Covestro

Pushing boundaries: innovative plastic materials to make the world a brighter place
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Plastics – the 21\textsuperscript{st} century material

- Essential in modern life
- Revolutionary new possibilities
- Light, strong, cost-efficient, versatile, sustainable
Covestro – leading in the world of plastics

- €12.4 bn in sales
- 17,200 employees¹
- Listed on the DAX stock exchange

Global player
- 33 production sites globally
- Close to markets, customers and suppliers

Large portfolio
- Products and solutions for many industries

Highly innovative
- 1,200 employees in research and development
- 80 years of ideas and inventions

¹calculated as full-time equivalent (FTE)
To make the world a brighter place

Our vision for a brighter world

In a brighter world the United Nation’s 17 Sustainable Development Goals are realized

How we want to make the world a brighter place

With innovative products and solutions for more sustainability we push the boundaries of what is possible
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Solutions for global challenges

Pushing boundaries

Huge global challenges set limits to our current way of life.

Covestro goes the extra mile to master these challenges and to push the boundaries of what is possible.

This is how we achieve innovative solutions – efficiently, economically and sustainably.
Climate change

The global average temperature will rise by up to 1.5 °C by 2030.\(^1\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sea Level Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>7 mm</td>
</tr>
<tr>
<td>2000</td>
<td>25 mm</td>
</tr>
<tr>
<td>2005</td>
<td>43 mm</td>
</tr>
<tr>
<td>2010</td>
<td>56 mm</td>
</tr>
<tr>
<td>2015</td>
<td>76 mm</td>
</tr>
</tbody>
</table>

Change in global mean sea level since 1993 (corresponds to an average increase of 3.2 mm per year).\(^2\)

Our answer

Products and solutions for economical cars, energy-efficient houses and renewable energies

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Population growth

The world population will reach 9.7 bn people by 2050 – compared to 7.5 bn today\(^1\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Population growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial nations</td>
<td>3.6%</td>
</tr>
<tr>
<td>Developing countries</td>
<td>24%</td>
</tr>
</tbody>
</table>

Population growth rate by region 2010-2030\(^2\)

Our answer

Products and solutions for a reliable food supply and to create affordable housing

\(^1\) United Nations, Department of Economic and Social Affairs, 2015. World Population Prospects.
Mobility

By 2050 around 2 bn cars will be on the roads – more than twice as many as today¹

<table>
<thead>
<tr>
<th>Year</th>
<th>CO₂ emissions in million t (share of transport 14%)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>22,263</td>
</tr>
<tr>
<td>2000</td>
<td>24,486</td>
</tr>
<tr>
<td>2016</td>
<td>34,629</td>
</tr>
</tbody>
</table>

Our answer

Products and solution for sustainable mobility – to make vehicles lighter, safer and more comfortable

¹Shell, 2014. Pkw Szenarien bis 2040 (Passenger car scenarios by 2040).
Urbanization

By 2050 70% of the global population will live in cities¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>29%</td>
</tr>
<tr>
<td>2010</td>
<td>51%</td>
</tr>
<tr>
<td>2050</td>
<td>70%</td>
</tr>
</tbody>
</table>

Our answer

Products and solutions for the energy-efficient and aesthetic design of buildings in areas of high population density

Demographic change

By 2050 the number of people over 60 will double to up to around 2 bn\(^1\)

### Development of average global life expectancy\(^2\)

<table>
<thead>
<tr>
<th>Period</th>
<th>Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2010</td>
<td>69</td>
</tr>
<tr>
<td>2010-2015</td>
<td>71</td>
</tr>
<tr>
<td>2015-2020</td>
<td>72</td>
</tr>
<tr>
<td>2025-2030</td>
<td>74</td>
</tr>
<tr>
<td>2045-2050</td>
<td>77</td>
</tr>
</tbody>
</table>

Our answer

Products and solutions for more hygienic and resource-saving medical care

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Digital revolution

In 2020 34 bn devices will be connected to the internet – compared to 10 bn in 2015\(^1\)

This corresponds to about 4.3 connected devices per person

Our answer

Products and solutions to improve the efficiency, design, safety and usability of electronic devices

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Polyurethane rigid foam is an excellent insulation material and adds to high energy efficiency in cooling units and buildings.

