expectations of 2-3% p.a. Comparing asset utilization levels, 2017 and following years are expected to operate on higher levels compared to 2007 and before Covestro stand-alone 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017e operating costs per ton in mid-term future expected to consensus Group adj. EBITDA per ton of core volume PUR adj. EBITDA per ton of core volume be lower compared to pre-IPO Indicative share of expected TDI fly-up margin in 2017

#### CMD 2017 | Financial Performance

## Strong momentum continues

	FY 2016	Guidance FY 2017	Guidance update as of Apr. 25
Core Volume Growth	+7.5%	Low- to mid-single-digit percentage increase Y/Y	Unchanged
FOCF	€1,367m	Slightly above the average of the last three years	Significantly above the average of the last three years
ROCE	14.2%	Slightly above the 2016 level	Significantly above the 2016 level
Additional financial expectations	FY 2016	Guidance FY 2017	Guidance update as of Apr. 25
EBITDA 2017 FY	€2,014m	At or above the 2016 level	Significantly above 2016
EBITDA 2017 Q2	Q2: €542m	n.a.	Significantly above Q2 2016
D&A	€683m	~€650-700m	~€650m
Financial results	€-196m	€-170 to -190m	€-180 to -200m
Tax rate	29.0%	≤30%	Unchanged
Capex	€419m	~€550m	Unchanged



# Smart capex approach

## Expand existing asset base through capital-efficient growth investments



#### Highlights

#### **Until 2008**

- Capacity expansion through growth investments
- Building up an integrated, multi-BU, worldscale site in Caojing, China, as APAC production hub

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#### 2009 to 2016

- Continue expansion of Caojing site
- Increasing utilization of underutilized assets
- Optimize regional production network

#### 2017e to 2021e

Accompany industry growth by adding capacity through smart capex approach

#### 2022e and beyond

- New growth investments lead to capacity expansions
- Strengthen leading industry positions

# Disciplined decision process for capex projects

### Focus on value creation



Financial fit	<ul> <li>ROCE (return on capital employed)</li> <li>NPV (net present value)</li> <li>POT (pay-off time)</li> </ul>		
Strategic fit	<ul> <li>Relevancy for strategy realization</li> </ul>		
Process	<ol> <li>Definition of resource framework</li> <li>Definition of strategic priorities and financial expectations</li> <li>Prioritization of investment proposals:         <ul> <li>Maintenance capex projects: risk assessment, financial impact from project delay</li> <li>Growth and efficiency capex projects: ROCE, NPV, POT and strategic fit</li> </ul> </li> <li>Approval of overall project portfolio by Covestro Board of Management and inclusion in Covestro financial plan</li> <li>Individual project approval according to stage-gate process</li> </ol>		

# Savings potential: structured profitability enhancement program Net saving expected to start ramping up in 2018





# Example 1: Lowering maintenance costs

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	Key Measures			Status
optimiza plan Cost improver		Facility and asset management cost improvements	<ul> <li>Global initiative to reduce facility and asset management costs</li> <li>More efficient turnaround execution</li> <li>Further operational optimizations</li> </ul>	
	Asset optimization plan	Asset restructuring / efficiency projects	<ul> <li>Closure of Belford Roxo</li> <li>TDI EMEA restructuring</li> <li>Site consolidation: closure of South Korea PC sheet production</li> </ul>	executed executed executed
		Continuous improvement	In manufacturing area	ongoing
	Cost improvement measures       BU-level specific savings       • Streamline sales force and back-office • Focus on core areas and customers • Consolidation within regional functions, product manage		<ul> <li>More tailor-made service function designs to replace TSA<sup>(a)</sup> with Bayer,</li> </ul>	initiated
			ongoing	
		Continuous improvement	In non-manufacturing area	ongoing

#### Maintenance cost reduction program

- Goal: reduce annual spending for maintenance of production facilities globally by gross ~€100m
- Running multi-year facility and asset management cost savings program, based on pre-IPO (FY 2014) cost basis

#### **Response to intense competition**

- Maintenance cost analysis revealed significant savings potential
- Cost efficiency must never come at the expense of safety and plant availability

#### Multitude of bottom-up projects

- Almost every plant and site contributes to this program.
- Measures were implemented to improve the efficiency and effectiveness of our maintenance, inspections, and process cleaning activities; reducing the demand for service contractors

