International Energy Agency

Energy Efficiency Finance Event

Policy Pathway:

Public-Private Partnerships to Scale-up **Energy Efficiency** Financing

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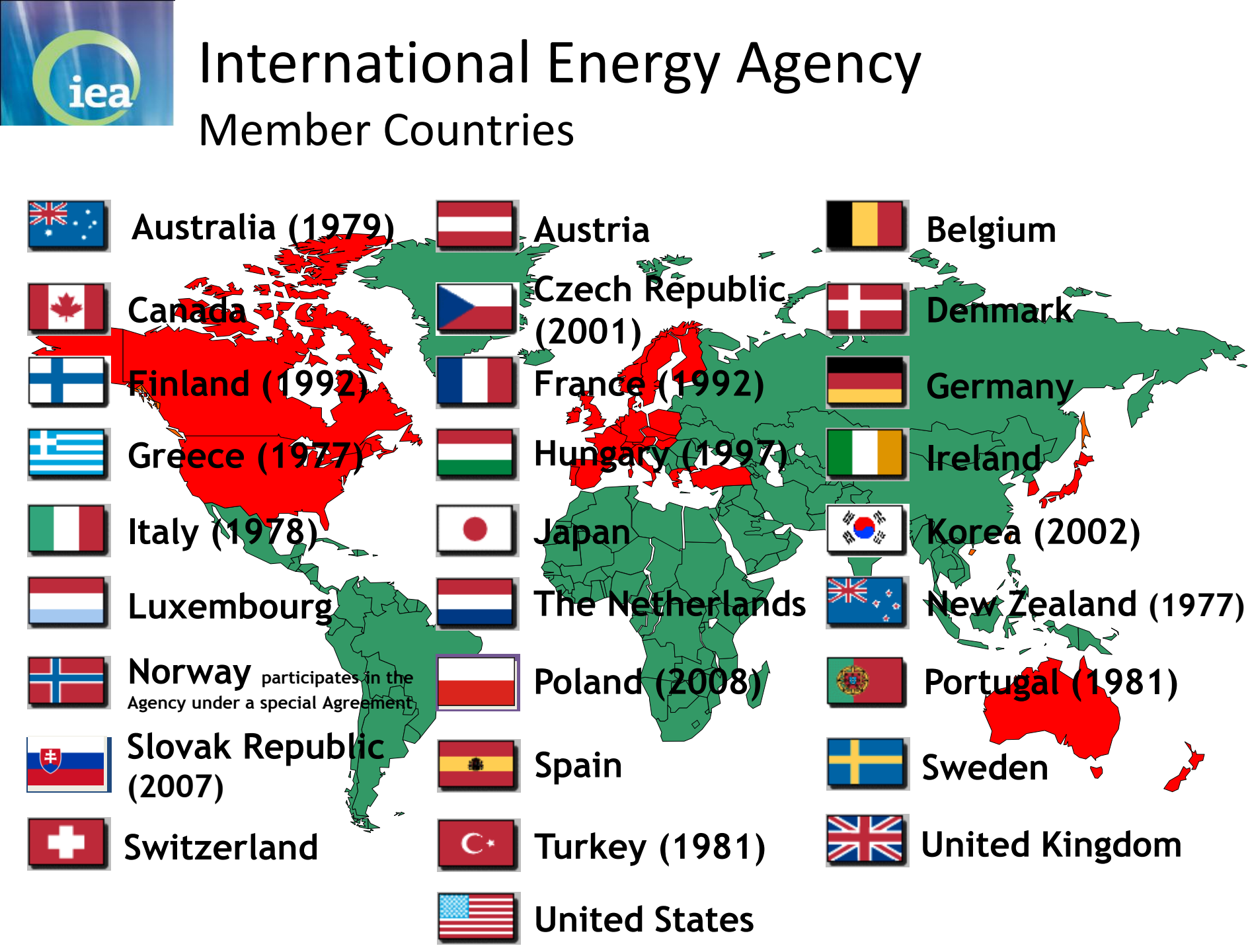
Presentation Outline

- Introduction
- IEA 25 EE policy recommendations and policy pathway series
- Financing barriers and policy solutions
- Public-Private Partnerships
- PPP Financing Mechanisms
  - Dedicated Credit Lines
  - Risk-Sharing Programs
  - Leveraging Commercial Financing through Performance Contracting
- Summary of Lessons Learned

Policy Pathway

International Energy Agency

Member Countries

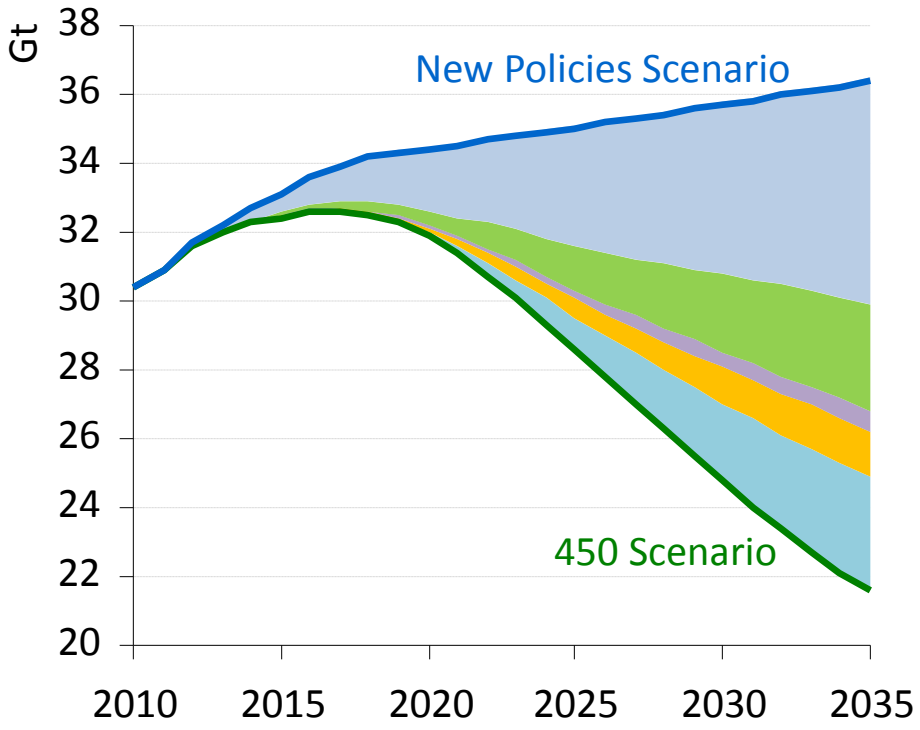


- Australia (1979)
- Austria
- Belgium
- Canada
- Czech Republic (2001)
- Denmark
- Finland (1992)
- France (1992)
- Germany
- Greece (1977)
- Hungary (1997)
- Ireland
- Italy (1978)
- Japan
- Korea (2002)
- Luxembourg
- The Netherlands
- New Zealand (1977)
- Norway participates in the Agency under a special Agreement
- Poland (2008)
- Portugal (1981)
- Slovak Republic (2007)
- Spain
- Sweden
- Switzerland
- Turkey (1981)
- United Kingdom
- United States

