

Renault's roadmap towards Environmental Life Cycle Management



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THREE MAJOR ENVIRONMENTAL CHALLENGES AT THE SAME TIME ...



URBAN AIR
POLLUTION



GLOBAL
WARMING



RESOURCES
DEPLETION

... THREE OPPORTUNITIES FOR RENAULT



**ENVIRONMENT
& HEALTH**

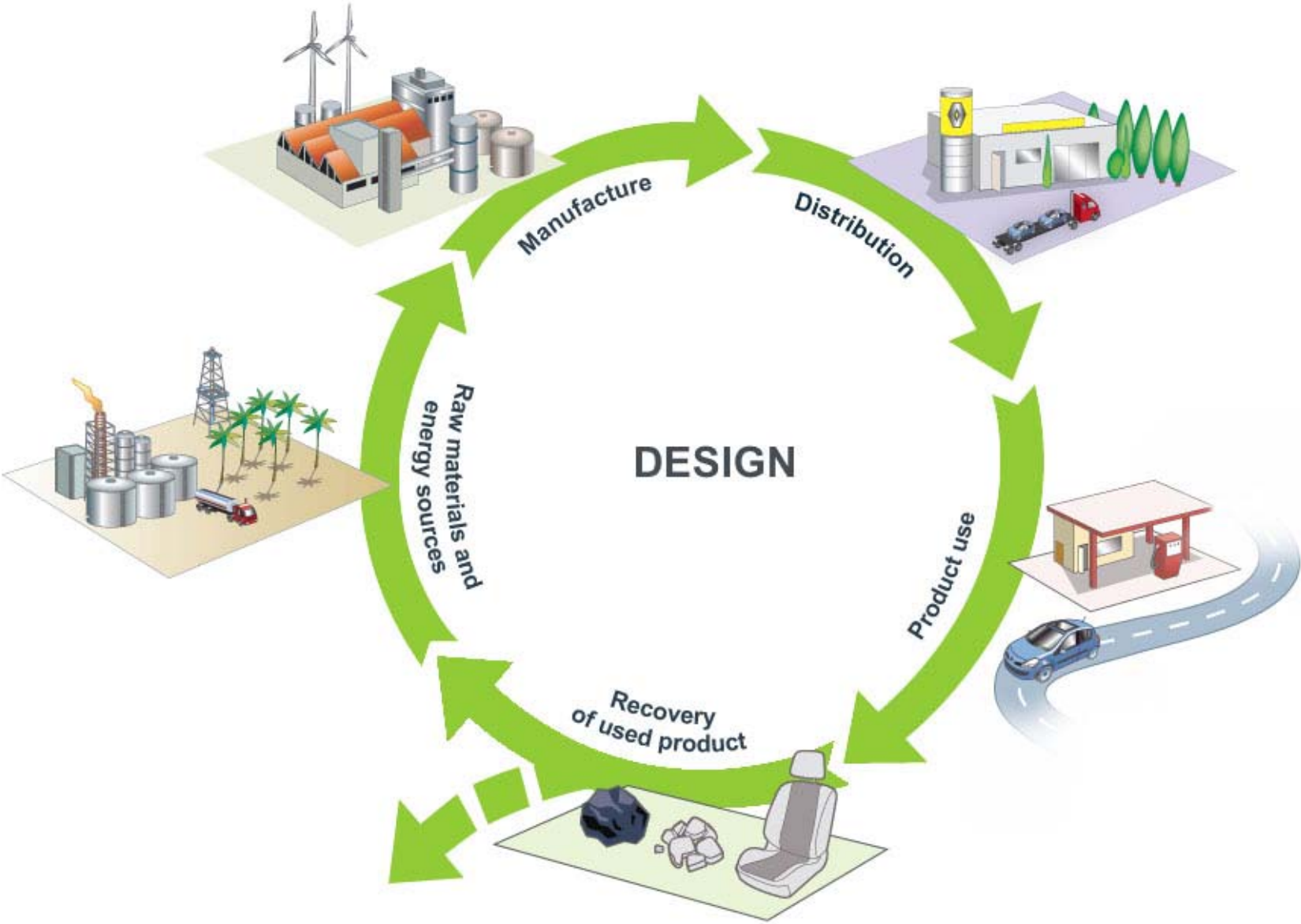


TOP 3 CO₂



**LIFE CYCLE
...UP TO RECYCLING**

Life Cycle analysis for industrial and commercial products



The tool selected by Renault : Life Cycle Analysis

1

INTERNATIONAL



2

