

Pilot Project MOVELE :

*An initiative of the IDAE in favour of
energy efficiency in transport*

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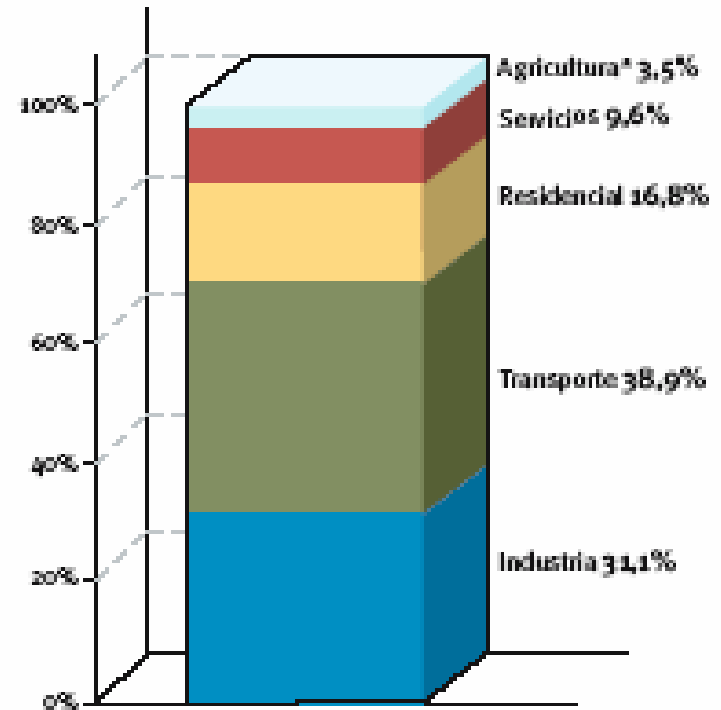
PROJECT MOVELE

- ***PROJECT MOVELE IS AN INITIATIVE MEANT TO SHOW THE TECHNICAL, ECONOMIC AND ENERGY FEASIBILITY OF ELECTRIC MOBILITY IN URBAN AND PERIURBAN AREAS.***
- ***THE CURRENT STATE OF ELECTRIC MOBILITY TECHNOLOGIES WILL DETERMINE THE NEED TO CARRY OUT DEMOS, WITH PUBLIC LEADERSHIP, THAT SHOULD ASSESS THE ADVANTAGES AND DISADVANTAGES OF THESE MOBILITY ALTERNATIVES, DISPELLING MOST OF THE DOUBTS THAT MAY EXIST.***
- ***THE RESULTS OF THE PROJECT ARE TO BE USED AS A BASE TO MAKE SUITABLE DECISIONS THAT SHOULD LEAD TO A WIDESPREAD EXPANSION OF THESE TECHNOLOGIES IN THE SHORT AND MEDIUM TERM.***

INTRODUCTION

- *Transport is the final sector with the highest energy consumption in Spain.*
- *25% of greenhouse effect gases are due to transport.*
- *80% of transport energy consumption takes place on roads.*
- *Oil-derivatives account for over 98% of the sources used in transport.*

