

NISSAN MOTOR COMPANY



[www.nissan-global.com](http://www.nissan-global.com)

# Recent Development and Future Trends

Takashi Shirakawa

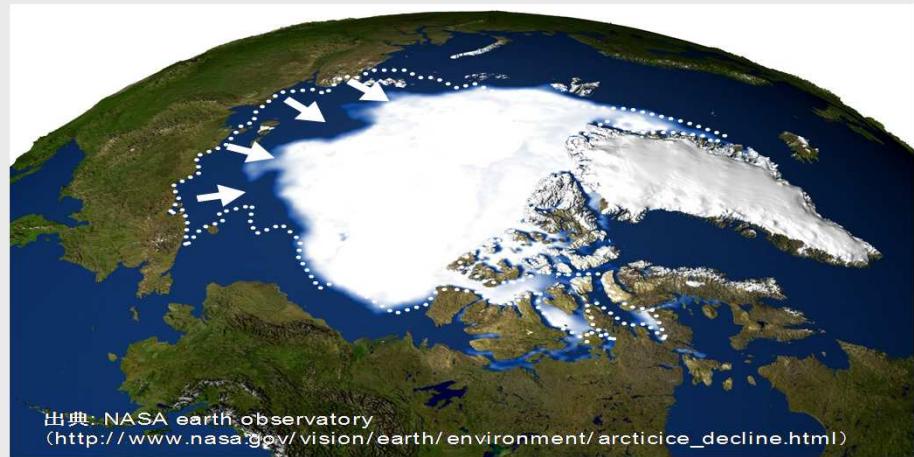
Vice President  
Nissan Technical Center Europe  
Nissan Motor Co., Ltd.

# Four Issues for Sustainability

## Energy



## Global Warming



## Congestion



## Traffic Accident



# Four Issues for Sustainability

Energy

Global warming

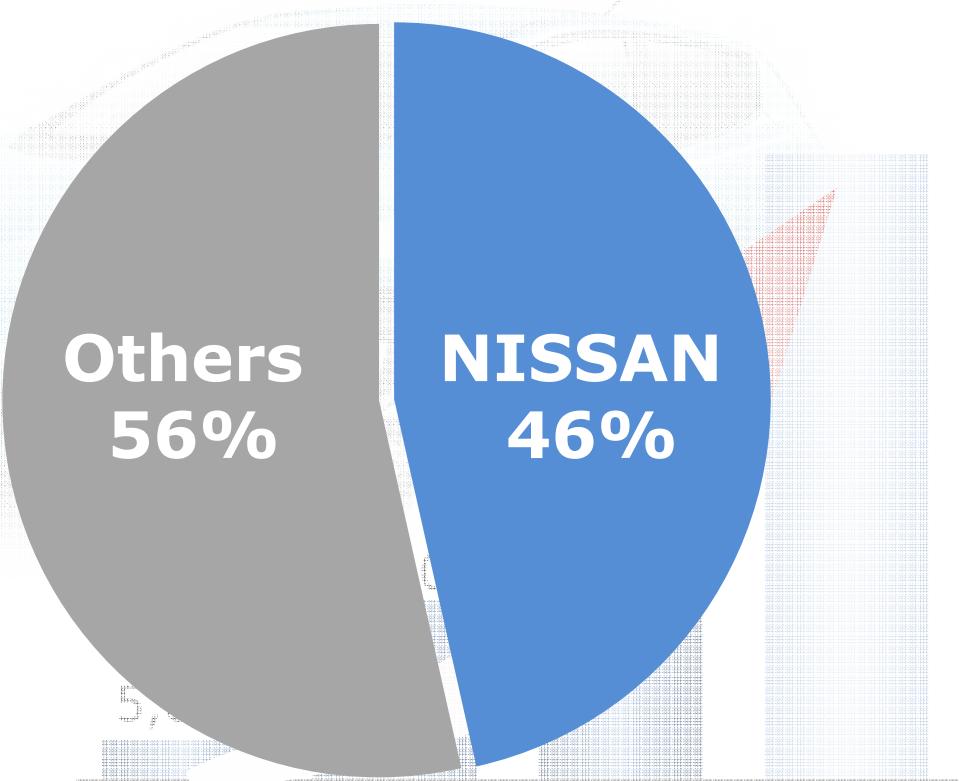
Toward Zero Emission



Toward Zero Fatality

# Nissan LEAF is the Best-Selling EV

■ More than 83,000 sold (Sep 2013)