NORMALIZED



3

RENAULT IS ACTOR



Life Cycle Analysis results



**New Laguna
2,0l dCi 130cv**



Abiotic Depletion Potential



Acidification Potential



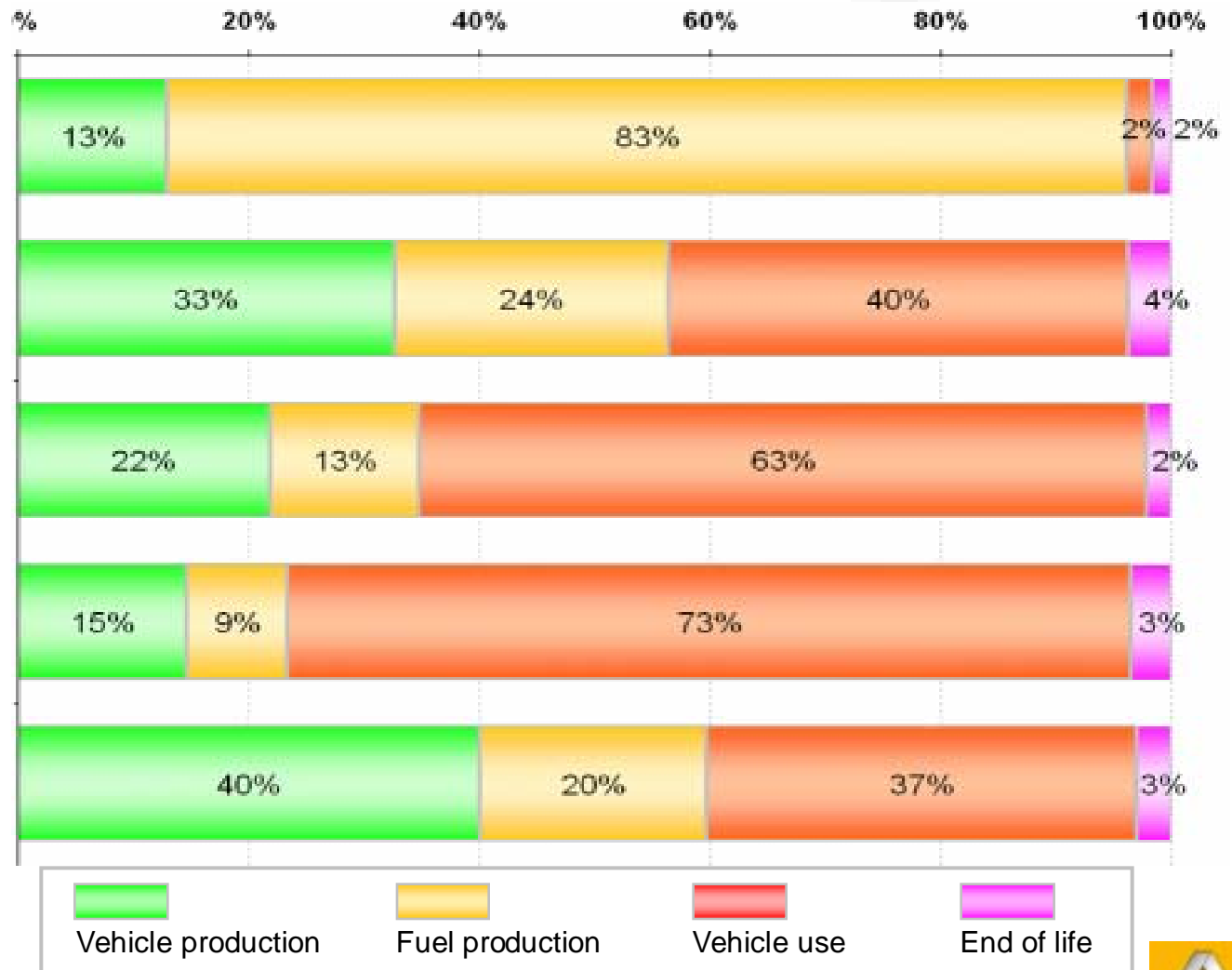
Eutrophication Potential



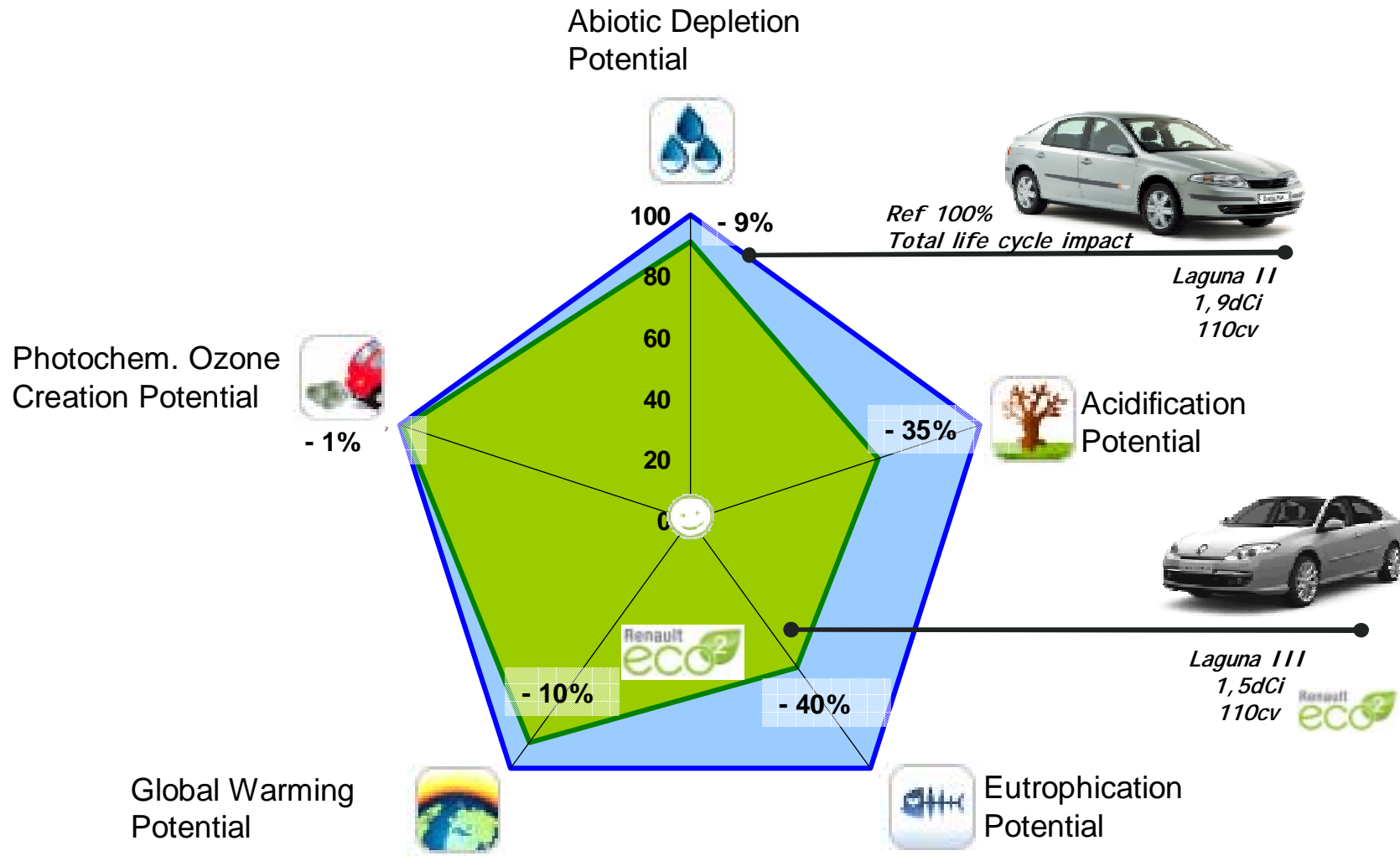
Global Warming Potential



Photochem. Ozone Creation Potential



From Laguna 2 to Laguna 3, a reduction of the environmental footprint



...Remember : The first commitment of a car manufacturer on the vehicle life cycle



Plants



Use



End of Life

Three Renault eco² criteria