Consumo de energía final por sectores en España, 2004



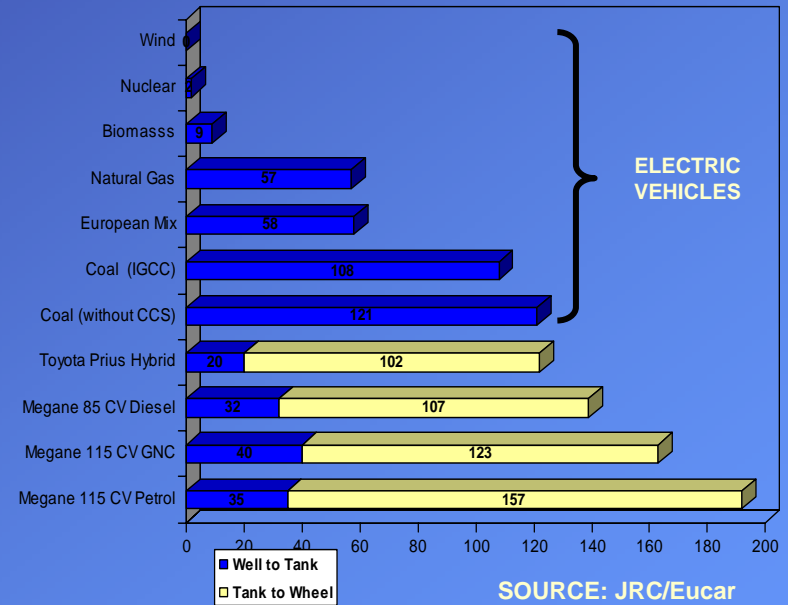
Nota: Excluidos consumos no energéticos.
 Fuente: Ministerio de Industria, Turismo y Comercio.
 * Incluidas diferencias estadísticas.

INTRODUCTION

WHY ELECTRIC MOBILITY?

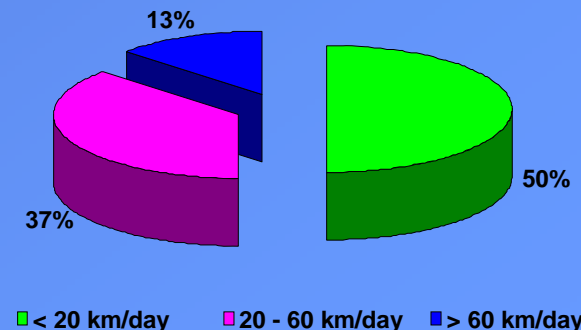
- **Because it improves transport energy efficiency as a whole and the electric system efficiency.**
 - **It adds up a new renewable energy**
 - **It reduces gaps between peaks and off-peaks.**
- **It reduces the energy dependence on oil derivatives.**
- **It includes the “diffuse” transport sector into the greenhouse-effect gas emission market.**
- **It reduces transport pollutants in urban environments.**