Efficiency gains can contribute most to emissions reductions

WORLD ENERGY OUTLOOK 2011

World energy-related CO_2 emissions abatement in the 450 Scenario relative to the New Policies Scenario



	Abatement	
	2020	2035
Efficiency	72%	44%
Renewables	17%	21%
Biofuels	2%	4%
Nuclear	5%	9%
CCS	3%	22%
Total (Gt CO_2)	2.5	14.8

Energy efficiency measures – driven by strong policy action across all sectors – account for 50% of the cumulative CO_2 abatement over the Outlook period

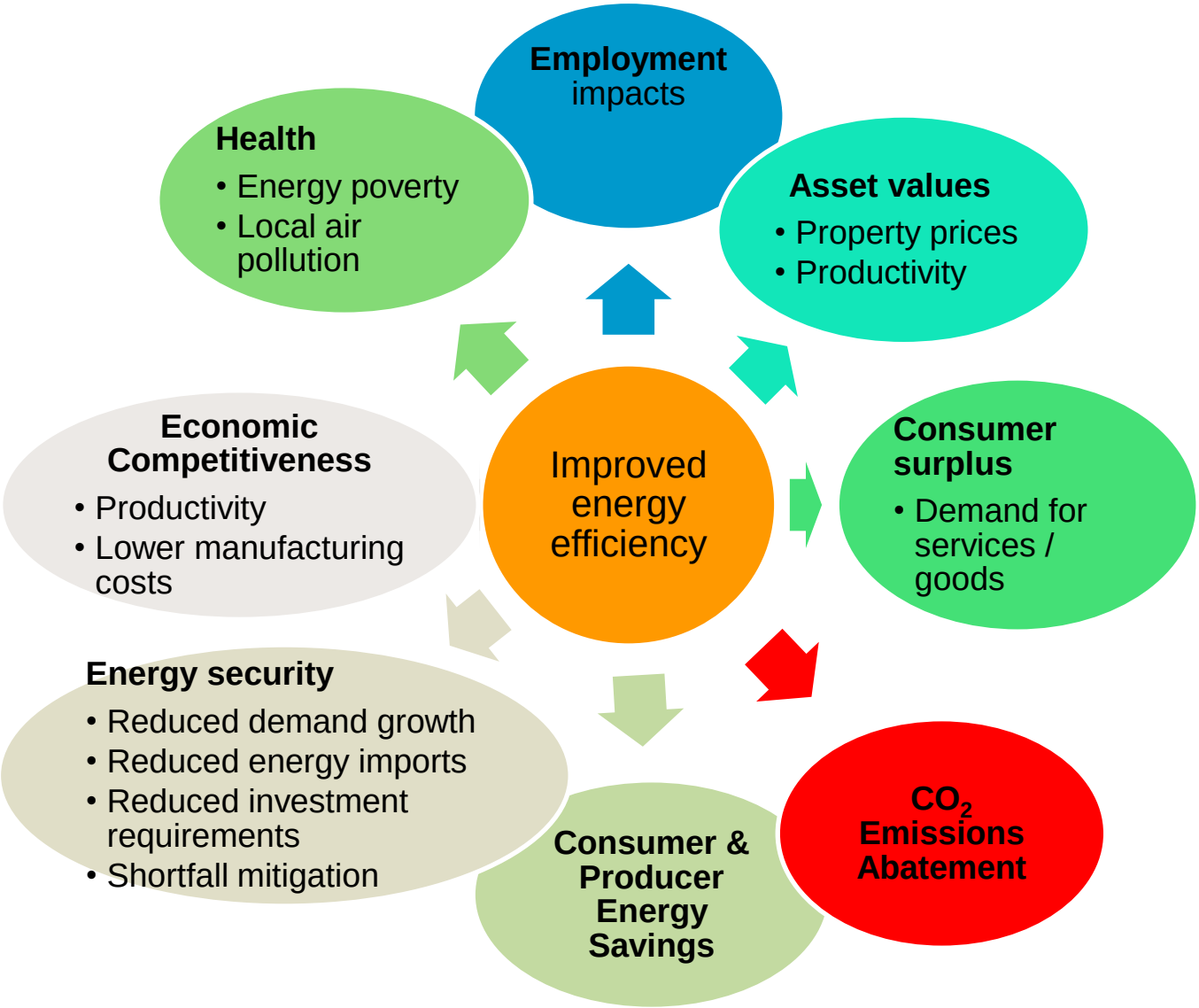
Flattening demand growth through energy efficiency

Without energy efficiency improvements since 1973

- **Energy consumption would be 56% higher today in IEA countries***
- **CO_2 emissions would be approx. 4GtCO_2 higher**
- **Energy efficiency is the first fuel**

Countries sampled include: Australia, Denmark, Finland, France, Germany, Italy, Japan, Norway, UK, USA, ~ 80% IEA energy consumption.

Financial and social benefits of energy efficiency policies



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Energy Efficiency Recommendations across 7 Sectors

Worldwide Implementation Now

IEA 25 Energy Efficiency Policy Recommendations

1. Across sectors

1.1 Energy efficiency data collection and indicators;
1.2 Strategies and action plans;
1.3 Competitive energy markets, with appropriate regulation;
1.4 Private investment in energy efficiency;
1.5 Monitoring, enforcement and evaluation of policies and measures.

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4. Lighting

4.1 Phase-out of inefficient lighting products and systems;
4.2 Energy-efficient lighting systems.

5. Transport

5.1 Mandatory vehicle fuel efficiency standards;
vehicle fuel efficiency;
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es to support industrial

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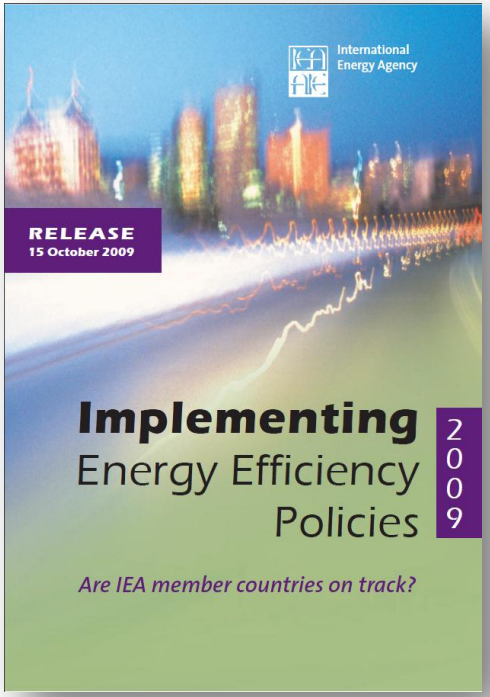
1.4 Private investment in energy efficiency

i. Energy efficiency knowledge generation and dissemination and technical assistance
ii. Education and training programmes
iii. Development of measurement and verification protocols
iv. Collaboration with private financial institutions to develop **public-private partnerships** and other frameworks to facilitate energy efficiency financing
v. Broad financial and collaborative supp
RDD&D.

