

Energy Efficiency at the IEA

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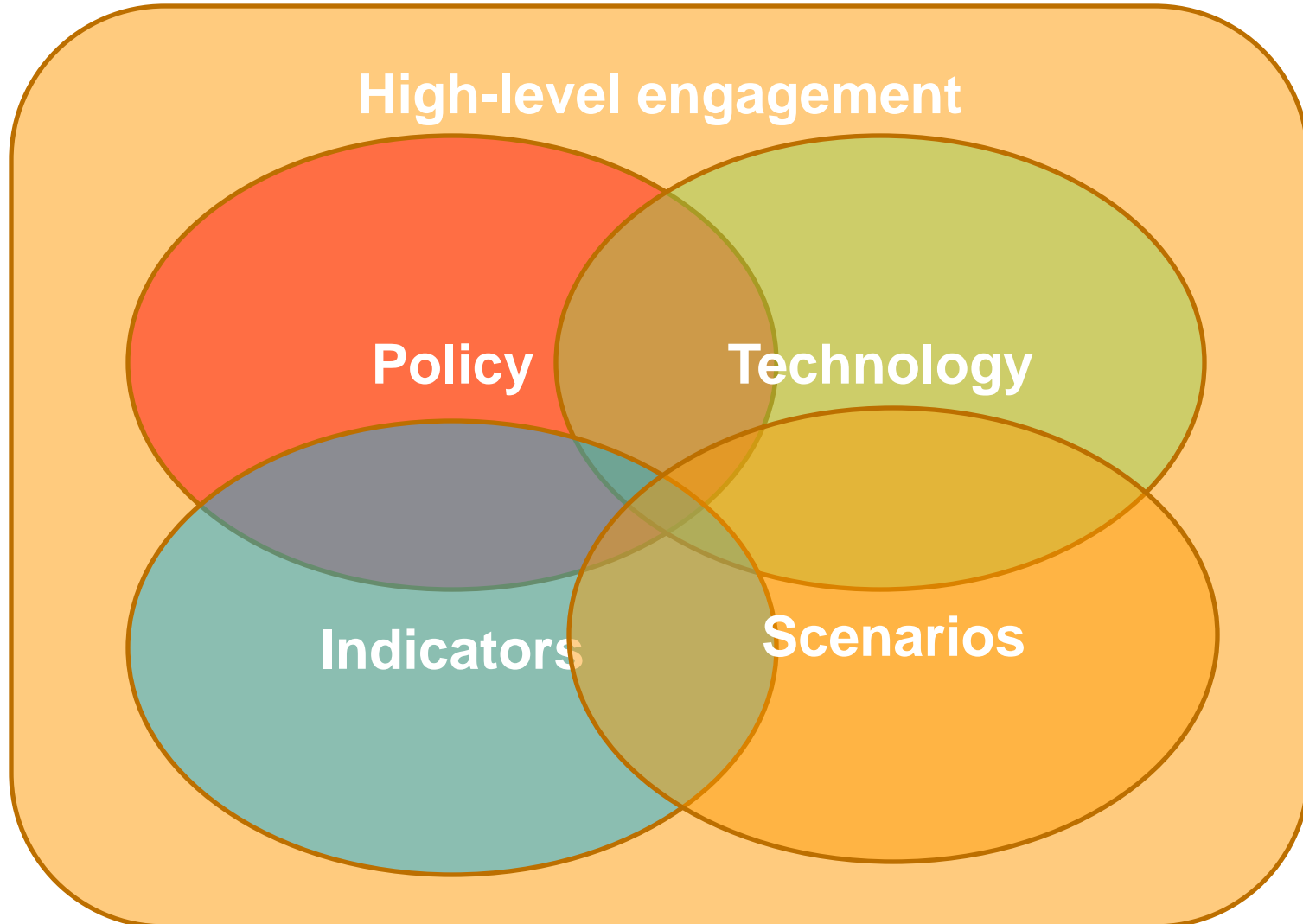


