Ending wasteful energy use

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in Central and Eastern Europe

An essential step for climate change policy in a competitive EU-25

September 2004

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Foreword

The volume of energy we squander is prodigious …Energy-efficiency gains could actually save more oil than could be found in the ground, and at lower cost than the average market price for oil. If we reduced energy intensity by just 3% a year, we could meet world demand in 2100 with only a quarter of the energy used today.
Michael Meacher, July 2004 (on "The End of Oil", by Paul Roberts)

In this moment it is crucial for new Member States to start making use of their enormous potentials for efficient use of energy. Community-wide support is needed both for transition to a competitive market based energy supply sector and large-scale improvement of energy uses – social sustainability being the most difficult constraint of both processes.
Dr. Mihael G. Tomsic, Jozef Stefan Institute, Slovenia
(former Energy Minis)

If we use the patterns of today, China cannot double its economy. We would need the energy of Mars or other planets… The key to our future will have to be greater efficiency.
Chen Jinhai, Director, Energy Commission, Shanghai Province, China

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Executive Summary

Energy waste is an unfortunate legacy of centrally planned economies and in many Central and Eastern European countries it has resulted in the highest energy intensities in the world. In the countries analysed in this report, the transition to market economies and the reduced dominance of heavy industry have both contributed to a reduction of these historic inefficiencies. However, as can be seen in the old Member States, relying solely on market forces will not lead to a truly efficient and sustainable energy economy without a decisive policy intervention.

Energy use per unit of Gross Domestic Product (GDP) in all countries in the Central and Eastern Europe was, and remains, far higher than the EU average. The Central and Eastern Europe average energy intensity was around 4 times higher in 1989, while some 11 years later, the energy intensity was still on average at least double that of the EU (according to independent data provided by the Central European University of Hungary). Furthermore, according to the EU energy forecasts, this higher level of energy intensity is expected to remain well into the future unless bold energy efficiency policy measures are taken.

The European Commission conservatively estimates that by using currently available technologies, 20% of the EU 15's energy consumption can be saved at no cost. In Central and Eastern Europe the saving potentials are even higher as the countries in the region use twice as much energy per unit of GDP. Conservative estimates suggest that 30% of energy can be saved economically, even considering the region's lower energy prices. The further harmonisation of the enlarged EU's energy prices will increase this potential.

Despite this, measures on a regional, national and local level have not been effectively introduced to capture this potential. All too often energy efficiency measures are not given the priority they need. In addition inadequate funding, lack of staffing and failure to implement national and EU regulations have resulted in slow progress in this fundamental area.

In preparing countries of Central and Eastern Europe for the accession to the EU, negotiations have focused mainly on market liberalisation, with insufficient attention given to environmental and energy demand implications of energy market reform.

In addition, the few policies on energy efficiency that new Member States have been asked to implement as part of the *acquis communautaire* (such as energy labels and standards) in the run up to accession, were already in dire need of attention and updating in existing Member States. Consequently they are far less effective than expected.

In some cases, such as the energy efficiency in Buildings Directive, the policies they are implementing are simply insufficient within the context of the urgency of an ambitious climate policy, which requires large greenhouse gases reductions. Such reductions will be required to keep climate change below the threshold of a 2-degree Celsius increase above pre-industrial temperatures and avoid the most catastrophic consequences on humanity and wildlife.

The enlargement of the EU will enable new Members to further access structural funds over the period 2004–6 (€ 22 billion have been earmarked for new Members). However, there is little indication that energy efficiency will be prioritised. **Structural funds have largely been used to date for investments in new infrastructures, electricity and gas interconnections, and not energy efficiency programmes.**

The lack of EU funds is even more striking given that this region's high energy intensity is not only a problem for environmental protection, but also for these countries'economies and their foreign debt. Both local household welfare and the economic competitiveness of the Union as a whole would also benefit from an improvement in energy efficiency.

Consequently, ambitious new policies and measures must be rapidly implemented and enforced across the EU and in particular in Central and Eastern Europe to enable efficiency improvements to be urgently achieved. **An EU-driven aggressive energy conservation and efficiency policy will benefit both the region's and the EU's economic competitiveness and security of supply**. Energy efficiency policy can also benefit the job market. In Slovakia alone, energy efficiency measures proposed in this report could lead to the creation of up to 10.000 jobs.

Last but not least, the pressing need for reducing greenhouse gas emissions makes this challenge even more urgent and it turns EU enlargement into a unique historic opportunity. This report identifies policy instruments that can turn energy efficiency into one of the driving forces of the overall economic and development strategy for this part of Europe.

Specific measures to capture this potential should include:

- Tax cuts and financial advantages in favour of environmentally harmful energy systems must be phased out and replaced with tax incentives (e.g. low VAT rates, accelerated depreciation and tax reductions) for energy efficiency investments in all sectors. When such tax reductions have been phased out, in the run-up to accession (such as in the Czech Republic), they should be reinstated as a matter of urgency.

- The annual 1% energy efficiency target of the draft End-use Efficiency and Energy Services Directive must be increased in order to fully reflect the existing potential for energy demand reductions. The existing target is particularly lacking for the economies of the new Member States. It is considerably lower, for example, than the target that Hungary has already set for itself in 1999 (decreasing energy consumption by 7–8% per year in 15 sectors by 2010[1]).

- EU istitutions must carry detailed assessments of the potentials for demand reduction and of the implementation and enforcement of all existing EU energy efficiency legislation and of an ambitious action plan must be undertaken.

- EU institutions must rapidly approve the Framework Directive on Eco-design of Energy Using Products and its implementing measures. Both must be ambitious and aimed at phasing out the least energy efficient products from the EU market, according to standards based on simple principles (such as the Least Life Cycle Cost approach) and updated regularly to reflect technological progress.

1) *IEA Energy Efficiency Update, 2003*.

- The EU Commission must prepare a Directive on Energy Labelling, in order to resolve the confusing situation of the future of the successful EU A-G labelling system, which is in urgent need of updating and expansion to all major energy-using products.

- New Member States have a higher level of district heating than old Member States. Priority should be given to maintain these systems and to increase their efficiency by converting more heating plants to combined heat and power facilities. EU institutions and Member States must make a concerted effort to make sure that funding for these systems is provided through Structural Funds and other EU funds.

- Cogeneration must be adequately promoted, for example through an amendment to the Cogeneration Directive, which should include targets and compulsory energy audits both on demand and supply for the growth of this technology.

- Specific programmes must be established in the current and further Structural Funds Programmes to specifically develop and fund energy efficiency initiatives. Similarly, International Financial Institutions such as the European Investment Bank, and European Bank for Reconstruction and Development must accelerate their lending for energy efficiency, especially in Central Europe.

- National Governments must carry out a review of past expenditure allocation and use it to identify past problems in the dispersal of funds. Simultaneously, there must be sufficient resources on a national level to reach the short and long-term goals of the energy efficiency action plans.

- Energy Agencies must be established and adequately staffed to give advice, knowledge and funding for energy efficiency projects on a national and local level.

- The price of energy must reflect its full economic and environmental cost. However, to assist with this reform's introduction measures must be taken to enable energy saving measures to be introduced to support the most vulnerable in society.

- EU institutions must carry out a detailed Extended Impact Assessment – specifically including their impact on energy demand – of the existing subsidies to the fossil and nuclear sectors and the Trans-European Energy Networks.

Introduction

Energy waste is an unfortunate legacy of centrally planned economies, partly because energy planning was mostly based on five-year plans and created a disincentive for savings. Consequently, many countries in Central and Eastern Europe suffered from the highest energy intensities in the world. In some Central and Eastern European countries there has been a decrease in energy use in the aftermath of the transition to a market economy, mainly due to economic slowdown and the restructuring of the heavy industry. In the 13 years before accession, many Central and Eastern European countries managed to decrease air pollution and CO_2 emissions considerably.

However, this trend may be set to change as the local population moves closer to patterns of consumption typical of Western Europe, as is occurring in the transport sector, where energy consumption has recently increased. **At the same time, the fact that the countries in the region have a much high level of energy intensity of their economies (energy use per unit of GDP) represents both a challenge and an opportunity for the Union.**

Now policy makers need to look ahead, particularly to effectively address persistent high levels of energy intensities and the high and growing per capita CO_2-emissions of the region and the need to set ambitious long-term climate change targets after 2012.

In order to achieve the essential increase in energy efficiency decisive policy intervention is needed, as is the case for the strategic items such as oil security, which cannot be fully covered by market mechanisms. In addition, markets mechanism alone will not save and maintain the few positive legacies of centrally planned economies such as good public transport and district heating systems. An EU-driven aggressive energy conservation and efficiency policy will benefit both the region's and the EU's economic competitiveness, households' welfare and security of supply. Last but not least, the urgency of reducing greenhouse gas emissions makes this challenge even more necessary.

