R&D & Manufacturing in Kanagawa Prefecture

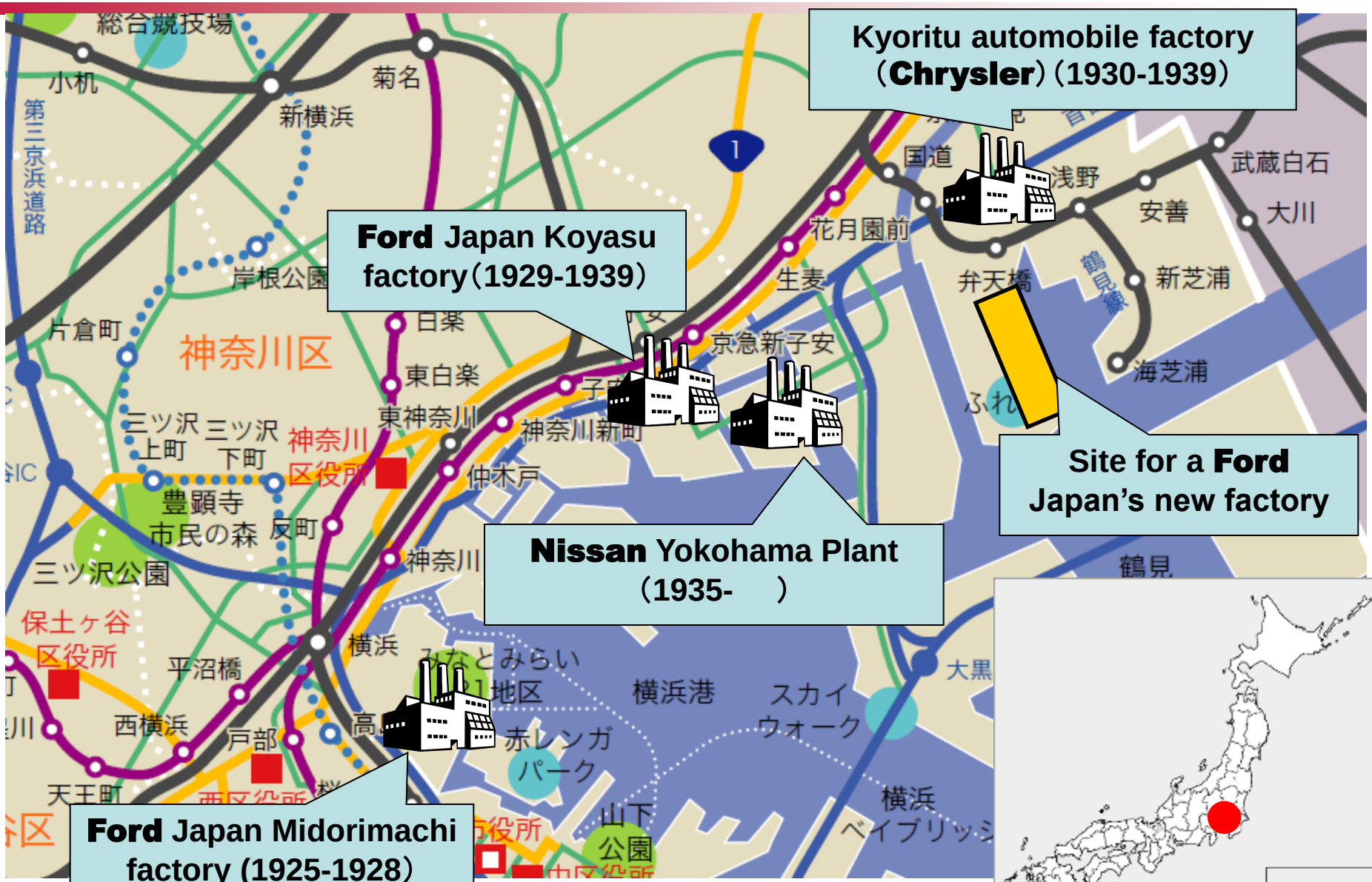
- Example of Nissan Motor Co., Ltd. -

November 4th, 2009

Tadao Takahashi

President, Kanagawa-Ken Employer's Association
Ex. EVP and Vice Chairman, Nissan Motor Co., Ltd.

Nissan and Detroit 2 in Kanagawa in 1930's



Nissan was established in Yokohama in 1933

NISSAN & Kanagawa Employers Associations

Nissan's EV strategy and Kanagawa

Why Nissan concentrated its global function in Kanagawa ?

