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Challenges and opportunities for EE in the residential building sector in Uzbekistan

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The building sector in Uzbekistan

- Buildings = energy consumption: 17 Mtoe, **almost 50% of total energy supply**
- Energy consumption = 320 – 690 kWh/m²/a (3 to 5 times higher than in developed countries)
- Overall losses in residential and administrative buildings = 8 Mtoe
- Privatisation of flats - 98.2%

Age of buildings

50 years and older	8%
25-50 years	58,9%
up to 24 years	33,1

Energy losses

Category	Percentage
Потери при производстве энергии	31%
В системах горячего водоснабжения	11%
В вентиляции	1%
В системах отопления	57%

Problem: Main losses in heat pipelines

Source: Development Focus, No 1/2012 2

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The standardized multi-storey buildings of soviet time

- Most common: 4-, 5-, 2- 9 storeys
- 58% of the energy losses from heating and ventilation
- 35% of energy losses from bad insulation of the building envelope
 - 35% face of the building
 - 25% roof – bleak situation (leaky despite roof renovation program)
 - 15% each doors and cellars
 - 10% windows
- Administrative setting
 - Communities of flat owners (ТЧЖ) (more than 5000 for more almost 32 thousand buildings in 2011), mainly Ltd. Liabilities
 - Average – 6 multi-storey buildings
 - Tendency to set up ТЧЖ for a smaller number of buildings in order to avoid monopolies for services and to allow for market development of management services
 - Associations of ТЧЖ and of professional management and service companies

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Opportunities for EE modernisation of the buildings?

Technical solutions and best practice experiences are available from other post-soviet countries

Motivations and incentives at different decision making levels

- Improvement of living conditions and thermal comfort for the residents – reduced energy poverty
- Saving energy costs (on the long run) resp. lower burden of potential price increases
- Saving energy resources (energy security)
- Increase of export profit Uzbekistan can earn per 1000 m³ of natural gas, even if drilling volumes remain constant (possible additional income from export of the amount of saved natural gas - approximately 1.86 bn USD/a)
- Development of markets for new businesses and services and technologies
- Creation of new businesses and jobs (craftsmen, technology producers, manager, ESCOs etc.)
- Reduction of GHG emissions, mitigation climate change
- Technology transfer

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The Challenges (I)

General

- Conducting a building thermal efficiency retrofit is a relatively complex decision-making process involving building owners, policy makers, managers, users and construction industry professionals, energy suppliers ... ➡ different information needs to be provided
- Lacking awareness or interest of households of retrofit opportunities, lacking culture of energy knowledge
- **Policies** are needed to overcome the lack of incentives
 - *Information* instruments for the different actors in the complex process. Auditing tools, energy performance certificates, Web based tools for retrofits, advice from professionals etc. exist, but they are not yet wide spread enough.
 - *Standards* not always sufficient and up to date with technology opportunities
 - *Financing* and quality issues
 - High upfront costs, often lack of sufficient own funds
 - Lack of affordable credits
 - Long term repayment of investment

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The Challenges (II)

Specific in Uzbekistan

Many of the (potential) incentives do not work efficiently in practice

- Overall bad technical conditions of the houses dominate awareness, huge underinvestment in the past
- No (detailed) heating bills which reveal the financial implications of the current status
- Lacking information about achievable norms and potential results in savings (Lacking EE standards for existing buildings stock)
- Low tariffs

Source: GIZ

- Lack of good national/local examples to believe in achievable EE modernisation (lacking peer communication through local leaders and networks)
- Lacking incentives for governmental and local administrations
- Lacking professional craftsmen and specialised businesses

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The Challenges III

Availability of reliable data

- Central monitoring and technical supervision bodies abolished after 1991
- Privatisation to costumers (residential buildings) and sub-national bodies (municipalities etc. – public buildings, heating capacities) → extreme decentralisation of information and responsibility – poor development of civil society bodies and associations
- Lack of metering devices and lump-sum billing

This leads to:

- Lack of data, even at boiler houses
- Non-systematic data
- Contradictions of data
- Non-coherent overview over sector/subsectors

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The Challenges (IV)

Housing management companies still weak

- Non-transparencies in use of payments for management services
- Professionalism level of many management companies still low
- Weak law enforcement against management organizations
- Low competition level although certain presidential and governmental decrees in place to support development of management companies

Lack of financing

- Lack of financial means in ТҶСЖ due to low income households
- Lack of public financial support → most programs for new buildings
- Lack of public awareness of priority need of maintenance of existing stock
- Poor quality of implementation of public overhaul programs (example: program on repair of roofs)

Technical issues

- Private back fitting of buildings (balconies) by flat owners
- De facto annual heat demand much higher than originally planned (example 4-storey built in the 1970ies in Tashkent – 2.4 times higher)

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NAMAs an instrument to overcome the special challenges?

- Nationally Appropriate Mitigation Activities (NAMA) = New instrument of international climate negotiations
- *Supported NAMAs* can provide a wide scope of support (co-financing, capacity building, MRV etc.)

Examples Mexico:

- Supported NAMA for new and existing houses (by Germany)
- NAMA to improve urban planning (together with World Bank)

NAMA - development of an integrated and gradual EE refurbishment concept for standardised multi-storey residential and public buildings of soviet type in Uzbekistan (supported by the Ministry of Environment of Germany)

- Selection of groups of buildings
- Elaboration of GHG emission baseline
- Identification of direct & indirect mitigation measures (incl. costs)
- Training of professionals
- Development of MRV options
- Financing mechanism and fund raising

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Thank you!

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