The enlargement of the European Union will have a significant impact on the energy industry in both new and old Member States of the EU. The acceleration of the liberalisation of Europe's energy market with the implementation of the latest energy market Directives adds further changes to both the structure and operation of the sector.

The electricity sector in particular has a key role to play in the EU's climate change policy, as electricity production represents 32.5% of the Union's greenhouse gas emissions[2]. Rapid growth in electricity consumption, in the absence of adequate policies to slow it down, represents a serious threat to the Union's efforts to mitigate climate change and increases its reliance on imports of fossil fuels.

2) *EU-25 Energy and Transport Outlook to 2030, Part IV* table 4–20, European Commission 2003. By 2030 electricity and steam generation will account for 38% of total CO_2 emissions.

Despite this, in preparing for the accession to the EU, negotiations have focused mainly on market liberalisation, with insufficient attention given to the environmental and energy demand implications of energy market reform. **This is even more striking given that the region's high energy intensity is not only a problem for environmental protection, but also for their economies and the foreign debt, as they highly rely on foreign fuel imports. Both local household welfare and the economic competitiveness of the Union as a whole would also benefit from an improvement in energy efficiency.**

The recent increase in both oil and gas prices on the international markets makes this danger even more evident. As this report highlights, market reform alone will never solve this problem and without decisive and immediate action may even make the problem worse.

Energy liberalisation can have a detrimental impact on energy efficiency, with a decrease in market actors. Without safeguards being put in place, the unbundling of energy utilities can in some cases reduce the incentives for energy saving. Energy generators may no longer be energy suppliers and this decoupling can increase the incentives to produce and sell more energy[3]. A major risk of liberalisation is to have an increase of commercial offers for cheaper or even free electricity. Incentive regulations for Demand Side Management like in Italy and the UK are needed to provide a win-win approach and reward suppliers for increased efficiency for supply, transport and use.

Although some measures on energy efficiency were part of the *acquis communautaire*, these have been given far less attention than they deserved. In addition, many of the policies on energy efficiency that new Member States have been asked to implement (such as energy labels and standards) in the run up to accession, were already in dire need of attention and updating. In other cases, such as the Buildings directive, the policies they are implementing are simply insufficient within the context of climate policy. The CO_2 savings to be gained through this Directive represent only 10% of the savings potential identified for the building sector, and even that only if properly implemented (which depends on the actions of Member States). **There have even been cases in which joining the EU has meant abandoning useful policies for the promotion of energy efficiency.** For example, in the run-up to accession, the Czech Republic has abandoned a subsidy scheme for promoting the purchase of some efficient products.[4] Another example is the fact that EU-mandated liberalisation has led to utilities abandoning previously existing demand side management programmes.

The European Union's stated pillars for energy policy are security of supply, market liberalisation and environmental protection. To date, these core requirements have not been given equal status and environmental protection has too often been given a lower priority. In order to meet the EU's climate commitments, and to prepare for the challenge of meeting the deeper greenhouse gas reductions that will be needed in the coming decades, the balance must be re-addressed. However, this does not need to be at the expense of security of supply or market liberalisation, as the more efficient use of energy can address all measures simultaneously.

3) However, unbundling introduces more cost transparency at the benefit of clients and green energy.

4) Urge-Vorsatz et al., p.22.

The EU has defined an indicative long-term global temperature target of no more than 2°C above pre-industrial levels[5]. The German Advisory Council on Global Change has also recently proposed the same global temperature target and a CO_2 concentration target of 450 parts per million of CO_2 (ppm), based on an extensive evaluation of limits to climate change for ecosystems, food production, water availability, economic development and human health[6]. In order to achieve this, the world will have to reduce emissions far more substantially than the 8% by 2008–2012 mandated (for the EU) by the Kyoto Protocol. In this context, a massive boost of energy efficiency and conservation is required globally.

Some Member States have already begun this process, the United Kingdom has adopted a 60% long-term emission reduction target and Germany aims at a 40% target (from 1990 levels, by 2050 and 2020, respectively). Likewise, the Netherlands has suggested a 40–60% emission reduction for Western Europe as an indicative target.

These targets could be the basis for the global post-2012 climate change negotiations, starting in 2005, when energy efficiency must become an even more crucial part of the solution.

This is why, this report argues, the European Union is facing a unique historical opportunity to boost its energy efficiency policy to the benefit of the enlarged Union's economy, competitiveness, household welfare, security of supply and – last but not least – its climate change commitments.

This report is mainly focused on five key countries: Poland, the Czech Republic, Slovakia and Hungary (referred to as Visegrad countries) and Slovenia. The first four have been chosen because similar historical developments have led to comparable trends in energy intensity and energy demand developments. Slovenia is also an interesting case study because it is the only country in the region that is not in line with achieving its Kyoto target[7].

5) Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down in the *Sixth Environmental Action Programme of the European Community*, OJ L242/1, 10. 09. 2002.

6) WGBU (German Advisory Council on Global Change) *Climate Protection Strategies for the 21st Century: Kyoto and Beyond* Special Report, Berlin, 2003.a.

7) EEA *Greenhouse gas emission trends and projections in Europe 2003 – Tracking progress by the EU and acceding and candidate countries towards achieving their Kyoto Protocol targets* Environmental issue report no 36.

8) In Hungary the level of primary energy intensity fell by around 3.5% per year in the early 1990s and in Poland it fell by 3.8% per year. Over the time period studied there has been some convergence of energy intensity levels within the region. In 1992 there was a four fold difference which has now decreased to a three fold difference between Slovenia, the most efficient user of energy, compared to Lithuania.

9) *European Energy and Transport Trends – 2030*, part 4, page 109, European Commission, 2003.

10) Urge-Vorsatz et al., Figure 5, page 14.

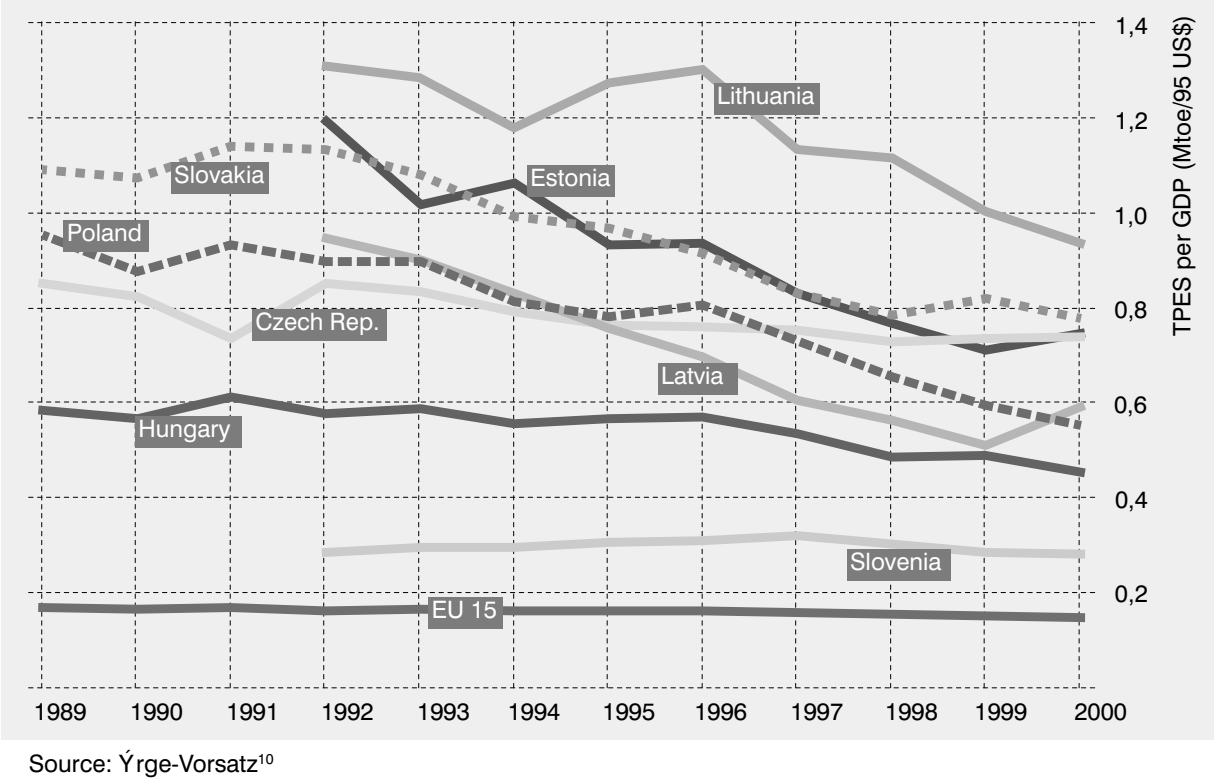
1. Current Energy Situation

1.1 Energy Intensity

Historically, from an energy perspective, countries in Central and Eastern Europe and the former Soviet Union have very inefficient economies. This was in part due to the practice of five-year plans (which led to an overestimation of energy needs), artificially low prices, poor performance standards, the lack of incentives and mechanisms to save energy or improve its use and also to the structure of the economies – reliant on very energy intensive industries. As a consequence the energy use per unit of GDP in all countries in Central Europe was, and remains, far higher than the EU average. This can be seen in the graph below. The difference between the EU average and CEE average was around 4 times higher in 1989, while some 11 years later, the energy intensity was still on average at least double that of the EU (according to independent data provided by the Central European University of Hungary)[8]. In some countries the energy intensity decrease is due to changes in the economic structure. In Slovenia, for example, the increased GDP is mainly a result of a rise in services, notoriously not energy intensive, while the energy intensity of old industries and power plants has not changed significantly and in some cases has even increased.