As soft foam polyurethane provides comfort, for example in mattresses, car seats and upholstery. Thermoplastic polyurethanes can be found in sports equipment and electronic devices.

Covestro develops and produces the components of this versatile material.

Polyurethanes were invented by a Covestro predecessor in 1937.

The global market is expected to grow by 4-5% per year on average in the mid-term.¹

Key customer industries:
- For comfortable cars
- For sustainable houses
- For cozy furniture
- For robust sports equipment

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¹Compound Annual Growth Rate (CAGR) 2018-2023e according to Covestro estimates
As a true high-tech material, polycarbonate is not only very robust, break-proof and light-weight, but also offers a high degree of design flexibility.

Polycarbonate is available in all colors ranging from crystal clear to deep black. It is an excellent substitute for traditional material such as glass or metal.

This allows for a wide variety of application possibilities ranging from vehicles to smartphones and laptops as well as lenses or large roofs.

Polycarbonates were first developed by the predecessor company of Covestro in 1953. The global demand is likely to grow by around 4% annually.\(^1\)

**Key customer industries:**
- For trendy smartphones
- For bright buildings
- For light-weight cars
- For safe medical products

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**Product**

**Facts and figures**

- €3.5bn sales in (rounded)
- 28% share of total sales

**Sample applications**

- For trendy smartphones
- For bright buildings
- For light-weight cars
- For safe medical products

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Financial year 2019

\(^1\)Compound Annual Growth Rate (CAGR) 2018-2023e according to Covestro estimates
In 1954, our predecessors revolutionized the market for CAS. The global market for CAS products is estimated to grow by about 4% annually.²

There is a vast application range of coatings and finishes made of Covestro polyurethane raw materials. They are used for protection and decoration.

In addition, the company produces pre-products for adhesives and sealants as well as for specialty films and elastomers.

CAS¹ also supplies materials for cosmetics, textiles and medical goods.

**Product**

**Facts and figures**

€2.4
sales in bn (rounded)

19%
share of total sales

In 1954, our predecessors revolutionized the market for CAS.

The global market for CAS products is estimated to grow by about 4% annually.²

**Key customer industries:**

- For long-lasting cosmetics
- For robust floors
- For fancy cars
- For functional textiles

**Sample applications**

Financial year 2019

¹CAS: Coatings, Adhesives, Specialties
²Compound Annual Growth Rate (CAGR) 2018-2023e according to Covestro estimates
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Key industries in focus

Autootive and transportation: 20%
Construction: 16%
Wood and furniture: 16%
Electrics and electronics: 13%
Chemicals: 7%
Sports/leisure, cosmetics, health and others: 28%

Percentages: Share of total sales in financial year 2019
Today and in the future, we seek to meet the variety of mobility requirements.

High-performance products from Covestro already contribute to increased light-weight, design freedom, efficiency, safety and comfort.

Our products and solutions also support new mobility concepts such as electric drives and autonomous driving.

For dynamic comfort

Sample applications

Integration of multi-functional displays

Light-weight, flexibly moldable body parts and sustainable surface coatings

Comfortable seating with minimum weight

Revolutionary holographic light and signal elements

Sample applications
For more efficient buildings

Buildings account for 40 percent of the global energy consumption.¹

Our materials help to considerably improve the energy balance – as insulating material against cold and heat.

At the same time they protect buildings against environmental impacts which in turn reduces the need for maintenance.

Sample applications

Efficient insulating material

Reliable adhesives and sealants

Coatings for durable and decorative flooring and infrastructure

Transparent elements for facades, roofs, carports, bus and train stops

Wood and furniture

For diverse designs

When it comes to furniture, expediency, comfort and sustainability are sought after more than ever.

Materials from Covestro enable furniture design with that certain something.

Comfortable upholstery, modern seating or robust floors – there are hardly any limits to application possibilities.

