ThyssenKrupp AG

Light Weight Designs for Electric Vehicles

Dr. Karsten Kroos

International Conference Electric Mobility Going Global

Berlin, 28th of May 2013

NATIONALE PLATTFORM ELEKTROMOBILITÄT

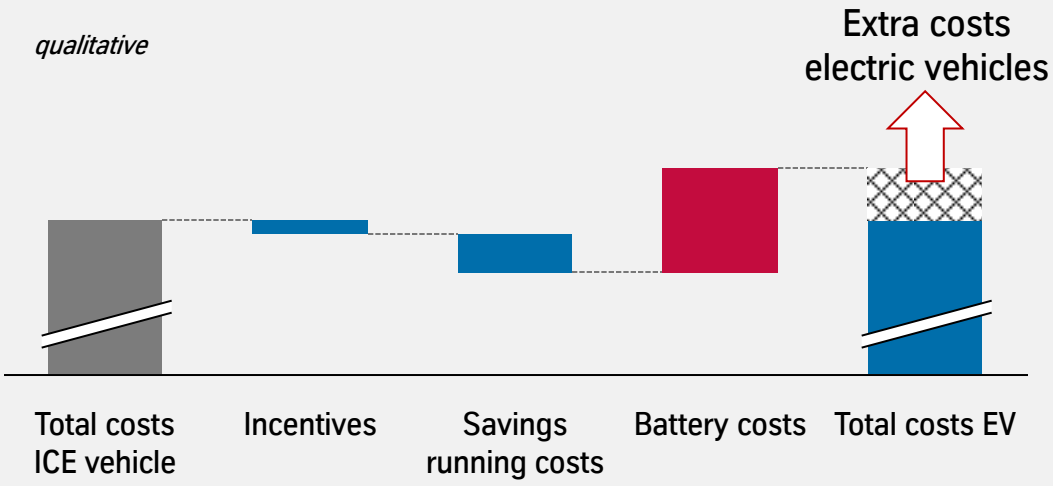
Developing the future.

