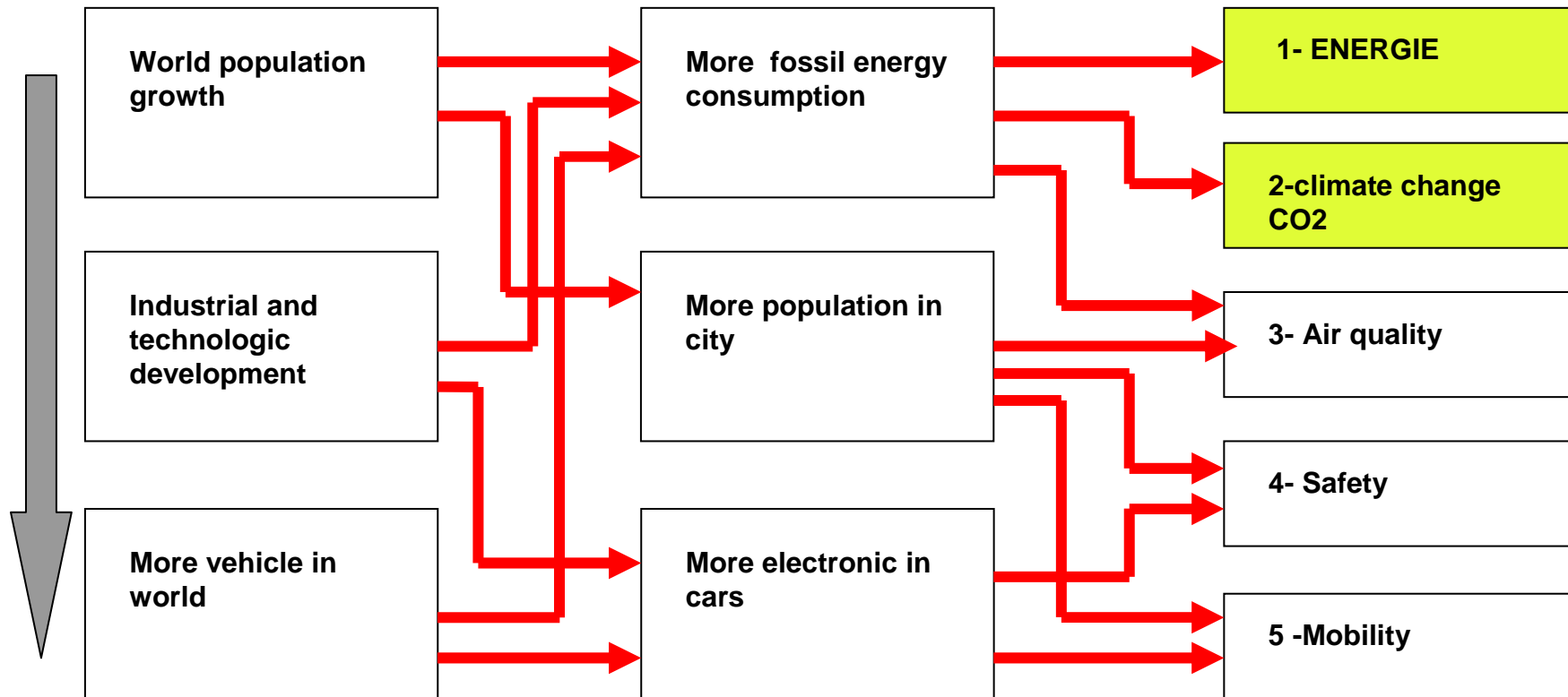


The ecological car for “each” the green innovation



The major challenges for car:



Today's five major challenges for the tomorrow's car

vehicles more ecologic of « each »

For us,

*Each customer has a need for mobility specific to his world of life,
adapted to the geographical area where he live,*

Consequently we must propose the best economic choice in term of:

