

Julien ROUSSEL
Toyota Motor Europe

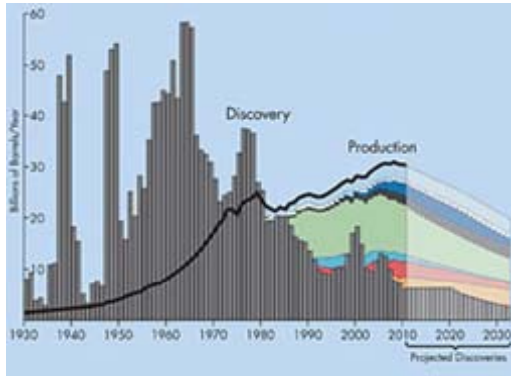
Fuel Cell Vehicles by Toyota

IEA Workshop 10th July 2013

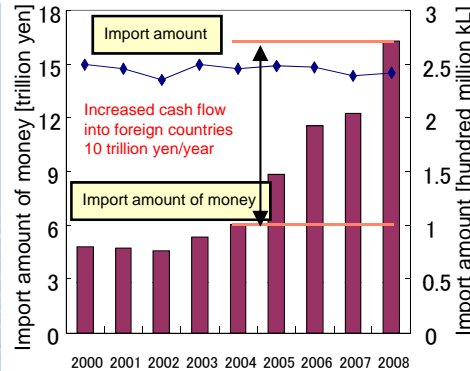
3 tough challenges ahead for transportation

Economic concerns

Energy security
Reduce Financial burden
Ensuring job security



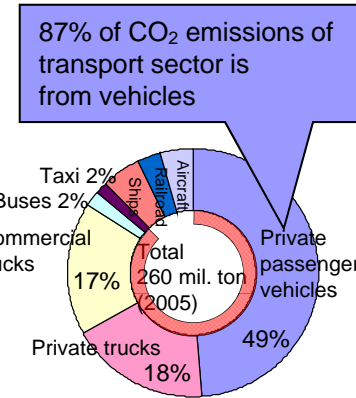
Decreasing oil production: Peak oil
Source: oilposter.org



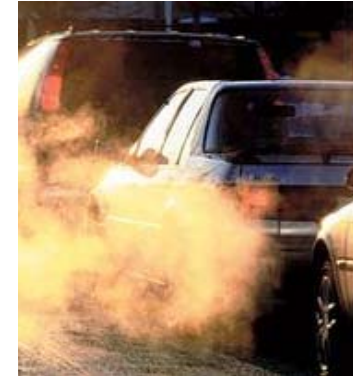
Japan's crude oil imports
Source: IEA

Environmental concerns

No NOx, HC, CO, PM
Achieve CO₂ reduction

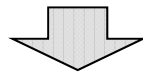


CO₂ emissions of each transport sector
Source: MLIT website



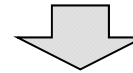
Air pollution in London
Source: The independent, 27th July 2011

