

**APPROXIMATION OF THE ENERGY ACQUIS
COMMUNAUTAIRE**

Review of energy markets and policies of seven accession countries

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Preface

This report is a compilation of the country reviews conducted by ECN in the framework of the Phare Multi-country programme project 'Approximation of CEEC to EU legislation'. The project was conducted and co-ordinated by DEM (Denmark), with contributions of ERM (UK) and ECN. The project's main objective was to assist the CEECs to approximate their energy legislation with EU energy legislation. A secondary objective was to review the current situation of the energy markets and policies in the thirteen CEECs with respect to their progress in approximation towards the EU energy acquis and policy practices.

For this second objective ECN assessed the current situation in seven countries, on the basis of a survey organised by the project co-ordinator DEM and filled in by the counterparts in the seven CEECs, see the included list of local experts. These seven countries are:

- Czech Republic
- Slovak Republic
- Hungary
- Latvia
- Estonia
- Lithuania
- Poland.

These country reviews, which were sent to DEM for inclusion in their final report, are compiled in this report. In addition we drafted an introduction and a few final comments in this report.

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Acknowledgement

The authors thank the local partners (in the seven accession countries), see the list below for their survey material, which was the basis for this report, and their comments on earlier drafts of the country reviews. The project was conducted under ECN project number 7.7201.

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1. COUNTRY REVIEW

The approximation of achieving the *acquis communautaire* in the area of energy is based on the following three main objectives of Community energy policy:

- ensuring security of supply,
- enhancement of competitiveness,
- securing environmental protection.

One of the key elements of the energy *acquis* consists of EC provisions on competition and state aid rules and is formed by the EU Directives on Gas and Electricity, Directive 98/50/EC and Directive 96/92/EC. Furthermore, EU provisions on price transparency, gas and electricity transit, as well as rules on emergency responses, such as security stock obligations, information transfer and those on hydrocarbon licensing are critical criteria for evaluating the progress of CEECs in their approximation process of the energy *acquis*.

Other EU provisions relevant for the CEECs entering the EU in the future are:

- treaty on European Coal and Steel Community (ECSC),
- Eurotom Treaty,
- trans-European Energy Networks provisions,
- labelling appliances, efficiency standards for rational use of energy, renewable energy and innovative energy technologies, see Communications (i.e. for Synergy, SAVE, Altener and Joule-Thermie programmes).

Furthermore, the so-called Agenda 2000 in the Accession Partnership also provides elements for consideration and adaptation of the functioning of energy markets in CEECs, such as recommendations and support for improving the energy efficiency (energy intensity of the CEECs is two to four times higher than in the EU), adaptation of energy prices towards economic costs levels¹.

In general, the energy market provides an essential service for the economic, social and regional development of all Member States. The Community provisions offer an excellent framework to serve as a reference point for the preparation of the accession countries in Eastern Europe to achieve this energy *acquis*, but also promote the implementation of these common objectives in the national policies of the accession countries.

This implies that CEECs should promote energy services in line with the EU to all consumers against stable and affordable costs for increasing the competitiveness of their industry. Furthermore, the CEECs must meet international environmental requirements, such as the commitments agreed upon at the Kyoto conference in order to comply with the energy *acquis*.

The report is constructed as follows: in Chapter 2 to 8 we present the reviews of energy markets of seven CEECs, namely the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovak Republic. In Chapter 9 we formulate some general conclusions with respect to the overall results of the country reviews.

¹ See the different 'Regular reports from the Commission on the countries' progress towards accession' for the council.

2. CZECH REPUBLIC

2.1 Introduction

The Czech Republic has an area of 78,315 square kilometres and a population of approximately 10 million. Considerable progress has been made in establishing a market economy. The government has begun moving to market pricing of energy products, reducing state subsidies, and privatising state-owned enterprises. However, political and financial crises in 1997 shattered the Czech Republic's image as one of the most stable and prosperous of post-Communist states. Delays in enterprise restructuring, failure to develop a well-functioning capital market, delays in privatisation of banks and the credit policy of Czech National Bank and some other reasons played major roles in Czech economic troubles in last two years.

2.2 Policy objectives and priorities for accession

2.2.1 Policy objectives and documents

Objectives

The Draft Energy Policy Statement (1999) is being prepared by the Ministry of Industry and Trade and sets out basic steps toward implementing the country's new energy strategy. It has the same main objectives as energy policy of the European Union (EU):

1. security of energy supply,
2. protection of the environment and sustainable development,
3. support of economic competitiveness.

The long-term goals of energy policy in the Czech Republic are:

- security of effective and economically advantageous use of domestic primary energy sources,
- definition and application of public service obligations, and services done in general economic interest,
- gradual harmonisation of the economic and the social development and protection of environment of the Czech Republic, its regions and localities,
- gradual attainment of common targets and plans of EU, including application of legislation specially aimed to the energy sector,
- extension of the freedom in decision of final users on the manner/selection of fuel/energy supply and energy services,
- creation of clear and relatively stable material and legislative conditions for efficient management of business activities done by subjects which are ensuring the supplies of fuels and energy and relevant energy services.

Policy framework

The Draft Energy Policy Statement (1999) will pass through the environment impact assessment and should be adopted by the Government early in 2000. The Draft Energy Policy will be consistent with the conclusions of the screening proceedings of accession with EU.

No definitive and up-to-date economic policy document currently exists. New policy documents (economy, industry, environment, energy) are clearly needed due to the significant and rapid political and socio-economic changes experienced by the Czech Republic over the past few years. The working date for EU accession of the Czech government is the year 2003.

2.2.2 Legal and institutional framework

Legal framework

The legislative framework of energy policy is mainly based on the *Czech Energy Act (1994)*. The Act sets out the basic conditions for the regulation of selected business activities that are natural monopolies or institutional monopolies in the process of transformation. The Act also sets out the functions and power of individual state administrative authorities, particularly in the domain of price regulation and environmental protection. All necessary secondary legislation to the Energy Act (Decrees of the Ministry of Industry and Trade) was issued during 1995-1998. A new Energy Act is under preparation. It will be fully compatible with adequate EU legislation, including the condition for opening an internal market with electricity and gas, definition of conditions for access of third parties to grids (electricity, gas, heat), position and role of regulation authorities, etc.

Other Acts that are related to the energy sector are:

- A new Energy Management Act is under preparation based on the EU legislative practice. It might be valid from 2001.
- Act on Emergency Oil Reserves.
- Act on Nuclear Energy, No 18/97Coll., provides basis for the Czech nuclear power stations.
- Amendment in Accounting Act, Income Tax Act and connected rules, which not only enable efficient regulation of energy companies but even the amendment of depreciation rates and valorization of depreciation bases for energy equipment.
- In the near future, the passage of an Act on Emergency Strategic Reserve of Crude Oil and an amendment to the Mining Act is expected.

According to current time schedules, the whole package of laws should be valid in the period 2000-2001 at the latest. However, the experience with the preparation of legislation in recent years has shown that delays are not impossible.