Measurable and auditable



Plants

ISO 14001 Plants



Use

< 140 g CO₂ /km
Or Biofuels



End of Life

95% valorizable &
5% of recycled plastics

Initiate the Dialog on Life Cycle with customers

Renault eco²: Use of best practices to develop affordable and ecological cars

1

MANUFACTURING PLANTS



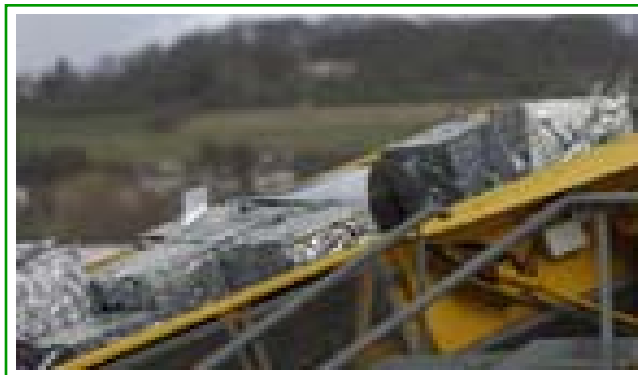
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ENERGY EFFICIENCY



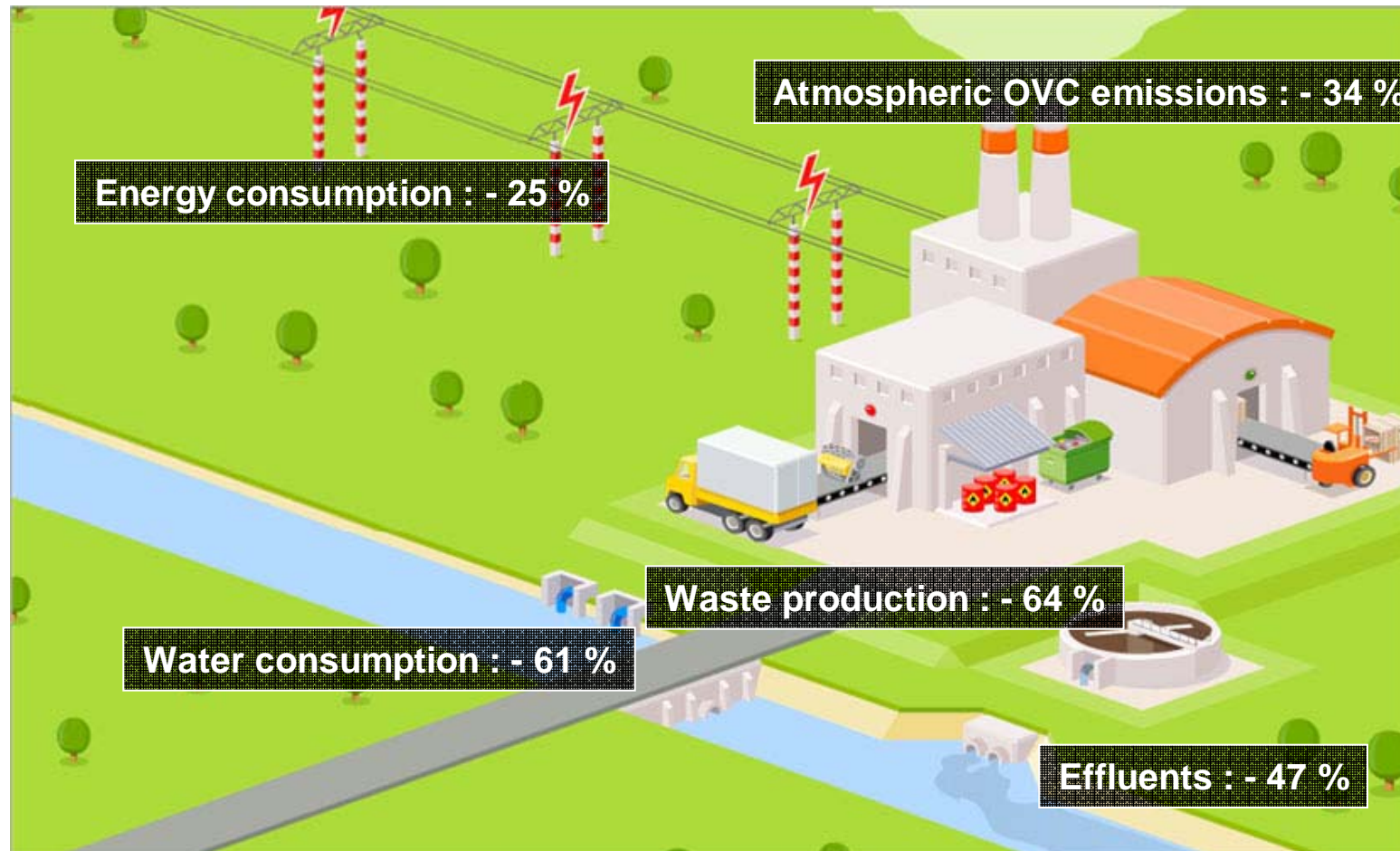
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RECYCLING





