faurecia
inspiring mobility

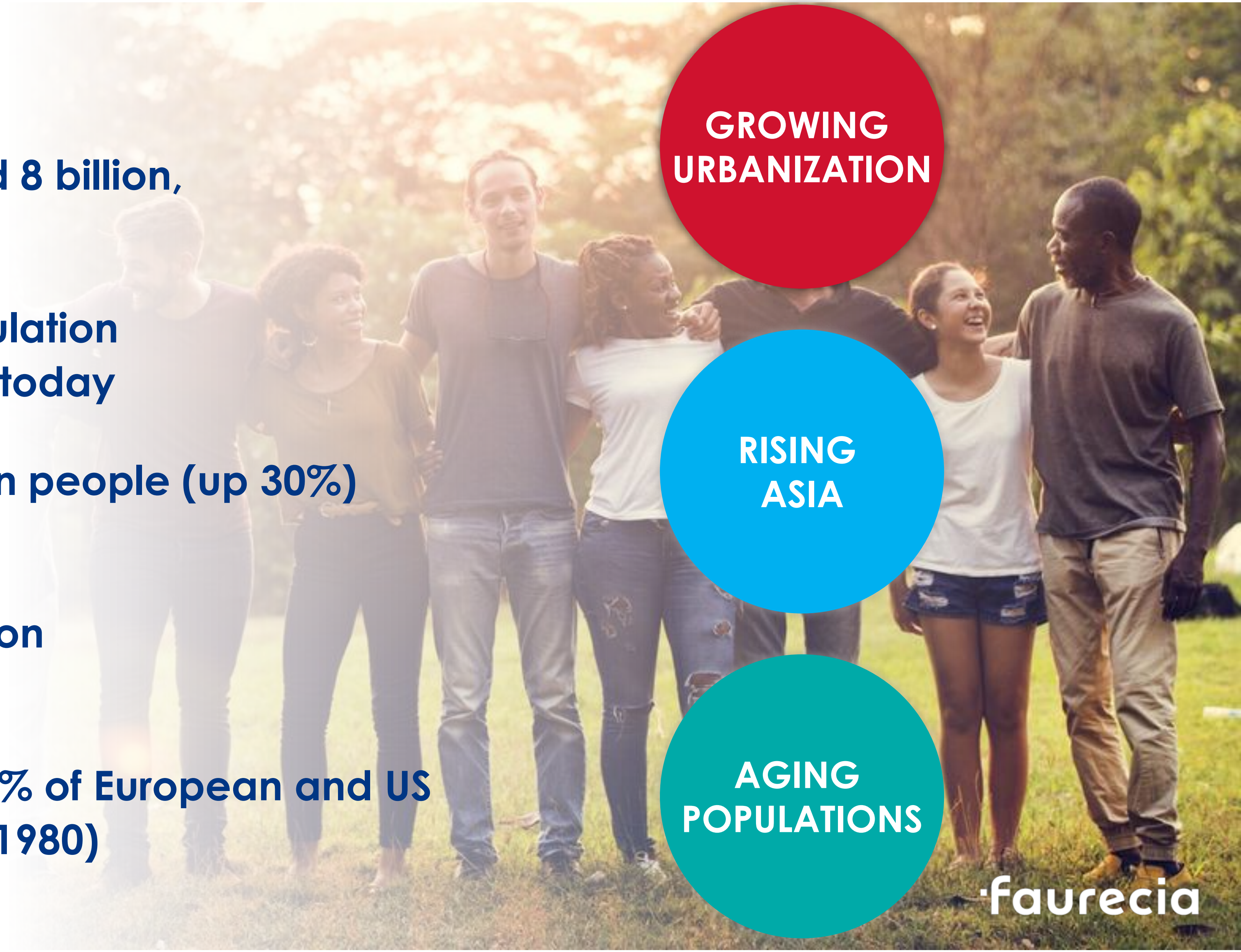
# Transforming Mobility

**Patrick Koller**
Chief Executive Officer

# Major demographic transformation…

## BY 2030…

- World population will exceed 8 billion, up from 2.5 billion in 1950
- Over 60% of the world's population will live in cities up from 50% today
- 43 mega cities over 10 million people (up 30%) with more than half in Asia
- Over 30% of world's population in China and India
- Seniors will represent over 25% of European and US populations (up from 16% in 1980)



GROWING URBANIZATION

RISING ASIA

AGING POPULATIONS

# Creating significant challenges for society…

- Income inequality is at its highest level in fifty years including in China
- 1 in 5 middle-income households spend more than they earn
- House prices have grown three times faster than the household median income over the last two decades
- Rising health care costs for aging populations

# …and for the planet

- $CO_2$ and other greenhouse gas (GHG) emissions will cause massive disruptions to the climate
- Global annual $CO_2$ emissions increased from 2 billion tonnes of carbon dioxide in 1900 to over 36 billion tonnes today
- Emissions of GHG have already increased global temperatures by around 1°C since pre-industrial times


faurecia

# Affordability will drive technology choices and speed of transformation

## CARBON NEUTRAL

- FCEV and BEV will coexist representing around 20% of vehicles by 2030
- In 2030 > 50% vehicles electrified
- Opportunities in product design, smart materials, recycling