Realize gross savings of ~€100m

# Example 2: Streamlining IT landscape

### Achieve best-in-class IT cost level in the chemical industry



Key Measures			Status
	Facility and asset management cost improvements	<ul> <li>Global initiative to reduce facility and asset management costs</li> <li>More efficient turnaround execution</li> <li>Further operational optimizations</li> </ul>	
Asset optimization plan	Asset restructuring / efficiency projects	<ul> <li>Closure of Belford Roxo</li> <li>TDI EMEA restructuring</li> <li>Site consolidation: closure of South Korea PC sheet production</li> </ul>	executed executed executed
	Continuous improvement	In manufacturing area	ongoing
	Corporate overhead cost savings	<ul> <li>Streamlining IT landscape and services</li> <li>More tailor-made service function designs to replace TSA<sup>(a)</sup> with Bayer, e.g. Shared Service Center in Bratislava</li> </ul>	
Cost improvement measures	BU-level specific savings	<ul> <li>Streamline sales force and back-office</li> <li>Focus on core areas and customers</li> <li>Consolidation within regional functions, product management and sales</li> <li>Maximize use of existing trade and distribution channels</li> </ul>	ongoing
	Continuous improvement	In non-manufacturing area	ongoing

#### **Streamlining IT**

- · Goal: standardization and lean IT solutions
- Actions (examples): move HR landscape to cloud solution; migrate SAP master data system to SAP P1; streamline approx. 80 product data collecting systems to a product life management solution; consolidate all internal service offerings into and onto one platform "Service4you"

#### Economies of scale

- Goal: Realize synergies through review of all IT contracts with focus to optimize offerings on a global level
- Actions (examples): Lenovo global PC fleet; Ricoh global printing fleet; Vodafone phone and data plans

#### Modernizing IT landscape

- Goal: Meeting business expectations through future orientated technology based on standards and business needs
- Actions (examples): Take advantage of simplifications, standardizations and consolidations while renewing workplace and infrastructure services; transition into a smart business cloud that opens up new paths towards collaborative ecosystems and further enhances Covestro's digital capabilities

# Example 3: Optimizing service delivery model

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### Create best-in-class shared service center

Key Measures			Status
	<ul> <li>Facility and asset</li> <li>Global initiative to reduce facility and asset management costs</li> <li>More efficient turnaround execution</li> <li>Further operational optimizations</li> </ul>		ongoing
Asset optimization plan	Asset restructuring / efficiency projects	<ul> <li>Closure of Belford Roxo</li> <li>TDI EMEA restructuring</li> <li>Site consolidation: closure of South Korea PC sheet production</li> </ul>	executed executed executed
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	Continuous improvement	In non-manufacturing area	ongoing

#### **Future Accounting SSC set-up**

- Global shared service center (SSC) hub located in Bratislava, Slovakia, plus satellite in Shanghai, China
- Main task is processing major accounting services globally for Covestro, e.g. accounts payables and receivables, financial closings
- Optimized service delivery model end-to-end (SSC, robotics center and local finance)
- Expected go-live in April 2018

#### **Process design and innovation**

- Strong global process ownership model
- Increased automation
- End-to-end process optimization

#### **Enhanced governance model**

- · Optimized activity split
- Streamlined process governance model
- Integrated global process governance organization

# High EBITDA to FOCF conversion rate

### Record FOCF in 2015 and 2016





#### Highlights in 2016

- The FOCF to EBITDA conversion rate increased to 68% compared to 59% in 2015 due to the absence of cash-out for special items
- Working capital to sales ratio almost unchanged at 15.6% vs. 15.4% end of 2015, in the targeted range of 15-17%
- Capex of €419m significantly down Y/Y partly due to project delays; capex below D&A of €683m; D&A/sales above long-term average given the young asset base and the conservative life time applied
- High cash-tax rate of 37% vs. effective tax rate of 29% due to prepayments

# Track record of reducing total net debt

### Strong balance sheet





#### Highlights – as of Q1 2017

- Total net debt (net financial debt plus pension provisions) to EBITDA ratio<sup>(a)</sup> reduced to 1.1x
- Target of 1.5x achieved earlier than previously assumed, driven by strong cash flow generation
- Pension provisions decreased to €1,144m due to CTA funding of €450m in Q4 2016 and lower interest rates
- Equity ratio further improved to 44%
- Long-term commitment to a solid investment grade rating, since IPO "Baa2" by Moody's

# Cumulative FOCF for next 5 years

Commitment to deliver free operating cash flow





# Use of free cash flow

## At the core: value creation and cash return to shareholders



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# Disciplined M&A approach with focus on value creation

Clear strategic direction, defined process and strict financial criteria



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# Commitment to return excess cash to shareholders

### After 24 months without significant M&A activity





# Attractive cash flow profile

Key financial highlights



### Strong cash generation history and future commitment

driven by volume growth, operational leverage and profitability enhancement measures

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#### Smart capex approach

balances required capacity additions and capital-efficient growth investments



# Disciplined M&A strategy with focus on value creation

follows clear strategic direction, defined process and strict financial criteria



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#### Commitment to return excess cash to shareholders after 24 months without significant M&A activity