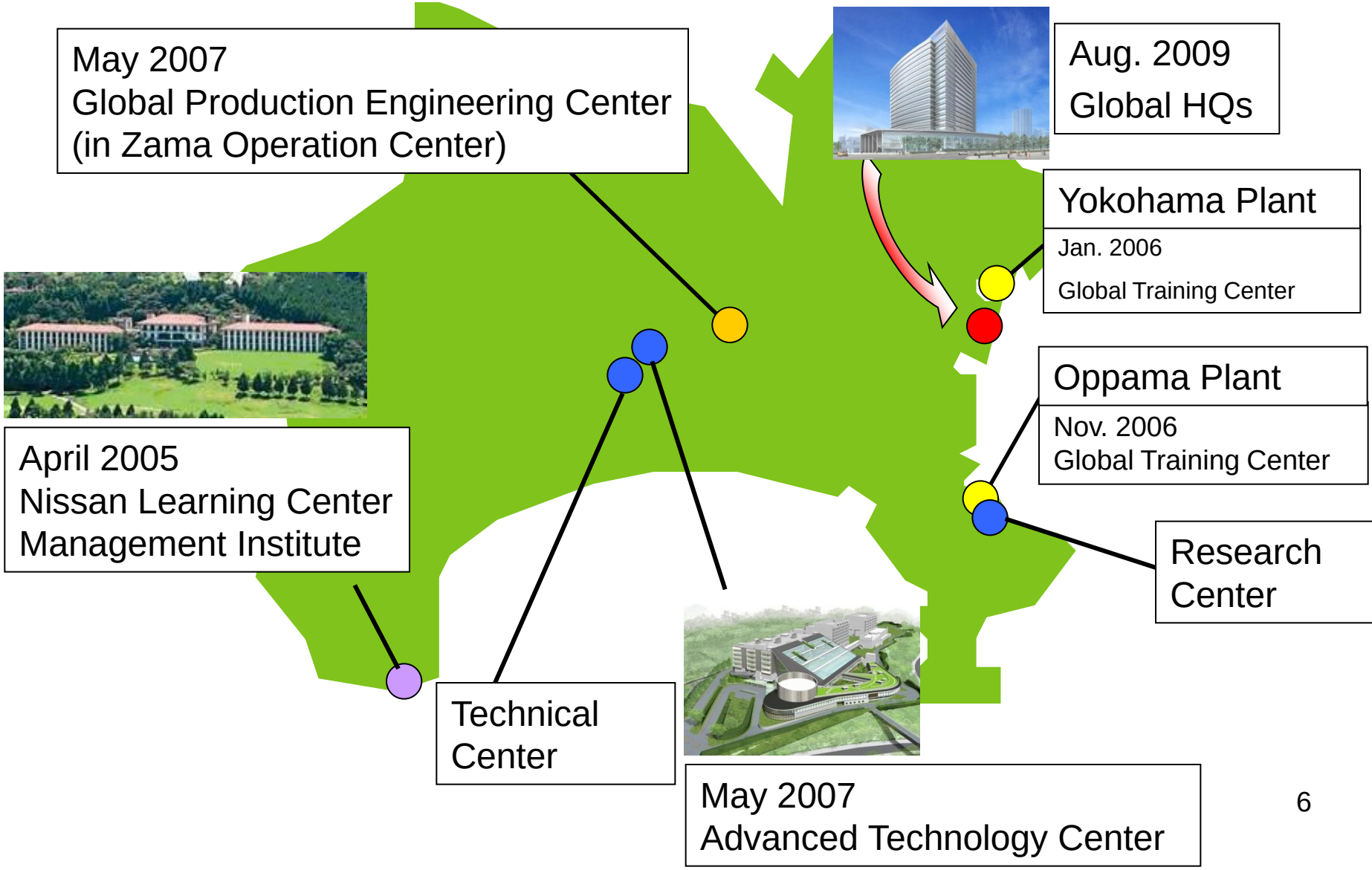
NISSAN & Employers Associations Kanagawa

Nissan's presence in Kanagawa Pref.