According to the EU energy forecasts this higher level of energy intensity is expected to remain well into the future in the absence of policy intervention. By 2030 newly accessed countries, in the absence of specifically targeted policy measures, will still have twice the energy intensity of EU-15[9].

Fig.1: Energy Intensity of Economies in CEE 1989–2000



Source: Ýrge-Vorsatz[10]

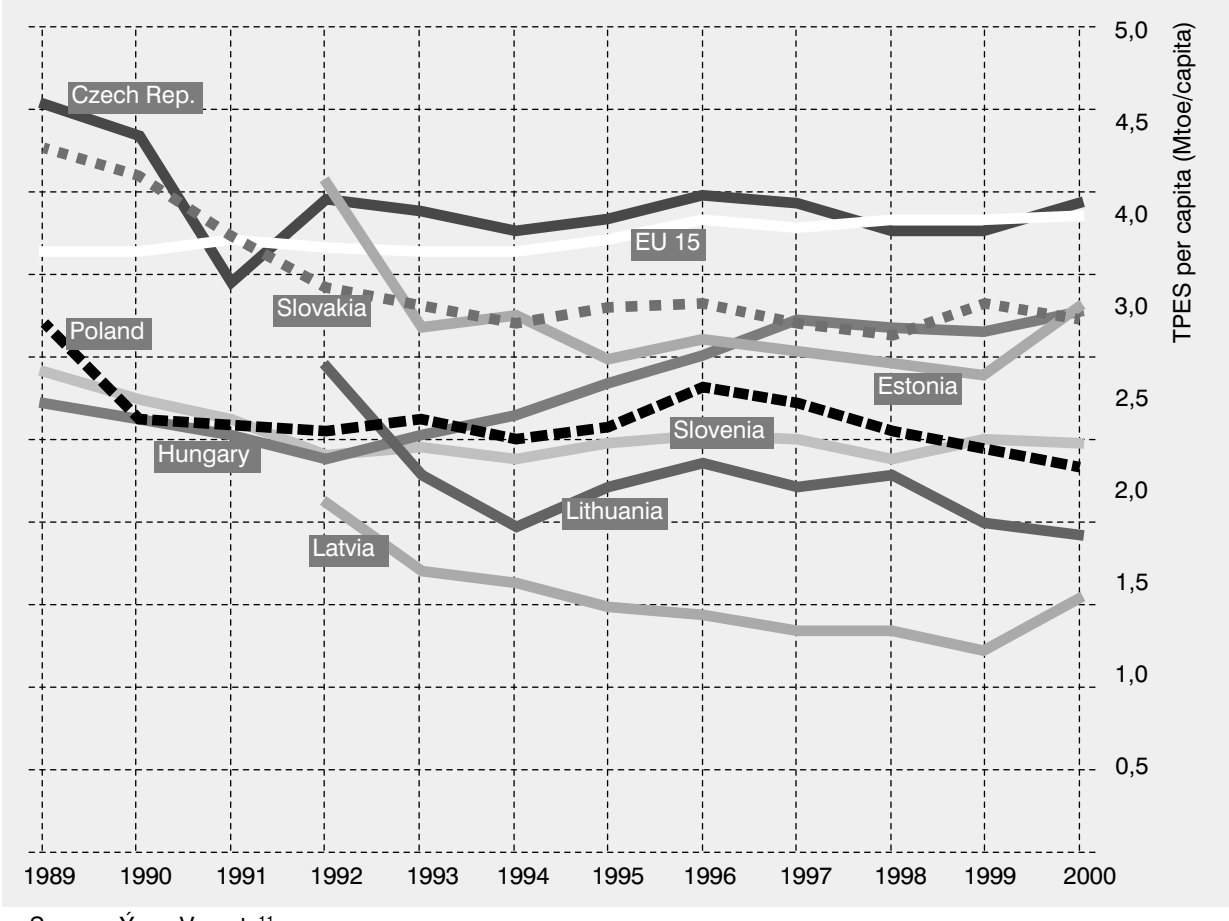
Paradoxically, despite the inefficient use of energy in comparison to economic output, less energy is used per person in most former accession countries than in the EU. This is due to a number of reasons including lower consumption of energy for transport, smaller housing, higher occupation of housing and lower use of appliances. This can be seen in the graph below.

However, this may change as households in the region move towards lifestyles more similar to those of citizens of the EU-15 and with the growth of the service sector (as in the case of Czech Republic, where in 2003 electricity consumption has reached its historical maximum).

While in some cases the replacement of old appliances with new, more efficient ones, may be positively affecting efficiency, this may be offset by the increase in the number of products per capita. This trend underlines the need for a very clear and ambitious policy to promote only the most efficient appliances on the EU-25 market and to establish minimum standards and quality labels for all relevant products (see below, 5.9).

11) Figure 3, page 16.

Fig. 2: Energy Use per Capita



Source: Ýrge-Vorsatz[11]

1.2 Trends in Energy Consumption by Sector

The table below shows the changing energy pattern in the countries studied. The political changes and subsequent economic decline in the early 1990s resulted in a considerable decline in energy consumption, between 1990 and 1995 there was an overall reduction of 12%. However, since then the overall level of energy use has been relatively constant (a 3% decline). However, this general trend hides some key factors, namely:

- A 30% increase in energy for the transport sector.
- A 40% decrease in energy for the industrial sector.

1.3 Fuel Mix and Infrastructure

The power generation sources for new and existing Member States differ significantly. The graph below shows the fuel mix in the power sector in the countries studied. What is clear is the dominance of coal, which generates around 60% of all electricity, in the main due to its dominance in Poland. Second is nuclear with around 23%, followed by natural gas and hydroelectric. In the coming years the dominance of coal will decrease with an expected increase in natural gas, mirroring the trends within the EU 15. It is also expected that there will be an increase use of renewable energy, as new Member States are required to increase the share of electricity from renewable energy to 22% by 2010 as part of their commitments to meeting the targets of the 2001 Directive on Renewable Energy.

Table 1: History of Energy Use in Different Sectors in Eastern Europe (in 1000 Toe)

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Czech Republic	Industry	20006	16475	17197	15055	13621	12906	12443	12538	11404	9644	10585	9496
	Transport	2804	2416	2993	2981	3247	2829	3690	3707	3818	4070	4099	4986
	Tertiary	13816	12943	10167	9243	9299	9660	9464	9305	9088	9425	9395	9590
Hungary	Industry	6528	5445	4404	4196	3909	3812	3964	3687	3666	3508	3489	3570
	Transport	3015	2676	2602	2591	2593	2653	2658	2784	3069	3257	3251	3399
	Tertiary	9215	9540	8384	8509	8659	8696	9247	8695	8539	9089	9058	9419
Poland	Industry	25232	22652	20762	21644	21180	22720	24182	23911	21111	18450	18886	17358
	Transport	7338	7535	7718	7582	7968	8256	9256	9637	9509	10673	9185	9161
	Tertiary	26984	29854	30535	35080	32754	32438	32761	31729	29758	29720	27503	29677
Slovakia	Industry	5841	5229	4760	2701	3077	2668	2325	2477	2352	2361	2499	4306
	Transport	1676	1391	1382	1240	1375	1509	1381	1583	1594	1602	1549	1409
	Tertiary	5535	5094	4897	4191	4160	4066	4491	4182	4885	4523	3557	5183
Slovenia	Industry	1468	1304	1152	1129	1224	1179	1189	1222	1166	1212	1423	1322
	Transport	928	856	885	1069	1191	1326	1496	1562	1377	1311	1313	1372
	Tertiary	972	1169	1251	1380	1342	1435	1675	1686	1729	1830	1788	1832

Source: Eurostat

Although domestic coal is currently the dominant fuel, the increasing use of natural gas and petroleum products will intensify dependence on imported fuel. Reliance on energy imports represents a significant burden on these countries' economies, on households (see prices in 1.5), and ultimately on the competitiveness of the EU-25 as a whole.

