Transport, Energy Efficiency and Behaviour Workshop

Keisuke Sadamori
Director of Energy Markets and Security

May 10-11

International Energy Agency

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A 2°C pathway is still some distance away

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

Why Focus on the Transport Sector?

**1973**
- Industry: 35%
- Transport: 25%
- Residential: 25%
- Services: 8%
- Other: 7%
- Total: 1973

**2013**
- Industry: 32%
- Transport: 30%
- Residential: 25%
- Services: 9%
- Other: 4%
- Total: 1973

**Oil products**
- Industry: 22%
- Transport: 52%
- Residential: 12%
- Services: 7%
- Other: 7%
- Total: 1973

**Oil products**
- Industry: 10%
- Transport: 76%
- Residential: 7%
- Services: 3%
- Other: 4%
- Total: 1973

*Source: IEA World Energy Balances. 2015*
Transport still overwhelmingly relies on oil

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

Source: Energy Technology Perspectives 2016, IEA 2016.
Toward decoupling activity from emissions

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
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Brian Motherway
Head of Energy Efficiency Division

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Improving Transport Efficiency

AVOID unnecessary trips
REDUCE km

SHIFT modes

IMPROVE vehicles
low carbon fuels
## Transport policies implemented in cities

<table>
<thead>
<tr>
<th>Pricing</th>
<th>Regulatory instruments</th>
<th>Public transport and walking and cycling support</th>
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<tbody>
<tr>
<td>Congestion charging, cordon pricing, tolls (e.g. London, Milan, Singapore, Stockholm).</td>
<td>Access restrictions (e.g. “yellow label” restrictions in Chinese cities).</td>
<td>Shared bicycle systems and bicycle parking (e.g. Vélib’ in Paris, Citi Bike in New York).</td>
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<tr>
<td>Parking pricing (widespread in North American, European and Japanese cities, most prevalent in the central business districts of densely populated cities).</td>
<td>Low-emission zones (e.g. time-of-day restricted access for freight trucks, as in many European cities).</td>
<td>Investments in cycling and walking paths, and sidewalks.</td>
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<tr>
<td>Registration caps (e.g. in Singapore, Shanghai and other Chinese cities).</td>
<td>Parking restrictions/reductions in parking supply (e.g. progressive elimination of off-street parking in Copenhagen, Paris and other European cities).</td>
<td>Transit infrastructure projects/ extensions (e.g. the Paris Métro; Bogotá’s Transmilenio).</td>
</tr>
</tbody>
</table>

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


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