Sample applications

- Trendy and functional chairs
- Comfortable foams and highly reliable adhesives for mattresses and upholstery
- Coatings for durable furniture and floors
Electrics and electronics

For digital solutions

Whether smartphone, laptop or fridge – electronic devices and electrical appliances are an integral part of our everyday life.

But with each new generation the devices have to become increasingly efficient, safe and aesthetic.

Covestro develops state-of-the-art high-performance materials and application solutions for the industry.

Sample applications

- Particularly slim notebooks, screens and smartphones
- Exterior lighting protected against vandalism
- Personalized ID cards that are difficult to forge
- Highly insulated cooling units and efficient cooling chains

For digital solutions

Whether smartphone, laptop or fridge – electronic devices and electrical appliances are an integral part of our everyday life.

But with each new generation the devices have to become increasingly efficient, safe and aesthetic.

Covestro develops state-of-the-art high-performance materials and application solutions for the industry.
Sports and leisure activities help increase the quality of life.

Such products must be functional and visually appealing.

Covestro provides materials which combine functionality, design and safety for sports and leisure products.

### Sample applications

- **Especially elastic shoe soles**
- **Light, yet durable helmets and goggles**
- **Lighter, robust ski boots**
- **High-performance, breathable sportswear and shoes with great design freedom**
For a more beautiful world

Aesthetic ideals may change, but the desire for beauty is constant.

At the same time, the requirements on beauty products increase: they need to be long-lasting and sustainable.

Covestro supplies skin-friendly ingredients for innovative and high-quality cosmetics.

Sample applications:
- Water-proof sun protection
- High-quality skin care
- Decorative, long-lasting color cosmetics
- Hair care and styling for a natural appearance
For a healthier life

Increasing life expectancy requires individual medical services.

In medical care the best possible support of the healing process is particularly important.

The high-tech material polycarbonate as well as polyurethane raw materials from Covestro are the perfect solution for these challenges.

Sample applications

- Flexible and skin-friendly wound dressings
- Light-weight, break-proof and heat-resistant medical equipment
- Robust textile coatings with a pleasant feel
- Skin-compatible, solvent-free, breathable and water-repellent wearables
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Focus on sustainability

For a brighter world

Sustainable thinking and acting are the key to a brighter future.

Brighter to us means: a world in which the United Nations’ Sustainable Development Goals are realized.

Groundbreaking innovations and sustainable materials are needed in order to achieve this ideal.

This is why, to us, sustainability and innovation belong together. Both are core elements of our corporate strategy.
Our sustainability formula

People
- Serving the people
  - Increased quality of life
  - Enhanced safety
  - More social progress

Planet
- Preserving the environment
  - Less CO₂ emissions
  - Improved product life cycles
  - Close material cycles

Profit
- Creating value
  - Innovative products and solutions
  - Continuous growth
  - Safeguarding jobs
Our sustainability goals

Five goals for 2025

- Align research and development with the UN sustainability goals
- Apply own dedicated sustainability standards to all suppliers
- Reduce own specific greenhouse gas emissions by 50%
- Improve living conditions of 10 million people in underserved markets
- Use carbon in the most intelligent way
A holistic approach

Focusing on the whole cycle

Covestro looks at value creation cycles in their entirety – keeping sustainability in mind at all times.

Especially important to us is to:

- Enable improvements for our partners
- Enable savings and increase benefit
- Increase reusability

[Diagram showing the cycle with various stages such as utilization phase, customer operations, and end-of-life, highlighting increasing reusability and enabling improvements for partners.]
Eco-friendly production

Energy-efficient production

Environmental protection and efficient use of resources are guiding our production.

We develop and use energy-saving technologies which support a more efficient and sustainable production – for example of chlorine, isocyanates and polycarbonates.

We have also implemented an intelligent control system in around 60 of our production facilities to optimize the use of energy.
Example – alternative raw materials

Replacing crude oil

Covestro focuses on new raw materials like CO₂ and plants as alternatives for scarce fossil resources such as crude oil.

We already use CO₂ to produce foam components – further applications are in progress.