10 YEARS OF PROGRESS IN OUR MANUFACTURING PLANTS



Examples of best practices : End of Life Vehicles

1

95% RECYCLABILITY

2008
HOMOLOGATION
OF FUTURE
MEGANE

2

USE OF RECYCLED
MATERIALS



3

BUSINESS MODEL

2008:
RENAULT -
SITA (SUEZ)
JV IN FRANCE



Recovered plastics

At least 5% of the vehicle's plastic content comes from recycling



Modus 13%



Clio III 10%



Scénic 8%



Mégane 9%



Grand Scénic 8%

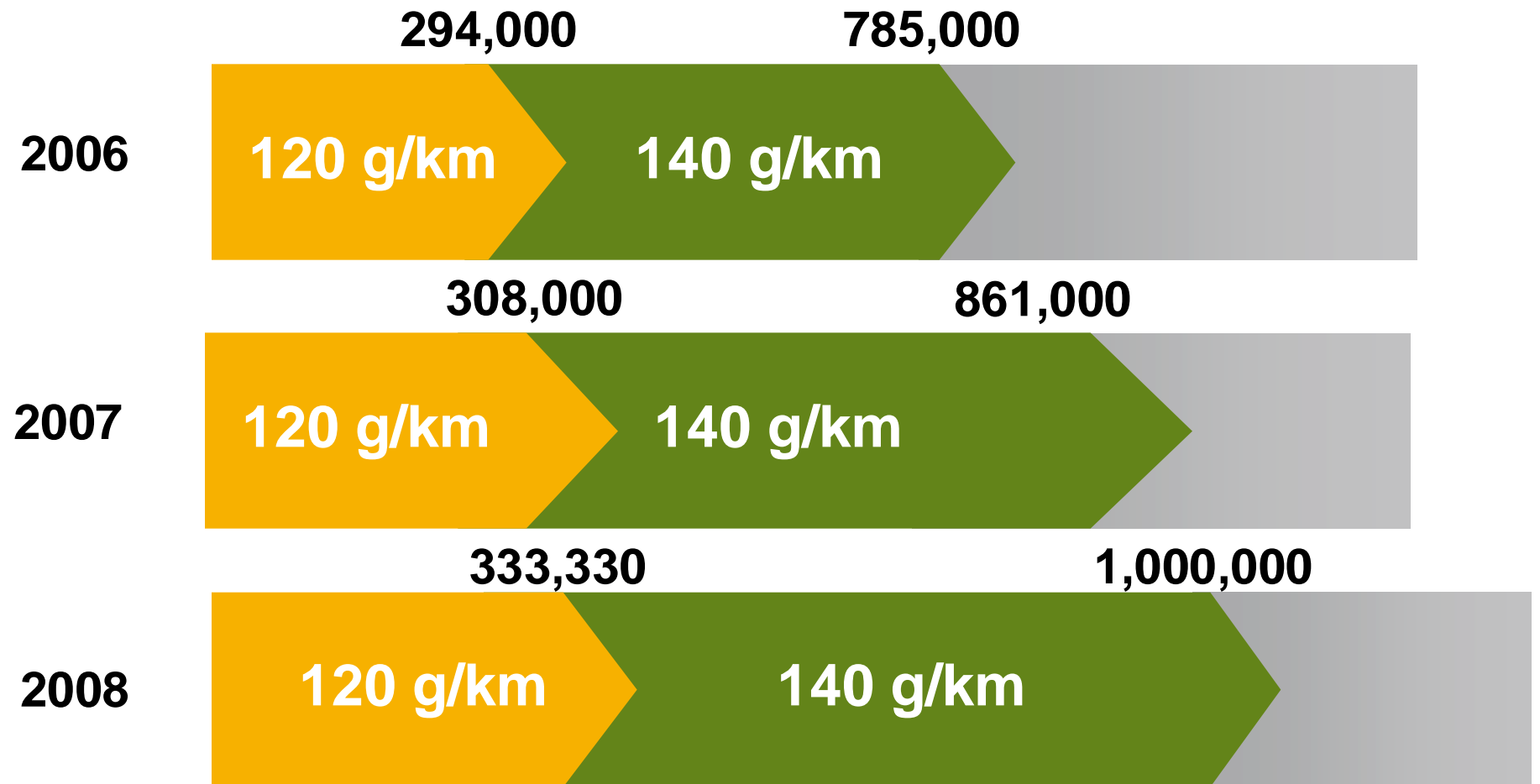
New Twingo 9%



Laguna 17%

Renault Commitment 2009

Be in the top three in terms of CO₂ emissions





Fostering the progress from generation to generation (Laguna, Diesel engines)



(LAGUNA)
1994



(LAGUNA II)
2001






(NEW LAGUNA)
2007

	2.2 dT 115hp	1.9 dCi 110hp	1.5 dCi 110hp
Fuel consumption (l/100km)	7.2	5.6	4.9
CO ₂ emissions (g/km) NEDC cycle	190	150	130