EMISSION BENCHMARKING ACCORDING TO THE USED TECHNOLOGIES

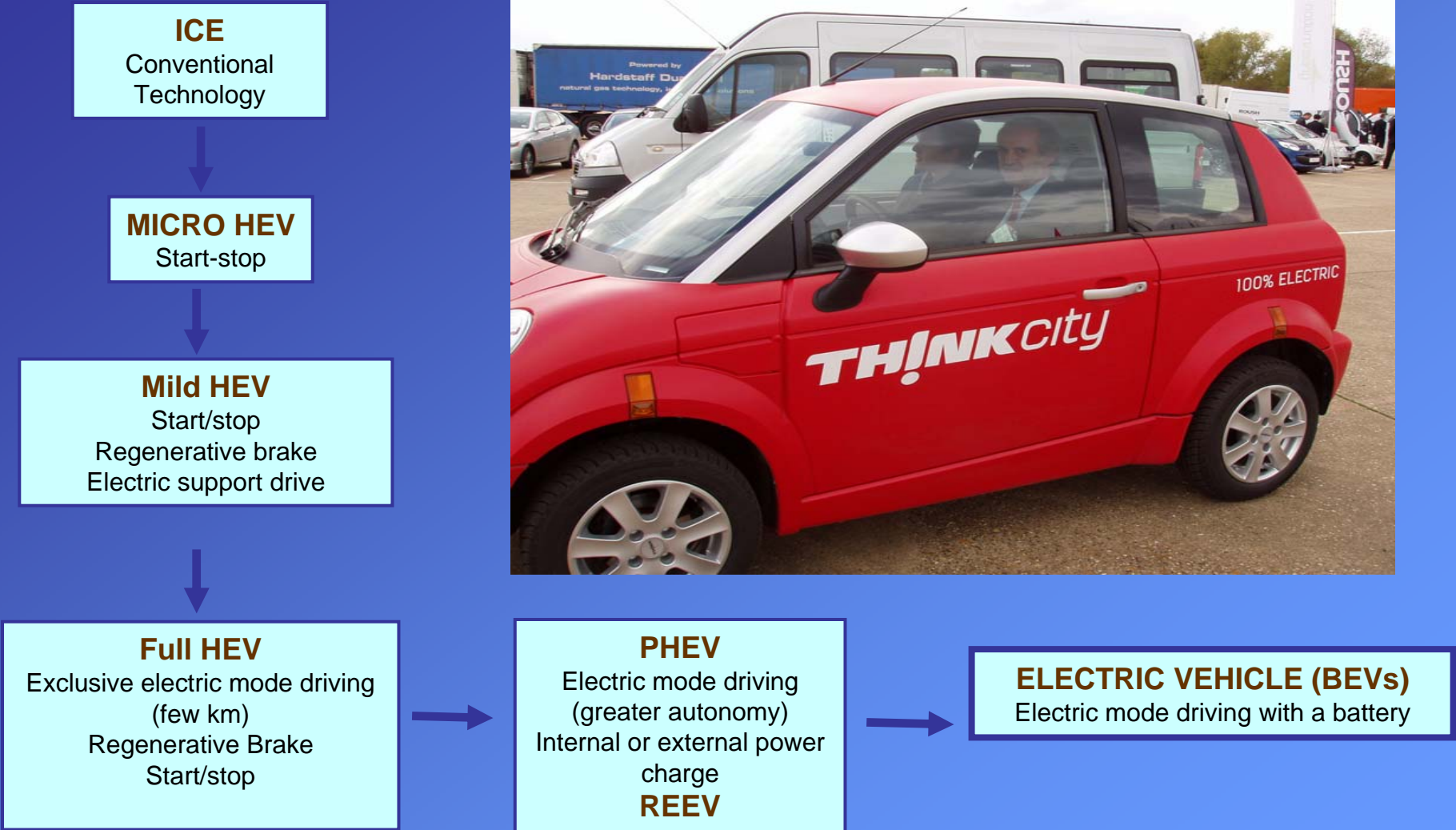


SOURCE: JRC/Eucar Concawe and RENAULT