### Attractive dividend policy

with focus on increasing or at least stable dividends going forward



# Financial Performance

Appendix

COVESTRO.COM CMD 2017 | Financial Performance

# STI solely based on three financial Group KPIs

Short-term incentive program "Profit Sharing Plan (PSP)"



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#### **Program details**

 Based on three equally weighted Group performance metrics core volume growth, FOCF and ROCE above WACC

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- PSP target amounts (equal 100% payout) are a percentage of annual base salary, linked to individual position grade, ranging from 9% for non-managerial level to 100% for board members
- For each metric, payout can range from zero to 300%, depending on Group achievement levels; total payout capped at 250%



Notes: Participation description based on German eligibility; may vary in other countries

# LTI component based on total shareholder return



### Long-term incentive program "Prisma"



#### **Program details**

- Cash settled plan with four-year performance periods (January to December)
- Globally consistent program for all eligible employees
- Target amount based on fixed percentage of annual base salary
- Payout criteria based on:
  - TSR (Total Shareholder Return) as absolute performance criterion
  - Outperformance factor as relative payout criterion based on STOXX<sup>®</sup> Europe 600 Chemicals index
- Start and end prices for Covestro share and index are determined by the average closing prices during November and December before the start and at the end of the performance period

# Benchmark analysis of incentive programs

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#### Range of metrics

#### Figure 6: Eclectic range of metrics used

Exane BNP Paribas study

Estimated low/mid/high (indicated by shading) exposure of total variable compensation to metrics



#### Highlights

- Study confirms Covestro's focus on few, meaningful KPIs
- Covestro is one of three companies with highest exposure of Return on Capital Employed on total variable compensation, reflecting high emphasis on value creation
- The study confirms a "high exposure" of the variable compensation elements (volume growth, cash flow and ROCE for STI, TSR for LTI) to the used KPIs – Covestro is the only company with high score in *all* analyzed KPIs
- The incentive components are also in comparison with competitor companies – well aligned with external targets and thus provide a strong pay-for-performance relation



# Polyurethanes (PUR)

# Dr. Markus Steilemann June 29, 2017



# Solid earnings growth potential through global PU leadership PUR key investment highlights



### Attractive industry outlook

based on robust structural demand growth and stable supply / demand dynamics



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### Global #1 producer of PU

with leading and defendable industry positions owing to distinct entry requirements, broad customer base and access as well as polyols-driven innovation capabilities<sup>(a)</sup>



Well-invested asset base and growth through smart capex complemented by evaluation of investment options to capture long-term market growth

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

### EBITDA growth potential

driven by volume growth and product mix improvements

Notes: (a) As well as integral foam, semi rigid foam, RIM, TPU and CASE (Coatings, Adhesives, Sealants and Elastomers) applications (b) Includes all MDI, TDI and polyether polyols facilities that partially reside at one site; feedstock, TPU and systems houses are excluded (c) Based on total combined nameplate capacity for MDI, TDI and polyether polyols in 2016 year end as per Covestro estimates

# Inventor of and leader in polyurethanes PUR at a glance

- Inventor and producer of polyurethane raw materials and formulations mainly for rigid and flexible foams<sup>(a)</sup>
- Broad portfolio spanning MDI and TDI (isocyanates) and polyether polyols
- Competitive integration from feedstock to formulations
- Global production platform comprising 18 facilities located in Europe, USA and Asia<sup>(b)</sup>
- Total production capacity of around 3,500kt globally
- Largest business unit generating half of Covestro sales and above 40% of EBITDA in FY 2016






# Full scope advantage as basis for innovation and growth

Industry structure and position





Advantages of broad access play		
Full innovation leverage	<ul> <li>Full-spectrum chemistry scope allows for broad solutions offering</li> <li>Global backbone in technical support and production start-ups for customers</li> <li>Proximity to customers and customized blends</li> </ul>	
Broad coverage of customer needs	<ul> <li>Reliable supply out of large production facilities globally</li> <li>Joint sales of polyols and isocyanates ("one-stop-shop") allow for economies of scope</li> <li>Offering of specialty polyol and isocyanate grades</li> </ul>	
Smoothened cyclicality	<ul> <li>Optimized asset utilization at any point in the industry cycle</li> <li>Broad geographical, customer and application portfolio</li> <li>Strong positioning in niche application segments</li> </ul>	

CMD 2017 | PUR

# Balanced business with attractive growth and margin trajectory PUR in numbers





# Sustainable solutions leading to above GDP growth

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### Tailwind from macro trends