**International
Energy Agency**

Overview

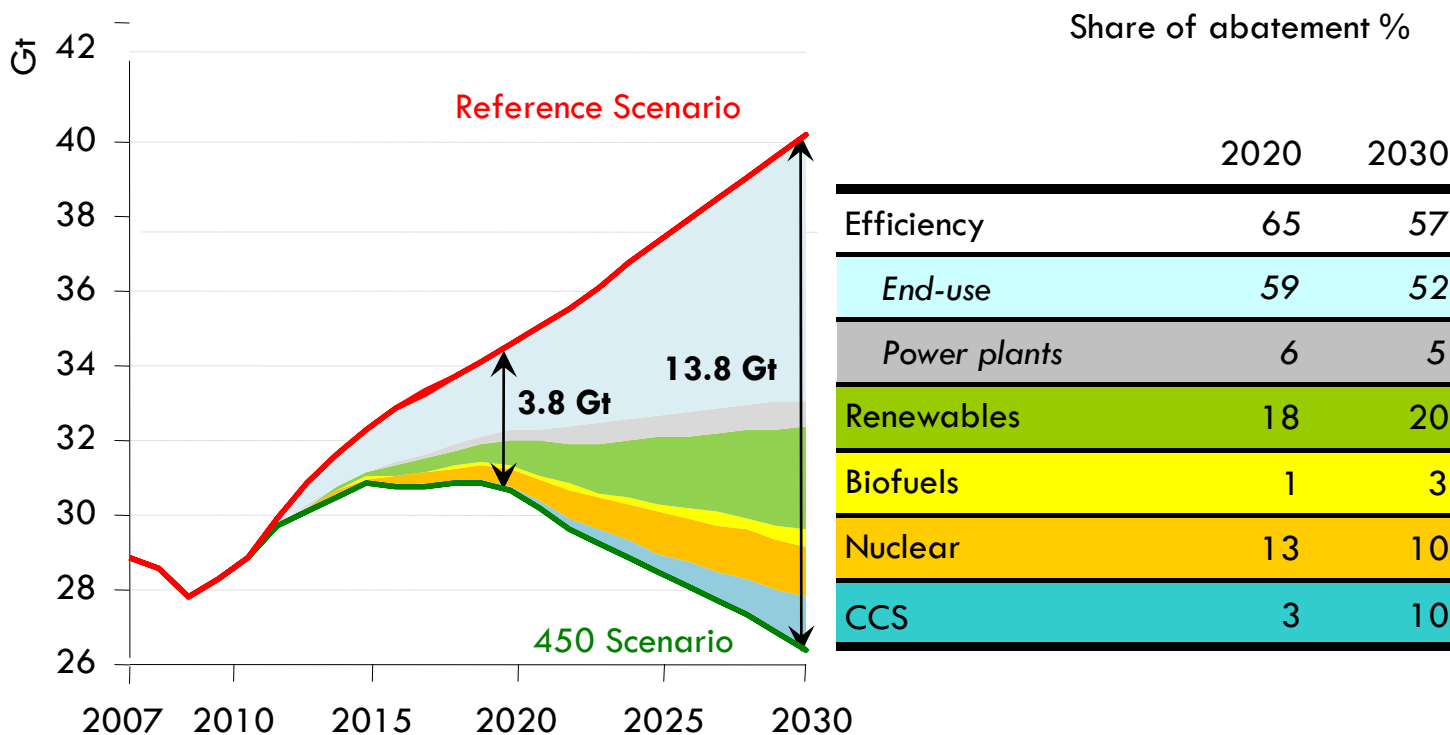
- **Energy efficiency gap and climate change mitigation**
- **25 IEA Energy Efficiency Policy Recommendations**
- **Work at the IEA on energy efficiency:**
 - **Policy analysis**
 - **Assistance with policy implementation**
 - **Technology roadmaps**
- **Summing up**

