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
Energy efficiency policy target | Economic instrument | Funding mechanism

- Buildings
  - User charges
  - Tax incentives
  - Grants
  - Loans
- Industry
  - Transport
  - Energy taxes
  - Treasury budget
- Funding mechanisms:
  - Private banks
  - ESCO’s
  - Utilities
  - MLDB’s
<table>
<thead>
<tr>
<th>Industry</th>
<th>Transport</th>
<th>Buildings</th>
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| • Tax relief  
• Audit support  
• CO₂ emissions trading  
• Energy management support  
• R&D incentives  
• Energy prices  
• 3rd party finance and ESCOs | • Vehicle tax incentives  
• Advanced vehicle subsidies  
• Fuel taxes  
• User charges  
• Infrastructure investment  
• CO₂ emissions trading | • 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
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<tr>
<th>Category</th>
<th>Criteria</th>
<th>Indicators</th>
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<td>Environmental effectiveness</td>
<td>Impact on market</td>
<td>Uptake of programme (units product)</td>
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<td>Level of awareness/influence (%)</td>
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<td>Sales of qualifying products (units product)</td>
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<td>Energy savings</td>
<td>Gross energy saved (kWh or toe)</td>
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<td>Gross CO₂ emissions (tCO2)</td>
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<td>Rebound effect</td>
<td>Increase in sales of energy using equipment (%)</td>
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<td>Increase in use of energy efficient technologies (%)</td>
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<td>Economic efficiency</td>
<td>Free-ridership</td>
<td>Share of tax incentives to purchasers who would have bought the energy efficient equipment anyway (%)</td>
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<td>Multiplier effects (%)</td>
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<td>Costs</td>
<td>Value of awarded tax incentives</td>
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<td>Administrative costs (€)</td>
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<td>Total costs (€)</td>
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<td>Cost-effectiveness = total costs/energy saved (€/kWh)</td>
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<td>Policy interaction</td>
<td>Qualitative analysis of policies</td>
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<td>Other criteria</td>
<td>Process features</td>
<td>Ease of administration</td>
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<td>Transaction and administration costs (€)</td>
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<td>Market distortion</td>
<td>Price changes (Δ€)</td>
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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