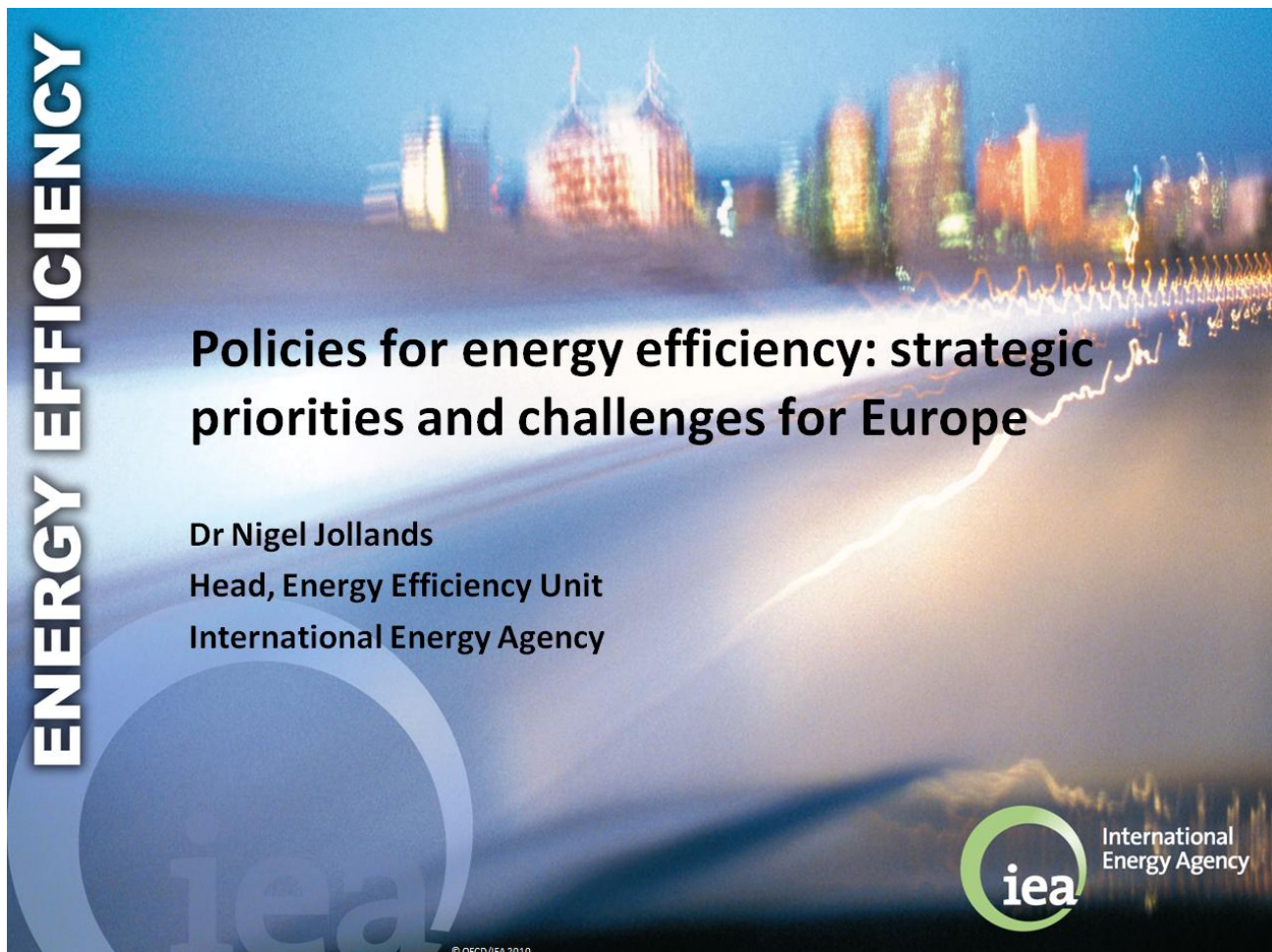


Policies for Energy Efficiency: Strategic Priorities and Challenges for Europe

Nigel JOLLANDS

Head, Energy Efficiency Unit

International Energy Agency (IEA)