Institutional framework

Different ministries and state bodies are responsible for energy policy in the Czech Republic:

- The Ministry of Industry and Trade (MIT) is the lead agency responsible for general energy policy and for policy towards the specific energy industries. The work of the MIT is supported by two non-departmental organisations responsible to the Minister: the Czech Energy Agency (CEA), which promotes energy conservation and renewable energy; and the Czech State Inspectorate of Energy (SEI), which undertakes control of persons authorised in accordance with the Energy Act.
- The Energy Regulation Office is directly subordinated to the Minister of Industry and Trade. The draft of Energy Policy Statement expects to create a fully independent Regulation Authority.
- The Ministry of Finance (MoF) administers general price legislation and approves the regulated prices in the energy sector. It also administers the state financial support for coal mining restructuring.
- The Ministry of Environment (MoE) formulates environmental policy, standards and regulations, and has become increasingly involved in energy policy issues. This support is part of the budget of State Environment Fund.

The State Office of Nuclear Safety (SONS) was established in 1993 as a successor to the Czechoslovak Atomic Energy Commission. Its responsibilities include state supervision over nuclear installations (including the handling of nuclear waste and spent nuclear fuel), safeguarding of nuclear material and nuclear installations, and technical co-operation with the International Atomic Energy Agency (IAEA).

2.2.3 Acquis acceptance and international energy dialogue

The Czech Republic accepts the Community acquis in the area of energy. The Czech Republic might request transitional periods in the following areas:

- The obligation to maintain minimum stock for crude oil/and/or petroleum products.
- The introduction of common rules for the internal market in electricity.
- The introduction of common rules for the internal market for gas.

The Czech Republic is active in the Energy Charter Treaty Conference and in its working groups for preparing new elements (Supplementary Treaty, Transit Treaty and others).

2.3 Current progress in approximation

2.3.1 Competitiveness and the internal market

Ownership

The government's overall restructuring strategy is based on a program of rapid privatisation. Small-scale privatisation was completed in 1992. Privatisation of large enterprises has been implemented in two branches, involving conventional sales to domestic and foreign investors as well as transfers of shares in enterprises to citizens through a voucher scheme. The transfer of ownership of assets in the second stage was completed by 1994, and currently, more than 81% of assets in the economy are in private hands (mid 1998). The proceeds from privatisation have been channelled to the National Property Fund (NPF), and they will be used for covering the costs of structural reforms as the need arises.

Most of the energy enterprises have been converted to joint-stock companies. Many of these companies are still partly state-owned, whilst in other cases, shares in these newly formed companies have been sold to both foreign and domestic investors. The Draft Energy Policy expects to continue with the privatisation of energy companies. The government is likely to retain significant shareholdings in some Czech energy enterprises.

Provisions for third party access will not be clarified until the draft of new energy legislation would be agreed. The draft of Energy Policy from June 1999 expects to open the internal market of electricity and gas in accordance with adequate EU directives. A transition period of three years is expected for opening. A regulated TPA is expected in the electricity sector and a negotiated TPA in the gas sector.

The amended 1991 Competition Act prohibits unfair business practices that restrict or exclude competition. The Act also attempts to prevent abuses of dominant market positions and to review mergers. Anti-trust authorities have, however, been given a limited role in the privatisation process.

Overall, the competition authorities are heavily burdened with the task of monitoring public utilities, including energy companies. An independent regulatory agency has not been set up yet. Also, the co-ordination between the Competition Office and the Ministry of Finance is weak. Until there is clarification on these issues, illegal cartel agreements and anti-competitive behaviour is likely to remain widespread.

2.3.2 Pricing and taxation

The Ministry of Finance is responsible for the energy price legislation and approves the regulated prices in the energy sector. It also administers the state financial support for the coal mining shutdown program. The Ministry of Industry and Trade is responsible for preparation of proposals.

The Czech government has taken significant steps towards correcting past energy price distortions. The government has increased energy prices drastically since 1989. Market prices exist for gasoline and diesel fuel including the excise tax which level is approved by the Parliament. Average electricity prices for industry cover economic costs but they are probably below long-run marginal costs. However, average electricity prices for households do not cover economic costs and remain below marginal costs. Industrial consumers subsidise households. Coal prices are completely deregulated. For all supplies, there are now direct price negotiations between clients and the coal producers or coal distributors. Coal prices will remain based on world market prices.

The Czech Government has stated that in the future:

- Electricity prices will be based on marginal costs. The remaining cross-subsidies from wholesale to inhabitant prices of electricity and gas will be withdrawn till 2002 by gradually yearly changes to prevent unacceptable social impacts.
- Gas prices will be based on the border price plus transmission and distribution costs.
- district heat prices (including those for households) will be based on a cost-plus formula.

In January 1993, a value-added tax (VAT) was introduced to unify and simplify energy pricing. The tax level of 22% is generally applied on prices of electricity, gas and fuels with exception of fuels based on biomass. Biomass fuel and heat has only 5% VAT. Excise tax has also been introduced for liquid fuels and its level is subject of yearly negotiation in the Parliament in connection with the proposal of yearly state budget prepared by the Government.

Electricity and heat market

Key corporate entities operating in the Czech electricity and heat sector include electricity producer CEZ, electricity distribution companies, and district heating companies.

CEZ is the main electric utility in the country, controlling most of the power generation (about 75%), while the transmission network is controlled by its daughter company CEPS. CEZ is a joint-stock company, created in 1992 from the former state electricity enterprise. Privatisation of the state owned shares in main power generator CEZ will be prepared and decided after 2002 when the nuclear power station Temelin will be in operation. CEPS will be separated from CEZ and left as a state company.

The dominant position of CEZ in the Czech power market, together with an unclear regulatory regime, may make it difficult to develop a competitive power market in the country. A degree of competition could be created by providing auto-producers and independent power producers with a fair opportunity to sell electricity to the grid or directly to customers. This is foreseen in the draft Energy Policy Statement.

The *electricity distribution sector* in the country is characterised by a relatively old network requiring modernisation, furthermore the regional power distribution companies are in a relatively weak position since they are obliged to purchase most of their power requirements from CEZ.

Heat generation and distribution are provided for by private companies, which are partly owned by municipalities. District heating distribution systems are now operated as separate enterprises but they are regional monopolists.

In *power and gas distribution companies*, the National Property Fund owns about one half of the shares. The privatisation of the energy sector will be completed by selling part of the shares to strategic partners (both foreign and domestic). Some amount of shares or golden shares will be left by NPF to save the influence of state on strategic decisions, especially as concerns on issues of general economic interest.

Gas market

Indigenous natural gas and oil production are expected to remain constant, but will provide less than 2% of domestic consumption of those energy carriers. Gas imports may increase by almost 50% within the next twenty years (1995-2015).

Transgas, a state enterprise, is responsible for gas transmission and supply and it is the owner of transit and transmission gas systems. It also operates the storage capacities. Transgas will remain a state company. It will also be under an obligation to supply gas to the private distribution companies and it will offer storage services under contractual terms approved by the government. The company also markets gas directly to large industrial customers. Accounting arrangements within the company need to be clearly defined in order to prevent potential abuse of Transgas' monopoly position in transmission and storage services. *The regional gas distribution companies, jsc*, are in the same relatively weak position as the power distribution companies.

