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## Country: ARMENIA

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ITS Combined Event on Benefits and Requirements of the EU Directives on Energy  
Performance in Buildings, RWP.08

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BUILDING PARTNERSHIPS FOR ENERGY SECURITY

# Residential Stock of Armenia

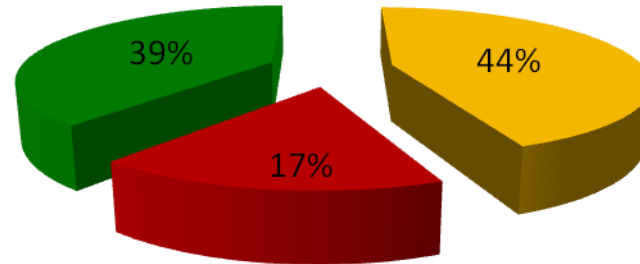


- Total space of the residential stock – 95 M sqm,
- Including multiflat stock – 27.6 M sqm, 18.9 K residential buildings, 430 K flats;
- Privatised over 96% of the multiflat stock;
- 53% of the multiflat stock is in the capital – Yerevan;
- Like in other CIS countries, the majority of multiflat buildings was constructed 30-60 years ago;
- The level of thermal insulation of building envelopes does not meet the requirements of the current construction codes.

# Parameters of multiflat stock of Armenia

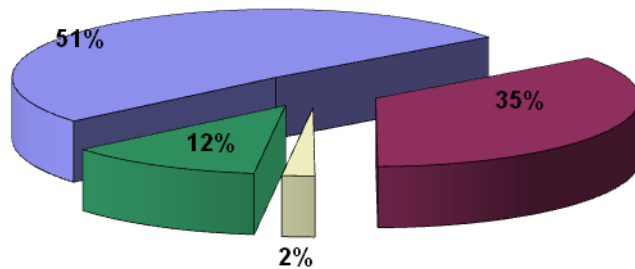


## Строительство по годам



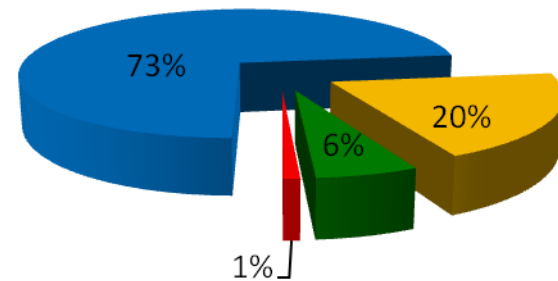
■ 1970-1990гг. ■ после 1990г. ■ до 1970г.

## By stories



■ 1 - 2 ■ 3 - 5 ■ 6 - 8 ■ 9 и выше

## По конструкции стен



■ камень ■ панель ■ монолит ■ прочее



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# Energy Savings and Energy Efficiency (ES/EE) in the residential sector



- ❑ Energy saving and improvement of Energy Efficiency are a priority task of the Government of Armenia, based on the need of rational use of resources, environmental protection and reduction in CO<sub>2</sub> emissions
- ❑ Energy saving is most urgent in light of energy prices hike (natural gas) and is an element of energy security of the country
- ❑ In country's economy over **35%** of electricity and over **25%** of heating energy are used in the residential sector and approximately **40%** of GHG emissions are caused by buildings;
- ❑ According to experts estimates, the economically justified potential of energy savings in buildings could reach **40%**

# Legal framework for EE and ES in Armenia



- The Ministry of Energy and Natural Resources of the Republic of Armenia is the State Competent body in EE and ES
- The Ministry of Urban Planning is the State competent body in the area EE and ES and in the construction sector
- The Ministry of Urban Planning makes a state policy in EE and ES in close cooperation with:
  - Ministry of Energy and Natural Resources of Armenia;
  - UNDP GEF Project;
  - Renewable Energy and Energy Saving Fund of Armenia

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# Laws and Regulations regulating EE and ES (1)



- Law “On Urban Planning” (1998) with consequent amendments and changes;
- Law “On Energy Saving and Renewable Energy” (2004)
- “Procedure of conducting Energy Audits” Government Resolution №1399 of 2006 with amendments and changes in 2015;
- National Programme on Energy Efficiency and Renewable Energy (2007)

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## Laws and Regulations regulating EE and ES (2)



- System of regulatory documents on urban planning (2013)
- Government Action Plan on Implementation of National EE and RE Programme for 2011-2020 NEEAP(2010)
- Mandatory requirements to use of **ES** and **EE** measures at construction and reconstruction of buildings at the expense of state budget, Regulation of th Government No 1504 of 2014