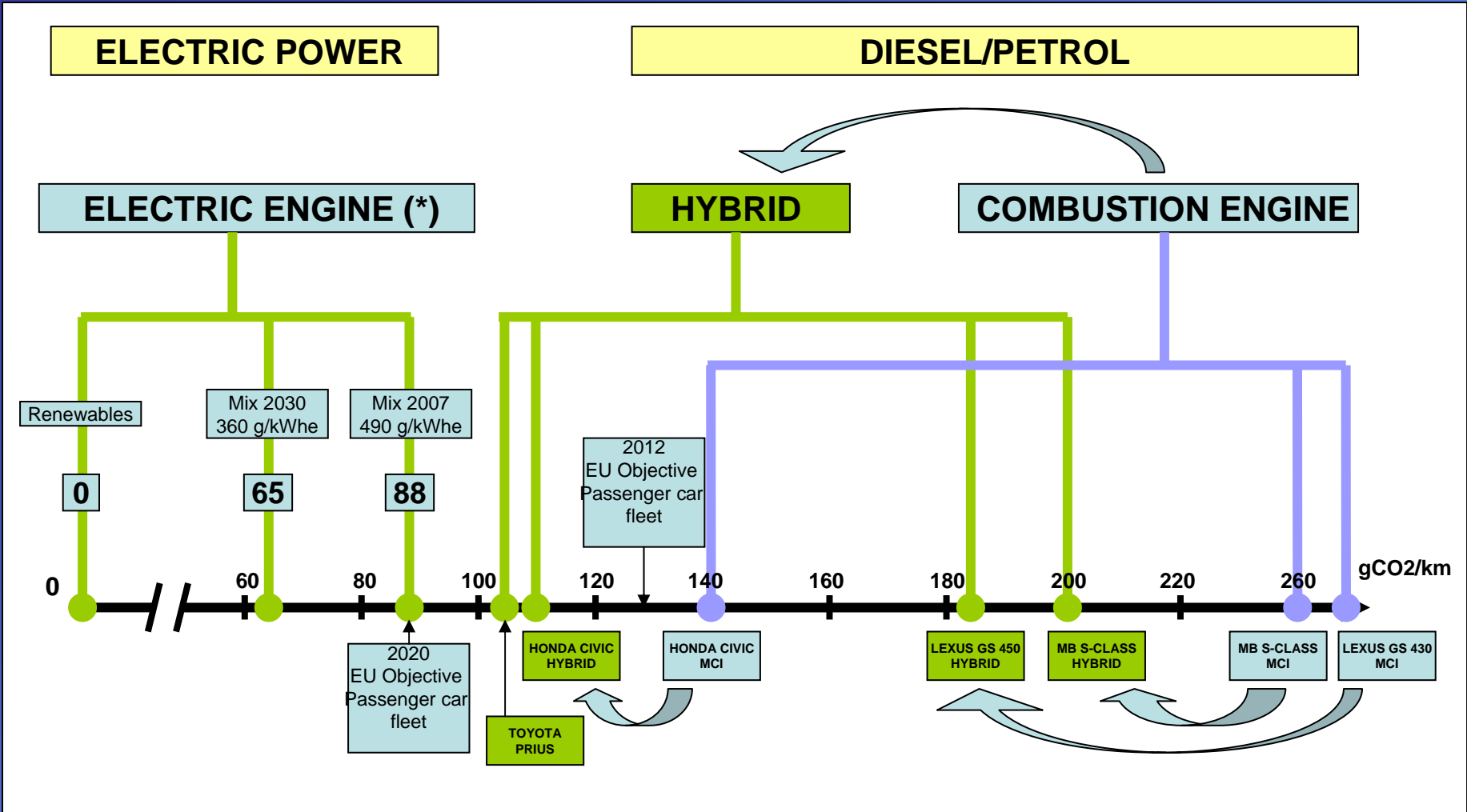
DISTRIBUTION OF THE DISTANCE COVERED BY URBAN DRIVERS IN THE ÎLE DE FRANCE AREA



INTRODUCCION



INTRODUCTION