-32%

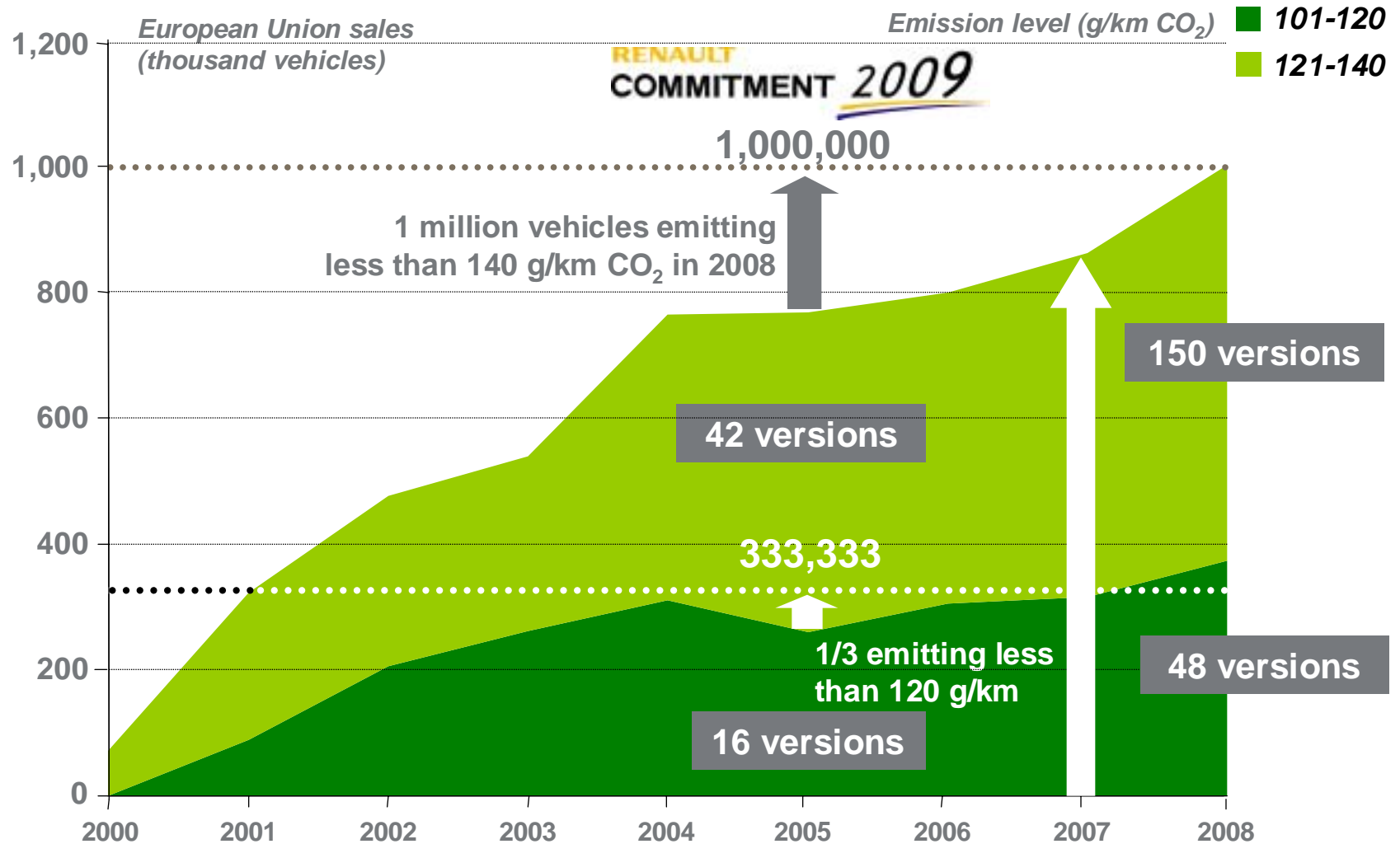


Fostering the progress from generation to generation (Megane, Gasoline engines)

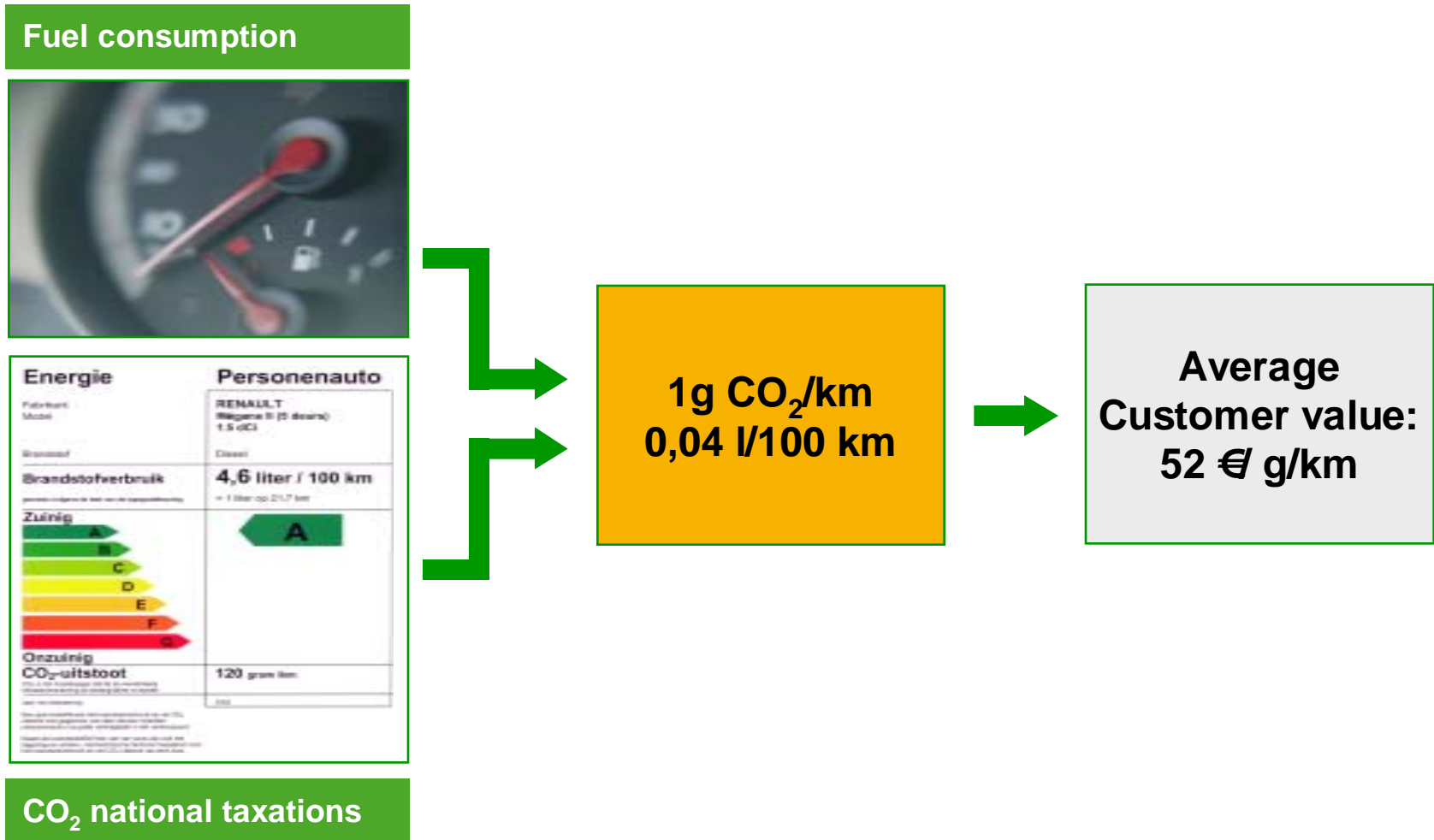
	 (MEGANE I) 1996	 (MEGANE II) 2002	 (MEGANE III) 2008
	2 16v	2 16v	1.4 TCE 130
Fuel consumption (l/100km)	8.4	8.0	6.6
CO ₂ emissions (g/km) NEDC cycle	200	192	156

