International Energy Agency
Secure
Sustainable
Together

Transport, Energy Efficiency and Behaviour Workshop

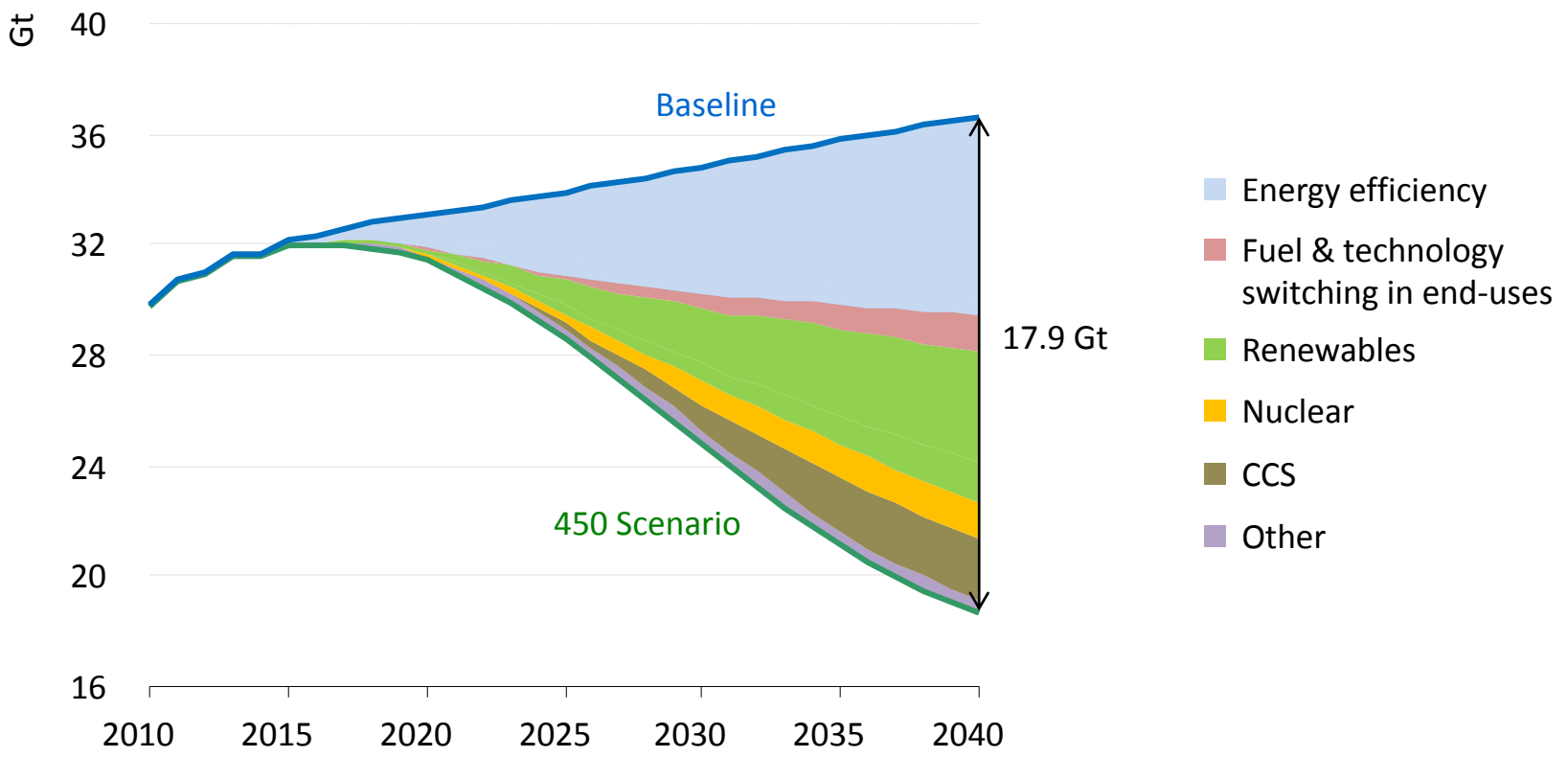
Keisuke Sadamori
Director of Energy Markets and Security