Energy

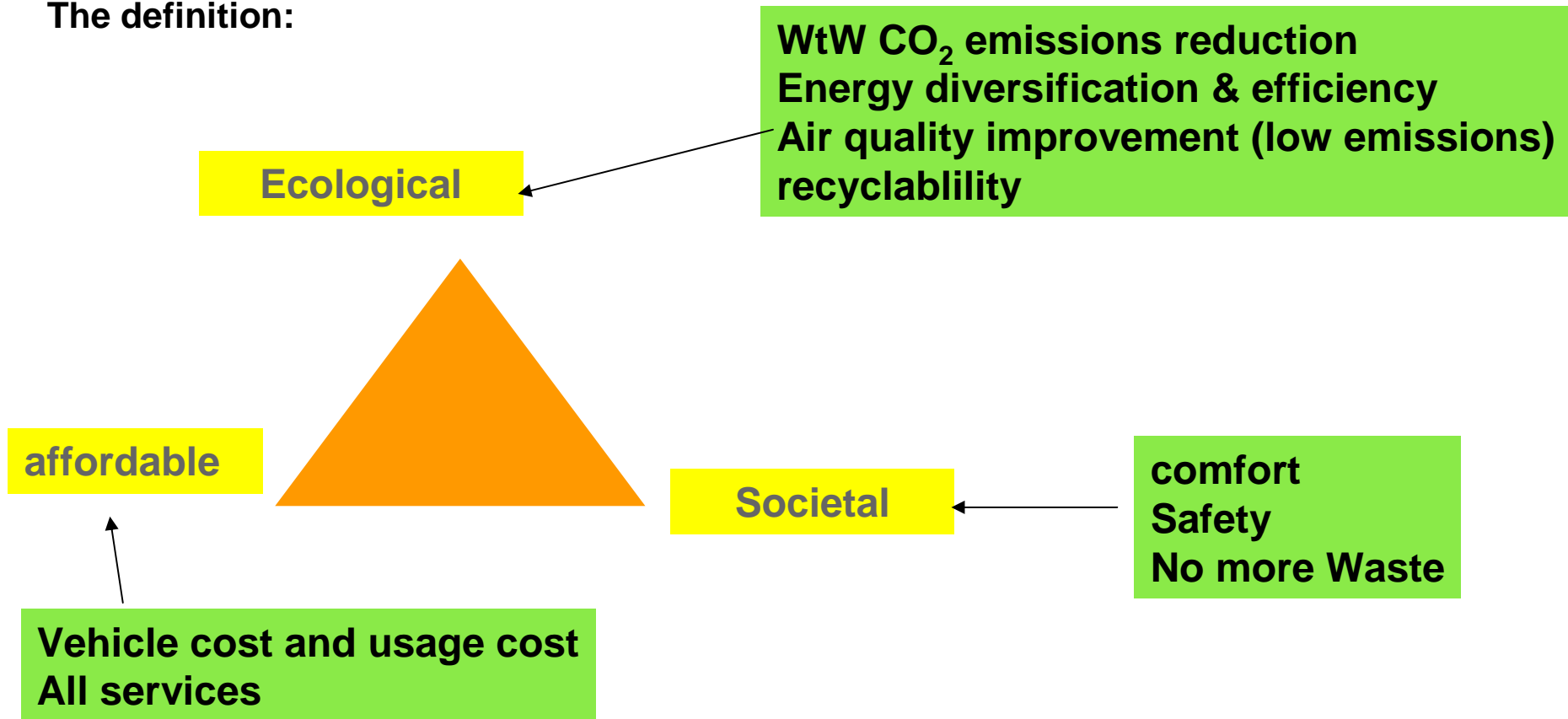
Technology

Usage



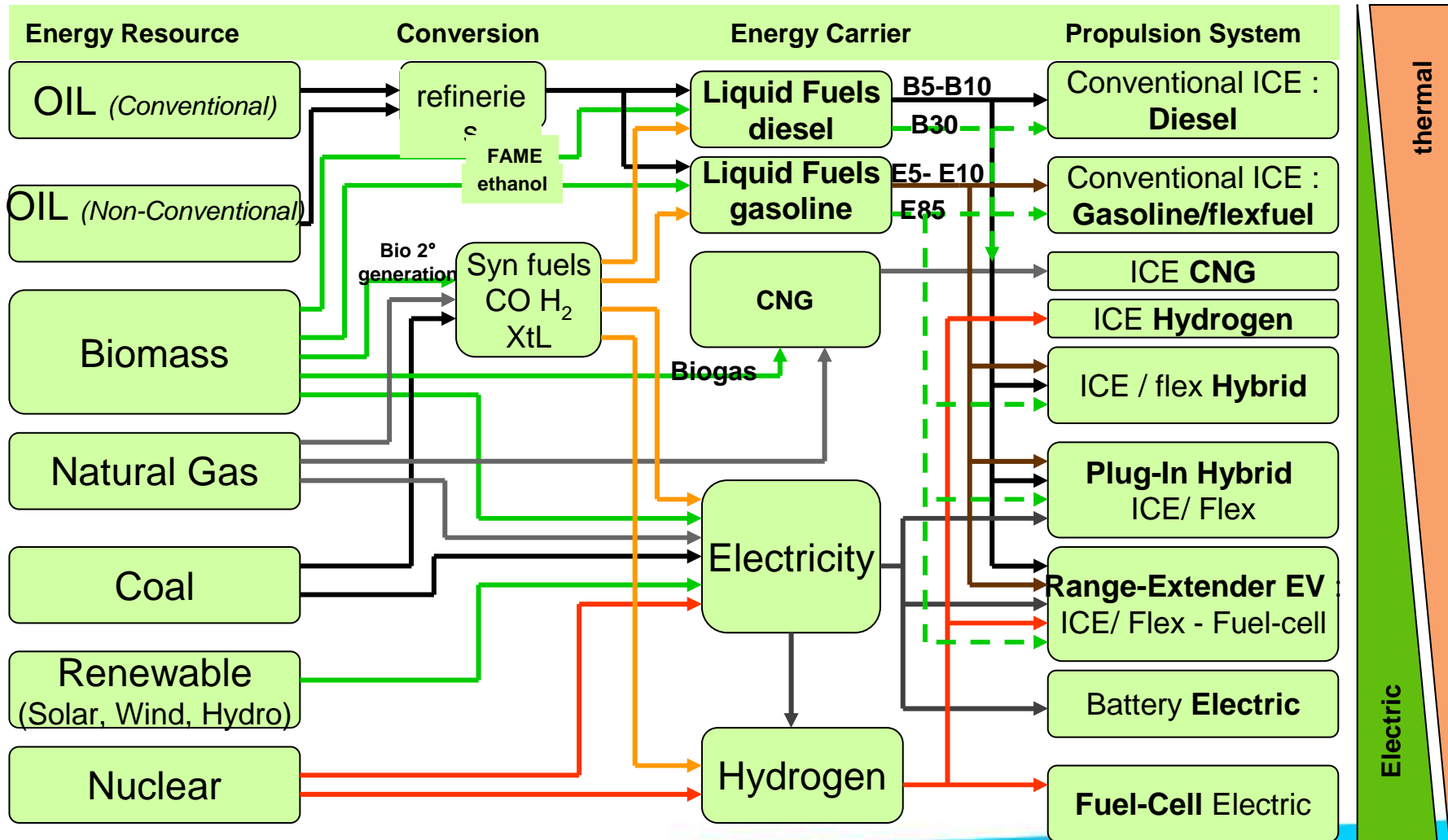
Ecological Affordable Car

The definition:



energies / technologies panel

With the diversity of energies, the 'well to wheel' approaches are necessary.



PSA, CO2 leader