-4%       -19.5         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	Global PU industry <sup>(a)</sup>	Macro trend	Impact on industries		PUR solu	tion example
16.1       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         16.1       Population growth       Increasing needs for more intelligently insulated buildings       Image: Comfort insulation material for lightweight vehicles and enhanced consumer driving experience       Enhanced insulation       Desmodur® (energy-efficie material for load floor) Baynat® headliners with improved acoustic         Digital revolution       Unleash the power of artificial       Image: Source of the power of artificial	AGR in %		0	•	Closing carbon cycle	
Increasing needs for more intelligently growth       Increasing needs for more intelligently insulation       Destinudul (energy-enicle insulation         Insulation       Increasing needs for more intelligently insulation       Material for lightweight vehicles and enhanced consumer driving experience       Imanded insulation       Baypreg® (Composite material for load floor) Baynat® headliners with improved acoustic         Digital revolution       Unleash the power of artificial       Intelligent solutions       BayCap® (intelligent	~19.5	Urbanization	Material for comfort adapted to higher	•		Baytherm <sup>®</sup> Microcell (high- efficient microcellular foam) Bed in box
Mobility       enhanced consumer driving experience       Smart mobility       material for load floor) Baynat® headliners with improved acoustic         Digital revolution       Unleash the power of artificial       Intelligent solutions       BayCap® (intelligent	16.1			•	Enhanced insulation	Desmodur <sup>®</sup> (energy-efficien insulation material)
		Mobility	enhanced consumer driving	•	Smart mobility	material for load floor) Baynat <sup>®</sup> headliners with
		Digital revolution		•	Intelligent solutions	

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

# PU industry expected to grow at CAGR ~4% until 2021

## Global PU industry growth driven by various applications





# Market-driven innovation as key value driver PUR R&D highlights







# Polyether polyols

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# Leading global player in industry with growth 1-2pp above GDP MDI at a glance





- Leading supplier in all key regions for MDI consuming industries
- Robust growth expectation of 1-2pp above GDP support stable industry utilization / margin outlook
- Covestro to grow volumes in-line with industry growth based on smart capex approach
- World-scale integrated production facilities support competitive cost position<sup>(a)</sup>
- Proven track record of cost discipline with asset restructuring potential in Europe to deliver further efficiency upsides
- Uplift potential in EBITDA due to volume growth and product mix improvements

# Diverse end-markets in all regions support robust growth



### MDI industry demand outlook



CMD 2017	PUR
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Notes: (a) Figures represent CAGR 2016-2021e (b) CASE - Coatings, Adhesives, Sealants and Elastomers (c) Include applications such as flexible foams and polyurethane elastomer used in e.g. coated textiles and shoe soles

# MDI product portfolio leads to increased resilience in earnings **MDI** margin resilience





Examples: CASE<sup>(c)</sup>, soft furniture, automotive seating

### Specialty or downstream products

Examples: Selected MDI grades (pre-polymers, blends,

### Formulations as market access requirement

• Examples: Automotive, appliances

### Differentiated business with ~0.25€/kg higher gross margin

# Strong industry position supported by distinct entry requirements MDI overview



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	Industry	Covestro position
Capital intensity	<ul> <li>Considerable investment required to develop world-scale plants<sup>(a)</sup></li> <li> €1.1 - 1.4bn investment for full train</li> <li>Approx. 5 years to full operation after completed environmental impact assessment</li> </ul>	<ul> <li>Well-invested, large- to world-scale asset base</li> <li>Economies of scale</li> <li>Total capacity 1,420kt<sup>(b)</sup></li> </ul>
Process technology	<ul> <li>State-of-the-art technology along the process chain of high importance</li> </ul>	<ul> <li>Competitive process technology</li> <li>Cost leader in NAFTA and advantageous position in Asia</li> <li>Restructuring potential in EMLA</li> </ul>
Feedstock integration	<ul><li>Security of precursor supply essential</li><li>Backward-integration as major value lever</li></ul>	<ul> <li>Favorable backward-integration</li> <li>Long-term supply contracts for important precursors</li> </ul>
Technical capabilities and expertise	<ul> <li>Systems demanding greater knowledge and expertise</li> <li>Permits required to handle hazardous feedstock, e.g. phosgene</li> </ul>	<ul> <li>Superior expertise and know-how in application development and customer insight</li> <li>Reputation cemented through 60+ years experience</li> </ul>
Proximity to customer markets	<ul> <li>Importance of proximity to customer markets</li> <li>Global asset base critical to support ambitions of global customer base</li> </ul>	<ul><li>Diverse, global footprint</li><li>Plants in all core regions</li><li>Ability to service all key areas of demand</li></ul>

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# Well-positioned production network to supply customers globally Covestro MDI operations



# jions covestro

# Leading cost position in US, efficiency potential in other regions MDI regional industry cost curves



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
- D Chinese leader with larger backward-integration including energy supply
- E Covestro ahead due to larger MDI train capacity and energy efficiency