Global EV share 2004-2012\*

\* MarkLines Automotive Information



Switch EV Project in UK



Nissan LEAF Owner's event in San Francisco

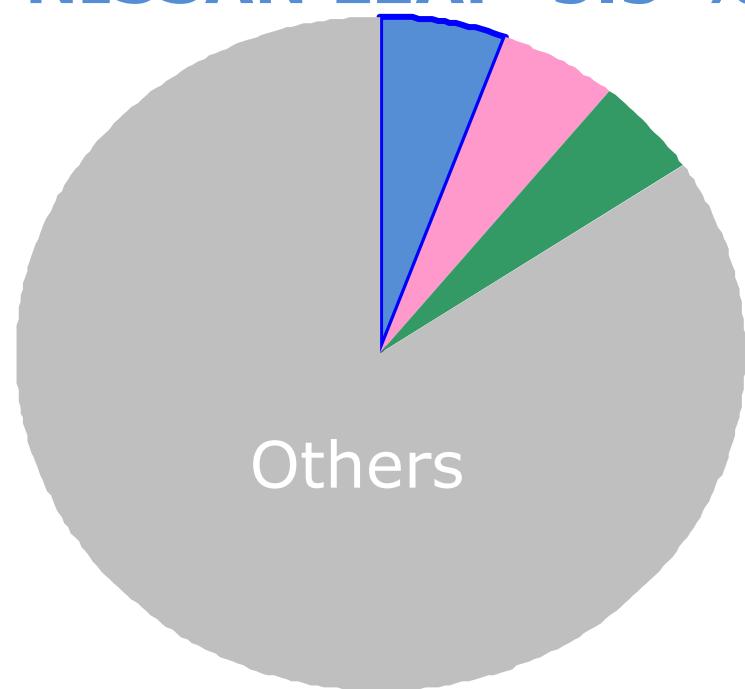


EV introduction ceremony in Kanagawa

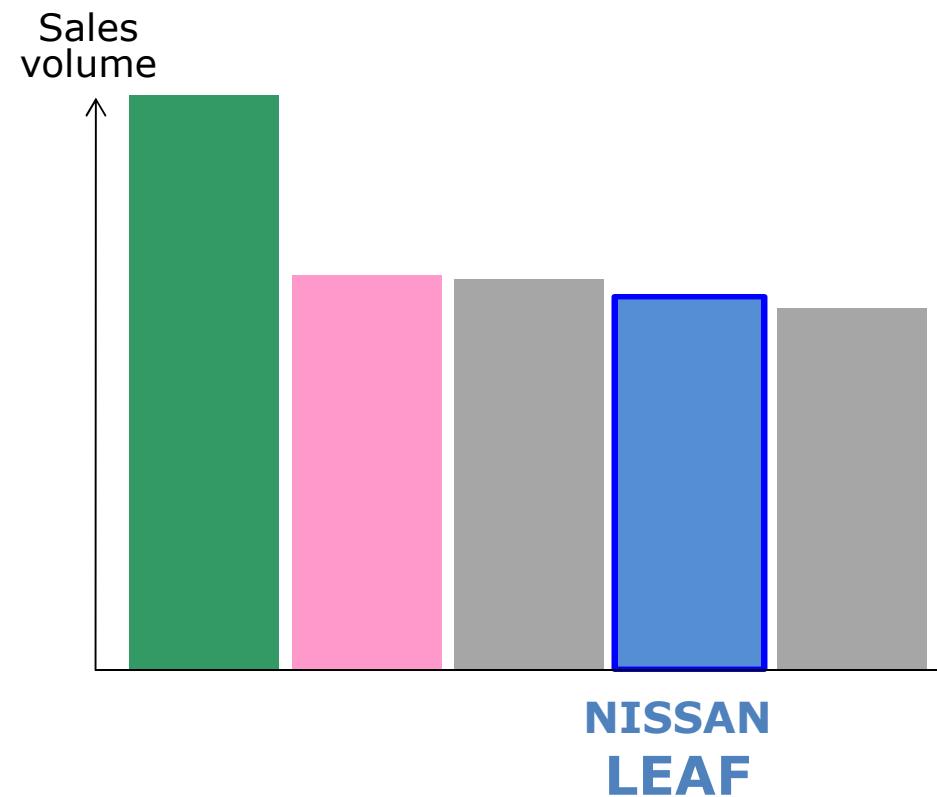
# “Real” EV market

- Nissan LEAF tops Norway Oct. car sales
- Over the last 10 months, the Nissan LEAF has been Norway's 4th best-selling car

**NISSAN LEAF 5.5 %**



Car sales share\*  
(Norway Oct. 2013)