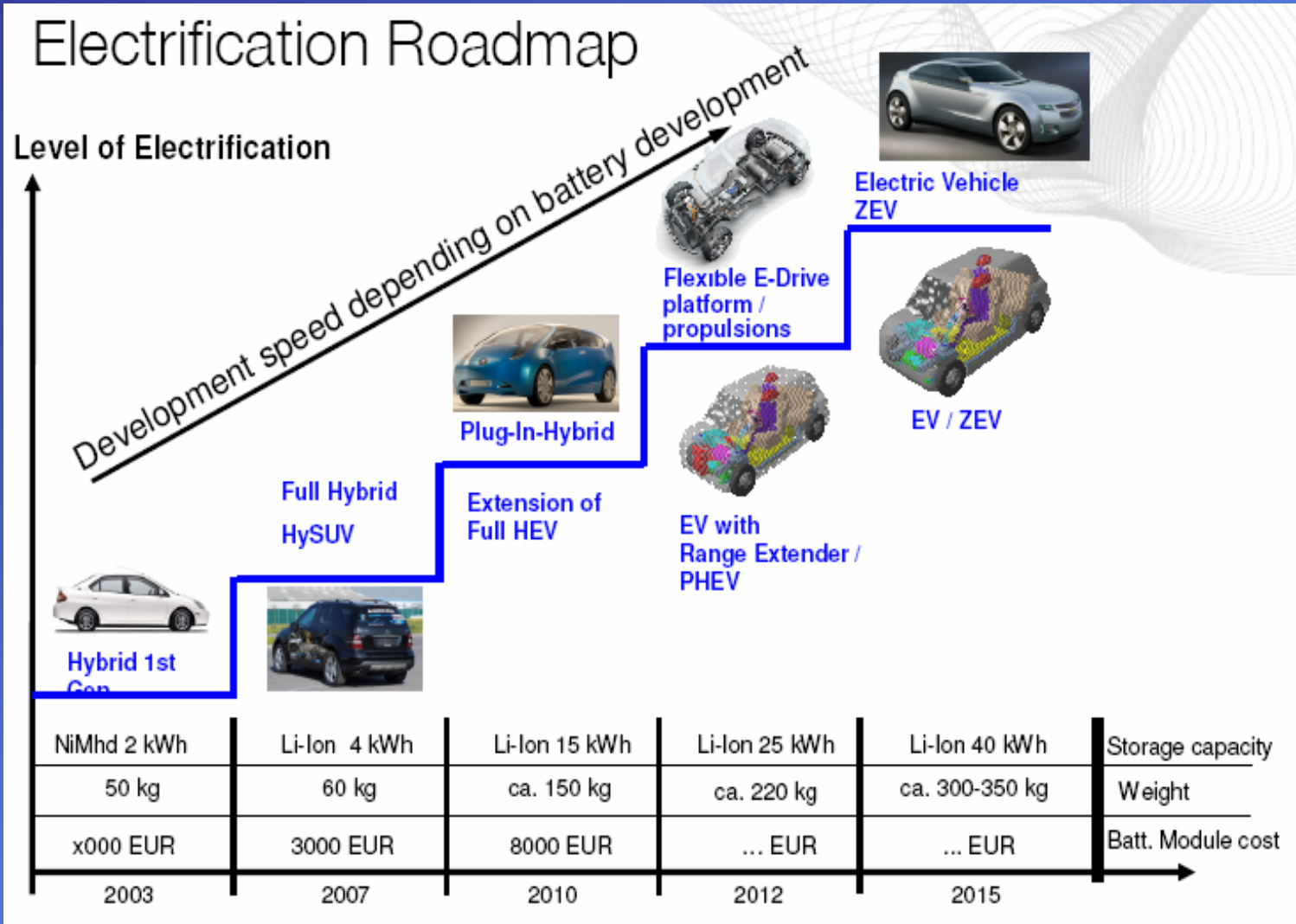


HYBRID VEHICLES ARE THE TECHNOLOGICAL BRIDGE TOWARDS ZERO-EMISSION VEHICLES

(*) Estimated consumption: 18 kWh/100 km.