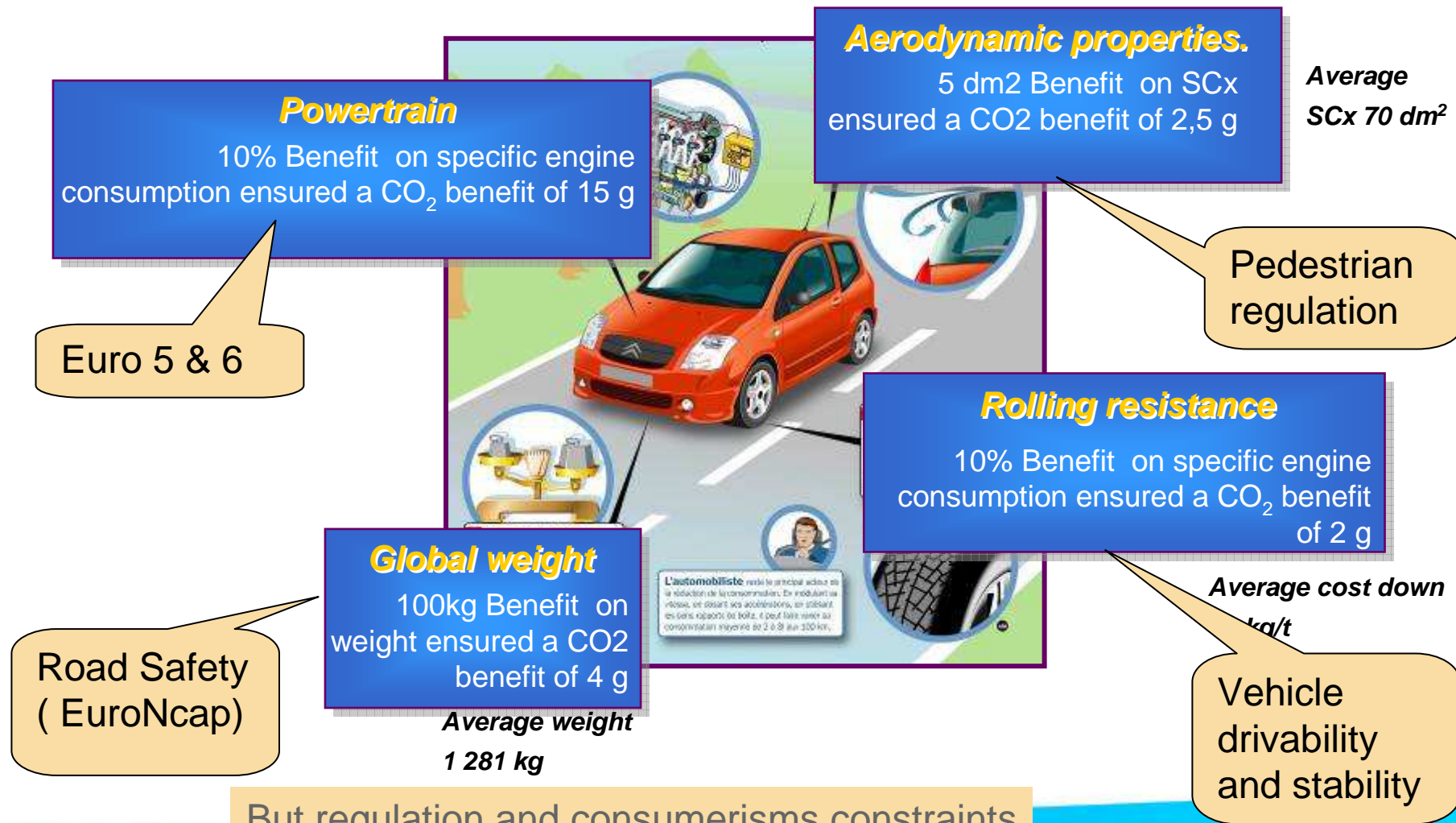
- 1st manufacturer in France with the classification of the ADEME.
- 1 million vehicles <140g CO₂/km sold in 2007.
- 1st manufacturer in Europe for low consumption vehicles with more than 400.000 sales of low consumption vehicles (lower than 130g CO₂ / km).