May 10-11

International Energy Agency

www.iea.org

A 2°c pathway is still some distance away



Energy efficiency holds the key to a peak in emissions by around 2020

Source: *World Energy Outlook 2015*, IEA 2015

International Energy Agency
Secure Sustainable Together

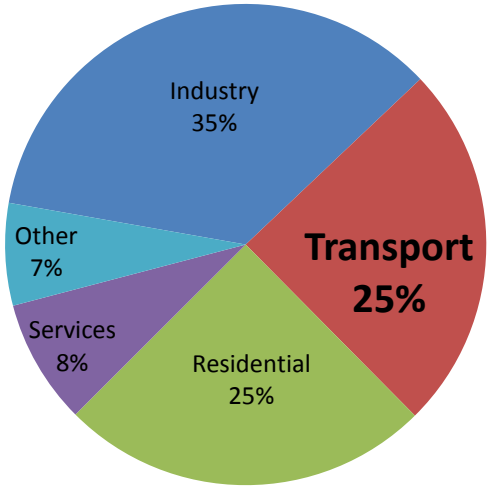
Why Focus on the Transport Sector?

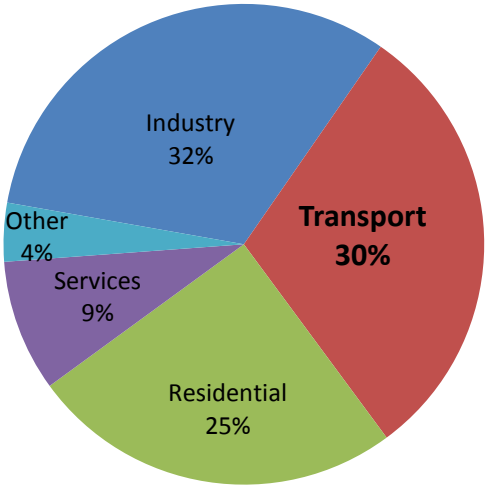
www.iea.org