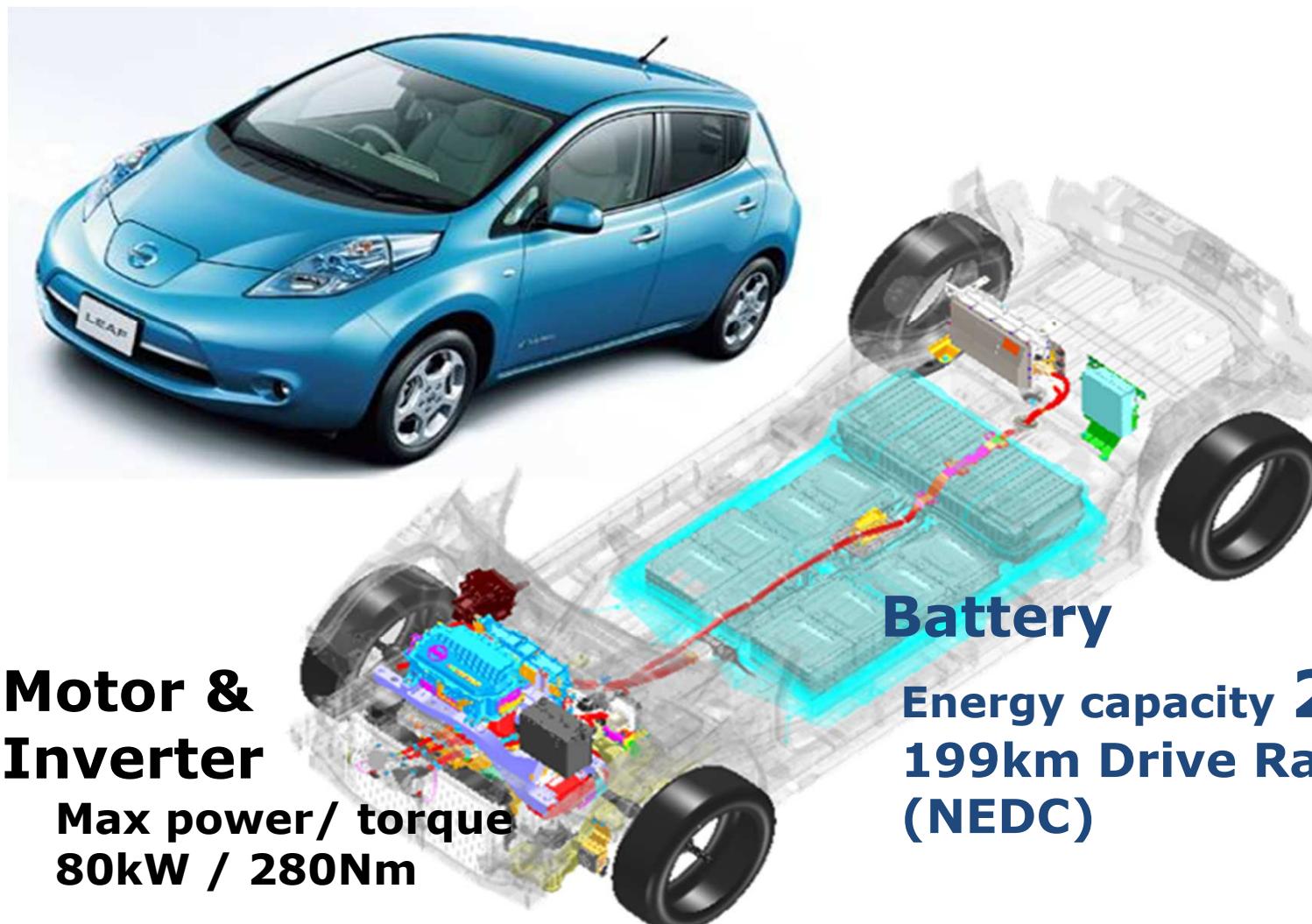


Car sales Volume\*  
(Norway YTD 2013)

\* JATO Automotive data

# “Leaf” Vehicle Platform Outline

## ■ EV Tailored Platform



# What is 24kWh?

- Energy necessary to travel 199km (NEDC) is equivalent to 2.7L gasoline

**Paella**



**20 plates = 24kWh**

**1 Plate = 1030kcal  $\Rightarrow$  1.20kWh**

**Fat**



**2.95 kg = 24kWh**

**1kg = 7000kcal  $\Rightarrow$  8.12kWh**

**Gasoline**



**2kg (2.7L) = 24kWh**

**1kg=44MJ  $\Rightarrow$  12.2kWh**

# Nissan LEAF in Numbers



Number of Cars

**83,000**

@ Sep 2013

Battery capacity

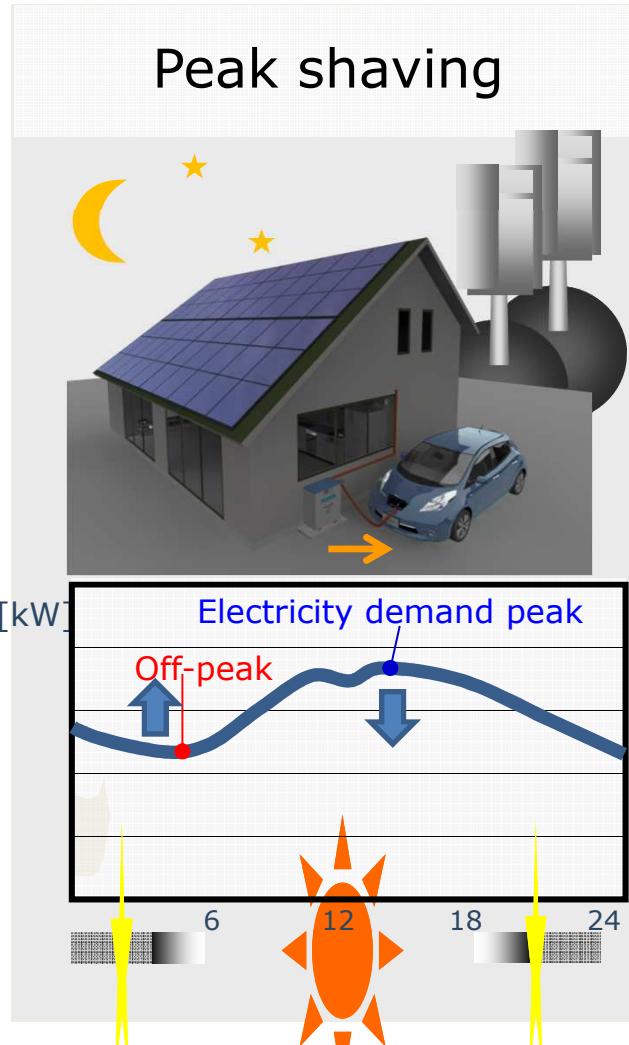
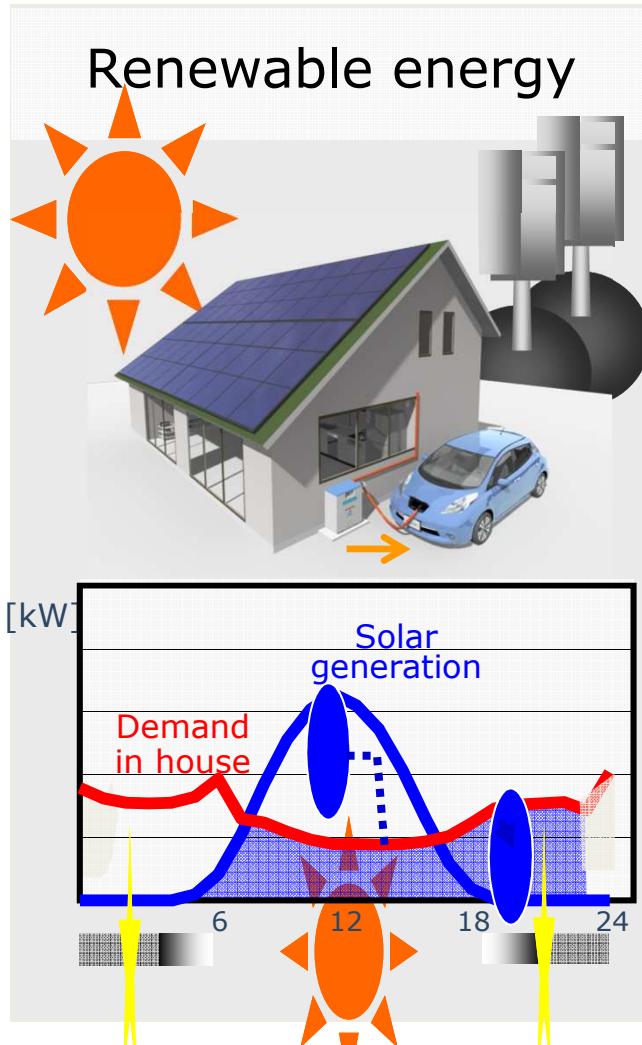
**1,992,000kWh**

