Slovakia

Country background on Social Housing

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Apartment buildings – state of the art

Households' heat consumption

95%

95 % of the Slovak dwelling stock has energy consumption as follows:

Apartment buildings	120 to 190 kWh/ m^2
Family houses	180 to 340 kWh/ m^2

5%

5 % of the Slovak dwelling stock has energy consumption approximately corresponding with the modern building energy efficiency requirements:

Apartment buildings	76 to 132 kWh/ m^2
Family houses	85 to 260 kWh/ m^2

1,931,441 dwellings

778,000 in panel buildings

3.21 persons p.a.

Currently

3,5% in state ownership (decrease of 24% to 1991)

14,9% housing cooperatives

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Apartment buildings – energy performance data

Average annual energy consumption for **DHW preparation** in apartment dwelling (in kWh/m^2) 1994-2000

No.	Type of building envelope	1994	1995	1996	1997	1998	1999	2000	Average for years 1994-2000
1	Brick masonry and brick-blocks buildings	60.4	56.0	56.1	52.3	51.1	s48.9	39.7	52.1
2	One course panel built 1955 -1983	59.8	56.2	55.2	52.1	50.6	48.3	52.1	53.5
3	Sandwich panel built 1971 - 1983	58.1	53.0	53.7	51.0	50.5	47.8	37.7	50.2
4	Sandwich panel built 1983 -1998	50.8	48.5	51.7	51.9	50.1	49.0	45.1	49.6
5	Other	58.2	48.1	51.6	47.7	50.0	47.9	43.8	49.6
Average for all apartment buildings		**57.5**	**54.0**	**54.5**	**51.9**	**50.6**	**48.5**	**46.1**	**51.9**

Source: National study on energy efficiency 2002

85% of all flats – supplied by district heating
remaining **15%** – supplied by individual and local heating, major fuels – coal and natural gas

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Apartment buildings – energy performance data

Average energy consumption for **space heating** in apartment dwellings (in kWh/(m²/year), 1994-2000

No.	Type of building envelope	1994	1995	1996	1997	1998	1999	2000	Average for years 1994-2000
1	Brick masonry and brick-blocks buildings	132.7	140.7	151.8	144.0	130.9	126.7	118.1	**135.0**
2	One course panel Built 1955-1983	113.6	118.2	129.9	120.9	108.9	105.3	96.2	**113.3**
3	Sandwich panel built 1971-1983	122.6	128.5	137.1	128.6	117.1	113.2	103.4	**121.5**
4	Sandwich panel built 1983-1988	103.5	110.6	118.4	110.3	99.0	95.8	87.6	**103.6**
5	Other	n.a.	n.a.	n.a.	148.8	131.5	138.6	194.7	**153.4**
Average for all apartment buildings		**116.9**	**125.3**	**134.9**	**126.5**	**113.6**	**110.3**	**101.0**	**118.1**

Source: National study on energy efficiency 2002

Slovak housing acts and regulations

The Concept of National Housing Policy up to 2010 framework document for reaching elementary goals, affordability, mobility, without extensive pressure on new construction...

Civil Code, rights of citizens, housing substitute...

Commercial Code, statues of Housing Cooperatives...

Act on Ownership of Apartments and Non-apartment Spaces, The management of these premises is done either by founding a association of flat owners or signing a management contract...

Act on Regulation in Network Industries, eligible costs, fair profit, VAT...

Act on Energy, enterprising in energy sector, acces on market, reponsibilities...

Act on Heat Energy sector, municipalities have to prepare development concepts, by the end of 2006

Act on Energy Performance of Buildings, effective from 1.1.2006, certificaion 1.1.2008 – coherent with EPBD 2002/91/EC

Deatailed and relevant energy policy,Act on energy efficiency – is under consideration

~~Act on renewable energy sources – strategy of higher utilisation of RES under preparation~~

Slovak Housing Institutions

Housing cooperatives and their associations
The Slovak Union of Housing Cooperatives (former CECODHAS member)

Associations of flat owners
Association of flat owners associaitions

Flat owners

Municipalities, State – market economy, creation of conditions for housing stock renovation, municipal concepts, legislative+execuuting activities...

