



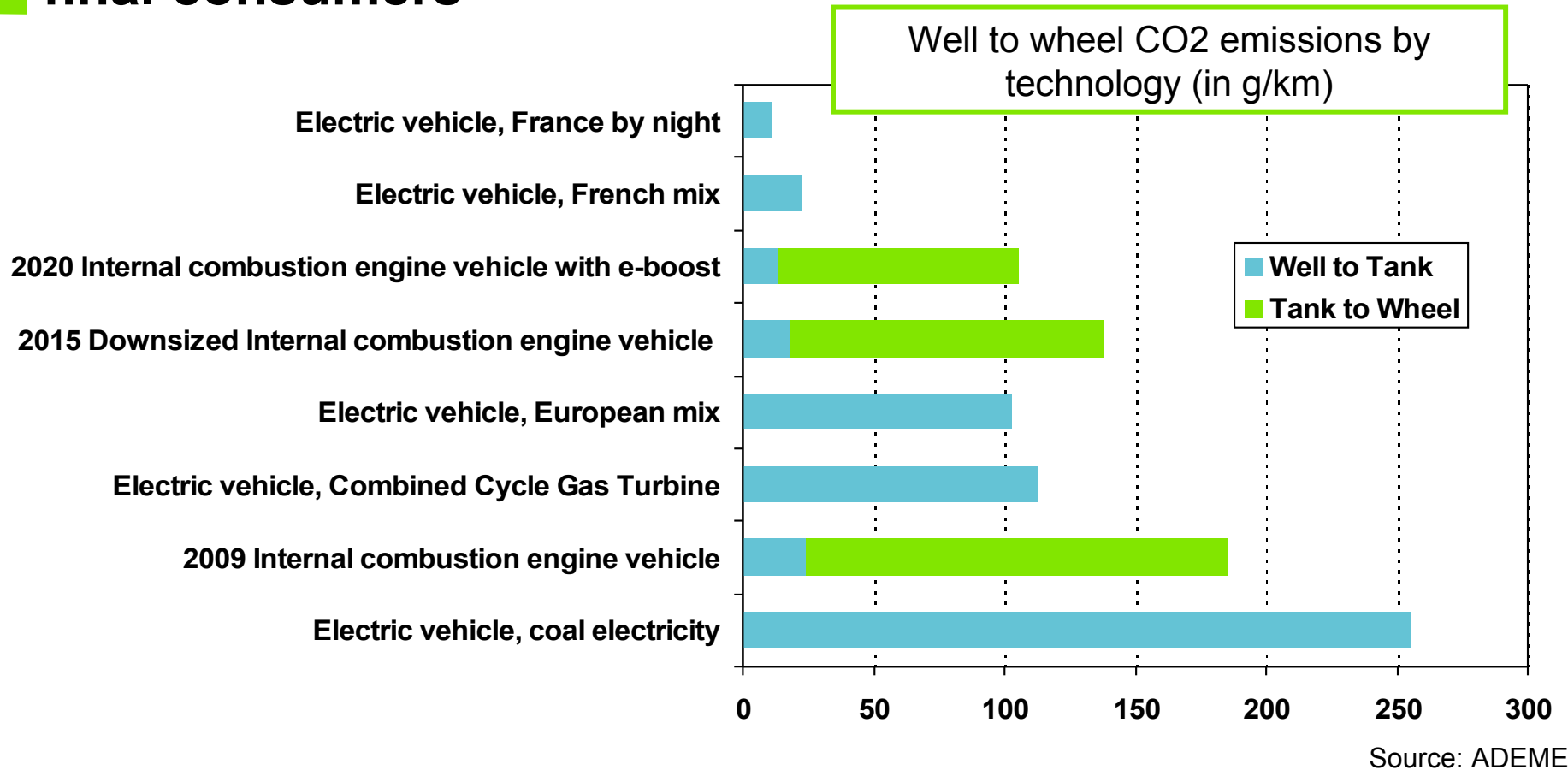
# Decarbonize cars

multiple solutions, multiple opportunities for  
the automotive industry

April 14-15, 2010

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Group VP Corporate Planning & Strategy

# No unique solution for multiple environments & final consumers



31 March 2010

“because driving the vehicle would result in CO2 emissions if charged from conventional energy sources, the claim the vehicle had “zero emission(s)” was misleading.”

# Some certainties

## ■ Driving a car is 100% energy inefficient

- Driving from A to B, and then back to A, delivers 0 effective work
- Energy saving is not limited in theory!