1973

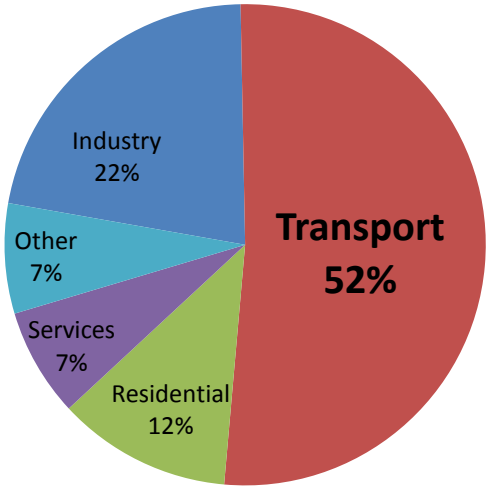
2013

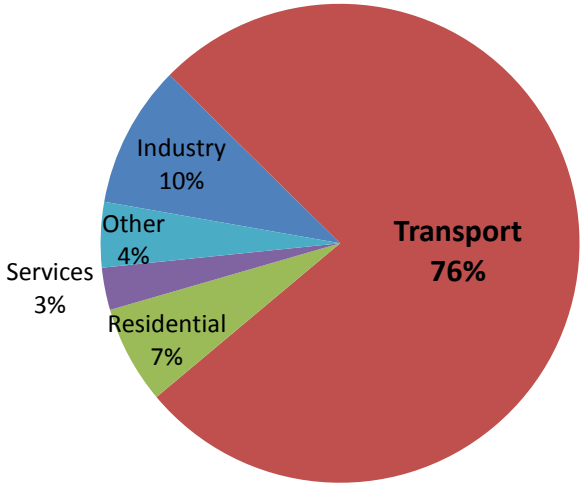
Total





Oil products





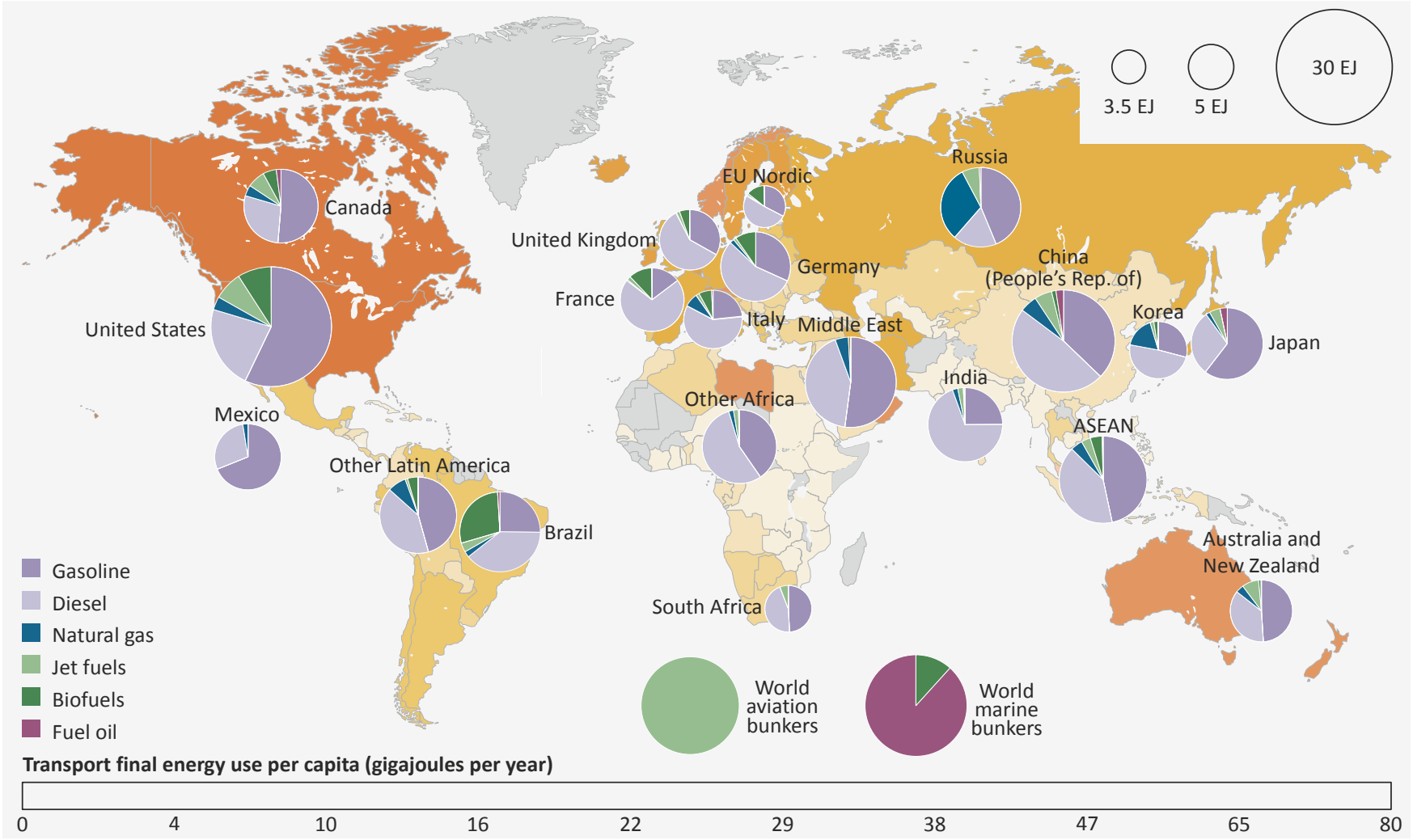
Source: IEA World Energy Balances. 2015

International Energy Agency
Secure Sustainable Together

Transport still overwhelmingly relies on oil

www.iea.org

Transport final energy use by fuel (EJ) and per capita transport energy use in 2015



