Volkswagen’s contribution to the Paris Agreement: our approach to decarbonization
Climate HOW Symposium, Venice, February 8, 2019
Ralf Pfitzner, Volkswagen AG
Transport Sector accounts for 14% of global GHG Emissions
In the EU, transport is the only sector with emissions increase since 1990

Global GHG-Emissions by sector
- Buildings: 25%
- Industry: 24%
- Electr./heat production: 21%
- Other energy: 6%
- Agriculture, Forestry; Land use: 10%
- Transport: 14%

Trends in EU by sector since 1990 [MT of CO2e]

Source: IPCC 2014, EEA 2018
Volkswagen will be part of the solution, our focus is on climate change mitigation and decarbonisation

**DIMENSIONS OF SUSTAINABILITY AT VOLKSWAGEN**

**FOCUS AREA: DECARBONIZATION AND CLIMATE CHANGE MITIGATION**

**Why it matters to Volkswagen:**

- Because of our significant influence and thus responsibility
- Because of rising stakeholder expectations
- Because decarbonization delivers direct business value
The long-term derivation of targets calls for prudent planning

Paris implications and transformation path

- Conventional platforms
- Conventional projects

SOP

>10 years
Fleet renewal

"Zero Emission" in the existing fleet

Broad product portfolio

Transformation

CO₂ neutral cars

- BEV
- FCEV
- PHEV
- e-fuels

2020

2050

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**CO₂ matters across the whole lifecycle – Paris Agreement translates into a ~30% reduction need by 2025**

Our Decarbonization Index allows to track improvements of CO₂ emissions [in t CO₂e / vehicle] of the group LDV product portfolio over the entire life cycle.

<table>
<thead>
<tr>
<th>Production</th>
<th>Use</th>
<th>End of Life &amp; Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain</td>
<td>Fuel Supply</td>
<td>Tailpipe Emissions</td>
</tr>
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</table>

2015 **DKI**

<table>
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<th>t CO₂e/vehicle</th>
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<tbody>
<tr>
<td>5.7</td>
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<tr>
<td>0.8</td>
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<td>5.5</td>
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</tbody>
</table>

| 29.0 |
| 2.7  |
| 43.7 |

Results for average Volkswagen Group vehicle across all brands.

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BEV today already first choice in CO₂ over lifetime –
example current Golf class car

Source: Volkswagen K-GEGU 2019, “Klimabilanz Antriebe”; Compact Car (Golf-class),
LCA, use phase acc. to WLTP, 200.000 km life
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The plan for the electric offensive starts in the launch phase with a portfolio of over 50 vehicles and a project volume already exceeding 15 million.

>50 New full electric models

~30 bn. invest

~15 m. cars

1st wave
- Mission E Cross Turismo
- ID. Buzz
- ID. Vizzion
- ID. Neo
- Vision E
- e-tron GT
- e-tron Sportback concept
- Taycan
- e-tron

2nd wave
- MEB Entry Family
- ID. Crozz
- Vision E
- e-tron GT
- ID. Buzz
- ID. Vizzion
- ID. Neo
- Vision E
- e-tron Sportback concept
- Taycan
- e-tron
- ID. Crozz
The first steps towards a CO$_2$-neutral society have been taken

**Objective**

**CO$_2$-neutral production incl. supply chain**

**zero-emission-vehicles**

**Vision:**
100 % CO$_2$-neutral e-mobility

**VW supply promise**

**Customer offering**

**100 % green power in high-power charging-network EU**

**Offer Green power contracts for home-charging**

**CO$_2$-neutral hand-over to customer in retail**

**Offers for CO$_2$-free use phase**
CO$_2$-neutral hand-over of the ID. to European customers decided

**Motto**

- I Avoid & reduce
- II Compensate for unavoidable CO$_2$ emissions

**Principle & roadmap CO$_2$ supply chain & production Europe**

- Energy efficiency Zwickau
- Green power Zwickau
- Green power cell production HV battery

Market launch: Q1/2020
Additional offsetting during production and green power during use phase make the ID. CO2-neutral over lifecycle. CO2 neutrality ID.

**A. Production phase**

Unavoidable CO2 emissions...

...will be offset by investments in forest conservation or reforestation.

**B. Use phase**

When charged with green power...

...the ID. will be CO2-neutral over its entire lifecycle.
Decarbonization: We address an entire ecosystem and go beyond the vehicle itself

**Supporting the Energy transition**
- Conversion of power plant, saving 1.5 mn tons of CO₂ by 2022, corresponding to emissions of 870,000 cars per year
- Volkswagen with 37% renewable energy in manufacturing (as of 2017)

**Lower emission products**
- Further emission reductions
- Alternative fuels (e.g. Audi e-gas)
- Extended portfolio of electric vehicles

**Charging infrastructure**
- Joint venture for rapid charging network in place
- ELLI, offering home charging with green electricity

**Mobility Services**
- MOIA electric shuttles in first cities
- All-electric car-sharing Volkswagen We share Q2/2019 in Berlin

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