More than 134 games of Camp Nou Stadium\*

\* During evening matches, the stadium consumes 14,860kWh in five hours. (FC Barcelona HP)

# Storage Batteries on Wheels

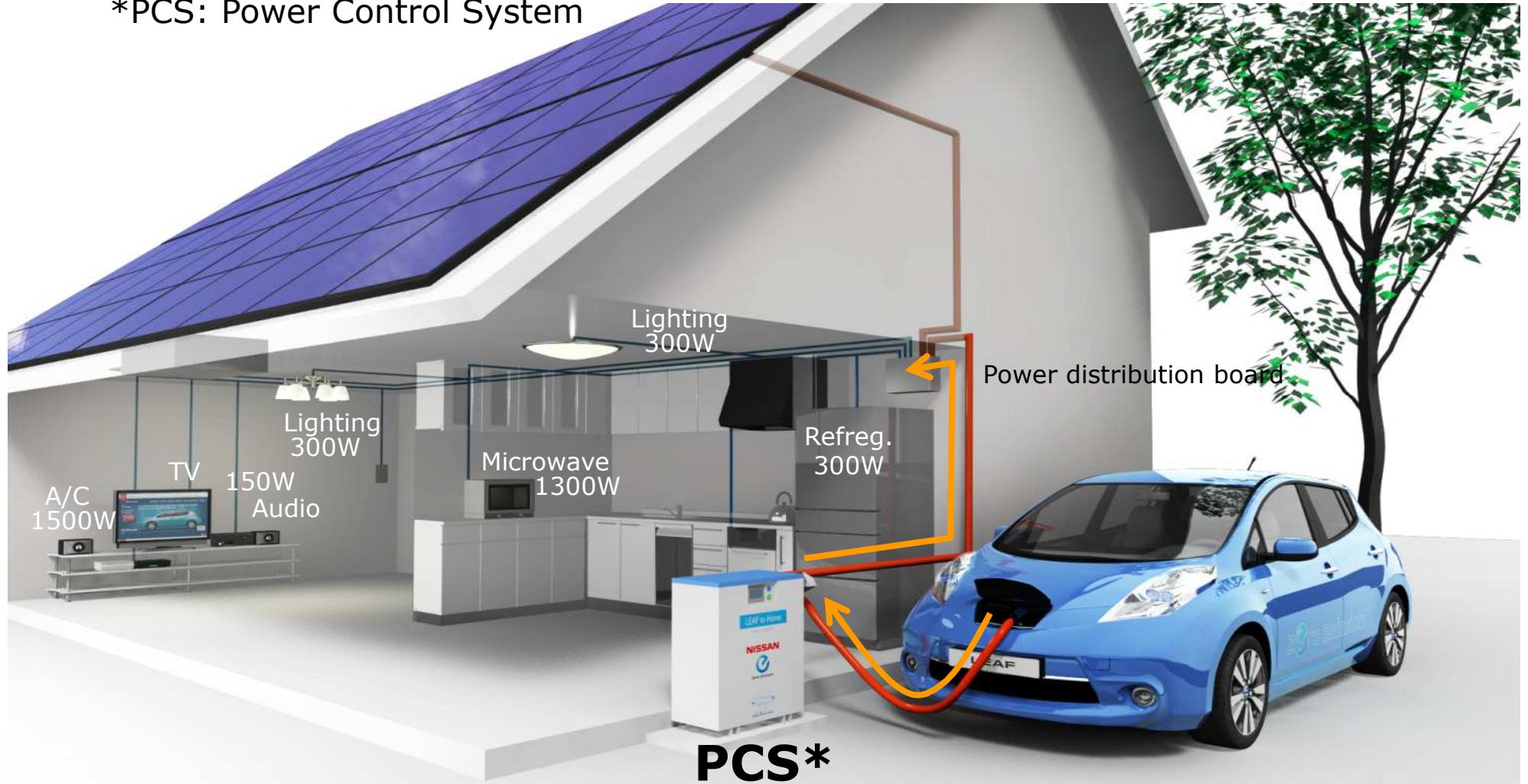
- Nissan LEAF supplies electricity to home



