

ENERGY EFFICIENCY IN ECONOMIES IN TRANSITION (EITs): A POLICY PRIORITY

Energy Efficiency in EITs: a Sound Priority

1. Energy efficiency refers to the ratio between energy output (services such as light, heat and mobility) and input (primary energy). Energy intensity (GJ per unit of GDP) and unit consumption ratio (GJ/t of product, GJ/Sq. m) in Economies in Transition (EITs) are, despite clear progress during the last decade, still much higher than the average in Western Europe. For instance, energy intensity in the Czech Republic is 1.6 times higher and over four times higher in CIS countries like the Ukraine.
2. The estimates of the economic potential for energy saving in Central Europe are estimated to exceed 20% of the total current final consumption¹. In South East Europe and CIS, this potential is even higher, in the range of 30-50%.
3. Increasing energy efficiency will assist EITs in improving business competitiveness and consumers welfare (especially in the context of energy price increases), and shift activities to more sustainable directions. It generates environmental benefits through reduced emissions of greenhouse gases and local air pollutants. It also stimulates new services, creating value and local jobs.
4. The combination of new technologies with higher efficiency, programs to deploy them, and rational markets will maximise their impact. Improving energy efficiency both by reducing quantities of energy consumed and by changing processes, offers a powerful tool for achieving sustainable development by reducing the need for investment in energy infrastructure and by cutting fuel costs. Lower demand for energy will reduce energy security concerns and will improve commercial competitiveness. Furthermore, the enforcement of the Kyoto Protocol and the EU Greenhouse Gas Emission Trading Scheme (EU ETS) stands to benefit energy efficiency because it is an effective and economical policy tool.
5. Overall, improving energy efficiency allows countries to transform the constraints of energy dependency, insecurity, inequality, high prices and bills, and environmental and health damages into multiple benefits. Therefore, sound energy policies should aim at making an energy efficient economy a central priority.

The Need for an Integrated Approach

6. Energy efficiency needs to be integrated in the overall policy framework and therefore government should develop and implement:
 - general energy policy (supply and demand) and subsequent regulation,
 - energy efficiency support policy including institutional framework and sectoral policies.
7. Energy efficiency is generally integrated into the national energy policy, which establishes the objectives and priorities of the country in the medium-term. Improving energy efficiency towards Western European levels is a general objective for EITs. It must be supported by other policy objectives, such as pricing reforms.
8. A prescriptive legislation (e.g. energy law) and measures implement the energy policy objectives. Regulatory reforms and sector restructuring generally play a crucial role in promoting energy efficiency. On the demand side, the price adjustment, tariff reforms and removal of direct subsidies and cross-subsidies in order to achieve cost covering pricing are the driving forces to motivate consumers to use energy more rationally. On the supply side, the introduction of market prices together with the restructuring of the sector and the lower energy demand have led to the gradual elimination of the least efficient generation and transport infrastructure. Separating monopolistic activities (unbundling) such as transmission and distribution facilitates the development of energy efficiency customer policies². For instance, independent distribution companies have more incentives to provide demand management services to increase customer satisfaction than in a vertically integrated industry.
9. Market forces and good information can accelerate energy efficiency improvement, but market failures and barriers can inhibit efficiency gains. In such cases, government intervention may be necessary in focusing

¹ World Bank Energy Efficiency Action Plan in the Czech Republic (1999) and Slovak Energy Efficiency Action Plan (2002) which is available on: www.ecbratislava.sk

² Detailed analysis on the IEA Demand-Side Management Programme (<http://dsm.iea.org>) and article "Energy Policy Analysis of Energy Efficiency and Load Management in Changing Electricity Businesses" (E. Vine, Energy Policy, 2003)

market interest on energy efficiency. The role of the government proved to be essential in the design of an energy efficiency support policy and related action plans. Ultimately, the actions of individual companies and customers are crucial. Generally, the objectives are implemented through a specific energy efficiency legislation. But government intervention must be designed to reinforce market segments to achieve their objectives as they will further distort markets.