Global HQs	Nissan Motor Co., Ltd	3,400	Aug. 2009
R&D	Research center (Oppama)		Apr. 1961
	Advanced Technology Center	1,600	Jan. 2004
	Technical Center	17,700	Nov. 1981
	Powertrain Engineering Div.		July 1948
	Oppama Proving Ground		June 1961
Production	Oppama Plant	2,600	Oct. 1961
	Oppama Wharf		May 1983
	Yokohama Plant	3,400	Apr. 1935
	Zama Operation Center	2400	Dec. 1964
	Honmoku Wharf	360	June 1967
	Sagamihara Parts Center	370	Apr. 1972
Affiliates	Nissan Shatai Co., Ltd.	4,200	Apr. 1949
Supplier	Kalsonic kansei, Unipres Corp., Kasai Kogyo Co., Ltd. Hitachi Automotive Systems, etc.		

Nissan facilities & plants in Kanagawa

Nissan is concentrating allocation of facilities in Kanagawa



Kanagawa-Ken Employers' Association

- Established January 18, 1949
- Membership：450 companies

<Breakdown>

Large companies: 30%
Small & Medium companies: 70%

Manufacturing: 60%
Non-Manufacturing: 40%

- Description of business

1. Deepen exchanges and mutual edification among member companies and their leaders.
2. Investigation on improving company's management and development of the industry.
3. Establishing partnership with government institution and related associations.

INVEST KANAGAWA

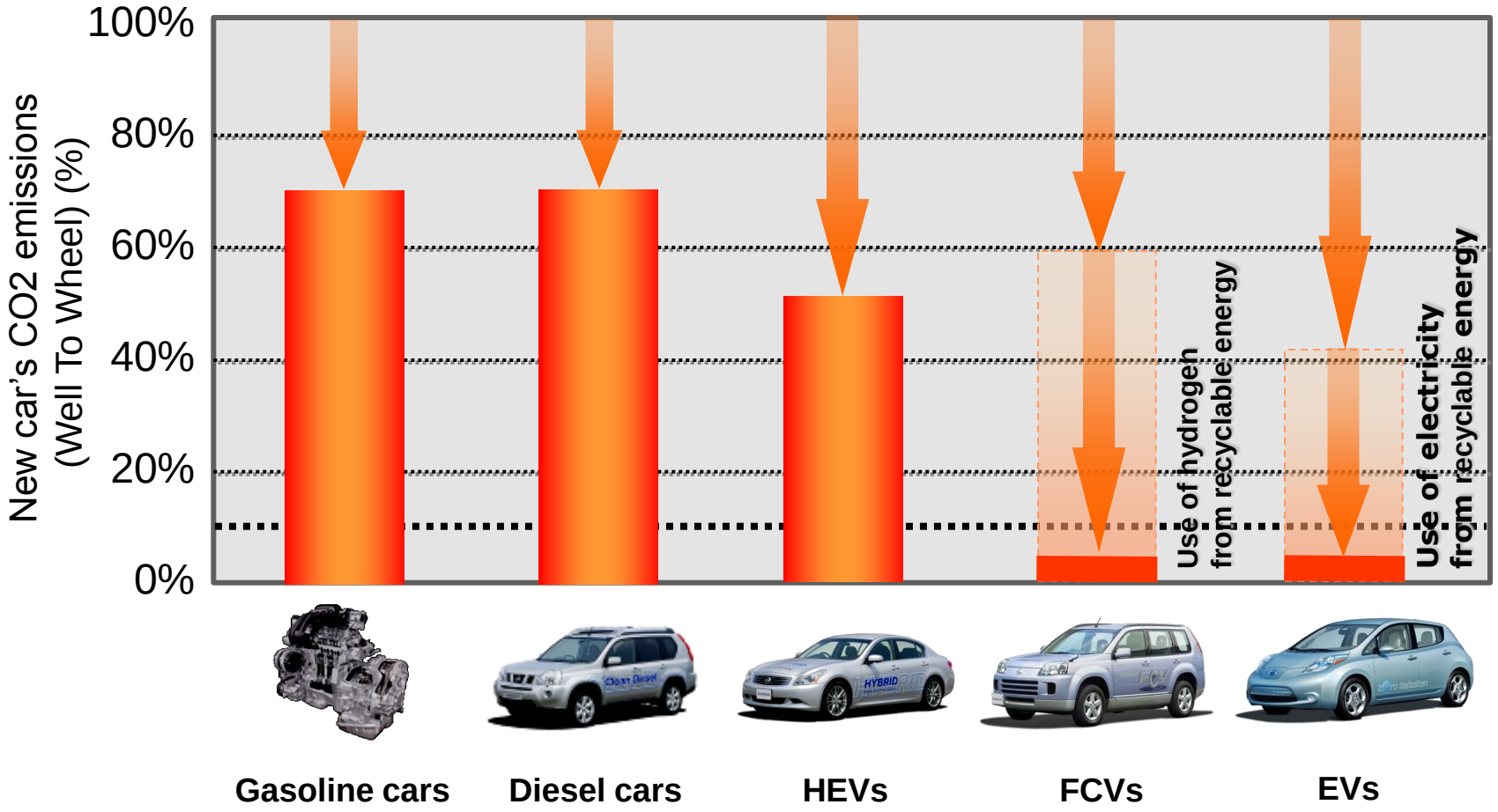
Global companies which invested to Kanagawa Pref. by using “Invest Kanagawa” scheme.