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Grant schemes for Housing refurbishment

Grant from State Fund of Housing development (founded in 1996)

removal of systematic defects (9 out of 12)

0.2% of 2006 budget, currently max. 50% of invesment, which is about 12€/m2

Limited budget, enormous demand

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Financing initiatives on Housing refurbishment

Situation has improved

Variety of commercial financial products for individual persons as well as for associations of flat owners, companies.

Targeted products for housing associations/cooperatives, indvidual approach

Slovak guarantee and development bank, formed by the decision of government

EBRD Credit line, combined with decomissioning fund.

High percentage of private financing, due to ownership structure

ESCOs – oriented on non-residential buildings

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Drivers and Barriers

Strengths:	The more buildings are refurbished the higher demand for refurbishment (active promotion of positive examples needed) Reformed bank sector, growing market of financial products
Weaknesses:	Income level among social housing Access to capital Complicated state support schemes, difficult requirements difficult decision making process
Oportunities:	Potential for refurbishment (778,000 flats in panel buildings) Growing energy prices Energy savings potential
Threats:	prefering new buildings to refurbishment possible change of taxtion system lack of awareness (especially smaller towns)

Thank you for attention!

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Slovak energy sector

Characterised by:

- high level of energy intensity (2,7 x higher than EU average)
- the fact that over 90% of primary energy sources are imported
- transformation of policy, regulatory and legal framework
- slowly increasing resources for necessery investments
- lack of capacity and energy awareness on the side of supply as on the side of demand

The residential sector - second largest final energy consumer - 25% share on the whole country energy consumption.
80% of total sector consumption - space heating and DHW preparation

- increasing of energy efficiency becomes of an important interest to the Slovak Republic from a political and economic perspective.

Energy prices

- cross **subsidies are removed**
- energy **prices are increased** significantly for all categories of end-users
- average **household pays 25%** of its family income for energy and housing
- according to Eurostat Slovakia is No.3 in Europe after Sweden and Denmark

Energy prices for households, 2006:
- Natural gas .... 0,36 €/m3
- electricity .....0,10 €/kWh
- heat .....14 €/GJ for DH max

-In social housing, increasing of energy prices, lack of communication and lack of awareness is leading to **mass-disconnections** from DH networks and increasing number of block-boiler rooms construction.
- Main **DH plants** are currently **under privatisation**

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Residential building sector – state of the art

Type of construction according to the thermal quality:

- brick masonry and brick-blocks buildings
- one course panels built between 1955 and 1983,
- sandwich panels built between 1971 and 1983,
- sandwich panels built between 1983 and 1998.
- other

For family houses the brick masonry is the predominantly used building material.

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Energy Efficiency and RES - Legal framework

The base legislation of the SR in the field of energy is presented by:

- **Act on Energy Management** - amended according to Directives 2003/54/EC, 2003/55/EC, 2001/77/EC and partly 2004/8/EC
- **Act on Regulation in Network Industries**
- **Act on Heat Energy** – removed from the AoEM – decentralization to the regional level
- **Act on Energy Performance of Buildings –** coherent with EPBD 2002/91/EC

Directives yet not fully implemented:

- 2004/8/EC – co-generation – MoE
- 2001/77/EC – RES electricity – MoE

•Still missing:

- Deatailed and relevant energy policy
- Act on energy efficiency
- Act on renewable energy sources

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Energy Efficiency and RES - Legal framework

- main difficulty in assessing the overall energy policy in Slovakia - **disparity** of information and policy documents
- policy - oriented towards the **supply side**, little has been done to formulate a coherent strategy for the demand side.
- action plans - developed for the transport sector and combined heat and power systems
- energy issues in other sectors such as the building sector - not dealt effectively
- a strong strategy is lacking to promote EE/RES use and contribute to the diversification and security of supply