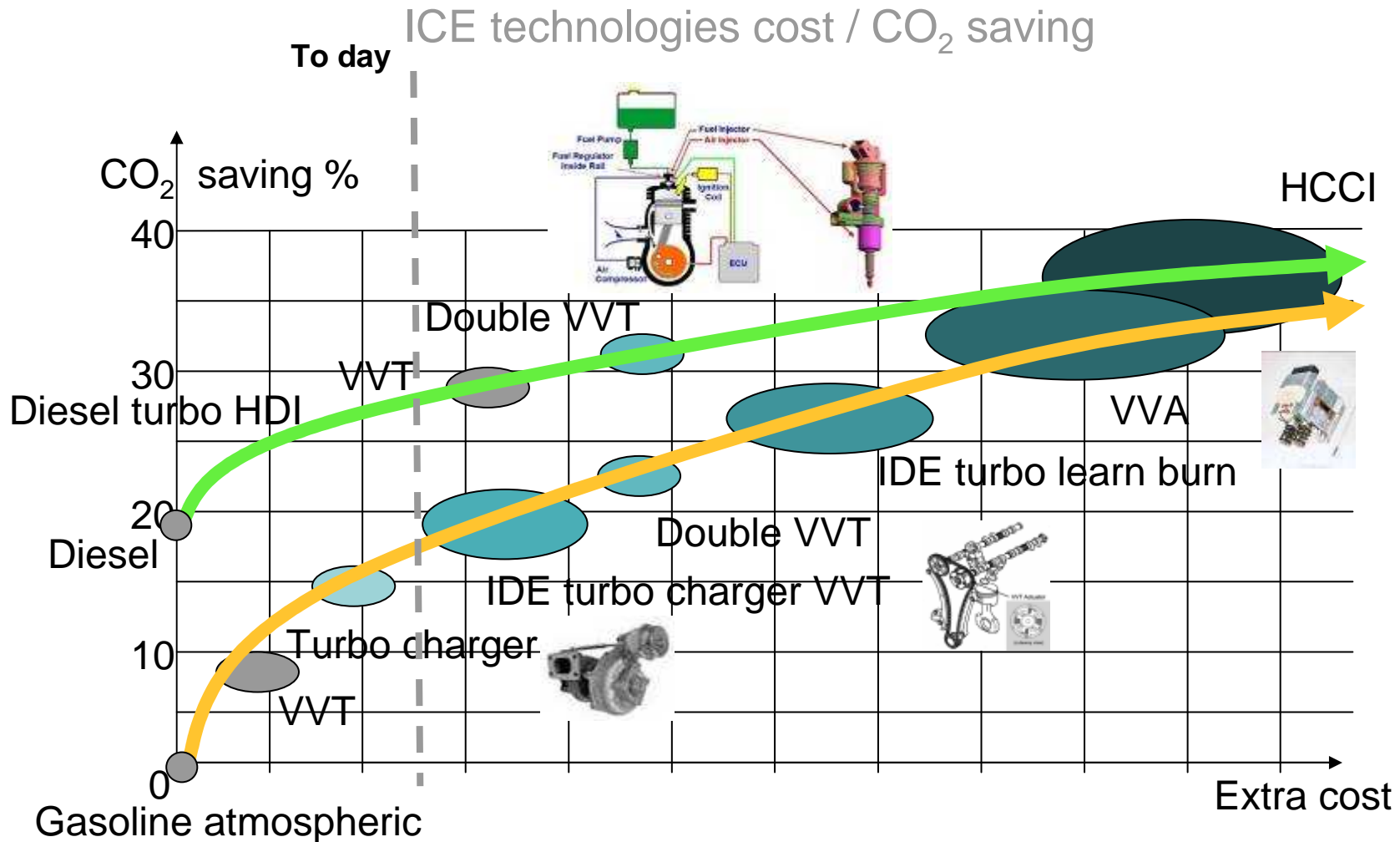
PSA, leader of low CO2 vehicles

Increase efficiency at the level of vehicle

Solutions and constraints