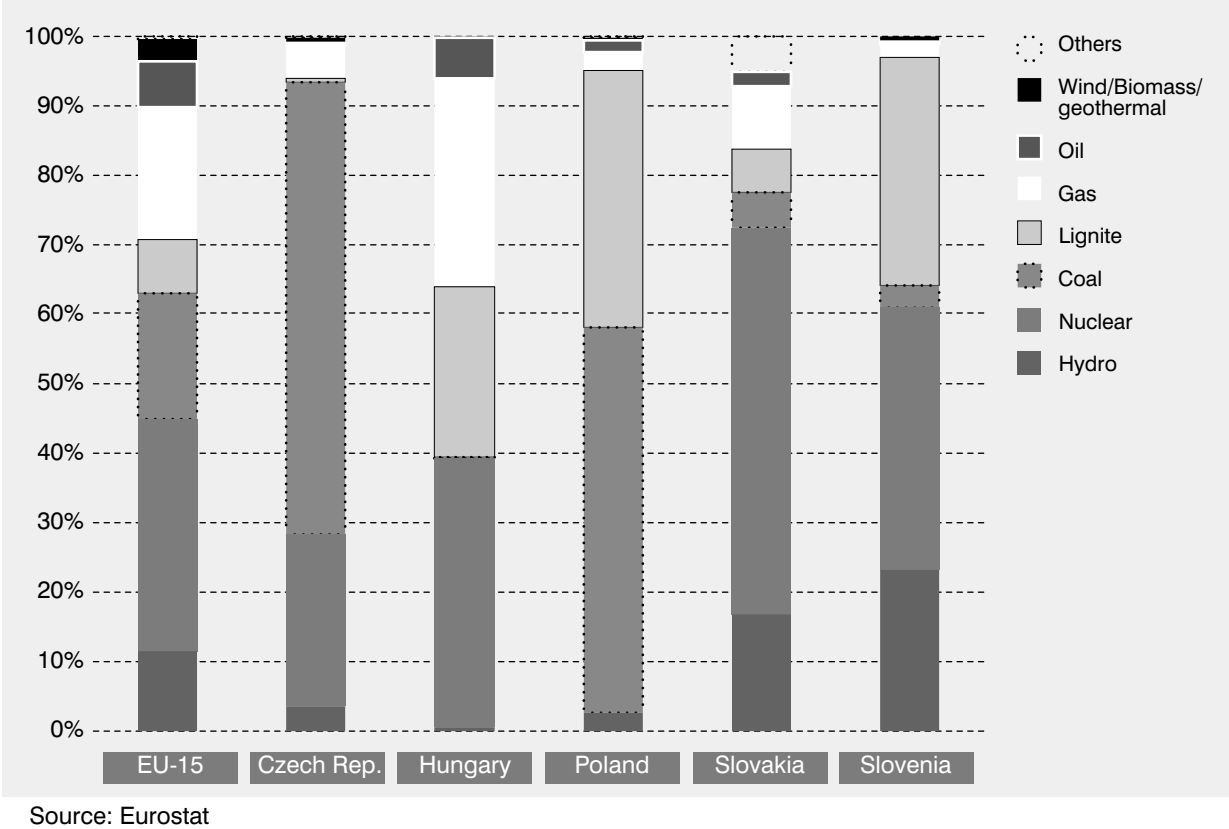
On the positive side, many countries in this region have inherited from the socialist era a well developed public transport, natural gas transport and district heating infrastructure. Part of latter is based on cogeneration, making it more efficient than individual heating systems. The maintenance and upgrade of this infrastructure should be a considered a priority for EU policy. Unfortunately, at the moment this is not the case. On the contrary, there is a trend towards individual heating use[12].

1.4 Over Capacity

Due to the rapid decline in industrial output in the early 1990s and the restructuring of the industrial sector there has been a decline in electricity use. However, this has not been balanced by equivalent power capacity decommissioning. On the contrary, in a number of cases, there has been a rehabilitation of coal stations and the completion of large new power stations (e.g. Temelin in the Czech Republic where there is significant overcapacity) – mainly of base-load. In the old Member States of the EU the average overcapacity was 26% of total installed capacity, while in new Members it is 38%. Given the continued high level of energy intensity of the region (as explained in 1.2) and the large available potentials for energy demand reduction (see below, 2.1), the real overcapacity may turn out to be even higher.

12) Urge-Vorsatz, p. 7.

Fig. 3: Generation Mix of Electricity Production



Source: Eurostat

Excessive surplus capacity distort competition as incumbents can flood markets with cheap electricity at the expense of competitors (e.g. since 2002, č EZ, the Czech dominant generator and distributor, has marginalised outsiders, mainly Combined Heat and Power producers). This may inhibit incentives to add new, more sustainable capacity, such as renewable fuel-based ones. Some parts of the utility industry and the more supply-focused parts of the European Commission's DG TREN also hope that this region will become the 'powerhouse' of Europe with plans for new high-voltage grid lines and interconnectors to Western Europe planned under the EU's Trans European Networks-Energy programme. Such plans will not only be extremely questionable from the perspective of the reliability of the European grid[13], but they will also act as a direct disincentive to boost energy demand reduction policies in this region.

1.5 Prices

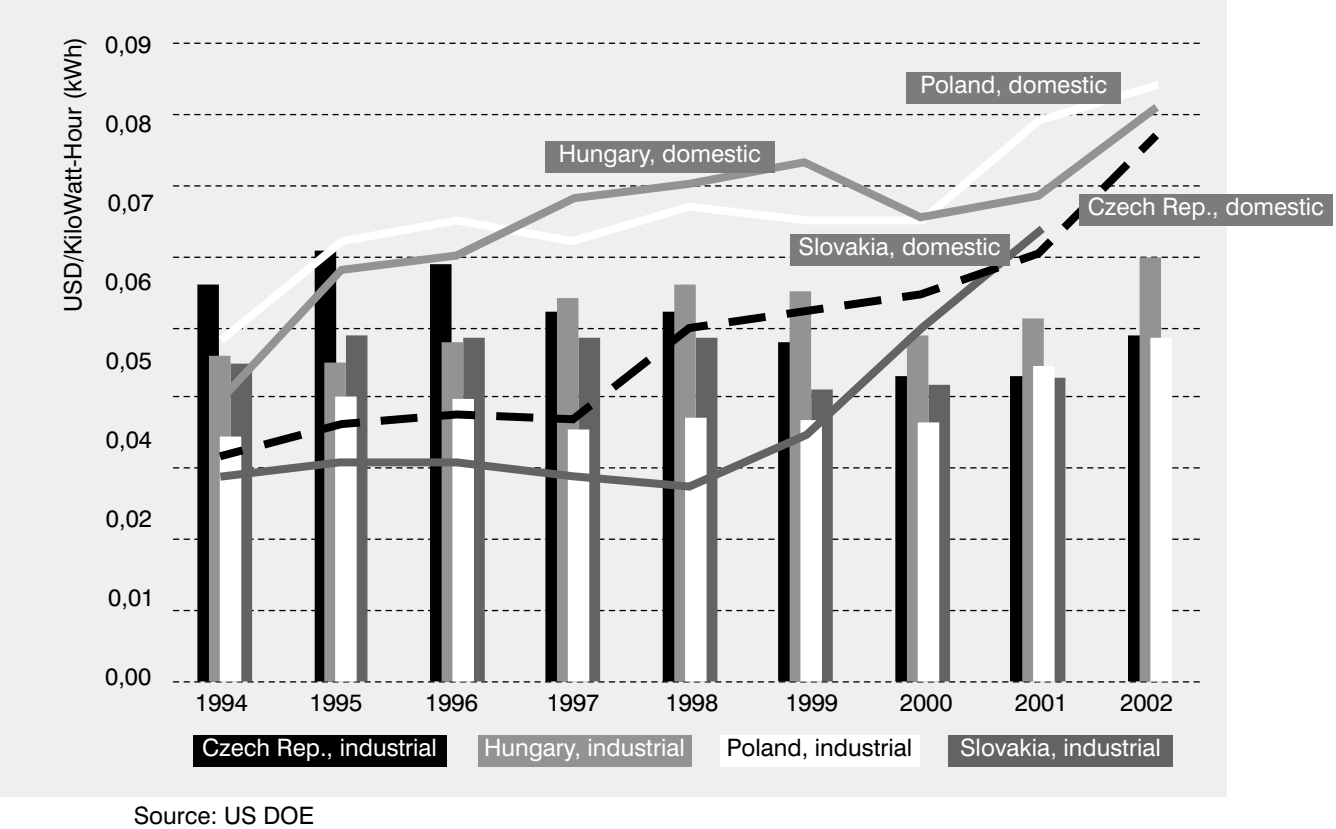
The development of electricity prices in the region for both domestic and industrial consumers can be seen in the following figure. In general in Central and Eastern Europe since 1994 the price for domestic electricity has doubled, while remained relatively constant for industrial consumers.