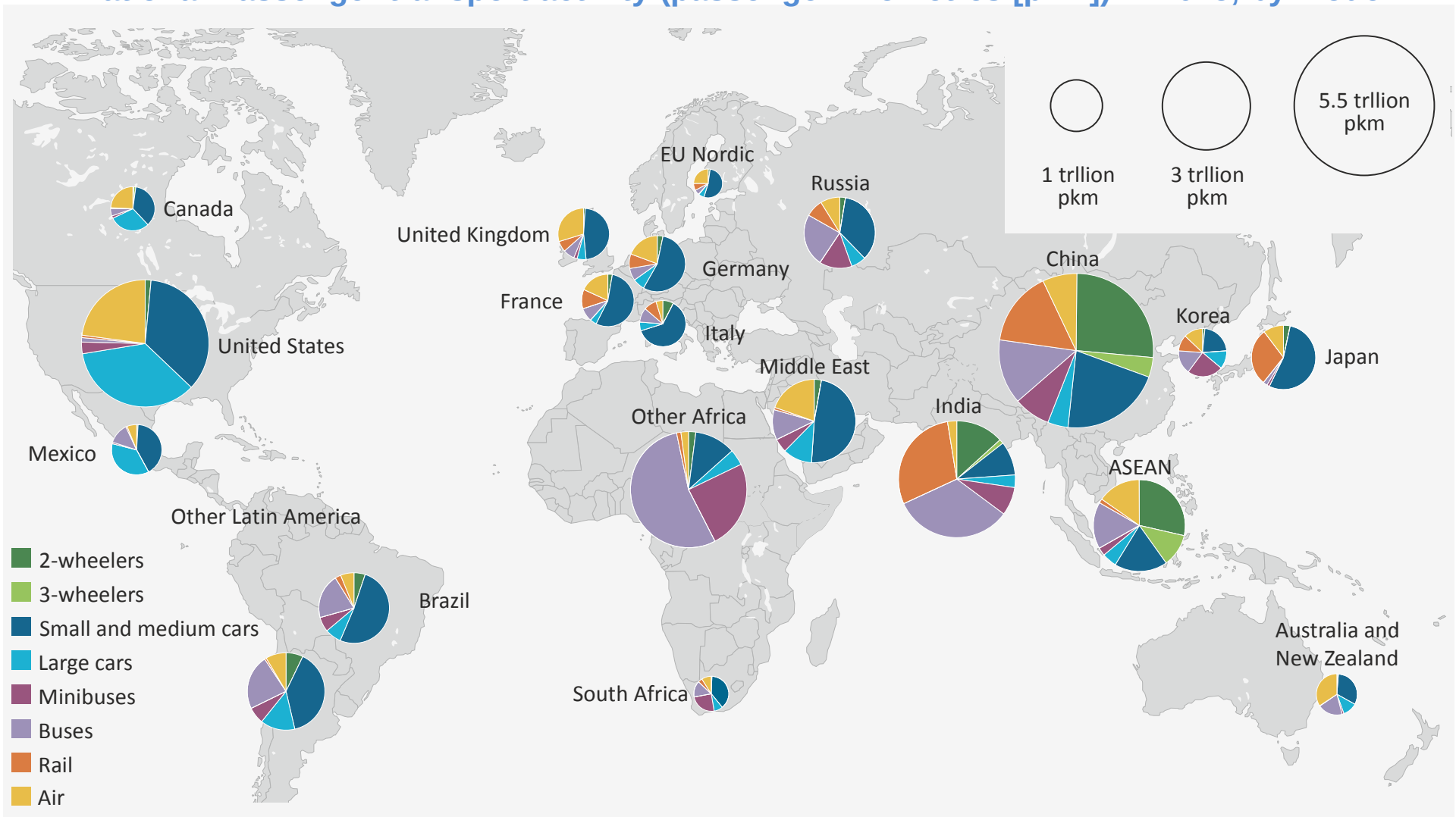
Source: *Energy Technology Perspectives 2016*, IEA 2016; Taken from the IEA energy balances, 2016.