10. Energy efficiency policy defines the means and institutional set-up, identifying the responsibilities of state bodies and their co-ordination with users and other organisations (professional organisations, NGOs). The government separates its responsibilities between policy (ministry) and implementation and monitoring through an independent energy authority which can also cover environmental issues.
11. The main measures of an energy efficiency action plan include:
 - Information and awareness,
 - Assessment and monitoring (data and indicators, energy audits and feasibility studies),
 - Regulation (e.g. codes and standards for buildings, appliances, vehicles...etc, procurement),
 - Market mechanisms (integrated resource planning, energy performance labelling)
 - Support mechanisms (e.g. developing ESCOs, voluntary agreements...etc)
 - Tax mechanisms (e.g. reduced VAT for energy efficient appliances, accelerated depreciation, energy and/or carbon tax...etc),
 - Funding mechanisms (e.g. revolving funds, third party financing, clustering small projects into investment portfolios),
 - R&D (including pilot and demonstration projects).
12. Of the same importance, the action plan defines the targets, details the objectives and calendar for implementation with the roles for each organisation clearly identified. Constant monitoring and evaluation are crucial in adapting the action plan to changing environment and experiences.
13. The best results from energy efficiency programs occur when they are directly embedded into sectoral policies for energy sector, buildings, transport and industry as well as for transversal uses (lighting, motors, CHP) by encouraging more efficient energy use and technologies. The most effective policies include measures that, together with raising the national awareness towards energy efficiency, both “push” the market (e.g.. rational prices, mandatory efficiency requirements for equipment, buildings and vehicles) and “pull” the market (e.g.. incentives such as labelling). In addition, energy efficiency should be integrated into governmental policies on environment, urban planning, regional development and social issues.

The Challenges of Energy Efficiency in EITs: Ambitious Objectives but Not Prioritised

14. The large majority of EITs have developed ambitious objectives for energy efficiency to reach the EU energy intensity levels in the medium-term. Meeting this objective will require a sustained strong reduction of the energy intensity in all major consuming sectors.
15. **However, the resources allocated to energy efficiency remain largely insufficient to implement these ambitious objectives.** End-use data and indicators remain insufficiently developed to identify priorities and monitor developments. Supply oriented policies remain dominant whereas energy demand management has not received sufficient priority. As a clear illustration, energy agencies in EITs with responsibility of most implementation of the energy efficiency policy, have remained relatively small and have limited intervention programmes. For instance, the Czech Energy Agency (CEA) has a staff of only 20 and an annual budget of € 3 million to develop a broad set of activities and programmes in order to abate an energy saving economic potential of 5 Mtoe as well as inform and advise a population of 10 million. Therefore, the impact of CEA’s programmes, for example in industry, has been limited to 0.05% of the annual energy consumption³. In Poland (39 million inhabitants), Kape (National Energy Conservation Agency) employs less than 20. As a comparison, Novem (the Netherlands Agency for Energy and Environment) has a staff of 500 and manages a budget of over € 300 million (energy represents 60%).
16. Thus, energy efficiency in EITs suffers from an imbalance between a large energy saving potential and insufficient resources allocated to policies, institutions and financing to reach the objectives. The experience of energy saving programmes in Western Europe show that even a more limited energy saving potential requires a sustained policy and adequate resources. Adequate and skilled staff proved determinant for the effective design, implementation and monitoring of these policies.

³ See Czech Rep. Energy Policy 2001 Review (IEA, p 31-43), free download from: www.iea.org/dbtw-wpd/textbase/nppdf/free/2000/czech2001.pdf

17. Governments should make energy efficiency a higher policy priority and allocate adequate resources to institutions and programmes if they wish to reach their ambitious objectives. This effort will pay for itself thanks to the large benefits of energy efficiency.

18. However, some EITs place higher priority on energy efficiency. Hungary has integrated energy efficiency in the medium-term economic development plan (Szechenyi plan, 1999) with a significant effort to allocate resources for an integrated organisation (Energy Centre Hungary) and sectoral programmes, notably to retrofit housing. In 2002, the Slovak government, with the support of the World Bank, developed an ambitious energy efficiency Action Plan 2002-2012¹ which foresees substantial state financial support for institutions and programmes. Slovenia adopted in 1996 a programme aiming at improving energy efficiency by 2% annually. The Energy Efficiency Agency implements most of the programme with a state financial support of € 5.3 million (2003). The three Baltic States, Bulgaria and Ukraine have adopted and are actively implementing energy efficiency action plans.

IEA Contribution

19. The International Energy Agency (IEA)⁴ has developed an energy co-operation programme for economies in transition. The work is designed to help countries in achieving market-oriented, energy-efficient policies and increase energy security.

20. Energy efficiency has been identified as a policy priority for EITs. Furthermore, energy efficiency can contribute to the enhancement of domestic and regional energy security.

21. For this purpose, and in order to foster the development of ambitious and effective energy efficiency policies in EITs, the IEA has developed a set of activities, including:

- Statistical harmonisation: supply and demand data, and energy efficiency indicators,
- Policy and energy efficiency reviews and advice,
- R & D through Implementing Agreements (IAs)⁵ on Energy End-Use Technologies,
- International collaboration (policy co-ordination, standards).