# Competitive cost position through continuous improvements Covestro asset efficiency





### Closure of Belford Roxo, Brazil

- Operations discontinued since July 2015
- Decision driven by relative cost competitiveness vs. other production sites

### Continuous optimization of global production set-up

- Caojing capacity to be debottlenecked to 500kt p.a. by 2018e
- Brunsbuettel expansion to 400kt p.a. in H2 2018e to leverage existing site-infrastructure

# Smart capex approach to secure growth

## Covestro plans for capacity expansions



Shanghai China



### Brunsbuettel expansion of 200kt p.a.

- Possible re-usage of idle TDI infrastructure and precursors in Brunsbuettel enable economic doubling of MDI capacity by 200kt p.a.
- Expected on stream by end of 2018

### Shanghai debottlenecking of 40kt p.a.

- World-scale plant in Caojing to reach targeted capacity of 500kt p.a. in 2018e
- Mid-single digit m€ investment backed by additional market demand

### Various options for additional MDI growth will be investigated

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





# Polyether polyols

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# Global leader in long-term growth industry TDI at a glance





- Globally leading producer of TDI with number one positions in all major regions
- Demand growth around 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 technology and integrated, world-scale asset base<sup>(a)</sup>
- Cost savings and increased profitability out of restructuring of European asset base
- Growth into recently expanded world-scale asset base

# Diverse end-markets across all regions support robust growth TDI industry demand





Underlying application growth driver <sup>(a)</sup>		
Bedding	~3-4%	
Furniture	~3-4%	
Automotive	~3%	
CASE <sup>(b)</sup>	~4-5%	

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

# Strong industry position supported by distinct entry requirements TDI overview



	Industry	Covestro position
Capital intensity	<ul> <li>World-scale plant<sup>(a)</sup> requires:         <ul> <li>€0.8-1.1bn investment for full train</li> <li>Approx. 5 years to full operation after completed environmental impact assessment</li> </ul> </li> </ul>	<ul> <li>3 world-scale production facilities and total capacity of 720kt</li> <li>Benefits from economies of scale</li> </ul>
Process technology	<ul> <li>Advanced technology along the process chain important particularly in high cost locations</li> <li>Limited options for licensing</li> </ul>	<ul> <li>State-of-the-art gas-phase phosgenation (GPP) technology leading to global cost leadership<sup>(b)</sup> <ul> <li>highly cost efficient and eco-friendly</li> </ul> </li> </ul>
Feedstock integration	<ul><li>Supply contracts as standard option</li><li>Backward-integration advantageous</li></ul>	<ul><li>Long-term supply contracts for important precursors</li><li>Favorable backward-integration</li></ul>
Technical capabilities and expertise	<ul> <li>Permits required to handle hazardous feedstock, e.g. phosgene</li> <li>Track record and suitable infrastructure important</li> </ul>	<ul> <li>World-class expertise and know-how in customer-centric application development</li> <li>Proven reputation with 60+ years experience</li> <li>Impeccable safety record</li> </ul>
Proximity to markets	<ul> <li>Benefits for established global players</li> <li>Required to service large-scale multi-nationals with diverse operations</li> </ul>	<ul><li>Global footprint and customer insight</li><li>Facilities in all core regions</li></ul>

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# Efficiency program to enhance quality of existing assets Covestro TDI operations





# Global cost leadership by scale, integration and technology TDI regional industry cost curves





- 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



# Polyether polyols

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# Leading position in polyether polyols as distinctive component Polyether polyols at a glance





- 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

# Polyether polyols drive innovation as competitive advantage Role of polyether polyols in Covestro portfolio



### Polyether polyols mixed with isocyanates lead to versatile applications

### **Rigid foam**

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

### Flexible foam





# Global #2 producer with strong positions in NAFTA and EMEA Polyether polyols position in the industry





- 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; ~50 small producers<sup>(b)</sup> account for ~20% share
- 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

# Polyols industry spreads

# Polyether polyols demonstrate inherently stable margins



### Resilience of polyether polyols business also confirmed in 2016, although at low end of historic band

% of 2016 group sales





- Non-integrated polyether polyols producers with limited competitiveness
- Single capacity addition with little influence on supply / 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/demand dynamics create local pricing opportunities in the short-term

# Competitive cost position through PO backward-integration



### Joint venture with LyondellBasell

### 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



# Polycarbonates (PCS)

Michelle Jou June 29, 2017

# Well-positioned to capture global demand

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## PCS key investment highlights



### High-value, differentiated business

with more than 1,000 different PC grades ranging from ~€1.5 to ~€15 per kg



### Increasing earning resilience

driven by continuous product mix improvements



### Opportunity to outgrow the industry

taking shares for three consecutive years, outgrowing in high value-added applications