In 2003 the average household price for electricity in old Member States was € 15.9 cent/KiloWatt-Hour (kWh) while in new Members it was € 8.77 cent/kWh, whilst there is less difference between industrial consumers, around 30% less in new Members[14]. Although the domestic price of electricity is lower

13) C. Turmes, *Why Europe will face more US-style blackouts*, Background paper for the European Parliament, October 2003.

14) Electricity Tariffs as of 1st January 2004: Eurelectric, May 2004.

Fig. 4: Historical Development of Electricity Prices in Central Europe



Source: US DOE

in Central Europe, due to the lower household income, it requires a higher percentage of the household budget than in Western Europe. **In Central an Eastern Europe an average of 10–15% of the average income is spent on energy, compared to 3–5% in Western Europe, which can have a significant impact on the most vulnerable in society.**

Programmes are currently being developed to reach cost reflective pricing, in particular in the domestic sector. In Slovakia, the prices for domestic gas and electricity are expected to double between 2000 and 2006.

The high relative price of industrial and domestic electricity in New Members highlights the need for policy reform rather than just relying on market induced measures to achieve energy savings. An aggressive energy efficiency policy will benefit the competitiveness of the industry and it will help tackle the problem of fuel poverty in these countries. Other useful measures include abolishing cross-subsidies at the benefit of electrical heating, flat rates and introducing metering systems.

2. Energy Efficiency

2.1 Potentials

The potential for energy efficiency improvements and energy saving in the region is clear. Given the high energy intensity levels in the countries of the region, it is self-evident that there should be a very high potential for the improvement of energy efficiency. In particular, since numerous studies have highlighted a cost-effective potential in the EU-15 for energy demand reduction of around 20% (and a technical potential of around 40%), the potential in this part of Europe, where energy intensity is twice as high, should be considerably higher. **Just changing energy intensity levels in new Members to the current EU average would result in huge energy savings.** Unfortunately, detailed, publicly available and up-to-date studies on end-use energy efficiency potentials are rare in the region. One reason is the lack of consistently collected end-use energy data, which makes such research difficult and imprecise.[15]

The table below shows the ranges that the research team working on this report has been able to identify in different countries. In all countries except Hungary, the technical potential for the industry and commercial sectors was in the range of 30–56%, however, other figures are much lower and must be seen as a conservative estimate of the local potentials. **The report authors argue that the EU should, as a matter of priority, immediately start funding comprehensive studies that can gather adequate data and clarify the exact amount of technical and economic savings available in the region.**

15) This problem was also highlighted in Urge-Vorsatz et sl, 2003

16) This figure is very likely to be extremely conservative. It reflects, as stated before, the urgent need for an assessment of credible potentials by national and EU authorities.

Table 2: Energy Efficiency Potentials in Some New Member States of the EU

		Technical Potential	Mtoe	Economic Potential
Czech Republic	Industrial	209 PJ – 52%	4.9	329 PJ – 31%
	Commercial	141 PJ – 56%	3.3	
	Residential	140 PJ – 57%	3.3	
Hungary	Industrial	44 PJ – 12%	1.0	n/a
	Commercial	4-6PJ – 2–3%	0.1	n/a
	Residential	39-59 PJ 30–45%	1.0	10–15%[16]
Poland	Industrial	30–33%	6.5	20–30%
	Commercial	20–35%	2.1–3.4	25–40%
	Residential	35–45%	5.7–7.7	25–40%
Slovakia	Industrial	99 PJ – 48%	2.3	42 PJ – 20%
	Commercial	30 PJ – 38%	0.7	18 PJ – 23%
	Residential	60 PJ – 48%	1.42	21 PJ – 17%
Slovenia	Industrial	11.7 PJ – 45%	0.3	20%
	Commercial			n/a
	Residential			n/a

Source: WWF Country Reports

Using existing, usually conservative studies, and on the basis of current day economics – with low energy prices – the potential for energy saving is around 30% across the region. If energy prices moved towards world market prices, then the economic potential would rise significantly.

By comparison the European Commission has noted in its Green Paper on security of Energy Supply[17] that around 20% of consumption is higher than economically justified and thus can be saved at no cost or even at a net economic gain for the economy. Despite this, the European Commission has proposed, in the draft Directive on End-Use Energy Efficiency and Energy Services[18], a target of 1% decrease in energy demand in certain sectors per year between 2006–12. This, in the context of the large available potentials and the urgency of tackling climate change and security of supply, is to be considered unambitious. This target is considerably lower, for example, than the target that Hungary has already set for itself in 1999, of decreasing energy consumption in 15 sectors by 7–8% per year by 2010.[19]

2.2 Opportunities

The recognition of the potential for energy efficiency should have resulted in the establishment of policies, programmes and financial assistance especially in the run-up to enlargement. To date this has not occurred to the degree necessary, but the opportunities that efficiency brings have been recognised. These include:

2.2.1 Economic Imperative

As the harmonisation of energy prices occurs across the enlarged EU, and given the sustained prices of coal, natural gas and oil, the incentive to increase the energy efficiency of the economy will intensify. For example, the End-Use Efficiency and Energy Services Directive has the potential for helping to reach more than half of the Kyoto Protocol target, reducing considerably Europe's energy dependence, at a net economic benefit for the EU economy of at least € 10 billion[20].

2.2.2 Energy Restructuring and Investments

The changing ownership and structure of the energy sector will lead to management and technological changes. Under certain circumstances, and given the appropriate incentives, these can result in increased energy efficiency with the introduction to new practises and increased investment.

17) Commission of the European Communities, Communication from the Commission to the Council and the European Parliament, Final report on the Green Paper *Towards a European strategy for the security of energy supply*, COM(2002) 321 final, Brussels 26. 6. 2002.

18) Commission of the European Communities, Proposal for a *Directive of the European Parliament and of the Council on energy end-use efficiency and energy services* COM (2003) 739 final, Brussels, 10. 12. 2003 739 Final.

19) IEA Energy Efficiency Update, 2003.

20) SAVE Study, *Completing the Market for Least-Cost services*, Wuppertal Institute, 2000.

21) Vincent Berrutto and Paolo Bertoldi (dir.), *Developing an ESCO Industry in the European Union* report presented at ACEEE (American Council for an Energy-Efficient Economy) in 2004.

22) This could be substantially limited at design and use stage given the existence of proper regulation, see IEA *Things that go blip in the night*, Paris 2001; www.iea.org/dbtw-wpd/textbase/nppdf/free/2000/blipinthenight01.pdf

2.2.3 Government Policies

Targets: Across the region some Governments have recognised that efficiency improvements are essential and in some cases have set targets. In the Czech Republic the Government has a requirement for an annual decrease in energy intensity of the economy by 3–3.5%; in Hungary the target is to reduce energy consumption in 15 sectors by 7–8% a year. In Slovenia a target of 2% has been adopted, with a final target of a reduction in energy intensity of 30% over 2000 levels by 2015.

Financial Support: The recognition of opportunities for energy saving has resulted in programmes on the national and EU level. Energy Agencies can and do fund energy efficiency measures, which have had a positive impact.

2.2.4 District Heating

In Central and Eastern Europe district heating supplies around 40% of residential homes, compared to only 10% in the EU. The use of district heating usually results in increased energy efficiency. However, in Central and Eastern Europe a smaller percentage of district heating facilities are combined heat and power plants (52%, compared to the EU where there is 67%), which offers a further opportunity to increase the efficiency of the heating sector. Furthermore, in Central Europe the metering system in many households is based on the size of accommodation rather than usage with little incentive to reduce consumption. The introduction of adequate metering systems is fundamental to improve the economics and energy efficiency of the heating sector. ESCOs (Energy Services Companies) and third party financing have proved an efficient and sustainable financial ways to restore and develop systems with greater energy efficiency as has been shown in Hungary[21]. **In addition, EU funds such as Structural Funds and other financial tools (e.g. European Investment Bank) should be used for refurbishing this infrastructure.**

2.3 Threats

2.3.1 Trends threatening increased energy use

Growth in Transport Sector: The use of the car for private transportation and trucks for freight are increasing at a faster rate than in the EU. This will result in an increase in the use of oil products in the transport sector, more pollution, accidents, infrastructure congestion and degradation.

Growth in Domestic Sector: Energy use per capita in the domestic sector is low, in comparison to existing Member States. This trend is expected to change with the forecast increase in number and surface of households, greater use of electrical equipment, such as clothes dryers, air conditioners, additional televisions and increased use of equipment with stand-by power (that cannot easily be completely switched off[22]).