The following table summarises the activities on energy efficiency in the 26 IEA Member Countries (including the Czech Republic and Hungary) and in EITs:

	IEA Members	EITs
Energy data and indicators	. Annual energy balances (latest: 2002) and statistics . Energy efficiency indicators . "Oil Crises & Climate Challenges - 30 Years of Energy Use in IEA Countries" (2004)	. Energy efficiency indicators for the ECS/PEEREA (2003 Kiev meeting)
Energy Policy Reviews <i>including energy efficiency</i>		
National	<i>Every 4 years:</i> Hungary (1999*, 2003), Czech Republic (2001*, 2005)	Russia Energy Survey (1995, 2002) Slovakia (1997, 2005)
Regional		. Black Sea (2000) . Baltic Energy Efficiency Group . South East Europe (2006)
Energy Efficiency Analysis	- Publications: . "The Power to Choose - Demand Response in Liberalised Electricity Markets" (2004) . "Energy Efficiency Up-date"* (Hungary-2001, Czech Rep.-2003) . Contribution to the IEA 2002 & 2004 World Energy Outlook (alternative scenarios) . "Energy Efficiency Initiative" (1997, Vol. I and II)* - IA "Energy and Environmental Technologies Information Centres (EETIC)": CADDET-Energy Efficiency and GREENTIE-Renewable Energy	. Covers most of EITs . Information available to EITs

⁴ The IEA was founded in 1974 in the wake of the first oil shock. It is an independent organisation within the framework of the Organisation for Economic Co-operation and Development (OECD). Its core mission is to meet energy supply disruptions. Over the years, the Agency has extended its tasks to include extensive gathering of statistics, analysis and projection of energy market trends, the promotion of energy efficiency and involvement in energy-related environment issues, especially climate change (www.iea.org/dbtw-wpd/Textbase/about/index.htm).

⁵ Include the following IAs "CADDET Energy Efficiency", "Buildings and Community Systems", "Energy Conservation and Emissions Reduction in Combustion", "Demand Side Management", "District Heating and Cooling" (www.iea.org/dbtw-wpd/Textbase/techno/index.asp).

	IEA Members	EITs
Energy Efficiency Workshops (<i>extract</i>)	. "Cooling Buildings in a Warming Climate" (June 2004) . "Enhancing Demand Response in a Liberalised Market" (March 2003) . "Save Electricity in a Hurry" (June 2003)	Open to EITs
Transversal		
Energy Efficient Appliances	. "Cool Appliances, Policy Strategies for Energy Efficient Homes (2003) . "Stand-by Power" (2001)* . "Labels and Standards" (2000)* . Stand-by Power Initiative (1W)	CEEC Appliance Policy Project: - Stage 1 (2002): project report, Berlin Workshop* (November) - Stage 2 (2003): with Novem and 6 CEEC Energy agencies: Project Meetings (15-16 May 2003, EC, Brussels and 29-30 September 2003, Turin) Project web page: www.ceecap.org
Lighting	. Forthcoming IEA Publication on Energy Efficient Lighting	Co-operation with IFC/GEF Efficient Lighting Initiative
Financial schemes	IA "Demand Side Management" (Task X: Performance Contracting)	. "Regulatory Framework for Energy Third Party Financing in Central Europe" (Budapest, 2001) and note on Poland . CD-ROM "Guide to Energy Services Companies in Central and Eastern Europe"
Sectoral		
Buildings	. Co-operation Agreement "Buildings and Community Systems" . Joint IEA-OECD programme on "Sustainable Building": 3rd International IEA-OECD Workshop (Jan. 2004)	
Transport	. Publications: including "Saving Oil and Reducing CO ₂ Emissions in Transport"* (2001) . IA "Energy Conservation and Emissions Reduction in Combustion"	
District Heating and CHP	IA "District Heating and Cooling"	Policy Initiative on District Heating in EITs, Priorities and Best Policy Practices: . Regional Round Table (Paris, December 2002) & Conference (Prague, February 2004) . "Coming in from the Cold - Improving District Heating Policy in Transition Economies" (2004)
Industry	IA "CADET Energy Efficiency"	

IA: Implementing Agreement

ECS/PEEREA: Energy Charter Treaty/Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects

*: Free download from: www.iea.org/dbtw-wpd/Textbase/publications/newfreesearch.asp



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Web page: www.iea.org / Information Centre / Energy Efficiency

The Energy Efficiency Update by Country: same page

Implementing Agreements: [/www.iea.org/dbtw-wpd/Textbase/techno/index.asp](http://www.iea.org/dbtw-wpd/Textbase/techno/index.asp)

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District Heating Policy Initiative: same page

Baltic Energy Efficiency Group: www.ens.dk/sw1559.asp