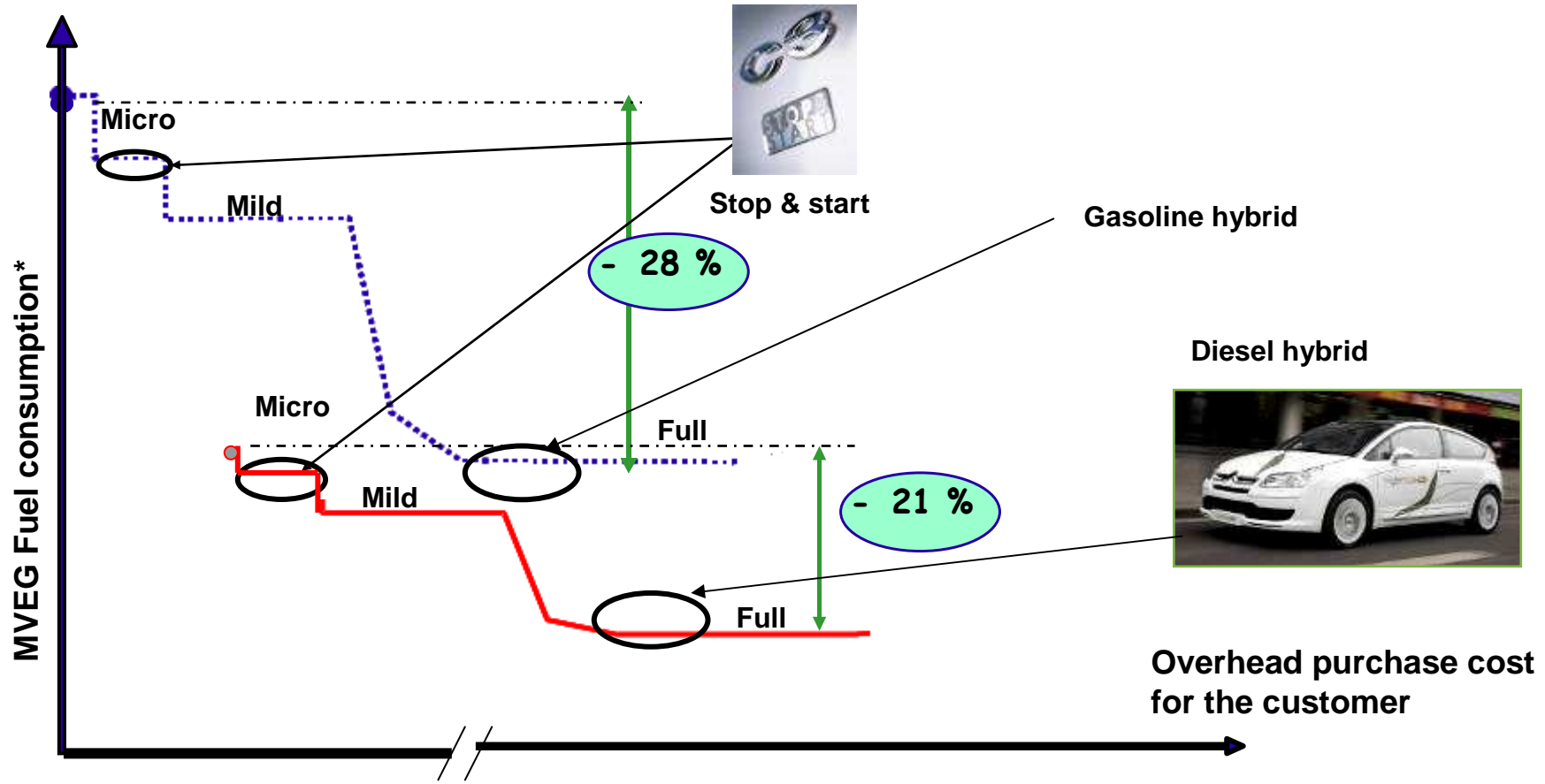


Internal Combustion Engines: Improve efficiency



efficiency increase: but with extra cost

PSA hybrid technology :