Key messages

- Mick Jagger is wrong
- Energy efficiency is a critical part of a sustainable energy future
- The IEA 25 recommendations provide direction
- Energy efficiency policy implementation is in 2nd gear



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Energy efficiency – critical part of sustainable energy future





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FINANCIAL TIMES FRIDAY SEPTEMBER 12 2008

Splendid insulation

UK government package is right to focus on saving energy

Energy efficiency is the antithesis of what we have come to expect from government initiatives: it is long-term, dull – and effective. Yet it was the core of the energy aid package that Gordon Brown unveiled yesterday. Together with the refusal to bow to populist pressure for a windfall tax on energy companies, it is welcome progress.

As with last week's package for

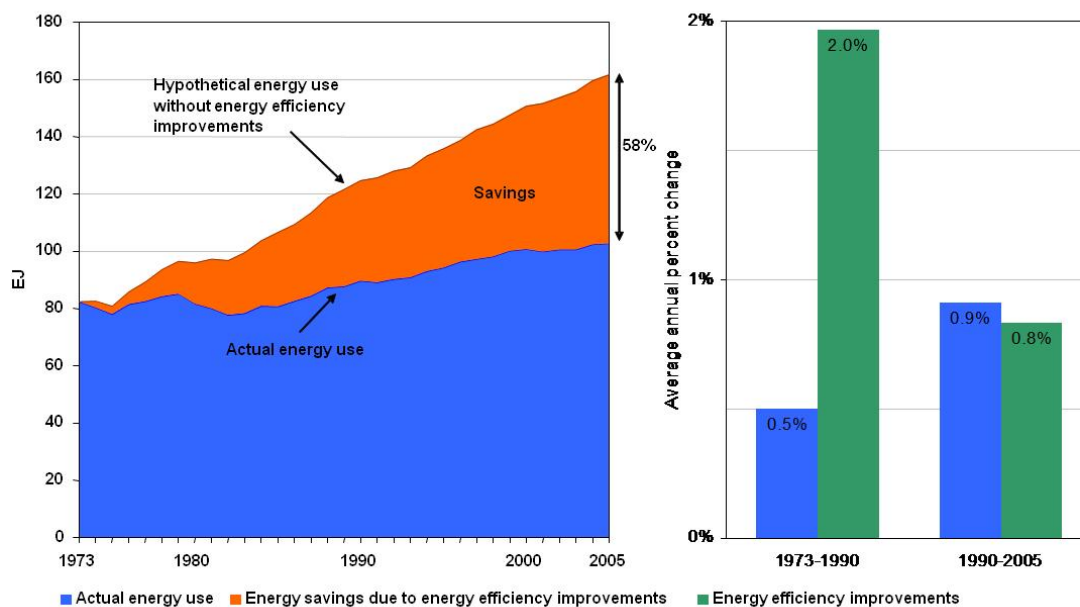
know how successfully the scheme will be taken up. The UK's housing stock is among the least fuel-efficient in Europe, and reducing waste is critical to cutting emission of greenhouse gases.

But even awareness that spending on energy-saving may pay for itself within three or four years in the form of lower fuel bills has failed to prompt enough householders and