Company	R&D	Plant	HQs	Investment amount (Oku-Yen)	
FUJIFILM	○			460	Advanced technology center
AJINOMOTO	○	○		400	Leading technology research center
NISSAN	○		○	984	GHQ, NATC
SONY	○			290	Technology center expansion
CANON	○			213	Next generation display R&D center
FUJI XEROX	○			450	Integration of R&D center in Yokohama
JFE STEEL		○		100	New shaft furnace
MITSUBISHI HEAVY INDUSTRIES		○		140	Mother factory for turbo charger

Nissan’s EV strategy and Kanagawa

ULTIMATE GOAL for CO_2 REDUCTION

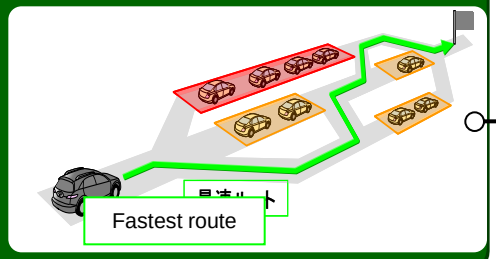
Zero-Emission vehicle is the ultimate goal for CO2 reduction



Nissan's Triple Layered Approach

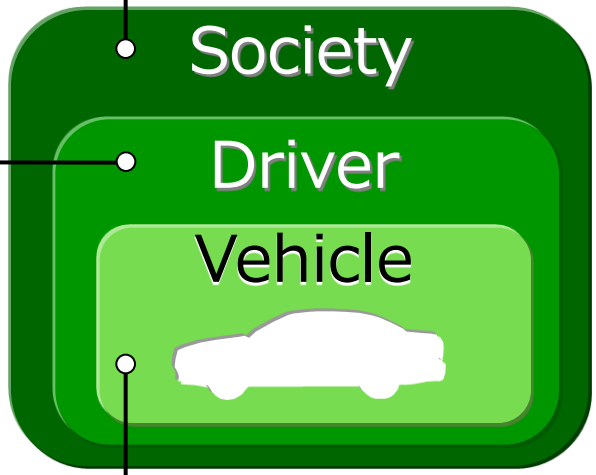
- Comprehensive approaches through *Vehicle*, *Driver*, *and Society* to achieve sustainable mobility society effectively.

- Reduce congestion
- New transportation, and mobility net-working



- Support ECO-drive
  - Eco meter
  - Eco-advice
  - Eco-pedal

- Engine/Transmission
- HEV, EV, FCV
- Bio Fuel Vehicle



Nissan's new EV "LEAF"

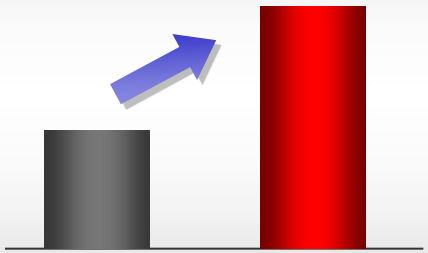
Size	**Compact car class**	**Ample cabin space**
Seating	**5**	
Battery	**Laminated compact Li-ion battery**	
Motor	**High-response AC syncronous motor**	**Stimulating acceleration**
Cruising Range	**160km (US-LA4 mode)**	**Sufficient cruising range for daily use**
Major features	**Dedicated IT system**	**Charging support for secure feel**