-22 %

A WIDER OFFER UNDER 140 g/km CO₂ IS A MARKET OPPORTUNITY

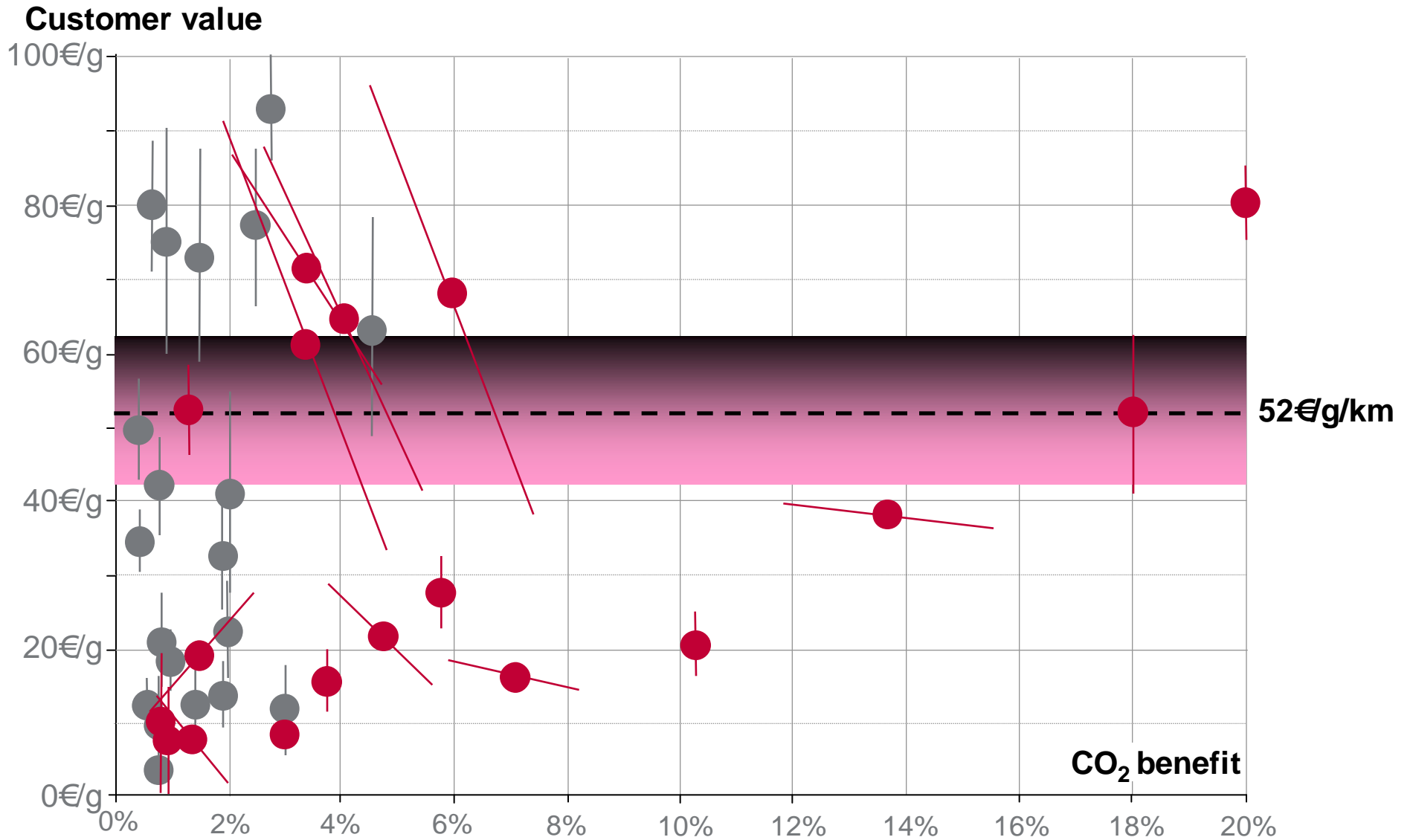


Each gramme of CO₂ saved per km has a customer value

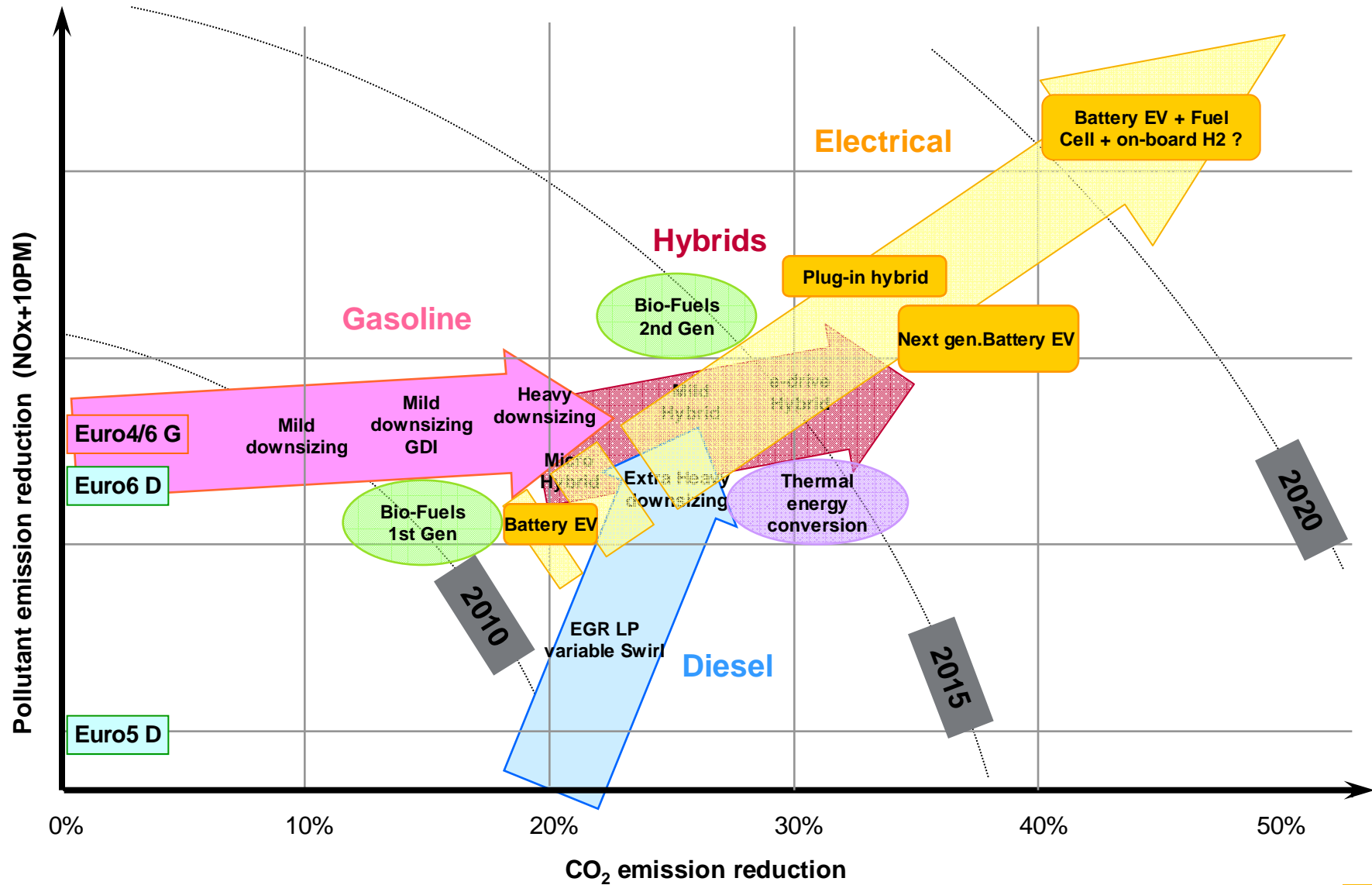


CO₂ Technologies

- Vehicle management
- Powertrain technologies



Vehicle and powertrain roadmap



Downsizing....

Diesel engine

Gasoline engines



1.5 dCi



1.2 TCE 100



1.4 TCE 130

Eco-driving

(-20%)



