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# W.I.N or lose? The energy revolution and energy efficiency

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# Key questions

- Why is energy efficiency important and possible?
- What direction does the IEA provide?
- What is the progress?
- What are the priorities?

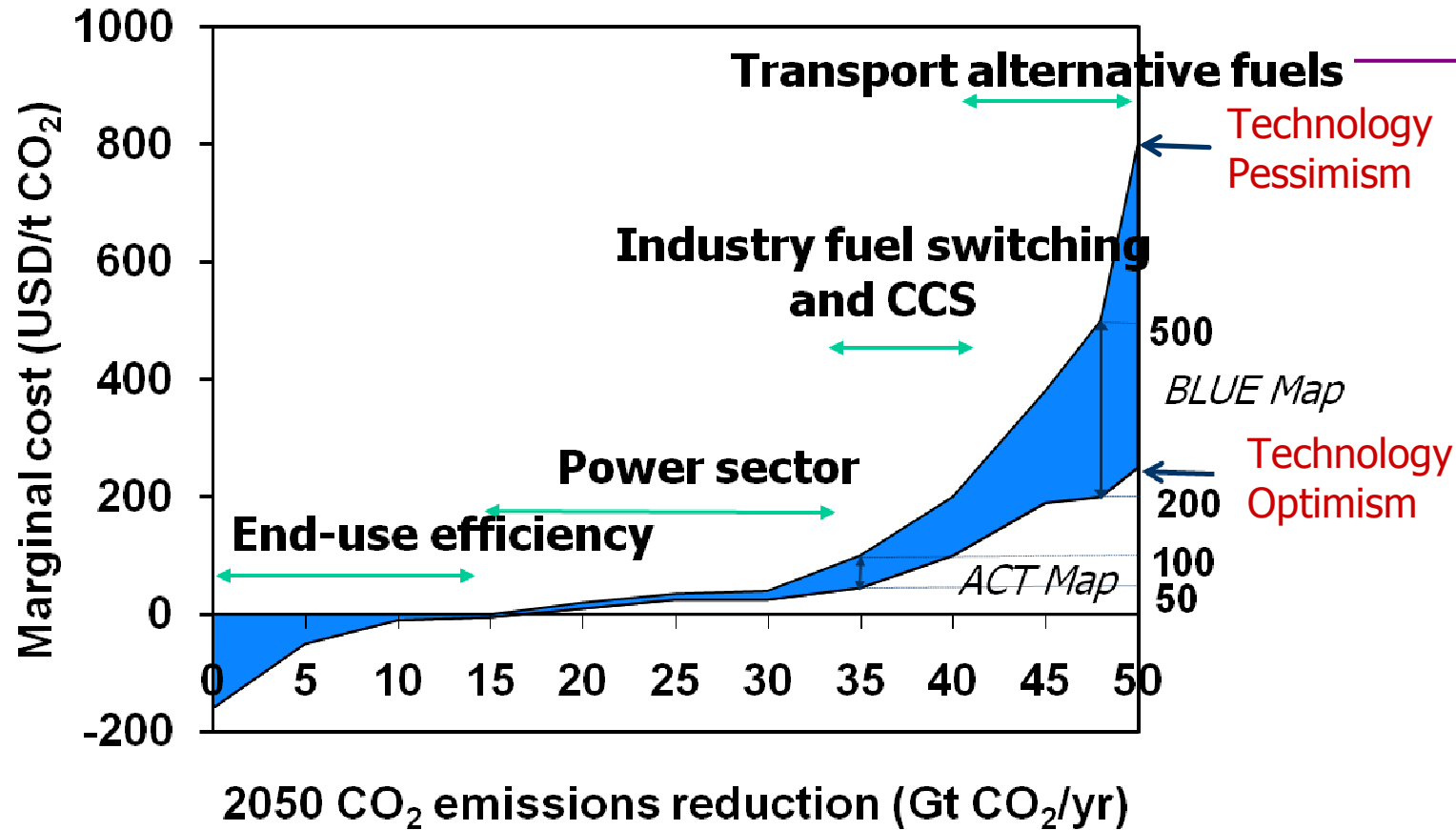
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# Cost of Emissions Reductions



