ERTRAC Conference
Implementing the Strategic Research Agenda

Innovation for Safety and Competitiveness

Introductory speech:

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Meet the standards of continuous improvements for a better mobility

- The requests from the urban context
- The socio-economic requirements for the industry
- A tremendous challenge: new decarbonized solution cars paving the way for new driving behaviors.

In the context of« Urban burdens/challenges »

- DEMOGRAPHY AND MIGRATIONS

  Urban zones will have to accommodate 2 billion more people in the next 20 years.

- MOBILITY AND **COMPETITIVENESS**

  How to cope between **city congestion** and **city attractiveness**?

- SAFETY FIRST

  How to improve road safety?

The industry adaptation to meet the new challenges

- From a Multi-stakeholders approach, diagnosis…
- To the delivery from the supply chain of the industry

The industrial process requirements for innovation

- Amongst automotive industry: suppliers and OEM's

-Costly choices call for risk sharing

-More co-decision making

- Towards a better efficiency of co – innovation :
  - making the pertinent choices
  - better **co-development** in projects

- Industry's "lessons learned cards"

- Learn from other industries (Information Society,…)

and .innovative business models

=> Increase perceived value of innovation for end consumer and all the other stakeholders

How could driving look and feel in the future:

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Drive eco-friendly

- Neutral CO2 emission balance
- Lighter materials
- Hybrid / pure EV concepts
- Internal engine measures
- Car sharing and car on demand

Drive safe and smart

- Dialogue with other vehicles/traffic infrastructure
- Intelligent traffic mgmt
- Automatic warning on tail-end traffic jams

Just good enough and cheap

- Downsized engine technology for low cost market
- Use of older product generation for emerging market
- Interior reduction to basic and simple functionalities

Modularity

- Variable power engines, i.e. power to be chosen/paid via mobile devices
- Flexible set-up changes of basic features
- Integration/use of external intelligence