Growth in Service Sector: In most new Member States the service sector is expanding with increased use of electricity and energy for heat and cooling and an increased use of electronic equipment.

2.3.2 Market Conditions

Long pay-back times: The lower price of energy reduces the financial attractiveness of energy efficiency as it increases the pay-back time for investments.

2.3.3. Lack of Coherent and Ambitious National Strategies

Energy efficiency suffers from insufficient political support and tends to be given lower priority. Furthermore, the implementation of policies on energy demand is complicated, as it requires actions across the administration and large sections of society and not just in the energy

sector and therefore needs further institutions and financial support. A number of key elements are needed:

- Make energy efficiency a core priority of the national energy strategies/policies and develop a specific Energy Efficiency Action Plan with sufficient resources for action on a national and local level as well as for sectoral programmes. Such action plans have been developed, such as in the Czech Republic and Slovakia, but not implemented in a satisfactory way.
- Appropriate legal framework.
- Action on different levels of government: national, regional and local.
- Increasing levels of awareness, about government policies, technical expertise, funding possibilities and reasons for implementing agreed actions (motivation)

2.3.4 Lack of Support

The staffing of energy offices in Central Europe is largely inadequate, as can be seen in the table below. Without adequate staff the Energy Agencies cannot provide all the necessary support to actors on the local or national level. Action plans should include an institutional development plan.

Across the region the staff to population ratio varies considerable, from around 0.6–9 staff/million, but it is still low **compared with the Netherlands where the ratio is 31 staff per million.**

2.3.5 Insufficient Investments

For the efficiency programme in Czech Republic € 50 million was needed for investments, but only € 1.5 million was allocated. In Hungary on the basis of an action plan approved by the government in 1999, € 3.8 million was to be allocated for actions in 2004, but part of the funds were cut back as governmental restrictions were introduced.

2.3.6 Lack of a sufficiently comprehensive and ambitious effort at EU level

Too little has been done in the run-up to accession to stimulate an adequate energy efficiency policy. **The** *acquis communautaire* **was mostly designed for the needs of the EU-15 and not so much for the specific needs and historical legacies of the new countries.** In addition, there is little evidence that the EU emissions trading system – as currently formulated – may lead to adequately strong incentives to the development of energy efficiency in the industrial sector of the region[23].

Table 3: Governmental Energy Agencies in Central Europe (2002)

	Total staff*	Ratio (staff/Mtoe TFC**)	Ratio (staff/total million population)
Czech Republic	21	0.59	2.3
Hungary	60	2.4	5.9
Poland	25	0.26	0.6
Slovakia	15	0.8	2.6
Slovenia	18	2.77	9.0
Average CE		0.85	2.1

* at national level (without eventual regional offices and agencies)

** TFC = Total Final Consumption

3. EU Policy

3.1 Energy Services Directive

The European Union has consistently called for increased energy saving and efficient use, it is said to be the 'priority of priorities'. The Green Paper on Security of Supply in 2000 stated that *"This policy of demand management is all the more necessary in that it is the only way of meeting the challenge of climate change"* and *"The European Union will only reduce its external energy dependency through a determined policy of demand management"*[24].

Although legislation has been adopted on a sector by sector, or product by product-basis (such as through the Buildings Directive, or through energy labelling for some products,) only now is the EU discussing more strategic and all-encompassing legislation, through the proposed Directive on End Use Efficiency and Energy Services[25], the Directive on creating a Framework for the Eco-Design of Energy Using Products (EuP)[26] and a planned Framework Directive on Energy Labelling. The first two Directives are currently being discussed in the European Council and Parliament.

The Energy Services Directive's most specific requirement is that Member States reduce energy consumption in final consumers by 1% per year. If adopted this requirement will start in 2006 for six years. However, in the current draft Member States are allowed to take into account measures taken since 1991 to reduce energy demand. In addition, the target is considered as absolute only in the case of economic recession. In case of strong economic growth, it will be calculated relative to business as usual scenario.

The draft Directive, states that the 1% annual saving is a minimum requirement for energy saving and that much higher economically achievable saving could be made. This would result in a € 10 billion saving over a ten year period. It is estimated that 20% of consumption is higher than economically justified and thus far more saving can, even at current energy prices, be economically achieved.

23) Finding from national reports prepared as part of this project.

24) European Commission, *Green Paper – Towards a European Strategy for the Security of Energy Supply*, page 547.

25) Commission of the European Communities, COM (2003) 739 final, see note 18 Proposal For A Directive Of The European Parliament.

26) Commission of the European Communities, Proposal for a Directive on establishing a framework for the setting of Eco-design requirements for Energy – Using Products and amending Council Directive 92/42/EEC, COM(2003) 453 final, Brussels 01. 08. 2003.

Given that energy efficiency is seen as essential to meet Climate and Security of Supply concerns and that it has been identified as bringing economic advantages to the EU, the efficiency target proposed by the Commission is insufficiently ambitious even for the old Member States of the EU. For new Member States, it is even less ambitious and may even be deterrent to future action, as some countries have adopted targets at least double that proposed by the Commission.

The EuP Directive will also have a potentially important role in stimulating innovation towards more efficient products. **However, it will be extremely important to have a periodical evaluation, at EU level, on whether these policies, combined with existing domestic policies, are sufficient to move towards the long-term climate objective of keeping climate change below 2 degrees above pre-industrial temperatures. In case these policies may turn out to be insufficient, new policies will have to be devised.**

3.2 European Funds

The European Union has a number of programmes designed to support energy and energy efficiency measures. However of particular importance for new Member States is the use of Structural Funds, due to their large impact on the sector. The current funding period, 2000–6, has specific programmes to support the development of energy efficiency projects. However, the financial expenditure for these particular programmes does not differentiate between different sub-parts of any particular project and so it is not possible to assess the extent of funding for purely energy efficiency initiatives.

27) According to the governmental decree Hungary will save 75 PJ per year; compared to the 1060 PJ consumption of 1999 this is about 7–8% on average.

28) IEA Energy Efficiency Update, 2003.

4. Country Reports

4.1 Czech Republic

The Czech economy has a large technical potential for energy saving, which is estimated to be as high as 50% (the economic one is 31%) of final energy consumption. This potential could be realised through measures like insulation of buildings or incentives for public transport. However, this potential is not being realised mainly because of economic and policy barriers. Fossil fuels are still relatively cheap (as the external costs are not included in the price and some energy uses are subsidised) and investments into energy efficiency have relatively long pay back times.

The first step for improving the energy efficiency in the Czech Republic should be the adoption of an ambitious action plan with enhanced institutional capacities and the development of adequately funded sectoral programmes. This should include an environmental tax reform, which would transfer tax charge from labour to fuels and other natural resources.

The other essential step for improving energy efficiency would be a fundamental change of the state energy policy. Current efforts to maximise energy production should be replaced by extended demand-side management and mitigation of consumption. The following measures should be taken as a priority:

- To change the existing energy intensity target with a target to reduce energy consumption.
- In 2005, an evaluation and if necessary a modification of the *Act on Efficient Use of Energy* should be undertaken.

4.2 Hungary

During the 1990s there were fundamental structural changes in the Hungarian economy, which influenced both the energy sector and end-use consumption. The change in GDP was accompanied by the reduction in final energy consumption and electricity consumption until 1993. However, between 1991–1998 the primary energy intensity decreased by 17.2%, while final energy intensity fell by 24.5% but remaining above the level of Western-European countries. In contrast energy consumption per capita is much lower than in the EU-15.

In 1999 Hungary set for itself a target of 7–8%[27] of decreasing energy consumption in 15 sectors by 2010[28].

Although the energy efficiency and energy saving has always been a stated priority for energy policy and several energy efficiency programmes have been launched, it is questionable whether these have been adequately implemented and undertaken. Furthermore, use of Structural Funds is not adequately emphasised, as energy itself is not a particular priority of the Environmental Protection and Infrastructure Operational Programme.

Although a domestic energy efficiency support scheme encouraged thousands of people to set about investing money on energy savings, the financial background of this project was uncertain and was reduced in recent years.

As is typical in CEE countries the energy prices are in some cases lower than energy costs which hinders the introduction of energy efficiency measures.

4.3 Poland

After transition to a market economy, Poland has benefited from an energy efficiency improvement to the economy. Energy intensity of GDP fell by 42% between 1991–2002, an average of 3.8% per year, including a decrease of 4.7% per year between 1997–2002. Through market conditions and energy price growth the non-energy industrial sector has seen large improvements in energy efficiency through structural changes and management and technology improvements.

However, there still exists a large cost-effective potential for further energy saving in energy and non-energy industries, residential and commercial sectors (estimated to be 20–30% in industry and 25–40% in the residential and commercial sectors). Realising this potential will bring positive benefits including: improved energy security, better air quality, reduction in industry and households bills and job creation. However, even for these 'win-win' projects, policy driven mechanisms need to be implemented.