Oil markets

Crude oil reserves in the Czech Republic are marginal. Oil imports are expected to increase significantly over the next decade. Key entities in oil imports and production and distribution of oil products are:

- Moravske Naftove Doly, jsc - responsible for oil and gas exploration and excavation.
- Refineries, jsc, import crude oil and produced oil products.
- Benzina, state enterprise, Benzina jsc. and mostly the private companies (including the net of foreign companies like Shell, Aral, OMV and others) distribute oil products.
- CEPRO and MERO are state enterprises that operate the oil and oil product pipelines.

Solid fuels

In the Czech Republic, coal is the most important domestic energy source, as solid fuels account for almost 57% of primary energy sources. Despite a continuing reduction in the share of coal, it is likely that it will continue to have an important part to play in the Czech Republic's energy supply.

There has been a great deal of progress in restructuring the coal industry since 1989. State enterprises have been converted to joint-stock companies and they have been privatised. The retail sale of coal is done by a wide net of private companies.

Since the end of 1993, the coal industry has been reorganised into three joint-stock lignite-mining companies and three joint-stock hard coal mining companies, all of which are majority owned by private investors. Four smaller state-owned hard coal and lignite mining enterprises are being closed. 34-52% of the shares will remain with the National Property Fund (NPF) and their privatisation is expected. Coal distribution is fully based on market conditions with no dominant position.

2.3.3 Supply security

Domestic resources and external dependency

The Czech Republic only imports about one quarter of its total energy needs. The diversification of oil and gas import has been achieved. There are insignificant exports (about 2%) of primary energy. Gas and oil imports will grow in the future. Consequently, import dependency will increase to app. 30-35% in the year 2010.

Projects to diversify gas supply routes have reached substantial progress. Transgas signed a long-term contract with a Norwegian gas company for the supply of natural gas to the Czech Republic (about 3 mil m³/year). The Government's goal is to ensure that suppliers of gas other than Russia provide about 25% of the Czech gas demand.

Stocks and crisis measures

A serious logistic problem in the Czech Republic was the lack of crude oil storage capacity, which presents both strategic and commercial problems till the beginning of 90s. Since the separation of the Czech and Slovak Republics, together with the building of pipeline from Ingolstadt, new crude-oil storage capacities were built (Kralupy and others) and thus, the Czech Republic reached the storage capacity for oil and oil products for about 60 days of annual consumption. Plans exist for construction of additional storage capacities and fulfilment of other measures. A draft of the Act on Emergency Reserve of Crude Oil is passing the Parliament.

Regarding gas storage, the available storage capacity represents approximately 28% of yearly gas consumption. Some new storage capacities will be in operation soon.

Transit and interconnections

The Czech Republic is an important transit country for Russian gas. The accession of the Czech Republic would bring one of the major transit countries for natural gas into the Community legal system and would reduce some of the perceived risks of bringing gas from Russia across a series of non-EU transit countries.

The opportunities for diversification are higher due to lower transport costs (compared to gas). Currently, the country is connected to the Trans Alpine pipeline and the oil storage capacities have increased substantially. This new pipeline is improving security and diversification of supply of crude oil.

The Czech Republic has an adequate power system, which is the element of UCPT. The Czech Republic is a participant in the Central European organisation CENTREL, established for similar reasons as UCPT by the Czech Republic, Slovak Republic, Poland and Hungary. Future strengthening of interconnection of power systems in this region is desirable. In the very long term, the Czech Republic might form part of a power corridor from Germany to the Ukraine.

2.3.4 Sustainable development

Energy efficiency

Overall energy intensity in the Czech Republic is about twice as high as the average energy intensity in EU countries. The promotion of energy efficiency is a main objective of Czech energy policy and will be addressed in the draft Energy Policy Statement.

The Draft Act on Energy Management will provide a legal framework for the promotion of energy efficiency, including combined heat and power production (CHP). The Draft Act applies the regulations and recommendations of the EU, the IEA and the Energy Charter Protocol on energy efficiency and the related environmental aspects. It is expected that it will be in force in 2001.

However, so far a comprehensive official Energy Efficiency Policy document does not exist. No official targets for the increase of supply and demand efficiency have been adopted yet. The Government should discuss the recently made available draft Energy Efficiency Action Plan (see World Bank NEES study²) as soon as possible for preparing an official Energy Efficiency Policy Document.

Renewable energy

The current share of renewable energy sources in the Czech Republic is about 1,5% of the total primary energy requirement. Promotion of renewable energy will be included as a general objective in the energy policy, which is in preparation at the moment. The Draft Energy Policy Statement expects the substantial increase of share of renewable energy sources in energy balance from present 1% to more than 5% in next twenty years.

It is necessary to take supporting measures relating to the legislation, pricing and tax policy, financial support and promotion. The Draft Energy Management Act will establish the legal framework for a higher utilisation of renewable secondary sources in line with the legal regulations of the EU countries. However, a comprehensive policy for renewable energy has not been adopted yet. The Draft Renewable Energy Action Plan (see recent World Bank NEES study) should be discussed by the Government as soon as possible.

Environmental protection

One of the government's first priorities for improving environmental protection is the better control of air emissions. The energy sector activities account for the vast majority of particulate, SO₂, NO_x and carbon monoxide emissions in the country. Combustion of coal for electricity and heat production is responsible for the largest share of air pollutant emissions. Between 1989 and 1997, national emissions of SO₂ and NO_x decreased by approximately 65% and 55% respectively, according to Ministry of Environment data.

After air pollution, the most widespread environmental impacts from energy sector industries are the effects of coal mining, and particularly open cast lignite mining. Finally, oil refining and petrochemical plant operations contribute to air pollution and have contaminated soil and groundwater around refinery sites.

The Ministry of Environment (MoE) has the main responsibility in the field of environmental protection, with the Ministry of Health and the Ministry of Transport also playing important roles. The government has accepted the State Environmental Policy (1995), which sets out the legal framework for environmental protection and the mechanisms for its implementation. The current system of environmental legislation in the Czech Republic covers the most important areas of environmental protection more or less effectively.

The new Environmental Policy has been prepared very recently. Its main goal is to further improve the environment condition, consequentially apply the principle of sustainable development and to fulfil all obligations from international agreements including the Kyoto Protocol. The draft of amended Environmental Policy Paper is under discussion. At present, new laws on air, water, wastes, and other laws are being prepared connected with protection of nature which will be fully compatible with EU legislation which might be valid not late than in 2002.

² *The National Energy Efficiency study*, by ECN and SRC, ECN-C--99-063.

Promotion of energy technology and research

The Czech Republic has a small energy R&D program. The general policy of the Czech government relies on obtaining advanced technology from abroad. Government research and development funds available to the Ministry of Industry and Trade are designated for a limited number of energy conservation demonstration projects. An amendment to the Act on State Support to the Research and Development, No 300/92 Coll., is under preparation.

2.4 Conclusions and comments

The preparation of the Czech Republic for the energy acquis is progressing well. However, in several areas, delays are noticed, which call for extra efforts from the Czech government.

