ENERGY EFFICIENCY

Economic instruments to catalyse investments in energy efficiency policy

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The future of Energy Efficiency Finance

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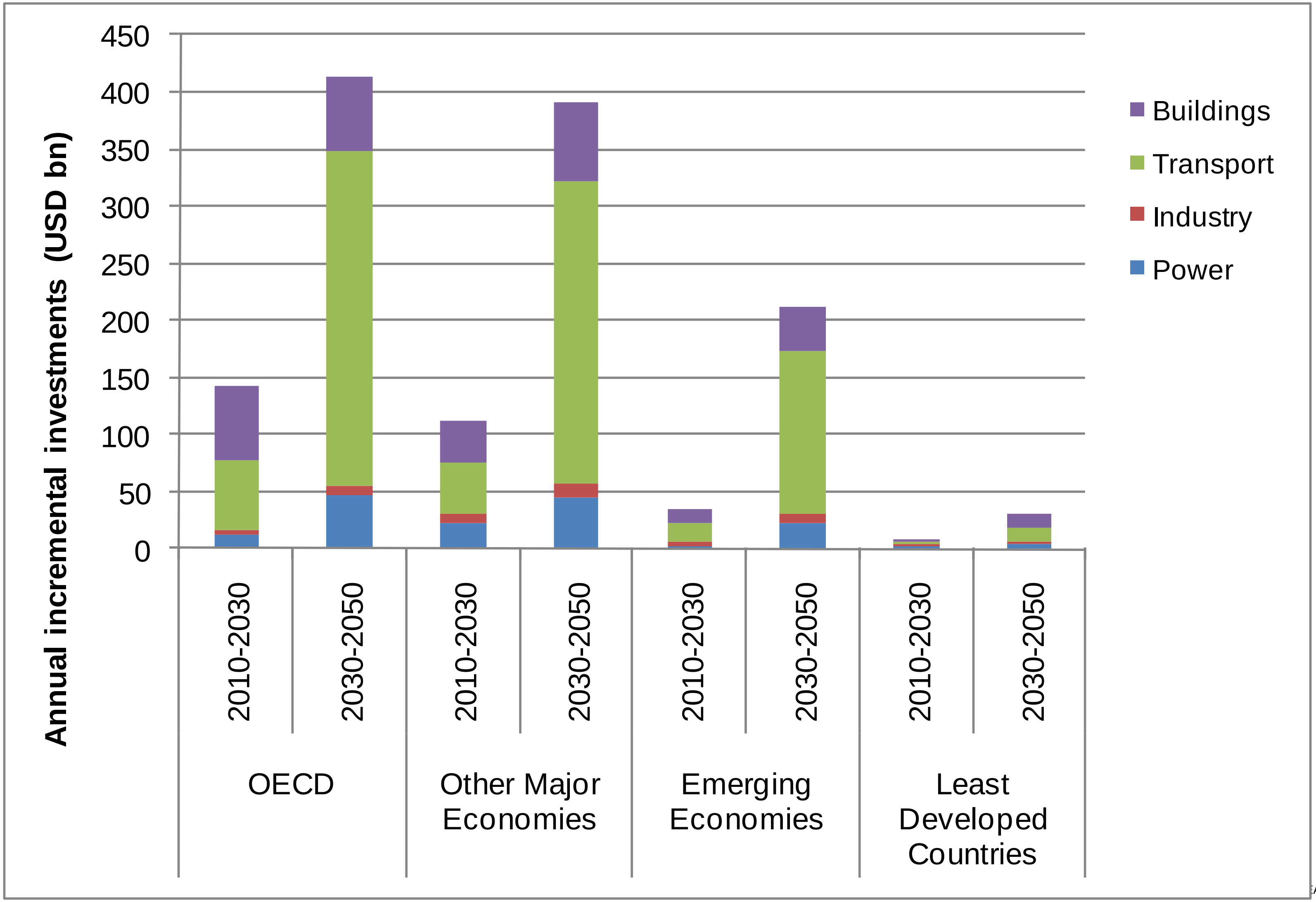
Overview

