DAIMLER
Sustainability Management & Environment@Daimler
SRI Meeting, September 13th 2017, Frankfurt

I. Organisation, Scope & Targets
II. Holistic approach towards Environmental Challenges
III. Production related Issues
IV. CO₂ & Electrification
V. CASE
Our Sustainability Management Daimler Group

Board of Management

Corporate Sustainability Board (CSB)

- Human Resources
- Communication
- Policy and External Relations
- Purchasing
- Group Research & MB Cars Development
- Integrity and Legal Affairs
- Environmental Protection

Member of the Board of Management/
Co-Chair CSB
reports to the General Management

Mercedes-Benz Cars
Daimler Trucks
Mercedes-Benz Vans
Daimler Buses
Daimler Financial Services
Responsibilities and interfaces of Corporate Environmental Protection

**Board of Management**

- **Determine goals and areas of activity**

**Politics & Society**
- **Analyze legislation and social environmental trends**

**Product**
- **Push worldwide implementation of goals and ensure legal compliance**

**Production**

**Communication & Dialogue**
- **Stakeholder & Customer**

**Environmental Officer**
- **Business Units**
Daimler Sustainability Program with Target Horizon 2022

Production Responsibility

Product Responsibility

Employees Responsibility

Supplier Management

Social Responsibility

Ethical Responsibility

Our contribution to the implementation of the UN Sustainability Goals (SDG)

MBC fleet consumption: -25 %
Daimler environmental protection targets 2022 structured by...

**Climate Protection & Energy**

**Europe**
- Reduction absolute CO₂ emissions: -20% 1990 - 2020
- Reduction specific energy MBC: -75% 2007 - 2021
- Reduction specific CO₂: -40% 2007 - 2020

**Worldwide**
- Reduction specific energy MBC: -25% 2015 - 2022
- Reduction specific CO₂: -40% 2015 - 2022

**Air Quality & Health**

- Market launch of 10 models, which conform to the future legislation Real Driving Emissions (Step 1)
- Ensure allergy sufferer friendly interiors for all new passenger car models

**Resource Conservation**

- MBC Reduction specific water consumption: -15% 2015 - 2022
- MBC Reduction specific waste amount: -25% 2015 - 2022

**Production**

- Reduction CO₂ emissions passenger cars: 100% 2007 - 2016
- Reduction CO₂ emissions light CV: 30% 2014 - 2018
- Reduced consumption heavy CV: 70% 2005 - 2020
- Reduced cons. of buses: 70% 2005 - 2020

**Products**

- Reduction of CO₂ and nitrogen oxide emissions over the entire life cycle for each new model generation
- Achieve a leading position in premium segment of electric and hybrid vehicles
Daimler Sustainability Report 2016

Accountability Report
Sustainability Report

Online
www.daimler.com/sustainability

Brochure
Focus on Sustainability

Focus on Electromobility
EQ
Urban eTruck

Further topics
Convoy of hope
Sust. Dialogue China
Leadership 2020
I. Organisation, Scope & Targets
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Elements of the environmental management system RD with focus on design for environment

Plan
1. Daimler Green Strategy
2. Environmental policy/program

Do
3. Design for environment as central element of the environmental management system in R&D

Check
4. Environmental audit
5. Management Review

Mercedes-Benz Development Process

Plan
- Quality
- Cost
- Time
- Environment

Environmental aspects
- Consumption/CO₂-Emissions
- Exhaust Emissions
- Green Materials
- Recycling
- Prohibited subs./Indoor Emissions
- Acoustic/Noise

Mercedes-Benz Development Process

Strategy phase
Technology phase
Vehicle phase
Production phase

Life Cycle Assessment
Climate protection & air quality
Resource Conservation
Health
Balancing of disparate requirements in a permanent task in Research & Development.

Within the different environmental targets contradictory effects are possible.

Challenges for research & development of automobiles
For our Products a look at the whole life cycle is crucial – E-Class Plug-In Hybrid E 350 e

Production

Supply chain
Daimler production

Utilization phase (250 tKm)

Fuel supply
Driving emissions

Sum

All values in tons CO₂

Daimler AG
The resource input of C 250 and C 350 e
Comparison of Material Composition

+ 270 kg additional weight of C 350 e compared with C 250

Comparison of Modules [kg] (C 250 vs. C 350 e)

- Steel/Ferrous Materials
- Light Metal
- Polymer Material
- Other Metals
- Operating Liquids
- Other Materials

Spare wheel well, HV Crashpackage (Steel) etc.
17" Wheels, Breaks, Pneumatic Suspension etc.
50l Tank, Cooling Circuit, E-Engine (37,6 kg) etc.
Li-Ion Battery (100 kg), E/E, Cabling etc.

Daimler AG
Remanufacturing / Product Recycling
New Life for Used Parts

Over 12,000 Parts in Reman Portfolio - incl. E-Drive Components...