# LEAF to Home

- PCS\* enables bi-directional electricity management

\*PCS: Power Control System



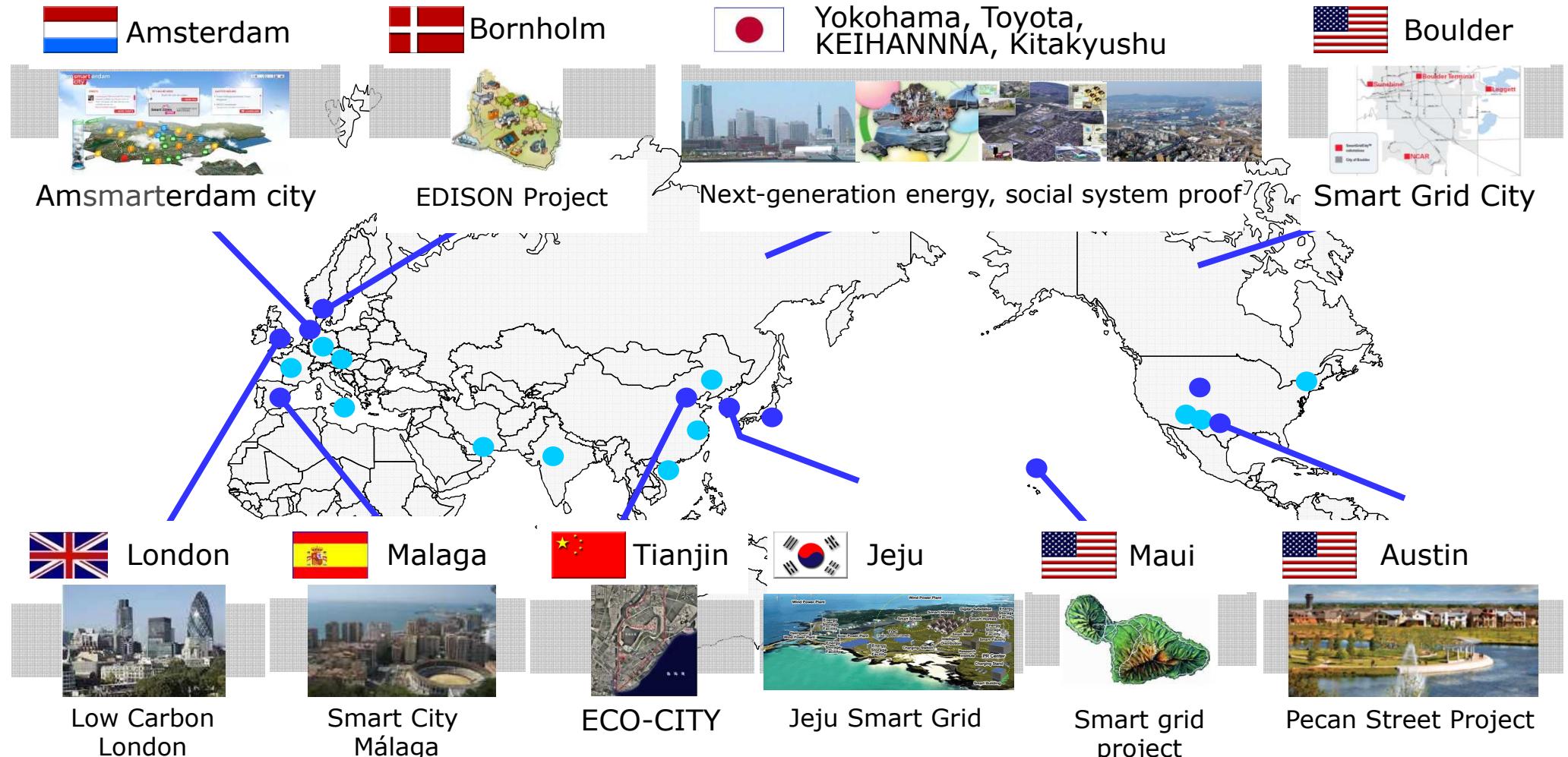
# “LEAF to Home” is Well Received in Japan

