



High-performance energy efficiency standards in buildings in UNECE Region.

Topic 5. The role of legal framework and standards in attracting energy efficiency investments, for new construction and retrofits in UNECE countries.

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Role of the authorities in financing energy efficiency (EE) projects



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State authorities

- Create legislation to attract governmental (federal programs on EE, regional development funds) and private (Energy Performance Contracting, Public Private Partnership, loans from local Banks) investments.
- Attract financing from IFOs (international financial organizations) and determine the terms and conditions of its use
- Introduce state programs for financing and supporting energy efficiency programs
- Provide informational and technical support for local authorities and other loan recipients
- Provide state guarantees for procured financing

Role of the authorities in financing energy efficiency (EE) projects



Local authorities

- May act as partners of existing EE programmes or develop their own to be funded from local budgets
- Local authorities have better understanding of the priorities of energy modernization on site and may attract funds for such projects
- Local authorities monitor the implementation of EE projects, because usually most municipal thermal energy producers are municipally owned
- Provide municipal guaranties for procured financing

EE financing schemes



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Scheme	Strengths	Weaknesses
IFO-Government-Bank-Provider	Overall orientation for asset renewal, possibility to obtain funds from IFOs	More complicated management mechanism requiring relevant legal framework
IFO-Government-Provider	Possibility to obtain large funds allocating them for top priority goals	Overregulated procedures, extend the process of obtaining to several years
IFO-Local authorities-Provider	Municipal authorities determine the most effective projects for the municipal budget	Municipal authorities mostly have no incentives to implement EE measures in the housing sector

EE financing schemes



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Scheme	Strengths	Weaknesses
IFO-Bank-Provider	IFOs use an extensive network of banks and other resources to find projects	Loan interest rates increase because of bank margin
Government-Bank-Provider	Relatively simple management and convenience for the state authorities	Spot financing results in lower effectiveness
Government-Provider	The State can provide loans with low interest rates	Additional expenses of resources, limited budget
Bank/Private company - Provider	Established communications between banks and potential customers	High interest rates because of macroeconomic instability

EE investments in buildings sector



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Energy efficiency investments necessary to implement European and national policies will increase the initial capital costs for energy consumers. However, over time, energy efficiency investments will pay back as they will reduce operating costs (energy bills for energy consumers to pay for fuels and electricity) compared to the situation without the intervention. In other words, an increase in capital costs due to up-front investments for energy efficiency improvement measures will be to a large extent compensated by lower operational costs.

This is demonstrated by a general shift in the structure of costs for energy consumers, i.e. diminishing energy purchases (consumer paying less for fuels and electricity) and increasing investment expenditures (consumers paying for additional energy efficiency investments)

Market barriers: poor access to capital and lack of information



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- Poor access to finance hinders the use of cost-efficient energy efficiency possibilities
- In addition, ineffective, uncoordinated and fragmented use of public finance with excessive focus on grants and the use of publically supported financial instruments which are set up ad hoc, overly subsidised and do not reach sufficient economic scale to attract private finance can impair the development of well-functioning markets for energy efficiency investments

Market barriers: poor access to capital and lack of information



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Today, there are about 200 energy efficiency financing schemes in operation across different UNECE Member States, targeting the different markets and testifying to the broad range of different circumstances

In some cases, various schemes address the same sectors and the same beneficiaries in the same Member States, with different intensity of public support and competing solutions.

In the area of energy services high intensity grants sometimes crowd out private investments (e.g. in public lighting or industry sectors), which is clearly not an optimal way to support them.

Challenges in up-scaling EE investments in buildings



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In 2015, the Energy Efficiency Financial Institutions Group (EEFIG) reported with an analysis of the obstacles that prevent up-scaled investment in economically viable energy efficiency projects. It identified four challenges:

- **De-risking:** Addressing the financial community's perception, based on lack of experience with energy efficiency, of the high level of risk of investments in this sector and unclear business case (unclear benefits) at the demand side that reduces the investment appetite
- **Aggregation:** Enabling project promoters to bundle small, heterogeneous projects in larger packages which reduce transaction costs while enabling more effective (and profitable) investment structuring and governance

Challenges in up-scaling EE investments in buildings



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- **More effective use of public funding:** Reinforcing the use of public finance via financial instruments moving away from grants in favour of instruments that maximize the triggering of private capital allocation for energy efficiency
- **Regulatory framework:** Full implementation of existing energy efficiency legislation as well as "future concerted and consistent regulatory pressure to improve buildings efficiency". If countries want to unlock the enormous potential for energy savings in its existing building stock then it clearly requires bold policy intervention going beyond the strong implementation of existing legislation.

Finding EE investment projects



- **Step 1.** Prepare common register of buildings and collect initial data
- **Step 2.** Analyze priority needs and select “invest ready” ones
- **Step 3.** Prioritize investments according to available regional/local/investors budget with low Internal Return Rate (IRR).

Finding EE investment projects



- **Step 4.** Prepare business plans for cases, ready for external investments (ESCO, PPP, Loans ...) and support them with budget financing for low IRR EE part.
- **Step 5.** Present developed projects pipeline as a mid- or long-term action plan. Receive support of regional/local government or other available “grant type” funds (in case of need)

Conclusions



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- Existing programs mainly support separate energy efficiency projects, however, it is possible to achieve significant energy savings only with all-inclusive renovation projects ensuring the effective use of energy resources during their consumption.

Conclusions



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- Top-priority measures to improve energy efficiency include the installation of individual smart energy meters and support regulation engineering equipment.
- Energy Efficiency works only if you can:
 - **monitor actual consumption of energy**
 - **adjust building performance according to current conditions**
 - **use financial resources to implement EE measures (in case of need)**

Conclusions



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- The non-regulatory financial measures set out for example in a format of “Smart Financing for Smart Buildings Initiative” would enable a framework with greater private capital participation in the sector.

Practical task



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- PRACTICAL TASK TOPIC 7 PART 3.