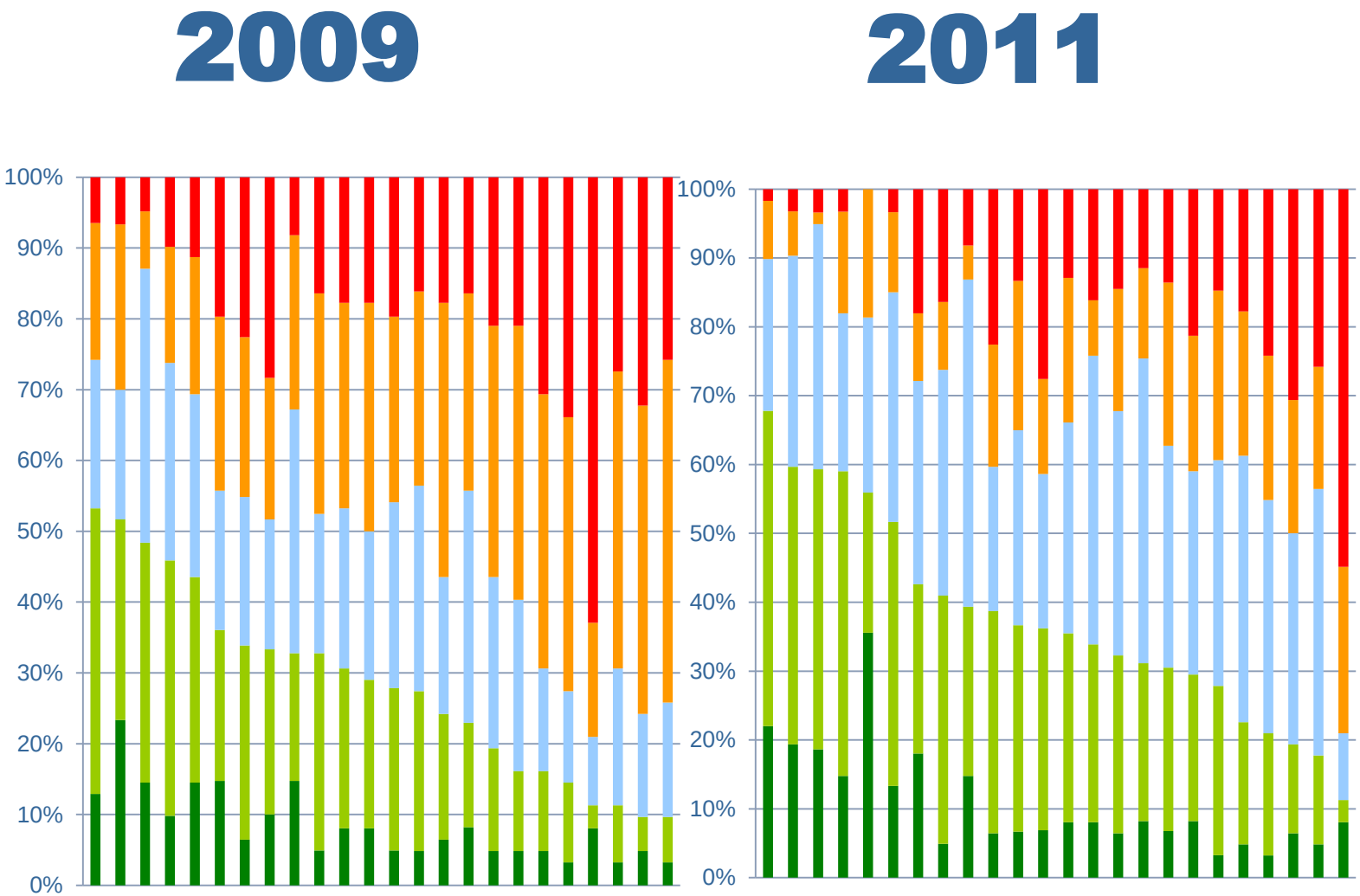
The IEA is tracking progress with implementing the recommendations



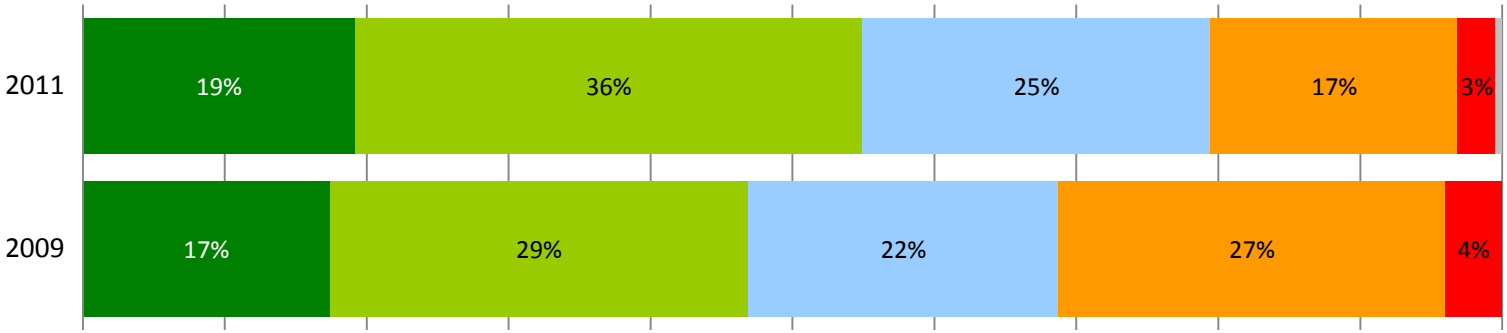
- Fully implemented
- Substantial implementation
- Implementation underway
- Plan to implement
- Not implemented
- Not applicable

- Each member country evaluated on progress with implementing energy efficiency policies.
- Used the 25 recommendations as a common benchmark.
- Initial evaluation in 2009; second evaluation in 2011.

Policy implementation has improved



1. Cross-sectoral developments



Strengths

- Common savings measurement and verification protocol developed.
- Efforts to improve monitoring, enforcement and evaluation reported in Australia, Canada, EU member states, Turkey and in US.

Areas for improvement

- Improve national energy efficiency strategies and action plans further.
- Expand efforts to increase financing.
- Improve quality and coverage of energy indicators.