■ “LEAF to Home” passes 2000 units sales in Japan



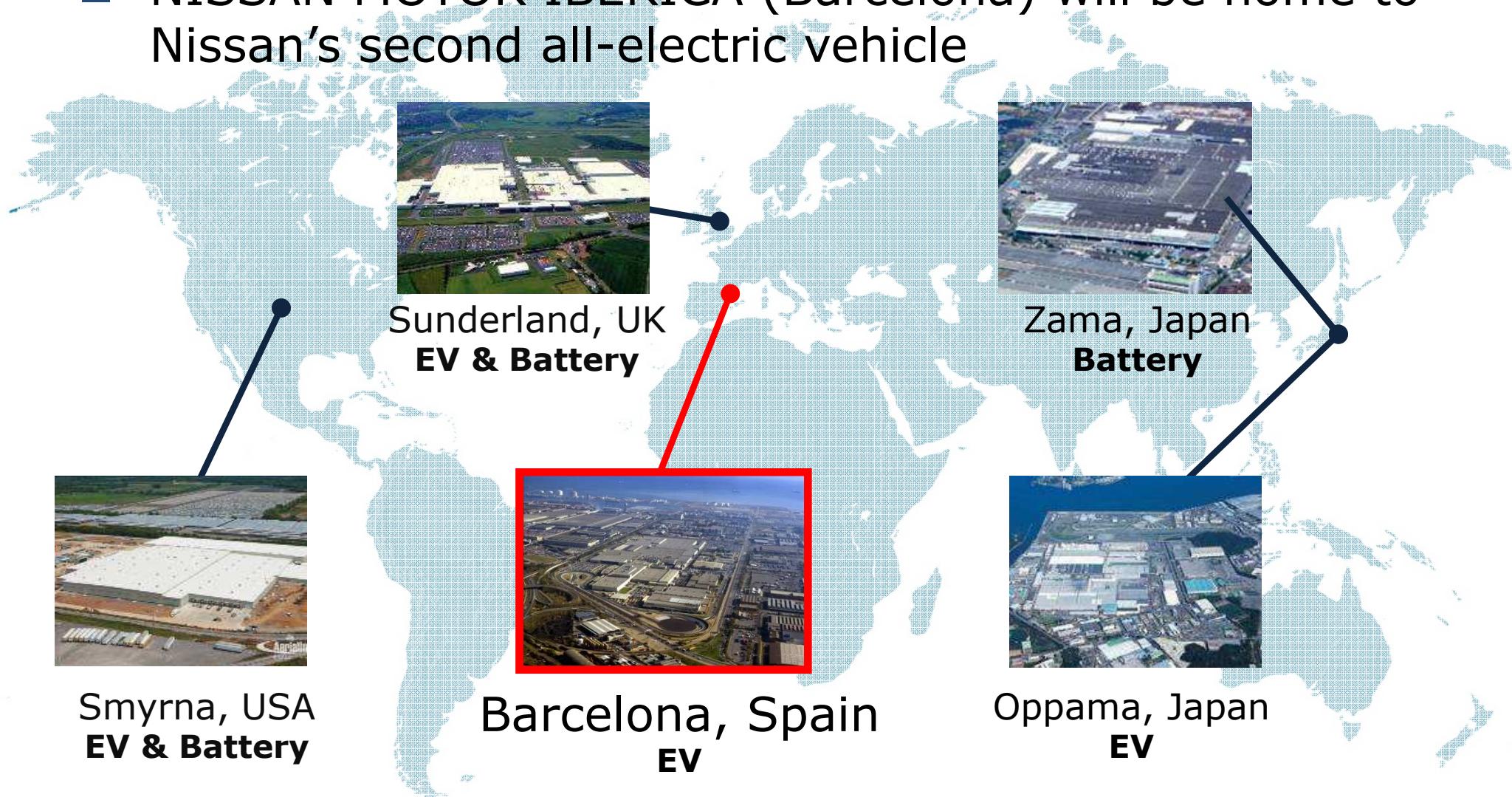
# Toward to Zero Emission World

- Large-scale field tests have begun all over the world



# Expansion of EV and Battery Production

- NISSAN MOTOR IBÉRICA (Barcelona) will be home to Nissan's second all-electric vehicle



# e-NV200 is in the Final Development Phase

- e-NV200 is scheduled to launch in 2014
- Positive feedback has been received from fleet customers;  
**it is quiet and comfortable with generous carrying capacity**



# NISSAN e-NV200 Electric Barcelona Taxi



# Summary

- Nissan Leaf is the first step for achieving sustainable and electric support mobility in social energy infrastructure
- We all need to increase awareness with the public that EVs are here and a real alternative for us and our lives
- People in Barcelona will be able to experience the eNV200 taxi in 2014