ThyssenKrupp

Challenges: Battery Costs and Vehicle Weight

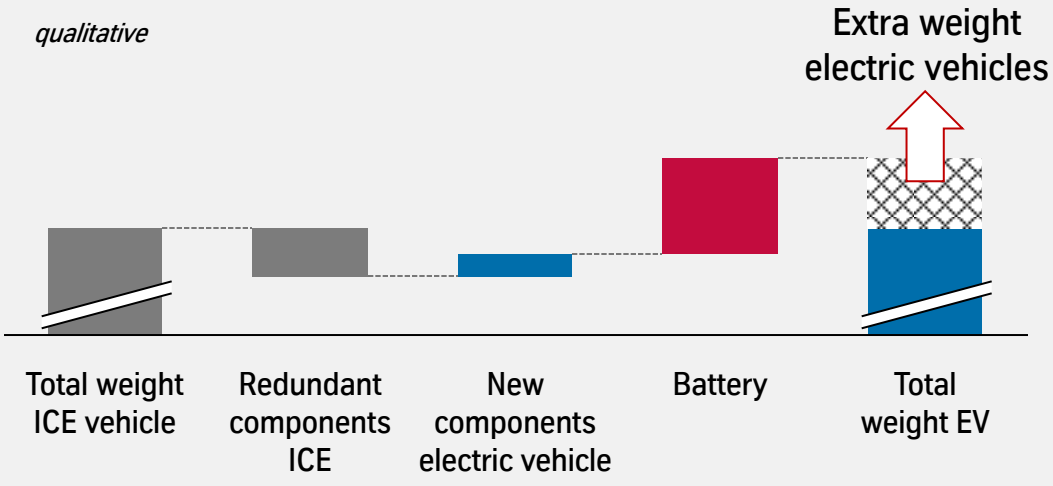
NATIONALE PLATTFORM ELEKTROMOBILITÄT

Cost Comparison



Costs ↑

Weight Comparison



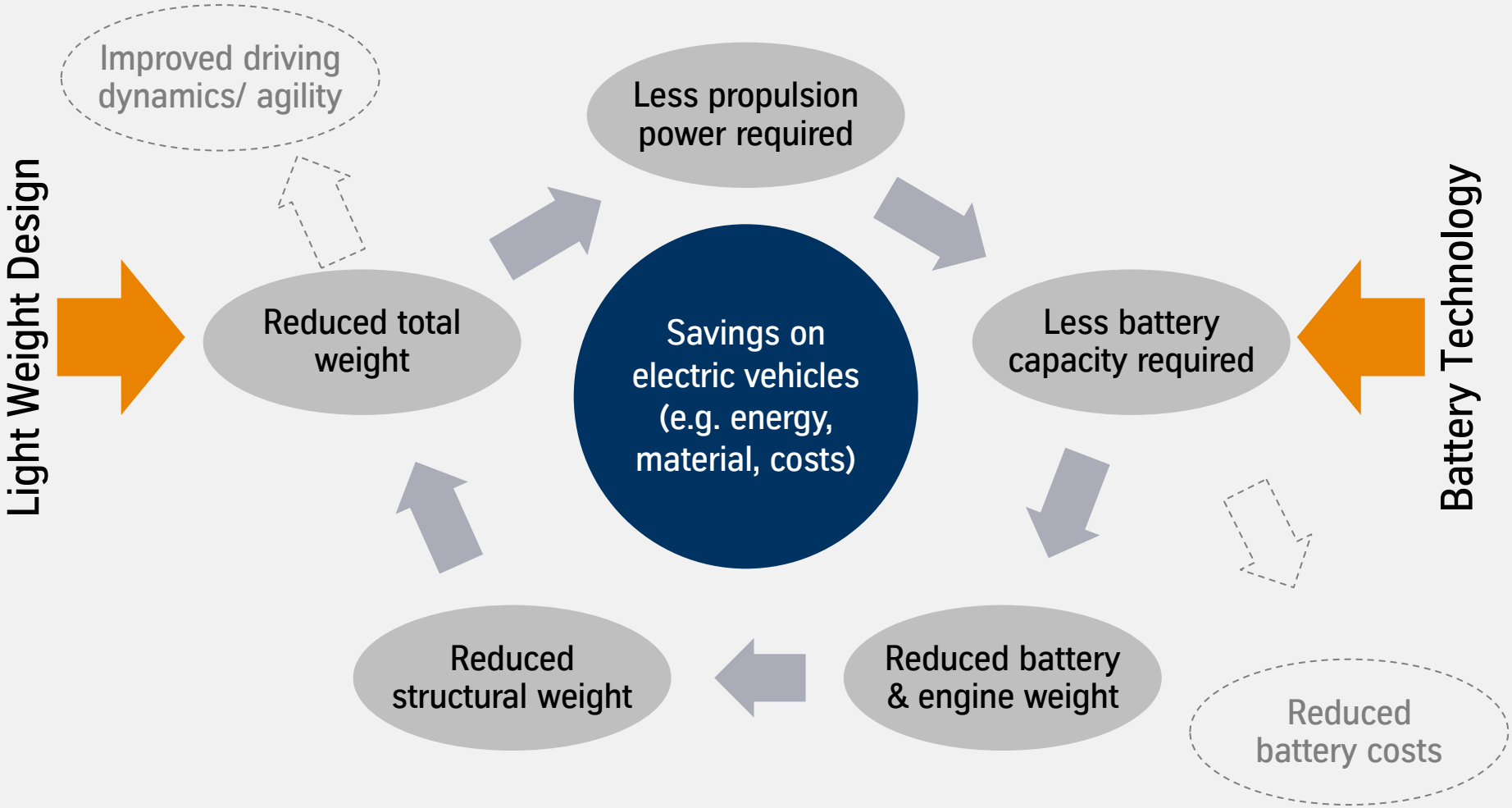
Driving dynamics/ Agility ↓

ICE = Internal Combustion Engine, EV = Electric Vehicle

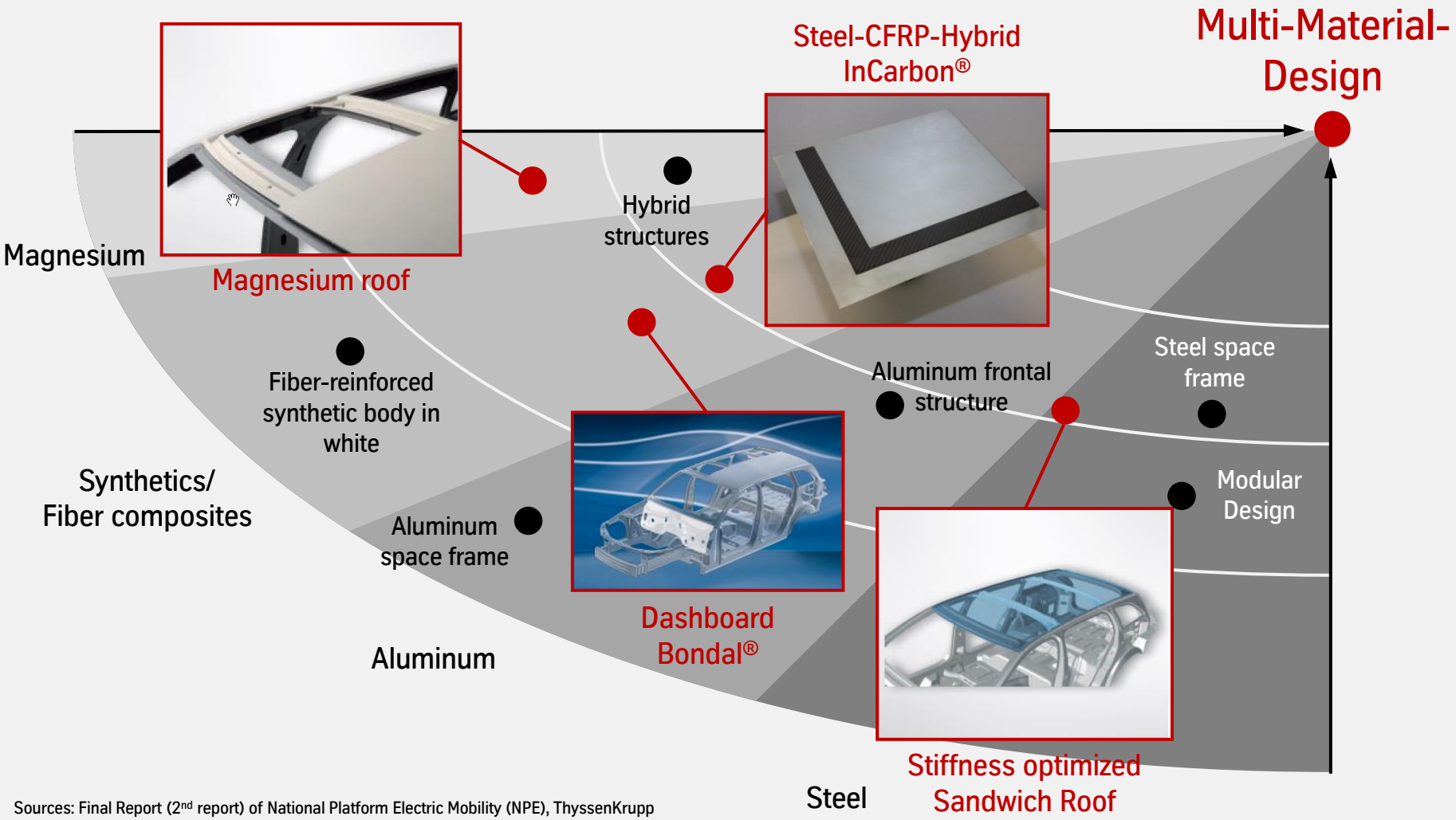
Developing the future.

ThyssenKrupp

Light Weight Design Is Key Enabler for affordable Electric Mobility



NPE Approach: Multi-Material Design for Cost and Resource-efficient Light Weighting



Sources: Final Report (2nd report) of National Platform Electric Mobility (NPE), ThyssenKrupp

Light Weight Design Provides significant Competitive Advantage

NATIONALE PLATTFORM ELEKTROMOBILITÄT

Fields of activities within the NPE

- Light weight materials for the automotive serial production
- Modular light weight design concepts for electric vehicles
- Light weight components
- Resource efficient production processes suitable for large batches

Multi-Material-Design

- Light weight and multi-material design is a **key enabler** for electric mobility
- Due to its **highly developed material and process competences** Germany holds a leading position in the metal and polymer processing industry
- To maintain this **competitive advantage** it is crucial to push developments for new materials or combinations of materials as well as to extend energy and cost efficient processes
- The **comprehensive program of the NPE** requires a close alliance between industry, science and politics