Energy policy

The finalisation of the Czech Energy Policy Statement is the main priority in the current Czech energy policy. The preparation has been delayed several times, also as a result of changes in government. In particular, with the acceptance of the Policy, the Czech Government should commit herself to clear objectives and targets in the energy field. Recently, the debate on the future commissioning of the Temelin nuclear power plant has seriously delayed the process. New policy documents in related fields (economy, industrial, environment, energy) are clearly needed due to the significant and rapid political and socio-economic changes experienced by the Czech Republic over the past few years.

According to current very tight time schedules, the whole package of energy related laws should be valid at latest in the period 2000-2001 with regard to joint negotiation with EU. However, the experience with the preparation of legislation in recent years has shown that delays can be expected.

Restructuring of the gas and electricity sector

It can be expected that the Czech Republic will need a transitional period to comply with the Acquis requirements concerning the restructuring of the gas and electricity sector. It is recommended to set up a clear scheme of objectives, actions and time frame for this restructuring process. Within this scheme, issues of stranded costs, TPA and gas pricing should be dealt with. The dominant position of CEZ in the Czech power market, together with an unclear regulatory regime, may make it difficult to develop a competitive power market in the country. The new Energy Policy Statement and new Energy Act should provide auto-producers and independent power producers with a fair opportunity to sell electricity to the grid or directly to customers.

Fair competition

The competition authorities are heavily burdened with the task of monitoring public utilities, including energy companies. An independent regulatory agency has not been set up yet. Also, the co-ordination between the Competition Office and the Ministry of Finance is weak. Until there is clarification on these issues, illegal cartel agreements and anti-competitive behaviour is likely to remain widespread.

Nuclear energy

It is important that a strategic decision on the future of nuclear energy in the Czech Republic, in particular the commissioning of Temelin has been taken and integrated in the strategic long-term energy policy. With respect to nuclear energy, no difficulties are foreseen for compliance with the Euratom provisions. Long-term solutions for nuclear waste have to be developed.

Energy efficiency

At the moment, the Czech Government focuses on the harmonisation of legislation in the field of energy efficiency (the Energy Management Act). However, its commitment to energy efficiency in energy policy is lower than in the European Commission and in most EU Member States. Unfortunately in the draft version of the Czech Energy Policy statement, energy efficiency is addressed only briefly so far.

It is necessary to develop specific policies for the promotion of energy efficiency, of which energy efficiency regulation would be a component. Official targets should be adopted. A separate Energy Efficiency Policy Document should be developed. The recently completed National Energy Efficiency Study for the Czech Republic provided a draft Energy Efficiency Action Plan, which can be used as a starting point for such a Document.

Renewable energy

The commitment of the Czech Republic to the promotion of renewable energy sources is lower, than in the European Commission and in most EU Member States. In the draft Czech Energy Policy, renewable energy is addressed only briefly.

Similar to the field of energy efficiency, it is necessary to develop specific policies for the promotion of renewable energy. Official targets that are harmonised with EU targets should be adopted. A separate Renewable Energy Policy Document should be developed. The recently completed National Energy Efficiency Study for the Czech Republic provided a draft Renewable Energy Action Plan, which can be used as a starting point for this document.

3. ESTONIA

3.1 Introduction

The Republic of Estonia is the smallest of the three Baltic States, covering 45,227 km². The population of Estonia is about 1.45 million. The capital of Estonia is Tallinn with a population of 415 thousand. After Estonia regained independence in 1991, the Government adopted market-based economic policies, which have been reflected in the legislation. Liberal trade and conservative monetary policies have helped to improve the economy. The annual inflation rate in 1998 was 6.5% (on monthly basis) and GDP growth was 4.0% in 1996 and 11.4% in 1997.

3.2 Policy objectives and priorities for accession

3.2.1 Policy objectives and documents

The main document presenting Estonian energy policy is *The Long-term National Development Plan for the Fuel and Energy Sector*, which was discussed and approved by the Government and Parliament (passed in February 1998). It formulates the major goals for the energy policy to provide stable and high quality energy supply to consumers with the prices reflecting economic costs and an energy sector that promotes GDP to be increased to the level necessary for the accession to the European Union. The targets are defined for the development of the fuel and energy sector to the year 2005 and principal development trends are given until 2018.

According to the *Long-term National Development Plan for the Fuel and Energy Sector*, the Government will take into account the following strategic goals for developing the energy policy for Estonia:

- To provide political and economic independence of the state by the fuel and energy supply as a strategic sector of the economy.
- To establish strategic security reserves in conformity with EU requirements.
- To establish an actually working energy conservation system for production and use of fuel and energy.
- To provide conformity with international environmental requirements.
- To increase efficiency in oil shale based energy production to achieve a significant reduction of the harmful environmental impacts via the renovation of combustion technology.
- To improve the rational use of oil shale resources in the existing underground mines and open pits. The total capacity of 0.6 billion tons (excluding production losses) is sufficient for keeping the power plants and oil processing plants in operation to the end of their depreciation time and after their rehabilitation based on the existing infrastructure.
- To follow the principle of distributed electricity production and combined heat and power production by planning new power plants with the concurrent optimal use of the available heating capacities.
- To promote wider use of renewables by applying tax exemptions both to the respective investments and to the energy production based on renewables.
- To provide integration with the EU of the Estonian energy sector in conformity with the EU Directives and trends.

3.2.2 Legal and institutional framework

The *Energy Act* (enforced on 01.01.1998) regulates the fuel and energy market and the state supervision over fuel and energy supply. The fuels covered by the Act are gaseous, liquid and solid fuels (exc. wood, peat and biofuel). The Energy Act includes regulation on unbundled accounting, TPA to energy networks, abolishment of cross-subsidies, transparent pricing and accounting and introduction of a new regulatory framework. From January 1998 on, several acts of secondary legislation have been issued, based on the *Energy Act*. Still, some acts of secondary legislation are needed.

The *Sustainable Development Act* (enforced on 01.04.1995) formulates the general principles for sustainable development, including the energy sector.

There are several other legal acts related to the energy sector activities - *Utilisation of Natural Resources Act*, *Pollution Charges Act*, *Fuel Excise Act*, *Competition Act*, *Technical Supervision Act*, *Electricity Safety Act*, *Planning and Construction Act*, the *Estonian National Environmental Strategy* (NES), etc. The basics of some of these acts are included in the relevant sections of this report chapter.

3.2.3 Acquis acceptance and international dialogue

With a large dependency on imports from Russia and being poorly equipped to meet shortages of oil or gas, strategic aspects are of concern in Estonia. The uneven distribution of natural resources and capital assets between the Baltic States make an effective co-operation within the energy sector indispensable. Technical assistance to strengthen the emerging efforts in this area is therefore desired.

The location of the Baltic States between the Nordic countries and the continental Member States of the Community gives them a strategic significance in the strengthening of European networks. Estonia therefore finds it important that technical assistance is given to the Baltic States to assist the liberalisation process. In addition, they regard support to international energy projects such as the Baltic Ring Power System as indispensable.