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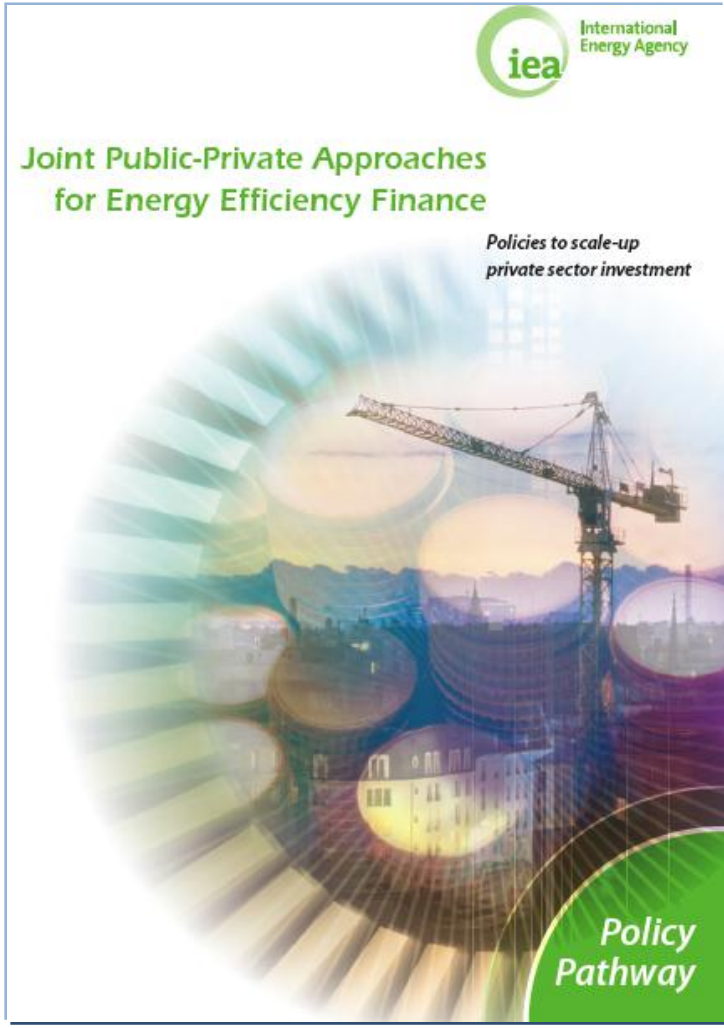
POLICY PATHWAY Joint Public Private Approaches for Energy Efficiency Finance



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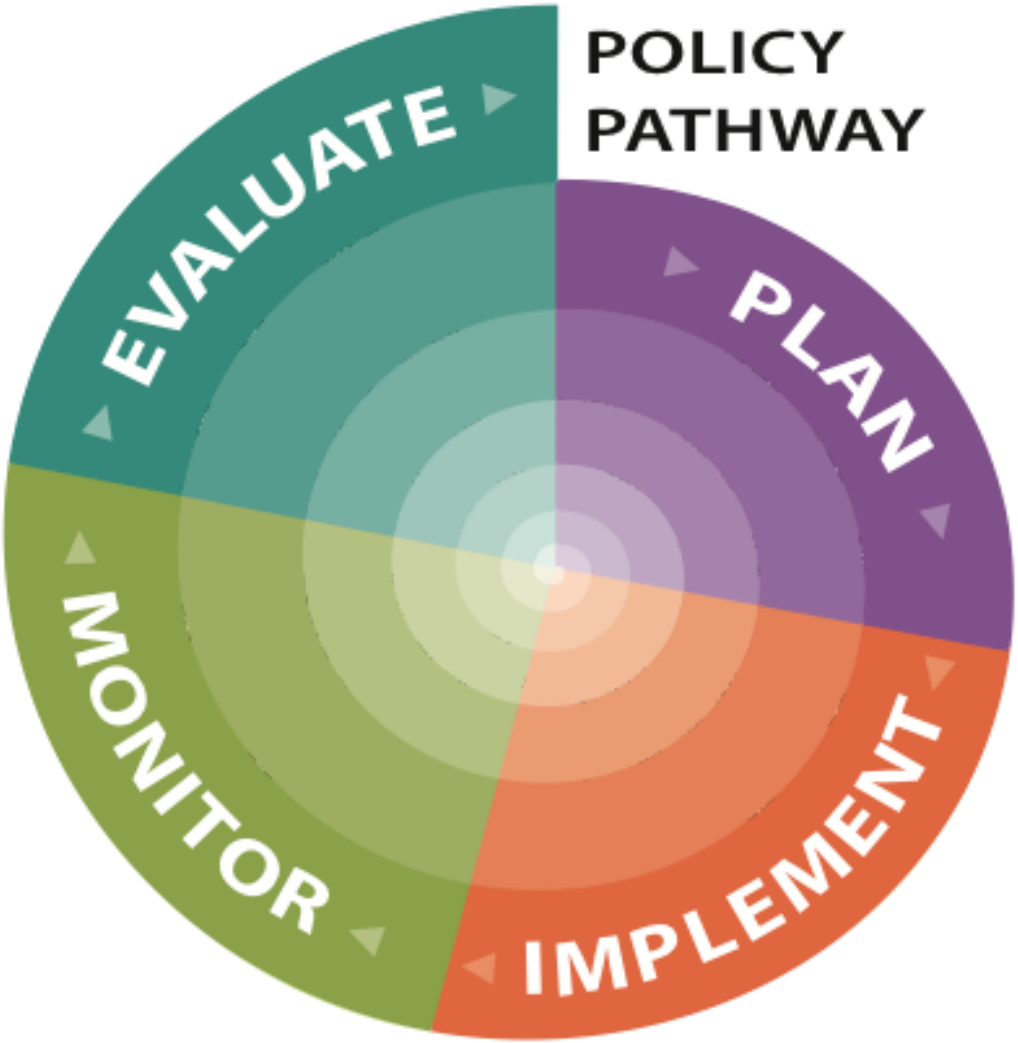

The EE finance challenge—why so much remains untapped

- **Principal agent problem**
  - Split incentives
  - Absence of clear legal responsibility
- **Information failure**
  - Benefits of EE
  - Lack of training
- **Financial barriers to access to capital**
  - Externalities
  - Initial cost
  - Perceived high risk
  - Lack of adequate collateral
  - High uncertainty
  - Small size of the projects, high transaction costs
  - Information failure in finance sector