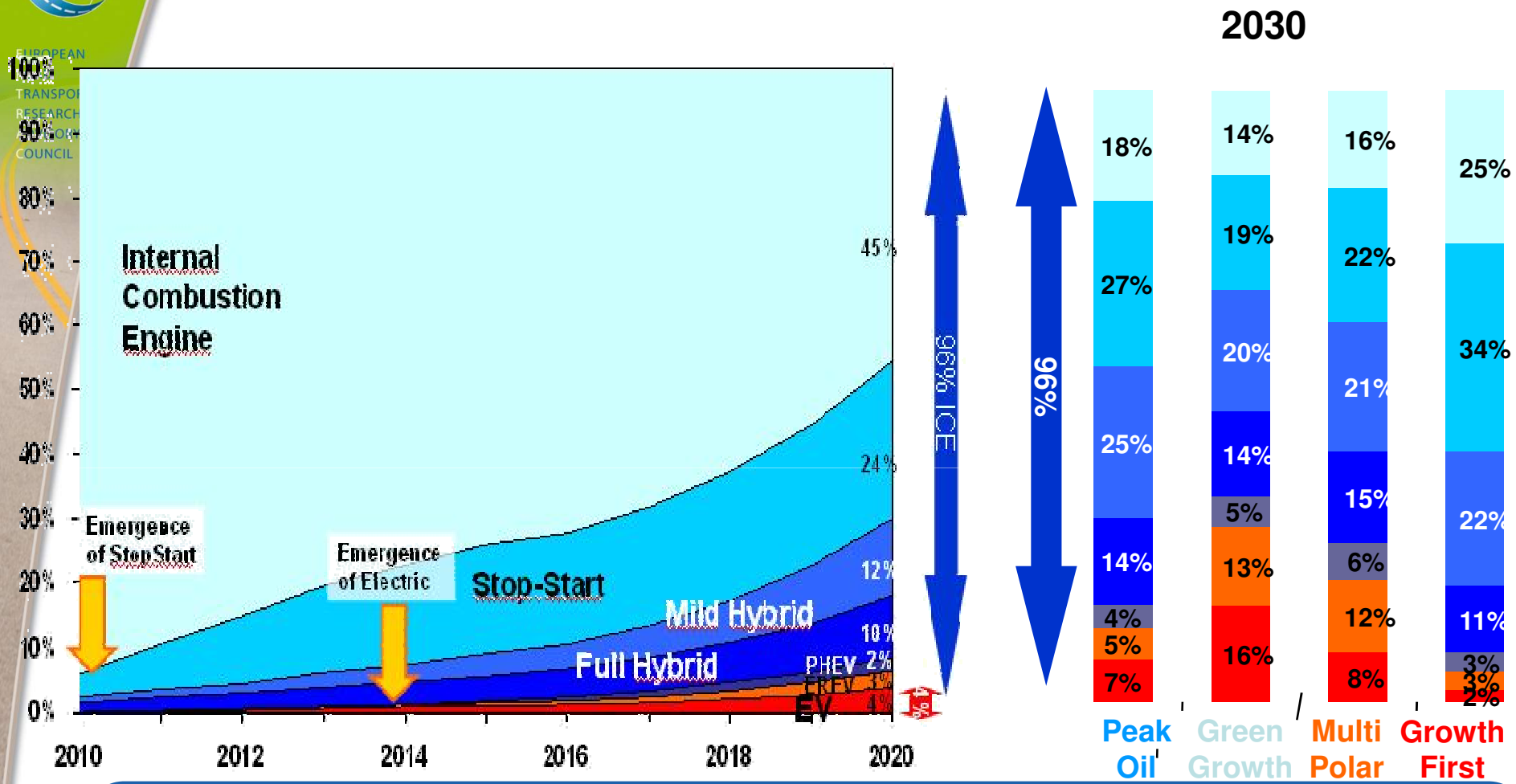
Easy comfort

- Situational automation of driving systems
- Integration of mobile devices and onboard electr.
- Flexible exterior/interior configurations
- Modification car window transparency

An example of future context dealing with competitiveness

- Electrification of drive-train and the different scenarii: what it will mean in terms of market/research orientations?

What kind of powertrain in 2030 ?



Peak Oil ➔ High Hybrid fitment rates because fuel economy is key
Green Growth ➔ Regulation & infrastructure pushing EVs & Hybrids
Multi Polar World ➔ Mixed of 2 different markets becoming a reasonable forecast
Growth First ➔ Low EV fitment rates, only rationales push other Hybrids

2020 World Electrical Systems market

Source: PTS Databook & MTP Release October 2010

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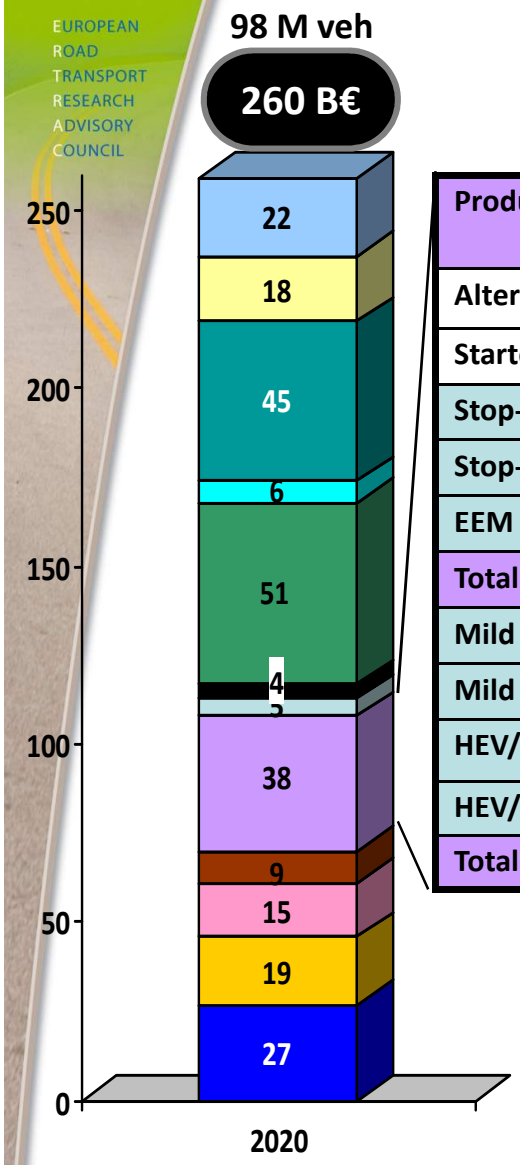


ELECTRICAL SYSTEMS

Products	Market Size 2010 (M€)	Market Size 2015(M€)	Market Size 2020 (M€)	CAGR 10-20
Alternator	2 964	3 402	2 554	-1%
Starter	1 803	1 763	1 240	-4%
Stop-Start (ReStart)	101	525	684	21%
Stop-Start (iStARS)	49	243	454	25%
EEM 12 V S/S	61	261	310	18%
Total Conventional	4 977	6 194	5 242	0,5%
Mild e-Motor	115	620	1 840	32%
Mild Power Elect	239	1 160	3 815	32%
HEV/EV e-Motor	809	2 900	8 031	26%
HEV/EV Power Elect	1 361	5 274	15 457	28%
Total Hybrid	2 524	9 954	29 143	28%