Energy efficiency at the IEA



Energy efficiency and the 450 ppm scenario

World abatement of energy-related CO₂ emissions in the 450 Scenario



Efficiency measures account for two-thirds of the 3.8 Gt of abatement in 2020

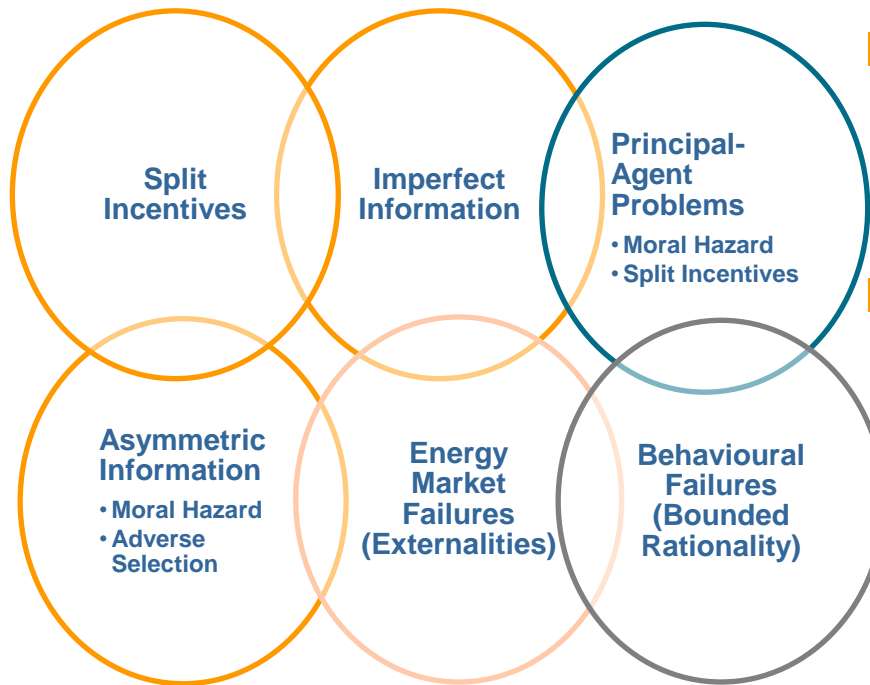
The energy efficiency gap

- **Energy efficiency is one of the near-term most cost-effective solutions to achieve a sustainable energy future**
 - Without the energy efficiency improvements achieved since 1973, final energy use in the OECD-11 would have been 63% higher in 2006
- **Market and non-market failures exist preventing the optimal use of energy and inhibit improvements in energy efficiency**
- **Public policies could correct these failures and deliver more efficient outcomes**



Energy efficiency and climate policy

■ Can carbon pricing remove barriers to energy efficiency?



- Price important for removing negative externalities
- BUT informational failures and principal-agent problems can prevent price signal from reaching consumers

Policies are needed that target energy efficiency barriers to deliver carbon mitigation goals

A vertical strip on the left side of the slide showing a blurred city skyline at night with light trails from traffic and buildings.

25

Energy Efficiency Recommendations across **7** Sectors

Worldwide **I**mplementation **N**ow

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

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.