Positive development in 2004-2005:

- **inter-sectoral commitees for discussion and commenting the process**
- **EE and RES (biomass, solar) – prioritized in new energy policy**
- **involvement of local actors in policy development**
- **supporting schemes introduced within structural funds available**
- **act on EPB, certification process under preparation**

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Residential building sector – state of the art

The numbers of the Slovak residential building stock indicates:

Total number of dwellings	**1 719 836**
No. of **apartments** in apartment buildings	**848 634** in 23 060 buildings/ **34,8 PJ heat cons.**
No. of **dwellings** in family houses	**871 202** in 568 345 buildings/ **60,1 PJ heat cons.**

The expected increase of standards of living and of level of housing comfort (in terms of heating as well as higher rate of equipment for domestic appliances) will lead to a **notable raise of energy consumption**, which should be **ballanced by implementing energy saving measures.**

The total energy consumption in the sector consists of heat energy consumption for space heating and domestic hot water preparation and electricity consumption for lighting and electric appliances.

Heat energy consumption presents 83.5 % of the total consumption of the sector.
The share of electricity consumption is 16.5 %.

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Social housing sector – state of the art

Buildings thermal quality:
- constructed according to thermal requirements set by Slovak technology standards

Buildings constructed before 1983 (first update od TS):
-Thermal insulation needed, replacement of windows, complex replacement of heating systems

Buildings constructed between 1983 – 1993 (second update of TS)
- reached the level of other European countries
- thermal insulatation recommended, replacement of windows, up-grade of heating systems with automatic control systems and thermostatic valves

Buildings constructed between 1993 – 1998
-Heating systems could be up-graded with automatic equithermic control systems

Buildings constructed after 1998
- sufficient level of thermal quality, savings could be reached by good housekeeping

Good housekeeping – necessity, as the energy awareness is low

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Social housing sector – state of the art

CEEC

- The dominant part of the dwelling stock were designed with the low thermal quality of the building envelope buildings built before cca 1990
- Significant problems represent first of all the panel buildings (poor condition of building envelope, roofs, opening structures, balconies, heating installation and distribution network)
- Panel buildings create 25-40% of the whole dwelling stock in EEC
- More than 50 % of population is unsatisfied with housing situation
- In EEC during the 90-ties prevailing part of the building stock has changed into the private ownership

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Apartment buildings – state of the art

Apartment buildings – heat energy consumption

- **85%** of all flats – supplied by district heating
- remaining **15%** – supplied by individual and local heating
- major fuels – coal and natural gas

	Apartment buildings with central heating	Apartment buildings with individual and local heating	Total
Number of flats	789 500	69 000	858 500
Total surface in m^2	63 949 500	5 589 000	69 538 500
Average annual space heating energy consumption in kWh/m^2	118.1	118.1	
Space heating energy consumption in GWh	**7 552.4**	**660**	**8212.4**
Average annual hot water energy consumption in $kWh/(m^2.year)$	51.9	51.9	
Domestic hot water energy consumption in GWh	**3 319**	**330**	**3 649**
Total heat energy consumption in GWh	**10 871.4**	**990**	**11 861.4**

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Apartment buildings – state of the art