Becoming a leader with zero-emission vehicles

Nissan's advanced lithium ion battery technology

Double output

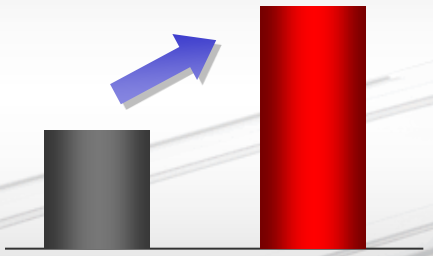
> 2.5 kW/kg*



* After endurance experiments

Double energy

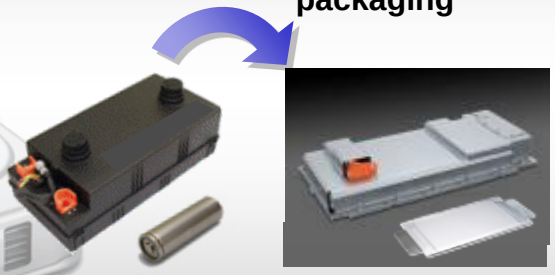
140 Wh/kg*



* After endurance experiments

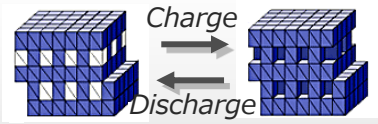
Half the size

Compact and flexible packaging

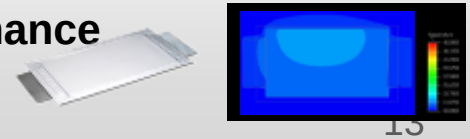


High reliability has been secured

Lithium manganese spinel with stable crystal structure even under overcharged conditions



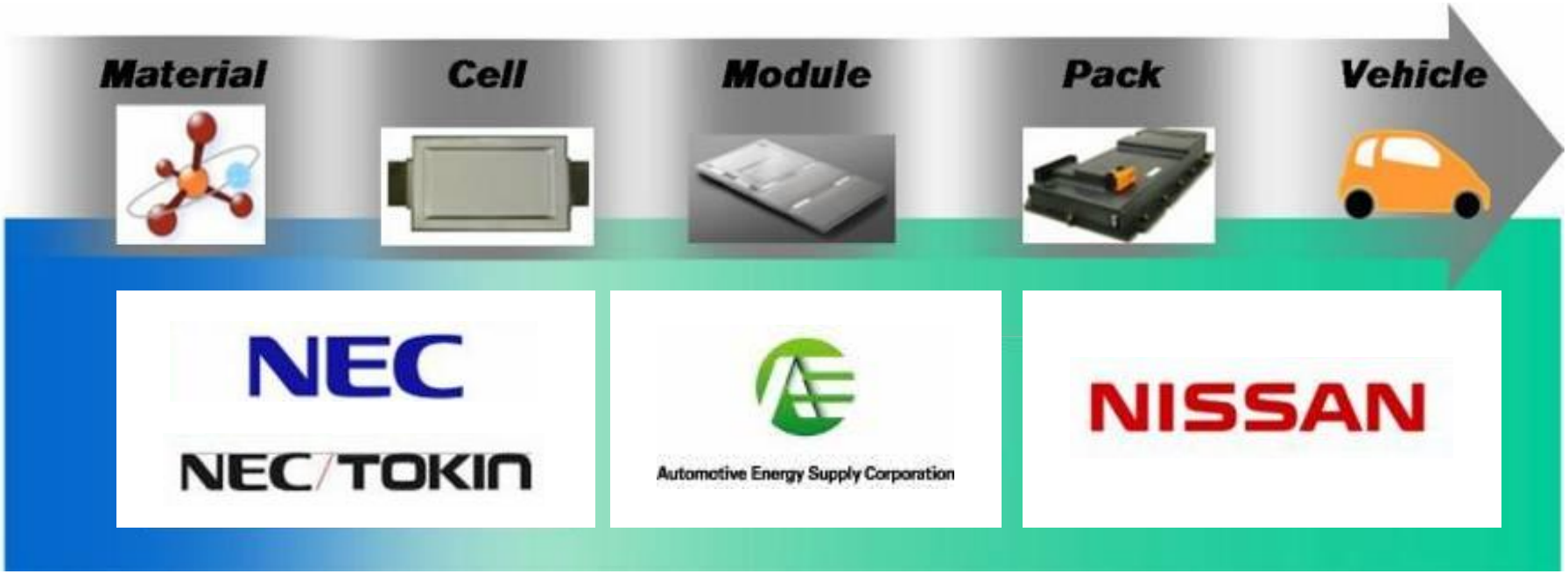
A laminated structure having outstanding cooling performance



Securing of stability through cell management

Automotive Energy Supply Corporation

- AESC: a joint-venture of Nissan (51%) and NEC group (49%).
- AESC enables to:
  - ✓ develop optimized battery for electric powered vehicle from material selection to vehicle application.
  - ✓ provide assurance based on the deep understanding and experience of vehicle installations.

