All lights on green – Delivering sustainable mobility through innovation

Mr. Klaus Rosenfeld, CEO Schaeffler AG | Mr. Matthias Zink, CEO Automotive OEM
1 Overview

Schaeffler – Delivering sustainable mobility through innovation

![Diagram showing Automotive and Industrial sectors with sales breakdown for 2016-2019.](image-url)

Sales 14.2 bn EUR

- **Industrial**: 63%
- **Automotive**: 24%
- **Aftermarket**: 13%

**Overview**

Schaeffler – Delivering sustainable mobility through innovation

9/10/2019 IAA Press Conference | Klaus Rosenfeld | Matthias Zink
Vision Powertrain 2030 – Delivering technology to all powertrain solutions

- 30% Internal Combustion Engine Vehicle
- 40% Hybrid Vehicle
- 30% Battery Electric Vehicle
Vision Chassis 2035 – Delivering technology for autonomous driving

Automation Level

- **60%**
  - L1 & L2
  - Hands-on & Hands-off

- **30%**
  - L3 & L4
  - Minds-off

- **10%**
  - L5
  - Autonomous
Vision Powertrain

Year

World light vehicle production

2020
2025
2030

30%
Electric vehicle

40%
Hybrid vehicle

30%
ICE vehicle

2030
30%
Electric vehicle

40%
Hybrid vehicle

30%
ICE vehicle

Making Mobility Sustainable – What’s new at Schaeffler?
70% of vehicles will still have a combustion engine in 2030 – Optimizing the engine for real driving conditions
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70% of vehicles will still have a combustion engine in 2030 – Optimizing the engine for real driving conditions

![Graph showing engine torque and speed](image)

- Electric vehicle
- Hybrid vehicle
- ICE vehicle

2030

![WLTC Schaeffler Real Driving Cycle](image)
70% of vehicles will still have a combustion engine in 2030 – Optimizing the engine for real driving conditions
70% of vehicles will still have a combustion engine in 2030 – Optimizing the powertrain for real driving conditions

- Electric vehicle
- Hybrid vehicle
- ICE vehicle

2030

Engine speed in rpm

Engine torque in Nm

“Reduced map” Engine

P2 HV Technology

Conv. Powertrain

E-drive mode

Serial mode

Parallel mode

Battery E-motor

Battery Generator ICE

Battery E-motor ICE Generator
70% of vehicles will still have a combustion engine in 2030 – Optimizing the powertrain for real driving conditions

Schaeffler is a supplier for the Porsche Taycan drivetrain
Find out more about Schaeffler innovative Driveline Solutions
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Find out more about Schaeffler innovative Driveline Solutions

Electric vehicle

Hybrid vehicle

ICE vehicle

2030

Fuel cell stack

Metallic bipolar plates

Hybridized solutions from 48 V to plug-ins are key to significantly reduce CO₂ emissions.
Schaeffler E-Motors – All competencies under one roof

- Electric vehicle
  - E-motors for electric axle drives
- Hybrid vehicle
  - E-motors for hybrid transmissions
- ICE vehicle
  - E-motors for hybrid modules

2030
Intelligent Mobility Concepts

- Maximum maneuverability
- Locally emission-free e-drive
- Connectivity: Ride-hailing via Smartphone

Visit the outside driving area
2 Schaeffler Automotive OEM

Schaeffler Mover – The platform for future driving functions

90° PARKING

TURNING CIRCLE

LANE CHANGE

CORNERING
Schaeffler Paravan Space Drive – Drive-by-Wire will play a major role for autonomous driving
Schaeffler Paravan Space Drive – Drive-by-Wire will play a major role for autonomous driving

Schaeffler Paravan Space Drive Technology as enabler

Drive-by-Wire as core technology for autonomous driving

Level of automation

Schaeffler signs investment agreement with China’s Hunan province during a state visit to China by German Chancellor Angela Merkel
‘Making Mobility Sustainable and Autonomous’