...with significant environmental benefits

Daimler AG
E-Mobility thought to the end
World's largest 2nd-use battery storage (13MW) in operation
I. Organisation, Scope & Targets
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CO₂-Reduction and Energy Efficiency in our Daimler Plants

Combined Power Plant
2011 - 2016
4.8 MWₘₚ, 92 MWₑₘ

District Heat
961 GWh
thereof renewable
911 GWh (21%)

Natural Gas
5,105 GWh
+1%

CO₂
2,938,000 t
-4%

Electricity
4,336 GWh
-3%

Installed Electric Power CHPs [MWₑₘ]

Photovoltaic System
2011 - 2016
50,600 m²
104,200 m²
6,385 kWₚ
12,480 kWₚ

Units*2016: Changes to 2015
328,000 +12%
1.8 mio. +7%
413,000 -19%
25,000 -14%

* Produced vehicle without joint ventures/contract manufacture

Installed Area PV [m²]
AREUS: EU-Project for Automotive Production in the future

Challenges:
- Volatile electricity grid quality and renewable energy supply
- Rising electricity prices

Project components:
- Reduction of Energy Consumption of Industrial Robotics
- New direct current architecture
- Intelligent network management
- Energy generation by recuperation

Use:
- Energy efficiency: +10-20 %
- Stability against electricity grid fluctuations
- Direct integration of renewable energies
- Possibility of buffer storage
**Production: Technical Modules to improve environmental performance**

<table>
<thead>
<tr>
<th>Powertrain</th>
<th>Body Construction</th>
<th>Surface</th>
<th>Assembly/Logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser Cleaning instead of degrease</td>
<td>Analysis Product Effect for energy demand</td>
<td>Energy Efficient Dryer</td>
<td>Cycle Time Optimization</td>
</tr>
<tr>
<td>Energy-Manager for Machine Tools</td>
<td>Laser welding (RobScan) instead of WPS</td>
<td>Energy-optimized Pretreatment</td>
<td>Building Energy Management</td>
</tr>
</tbody>
</table>

**Process optimization in all plants to reduce resources demand, especially focusing on the energy issue**
And how do we achieve these values...  
For example new Nanoslide Coating Technology...  

Aluminum Engine Block

Grey Cast Iron Cylinder Liners

Nanoslide Coating

**Process Optimization**
*(2nd Generation*)

**Mechanically Roughening**
instead of
**High-Pressure Water Jet**

- **Electric Energy**
  - ca. 700 MWh/a per module (Plan: 4 modules)
  - ca. 22,500 MWh over life cycle

- **Process Water**
  - ca. 15,000 m³/a per module (Plan: 4 modules)
  - ca. 480,000 m³ water over life cycle

- **Recirculation of aluminum chips**
  - Reduction of 8% primary aluminum
  - Elimination of 15 t/a aluminum slurry

\* FAME = Family of Modular Engines = new family of state-of-the-art  
ku = kilo units
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CO₂-Emissions of our Car Fleet is well on the Way

Cars¹

- SUV and Pickup' up to 7,5t¹

- Import¹

- Domestic¹

* All values in g CO₂ / km
1 In different test cycles
2 Model year

Sold Units

USA
347,000

China
488,000

Europe
980,000

Daimler AG
Our road to emission-free driving

High-tech combustion engines
Consequent hybridization
Electric vehicles with battery and fuel-cell
Powerful and efficient: The new 4-Cylinder Diesel OM 654 sets standards in terms of environmental compatibility

- 17% Weight Reduction
- 24% Friction Losses
- 13% CO₂-Reduction
- 80% NOx-Reduction
- 14% Performance Increase
- 11% Improved Acceleration

Aluminum-Crankase
Nanoslide Coating
Stepped Combustion Bowls
Engine-Related Emission Control
Rollout of plug-in-hybrids as important step: Already 8 models on the market and more to come soon...
Electric drive vehicles
Next generation fuel-cell system: huge technological progress

2010: Underfloor package
- 4 kW / m² active area
- Screw compressor

2017: Compartment package
- 9 kW / m² active area
- Electric turbo charger with turbine

- 30% reduction fuel cell engine size
- 90% reduction of Platinum
- 30% higher electric range in future vehicles
- 40% higher system performance
Emission regulations and battery technology development favour battery cost position

<table>
<thead>
<tr>
<th>Year</th>
<th>Conventional powertrain costs</th>
<th>HV battery system costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>150 € / kWh</td>
<td>200 – 300 € / kWh</td>
</tr>
<tr>
<td>2020</td>
<td>150 € / kWh</td>
<td>150 € / kWh</td>
</tr>
<tr>
<td>2025</td>
<td>100 € / kWh</td>
<td>100 € / kWh</td>
</tr>
<tr>
<td>2030</td>
<td></td>
<td>200 – 300 € / kWh</td>
</tr>
</tbody>
</table>

-illustrative-
Electric Line Up extended into the Future

SLS AMG Coupé Electric Drive
B 250 e
smart fortwo electric drive
smart electric drive - fortwo and forfour