- Need for investment and barriers
- Role of government – to encourage investment
- Economic instruments – characteristics, definitions, examples
- Instruments and their funding mechanisms
- Choosing, designing, evaluating
- Buildings as the focus of today's workshop

Additional investment needs in the BLUE Map scenario by region and sector



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
  - Initial cost
  - Perceived high risk
  - Lack of adequate collateral
  - High uncertainty
  - Small size of the projects, high transaction costs
  - Information failure in finance sector

Government Role

Provide Incentives

Require ambitious EE improvement

Stimulate Market development

Long-Term Market Growth and Development

Sustainable Project Development and Commercial Financing

Active Participation of Commercial Financial Institutions

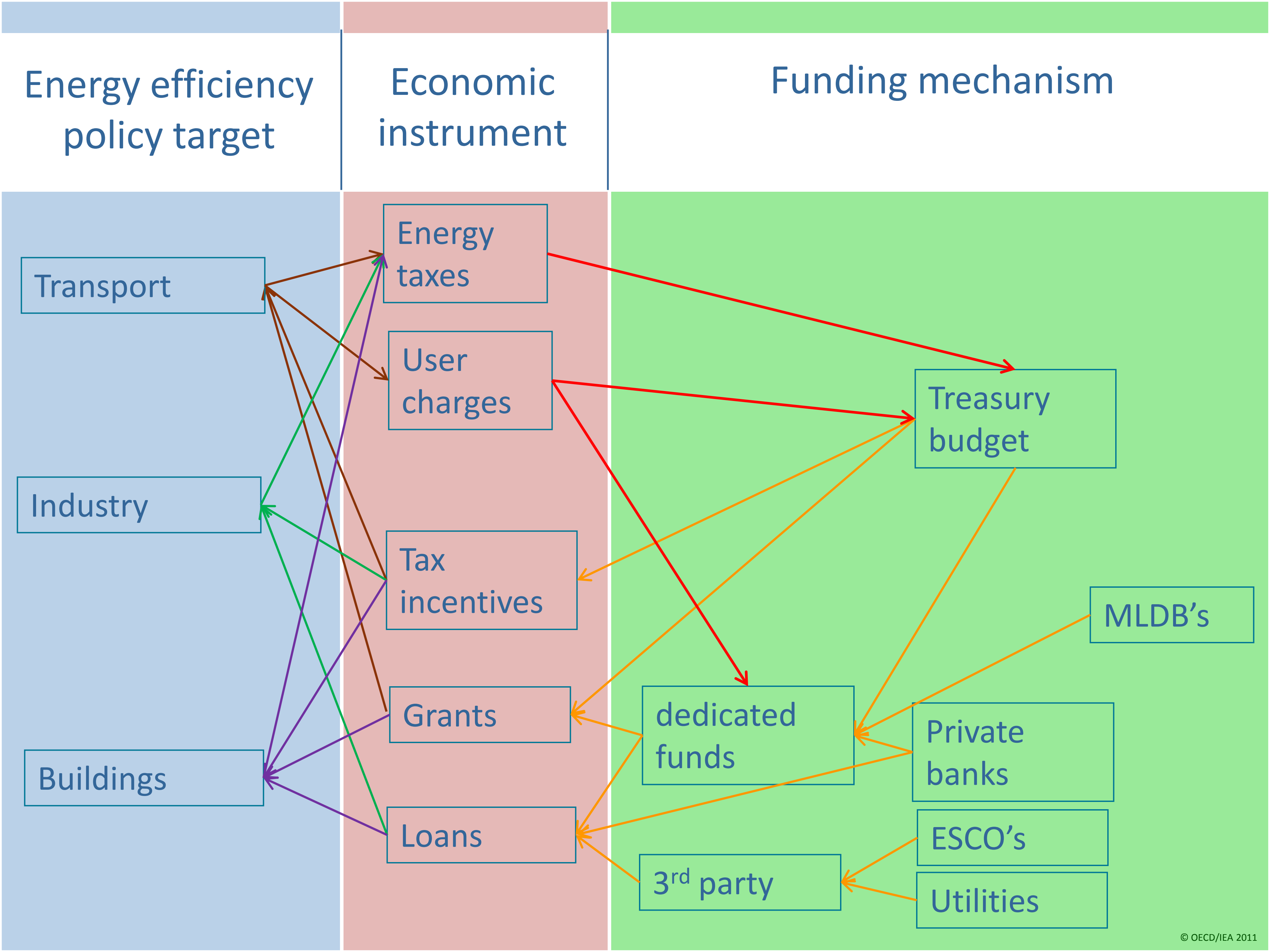
Need for Innovative Financing Mechanisms