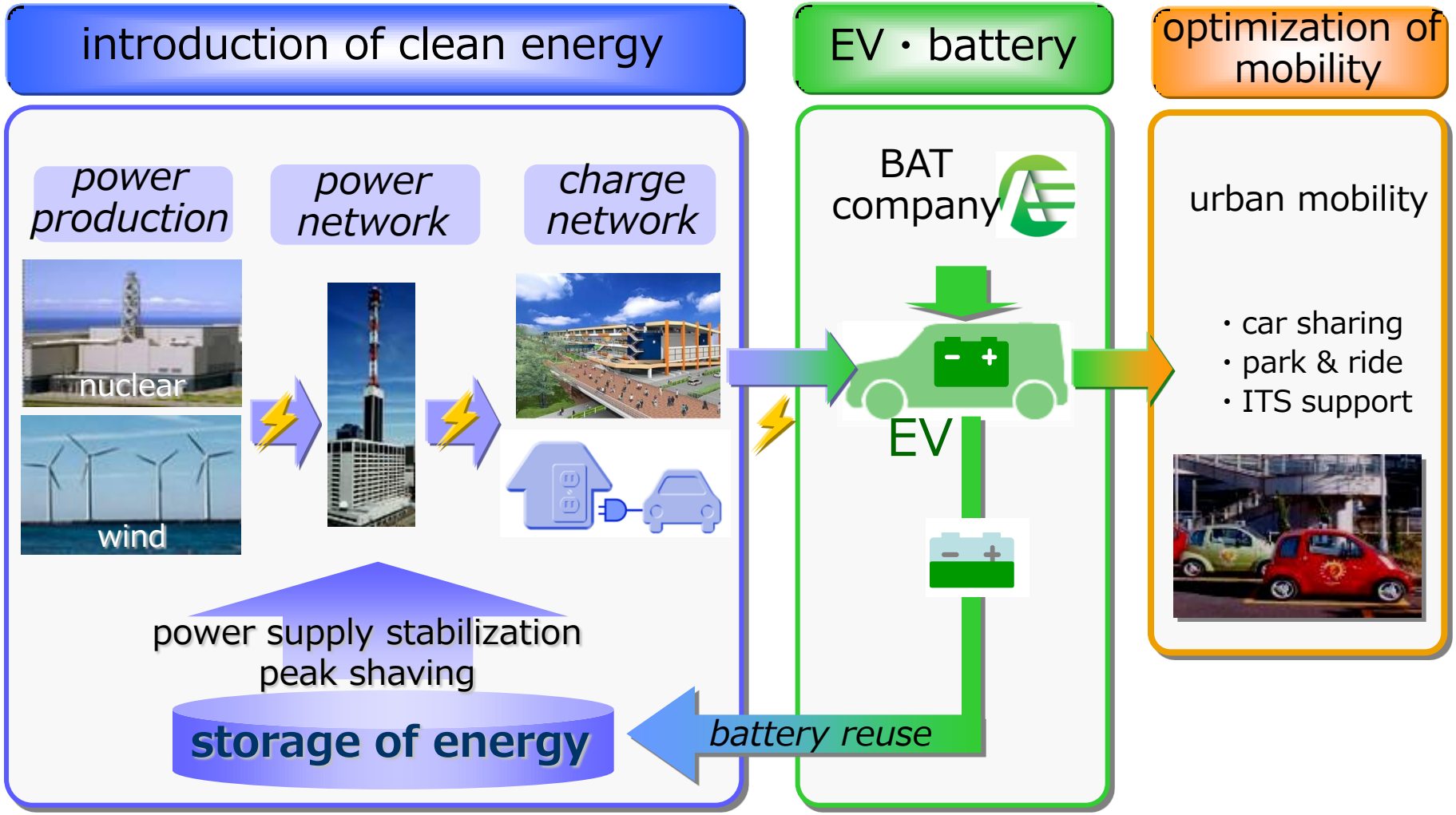


EV Global Partnership

- Nissan will partner with select public and private organizations to contribute to zero emission society with EVs globally.