### Leading global player in an attractive industry with above GDP growth, driven by broad application range



Well-invested, young and highly efficient asset base based on low-cost production and smart capex approach

# Global leading producer of polycarbonates

# PCS serving key growth end-markets

- Global leader and inventor of polycarbonates
- Offers products and solutions for a wide range of applications
- Integrated production processes along the value chain
- Global platform with 5 production sites, 5 R&D centers, 7 compounding centers and business unit headquarter in Shanghai, China
- Total production capacity of 1,480kt



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# Reach and access to customers is key competitive advantage



Global asset footprint with world-scale plants<sup>(a)</sup> in all key regions



### Primary production plants

 Production of polycarbonate resin for either external sales or internal feedstock for compounding and sheet plants

### **Compounding plants**

- Refinement of polycarbonate resin with color and / or other additives (e.g. ABS)
- Color matching, technical service and smallscale production capabilities

### Sheet plants

 Production and sales of solid sheet in all regions and multi-wall sheet in EMEA and APAC

# Engineering thermoplastics

# Serving numerous industries with a unique combination of properties



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# Strong growth and margin improvement continuing in 2016 PCS historical financial performance



### Net sales and core volume growth 3,172 3.298 2.822 2,822 2.645 10.3% 9.0% 5.1% (3.2)% 3.0% 2016 2012 2013 2014 2015 Net sales (€m) ----Core volume growth

### Adj. EBITDA and margin



### Highlights

- Core volume CAGR of ~5% between 2011 and 2016
- Selling price declines below feedstock price benefits between 2012 and 2016
- Significant market share gains due to capacity expansions and innovative products

- Trough margin of 3.6% in 2013 driven by rapidly declining DVD / CD market
- Margins in 2015 and 2016 back to levels prior to DVD / CD boom and bust period

### CMD 2017 | PCS

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Material, application and production know-how ensure leading market access and development

Supporting our customers in every step of the value chain





# Macro trends support above GDP demand growth

Polycarbonates industry demand across diverse customer industries and regions





# Development of diverse applications drives the demand of PC



### Polycarbonates industry demand



# Broad access to customer applications and regions

## Covestro position in the PC industry




# Excellent access to high-growth and resilient end-markets



Benefits from the combination of global market access, innovation capabilities and high quality product portfolio





#### High-value industry application (e.g. automotive, medical, electrical)

- Greater technical specification requirement
- Longer lifecycles, higher market growth
- Comprehensive innovation capabilities and technical service is key
- · Premium pricing in selected segments

#### Limited disruptions from new capacity additions

- · Niche applications with strong differentiation potential
- Customer intimacy and distinct industry entry requirements
- · Investment need for material switch

Resilient portion of PCS volumes improved from ~40% to ~50% in the last 5 years, supported by continuous progress of innovative offerings

# Leading cost positions in key regions



#### PCS regional industry cost curves



A		Covestro cost leader in North America
В		Covestro cost leader in Europe
С		Covestro's leading cost position in China due to integration and economies of scale

## Market-driven innovation as key value driver PCS R&D highlights







# Coatings, Adhesives, Specialties (CAS)

Daniel Meyer June 29, 2017



### Global industry leader with high and resilient profitability CAS key investment highlights

High-end solution provider for value-add materials serving intrinsically complex customer industries



Market-driven innovation capability and customer proximity help create new application space and maintain leadership

# 3 Global leading and defendable position

in an industry with distinct entry requirements



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Strong financial profile due to high margin resilience and low capex requirements represent solid platform for future business expansion

## Niche enablers business focused on high-end products CAS at a glance

- Global leading supplier of high-performance materials to the coatings and adhesives industry and other specialties (films, elastomers, ingredients to textiles / medical / cosmetics)
- Inventor of and technology leader in isocyanate derivatives for coatings, adhesives, sealants and specialties
- More than 2,300 products based primarily on six monomers, serving over ten high-end industries and over 4,300 customers
- Product pricing driven by value-added to end-customer, as CAS materials are critical to the performance of the final product, but form a small proportion of the overall cost
- Market-driven innovation in close collaboration with all partners in the value chain, developing customized solutions for specific problems ("forward marketing")
- Efficient production processes benefitting from low cost technology and integration
- Has delivered high, resilient margins and strong cash flow and returns







# Specialist in managing complexity and high-end applications 2,300+ products derived from 6+ monomers



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# Strong growth potential in specialty products