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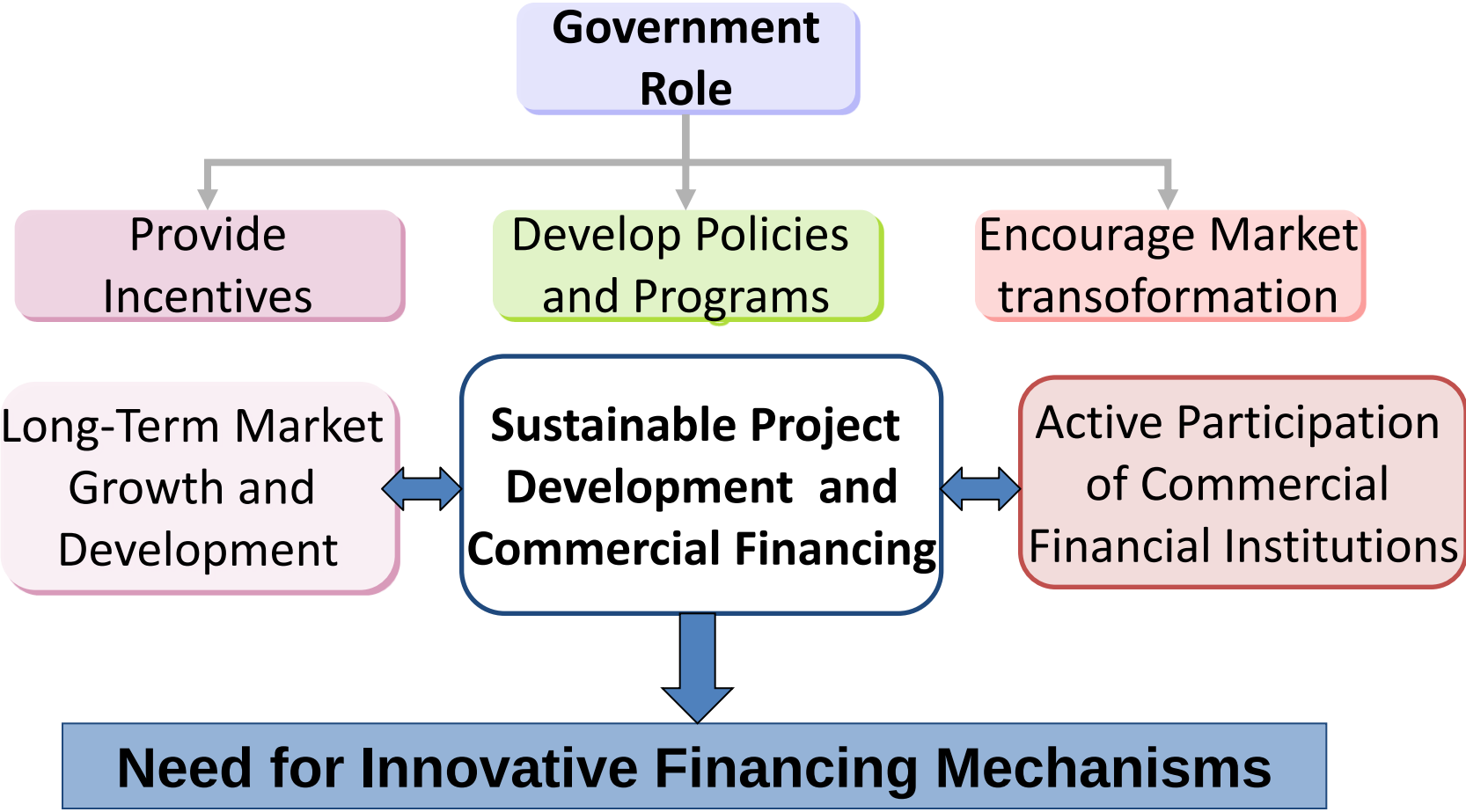
Government Role in improving Energy Efficiency



PUBLIC-PRIVATE PARTNERSHIPS

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What are Public-Private Partnerships?

- Public-Private Partnerships (PPPs) are mechanisms that use public policies, regulations or financing to leverage private sector financing for EE projects
- Key Characteristics of PPPs:
  - A contractual relationship (or agreement) between a public entity and a private organization
  - Fair allocation of risk between the public and private partner to encourage the private partner to mobilize financing
  - Mobilization of increased private sector project financing for EE
  - Payments to the private sector for delivering services to the public sector.

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Why public-private partnerships?

- Advantages of PPPs
  - Mitigate perceived risk with EE projects
  - Indirect involvement of governments in the market
  - Education of private sector
  - Leveraging of public money
  - Can allow public sector be EE leaders – showcase technologies and projects
  - May be politically more acceptable

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Types of PPPs

- **Dedicated Credit Lines** – established by the public sector to enable co-financing from the private sector for EE project financing.
- **Risk-Sharing Facilities** – partial risk or partial credit guarantee programs, which reduce the risk of EE project financing to the private sector, thereby enabling increased lending to EE
- **Energy Performance Contracting** – Legislative and/or regulatory initiatives to facilitate private sector financing (ESCOs) of public sector EE projects.

DEDICATED CREDIT LINES

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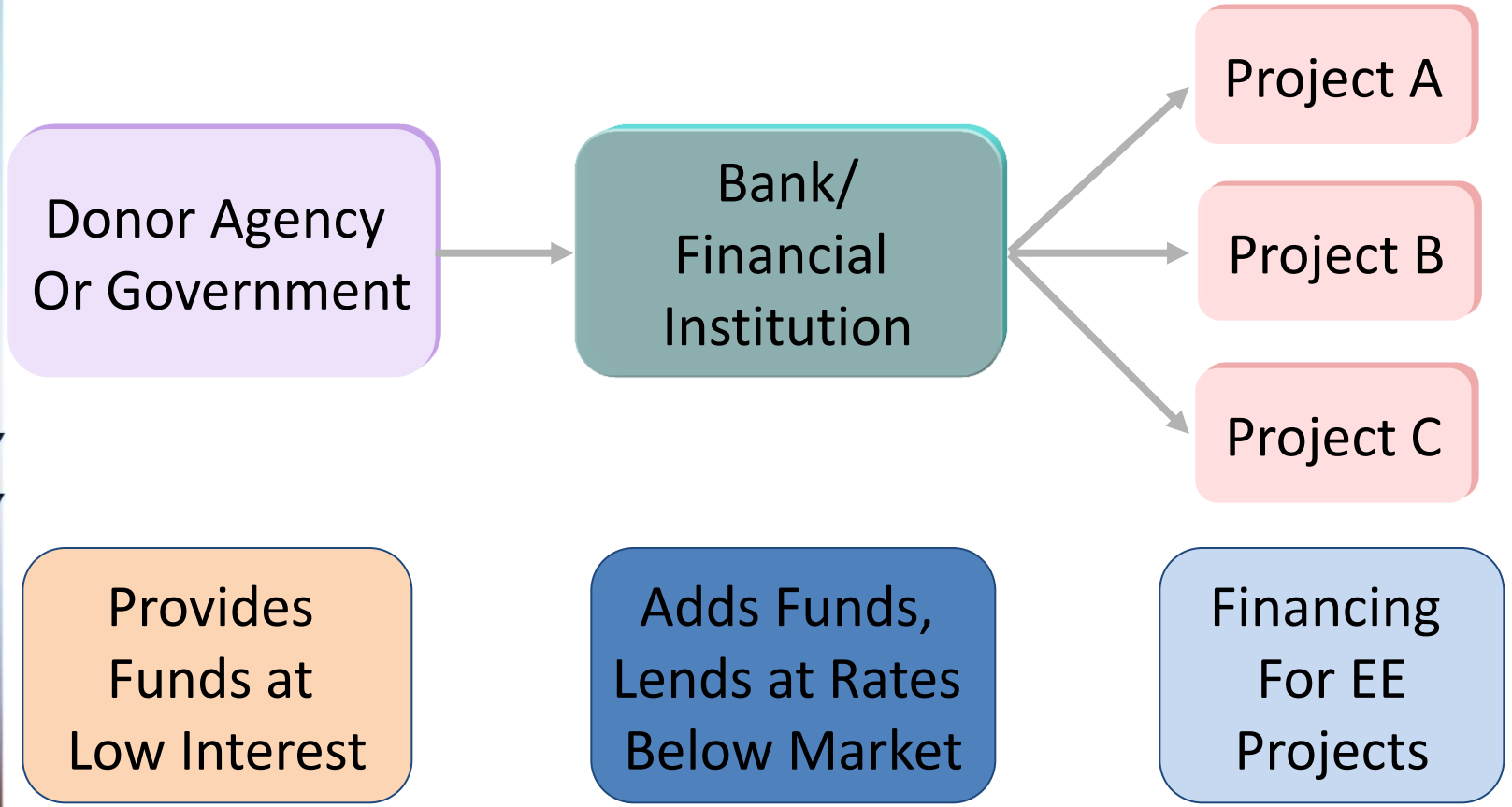
Structure of Dedicated Credit Line