Renault eco² Line-up

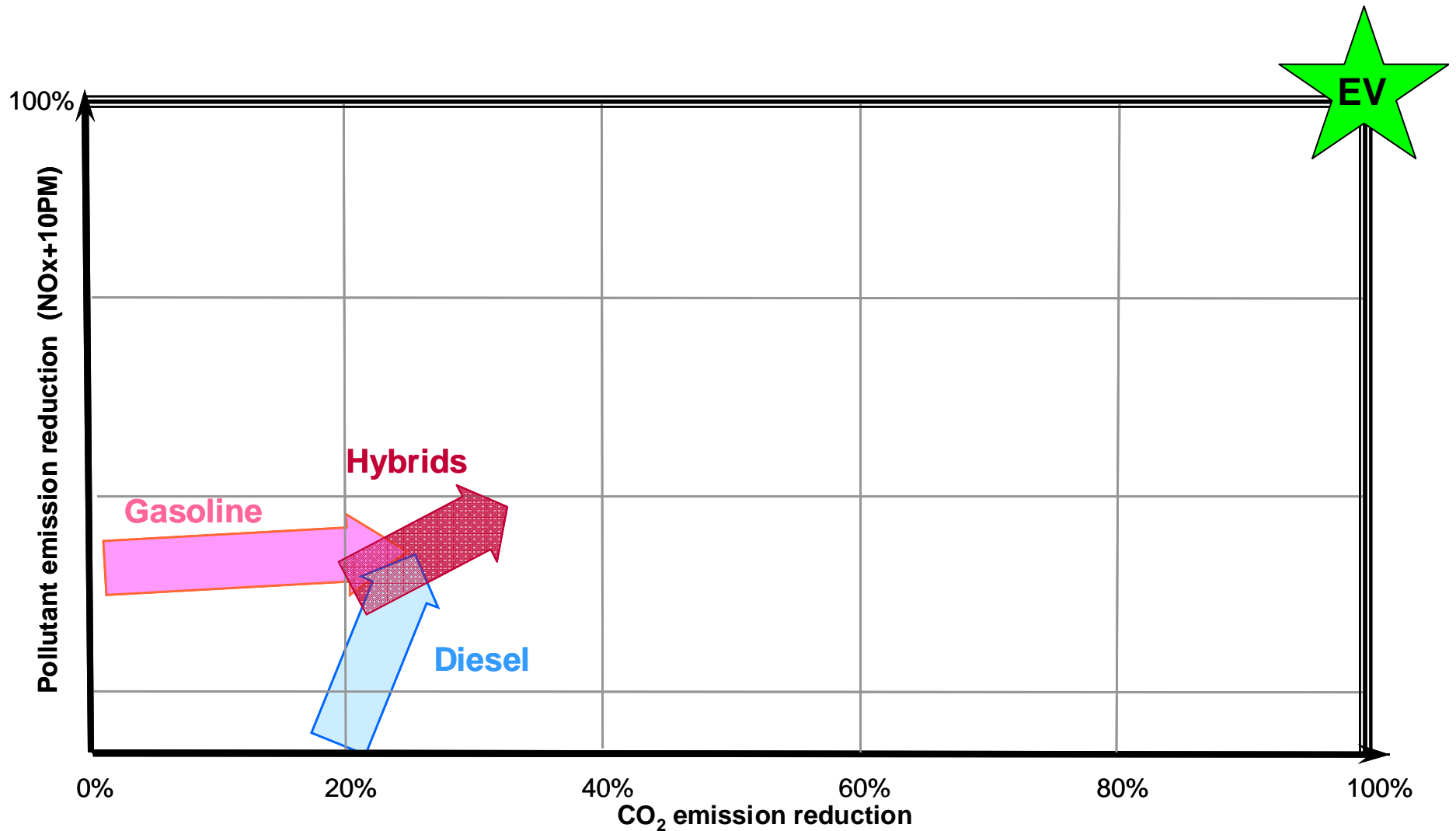
2007



2008



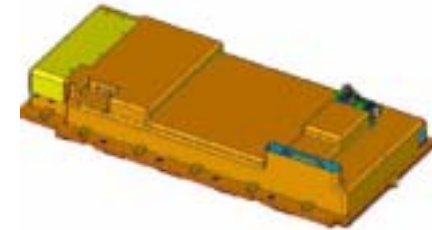
Roadmap: EV as the ultimate Zero Emission Vehicle



Three main reasons for a massive deployment of electric cars during the next decade

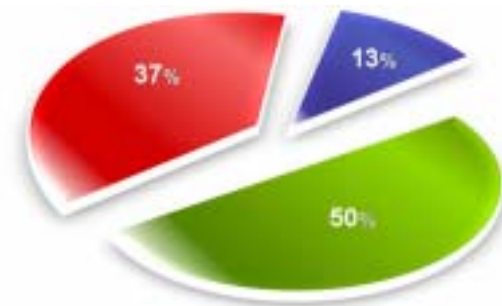
■ 1. Technology & Cost

- *Advanced Li-ion batteries*
- *High volumes production*



■ 2. Sociology & Market

- *EV driving range (>> 100 km)*
- *> 50 % of world population in cities (2006)*
- *Suburban drivers: 87 % less than 60 km/day !*






■ 3. Regulations & Incentives

- *Car ban or restriction in cities*
- *CO₂ taxes on cars*



A complete Renault Electrical Vehicle Line-up

	2009	2010	2011	2012
 e Sedan (Israel)			⊙	
 e LCV (Fleets)			⊙	
 ...				⊙

⊙ Mass production

Environment in the heart of Renault's strategy

1

Vehicles



2

Powertrains



3

Technology



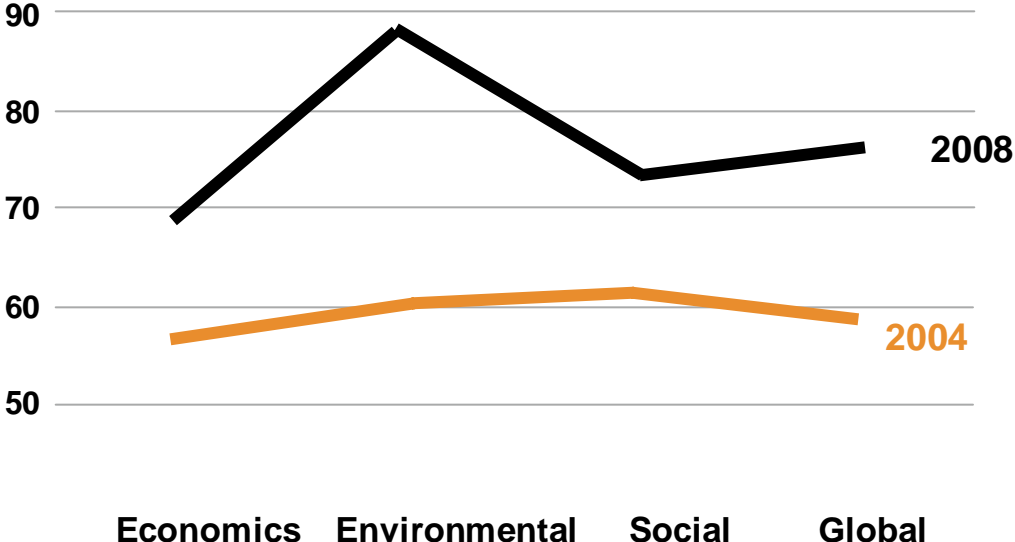
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Environment



Sustainable Development Governance: World class level acknowledgment

World Dow Jones Sustainability Index
Renault Score



**Renault Member
2006, 2007 & 2008 !**