The existence of strong dominant positions, combined with the environmental liabilities and the relatively poor technical state of the power system may be an impediment to liberalisation in Estonia.

The Baltic States are also a possible future transit corridor for gas. The possibility of gas supplies to the Baltic countries from the North Sea via Sweden could be very significant as it would give the Baltics a strategic role in the Trans-European gas networks.

International co-operation exists between Estonia and its neighbouring countries as well as with the EU and its Member States. Agreements were signed by the three Baltic governments concerning co-operation in developing and implementing energy policy and in the development of a uniform system of standards and norms. Estonia takes active part in the Agenda 21 for the Baltic Sea Region process (Baltic 21) that was launched in October 1998. The government is also committed to integration with the European Union and intends to develop its economy according to the EU's energy policy and legislation. The working date for EU accession is the 1st of January 2003. The Estonian Government has signed the European Energy Charter and the Association Agreement with the European Community. The Energy Charter Treaty and the Protocol of Energy Charter on the Efficient Energy Use and the Related Environmental Aspects were ratified by the Parliament of Estonia in February 1998.

3.3 Current progress in approximation

3.3.1 Competitiveness and internal market

Ownership

The new *Competition Act* entered into force on October 1, 1998. The *Act* was elaborated in accordance with principles of Articles 85, 86, 90 and 92 of the Treaty establishing European Communities, which include the main rules on competition. The present *Competition Act* contains new concepts such as 'Special or Exclusive Rights and Natural Monopoly' (also regulated through the *Public Procurement Act*), 'State Aid' and 'Merger Control'. The present *Competition Act* also includes provisions on prohibition of restrictive agreements and concerted practices and abuse of dominant positions. The law provides for individual exemptions for restrictive agreements on certain conditions and blocks exemptions for certain categories of agreements.

The *Competition Board* supervises the implementation of the *Competition Act*. The Board is responsible for investigation and examination of anti-trust cases while civil courts have the competence to impose fines. Up to now, the number of notifications has been very limited.

A few standards are applicable to the energy sector, although preparations are being made to establish standards within the energy sector, which correspond to the relevant EU standards.

In compliance with the *Energy Act* and according to the Government regulation entered into force in September 1998, the Energy Market Inspectorate has been established. It is responsible for issuing, prolongation, withdrawal and inspection of market licences to energy and fuel enterprises.

Pricing and taxation

There have been no direct subsidies for energy since 1993. In the energy sectors that were liberalised (oil markets), prices are set by the market mechanism. In monopolistic markets prices are still regulated. The Energy Act requires a gradual implementation of energy prices to cost-recovering levels. As a rule, all energy is liable for a VAT rate of 18%, the only exemption (0% till 30 June, 2000) is made for heat, which is sold to the households, churches, congregations and to institutions and organisations, which are financed from the state or local budgets. Additionally, the VAT rate for peat, peat briquettes, coal and fuel wood, sold to households, will be 0% until the above-mentioned date.

In January 1997, a VAT exemption was enforced for electricity generated by hydro and wind turbines - the rate of 0% is levied up to the end of 2006.

In Estonia there are no direct environment-related taxes on fuels or energy. The impact of the energy sector on environment is partially reduced by a system of pollution (emission) charges paid by polluters, i.e. by end-users of the fuels. The new amended Pollution Charges Act introduced a pollution charge on CO₂ emissions, to be levied from January 1st, 2000.

Electricity and heat market

The largest utility in the energy sector is AS Eesti Energia, which is a fully vertically integrated company. Eesti Energia is responsible for the generation, transmission, distribution and export of electricity and generates more than 98% of electricity in Estonia and thus holds a monopoly position. At present, AS Eesti Energia is a stock company with all shares owned by state. Eesti Energia also used to be the largest heat producer in the country, but currently most of the district heating plants and networks are in municipal ownership.

In November 1998, a subsidiary of the company was created to operate in the transmission sector with a separate account. So far access to the network was not allowed. Two small privatised distribution companies (one of which is EU-based) have recently been granted licenses by the Energy Market Inspectorate to compete with Eesti Energia. This license also includes the import and export of electricity.

The latest restructuring and privatisation plan, which was adopted December 29, 1998, indicates that the company will be separated into independent enterprises for production, transmission and distribution. Together with this restructuring plan, a merger has been proposed with the Eesti Põlevkivi company, the Estonian Oil Shale Company.

The tariff rates for electricity and in some cases for district heating still includes some cross-subsidies from industrial consumers to households.

Gas market

The company AS Eesti Gaas is a vertically integrated stock company that supplies 75% of the national domestic consumption and is responsible for imports, transport and most of the distribution. Gas supplies mainly originate from Gazprom. About 25% of the national consumption is supplied directly (using transmission pipelines owned by AS Eesti Gaas) to the chemical plant AS Nitrofert located in North-East Estonia. The main shareholders of Eesti Gaas are Ruhrgas (32.06%), Gazprom (30.64%), Neste (10%) and the state (11.4%).

In order to meet the EU Gas Directive obligations, amendments of the Energy Act are foreseen to introduce unbundling and transparency of accounts and setting up a tender procedure for building new capacity. Estonian authorities are convinced that certain provisions of the EU Gas Directive (i.e. lack of sufficient interconnections with the EU gas network for imports and exports) require derogations of implementation until approximately the year 2006, when interconnections with EU gas networks are built.

Oil markets

The Estonian oil sector is fully liberalised. Estonia lacks crude oil deposits and refining capacity. Crude oil products are mainly imported from Finland and Russia, as well as from some parts of central Russia and from Lithuania. All of these foreign refineries use crude oil originating from Russia.

Prices are no longer regulated, but set by the market mechanism.

Changes required in the legislation in order to meet Acquis requirements are expected by January 1st, 2003, the 'working date' for EU integration.

Solid fuels

Estonia has large resources of oil shale, which is of vital importance to the country's economy. Oil shale provides more than 60% of Estonian primary energy supply and has a share of 98% in the electricity production. Mineable reserves are estimated to last for the next 20-30 years. Peat and wood resources are also relatively large. Peat, wood and coal provide around 14% of total primary energy supply. The stock company AS Eesti Põlevkivi currently has a monopoly in oil shale mining, but during the year 1999 the Ministry of Economic Affairs has to present a proposal for its privatisation.

There are no dominant positions in the Estonian coal market. The coal market is divided between several small companies, which are mainly privately owned. Some municipal companies are involved in coal trade. Oil shale mines are owned and operated by the state-owned monopoly Eesti Põlevkivi. The oil shale sector went through a restructuring process in the last years, in which production decreased from over 31 million tons in 1980 to 12.2 million tons in 1998. Shale oil is produced by Eesti Energia and by AS Kiviter. The latter company has considerable financial problems, amongst others due to the relatively low price levels of oil products on the world market.

3.3.2 Supply security

Domestic resources and external dependency

Estonia produces around 60% of its total primary energy supply. The main supplier of the many fuels used in Estonia is still Russia. Around 93.5% (by volume) of hard coal imported in 1997 was purchased from Russia. Heavy fuel oil was imported almost completely (99.8%) from Russia as well. Light fuel oil and diesel fuel were imported mainly from two countries - from Finland (52.9%) and from Russia (46.6%), but supplies of oil and oil products, especially higher grade motor fuels, from Finland and Sweden have grown considerably over the last few years.