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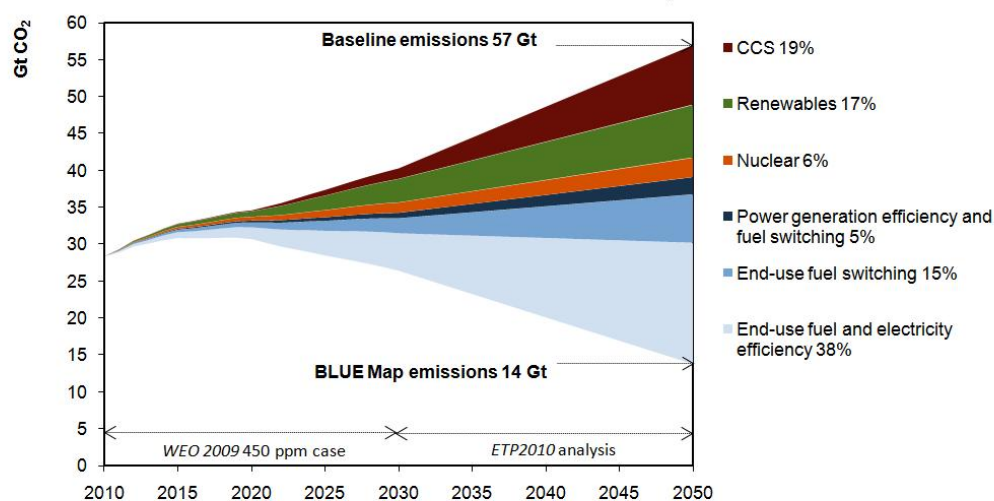
Long-Term Energy Savings from Improvements in Energy Efficiency, All Sectors, IEA11



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Key options for reducing global CO₂ emissions under the BLUE Map scenario



A wide range of technologies & policies will be necessary to reduce energy-related CO₂ emissions substantially.

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25

Energy Efficiency Recommendations across 7 Sectors

Worldwide Implementation Now

Cross-sectoral

Buildings

Appliances and equipment

Lighting

Transport

Industry

Energy utilities





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“...Maximise implementation of IEA 25 energy efficiency recommendations”



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About the recommendations

■ G8 Leaders:

- committed to "maximize implementation of the IEA 25 recommendations on energy efficiency."

■ Extensive analysis

■ Four criteria

- Significant energy savings at low cost
- Address market imperfections or barriers
- Address significant gaps in existing policy
- High degree of political support

■ Cohesive set

■ Early implementation is key

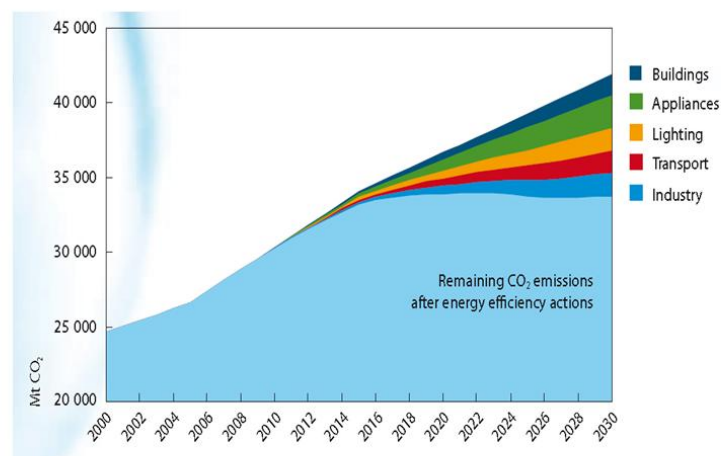


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CO₂ savings potential



Global implementation of recommendations could save around 8.2 GtCO₂/yr by 2030; this is equivalent to 20% of global reference scenario energy related CO₂ emissions in 2030



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25 energy efficiency policy recommendations across 7 priority areas

1. Across sectors

- 1.1 Measures for increasing investment in energy efficiency;
- 1.2 National energy efficiency strategies and goals;
- 1.3 Compliance, monitoring, enforcement and evaluation of energy efficiency measures;
- 1.4 Energy efficiency indicators;
- 1.5 Monitoring and reporting progress with the IEA energy efficiency recommendations themselves.

2. Buildings

- 2.1 Building codes for new buildings;
- 2.2 Passive Energy Houses and Zero Energy Buildings;
- 2.3 Policy packages to promote energy efficiency in existing buildings;
- 2.4 Building certification schemes;
- 2.5 Energy efficiency improvements in glazed areas.