Age of construction of residential buildings

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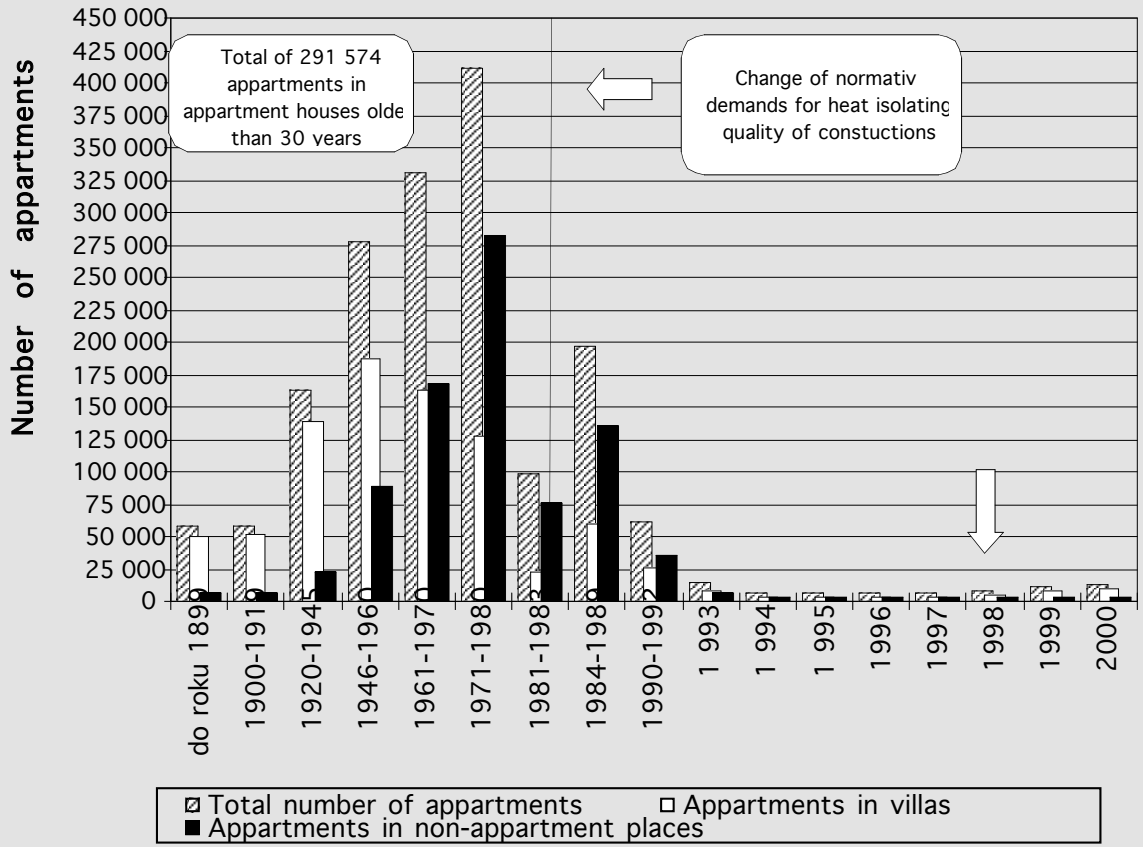

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Apartment buildings – savings potential

Total energy consumption in apartment buildings – 11 861 GWh = 42 701 TJ

- **DHW represents 30,7% of the demand, Space heating represents 69,3%**
- **Major consumer – buildings constructed before 1983**
- **Energy saving measures need to address mainly these buildings with a special focus on apartment buildings constructed before 1970.**

Energy savings potential in Slovak residential sector:

Technical potential: 53 788 TJ.....60% in CEEC
Economic potential: 17 039 TJ.....40% in CEEC
Market potential: 7 222 TJ.....20% in CEEC