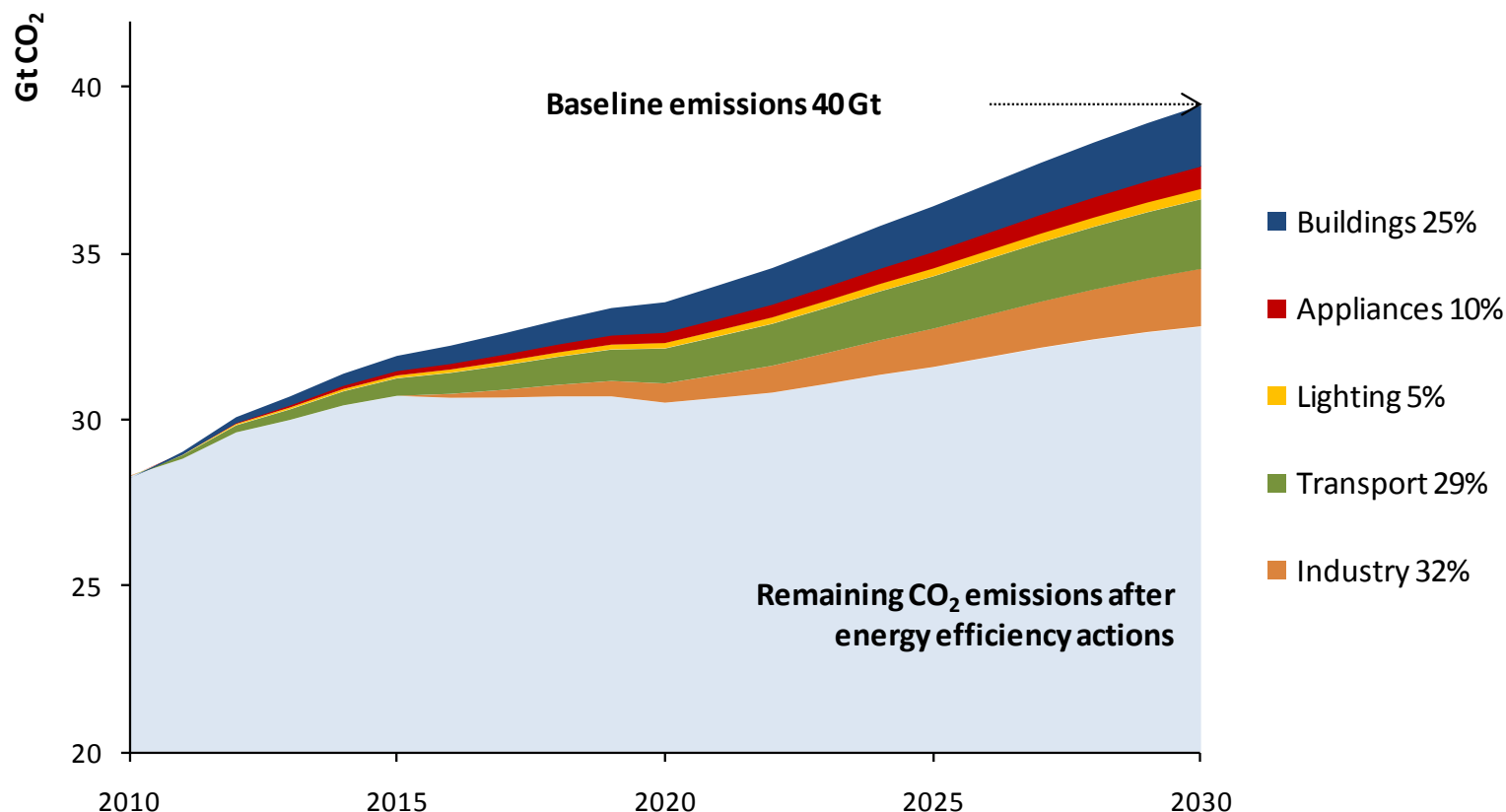
6. Industry

- 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

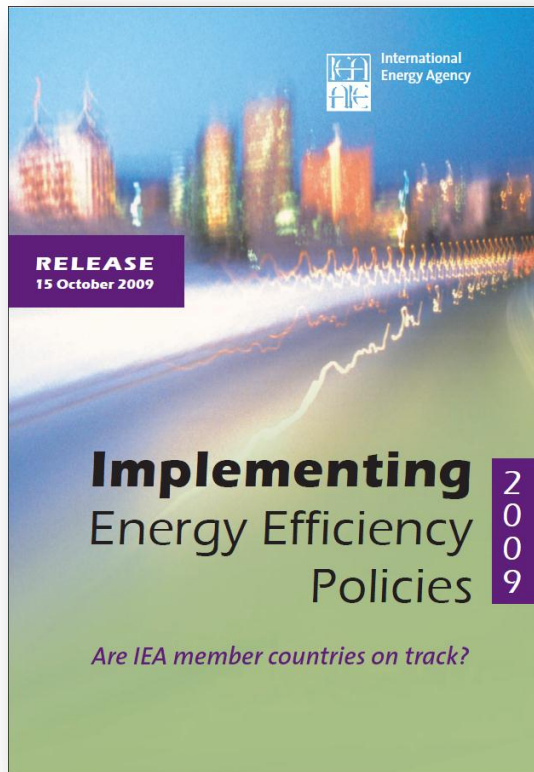
- 7.1 Utility end-use energy efficiency schemes.



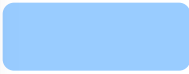



CO₂ savings potential of IEA energy efficiency policy recommendations



Global implementation of recommendations could save around 7.6 GtCO₂/year by 2030; this is equivalent to 20% of global reference scenario energy related CO₂ emissions in 2030