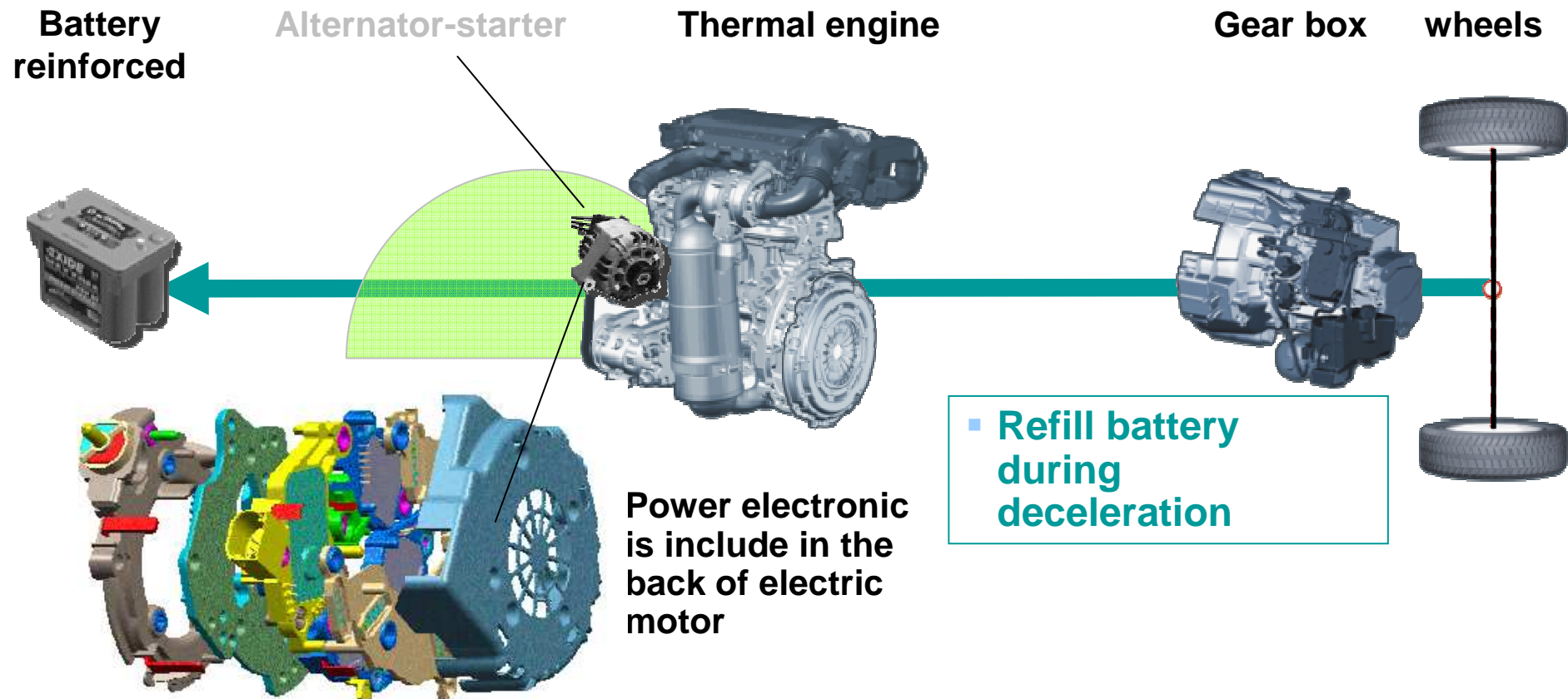
The benefit and cost for customer

..... : Gasoline
—— : Diesel

**Simulation with same performance car, just change the drive train*

PSA hybrid technology : Micro Hybrids

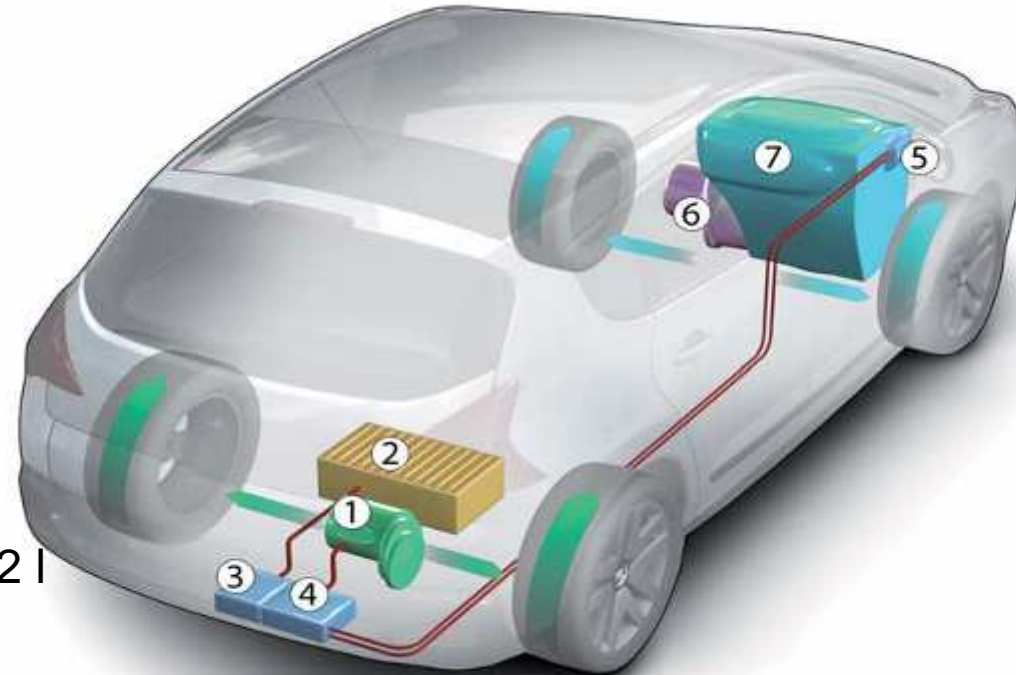
Micro Hybrid (Stop & Start optimise)



PSA Peugeot Citroën large deployment plan on gasoline & diesel engine start on 2010 with 1.1 million vehicle sold /year.

PSA hybrid technology : Full hybrid HYn 4

- 1 Electric motor
- 2 Power battery
- 3 BMU
- 4 Power electronic
- 5 High voltage STT
- 6 Senso-drive gear box
- 7 Diesel HDI from 1,6 to 2,2 l



- 4-wheel drive
- Comfort during ratio change
- Flexibility to adapt drive train to other thermal engine and other levels of electrical power.
- Improvement of the CO2 profit (better beach of mode in recuperation of energy)
- Maximum efficiency of the HDi engine on motorway (>120km/h automatic disconnection of electric motor to remove the electromagnetic losses and frictions).

