



Energy efficiency in New Member States and Candidate countries. Policies, potentials and needed action

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Vienna 28-29.10.2004



The Key Areas of the EU Energy Policy

- Security of supply;
- Climate change and sustainable development;
- Effective competition and creation of an internal market;

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The EU Electricity Market Opening

- The process was started in 1996 with the adoption of Directive 96/92/EC;
- To accelerate electricity market restructuring, the European Commission proposed a new directive in 2001 (COM(2001)125 final);
- Adopted Directive (2003/54/EC) impose on Member States to give all non-domestic (i.e., industrial and commercial) electricity customers freedom to choose their electricity suppliers by 1 July 2004, and this freedom to all customers (i.e. 100% market opening) by 1 July 2007;
- New Member States are part of the EU electricity and gas markets;

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Two Neglected Energy Sources

To improve the security of supply and meet the international climate change obligation there is the need :

- To foster the penetration of renewable energy sources;
- This shall be accompanied by a prompt action to reduce demand of energy through a sharp increase of the end-use energy efficiency (also needed for the renewable electricity targets);

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End-Use Energy Efficiency

- It is a key component of the EU climate change strategy as confirmed by the European Climate Change Programme;
- Economic potential for efficiency improvement of 20%, and CO₂ emission reduction by 2010 of 10% of all the CO₂ emissions from energy use (the technical potential has been evaluated in 20%);
- In most cases CO₂ emission reduction due to end-use efficiency are at negative or low cost;
- end-use energy efficiency has also gained in importance also as alternative to new capacity after the recent blackouts.

“Faster to reduce demand than increase supply”;



End-Use Energy Efficiency

.....And still business and people do not invest in end-use energy efficiency as it expected from a rational and economic point of view (market failure):

- This is due to several well know barriers (information, financial, pay back gap, split incentives, etc);
- This is why policy makers have introduced policy measures to foster energy efficiency;



End-Use Energy Efficiency

The EE policy instrument range:

- mandatory standards for equipment and buildings;
- information, labels and certification;
- voluntary programmes, incentives, disincentives;
- mandatory DSM programmes, public utilities charges;
- public and technology procurement;

Debate about market based instruments and traditional incentives;



Selected DG JRC activities related to energy efficiency and renewables in the New MS, Candidate and Western Balkan Countries

- Electricity end-use efficiency in buildings;
- Similar project planned for RES;
- Energy service companies (ESCOs): current status and development in the enlarged Europe;



Electricity end-use efficiency in buildings in Candidate Countries: aim and objectives (1)

- Started in mid-2004, aims at developing a bottom-up end-use electricity consumption model for the building sector;
- Geographical coverage: New EU MS, Bulgaria, Romania and Turkey; it will be expanded to the Western Balkans.



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Electricity end-use efficiency in buildings in Candidate Countries: aim and objectives (2)

- Main tasks:
 - Description of the installed end-use technologies (energy efficiency, penetration rate, usage pattern, specific energy consumption, etc.);
 - Evaluation of the corresponding electricity use;
 - Estimation of the electricity savings potential;
 - Analysis of the prevalent barriers/incentives to energy efficiency, an inventory of past and current energy-efficiency activities and policies;
 - Survey of the situation regarding the development of Energy Service Companies (ESCOs).

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Electricity end-use in buildings in Candidate Countries: some preliminary findings (1)

- Expert workshop to kick start data collection process (21-22 October 2003, Ispra, Italy);
- Data on electricity use and saving potential in buildings appear to be scarce;
- Data collection: individual experts from energy agencies, academia, ministries and official sources, such as central statistical offices. Questionnaire under preparation;
- Preliminary results will be presented on a workshop in December 2004 in Brussels.

Every contribution is welcome!

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Electricity end-use in buildings in Candidate Countries: some preliminary findings (2)

- Coverage: the *domestic* sector:
 - Breakdown of electricity use according to major types of appliances; ownership levels; average specific energy consumption of appliances;
 - Serious data gaps: e.g. domestic electric storage water heaters
 - Not all appliances covered in all breakdowns, only lighting, cold appliances and washing machines
- No any data for the *tertiary* sector!