Tracking progress in energy efficiency

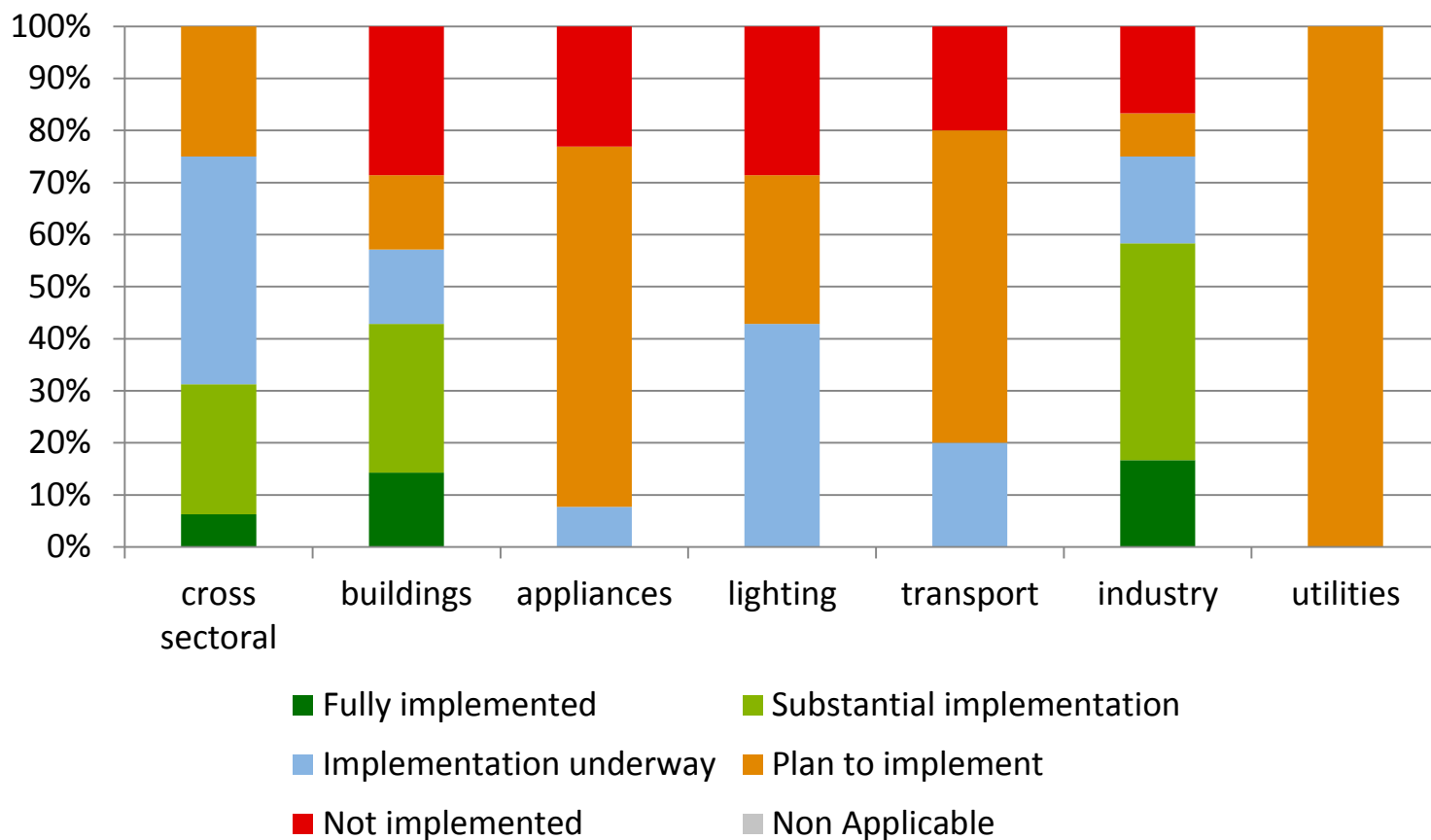


	Fully implemented
	Implementation underway
	Substantial implementation
	Plan to implement
	Not implemented
	Non applicable

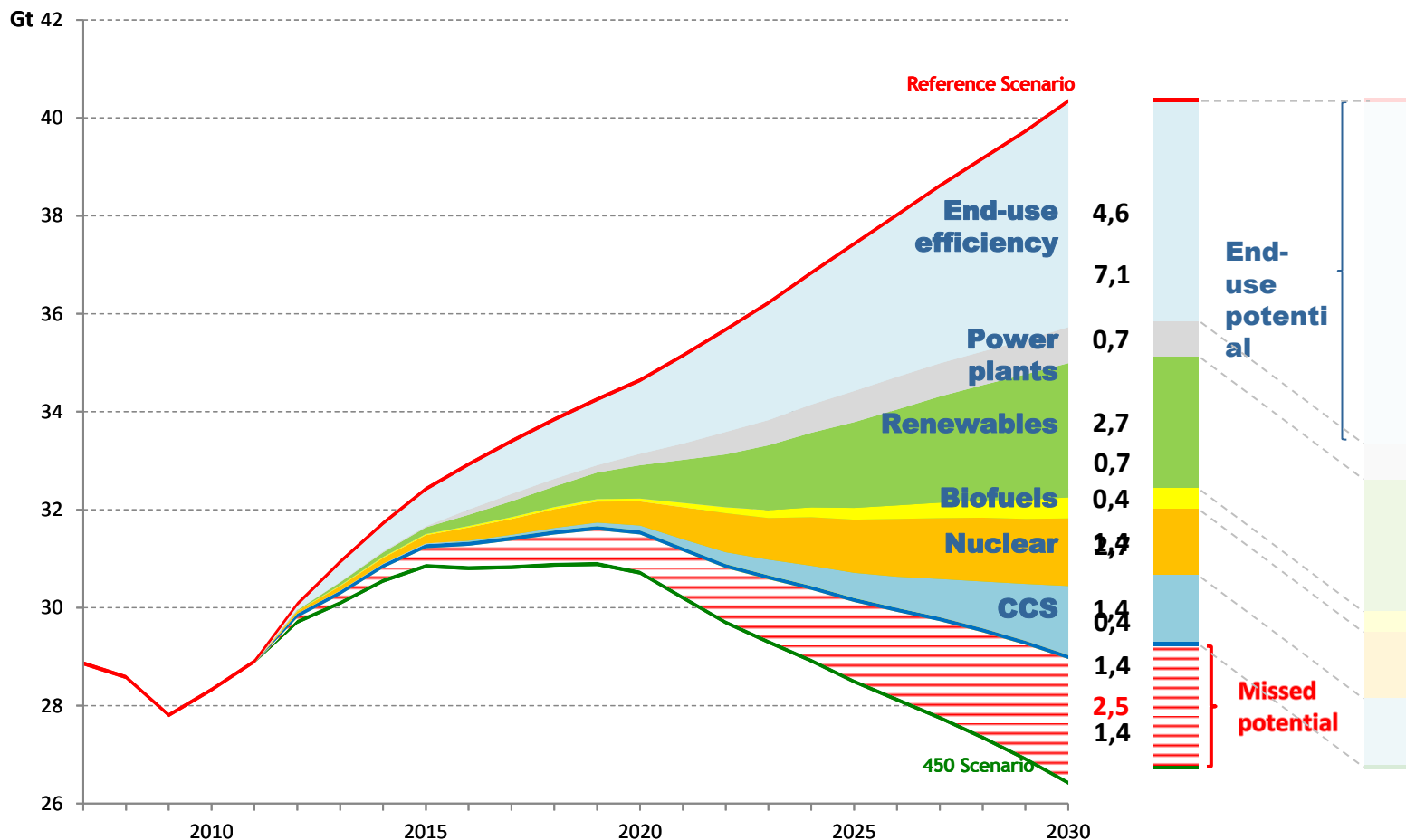
- Each IEA member country surveyed in 2009 to check progress in implementing 25 IEA energy efficiency recommendations
- Repeated in 2011