To diversify fuel supplies the Estonian authorities plan to build gas-fired CHP plants in the next year.

Stocks and crisis measures

Currently there are no measures to deal with an oil crisis in Estonia and there are no state storage facilities. Private storage facilities are held by companies trading liquid fuels and some larger consumers. Current storage capacity could cover for two months of consumption, which does not comply with the Acquis requirement of 90 days. Minimum investment requirements to meet the Acquis requirements are estimated at EEK 65 million (EUR 4.2 million), which would increase to EEK 790 million (EUR 50.5 million) if all security stocks should be based on state stockpiles. An important question remains whether oil shale reserves can be included in the stock requirements. Legislation concerning the security of supply needs to be amended, which is expected this year. Estonia has started negotiations on possibilities for storage of liquid fuels with EU Member States (Finland, Denmark and Sweden).

Estonia has the option of using natural gas from the underground gas storage reservoir in Latvia, which has a capacity of 2.1 billion m³, should there be an interruption in supply from Russia. The Estonian gas company AS Eesti Gaas has started to rent some capacity in the Latvian gas storage for keeping certain quantities of gas as a commercial reserve.

Transit and interconnections

Transit of energy plays an important role in the Estonian economy. The location of the Port of Tallinn is good for cargo trans-shipments between Russia and Western Europe. There are seven liquid bulk terminals with capacity of oil tanks of 190 thousand m³. The share of oil and oil products in the total volume of transit is growing fast, from only 10% in 1993 to 72% in 1997.

Electricity transmission lines and natural gas pipelines are interconnected to relevant systems in Russia and in Latvia. There may be opportunities in the future to expand these networks, especially through the Baltic Ring project. The *Council for Baltic Power Systems* has been set up for promoting mutual co-ordination when solving power engineering problems of the Baltic regions. The Estonian electricity network is not interconnected to networks of EU Member States.

3.3.3 Sustainable development

Energy efficiency

Since 1993 some funds from the state budget have been allocated annually for stimulating energy efficiency, mainly for relevant projects in the public sector. These annual energy conservation programs have been managed by the Ministry of Economic Affairs. Both the absolute and relative values of financing this program from the state budget have decreased significantly over the last years. As a result the overall energy savings have been quite limited. Elaboration of the new national energy conservation programme has started early 1999. The draft of the Program together with the preliminary Action Plan will be presented to the Government at the end of 1999. There are currently no plans to implement a programme on demand side management, third party financing or energy efficiency in transport.

Renewable energy

Wood is the most important renewable energy resource used in Estonia, production of heat from wood chips and waste was 5.6 PJ in 1997. Possibilities for hydropower are limited. Some small hydro power stations are in operation, with a total installed capacity of 0.8 MW. All hydro projects were financed by the private sector. Potentials for wind are also limited. Presently, only some very small wind turbines are in operation in Estonia. One larger wind turbine (159 kW) is connected to the national grid. The first measures to promote the wider use of renewables were taken in 1998. In June, the Minister of Economic Affairs issued a decree establishing an expert committee for elaborating a program for stimulation and wider application of wind and hydro. The first draft program was completed by the end of 1998. The Energy Act of 1998 includes an obligation to purchase electric power produced from renewable sources.

Environmental protection

The most serious environmental impacts result from the use of oil-shale, especially in thermal power plants. The present oil shale industry leads to a great deal of atmospheric pollution and the mining has negative impacts on surface, groundwater and landscape. Due to the drastic economic decline since 1990, emissions have decreased dramatically.

In March 1997, the Parliament passed the *Estonian National Environmental Strategy* (NES) - a document that specifies trends and priority goals of environmental management and protection in a new political and economic situation and formulates the main short-term and long-term tasks to be achieved by 2000 and 2010 respectively.

Environmental protection is a high priority of the Government and they are especially keen on increasing efficiency throughout the fuel cycle. In February 1999, the new Pollution Charge Act was passed by the Parliament. This new Act, based on internationally accepted principles, provides rates and calculation principles for pollution charges. The rates will be increased annually up to the year 2001. The new Act also introduced a pollution charge on CO₂ emissions; to be levied from the 1st of January 2000. Another new issue in the Act is the possibility for the polluter to replace (on fixed terms) the pollution charge with additional investments in measures reducing the environmental impact of its energy activity.

The Ministry of Environment is the main regulator in relation to the environment, and has overall responsibility for the development of an environmental protection policy in Estonia and the management of natural resources (including oil shale, peat, wood).

Estonia has signed the *Helsinki Convention* on reducing SO₂ emissions, but the targets set are not legally binding. Current SO₂ emissions are significantly smaller than the 1980 reference level, but this is primarily due to the economic recession rather than attempts to control pollution. Estonia also signed the FCCC convention on limiting greenhouse gas emissions.

Promotion of energy technology and research

In 1995, the National Energy Research and Development Programme was set up under the co-ordination of the Ministry of Economic Affairs. Due to lack of financing, no definition of priorities and lack of concrete action plans, the program has not been carried out in practice.

The leading institute in energy research is the Estonian Energy Research Institute, managed by the Ministry of Economic Affairs.

3.4 Conclusions and comments

The key characteristics of the Estonian energy sector are:

- a lack of domestic fossil fuel sources other than oil shale,
- overcapacities in electricity generation, gas transmission pipelines and in several district heating production and distribution systems,
- high energy consumption per unit of GDP,
- low technical standards and low energy efficiency of energy facilities compared to other industrial countries,
- low average income, compared to relatively high energy prices,
- limited access to domestic and foreign capital investments for the development of the energy sector,
- difficulties with introducing principles of liberal energy market in electricity and gas sectors:
 - no interconnections of electricity and gas systems with the relevant trans-European networks,
 - only one supplier (Russia) of natural gas,
 - still fully vertically integrated power and gas companies.

The following key issues need attention in the framework of complying with the EU energy Acquis:

- Building up the oils stocks (90 days of consumption), including resolving the question whether shale oil can be included in the definition of these stocks.
- Difficulties in compliance to the EU Electricity Directive in 2000, particularly concerning limitations of trade. This is due to the absence of interconnections with EU electricity networks.
- Difficulties in compliance to the Gas Directive, particularly with respect to limitation of trade, due to absence of interconnections and thus the absence of more than one supplier.
- Absence of legislation with respect to energy efficiency labelling.

The consultant observes that the Estonian government is progressing well in the approximation process with respect to the energy acquis. However, there are several obstacles to be tackled before full compliance is achieved.

Restructuring of the oil shale industry

The oil shale industry, which has great bearing on society, will require restructuring. Governmental policy includes the removal of cross-subsidies, but according to the underlying counterpart report, these are planned to be replaced by direct subsidies to consumers. There are no indications of plans to reach full cost-recovering prices for electricity and heat for households in the next years.

Restructuring of the power and gas sector

Furthermore, the state monopoly in the power and private gas company monopoly in the gas sector needs to be restructured and compliance with the EU Directives must have priority. An important role in enhancing competition can and must be played by the Energy Market Inspectorate, which was established in 1998.