3. Appliances

- 3.1 Mandatory energy performance requirements or labels;
- 3.2 Low-power modes, including standby power, for electronic and networked equipment;
- 3.3 Televisions and "set-top" boxes;
- 3.4 Energy performance test standards and measurement protocols.

4. Lighting

- 4.1 Best practice lighting and the phase-out of incandescent bulbs;
- 4.2 Ensuring least-cost lighting in non-residential buildings and the phase-out of inefficient fuel-based lighting.

5. Transport

- 5.1 Fuel-efficient tyres;
- 5.2 Mandatory fuel efficiency standards for light-duty vehicles;
- 5.3 Fuel economy of heavy-duty vehicles;
- 5.4 Eco-driving.

6. Industry

- 6.1 Collection of high quality energy efficiency data for industry;
- 6.2 Energy performance of electric motors;
- 6.3 Assistance in developing energy management capability;
- 6.4 Policy packages to promote energy efficiency in small and medium-sized enterprises.

7. Utilities

- 7.1 Utility end-use energy efficiency schemes.



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Are IEA countries on track?

■ Lots of energy efficiency policy action

but...

■ even most proactive countries not achieving maximum energy efficiency savings potential...

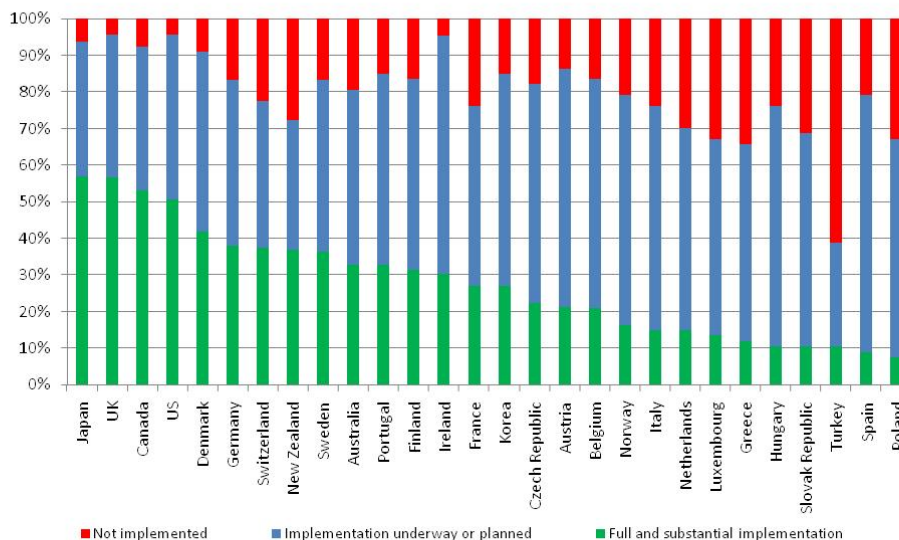
■ especially in the transport sector!



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How does implementation compare across countries – all recommendations?