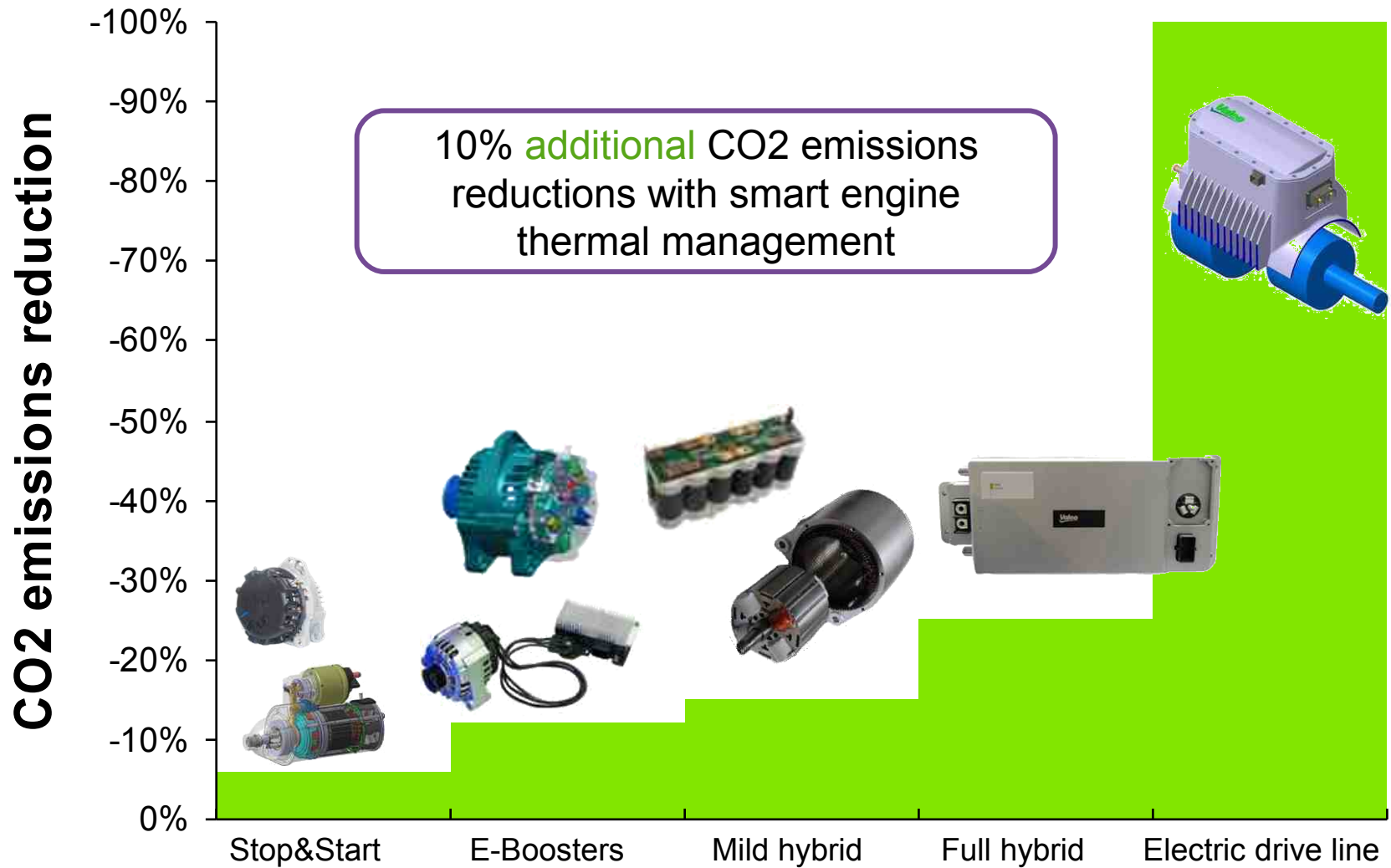
## ■ 70%+ of the energy of an internal combustion engine is lost in thermal energy

## ■ Drivers use the whole capacity of their car very rarely

- Engine running at red light
- Car dimensions for the biggest use (holidays...)
- Engine sized for peak use, not for 95%+ of time use