Security of supply

Interconnections for power and gas grid need priority (expected in 2006). Estonia should also work on solutions for the limited oil stock for crisis situations.

4. HUNGARY

4.1 Introduction

Hungary is a landlocked country with a population of 10.1 million and a land area of 93,000 km². Hungary has achieved major successes in 1995 and 1996 in the area of privatisation, especially in the energy sector. At the beginning of the reforms real GDP has been declining, but in 1994 real GDP did grow again. Unemployment has been falling steadily since 1993, arriving at 9.6% in 1998. The Hungarian Government intends to complete preparation for EU accession by January 2002.

4.2 Policy objectives and priorities for accession

4.2.1 Policy objectives and documents

The energy policies of the Hungarian government as approved by Parliament in 1993 are based on improving the performance of the energy sector and the economy as a whole. The key strategic objectives of the new energy policy document include:

- Creation of a competitive energy market which forms an integral part of the internal EU energy market.
- Maintaining security of supply.
- Enforcement of environmental protection measures.
- Proper public access to information concerning the energy industry and transparency of the regulatory framework.

The National Energy Conservation and Efficiency Promotion Programme was discussed by the Government in December 1995. A new Energy Conservation Credit Programme was introduced in 1996.

The Government Programme announced at the formation of the new government in June 1998, identified energy conservation and energy efficiency as its key priorities. The Ministry of Economic Affairs has prepared a new Energy Policy and Business Model, which deals with the privatisation of the Hungarian energy industry, changes in the regulatory environment, and improvement of the competitiveness of the energy industry. In addition, the Ministry developed the new Energy Conservation Strategy and Energy Efficiency Programme. Both documents will be discussed by the Cabinet in July 1999.

The National Programme for the Adoption of Acquis Communautaire was launched by the Hungarian Government in March 1998. This document follows the structure of the Commission's opinion and defines the short-, medium- and long-term tasks concerning the Acquis areas.

4.2.2 Legal and institutional framework

The Gas Supply Act and the Electricity Act (1994) provide for a new regulatory framework respectively for the gas supply and electricity industries. The Gas Supply Act established the Hungarian Energy Office (HEO) to license the supply and distribution of natural gas and the generation, transmission and supply of electricity, and to regulate gas and electricity prices. The Electricity Act removed MVM's monopoly on generation and permitted private investors to enter the electricity market. The Government intends to have a new Electricity Act by the end of 2000, to replace the Electricity Act of 1994.

The Competition Act of 1996 provides for the control of mergers and acquisitions to assure that economic competition is not hindered.

The Security Stockpiling Act, passed by the Hungarian Parliament in April 1993, required crude oil reserves to be increased to cover 90 days of consumption by December 1998.

The current framework for environmental protection is provided by Act LIII of 1995 on the General Rules of Environmental Protection. Under this Act, specific emission and discharge limits for pollutants are set under environmental permits issued by regional environment inspectorates. Legislation has been drafted to improve the protection of the environment in several areas, including water management, the protection of nature, forestry and buildings.

4.2.3 Acquis acceptance and international energy dialogue

Hungary declared to be able to fulfil the requirements of the EC by the time of her accession, targeted for January 2002. No transitional period is foreseen. The Hungarian Government approved the programme for the approximation of Hungarian laws to EC requirements and allocated the tasks of implementing the programme among the various governmental departments.

Hungary signed the Association agreement with the EU and ratified the Energy Charter Treaty in April 1998. Hungary is a member of the IEA since October 1996 and of the IAEA since 1957.

Hungary is part of CENTREL and has also been integrated into the UCPT system. Hungary sees itself as an important power link from Germany to the Ukraine and believes that compared to the Slovak and Czech Republic the transition through Hungary is more favourable.

4.3 Current progress in approximation

4.3.1 Competitiveness and the internal market

Ownership

Privatisation of the energy sector was completed by 1998. The Hungarian Oil and Gas Company (MOL), the regional heat companies and the Hungarian electricity company (MVM Rt) have been reorganised and, in parts, sold to private investors. The grid company, the Paks nuclear power plant and a power generating company operating outdated coal fired units remained in state hands.

Several European major energy companies are now active in Hungary, i.e. in the power generation and supply, and in gas distribution.

Pricing and taxation

Economic pricing was one of the cornerstones of the privatisation process. The 1994 Gas and Electricity Acts handed over the responsibility for regulating prices to the Hungarian Energy office (HEO). However, pricing decisions still have to be agreed by the Ministry of Economic Affairs and the Ministry of Finance. Electricity and gas prices were raised to levels that cover economic costs on 1st January 1997. Since 1st July 1999, subsidies on electricity and gas prices are abolished. Heat pricing is also approved and promulgated by the Ministry.

Electricity and heat market

Along with the preparations for EU accession, the Government is considering to redesign the regulatory framework of the electricity industry, and liberalise the heating market. Consequently, the role of the new MVM Rt. as 'system controller and grid operator' will change. The draft of the new legislation is to be discussed in the Cabinet later this year.

The prices for heat and electricity supplied by MVM are still set by the Ministry of Economic Affairs. As from July 1999, electricity and heat prices are no longer subsidised. Retail heat pricing is within the authority of the relevant local public authorities.

Gas market

The larger part of the Hungarian Oil and Gas Company (MOL) is now in private hands. The Hungarian Government still keeps a strategic interest of 25% +1 share, as provided for by law. More than 50% of the shares are held by foreign investors.

In accordance with EC requirements, transportation and storage of gas products from domestic production are made available for TPA. However, no TPA exists to gas pipelines in Hungary.

Gas pricing is still subject to regulation from the Ministry of Economic Affairs, which includes transmission and distribution tariffs. The gas tariff system includes a capacity stand-by payment. As from July 1999, gas prices are no longer subsidised.

Oil markets

The Hungarian oil sector has been fully liberalised. Import duties for oil products were abolished in 1992. Consequently, almost a dozen international petrol companies have entered the Hungarian market.

Oil product prices were liberalised in 1991, LPG prices in 1992.

Solid fuels

Until 1993, all coal mining and preparation capacity belonged to eight state-owned regionally based companies. Although a formal monopoly does not exist, a considerable central influence was exercised through government control of producer and consumer prices. By the end of 1992, all the mining companies had entered liquidation. The debts of the former companies were taken over by the coal mining restructuring centre SZÉSZEK, who integrated several mines with power stations. Currently, 90% of coal mining industry operates within the framework of this integration.

According to a resolution of the Cabinet, state subsidies for mine closures have to be specifically provided for in the state budget, to ensure transparency of these expenditures. Regulation of coal prices ended in 1992.

4.3.2 Supply security

Domestic resources and external dependency

Hungary's domestic energy production covered just less than half of TPER in the last years. However, with energy consumption increasing and domestic production slightly decreasing, import dependency is increasing. Total import dependency is expected to increase from 46% of TPES in 1989 to 57% in 2000 and 60-63% in 2010. Natural gas has a dominant position in the Hungarian energy structure, expected to increase further over the next decades. In 1998, domestic crude oil production satisfied around 17% of oil requirements, domestic natural gas production was less than one third of supply. Oil and gas production is expected to continue to decline through the next years as reserves are gradually exhausted. Hungary is still highly dependent on imports of gas and oil from Russia. Long-term gas import contracts have been signed both with Gazprom and Ruhrgas, the latter for gas from Austria.