Poland must design and implement an ambitious and long-term energy efficiency programme integrated with other national energy programmes under transparent and stable conditions of support. Assistance from the EU through Structural Funds is essential for a rapid and successful implementation.

4.4 Slovakia

A review of future trends of energy consumption shows that, in the absence of an active energy policy, which promotes energy efficiency, energy consumption will increase as a whole by approximately 6.8% by 2012 and continuing to rise after this period. This result hides large differences between the different sources of energy (mainly heat, fuels and electricity) and between the different sectors – transport, industry, buildings etc.

It is therefore clear that a strong energy efficiency policy is needed to counterbalance the expected increase in energy consumption in all sectors, with emphasis on measures in the building sector (both residential and tertiary) and in the transport sector. Furthermore improvements in the district-heating sector are also essential to prevent further disconnection from district heating and a shift to other means of heating.

Energy efficiency should be made a policy priority. This will require significant changes in the regulatory framework, the access to finance and the general awareness about existing technologies and best practice.

In order to evaluate the success of energy efficiency measures, recent studies have calculated low and high targets for energy policy. The low targets would represent about 11–12% reduction in overall energy consumption. The high targets would represent a 13–15% reduction in overall energy consumption. An Action Plan, which has already been formulated by the World Bank and the Ministry of Economy, should be adopted and effectively implemented.

Several studies have identified policy instruments, which can turn energy efficiency into one of the driving forces of the overall economic and development strategy of the country. Some of these instruments deal with general issues such as general policy issues, regulatory and legal aspects, the institutional framework and fiscal, taxation and pricing policy.

The State budget dedicated to energy issues will need to be increased significantly if the proposed targets are to be realised. The adoption of these instruments will be beneficial for the entire economy. The most obvious impact is related to the level of energy imports, and therefore the balance of payments. The reduction in energy imports is estimated between 8% (low targets) and 12% (high targets) for natural gas, and between 8% (low targets) and 14% (high targets) for petroleum products. Furthermore it is estimated that the implementation of the proposed energy efficiency could create approximately 10,000 new jobs. The annual reduction in CO_2 emissions has been estimated between 9 million tonnes (low targets) and 16 million tonnes (high targets).

4.5 Slovenia

Slovenia's energy system is heavily dependent on fossil fuels and nuclear energy (about 77% dependency in 2000) and the energy intensity of Slovenia is high, at least double the EU-15 average. This situation calls for urgent energy efficiency measures. Although existing studies of the potentials for improving energy efficiency in Slovenia are incomplete, the estimated potentials for energy efficiency range from 2.4% of whole energy consumption in 2005 to 9% in 2020. However, specific industrial sector studies suggest that much higher economic savings potentials, around 20% are possible. There are four key measures that must be implemented to improve the efficiency of the energy sector, these are:

- All electricity and production plants must be required to meet new efficiency standards.
- Improvement in the efficiency of large energy consuming industry, such as for aluminium production.
- The introduction of a sustainable transport policy, with specific targets for energy efficiency.
- Expanding awareness raising and practical measures of the Agency for Efficient Use of Energy and Renewable Sources of Energy to bring energy efficiency closer to the wider population.

4.6 International Financial Institutions

As has been noted, most of the countries in Central and Eastern Europe are dependent on imports of fossil fuels for their energy and have high energy intensity levels. Inefficiencies in CEE energy system are so large, that they can be assumed as separate energy source. The International Financial Institutions have a vital role in capturing these potentials.

4.6.1 European Investment Bank

Currently the European Investment Bank (EIB) is a major financier of large projects both inside and outside the European Union. These include infrastructure, energy, water, extractive industries and transport projects, all off which have long-lasting environmental and social impacts. EIB is the only international financial institution, which hasn't approved sectoral policies, programmes or other strategic documents setting lending priorities. EIB activities in energy sector are led by objectives of EU energy policy, which are: maintenance of secure energy supplies, liberalisation of the EU energy market and fostering sustainable development.

Lending for energy efficiency and renewable energy projects play a key role in efforts to meet the last of these objectives. However, during the past decade the main areas of EIB energy sector lending were the modernisation of electricity distribution grids, combined-cycle power stations, upgrading of industrial plants and extension of gas networks, although some funds also went to financing large CHP and district heating networks. The EIB has no any specific programmes covering renewable energy but it does provides loans for the "energy conservation" sector which includes promotion of energy savings, efficient energy and renewable energy technologies. EIB lending to the energy sector in CEE countries amounted to € 1.5 billion over the period 1990–2000, representing 11% of overall EIB lending in these countries.

Between 1995 and 1999, 52% of total EIB energy financing was used for projects concerning the rational use of energy. However, the bulk of this money arguably went to 'business as usual' activities. Waste incineration plants, gas-fired/ combined cycle power plants received a significant number of loans, although some investment also went to district heating networks.

The EIB has declared a focus on the promotion of new and efficient energy technologies, small-scale energy schemes and renewables including wind, small-scale hydro, biomass and geothermal resources. In December 1999, the EIB initiated a multi-annual energy conservation programme, which is designed to promote energy efficiency across all sectors.

4.6.2 European Bank for Reconstruction and Development

The European Bank for Reconstruction and Development (EBRD) was the first international financial institution with a proactive environmental mandate. In 1992 the EBRD board approved its first Energy Policy, which aimed to support energy efficiency on the one hand while on the other assisting with „priority nuclear projects". In 1995 the EBRD set up an Energy Efficiency Unit, which was warmly welcomed by civil society. The aim of this unit was not only to develop new projects that will improve energy efficiency, but also assessing all the bank's investment projects for their potential for improving energy efficiency. The EBRD has been a pioneer in developing ESCO schemes in Central and Eastern Europe and Ukraine. In Hungary, this support resulted in a significant development of ESCO and Third party financing[29].

On 21 March 2001 the EBRD board approved new Energy Operations Policy in which energy efficiency and energy savings were set as one of highest sector's investment priorities. Improvements of efficiency in energy conversion, transportation, distribution and consumption as well as improvement of environmental performance also were set as Bank's objectives for energy sector. However, these policy declarations were not bound by clear goals or targets, like, for example, to decrease energy intensity in the region.

Through its operations the EBRD has also played important role in shifting the energy sector in CEE region. The EBRD involvement in the sector as of 31 December 2002 is about 70 projects for a total project cost of about € 4.8 billion, of which the EBRD has financed of about € 1.9 billion. Most of the sector projects were in the power sub-sector and most of them involving energy efficiency elements. However, only few of them related to development of renewable energy. The Bank also support the development of finance facilities for energy efficiency projects.

4.6.3 World Bank

The World Bank, by its lending and providing technical and advisory services, has been active in CEE countries since 1991. From a total of 103 projects presently under implementation, 16 are related to power sub-sector representing 16% from total $ 5.7 billion Bank's investment portfolio. However, the main focus of the Bank's energy lending in CEE, is concentrated on the construction of new power plants, rehabilitation of transmission/distribution networks and modernization of dispatching and communication facilities. Consequently, the share of Bank's lending for energy efficiency and renewable energy projects is comparatively small.

The World Bank and IFC also significantly support the Global Environmental Facility (GEF) which funds energy efficiency projects in a number of countries in the region, for example in the Czech Republic, Hungary and Slovakia[30].

29) www.ebrd.com/country/sector/energyef/index.htm; and Paolo Bertoldi report on ESCO in the EU, see note 26, p.5.

30) www.gefweb.org/Outreach/outreach-PUblications/Project_factsheet/Hungary-ener-1-cc-wb-eng.pdf

5. Key Recommendations

The rational use of energy must be a cornerstone in the overall economic and development strategy for new Members of the EU. This will benefit the economic competitiveness and the environmental policy of the whole of the EU-25. To enable the efficient use of energy to occur, the following developments should take place.

5.1 Carry out Strategic Assessments and Action Plans

Reliable data to establish savings potentials in the region are scarce. The EU and the new Member States must undertake detailed national and regional studies to develop a road map for efficiency improvements. These must be developed by assessing past programmes and by looking at best practice examples implemented throughout the world. These action plans would detail opportunities and costs for efficiency improvements in all sectors and develop timelines for their introduction. They should include the development of ambitious and adequately funded long-term sectoral programmes and action plans and institutions/ organisations, i.e. national, regional or local energy agencies. It is crucial that these agencies are adequately funded. These investments will pay for themselves due to the economic benefits of energy efficiency improvements. Effective and independent monitoring and auditing of the action plan implementation and results must occur.