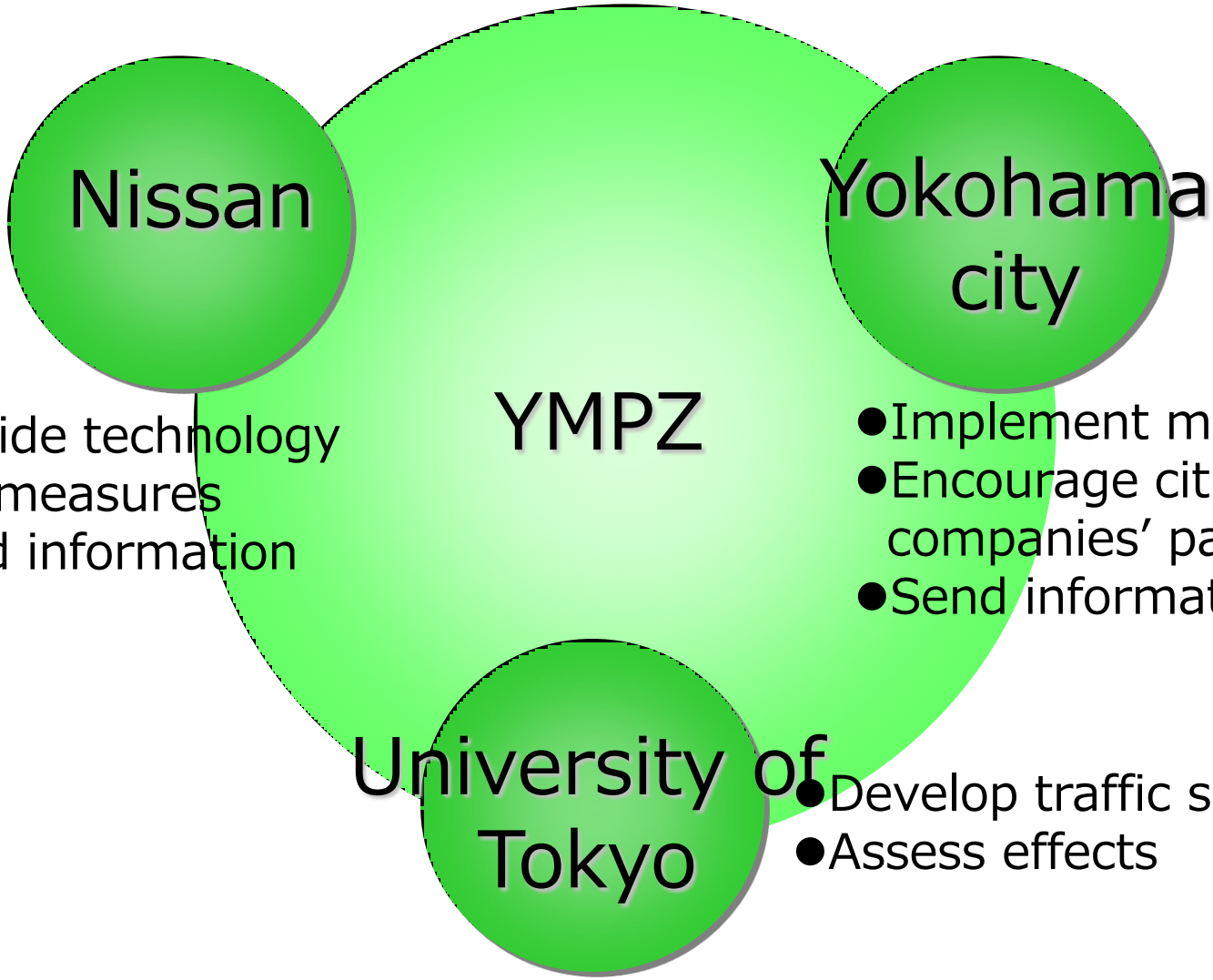
New businesses surrounding EV

■ To expand EV, consider wide range of views on energy supply, power storage and optimization of mobility



Yokohama Mobility "Project ZERO"