## MOBILITY SERVICES

- Level 4/5 for fleet mobility operators will offer affordable urban mobility alternative
- About 10% of yearly total automotive production for Mobility as a Service in 2030

## CONNECTIVITY

- New digital business models for upgradeability, retrofit and services across vehicle lifetime
- 700 million connected cars by 2025

**FULL ECOSYSTEM TO BE MOBILIZED FOR AFFORDABLE MOBILITY**

# Anticipating the next disruption: Carbon Neutral 2030

CARBON NEUTRAL

- Faurecia Carbon Neutral 2030 initiative covers Scopes 1, 2 and 3 excluding "use of products"
- Estimated 2017 emissions around 7.5 million $CO_2$ tonnes equivalent per year

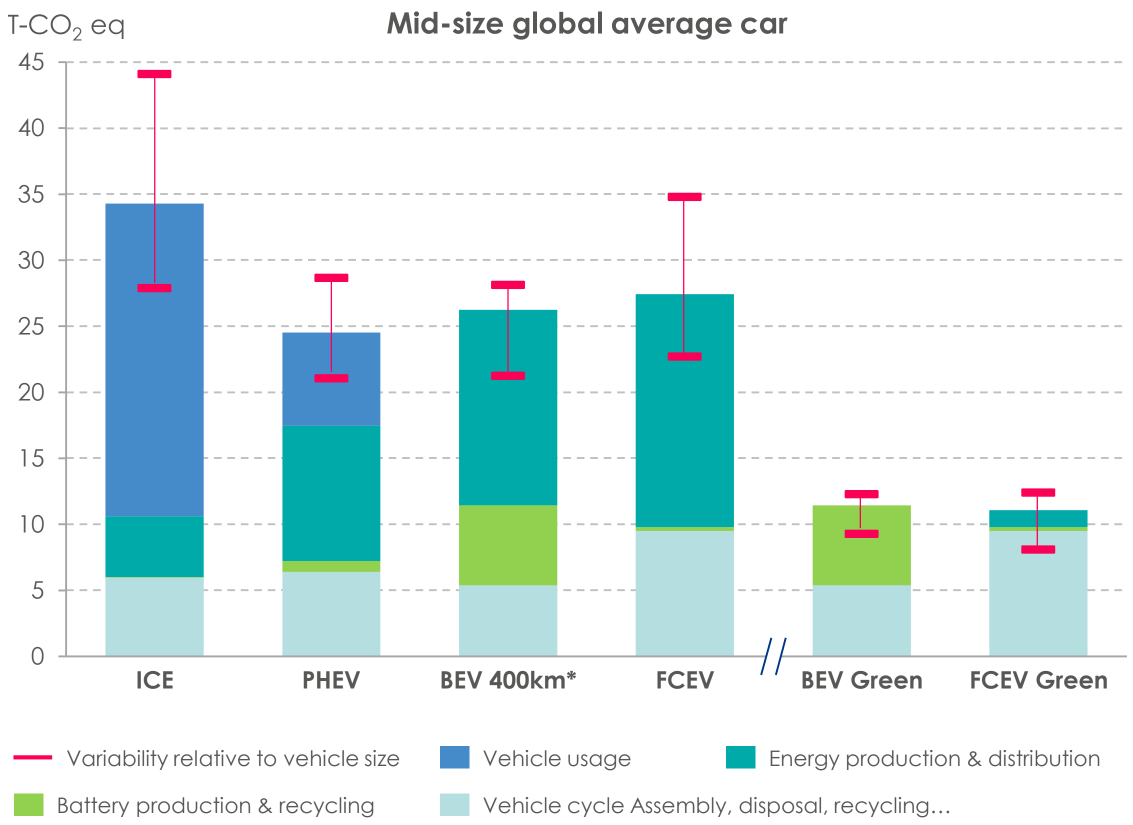
| USE LESS | DESIGN FOR PLANET | BUY GREEN | TRANSPORT LESS |
| --- | --- | --- | --- |
| Energy & waste saving in plants | Eco-design, recycled & bio-materials | Green partners & purchases | People & goods |

# Clear benefits of hydrogen energy drive investment

CARBON NEUTRAL

- **Hydrogen is universally available giving energy independence**
- **Few rare materials required for production**
- **Method of storing renewable energy and transportable in existing gas networks**
- **Two production methods**
  - SMR + Carbon Capture and Storage
    - 50% reduction $gCO_2/km$ vs ICE
  - Electrolysis from renewable energy (green)
    - zero emissions
- **Comparable cradle-to-grave CO2 footprint to BEV and improved versus ICE**

## CRADLE-TO-GRAVE $CO_2$ FOOTPRINT




*Source: IEA 2019 & Faurecia estimates for BEV & FCEV Green (Renewable Energy) / *Global energy mix*