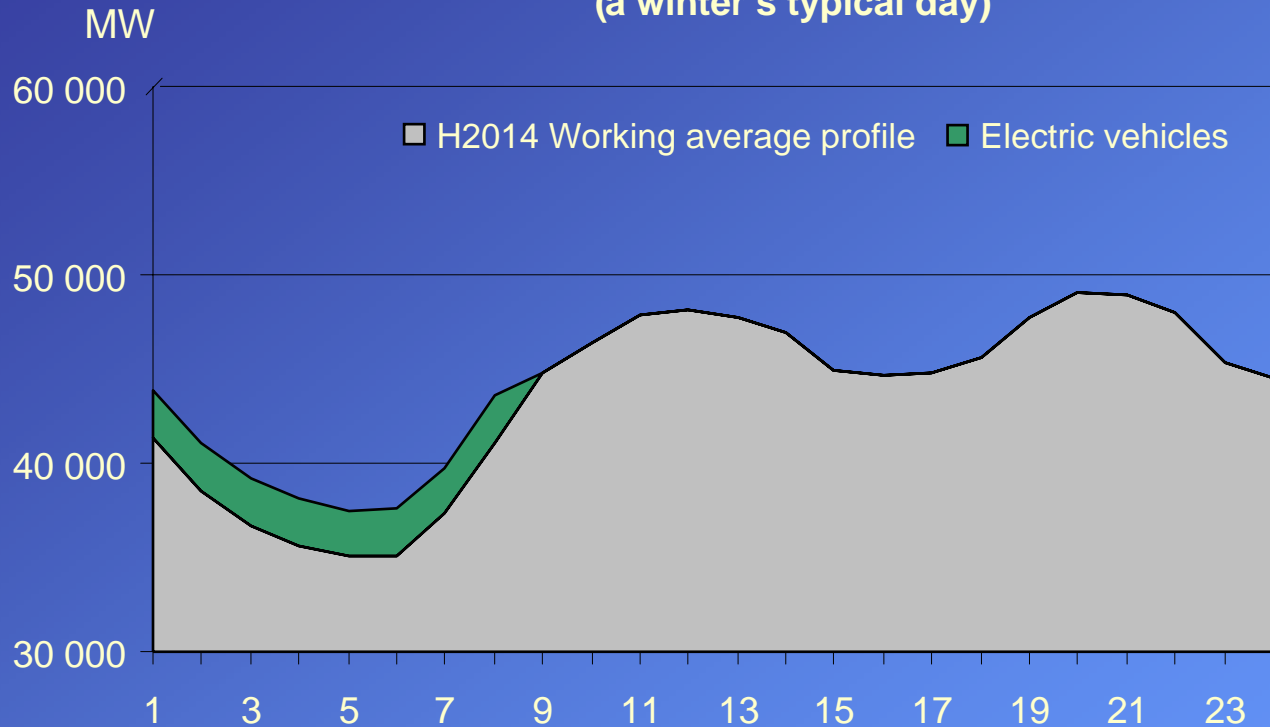
INTRODUCTION

ELECTRIC VEHICLE ROAD MAP



INTRODUCTION

Demand profile for a penetration of one million electric vehicles in 2014 during an 8-hour simultaneous recharge (a winter's typical day)



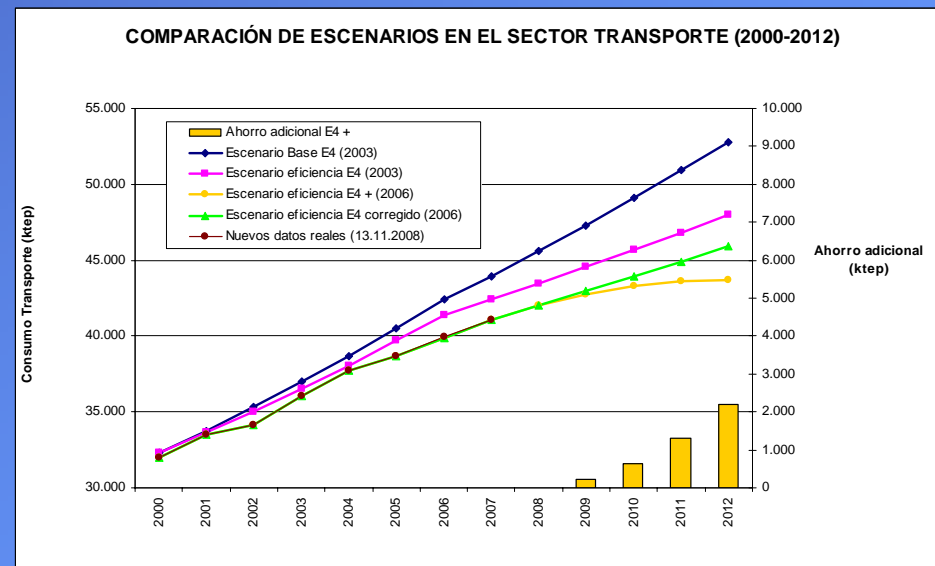
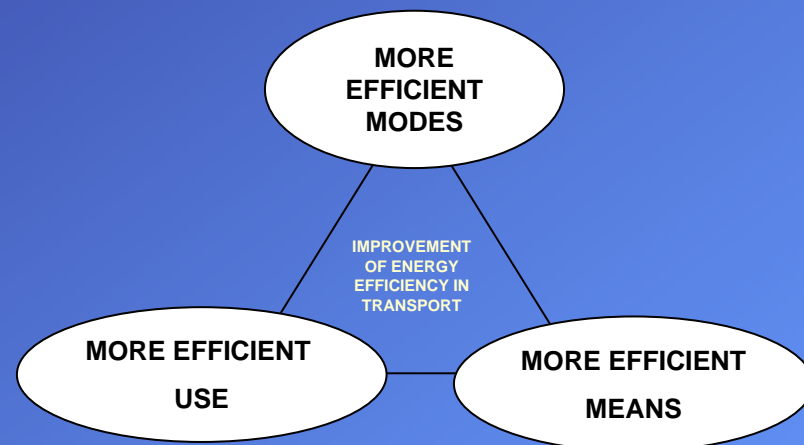
It gets recharged in 8 off-peak hours with smart management