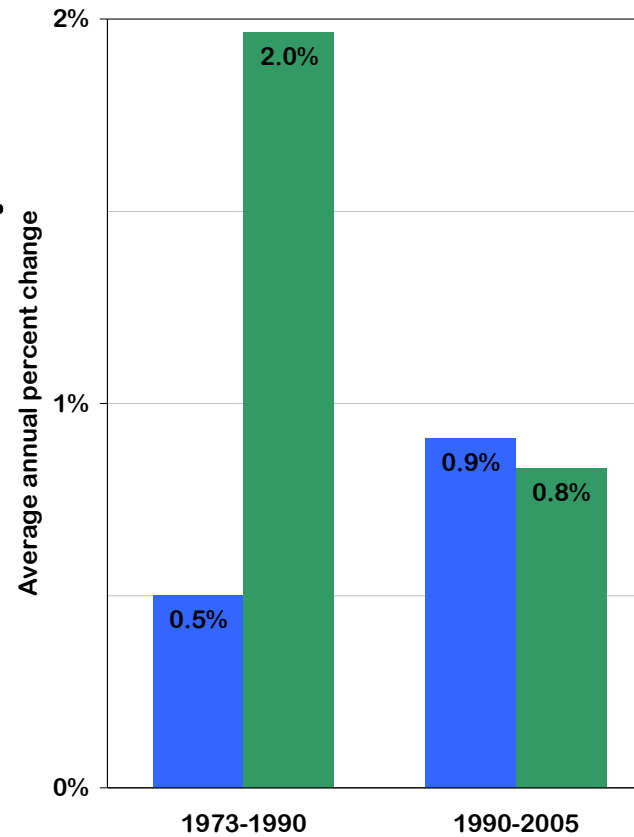
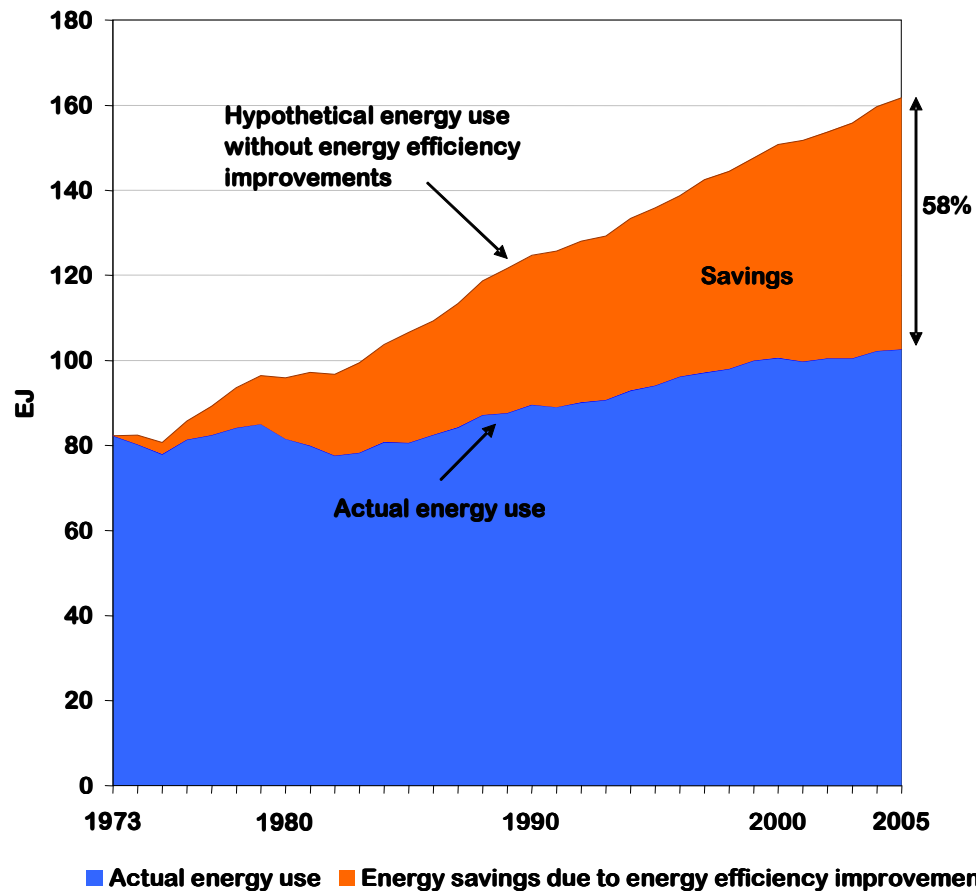
**To bring emissions back to current levels by 2050 options with a cost up to USD 50/t are needed. Reducing emissions by 50% would require options with a cost up to USD 200/t, possibly even up to USD 500/t CO<sub>2</sub>**