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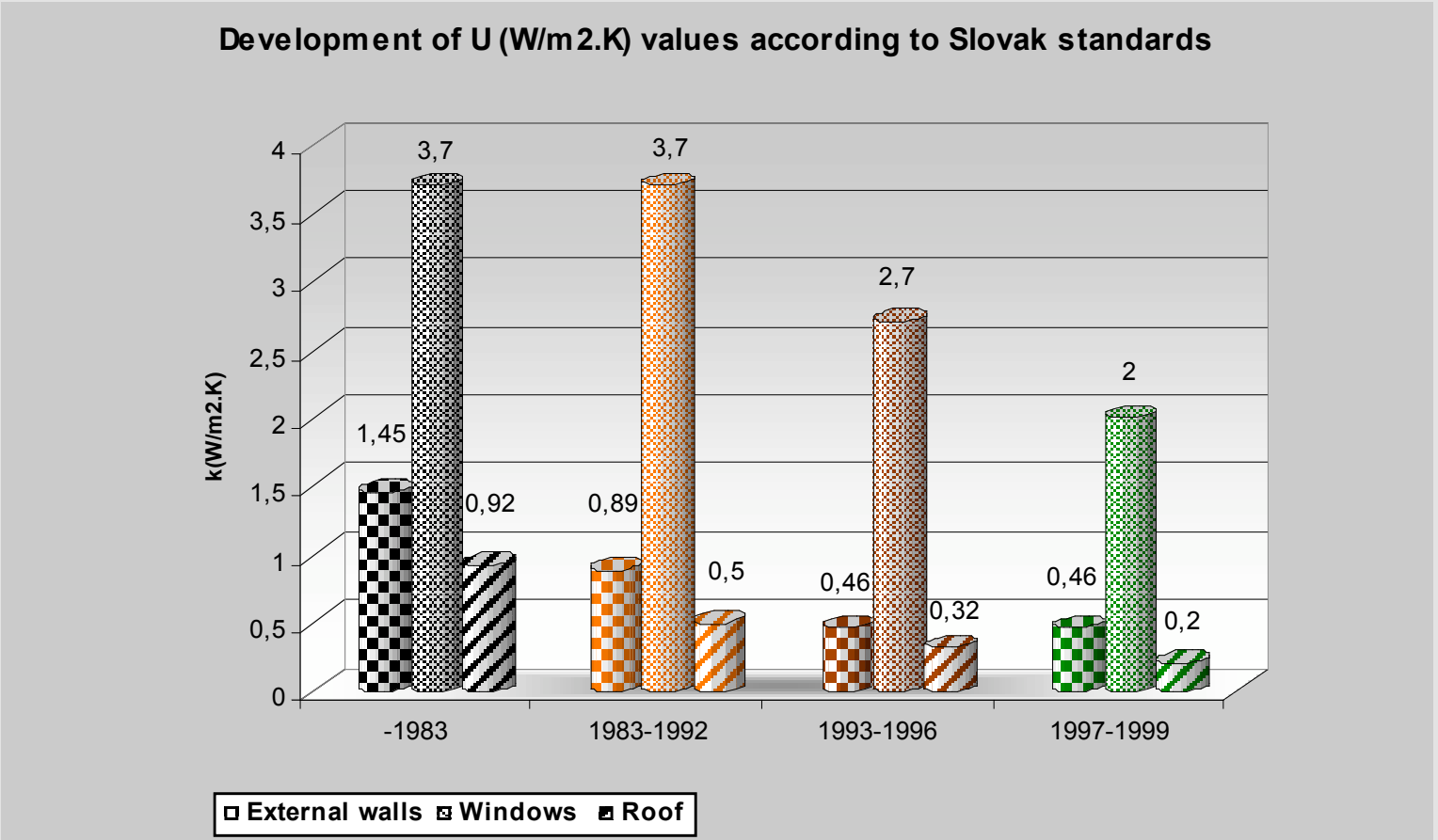
U-value development



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Financing of building sector refurbishment

Commercial Financing:

- **Loans** for Associations of Apartment Owners: investment loans, real estate credits, delivery loans and other specialised programmes of local and national FI's

- **providing of guarantee to share the credit risk of EE finance transactions -** IFC „Commercializing Energy Efficiency Finance" program of the World Bank

- TPF/EPC / few ESCO companies in Slovakia – no wider application

Non-commercial financing

- State support programs: Program of state supporting funding of the apartment building refurbishment – loans, guarantees and grants for refurbishment of apartment buildings and building of new apartment buildings.

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Energy Centre Bratislava

- Established in 1992 by the EC
- From 1997 till 1998 working as part of the Slovak Energy Agency
- In 1999 – ECB re - established as the independent NGO

ECB initiates and promotes development and uptake of energy efficiency and RES in Slovakia in following areas:

- legislation
- policy (national, regional and local level)
- energy management
- R&D
- implementation / investment projects
- awareness