PSA hybrid technology : HY 4



Concept Citroën HYPNOS

motorisation hybrid HDI 200 ch (147 kW)

Consumption: 4,5 l/100 km

CO2/km : 120 g



Concept Prologue Peugeot

motorisation hybrid HDI 200 ch (147 kW)

Consumption: 4,1 l/100 km

CO2/km : 109 g

Electric vehicles: PSA background



Citroën C15 - 1989
V. Max: 90km/h - 70km



Citroën AX - 1993
V. Max: 91km/h - 80km



Citroën Saxo - 1997
V. Max: 91km/h - 75 km



Citroën Berlingo - 1998
V. Max: 95 km/h - 95 km



Peugeot Partner - 1998
V. Max: 95 km/h - 95 km



Peugeot 106 - 1993
V. Max: 91km/h - 75 km



Véhicules Electriques
"Zero Emission"

10 000 EV sold from 1989 to 2004

PSA electric technology: Partnership EDF - PSA

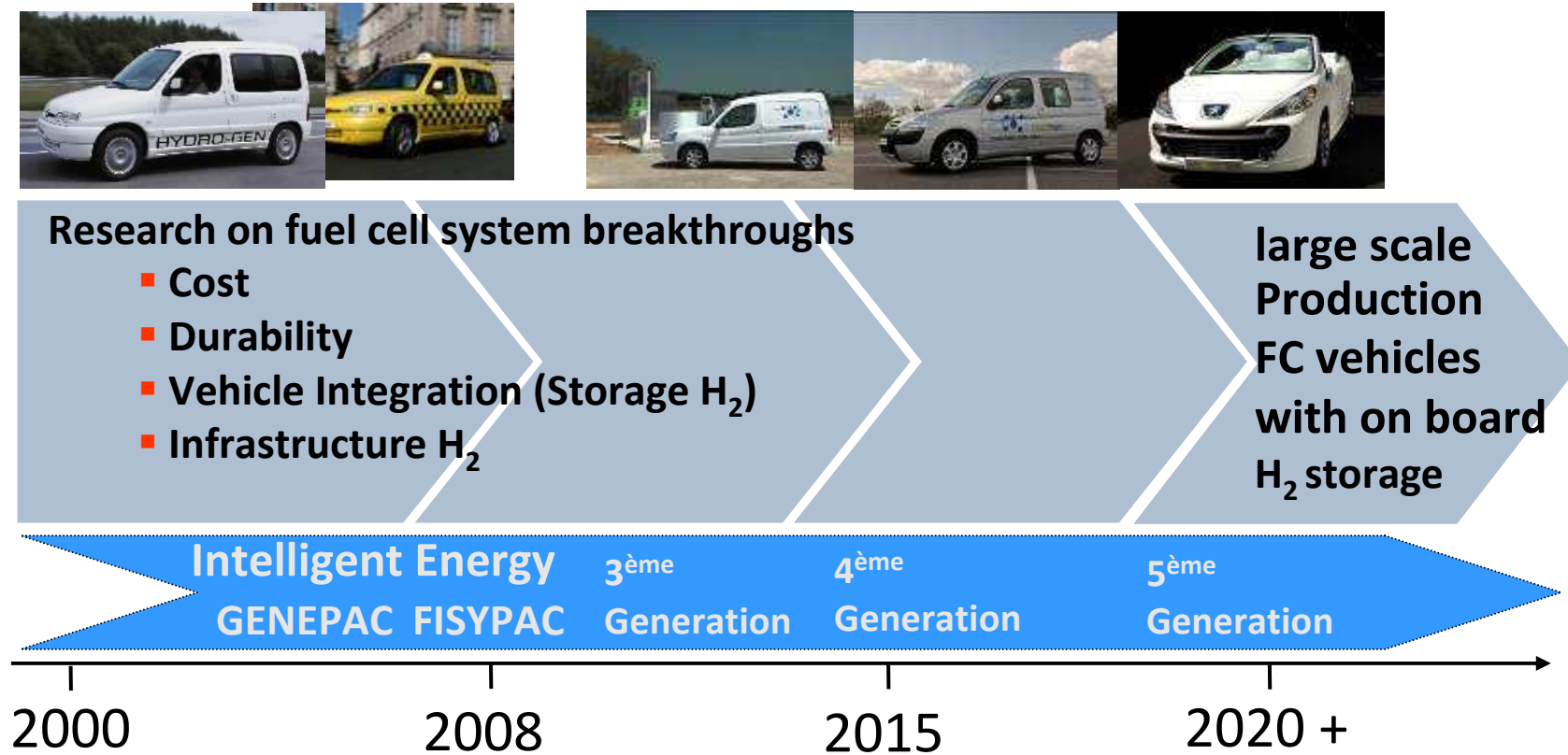
On electric and Hybrid plug-in vehicles

This cooperation agreement relates to several technological actions:

- **The definition of the economic models allowing to support the commercial development of the electric-powered vehicles,**
- **New energy storage technologies, in particular the batteries Lithium-ion,**
- **Vehicles charge systems, communication protocols between the vehicles and the network during the refilling and their standardization.**