# Enjoy your ride soon!

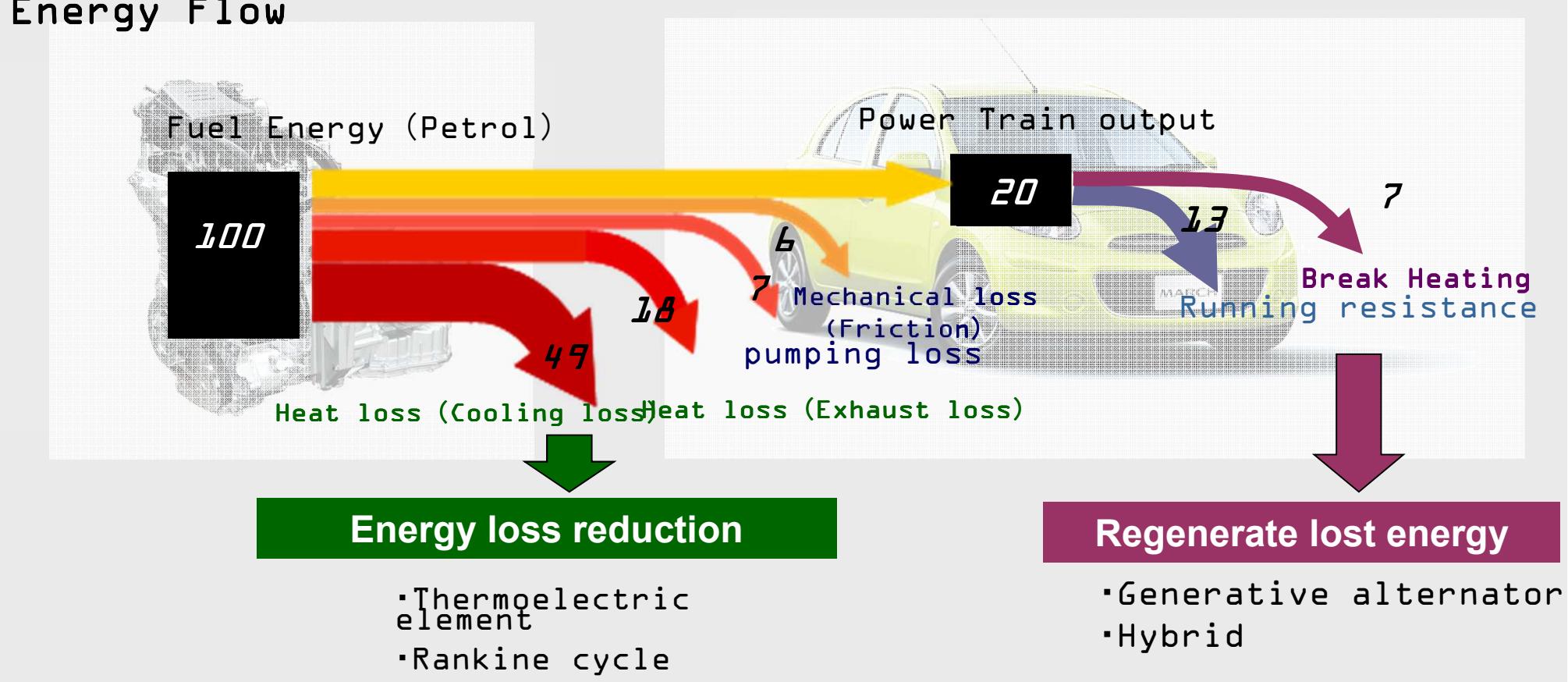


# Appendix

# Energy Balance of Powertrain & Vehicles

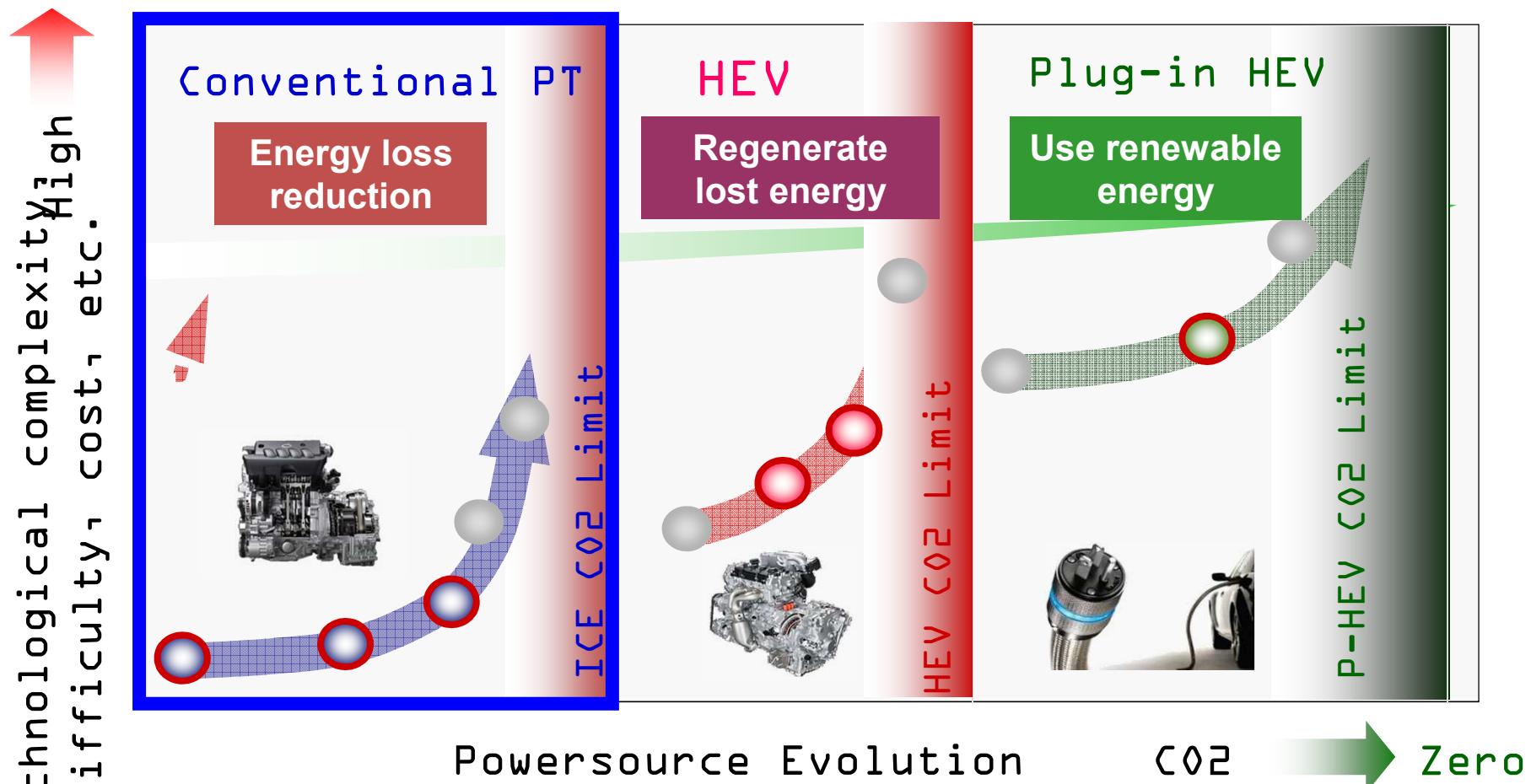
- Numerous energy losses before putting a vehicle in motion
- To improve CO2 (fuel consumption),  
**1. Minimize the energy loss and 2. Regenerate lost energy**