Economic instruments

- Providing a price signal to energy-users to engage in energy efficient activities
- Economically efficient and effective if designed right
- Should be combined with regulatory instruments
- Little evaluation means money wasted
- Can be revenue raisers for green investments

Economic policy instruments for energy efficiency

- Fiscal instruments
  - Tax relief
  - Taxes
  - User charges
- Financial measures
  - Loans
  - Grants
- Market-based instruments
  - Emissions trading schemes
  - White certificate schemes
- Direct investment
  - Public procurement rules
  - Public infrastructure
  - RD&D investment



Energy efficiency policy target
Economic instrument
Funding mechanism
Transport
Industry
Buildings
Energy taxes
User charges
Tax incentives
Grants
Loans
Treasury budget
MLDB's
dedicated funds
Private banks
ESCO's
3rd party
Utilities
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Economic instruments for EE in industry, transport and buildings

Industry

- Tax relief
- Audit support
- CO_2 emissions trading
- Energy management support
- R&D incentives
- Energy prices
- 3rd party finance and ESCOs

Transport

- Vehicle tax incentives
- Advanced vehicle subsidies
- Fuel taxes
- User charges
- Infrastructure investment
- CO_2 emissions trading

Buildings

- Grants for EE equipment
- Loans and grants for refurbishment
- Direct investment in social housing
- 3rd party finance and ESCOs
- Tax relief
- Energy prices

Choice and policy interaction

- Choice of instrument is depending on many context specific factors:
  - Sector
  - Target group
  - Existing barriers
  - Local economic, legal and infrastructure conditions
  - Choice of instruments affects the funding mechanism

- Policy interaction and policy coherence:
  - Incentives should always be referenced to existing regulation and building codes
    - ambitious performance criteria are needed as a basis
    - However, no performance without strict enforcement of regulation and building codes
  - Policy interaction and coherence also with regard to using several economic instruments in parallel

Design issues

- **Design issues may have even stronger influence on effectiveness and economic efficiency:**
  - **Uptake of the instrument**
  - **Free riders**
  - **Marked distortion created**
  - **Technology lock in**
  - **Administrative burden**
  - **Spill over effects**
  - **Monitoring and Evaluation**

Economic evaluation matrix

Category	Criteria	Indicators
Environmental effectiveness	Impact on market	Uptake of programme (units product) Level of awareness/influence (%) Sales of qualifying products (units product)
	Energy savings	Gross energy saved (kWh or toe) Gross CO_2 emissions (tCO2)
	Rebound effect	Increase in sales of energy using equipment (%) Increase in use of energy efficient technologies (%)
Economic efficiency	Free-ridership	Share of tax incentives to purchasers who would have bought the energy efficient equipment anyway (%) Multiplier effects (%)
	Costs	Value of awarded tax incentives Administrative costs (€) Total costs (€) Cost-effectiveness = total costs/energy saved (€/kWh)
	Policy interaction	Qualitative analysis of policies
Other criteria	Process features	Ease of administration Transaction and administration costs (€)
	Market distortion	Price changes (Δ€)

Focus today is on buildings…

- Nearly all IEA countries have at least one economic instrument for energy-efficient buildings – but not tied to level of energy performance
- More than one third are grants to owners
- Loans and tax relief are also widely used
- Policies and capital to facilitate 3rd party finance is a more recent phenomenon and likely to grow
- Complete information on the effectiveness and economic efficiency of instruments is rarely available and unmeasured

→ High potential for waste of money and little improvement

Thank you for your attention