



BIL Swedens elbilsseminarium, 2013.10.17

Michael De Geer, BMW Group Sverige

BMW - LÄTTA LÖSNINGAR FÖR EN HÅLLBAR MOBILITET.

**BMW
GROUP**



BMW GROUP VILL ERBJUDA PRODUKTER MED DRIVTEKNIK SOM EFTERFRÅGAS AV KUNDERNA – IDAG OCH I FRAMTIDEN.

Evolution

Effektiva
förbränningsmotorer.
Innovativ teknik.



Revolution

Alternativa drivtekniker.
Mobilitetstjänster.



BMW GROUPS DRIVTEKNIK-STRATEGI.



IDAG

- Optimisation of fuel consumption and emissions.
- Lightweight construction.



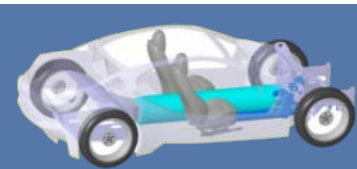
IDAG

- Full and mild hybrid vehicles.
- Initial step towards electrification of the drivetrain.
- Plug-in Hybrid drive-trains.



NÄRA FRAMTID

- First limited electric vehicle production in 2008.
- MINI E on the road since 2009.
- BMW ActiveE in 2011.
- Introduction of BMW i3 in 2013.



FRAMTID

- Commitment to and validation of technology.
- Focus on Crucial Components: Optimization of Powertrain Components (Fuel Cell and ICE).
- Improvement of hydrogen storage and efficiency.

BMW Group's drive strategy provides a **broad technology spectrum for today and the future.**

Förbränningsmotorer

Hybridteknik

Eldrift

Vätgasdrift

TESTPROJEKTEN MINI E OCH BMW ActiveE HAR GETT VIKTIGA KUNSKAPER FÖR BMW i.

MINI E (2009-2012)



16 million kilometers
~600 vehicles

High satisfaction of mobility needs.

Range was rarely the limiting factor.

Most users charge 2-3 times per week and charging events decreased during usage.

BMW ActiveE (2011-2014)



5 million kilometers
~1.000 vehicles

Adequate vehicle.

High interest of purchase.

Joy of driving and one-pedal-feeling.

BMW i3 and BMW i8



BMW i is more than just an electric car.

BMW i offers 360° ELECTRIC.

BMW i delivers joy of driving.

BMW i – PRODUKTLIVSCYKELN DEFINIERAS AV HÅLLBARHET.

New vehicle concepts



New materials and recycling



Production concept of the future



New electric drivetrain



Konstruktion, tillverkning och användning.