## Energy Flow

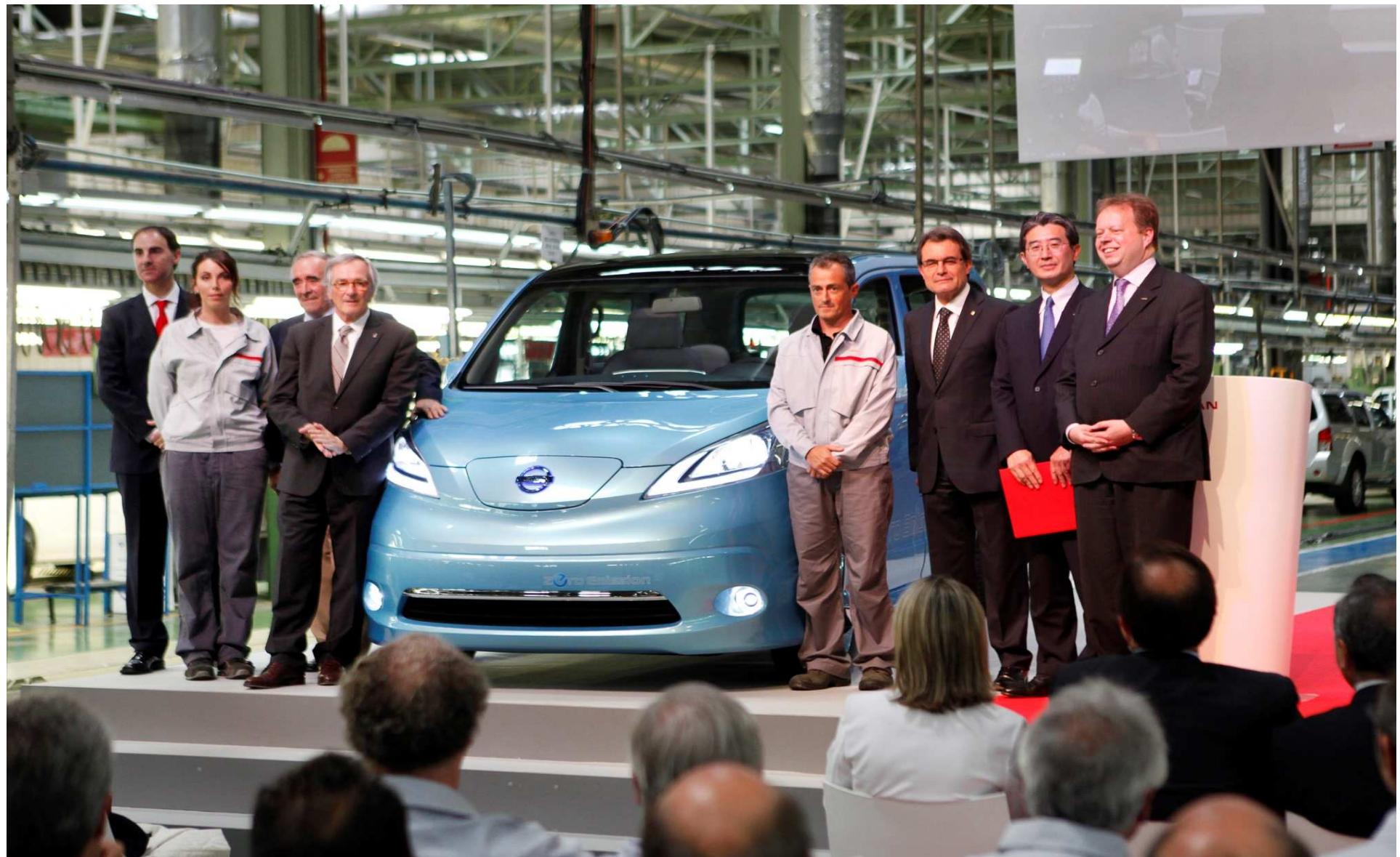


# Technology arrangement

- Technologies have to be arranged to consider all stages under “Powertrain” and “Powersource Evolution” concept



# NISSAN e-NV200 in Barcelona



# New Nissan LEAF

Range: 199 km (NEDC)  
Capacity: 5 passengers  
Motor: 80 kW, 254 Nm  
Battery: 24 kWh Li-ion  
AC Charger: 3.3/6.6 kW (option)  
DC Charger: 50 kW (CHAdeMO)