International Energy Agency
Secure Sustainable Together

Passenger transport activity – mode matters

www.iea.org

National Passenger transport activity (passenger kilometres [pkm]) in 2015, by mode



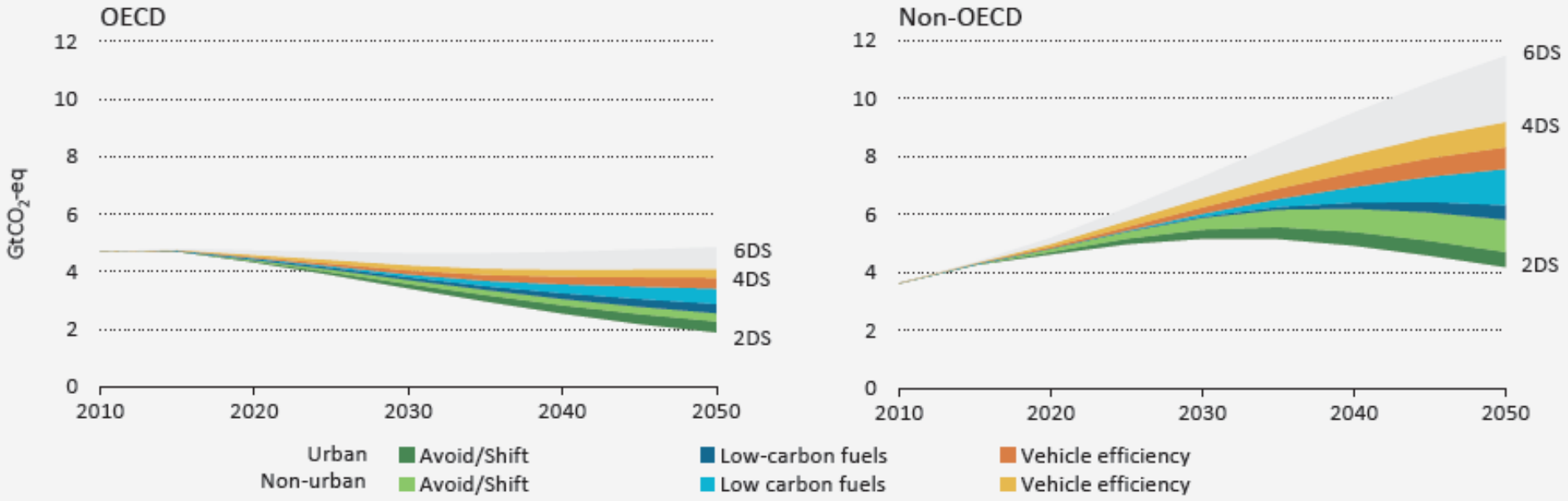
Source: *Energy Technology Perspectives 2016*, IEA 2016.

International Energy Agency
Secure Sustainable Together

Toward decoupling activity from emissions

www.iea.org

Well-to-wheel transport emissions in the 2DS, 4DS, and 6DS, OECD and Non-OECD



Source: *Energy Technology Perspectives 2016*, IEA 2016.

Needed actions: *Avoid & shift, improve, and low-carbon fuels*

International Energy Agency
Secure
Sustainable
Together

Transport, Energy Efficiency and Behaviour Workshop

Brian Motherway
Head of Energy Efficiency Division

May 10-11

International Energy Agency

www.iea.org

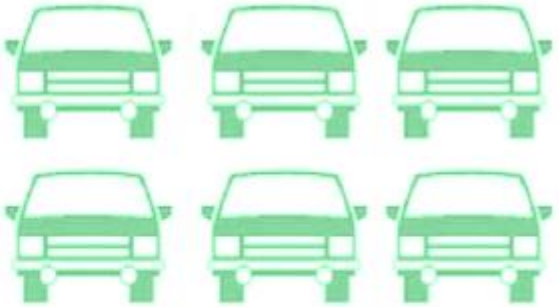
International Energy Agency
Secure Sustainable Together