5.2 Introduce Price and Tax Reform

Energy prices currently do not reflect their true cost to current or future generations. In the short term, harmonisation of prices in the EU is likely to reduce state subsidies and cross subsidies between consumers; this is likely to result in an increase in prices in both the domestic and industrial sectors of new Member States. Social safety net programmes for vulnerable households should favour grants to improve efficiency that reduce energy bills and improve living standards, instead of direct subsidies. However, further reform is necessary to ensure that:

- Cross-subsidies to inefficient and polluting electrical heating are phased out.

- Prices include all external environmental costs. In addition, the EU should reach an agreement on clear and efficient rules for implementation of environmental tax reform, providing a tax shift from labour towards environmental use, supplemented by the reform or removal of environmentally adverse subsidies[31]. Environmental taxes can be an efficient instrument for fostering a more rational use of natural resources and for reducing pollution and are also a good incentive for technological innovation.

- Tax cuts and financial advantages given to environmentally harmful energy systems are phased out and replaced with tax incentives (e.g. low VAT rates, accelerated depreciation and tax reductions) for energy efficiency investments and appliances purchase in all sectors. When these tax reductions have been phased out because of EU accession (as in the Czech Republic) they should be reinstated as a matter of urgency.

- Individual meters are introduced for households and flat rates are abolished, as they discourage conservation.

This reform process must be introduced as rapidly as possible in co-ordination between the governments and energy regulatory authorities.

31) So-called Eco-taxes can be implemented in a revenue-neutral way: their revenue can be recycled towards a cut in other taxes, for instance on labour. An environmental tax reform could become one of the main tools for moving towards sustainable development, through the internalisation of external costs in favour of the environment. For more information: www.eeb.org/activities/env_fiscal_reform/main.htm

5.3 Cap Demand Increases

Energy use in the transport and domestic sectors are expected to increase rapidly in the coming years in new Member States. This makes speedy approval of EU-level legislation on energy demand even more urgent for the EU-25 than it was for the EU-15. The 1% target of the End-Use Energy Efficiency and Energy Services Directive, currently under discussion, must be increased to 2–3% at least in order to adequately address the potentials for demand reduction in new Member States.

EU institutions must push for a speedy approval of the Framework Directive on Eco-design of Energy Using Products and its implementing measures. These must be adequately ambitious and aimed at phasing out the least energy efficient products from the EU market, on the basis of standards based on simple principles (such as the Least Life Cycle Cost approach) and updated regularly to reflect technological progress.

The EU Commission must prepare a Directive on Energy Labelling, in order to remedy a situation of confusion on the future of the successful EU A-G labelling system, which is in urgent need of updating.

The Save programme with Energy Intelligence for Europe should effectively prioritise implementation projects in the new Member States.

5.4 Refurbish and Promote Efficient District Heating and Cogeneration

New Member States have a higher level of district heating than old Member States. Priority should be given to maintain these systems and convert more heating plants to combined heat and power facilities. EU institutions and Member States must make a concerted effort to make sure that funding for these systems is provided through Structural Funds and other EU programmes.

Cogeneration must be adequately promoted, for example through an amendment to the Cogeneration Directive, which should include mandatory targets for the growth of this technology. When new power capacity is built or refurbished in the region, an energy audit establishing the cost-effectiveness of combined heat and power as well as an assessment of energy demand savings should be carried out. This should happen in all EU countries, as is currently the case in the Czech Republic. ESCO schemes should be favoured as they provide efficient and sustainable solutions by private operators.

5.5 Adapt the Market Framework

The rules of tendering for new generation in the power sector, must, in line with the revised electricity market Directive, allow energy efficiency measures as an alternative to new capacity.

5.6 Ensure Adequate Use of Funding

National Governments must carry out a review of past expenditure allocation and use to identify any past problems in dispersal of funds. Simultaneously, there must be sufficient resources on a national level to reach the short and long-term goals of the energy efficiency action plans.

The EU must provide additional funds for sustainable energy projects. Specific and earmarked funding must be made available from Structural Funds for energy efficiency measures. **EU institutions must encourage applications from local authorities for funding in this area.**

EU institutions must carry out a detailed Extended Impact Assessment – specifically including their impact on energy demand – of the existing subsidies to the fossil fuel, coal sectors and the Trans-European Networks-Energy.

Governments and regulators should remove regulatory barriers discouraging energy savings investment in particular in public procurement.

5.7 Capacity Building and Education

Despite the over-riding economic and environmental case for the introduction of energy efficiency measures and policies, insufficient action is taken on the local or national level. Therefore, greater emphasis must be placed on capacity building and education for actors in the energy field to highlight the benefits of energy efficiency and to show the mechanisms that can be introduced. **Increased public awareness on both climate change and specific energy efficiency solutions must be encouraged and financed though public budgets and EU funds.**

Energy Agencies must be established and adequately staffed to give advice, knowledge and funding for energy efficiency projects on a national and local level.

5.8 Recommendation for International Financial Institutions (IFIs)

Improvements in energy efficiency require investment, knowledge of best practice and often training and ongoing practical support. The IFIs have a crucial role in bringing many of these to the region and consequently should endeavour to ensure that all energy sector lending incorporate these. Specific action by the IFIs should include:

- Ensuring that all potential projects include an energy audit to evaluate their energy saving potential.

- Specific micro-financing initiatives should be established to enable small-scale energy efficiency projects to be funded.

Incrementally increasing targets for energy efficiency projects should be established to ensure that this priority area receives adequate funds.

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8. Contacts

CEE Bankwatch Network

The CEE Bankwatch Network is an international non-governmental organisation (NGO) with member organisations currently from 12 countries of CEE and CIS region. The basic aim of the network is to monitor activities of International Financial Institutions (IFIs) in the region, and to propose constructive alternatives to their policies and projects in the region.

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www.bankwatch.org

Energy Centre Bratislava

The Energy Centre Bratislava (ECB) is a non-governmental, not-for-profit information and consulting organisation, which has been working in the Slovak Republic since 1993. The mission of the ECB is to promote the rational use of energy and the utilisation of renewable sources of energy. This mission is carried out by the following:

- transfer of innovative energy technologies and support in implementation
- participation in national and international RTD projects concerning energy efficiency
- direct advising and consulting services to industry, SMEs and private households
- organisation of seminars, training courses, workshops, trade fairs and conferences
- promotion and dissemination of new energy technologies by publications, brochures and leaflets
- preparation of information for the media

Energy Centre Bratislava | Ambrova 35 |
SK 831 01 Bratislava 37
Tel. +421 2 593 000 91 |
Fax +421 2 593 000 97
www.ecb.sk

Energy Club Environmental Association

The Energy Club's mission is to minimise the environmental and social problems stemming from energy production and use. We advocate the creation of a sustainable and nuclear-free energy sector that is decentralised (i.e. based on the coordination of many small units using local resources), diversified (i.e. resting on may pillars) and formed upon the Least Cost Principle.

Szerb st. 17–19. 6th floor | H 1056 Budapest
Tel. +36 1 4113520 | Fax +36 1 411 3529
www.energiaklub.hu

FEWE – Polish Foundation for Energy Efficiency

FEWE was established in 1990 as independent, non-governmental and non-for-profit organisation. We undertook the mission of promoting the efficient use of energy and environment friendly energy production. Since 1999 we have also been carrying on the mission of creating new working places, vitally contributing to environment improvement and economic development of our country.

FEWE Center in Katowice | ul. Wierzbowa 11 |
PL 40-169 Katowice
Tel. +48 32 203 51 14 | Fax +48 32 203 51 20
office@fewe.pl

FOCUS Association for Sustainable Development

The mission of Focus Association for Sustainable Development is to, with the enhancement of understanding and awareness, change the behaviour of the people towards a more environmentally and socially responsible life.

Cesta na Roglo 17c |SL 3214 Zrece
Tel: + 386 41291091 or +386 40722149
info@focus-ngo.org | www.focus-ngo.org

Hnutî DUHA – Friends of Earth Czech Republic

Friends of Earth Czech Republic campaigns for environmental solutions on a wide range of issues, with priorities in energy, forests, mining, waste and agriculture, as well as on general environmental policy issues.

Bratislavskâ 31 | CZ 602 00 Brno
Tel. +420 545 214 431 | Fax +420 545 214 429
www.hnutiduha.cz

WWF European Policy Office

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which human live in harmony with nature, by:

- Conserving the world's biological diversity
- Ensuring that the use of renewable natural resources is sustainable
- Promoting the reduction of pollution and wasteful consumption

36 avenue de Tervuren, Box 12 |
B 1040 Brussels
Tel. +32 2 743 8800 | Fax +32 2 743 8819
www.panda.org/epo

PowerSwitch!

FROM COAL TO CLEAN

With **PowerSwitch!**, WWF challenges the power sector – the companies producing electricity and the people in finance and politics guiding their decision-making.

The power sector should become CO_2-free in developed countries by mid of this century, and make a major switch from coal to clean in developing countries.

There's no shortage of solutions – we've just got to do it.

www.panda.org/powerswitch

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