New processes



Employees

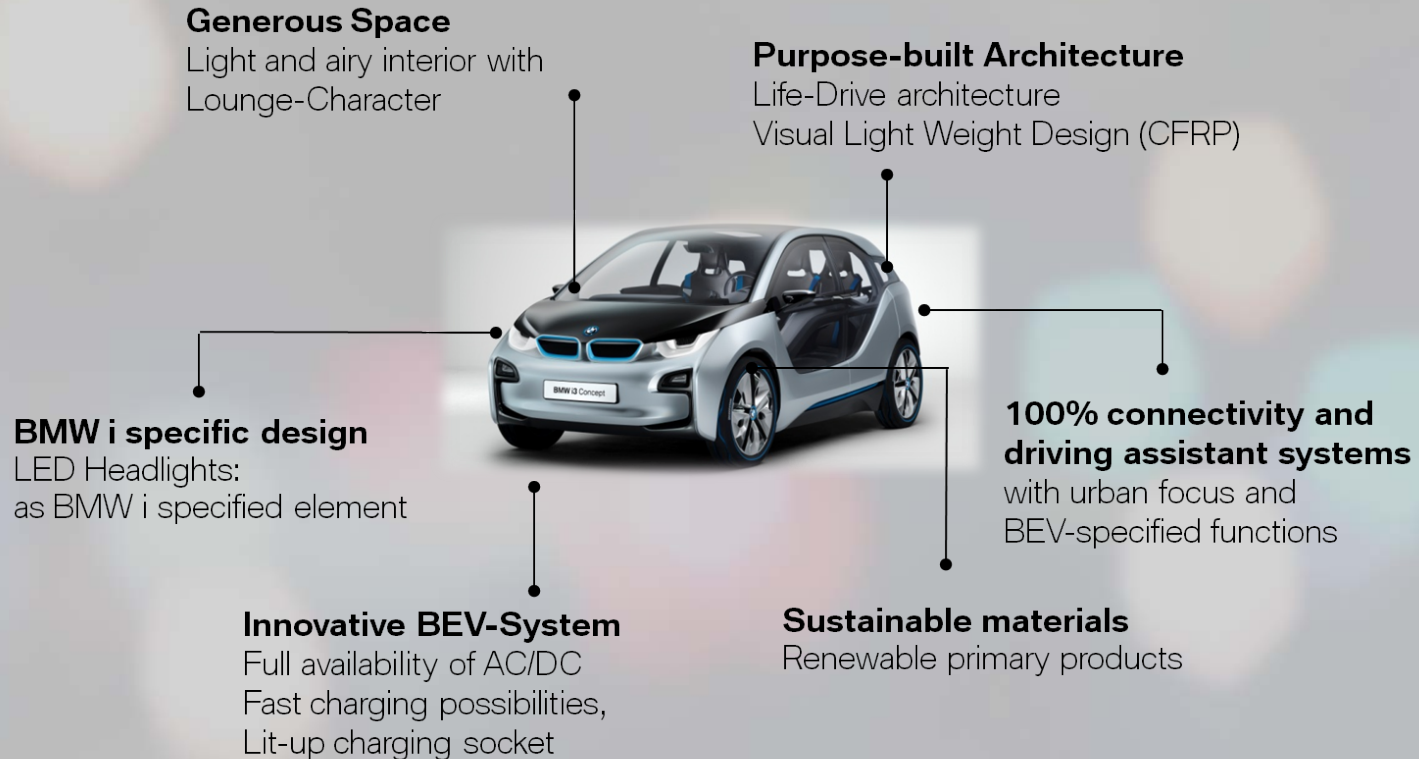


Pioneering design



New customers

BMW i3 – EN UNIK (EL)BIL KONSTRUERAD OCH TILLVERKAD EFTER HELT NYA FÖRUTSÄTTNINGAR.



BMW i-ARKITEKTUREN MED TVÅ MODULER: LIFE + DRIVE.

Life-Modul with CFRP passenger compartment



Drive Modul



Body surfaces

Lithium-Ion Battery

Electric motor with Power Electronics

Life-Modul with CFRP passenger compartment



Drive Modul



Body surfaces

Electric motor with Power Electronics

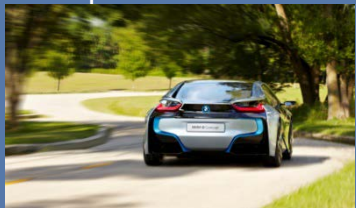
Lithium-Ion Battery

Fuel tank

Internal combustion engine with transmission

LIFEDRIVE-KONCEPTET GER NYA MÖJLIGHETER OCH LÖSNINGAR.

BMW dynamic driving performance



Vision: Clean Production



Optimised accommodation of the electric drive



Visionary design language



Innovative key-technologies: CFRP & electric motor



LIFE +
DRIVE

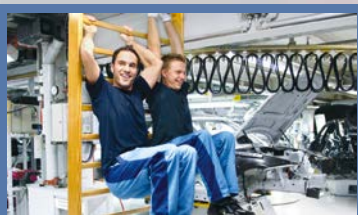
Free forms in the interior and exterior design



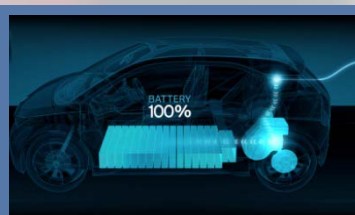
Easy to update with changing technologies