ENERGY TECHNOLOGY PERSPECTIVES 2008

Scenarios & Strategies to 2050

INTERNATIONAL ENERGY AGENCY

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



Worldwide Trends in Energy Use and Efficiency

Key Insights from IEA Indicator Analysis



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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



# But there are barriers

**For example, the landlord tenant problem**

**Landlord**

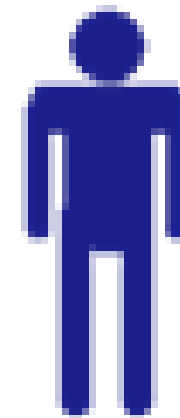


**Infrastructure & Appliances**

**Living space**

**Rent**

**Tenant**



**Energy  
bill**



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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





# 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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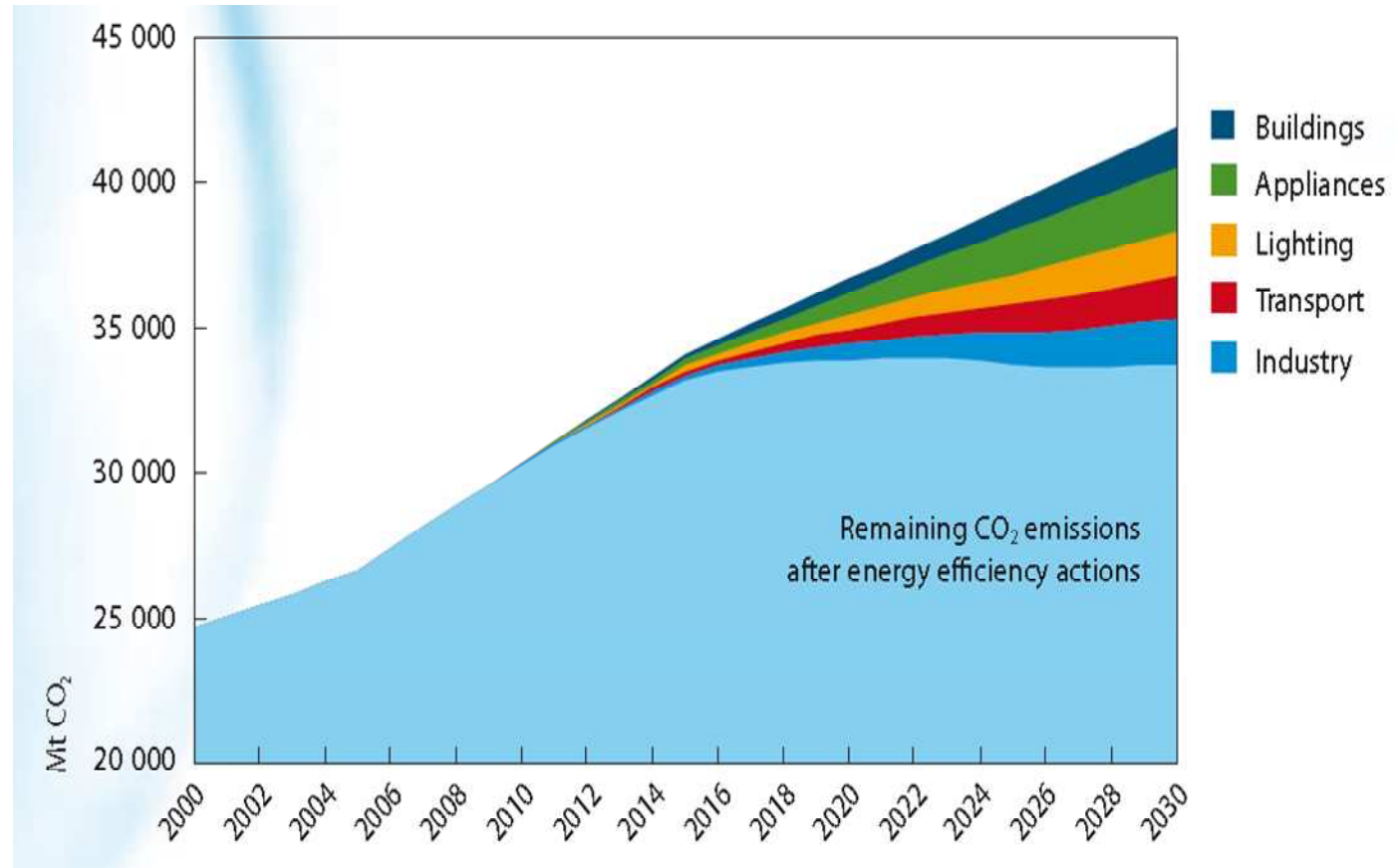