IEA Progress Reporting

- One country's results by sector



In 2009 energy efficiency policy delivery was behind schedule



Current levels of implementation are insufficient, leading to 2.5 Gt of missed potential by 2030. The 450 scenario will not be achieved.

Energy efficiency policy analysis at the IEA

- We assist countries to exploit all cost-effective energy efficiency potentials
- Specifically we aim to:
 - Identify all cost-effective energy efficiency potentials and best practice energy efficiency policies
 - Inform countries about these potentials and policies
 - Assist countries to design, implement and evaluate best practice policies – in particular, outside IEA region
 - Facilitate dialogue and international co-operation
- Our competitive advantage – knowledge of, and access to, information from many different countries

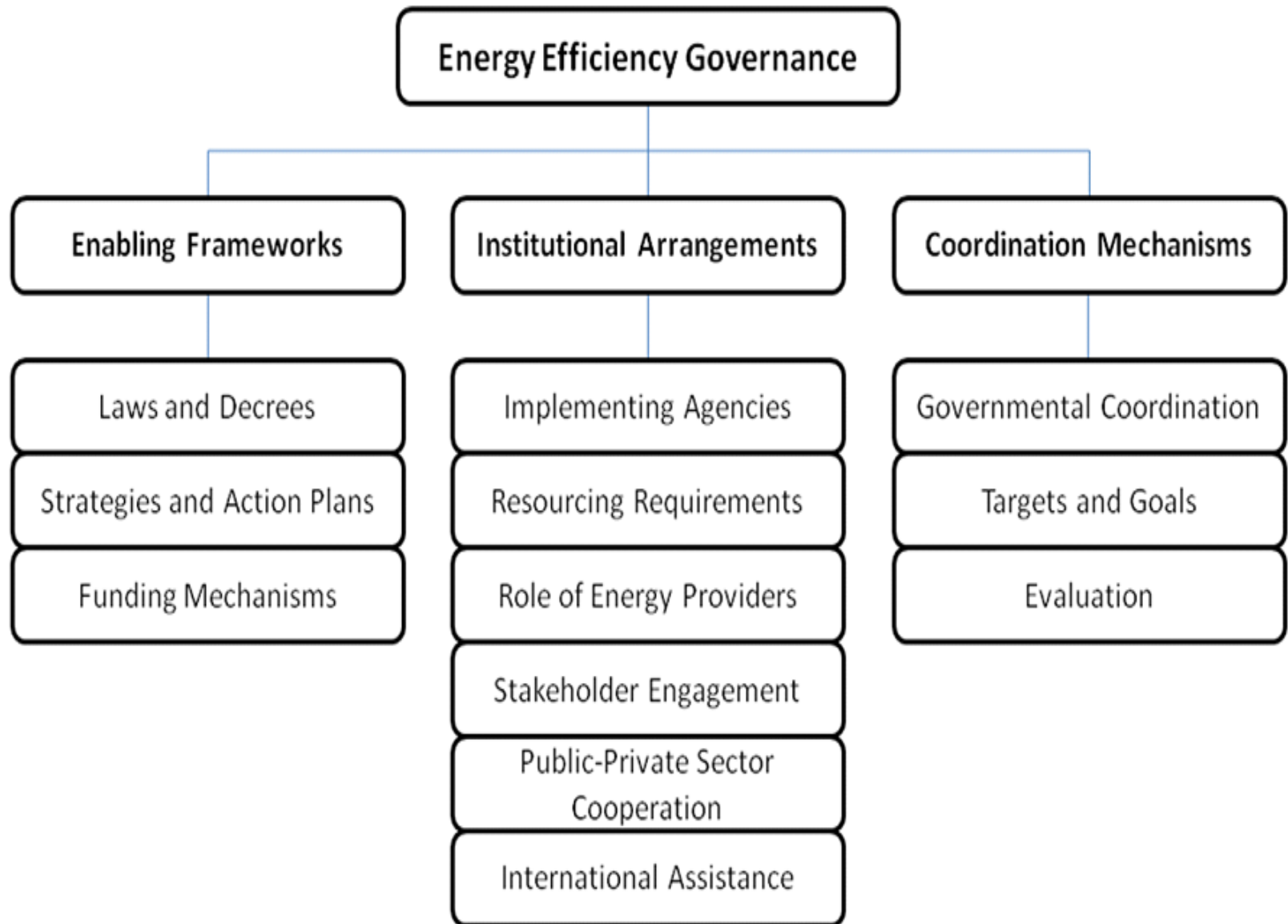


Energy Efficiency Governance

Governance definition:

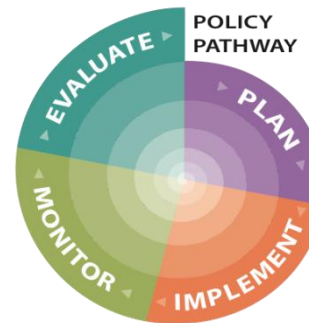
The combination of legislative frameworks and funding mechanisms, institutional arrangements, and co-ordination mechanisms, which work together to support implementation of energy efficiency strategies, policies and programmes

- Global study led by the IEA's EE Unit, supported by EBRD and IDB
- Objective: provide advice on “good” governance for energy efficiency policy implementation



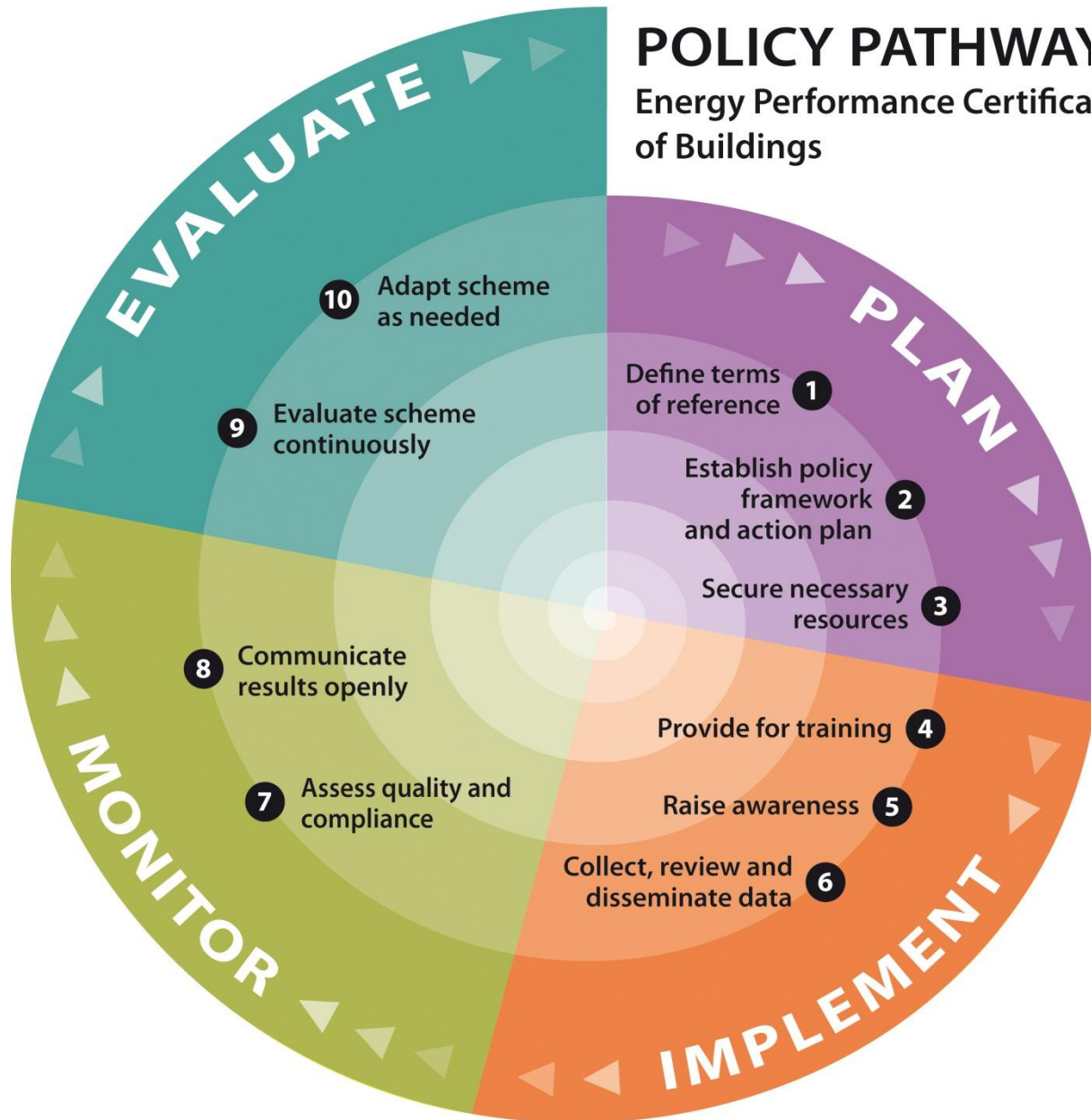
Policy Pathways: charting a path to deliver energy efficiency