A broad technology portfolio  
to be developed for all these stakes

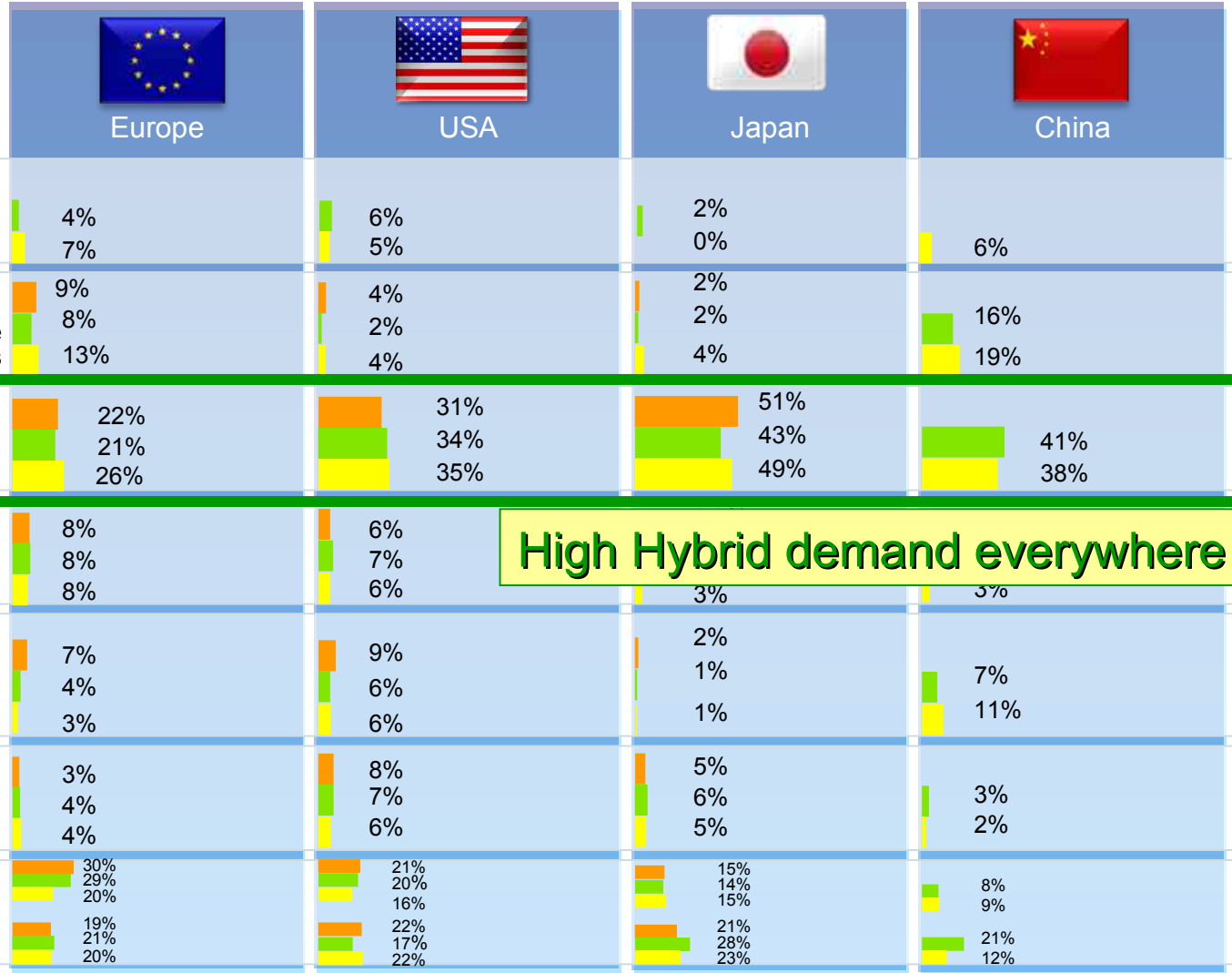
# Large technology panel: Hybridization example



# Automotive Challenges – Enduser Expectations

## Which Alternative Drive System would you prefer?

■ 2007  
■ 2008  
■ 2009



High Hybrid demand everywhere

\*Brand new car Buyers : 1790

\*Brand new car Buyers : 782

\* Prospective Car Buyers, n = 1.394 \* Prospective Car Buyers, n = 2347

# Clear growth opportunities for the automotive industry



April 1, 2010

“DOT, EPA Set Aggressive National Standards for Fuel Economy and First Ever Greenhouse Gas Emission Levels For Passenger Cars and Light Trucks”

“The standards would lead to **increases in average new vehicle prices** ranging from \$457 per vehicle in MY 2012 to \$985 per vehicle in MY 2016”

“The agency estimates that **incremental costs for achieving its standards** will total about \$52 billion.”

## ■ Huge R&D effort to be launched

- R&D efforts to be concentrated / R&D risks to be shared?
- Transversal standards to be created
- Suppliers to play a major role?

## ■ Public sector role

- R&D incentives
- Stable regulations to accelerate take rates increase

**Valeo**

The logo features the word 'Valeo' in a bold, green, sans-serif font. Below the text is a dark blue graphic element consisting of a curved line that starts under the 'V', dips down, and then curves back up under the 'o'.

*Automotive technology, naturally*