Improving Transport Efficiency

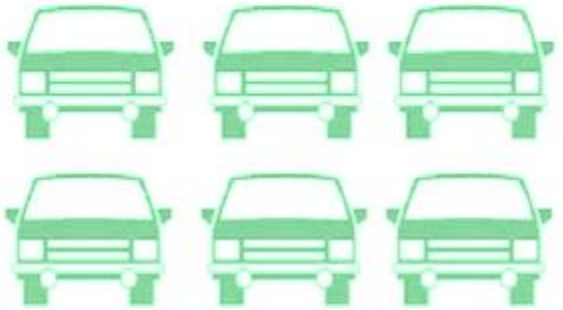
www.iea.org

AVOID
unnecessary trips
REDUCE km

SHIFT modes



IMPROVE vehicles
low carbon fuels



Ensuring a wide variety of mobility options

Transport policies implemented in cities

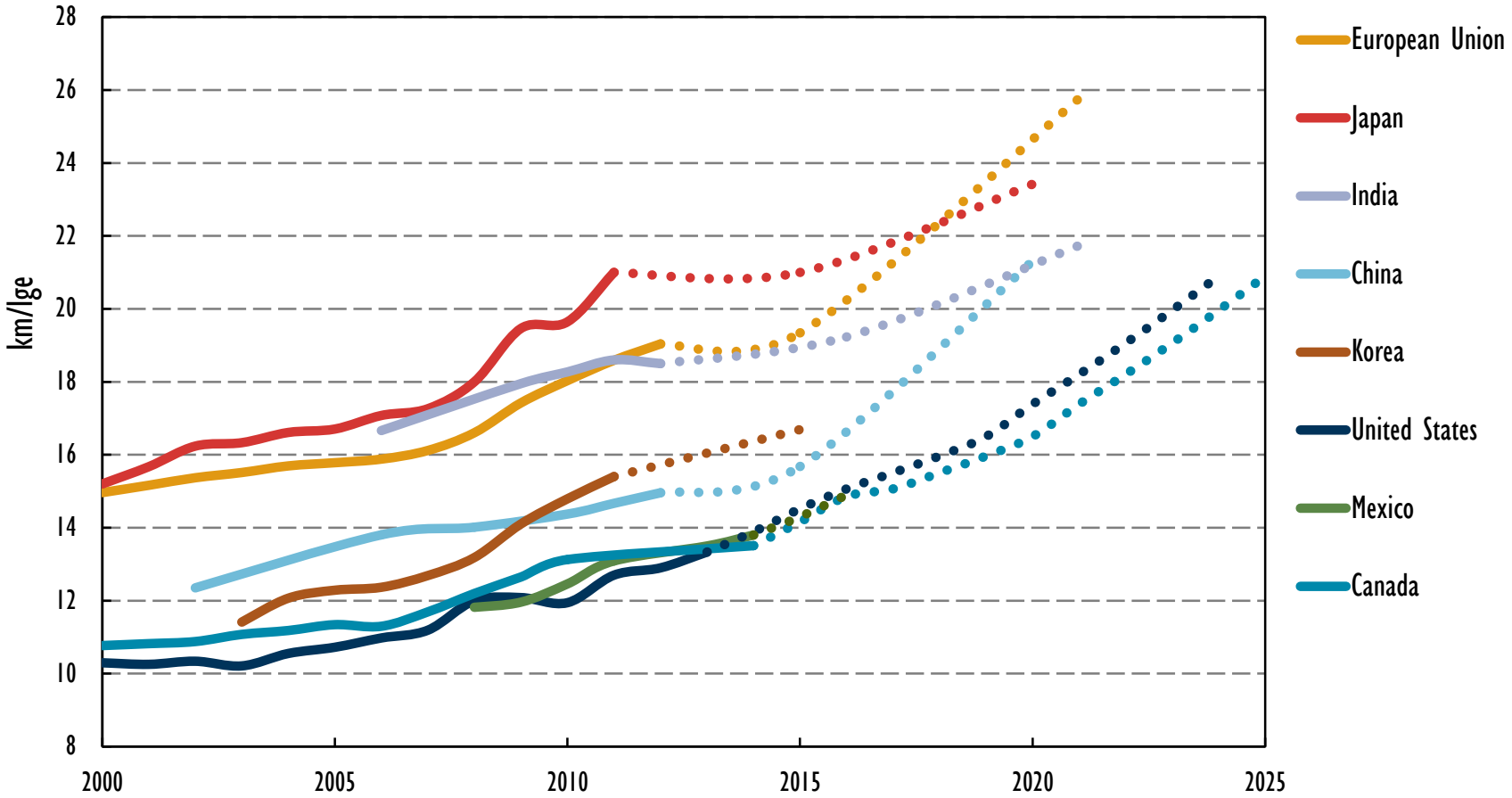
Pricing	Regulatory instruments	Public transport and walking and cycling support
Congestion charging, cordon pricing, tolls (e.g. London, Milan, Singapore, Stockholm).	Access restrictions (e.g. "yellow label" restrictions in Chinese cities).	Shared bicycle systems and bicycle parking (e.g. *Vélib'* in Paris, Citi Bike in New York).
Parking pricing (widespread in North American, European and Japanese cities, most prevalent in the central business districts of densely populated cities).	Low-emission zones (e.g. time-of-day restricted access for freight trucks, as in many European cities).	Investments in cycling and walking paths, and sidewalks.
	Registration caps (e.g. in Singapore, Shanghai and other Chinese cities).	Transit infrastructure projects/ extensions (e.g. the Paris *Métro*; Bogotá's *Transmilenio*).
	Parking restrictions/reductions in parking supply (e.g. progressive elimination of off-street parking in Copenhagen, Paris and other European cities).	Transit fare subsidies (e.g. local, regional and federal subsidies pay for roughly half of fares on systems in many European and Chinese cities).