- Aim is to assist governments to implement energy efficiency policy effectively
- Objective is to identify, analyse and communicate to all governments innovative policy pathways (steps and milestones) for implementing energy efficiency
- Each policy pathway is based on one of the 25 IEA energy efficiency recommendations
- Policy pathways highlight existing best experience in implementing such policies



POLICY PATHWAY

Energy Performance Certification
of Buildings



Policy Pathway



Energy Performance Certification of Buildings – November 2010



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Monitoring, Verification and Enforcement

*Improving compliance
within equipment
energy efficiency programmes*

*Policy
Pathway*



International
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Energy Performance Certification of Buildings

*A policy tool to improve
energy efficiency*

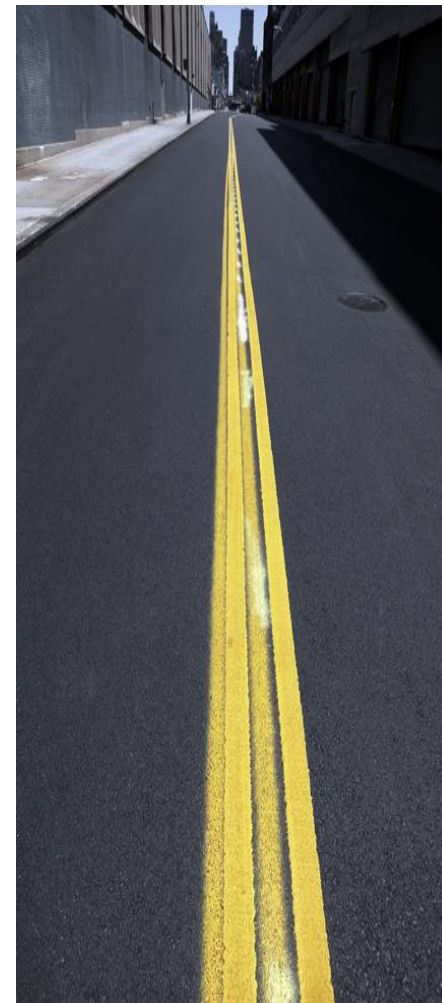
*Policy
Pathway*

Monitoring, Verification, and Enforcement of Appliances – November 2010

**Public-private energy efficiency finance Policy Pathway
– release date June 2011!**

Technology roadmaps provide answers

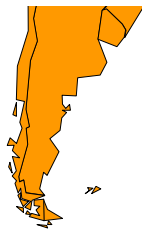
- **Where is technology today?**
 - GW installed capacity/kWh of savings
 - Leading countries/regions
 - Cost, efficiency
- **What is the deployment pathway needed to achieve 2050 goals?**
 - Use IEA Energy Technology Perspectives BLUE Map scenarios
- **What are the priority near-term actions?**
 - Technology incentives
 - Technology-specific barrier identification and removal
 - R&D funding
 - Technology diffusion/transfer



Global Energy R&D Network



- **5,000 scientists, experts, researchers, consultants**
- **500 universities, labs, government offices, companies, consultants**
- **Link public and private**
- **Link IEA members and non-members**



Summing up....

- **Energy efficiency is the most cost effective way to reduce energy consumption, improve economic competitiveness and energy security**
- **Package of policies needed to address energy efficiency market failures**
- **Much can be learnt from best practices and mistakes in other countries**
- **We are NOT on track in implementing necessary energy efficiency policies.**



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