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Product	Product groups S					
1	Aliphatic isocyanates and derivatives	<ul> <li>Polyurethane resins derived from aliphatic monomers including HDI, IPDI, H<sub>12</sub>MDI</li> <li>Applied mainly to coatings</li> </ul>	Spec • G • C Elas • Le			
2	Specialty products <sup>(a)</sup>	<ul> <li>Polyurethane- and polycarbonate- based specialty films, hot cast elastomers and other specialties</li> </ul>	E • G C Text • S			
3	Polyurethane dispersions	<ul> <li>Polyurethane polymers dispersed in water and mainly used in coatings and adhesives</li> </ul>	fu • C de Med • H			
4	Aromatic isocyanate derivatives	<ul> <li>Polyurethane resins derived from aromatic monomers including TDI and MDI</li> </ul>	fo • U Cosr • Fi • P			

Overview of CAS product portfolio

#### Specialty products in detail

#### Specialty films:

- · Globally leading producer of TPU and PC films
- Continuous stable cash flow and strong innovation pipeline

#### Elastomers:

- Leading producer in SCPU<sup>(b)</sup> cast machines, innovation leader for SCPU<sup>(b)</sup> Elastomers and machines
- Global production and sales network with dedicated legal entities in France, UK, China and a large global network of distributors

#### Textile:

- Specialty chemicals for the production of leather alternatives, technical and functionalized textiles for diverse industries (e.g. automotive, footwear)
- Comprehensive customer product development and services offering that is also delivered to downstream textile consuming companies

#### Medical:

- High OEM penetration generates market pull for differentiated PU-based materials for adhesives, foams and films
- Unique market position with broad tailor-made material offering in wound care

#### Cosmetics:

- Film formers and sensory additive for colour cosmetics, skin / sun and hair care
- PU-based solutions for innovative claims and high performance formulations

# CAS present in high-value part of PU resins industry

#### Overview of total market and key industrial applications





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(a) Coatings, Adhesives and Sealants Notes: (c) Polyurethane dispersions Orr & Boss as of 12/2016, annual figures for 2016 Source:

(b) Excluding decorative coatings

# Formulation in diverse chemical environment through partnership covestro Resins and film formers impact performance of final product



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



# Diverse applications require multi-dimensional solutions







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Notes: (a) includes STP (Silane-Terminated Prepolymer), PAC (Polyacrylate) dispersions, PAS (Polyaspartics), PES (Polyesters), PC (Polycarbonate) diols (b) Thermoplastic polyurethane

# Covestro serves profitable niches in diverse end-markets



Competitive advantage through a diverse application portfolio



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Notes: (a) Coatings, adhesives and sealants (b) Including polyols, excl. decorative coatings Source: Orr & Boss as of 12/2016, annual figures for 2016

# Technology substitution for growth and premium pricing

#### Leveraging unique characteristics of polyurethanes



#### Characteristics of PU-based coatings / adhesives PU raw materials industry demand in CAS ('000kt) · Highly versatile chemistry; allows tailor-made CAGR applications in formulations and solvent nature Unique characteristics include: 3-4% Abrasion resistance 2.2 Outdoor weathering High flexibility 2016 Low-temperature curing Corrosion and chemical resistance Price index of resins within coatings Durability 200% Gloss retention - Hydrolytic stability 150% 121% Offers solutions for environmental challenges (e.g. 100% 87% low VOC) 100% Superior combination of performance and price 50%

# 2.6 2021e 157%

Aromatic Isocyanate PUD

Aliphatic Isocyanate

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**Average Resins** 

# Finding above average growth niches in adjacent industries

#### **Selected CAS** applications



#### Textile coatings Furniture coatings Wind energy Waterborne New bio-based Novel solvent-free hardener for components for materials for water-based wind power functionalized textiles in diverse wood coatings plants applications Better occupational safety, environmental Furniture surface protection in demanding Rotor blades: Polyurethane resins for more protection, resource consumption environments like bathrooms and kitchens stability and durability Helps brand owners and manufacturers Biomass content of 66% and improved Towers: Polyurethane materials for antimeet their sustainability goals, e.g. ~45% carbon footprint corrosion coatings lower carbon footprint High hardness and chemical resistance Undersea cables: Elastomers for protection Enables new functionalities systems Textile coating market<sup>1</sup> Coating industrial furniture market<sup>3</sup> Energy consumption<sup>5</sup>

CAGR: ~6% COV relevant textile coating market<sup>2</sup> CAGR: ~11%

CMD 2017 | CAS

Source: (1) IAL PUD market report 2015 for 2014 – 2019 (2) Covestro estimates (3) CSIL January 2017 for 2017 - 2021 (4) Covestro estimates

Waterbased industrial furniture market<sup>4</sup>

CAGR: ~3%

CAGR: ~5%

 (5) BP, Energy Outlook, 2017 for 2015 – 2020 based on million tons oil equivalent
 (6) Navigant, World Wind Energy Market Update, 2017 for 2016 – 2021 based on mega watt