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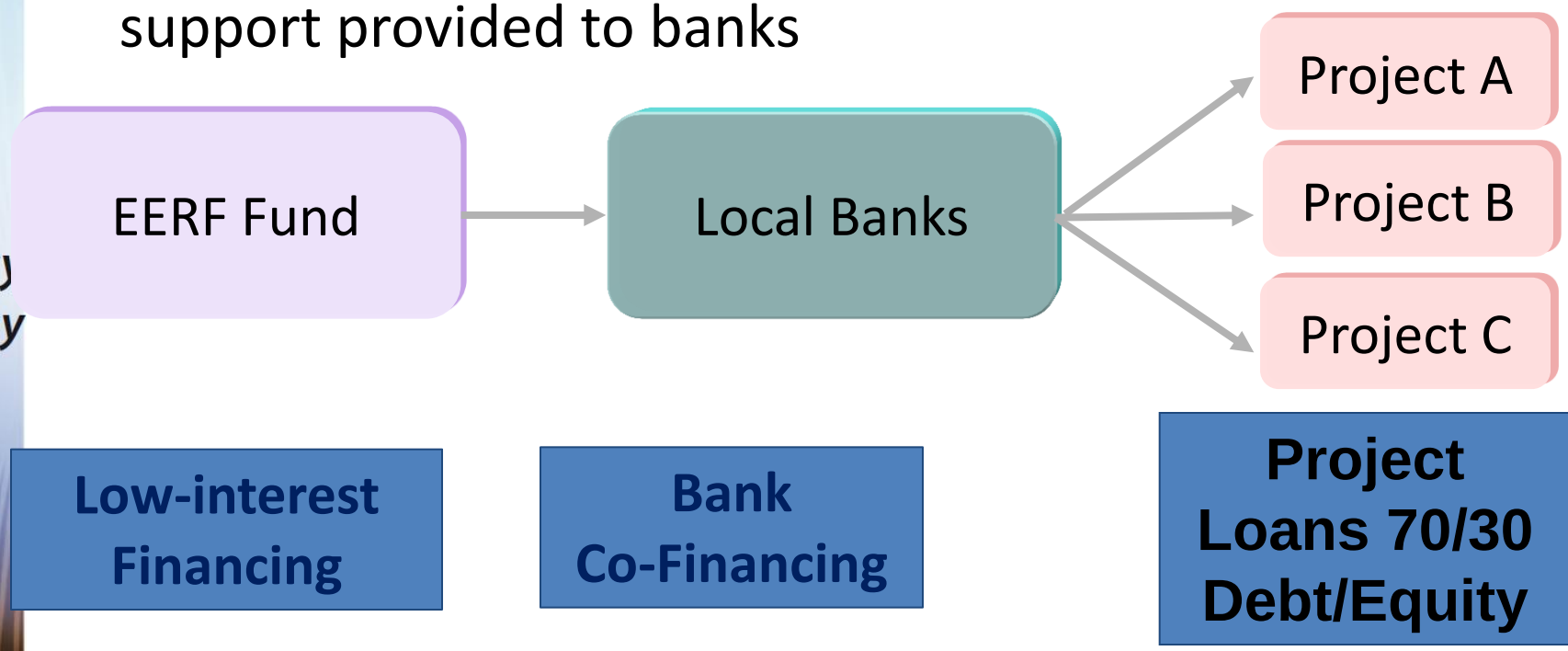
Example –Thailand Energy Efficiency Revolving Fund (EERF)

- Fund established using petroleum taxes
- Dedicated low interest credit line and technical support provided to banks



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Thailand ENCON Fund Results

- Number of projects approved (as of Oct. 2008):
  - 174 factories
  - 29 buildings
  - 3 ESCOs
- Total investment (as of Oct. 2008): US$ 293 million
- Total loan approvals under EERF: US$ 155 million
- Total savings (as of Oct. 2008):
  - Electricity savings - 758 million kWh/yr
  - Oil savings - 198 million liters/yr
  - Total savings - 251.9 ktoe/yr
  - CO2 reduction – over 1 million tons
  - Energy cost savings - $110 million

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RISK SHARING PROGRAMMES

Partial Credit and Risk Guarantees

- Designed to address the risk perception of banks and financial institutions
- Government or donor agency provides a partial guarantee covering loan loss from default
- Participating banks sign agreements specifying loan targets and conditions
- Banks conduct due diligence and process loans
- In case of loan default the guarantee covers a portion of the loss – the program may also include a “first loss reserve”
- Substantial technical assistance also provided to banks, project hosts and project developers (ESCOs)

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Example of Risk-Sharing Programme
Commercialising Energy Efficiency Finance

IFC signed Guarantee Facility Agreements (GFA) with participating commercial banks in the Czech Republic, Slovakia, Estonia, Latvia, and Lithuania, and Hungary

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IFC/GEF Program in Central & Eastern Europe (CEEF)

- **IFC/GEF guaranteed 50% of the loss due to loan defaults**
- **GEF provided "first loss reserve"**
- **Project eligibility criteria established jointly**
- **Specified maximum guarantee amount per project and total**
- **IFC defined some requirements for project due diligence**
- **Banks responsible for conducting due diligence**
- **Small fee charged by IFC for the guarantee facility (~1.5%)**

CEEF Results

- Provided partial risk guarantees (PRG) to large number of projects - $49.5 million in guarantees - Default rate < 0.5%
- Demonstrated low risk & high return of EE projects and induced banks to substantially increase loan portfolio
- High leveraging of IFC/GEF funds achieved – Total project investment in excess of $200 million
- Also a large $250 million ESCO contract was signed by a consortium that included OTP Bank
- Bank lending activity continued after end of IFC programme
- Criteria for successful programme – maturity of EE and financial market, technical capacity in banks, and enthusiasm.