Load curve flattening

- ⇒ Greater efficiency and profitability than with conventional generation
- ⇒ Greater introduction of renewable sources
- ⇒ Low-risk operation for limited VE incorporation (1M)

ACTION FRAMEWORK

- **Saving and Energy Efficiency Strategy in Spain (E4) 2004-2012.**
- **E4 Action Plans 2005-2007 & 2008-2012**
- **Saving and Energy Efficiency Activation Plan 2008-2011.**
 - **Objective EV in 2014.**
 - **Energy services.**
- **Engagements as regards the reduction of greenhouse effect gases.**

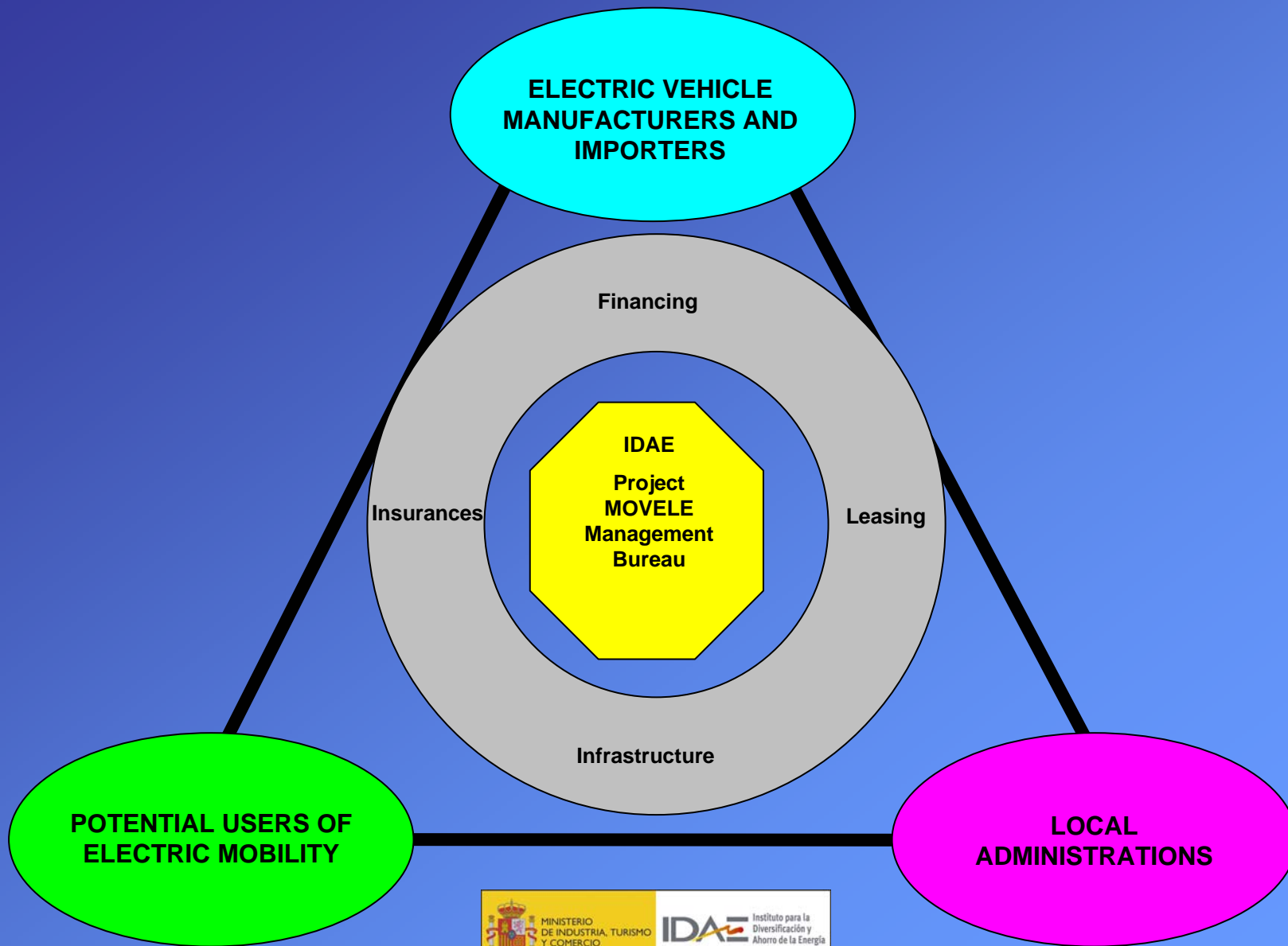


OBJECTIVES

- ***Introduction of 2,000 electric cars on the market, preferably in fleets, with mobility in urban and periurban environments.***
- ***Installation of a charging stations network in some of the main cities of the country.***
- ***Analysis of the energy results under real use conditions.***
- ***Proposal of regulatory amendments that may enable wider development of these mobility alternatives.***
- ***Position of Spain as a preferential scenario to introduce these new vehicles.***



OUTLINE



INVOLVED AGENTS

- **CAR MANUFACTURERS**
 - *Vehicle and service offer*
- **TRANSPORT USERS**