CAGR: ~3%

CAGR: ~19%

Offshore wind energy<sup>6</sup>

# Strong track record of product innovation

CAS innovation strategy leads to continued competitive differentiation





# Continued competitive differentiation through innovation

#### Selected CAS innovation examples



#### Desmodur<sup>®</sup> eco – PDI

- Covestro developed a coating hardener with ~70% carbon content from renewable raw materials
- Successful coating of Audi Q2 under near-series conditions
- Based on proven 2K PU technology fulfilling high performance standards
- Application on existing coating lines
   possible
- Helps customers to lower carbon footprint of their products



#### 3D products / cast elastomers

- Latest 3D printing production technologies help core customers to innovate both products and business models
- Integrating of 3D printing with core technologies and high performance materials, beyond "prototyping" maturity
- Polyurethane foams elastomers in combination with 3D printed parts exhibit excellent mechanical properties

#### INSQIN<sup>®</sup> waterborne PU for textiles

- High-performance coating material for highly flexible materials e.g. Spandex
- Successfully commercialized in Puma, evoPOWER Vigor 1
- Latest top of the range football boot from Puma
- Technology transformed playing features, construction and design of the product, while being environmentally sustainable





# Global leadership positions across entire portfolio

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CAS is the inventor of aliphatic isocyanate derivatives for the CAS industry, and the global leader with 44% share in a consolidated environment, and #1 player in EMEA, NAFTA and APAC

- NAFTA and EMEA relatively consolidated with only 3 competitors in each region
- APAC relatively fragmented with only 5 key players with shares higher than 5% and multiple others

#### Industry of aromatic isocyanates is more fragmented

 Global players like CAS compete in the more specialized segment, while regional players compete in the lower value segments

#### CAS is also the leading player in the PUD industry

- 5 other global players account for 28% share
- Remaining industry is fragmented with smaller regional players that compete in the low-cost, commodity-type products where CAS does not compete

#### Industry for specialties is quite fragmented

- · CAS is one of the two leaders in PC films
- TPU films can be viewed as a regional business rather than global
- 8 other major players in elastomers account for ~60% share

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CAS competitive positions

Note: (a) 2016 share of total volumes

Source: Orr & Boss, hot cast elastomers global position as per company estimates and volume share as per Orr & Boss 2016 analysis

# Critical success factors underpinning CAS unique position



Distinct entry requirements for derivative products

Entry requirements in derivatives		CAS position
Economies of scope	<ul> <li>Diversity of end-markets and products offered</li> <li>Niche applications with customized solutions</li> </ul>	<ul> <li>More than 2,300 products supplied to over 4,300 customers</li> <li>Focus on high value-add products</li> <li>Complementary product offering</li> </ul>
Formulation know-how and technical expertise	<ul> <li>Expertise required to address customers needs with specific formulations</li> </ul>	<ul> <li>Inventor of isocyanate derivative chemistry</li> <li>Unique formulation capabilities</li> </ul>
Long-term customer relationships	<ul> <li>Long-term relationships with customers are key</li> </ul>	<ul> <li>Solutions provider</li> <li>Proximity to customers</li> <li>Superior technical support</li> </ul>
Market-driven innovation	<ul> <li>Innovation is key to continuously address customers' needs</li> </ul>	<ul> <li>Leader in new product development</li> <li>Recently developed a new thermolatent hardener</li> </ul>
Global platform	<ul> <li>Global network to supply customers on a reliable basis</li> </ul>	<ul> <li>CAS has a strong international footprint with presence across all regions</li> <li>3 world-scale HDI production hubs</li> <li>11 other production units</li> <li>9 technical centers</li> </ul>

# Global leadership position for isocyanate derivatives

CAS value chain position in an attractive industry





# Best-in-class production technology

### CAS backward-integration into monomers





# Unique global set-up for proximity to customers and markets CAS global asset base





## High margin resilience reflects specialty character CAS financial performance



NAFTA

28%



- Value-add to customers and diversified application profile secures stable margins
- Gross margin driven by high value portfolio as well as low cost technology

# Growing portfolio-adjusted revenues and EBITDA margin

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#### Net sales and core volume growth 5.1% 4.5% 4.3% 2.7% (1.3)% 2,093 2,040 1,984 1.928 1,876 2012 2014 2013 2015 2016 ----Core volume growth Net sales (€m)

CAS historical financial performance

#### Adj. EBITDA and margin



#### Highlights

- After very strong growth in 2012, CAS experienced market entry of a new competitor in a major product line
- In the following years CAS performed with a CAGR of 3.6%
- Due to divestment of trading products, core volume growth at -0.3% for 2016. Without divestment, growth would have been at 4.5%

- 2012-2014: Margin improvement mainly driven by disposal of low-margin business
- 2015-2016: Margin increase mainly driven by product mix improvements and lower raw material costs

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