Source: *Energy Technology Perspectives 2016*, IEA 2016.

IMPROVE

Fuel economy standards driving efficiency

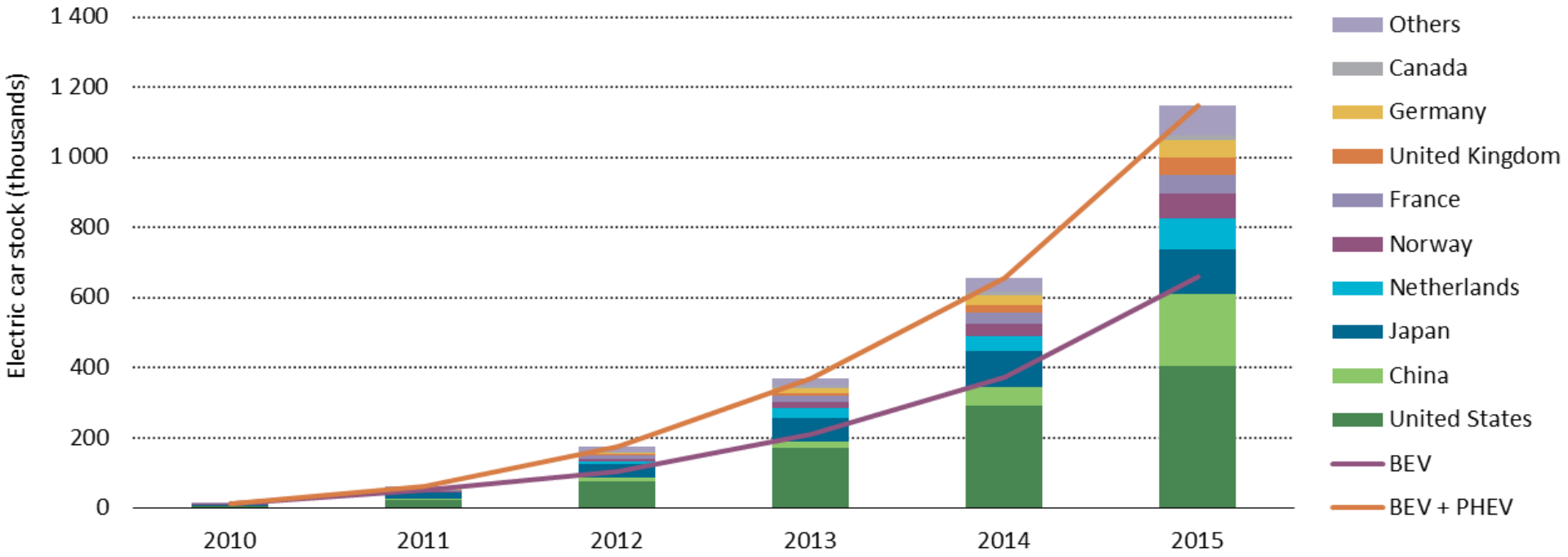
Enacted Light Duty Vehicle Fuel Economy Standards



Source: *ICCT (2014)*.