Intelligent EV-Architecture
Battery-electric vehicle with up to 500 km range

Mercedes-Benz GLC F-CELL
Foundation of new Mercedes-Benz electric vehicle strategy
Rollout E-Mobility: Markets, Vehicle- & Drive Train Portfolio

I. Rollout into the main markets

- NAFTA
- Greater China
- WEU

2025: Share 15 – 25 %

II. Integration in Vehicle Portfolio

2022: >10 Electric Vehicles

III. Modular Battery Concept

- Entry
- Mid
- High
„Ecosystem“ Electromobility

Inductive Charging

Own Battery Factory

2nd-Use-Battery

Connected Services

Charging Infrastructure
DAIMLER

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CASE

Connected
Autonomous
Shared & Services
Electrified
Within a digital ecosystem Daimler Financial Services caters to a broad range of mobility demands.
We are preparing for the mobility value chain of tomorrow

**Vehicle Manufacturer**
"Somebody needs to develop, produce and sell the vehicle"

**Asset Provider**
"Somebody needs to pay for and own the vehicle"

**Fleet Operator**
"Somebody needs to take care of the vehicles"

**Service Platform**
"Somebody needs to offer the individual mobility service to customers"

**Aggregator Platform**
"Somebody needs to turn various mobility options into one-stop-shopping solutions"

**Meta Platform**
"Customers will expect mobility options to be seamlessly integrated into their digital life sphere"

**Mobility Customer**
Consuming "mobility-as-a-service/robo car services"

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Daimler AG
Daimler AG

is the world’s market leader in flexible car sharing

Find a car2go next to you – with or without reservation. Whenever you need it. Available in 26 cities as of June 30, 2017.

Drive

Simply open your car2go with your smartphone and start driving – as long as you want.

Park

After having arrived, park your car2go on any parking lot within the business area. That’s it!

Number of customers

<table>
<thead>
<tr>
<th>[in mn]</th>
<th>06/2016</th>
<th>06/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of customers</td>
<td>2.0</td>
<td>2.6</td>
</tr>
<tr>
<td>+30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Transactions

12.5

YTD 06/17
Daimler AG has become Europe’s largest taxi-hailing provider.

**Step 1**
Order your cab via your smartphone. Available in more than 65 cities as of June 30, 2017.

**Step 2**
Directly get in touch with your driver.

**Step 3**
Get real-time information about estimated arrival.

**Step 4**
Pay your ride with just one swipe.

**Number of customers**

<table>
<thead>
<tr>
<th></th>
<th>06/2016</th>
<th>06/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers</td>
<td>3.0</td>
<td>8.2*</td>
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</tbody>
</table>

* Including: customers of Hailo merger and Taxibeat acquisition
Excluding: Clever Taxi

**Transactions**

<table>
<thead>
<tr>
<th></th>
<th>YTD 06/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millions</td>
<td>26.0</td>
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</tbody>
</table>

* YTD 06/17 includes customers of Hailo merger and Taxibeat acquisition. Excluding Clever Taxi.
Leadership in Future Mobility will be determined by the combination of the four dimensions:

- E-Mobility
- Autonomous Driving
- Shared Mobility
- Digitalized Eco System
More Information at

www.Mercedes-Benz.com

Innovation – Sustainable mobility

www.Daimler.com

Sustainability
Disclaimer

This document contains forward-looking statements that reflect our current views about future events. The words “anticipate,” “assume,” “believe,” “estimate,” “expect,” “intend,” “may,” “can,” “could,” “plan,” “project,” “should” and similar expressions are used to identify forward-looking statements. These statements are subject to many risks and uncertainties, including an adverse development of global economic conditions, in particular a decline of demand in our most important markets; a deterioration of our refinancing possibilities on the credit and financial markets; events of force majeure including natural disasters, acts of terrorism, political unrest, armed conflicts, industrial accidents and their effects on our sales, purchasing, production or financial services activities; changes in currency exchange rates; a shift in consumer preferences towards smaller, lower-margin vehicles; a possible lack of acceptance of our products or services which limits our ability to achieve prices and adequately utilize our production capacities; price increases for fuel or raw materials; disruption of production due to shortages of materials, labor strikes or supplier insolvencies; a decline in resale prices of used vehicles; the effective implementation of cost-reduction and efficiency-optimization measures; the business outlook for companies in which we hold a significant equity interest; the successful implementation of strategic cooperations and joint ventures; changes in laws, regulations and government policies, particularly those relating to vehicle emissions, fuel economy and safety; the resolution of pending government investigations or of investigations requested by governments and the conclusion of pending or threatened future legal proceedings; and other risks and uncertainties, some of which we describe under the heading “Risk and Opportunity Report” in the current Annual Report. If any of these risks and uncertainties materializes or if the assumptions underlying any of our forward-looking statements prove to be incorrect, the actual results may be materially different from those we express or imply by such statements. We do not intend or assume any obligation to update these forward-looking statements since they are based solely on the circumstances at the date of publication.