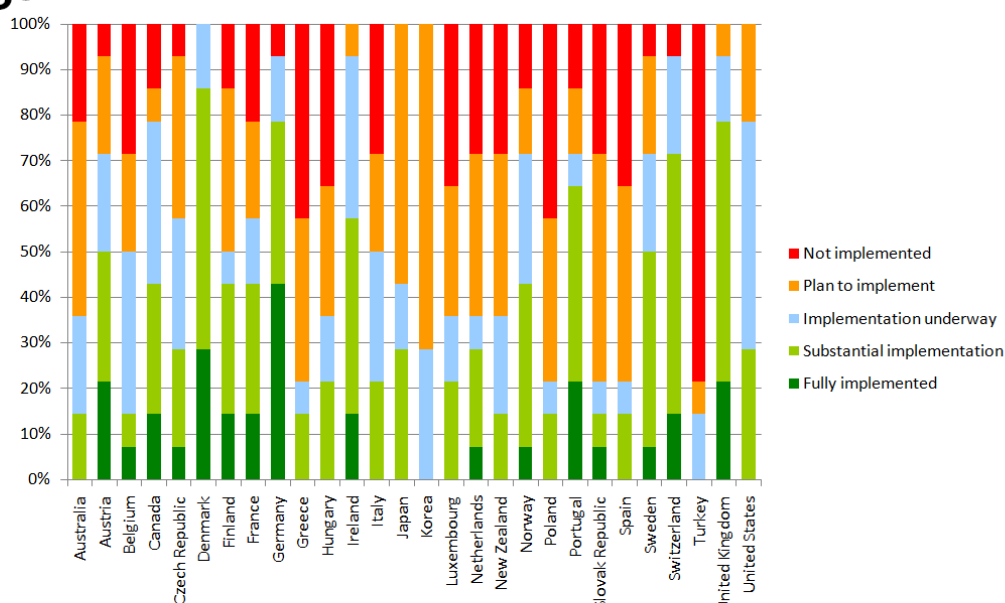


No country has 'fully' or 'substantially' implemented more than 57% of the relevant recommendations.

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Implementing energy efficiency policies for *buildings*



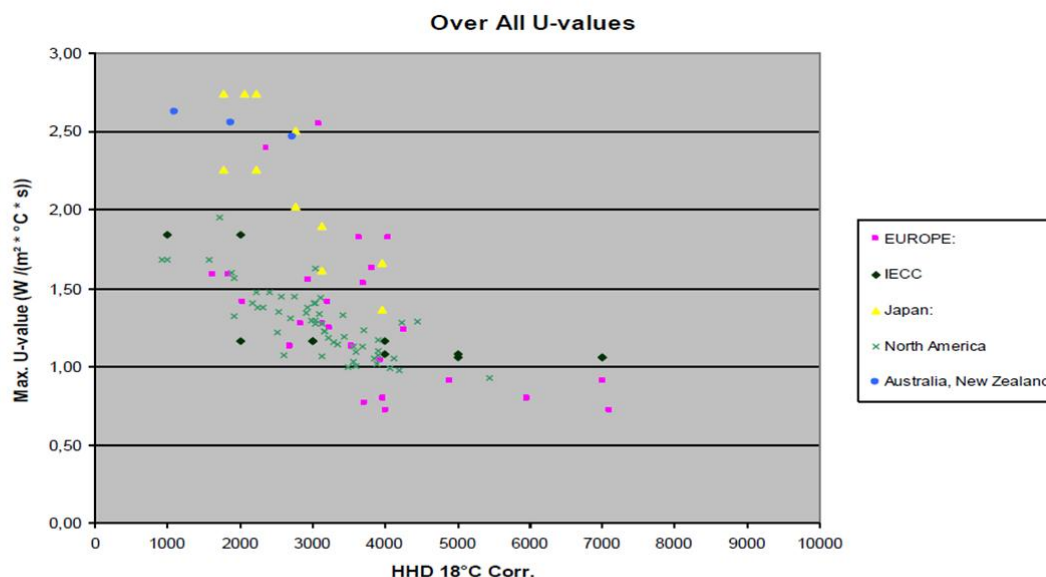
Few countries have strong enough policies to capture the huge energy efficiency potential in buildings.

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Comparing building code standards