7,5 B€ **16,1 B€** **34,4 B€**

16% CAGR

2010-20 Growth

Conventional + Stop-Start = FLAT MARKET

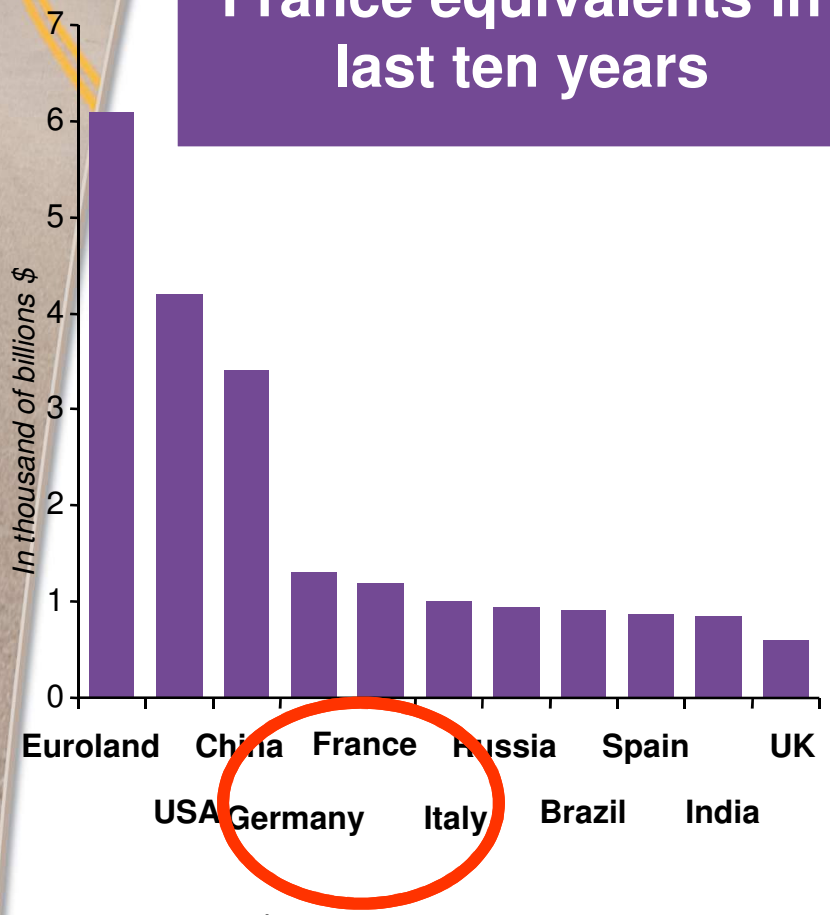
e-Motor + 8,9 B€ x 10,7

Power Electronic +17,7 B€ X 12

Major growth engine

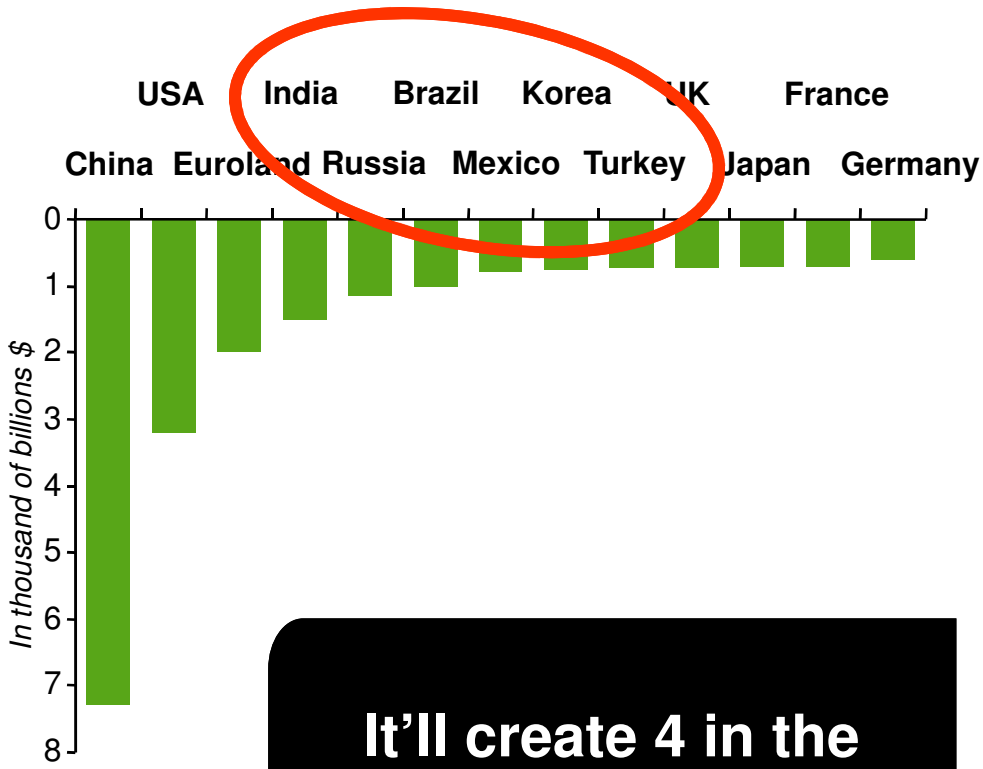
ALL THIS Meanwhile… : the center of gravity of the world is changing

China has created 2 France equivalents in last ten years



Change in US$ Size of GDP from 2000 to 2009

Change in US$ Size of GDP from 2010 to 2019



It'll create 4 in the next ten years!

ERTRAC's improvements

- Added **Competitiveness** as **new** pillar of the new Strategic Research Agenda.
- Integrated with the other ones and particularly Safety.

Implement the SRA, dedicated to unleash the research potential and delivery.