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# Regulatory and technical documents



- Construction code
  - CHPA II-7.02-95. “ Construction thermal physics of envelopes”
  - CHPA II-7.01-2011 “Construction climatology”
  - MCH “ Thermal protection of buildings“
- Catalogue of technical solutions on thermal insulations for designers (2013)
- ACT 362-2013 National Standard “Energy Savings. Energy passport of a building. General provisions. Standard form”
- More than 26 national standards on EE in buildings





# Documents at the stage of consideration (1)



- Draft law introducing changes and amendments to the Law “On Energy Saving and Renewable Energy” of 2004 – set requirements to EE and ES, being considered by the Parliament;
- Draft law introducing changes and amendments to the Law “On urban planning”
- Draft law “On construction of the small centre of Yerevan”
- Draft technical regulation on security of buildings, facilities, construction material and construction

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## Documents at the stage of consideration (2)



- Draft technical regulation “Energy security of buildings” on the basis of EU Directive on EE in Buildings
- Draft Standard “Methodology of energy audits in residential and public buildings” (at the stage of coordination)
- Draft Standard “Residential and public buildings. Rating system of assessment of sustainability of living environment” (at the stage of coordination)

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# First stage of the National EE Action Plan for 2011-2015



- Fostering of maintenance of energy statistics and compilation of annual energy balances.
- Establishment of the institutional framework of Energy Saving.
- Information campaigns, training and education in the area of EE.
- State procurements on the basis of EE.
- Implementation of measures to improve EE in the public sector and analysis of cost effectiveness.
- The Ministry of Energy and Natural Resources of Armenia plans to revise and adapt the NEEAP in 2016.

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# On minimum requirements to EE in buildings



- Armenia has no explicit obligations to apply the requirements of EU Directive on EE in buildings
- Minimum requirements to EE (except for state procurements) are set out by current construction norms and rules CNRA II-7.02-95.  
“Construction thermal physics of the building envelope”.
- Meeting the requirements of CNRA is checked at the stage of expertise evaluation of the design and estimate documentation before its approval and during technical supervision of the construction.
- In Armenia there is no separate institutional structure (body) on checking (auditing) a building to assess compliance with the requirements to EE.

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# Several cases of pilot projects with an energy audit component



1. Construction of a new residential social building in the town of Gorios
2. Thermal modernisation of the existing multiflat building in Yerevan
3. Construction of a school in line with the international standard LEED in Yerevan
4. Redesigning of private residential complex consisting of 8 buildings (attraction of private sector) in Yerevan
5. Designing of EE measures for buildings of 3 customs points on the Armenian-Georgian border
6. Designing EE measures for the regional children medical centre of blood transfusion in Yerevan



# Key barriers and challenges (1)



- Absence of legally formalised requirements (indicators) on EE and RES in buildings and implementation mechanisms and instruments
- Absence of reliable statistical (quantitative and qualitative) data on energy consumption in buildings
- Absence of targeted funds to support implementation of ECMs in existing buildings and also approved and financially backed programmes on thermal rehabilitation of the buildings
- Introduction of ECMs in existing buildings is made difficult due to required huge capital investments into the sector and social incapacity of the population.

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## Key barriers and challenges (2)



- Lack of a strategy on public awareness on the EE issues.
- The Key beneficiary (home owner) is not an active actor on the residential property market
- Lack of motivation and legally binding requirements to developers (except for state procurements)
- Lack of skills in the area of EE in buildings on designing, expert assessment and construction.
- Insufficiently developed mechanisms of state supervision on adhering to the requirements of the construction code, excluding requirements to seismic stability.
- Insufficiently developed market of EE materials, services on EE measures and energy audits in buildings.

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# Next steps

1. Improvement of legislative and regulatory frameworks, encouraging applications of EE/RES technologies.
2. Inclusion of requirements of EU Directive on energy performance in buildings into the national legislative framework of Armenia, considering the specifics of the country, primarily for new construction
3. Ensuring awareness among developers and owners (consumers) about the potential and benefits of application of EE/RES technologies in buildings.
4. Establishment of conditions for active participation of Armenia in international projects and programmes on EE/RES in the residential sector, and also access to the targeted funds, including for rehabilitation and reconstruction of the residential stock.
5. Development of the road map on introduction of energy audits and energy certification in the buildings of Armenia with assistance of the INOGATE project
6. Implementation of proposals and recommendations of the road map



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# THANK YOU!



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