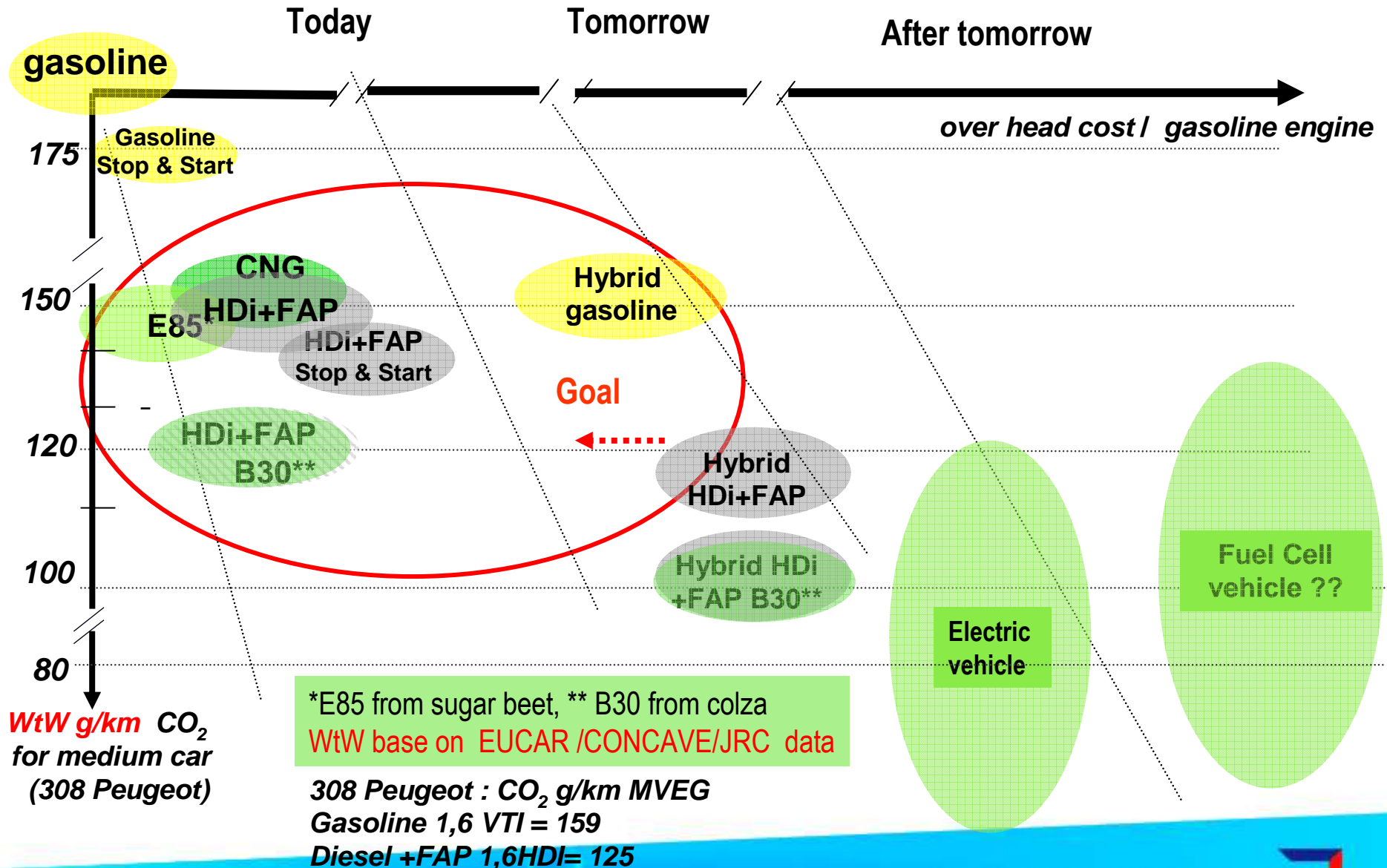


PSA Fuel cell technology : road map



The first most probable uses: are range extender electric-powered vehicles

Conclusions: ecological affordable car



4/ Conclusion :

In 2012 PSA the most ecological manufacturer of the world

To propose ecological vehicles for “each”:

Better choice Energy /Technology adapted to each need for mobility, supporting:

Energy efficiency,

A weak impact on the climate,

A weak impact on the soundness,

And at a cost adapted to the use according to the geographical areas.

All that to obtain significant and fast results on storage thanks to a fast “Pervasion” (speed of penetration on the market),

Vehicule partnership

➤ 107



➤ C1



TOYOTA - PSA

➤ 4007



➤ C-Crosser



MMC-PSA

Vehicule partnership

➤ 807



➤ C8



FIAT-PSA

➤ Bipper



➤ Nemo



➤ Boxer



➤ Jumper



enginePartenship



**Moteurs diesel 1,4l – 2,7l
FORD-PSA**



**Moteurs essence 1,3l – 1,8l
BMW-PSA**

Electric component partnership



Organes électrique
MMC-PSA