In addition, we offer paint hardeners for cars and furniture whose carbon content is derived from plants.

We are now also able to extract the important basic chemical aniline from biomass instead of crude oil.

Carbon dioxide as a source for carbon

New foam component with up to 20% CO₂

Plants as a source for carbon

Coatings components with up to 70% carbon content from biomass
The future belongs to renewable energies. In theory, wind power alone could already satisfy the world’s hunger for energy.

In order to leverage its potential even further, this clean form of electricity generation must convince not only ecologically, but also economically.

Covestro paves the way – with innovative materials for rotors, towers and pipes.

Our focus is also on China, the global leader in wind energy.

Currently, China accounts for about 35% of the global wind energy production capacity¹.

Whether employees, customers or end-users – Covestro is committed to safety in all areas. We continuously develop our safety culture further. Contributing to this are detailed regulations and regular checks as well as a focus on safety in production processes, plants and transport.

Equally important is the protection of the environment and the well-being of those who come into contact with our products.
As one of the biggest polymer companies in the world we aim to drive projects for the environment, society and economy together with organizations such as the United Nations.

For example, we support the UN Environment initiative “Young Champions of the Earth” – a global competition for revolutionary ideas for environmental protection.

As a founding member of the “World Alliance for Efficient Solutions” we are also committed to extend the use of clean technologies.

Covestro cooperates closely with the UN Environment program

The “World Alliance for Efficient Solutions” aims at closely interlinking environmental protection and the economy

The winners of the UN Environment idea competition “Young Champions of the Earth” 2017 at the award ceremony in Nairobi, Kenya

Our social commitment
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Ideas for the world of tomorrow

Global cutting-edge research

Courageous innovations are necessary to master the current global challenges.

So we rely on cutting-edge research around the globe with sustainability as our biggest innovation driver.

Through the regional presence of our innovation hubs we understand the local needs and can develop tailor-made solutions.

€266 m investment in R&D

1,200+ employees in R&D
Innovative by tradition

1937
Otto Bayer discovers polyurethanes

1953
Hermann Schnell discovers polycarbonates

1959
Polyurethane adopted by fashion industry

1962
Polyurethane rigid foam as insulation for cooling devices

1967
Prototype car made almost entirely from plastic

1970
"Memory" foam for mattresses made from polyurethane

1982
CD made of polycarbonate

1985
Office machines made of flame retardant polycarbonate composites

1991
Automotive glazing application for rear windows

1995
Polycarbonate-based films for security documents

1998
INSQIN® technology for textile coating with waterborne polyurethane

2001
Construction start at Covestro integrated site at Shanghai, China

2005
Microcell foam with improved insulation efficiency

2010
Shanghai TDI plant equipped with eco-friendly, efficient gas-phase technology

2011
Production of foam components based on CO₂ at Dormagen site, Germany

2015
Bio-based cross-linker

2016
Production of foam components based on CO₂ at Dormagen site, Germany

2018
Super light, new composite material with metal-like characteristics

2017
Bio-aniline: saving crude oil and CO₂ using biomass as new raw material in the production of aniline

2019
Microcell foam with improved insulation efficiency

2020
Production of foam components based on CO₂ at Dormagen site, Germany

2021
Replacing epoxy resin by polyurethane resin for wind blades

February 20 | Company Profile
Global network

Stronger together

Our curiosity drives us to pioneering innovations that challenge the status quo.

In keeping with the principle of open innovation we also work with spin-offs and start-ups from the academic area.

In this way we can quickly turn promising ideas into successful products.

Cross-industry projects (e.g. Carbon4PUR)

Honoring outstanding research (e.g. “Covestro Science Award”)

Joint projects with universities (e.g. “Covestro-Tongji Innovation Academy”)

Cooperation in design (e.g. through the Covestro designer network or the idea.lab)
Strengthen our innovation culture

17,200 innovators

We encourage every employee to be innovative.

To facilitate the ideation process and to make this process accessible to everyone at Covestro, we introduced a dedicated company-wide platform.

It is also part of our innovation culture to communicate and recognize outstanding performance externally.