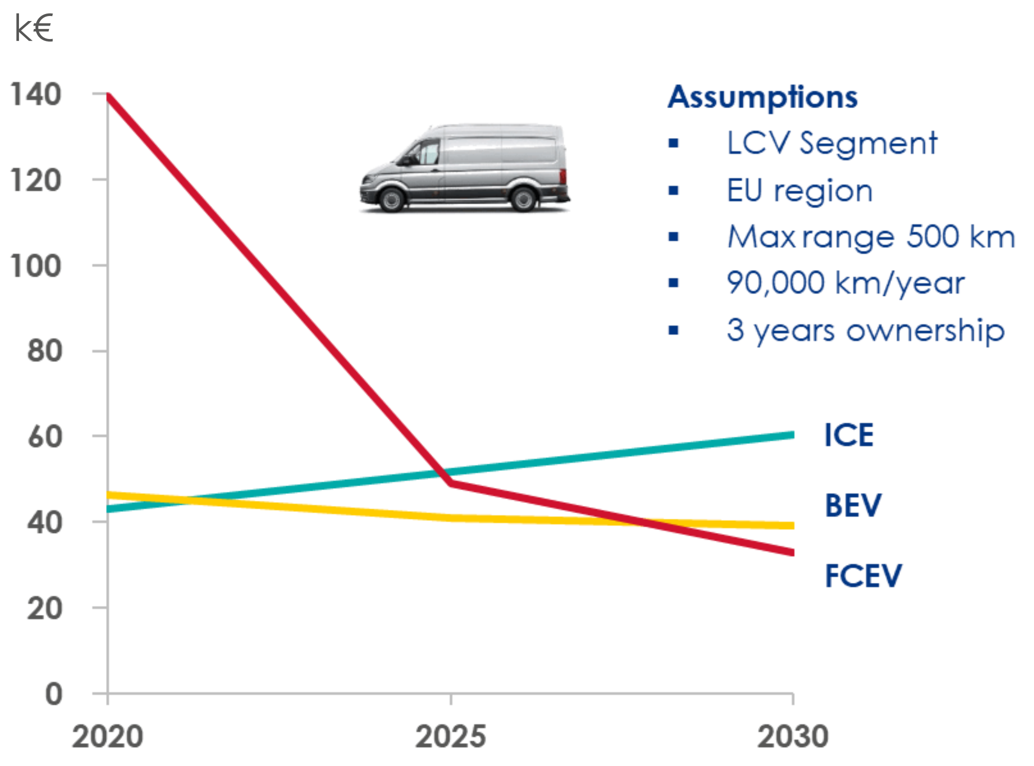
# Fuel cell technology, the only solution for commercial vehicle electrification

CARBON NEUTRAL

- **Fuel cell more suitable for SUV, LCV, CV**
  - Superior TCO potential versus BEV
  - Increased convenience: longer range, short refueling time
- **China announced 1m FCEV by 2030**
- **In 2019, all major CV players invest in fuel cell**
- **Faurecia and its new JV with Michelin will support OEMs from component to system development and vehicle integration**

SYMBIO
A FAURECIA MICHELIN HYDROGEN COMPANY

## FUEL CELL TCO EQUIVALENT TO BEV POST 2025



# Autonomous mobility services will be dedicated to fleet operators in urban areas



- **Level 4/5 for business models which make economic sense**
  - Affordable Mobility as a Service (MaaS) in urban areas
- **ADAS and level 1 to 2+ will be priority solutions for private vehicles for affordable safety and convenience**

# Cockpit connectivity opens doors for new experiences and business models

CONNECTIVITY

- Cars becoming new IOT with 90% of new cars connected in the next few years
- Cockpit connectivity combined with systematic user centric approach drive systems for immersive and personalized user experiences
- Connectivity will also allow personalization through upgradable and scalable over-the-air features with 'pay to access' business model
- Faurecia and its ecosystem have unique market position

Microsoft accenture Aptoide

GuardKNOX DEVIALET

# Microsoft and Faurecia partnership

Conversation with Jean-Philippe Courtois,

EVP and President, Global Sales, Marketing & Operations at Microsoft

# Takeaways

- **Carbon neutral**
  - Transformation of “cradle-to-grave” processes for carbon neutrality
  - FCEV to accelerate as only alternative for Commercial vehicles electrification*
- **Mobility services**
  - Autonomous driving reserved for BtoB business models
  - ADAS up to Level 2+ for improved convenience and safety in BtoC environment
- **Connectivity**
  - User experience for productivity and immersive entertainment in vehicle
  - New business models for upgradability, retrofit and connected services

**AFFORDABLE MOBILITY DRIVING BUSINESS MODELS AND TECHNOLOGY TRANSFORMATION**

# Faurecia #CES2020

- **Sustainable Mobility**
  - Full range of fuel cell stack systems & homologated hydrogen storage systems (350 and 700 bars)
  - Renault Master Z.E. fuel cell electric vehicle
  - ADAS technologies for autonomous parking
  - E-mirror for $CO_2$ reduction & battery range extension


- **Cockpit of the Future**
  - "My Cockpit of the Future": a fully integrated versatile and intelligent Ford F150 interior
  - Personalized sound experiences including Devialet, smart headrest and active noise cancellation
  - Immersive and connected experiences for multimedia, gaming and working

faurecia

faurecia
inspiring mobility