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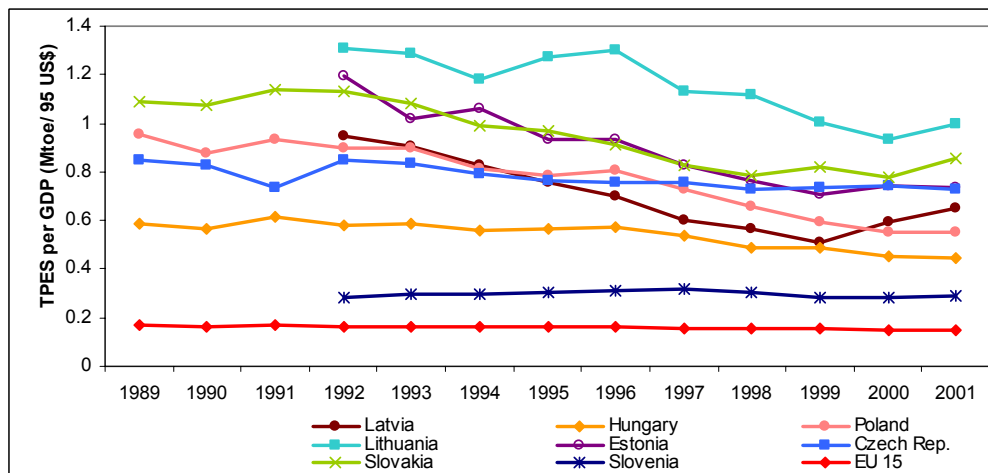
Electricity end-use in buildings in Candidate Countries: some preliminary findings (3)

- Inconsistencies in data, e.g. between national figures;
- Buildings are recognized as a prime target for an effective energy policy, however data is incomplete and systematic quality control is needed;
- This hinders the definition and prioritization of best energy conservation measures and is an obstacle to policy recommendations;
- Energy efficiency activities well surveyed;

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Energy intensities in New M.S. and EU15, 1989 – 2001 (measured at real exchange rates)

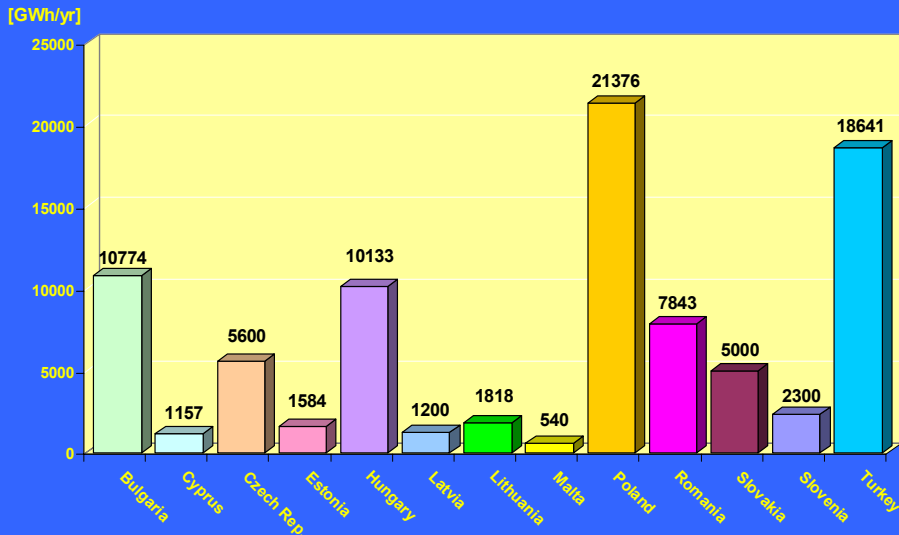


Sources of data: IEA 1999a, 1999b, 2001b, 2001c; 2002c, 2002d; 2003b; 2003c

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Electricity consumption in residential sector in 2002 [GWh/yr]