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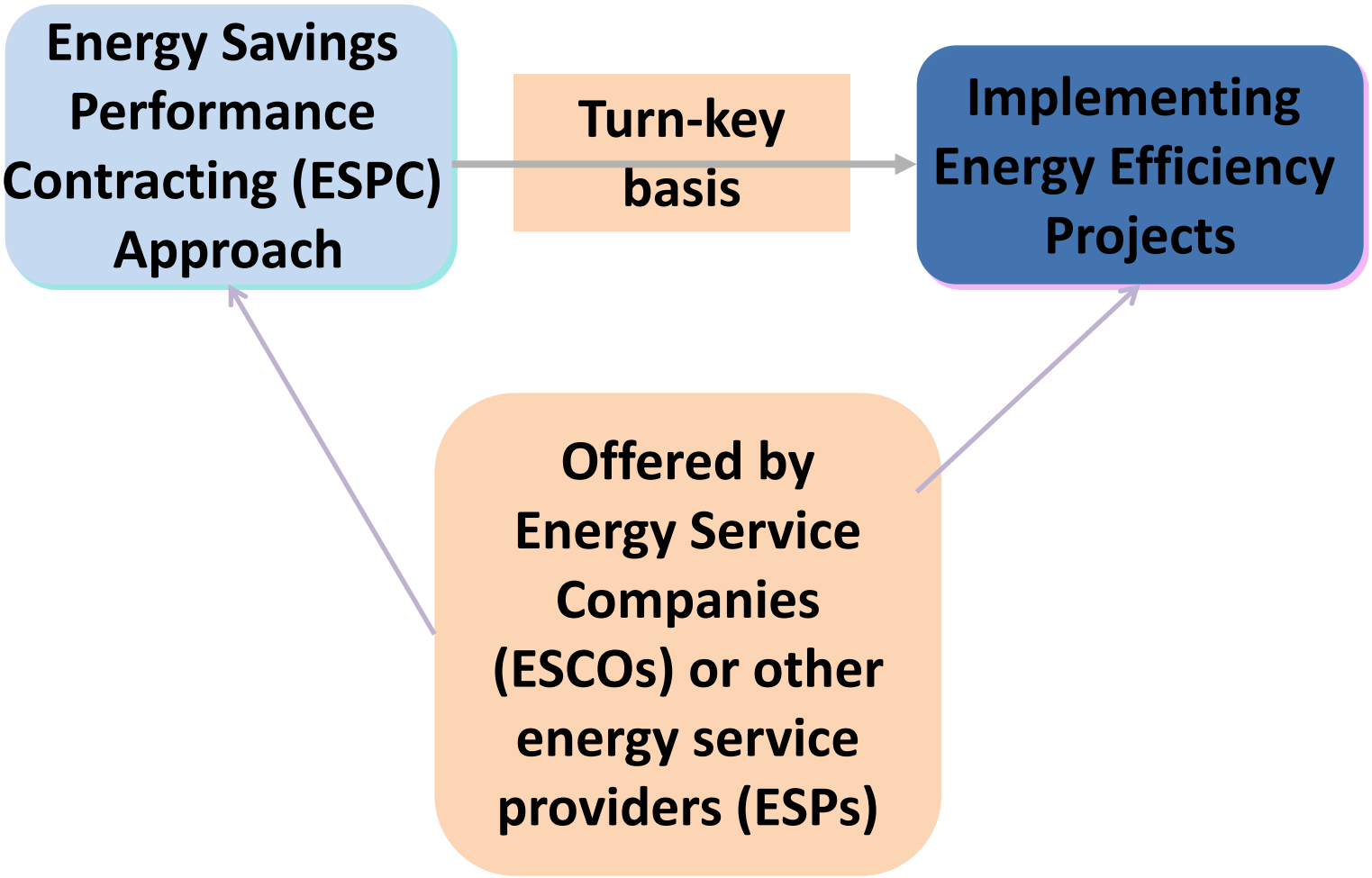
LEVERAGING COMMERCIAL FINANCE THROUGH PERFORMANCE CONTRACTING

Energy Savings Performance Contracts for the Public Sector



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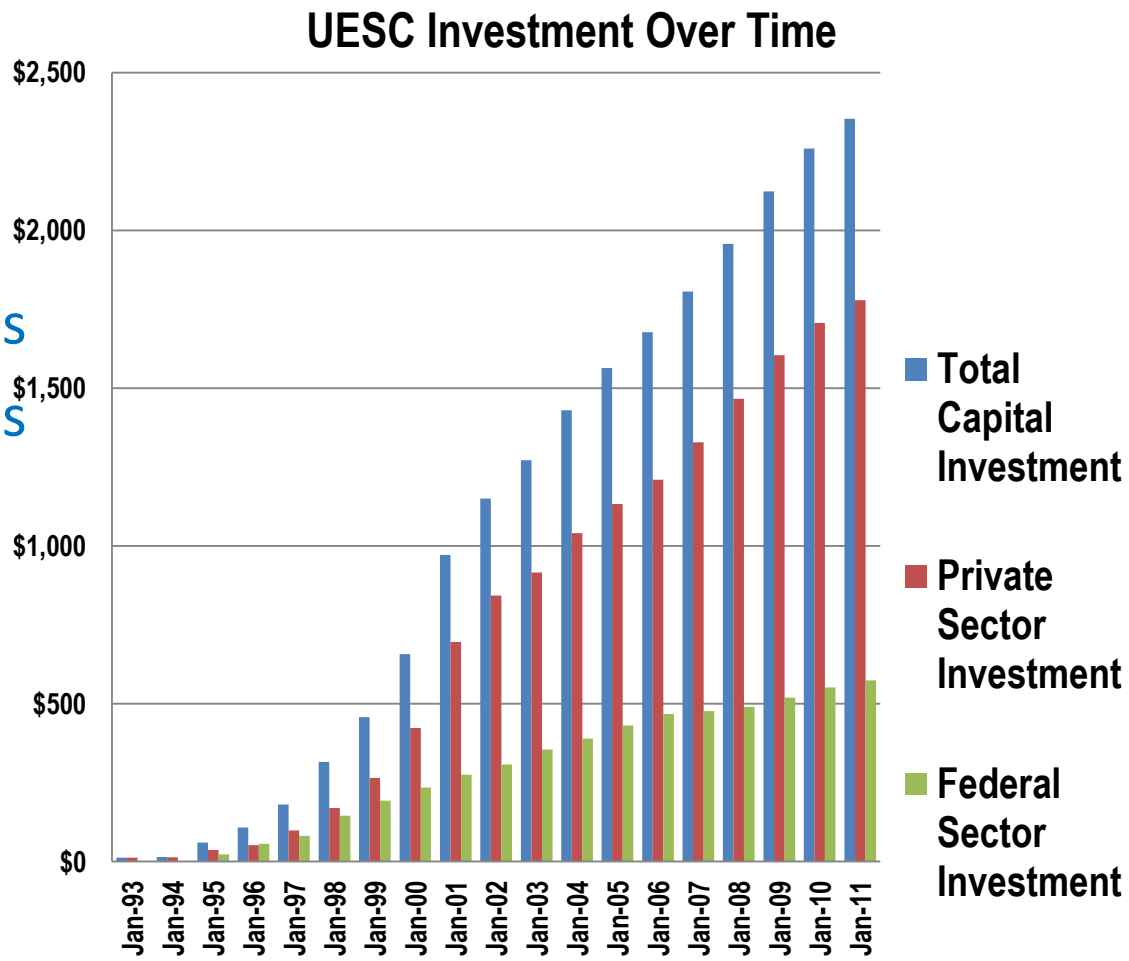
EPC Example – United States FEMP/UESC Programme