 - *Adaptation of demand*
- **LOCAL ADMINISTRATIONS**
 - *Development of infrastructures and positive framework for EV*
- **ENERGY SECTOR - SERVICES**
 - *Regulatory-financial support*
- **OTHER AGENTS**
 - *Insurances, leasing, renting, ...*



INSTRUMENTS

- ***COLLABORATION AGREEMENT*** with municipalities to develop infrastructures
- ***DIRECT SUBSIDIES*** to purchase vehicles.
- ***MONITORING*** of the energy and mobility results
- ***SPREADING OF RESULTS***
- ***Proposal of REGULATORY CHANGES***



DEVELOPMENT

- Execution period

2009-2010

- IDAE's budget

k€ 10,000

Procurement support: k€ 8,000

Infrastructure support: k€ 1.500

Assistance and analysis: k€500

- Agreements with municipalities:

April/May 2009

- Call for vehicle aids:

May/June 2009



EXPECTED RESULTS

- **ELECTRIC VEHICLES :** **2,000**
- **PUBLIC CHARGING STATIONS :** **more than 500**
- **OIL CONSUMPTION AVOIDED :** **4,282 toe/y. (4.7 million liters/y.)**
- **ENERGY CONSUMPTION :** **1,510 toe/y. (7,000 MWh/y.)**
- **ENERGY SAVING:** **2,772 toe/y.**
- **AVOIDED EMISSIONS :** **4,471 tCO₂/y. (411 gCO₂/kWh)**

FURTHER INFORMATION...

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