Low carbon model city concept



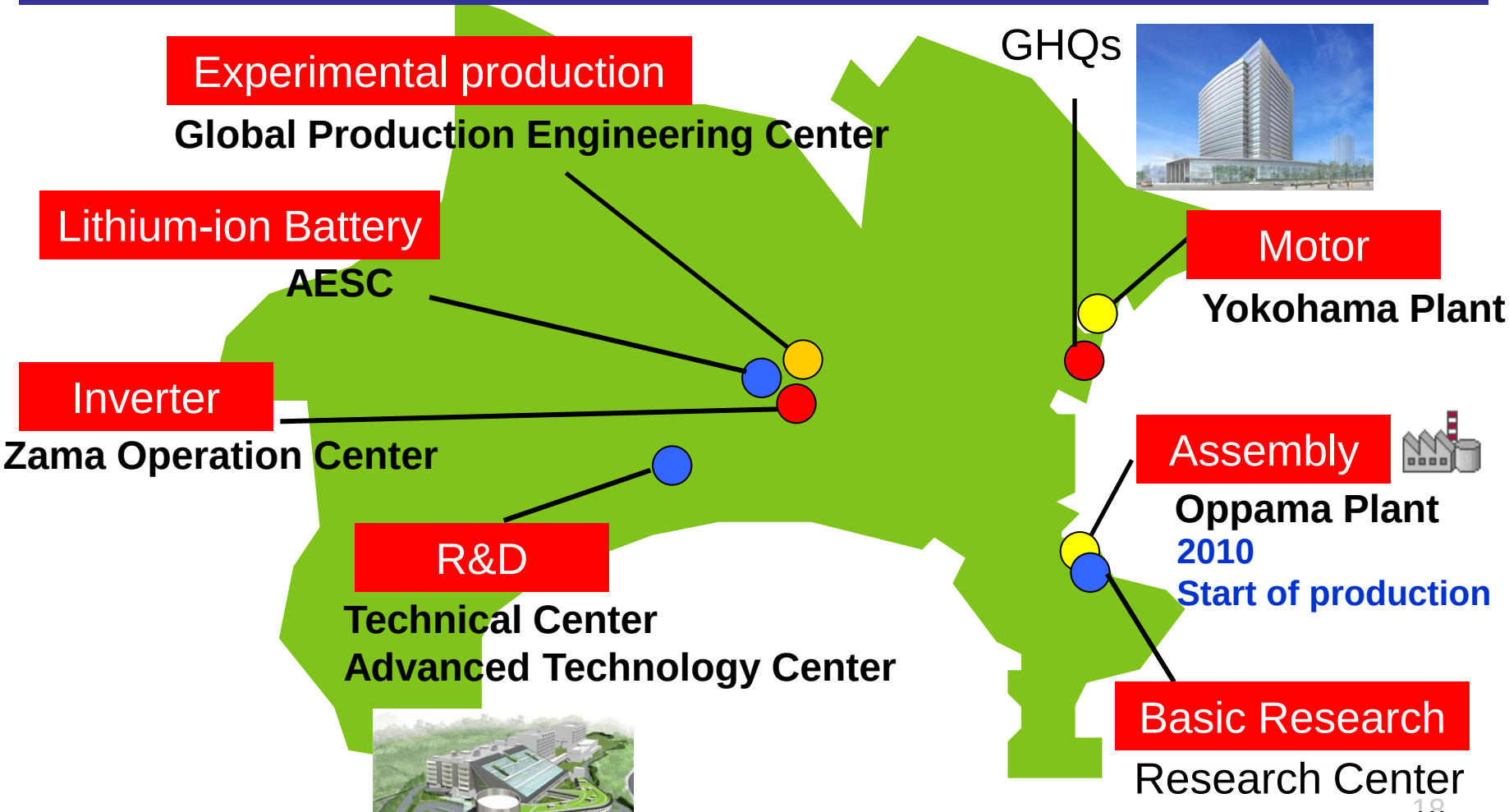
- Provide technology and measures
- Send information

- Implement measures
- Encourage citizen's & companies' participation
- Send information

- Develop traffic simulations
- Assess effects

Nissan's EV is made in Kanagawa

Nissan allocated all EV related facilities from R&D to production in Kanagawa Prefecture. Batteries, Motors and inverters will be also produced in Kanagawa.



Why Nissan concentrated its global function in Kanagawa ?

Advantage of Kanagawa

- Support from local government
- Infrastructure: roads, port and airport
- Gathering of manufacturing industry
- Human resource: many scholastic institutions
- Location: short range from Tokyo

Thank you for your attention !