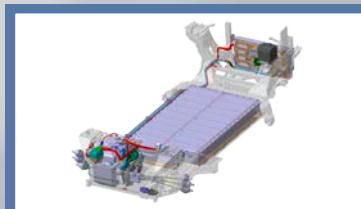
Social sustainability



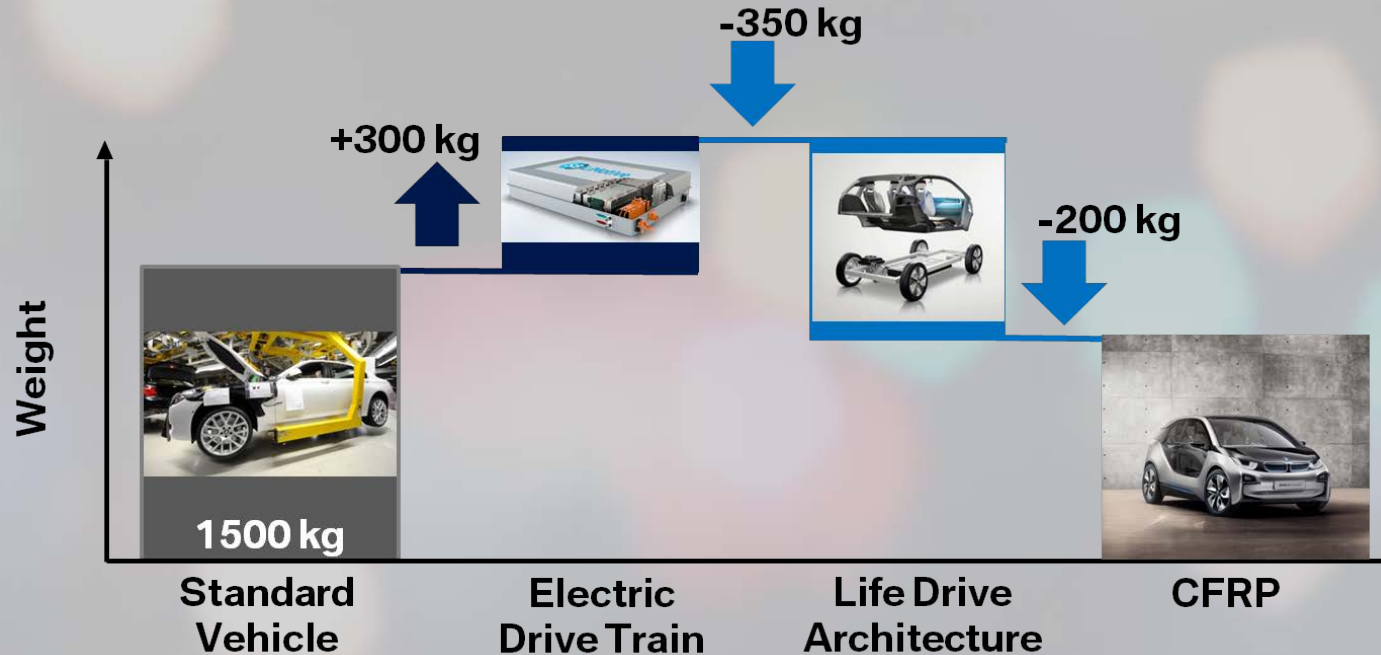
Customer related e-mobility concepts



Integrated safety concept for the high-voltage components



BMW i3 ÄR EN LÄTTVIKTSKONSTRUKTION TACK VARE LIFEDRIVE-KONCEPTET OCH DEN OMFATTANDE ANVÄNDNINGEN AV KOLFIBER.



50% LÄGRE CO₂-UTSLÄPP FRÅN BMW I CFRP-PRODUKTION ÄN FRÅN KONVENTIONELL CFRP-PRODUKTION.

Sourcing



Precursor

Joint venture SGL ACF



Moses Lake
Carbon fibre



Wackersdorf
Fabric

BMW
production network



Landshut and Leipzig
CFRP components

25% AV ANVÄND TERMOPLAST BESTÅR AV ÅTERVUNNET ELLER FÖRNYBART MATERIAL.

Recycled materials



Savings
80 kg CO_{2e}

Renewable raw materials



Savings
40 kg CO_{2e}

80% AV ANVÄNT ALUMINIUM ÄR ANTINGEN ÅTERVUNNET ELLER PRODUCERAT MED FÖRNYELSEBAR ENERGI.

Secondary aluminium



2 kg CO_{2e}

Primary aluminium produced
with renewable energy



5 kg CO_{2e}

Conventional
primary aluminium



10 kg CO_{2e}

BMW i-BILARNA TILLVERKAS MED MINDRE ENERGI, MINDRE VATTEN OCH HELT FÖRNYBAR ENERGI.

– 50% energy



– 70% water



100%
renewable energy



BMW i – EN HELHETSSYN PÅ HÅLLBAR MOBILITET.

BMW i vehicles



Innovative key-technologies: CFRP & High Voltage Motor



New sub-brand



Visionary design language



BORN ELECTRIC

New sales models



360° Electric



Customer related e-mobility services



Connectivity

TACK FÖR UPPMÄRKSAMHETEN!