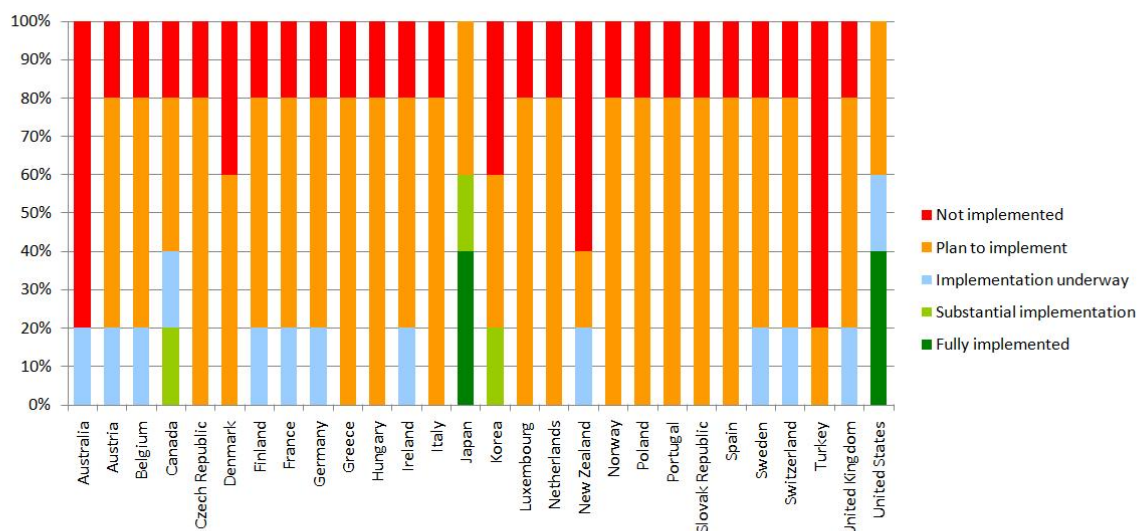
$$U_{\text{overall}} = U_{\text{ceilings}} + U_{\text{walls}} + U_{\text{floors}} + 0.2 * U_{\text{windows}}$$



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Implementing energy efficiency policies for transport

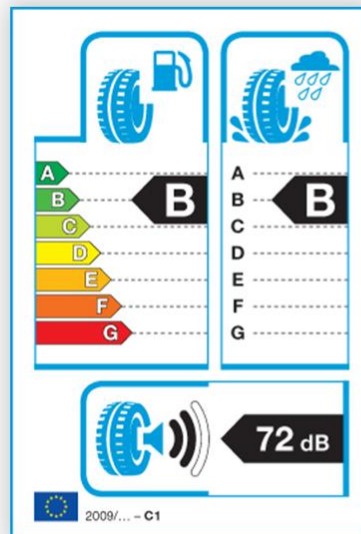


All countries need to devote more attention to improving the energy efficiency of their transport fleet.

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5.1 Fuel-efficient Tyres



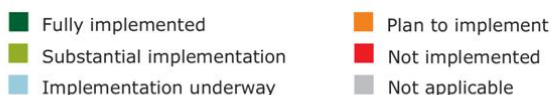
Fuel efficient tyres can reduce a motor vehicle's fuel consumption by as much as 5%.



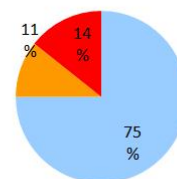
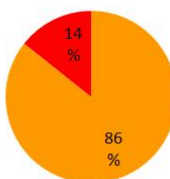
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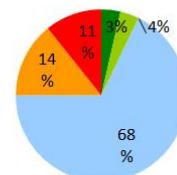
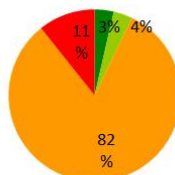
Fuel-efficient tyres



Labelling on tyre rolling resistance



Tyre pressure monitoring systems



March 2009

May 2010

- EU adopted regulations for TPMS, tyre rolling resistance and labelling
- Japan started voluntary tyre labelling scheme



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5.2 Mandatory Fuel Efficiency Standards for Light-duty Vehicles