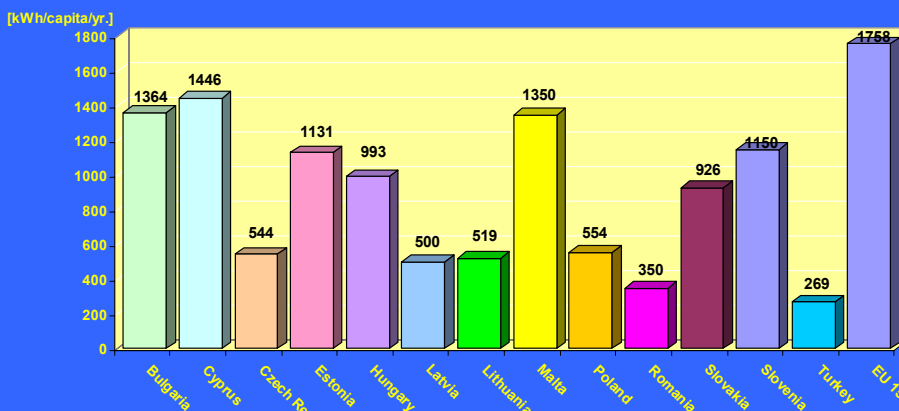


Source: "Electricity end-use efficiency in buildings in Candidate Countries", workshop Proceedings, Ispra, 21-22 Oct.2003

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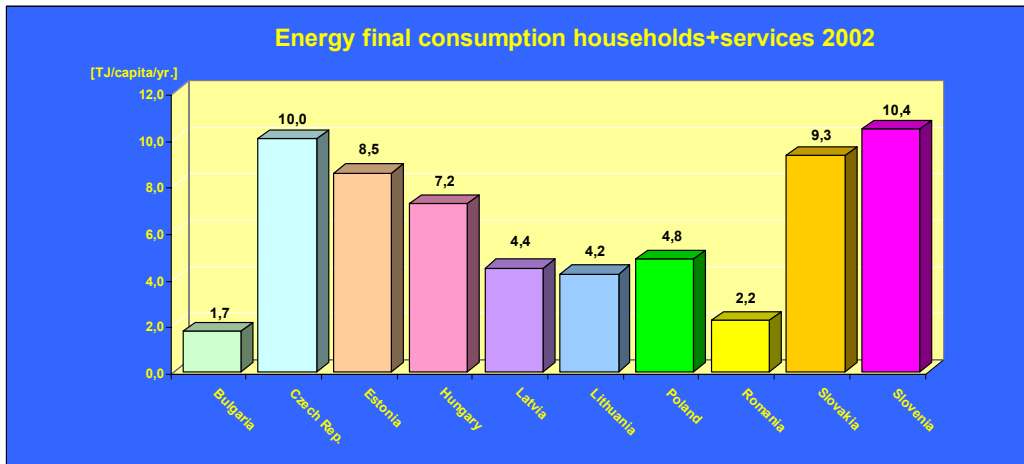


Electricity consumption in residential sector in 2002 [kWh/capita/yr.]



Source: "Electricity end-use efficiency in buildings in Candidate Countries", workshop Proceedings, Ispra, 21-22 Oct.2003

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Source ENERDATA - WORLD ENERGY DATABASE, enerCEE.net, EVA-Austria

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Electricity end-use in buildings in Candidate Countries: some preliminary findings (4)

- Electricity end-use consumption is affected by the economical situation: even in some of the countries the electricity consumption seems to be very small, this doesn't mean that the efficiency is higher. The price of electricity (which still increases in CC) is one of the main factors which affect residential consumption.
- The market for electrical appliances for households in New MS and CC and consequently the electricity consumption in the residential sector has a rising trend.
- The electric appliances market in New MS and CC changed in the last years from cheaper and less efficient products to A, B and C class appliances.
- However, the share of A, B class installed electric appliances in households is lower in New MS and CC than in old MS.

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Electricity end-use in buildings in Candidate Countries: further needs

- Find the best way/channel for collection of missing data
 - Utilization and expansion of existing sources (manufacturers' data, censuses)?
 - Develop standard methodologies for data gathering?
- Ensure continuous cross-fertilization with similar ongoing activities

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ESCO businesses: a key area

- ESCOs are the driver of energy efficiency improvement;
- Some MS more attractive for ESCOs than other (Hungary, the Czech republic among New MS):
 - Reasons for success,
 - Strategy for ESCO development,
 - Detailed analysis: most attractive sectors (in terms of project size and financing), most common technologies, average project length, financing options.

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Conclusions

- DG JRC is actively engaged in research of end-use energy efficiency potentials in New MS, Candidate Countries and Western Balkan Countries;
- Need for cooperation for electricity end-use data collection in New MS and Candidate Countries in order to compile a fact book on electricity consumption and savings potential in buildings and inform policy making for the the design of needed energy efficiency policies;
- Similar activity on RES planned;
- Ongoing research on ESCOs in Europe;

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Thank you for your attention

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