Electric vehicles: The beginning of a new era?

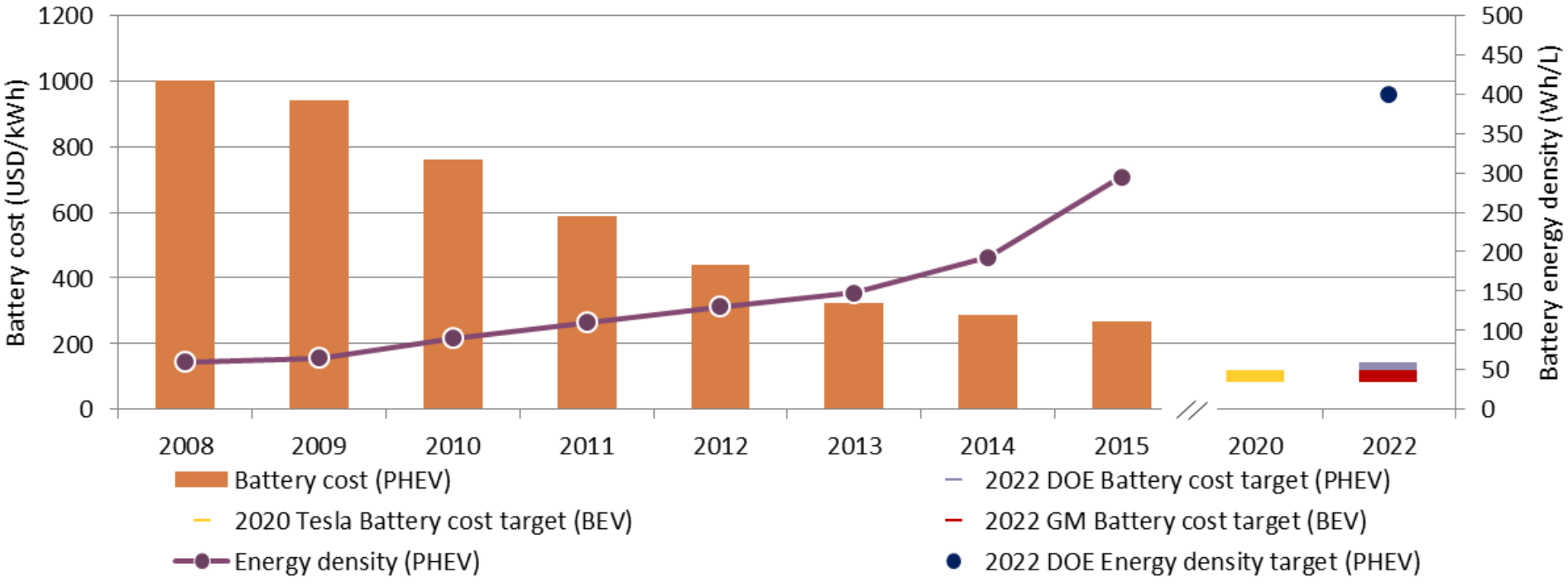
Evolution of the global electric car stock, 2010-2015



Source: *Global EV Outlook 2016 – Beyond one million electric cars*, IEA 2016.

Technology developments are crucial

Evolution of battery energy density and cost



Source: *Global EV Outlook 2016 – Beyond one million electric cars*, IEA 2016.

… but ultimately, it depends on consumer preferences, acceptance, and market uptake.

International Energy Agency
Secure Sustainable Together

Agenda

Day 1

- Demand Management
- Eco-Driving, Feedback Systems & Vehicle Components
- Vehicle Purchasing Decisions

Day 2

- Fuel Switching: Promoting Hydrogen & Electric Vehicles
- Urban Transport and Alternatives to Cars
- Modelling Transport Behaviour

International Energy Agency

Secure
Sustainable
Together

Transport, Energy Efficiency & Behaviour Workshop

May 10-11

International Energy Agency

www.iea.org