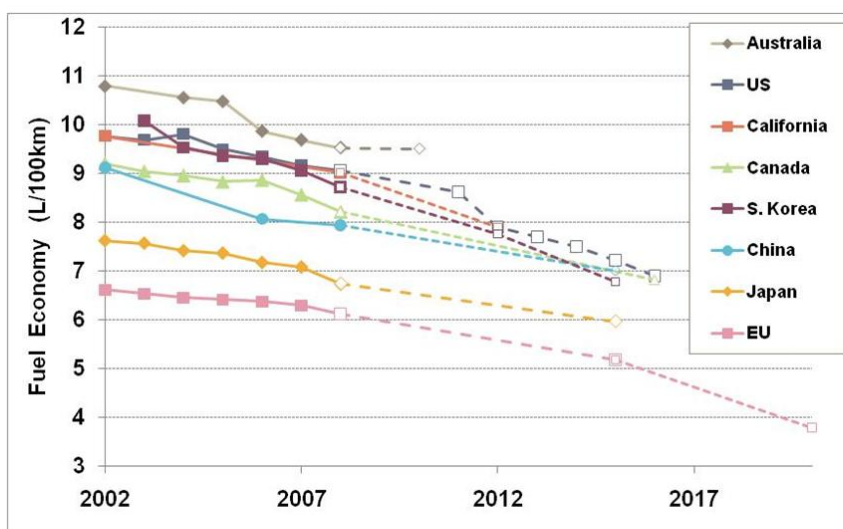


European Union recently improved its fuel standards, bringing it 130 g/km in 2012, which will lead to a projected 19% reduction in CO₂ emissions

Source: European Commission

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Average LDV fuel economy (2002-2020)



Source: ICCT

Transport market transformation
is underway

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5.3 Mandatory Fuel Efficiency Standards for Heavy-duty Vehicles



Japan is the only country to have implemented fuel efficiency standards for heavy-duty vehicles

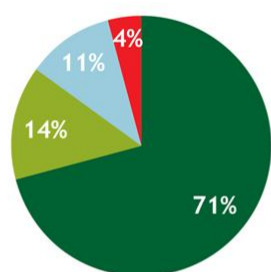
5.4 Eco-driving



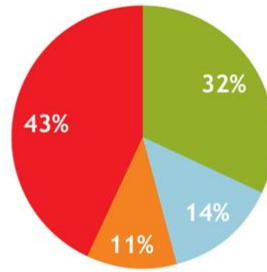
Eco-driving has the potential to reduce fuel consumption by around 10%.



Policy for appliances and equipment - all IEA



■ Fully implemented
■ Substantial implementation
■ Implementation underway



■ Plan to implement
■ Not implemented
■ Not applicable

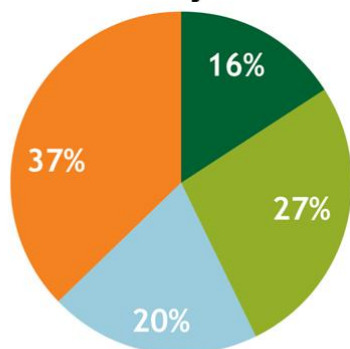
Good coverage of policies for set-top boxes and standby power in all IEA countries.

Policies for TVSPs very limited. More policy attention needed on maintaining stringency of MEPS

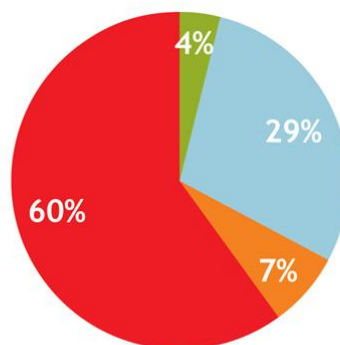
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Policies for industry - all IEA



■ Fully implemented
■ Substantial implementation
■ Implementation underway



■ Plan to implement
■ Not implemented
■ Not applicable

Generally good policy support for energy audits and information provision to SMEs

Policies for energy efficiency standards for electric motors need implementing

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Other sectors – all IEA

Lighting

More policy attention needed for energy efficiency in non-residential lighting in all countries.

Utilities

All countries need to continue to consider how to incentivize utilities to promote energy efficiency.

Cross-sectoral

All countries need to increase enforcement, compliance and evaluation efforts and expand energy efficiency financing.



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Key messages

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