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# CO<sub>2</sub> savings potential



**Global implementation of recommendations could save around 8.2 GtCO<sub>2</sub>/yr by 2030; this is equivalent to 20% of global reference scenario energy related CO<sub>2</sub> emissions in 2030**



# 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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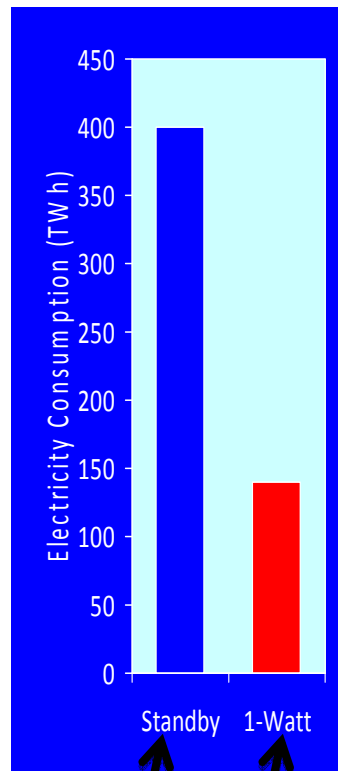
# An example of the benefits

## Recommendation: Tackling Standby Power

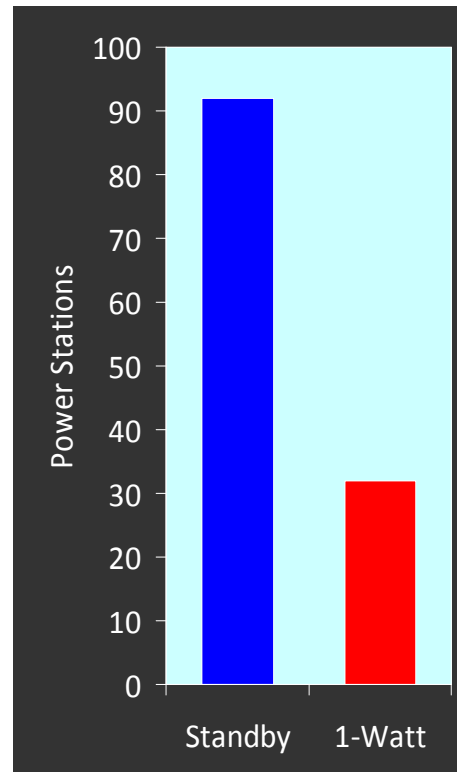
*Less Consumption*

*Fewer Power Stations*

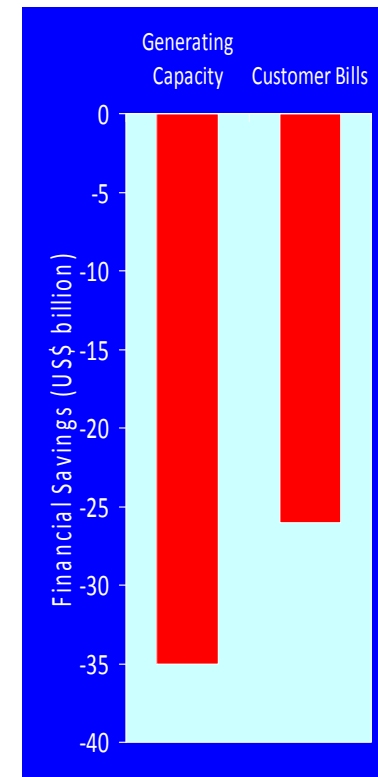
*Lower Costs*



Before action      After action



Source: IEA estimates



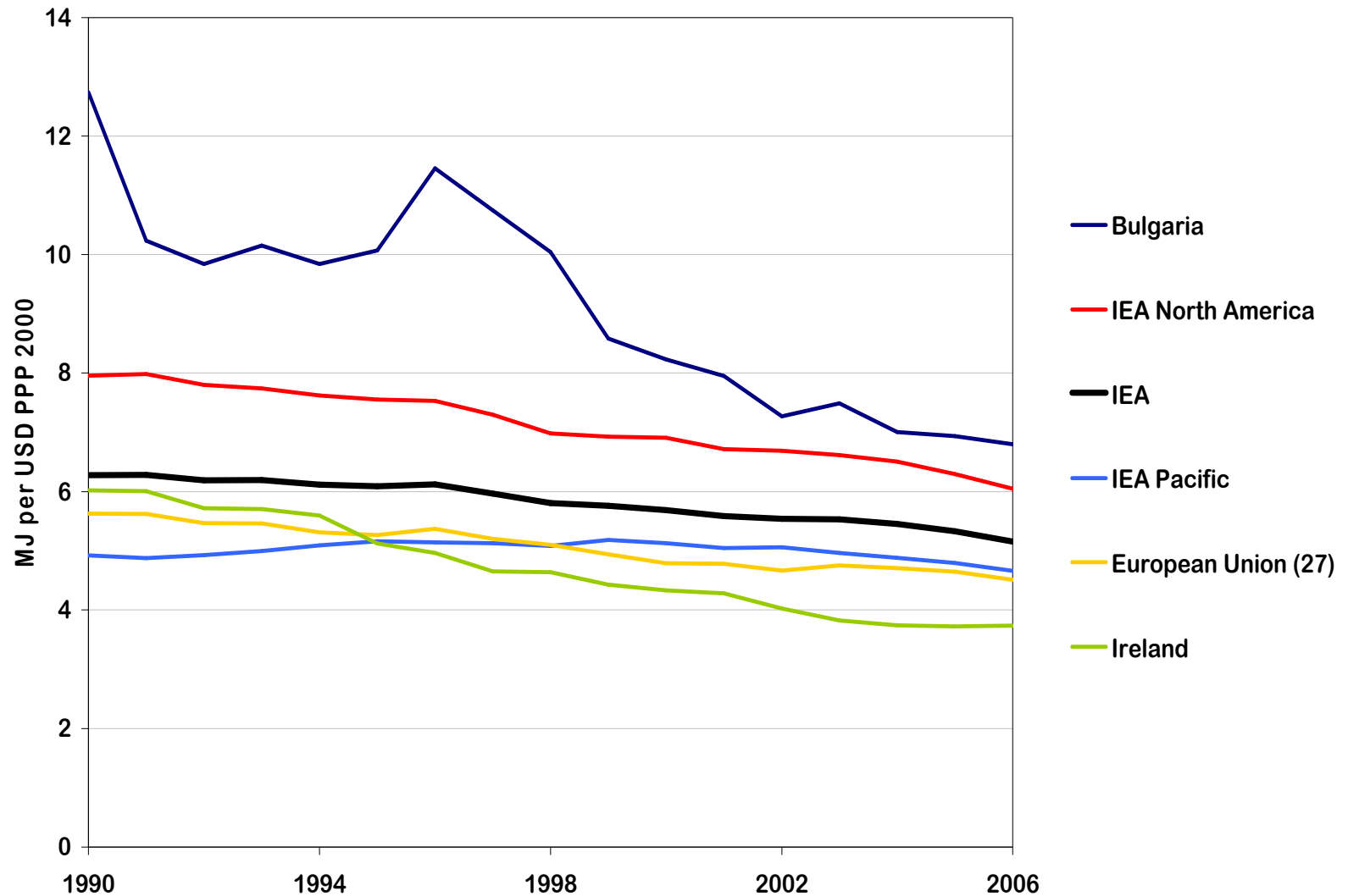
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# Total Final Consumption per Unit of GDP



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# Energy efficiency in the EU

## Positive developments

- International energy efficiency policy
- Huge increase in energy efficiency policy activity

## Areas for improvement

- Energy efficiency goal mandatory
- ESD – quality of NEEAPs
- Energy Performance of Buildings recast
  - Stringency needs to be increased
  - Removal of 1000m<sup>2</sup> limit welcomed
  - Validity period for certificates needs shortening
  - Link certificates to financial incentives
  - Improve compliance
  - Timeframe for all buildings to be net zero carbon



# Energy efficiency in the EU

- Energy using Products Directive
  - Appliance energy efficiency in Europe lags behind other OECD countries
  - Urgent attention to MEPS and labelling
  - Current efforts by Commission to address these concerns to be applauded
- Resourcing
- Policies for SMEs lacking
- Transposition
- Compliance

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# Summary

- Energy efficiency most important and cost-effective element of energy revolution
- Global energy efficiency improvement has declined
- Barriers exist that need strong policy actions
  - IEA 25 recommendations
- European Union doing well, but ample room for improvement



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# Thank you

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