- The Federal Energy Management Program (FEMP) has contracted with a number of private utilities to establish the Utility Energy Services Contracts (UESC) mechanism
- FEMP has developed the enabling policies, regulations and procedures as well as provided contract templates to public agencies to facilitate contracting with utilities
- Utilities perform the ESCO functions including providing their own financing or leveraging commercial financing
- Many success stories of federal agencies using UESC

UESC Projects

- Total Projects by fiscal year:
- 2009: 106 projects
- 2008: 107 projects
- 2007: 97 projects



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LESSONS LEARNED

Policy Pathway

Moving from Public to Commercial Financing

PPP mechanisms involve different levels of public and private financing depending on maturity of the commercial financing market

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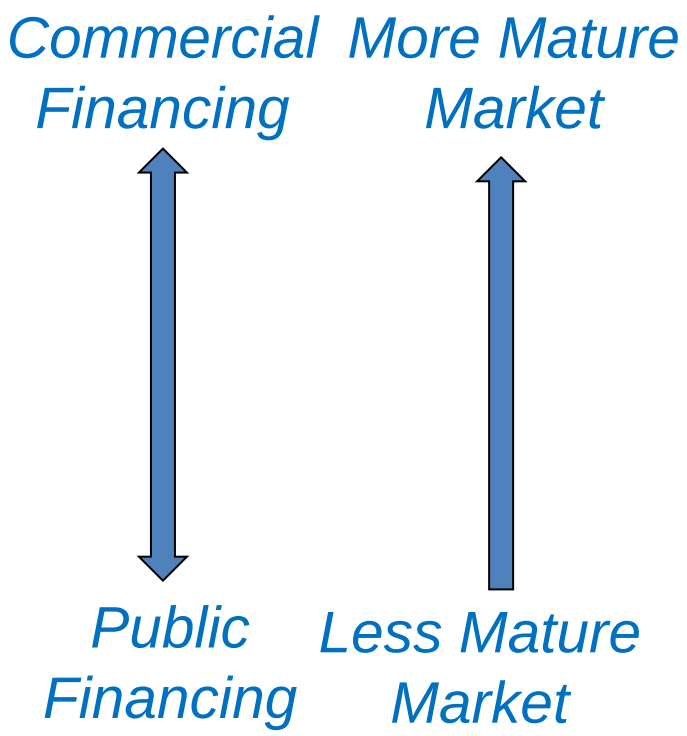
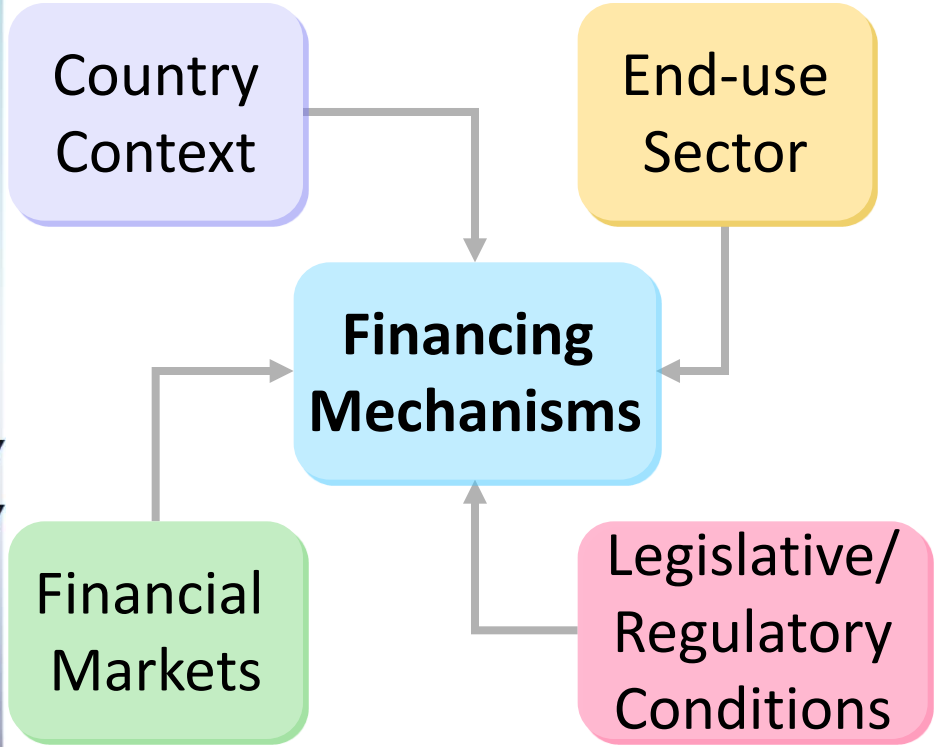
Leveraging Commercial Financing through Performance Contracts

Partial Credit or Risk Guarantees

Dedicated Credit Lines



Designing the PPP Mechanisms



- Selection of mechanisms depends on local conditions
- Different mechanisms may be needed for different sectors
- Combinations of mechanisms may be more effective
- International experience provides useful information, but must be adapted to local conditions

Policy Pathway

Policy Pathway: Public-Private Partnerships to Scale-up Energy Efficiency Financing

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