Employees can discuss their innovative ideas in the idea.lounge, our global innovation platform.

At the Start-up Challenge employees develop innovative business ideas through team work.

Teams can become creative in the idea.garden.

Innovation Celebration: at Covestro, we celebrate the innovative spirit.
Example – groundbreaking car concept

Sustainable, trendy, functional

Mobility is a basic need of mankind and an essential key to the future of society and economy.

Accordingly, the demands on individuality, environmental impact, safety and efficiency of vehicles are high.

Our innovative material solutions drive electro mobility and pave the way for autonomous driving.

1. Less weight and more aerodynamics allow for greater reach

2. Seamless all-round glazing made of polycarbonate elements

3. Energy-saving, environmentally friendly coating

4. More safety through an innovative lighting concept with holographic films

5. Integrated displays in body parts and interiors
Our next-generation composites offer unprecedented design freedom. They are suitable, for example, for ever-thinner, lighter and more robust components for electronic devices. Compared to conventional plastics, the composites also differ in feel and appearance. They have a “cool” touch and sound like metal when knocked.

The new material is especially suitable for the electronics industry.

The composites are produced at a new plant in Markt Bibart, in the south of Germany.

The material is extremely light and robust – and sounds like metal.
Covestro aims to leverage the opportunities of digitalization with an extensive program.

We focus on innovative solutions for production, research, sales and business models.

Through this approach we want to set new standards in the collaboration with customers.

At the same time all our employees should benefit from digital technologies and digital ways of working.
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Our vision, values and mission

VISION
To make the world a brighter place

VALUES
Curious  Courageous  Colorful

MISSION
We inspire innovation and drive growth through profitable products and technologies that benefit society and reduce the impact on the environment
Our strategy

**Investments**
Strengthen core business: allow for growth and build competences

**Innovations**
Focus on sustainability: align research & development with the UN Sustainable Development Goals

**Acquisitions**
M&A as value driver: systematic additions to our portfolio in line with megatrends

**Efficiency**
Growth through efficiency: check and utilize potentials to improve long-term performance

**Digitalization**
Set digital standards: use digitalization holistically for growth and efficiency

**Culture**
Curious, courageous, colorful: further develop our common culture to unlock the full potential of all our people
Our presence

Covestro operates 33 production sites in Europe, Asia and America – eight of which have world-scale plants.

COVESTRO WORLDWIDE

Covestro operates 33 production sites worldwide, 8 of which have world-scale production plants and 4 innovation hubs.
Our figures

Sales

€12.4 bn

EBITDA\(^1\)

€1.6 bn

Net income

€552 m

Globally leading polymer producer

Sales per region

NAFTA

€3.1 bn

EMLA

€5.3 bn

APAC

€4.0 bn

2.0%
Core volume growth

8.4%
ROCE\(^2\)

€473 m
Free operating cash flow

Financial year 2019
\(^1\)Earnings Before Interest, Taxes, Depreciation and Amortization
\(^2\)Return on Capital Employed
Our stock market listing

A strong investment

Stock market listed since October 6, 2015

Included in important stock indices such as DAX 30\(^1\) and STOXX Europe 600

Shareholder structure: Around 92% free float, approx. 8% Bayer AG

Dividend of €2.40 per share in 2018

Covestro has been listed on the Frankfurt Stock Exchange since 2015

In 2019 Covestro held its fourth annual shareholder meeting after the IPO in 2015

“Beyond” is the motto of the annual report 2019

Covestro raises dividend after strong business performance in 2018

\(^1\)Before moving into the DAX 30 on March 19, 2018, Covestro was listed in the MDAX.
Our Board of Management

Dr. Markus Steilemann
Chief Executive Officer

Sucheta Govil
Chief Commercial Officer

Dr. Klaus Schäfer
Chief Technology Officer

Dr. Thomas Toepfer
Chief Financial Officer
Labor Director
Forward-looking statements

This presentation may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG.

Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Covestro’s public reports, which are available on the Covestro website at www.covestro.com.

The company assumes no liability whatsoever to update these forward-looking statements or to adjust them to future events or developments.