Energy security

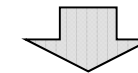


Rapidly reduce the dependence on oil

CO₂ reduction
-80 % in 2050



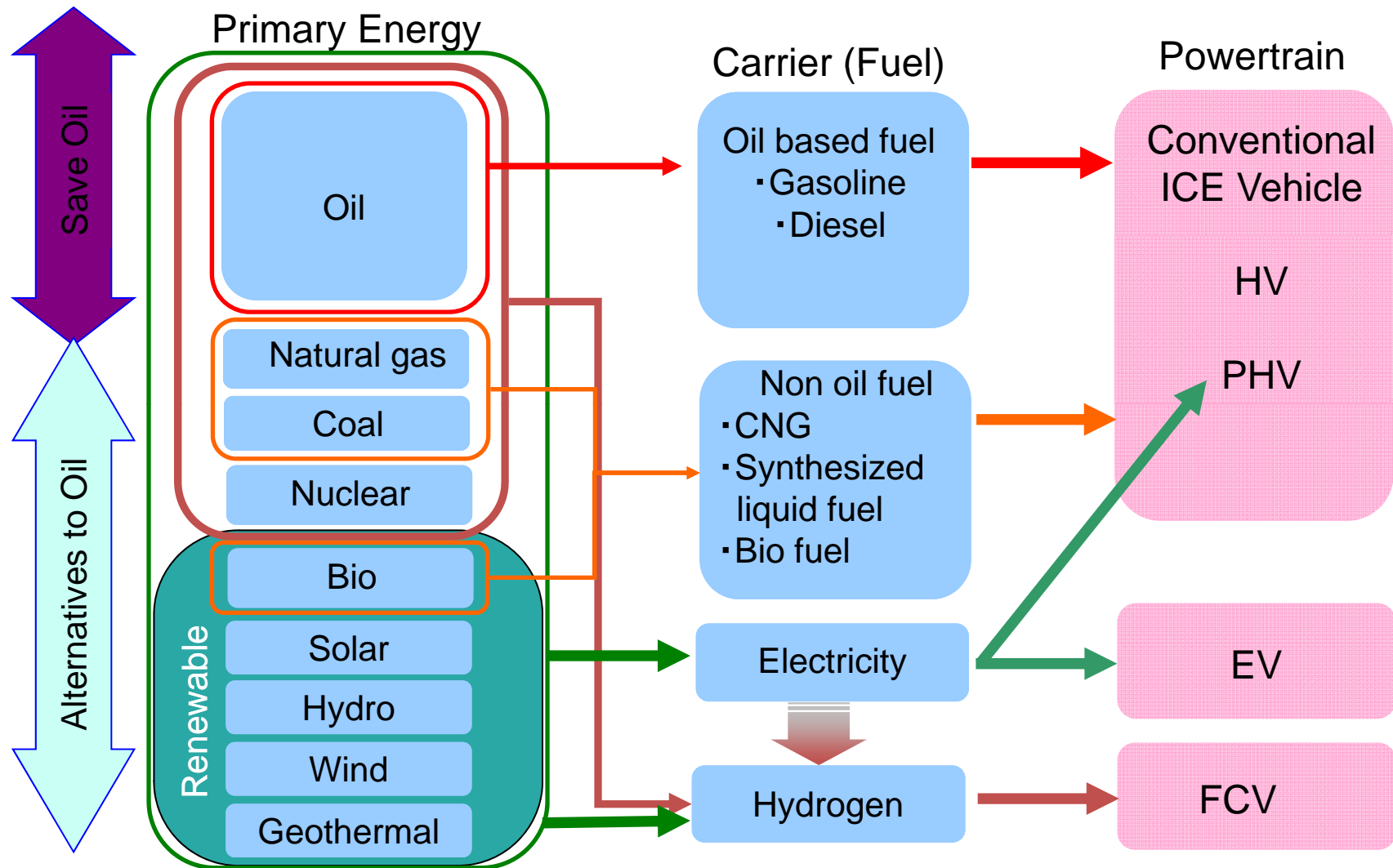
Deterioration of urban environment



Zero emissions

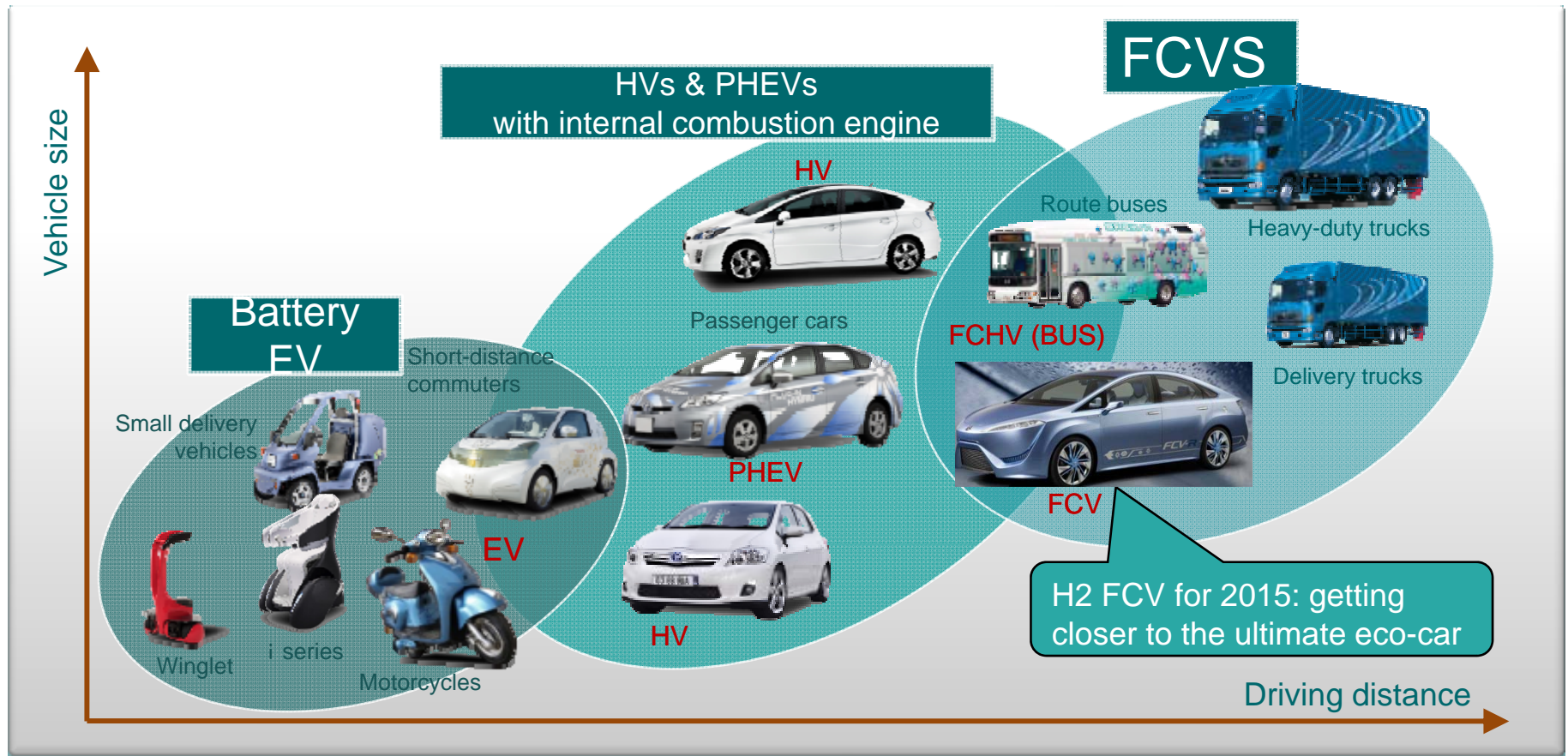
Automotive industry is urged to respond to these issues to offer sustainable mobility for the 21st century.

Diversification of Automotive Fuels and Powertrains



New powertrain will emerge as energy carriers diversify:
H2 and electricity combine many advantages

Vision of Future Vehicle Market



Energy carriers

Electricity

Gasoline, diesel, bio-fuels, compressed natural gas, gas to liquids, coal to liquids, etc.

Hydrogen

A portfolio of technologies to take on the challenge of eco-mobility

Vision on necessary policies

SUPPORT

Initial H2 retail stations will not be profitable: cross the valley of death

- Long-term financing tools, bank guarantees to attract early investors

TCO of FCV not attractive for early adopters:

- Offer financial incentives: grants, tax-free H2, free H2, green loans, VAT rebate
- Offer non-financial incentives: parking spots, bus-lane access

REGULATE

Policy-makers are urged to implement the necessary regulations

- International regulations and standards are needed: H2 stations, FCV parking
- Every country should have a simplified and safe procedure to open new stations
- Lack of appropriate regulations on H2 complicates the deployment

COORDINATE

Policy-makers could coordinate the H2 station deployment

- Setting targets at EU-national-regional levels to cover main corridors
- Guarantee a sound inter-connection of networks across borders
(H2movesScandinavia trans-national H2 highway)