Coal imports in 1998 represented only 4% of coal requirements. The uranium mine at Pecs was closed down in 1998. Consequently, all nuclear fuels will be imported.

Stocks and crisis measures

Hungary meets the requirements of the IEA and EC on minimum required oil reserves. However, the Security Stockpiling Act that was approved in 1993 shall be amended with respect to the definition of reserves and the specification of products, to fully satisfy the Acquis. Underground gas storage capacity is also well developed. The Ministry of Economic Affairs has been authorised by the Electricity Act of 1994 to specify the amount of fuel oil to be stockpiled by the power generating companies operating oil fired power generating units.

Transit and interconnections

Hungary's power system is interconnected to the Ukraine, Slovak Republic, Austria, Croatia and the Former Yugoslavia. Hungary is part of CENTREL and has also been integrated into the UCPTE system since October 1995. From January 1999, Hungary has been admitted as a UCPTE associated country. There are plans to build a 400kV line to Slovak Republic.

Hungary is linked to the European gas network. A new pipeline to link Hungary with Austria was opened in October 1996. The Adria pipeline was closed down in 1991 because of the war in former Yugoslavia, but was recently re-opened again.

4.3.3 Sustainable development

Energy efficiency

Energy intensity in Hungary is significantly higher than in OECD countries. The main reasons for this include inefficient production, high share of energy-intensive production, historical low pricing and low value added in economic output.

The Action Programme for Energy Conservation, developed by the MIT in 1995, is believed to encourage energy efficiency. The programme constitutes the major part of measures to meet Hungary's obligations under the FCCC. Draft proposals for new legislation deal first with funding for energy saving measures. The MIT proposes an introduction of a tax on electricity and gas. However, it is not clear that the Ministry of Finance will approve such a tax. Although the largest growth in energy consumption is expected in transport, the Action Programme does not include transport projects.

Renewable energy

The use of renewables estimated for 1998 was 3.6% of TPER. Opportunities for the exploitation of renewables will remain limited, though some small-scale opportunities may arise as a result of increased electricity prices. Biomass (mainly straw) has the largest potential of renewable sources. The government target aims at 1.7 Mtoe of renewables in the year 2000.

Environmental protection

Responsibility for environmental protection in the energy sector is shared jointly by the Ministry of Environmental Protection and the Ministry of Economic Affairs. The duties are carried out through subordinated agencies, such as the National Environmental Inspectorate for monitoring and enforcement, the regional inspectorates for implementing environmental regulations, and the central environmental protection fund for providing loans and grants for investments in environmental protection.

Promotion of energy technology and research

In May 1993, the Government approved a policy document on R&D entitled 'Innovation Policy', to improve R&D efficiency by focusing on applied research and more market oriented activities. Energy R&D is currently suffering from a lack of clear priorities; a lack of clear distinction among types of R&D activities, i.e. demonstration activities and commercial investments in new technology; insufficient evaluation and dissemination of R&D results; and a lack of co-ordination between public needs and private R&D institutions. Present economic conditions severely limit the allocation of government funds for R&D.

4.4 Conclusions and comments

There are no severe problems expected in the approximation process and the implementation of the energy acquis. Small changes in the market structure and market organisation are recommended, as is explained below.

Nuclear power

Low-cost nuclear power is used to subsidise energy prices to households. This system is not in line with full commercialisation of the energy market and forms a market barrier for new entrants.

Price of gas

The price structure of gas as included in the Gas Act includes a clause on ensuring reasonable prices for households, financed through lowering the profits derived from domestic gas extraction. This part of the Act is not in accordance with the Acquis. However, it can be expected that the amendments of the new Acts will include a price structure that is in line with liberalisation in the EU and that this phenomenon, which leads to price distortions, will be abolished completely before the planned date of accession.

Hungarian Energy Office

The Hungarian Energy Office (HEO), responsible for amongst others licensing and price regulation, is financed from fees paid by industry. In order to safeguard its objectiveness in decision making, it is recommended to make HEO completely independent from the industry.

EU Directives on electricity and gas

Regarding adoption of the EU Electricity and Gas Directives, there is still uncertainty on which market regimes Hungary will choose for access to the gas network and licensing the building of new pipelines etc. capacity. Furthermore, there is still uncertainty on ensuring the independence of the transmission network operator. It is recommended to define clearly which steps will be taken to satisfy the requirements of the EU Directives as soon as possible. Enhancement of the progress in this process of establishing clear rules and legislation for TPA is important.

Energy efficiency

Energy efficiency is still relatively low in Hungary. An important step in the long-term strategy of improving energy efficiency has been made by development of the Action Programme for Energy Conservation and by setting energy prices that cover full economic costs for consumers.

5. LATVIA

5.1 Introduction

Latvia is situated between Lithuania and Estonia on the Baltic Sea. It has a population of 2.5 million. Although the economy has suffered from a deep recession since independence, it is now showing signs of recovery with the stabilisation of GDP and investments in the national economy.

5.2 Policy objectives and priorities for accession

5.2.1 Policy objectives and documents

The Latvian National Energy Programme (1997) sets out the aims of the Latvian government up to 2020. The main objectives are:

- efficiency improvements in the whole chain of energy system,
- enhancement of the integration into the EU energy market, energy systems of the Baltic and Nordic states,
- liberalisation and restructuring of the energy sector, with the aim to promote development of efficient energy systems,
- creation of a favourable environment for private investments in efficient energy systems (co-generation), for use of domestic and renewable energy resources as well as for energy efficiency,
- rational use and maintenance of existing capacities, replacement of environmentally unfriendly installations,
- efficient use of domestic energy resources, replacing energy imports,
- pricing policy based on economic costs and market principles,
- development of domestic power generating capacities gradually decreasing dependence of electricity imports,
- support in development of environmentally friendly energy sources, new and energy efficient technologies.

Other important energy policy documents are:

- The Energy Policy of the Government of the Republic of Latvia (1996) defines the main strategic directions of energy development.
- The *Energy Master Plan of Latvia (1993)* which describes the energy sector in Latvia and identifies the general directions for development.
- An *Energy Saving Strategy* to encourage energy efficiency improvements.
- *The National Programme on Production and utilisation of biofuels*, which is still in the process of drafting and for which a parallel technical research is being carried out.

In June 1999, the National Integration Programme has been adopted in Latvia. The programme will provide guidelines on the general direction towards accession, and deals with the following subjects in the energy sector:

- emergency stocks,
- energy efficiency,
- liberalisation of the electricity market.

5.2.2 Legal and institutional framework

The Government of Latvia is striving to develop a legislation system and an energy strategy that complies with the Energy Charter and the equivalent European legislation. The Ministry of Economy is responsible for all energy policy making in Latvia.

The *Law on Energy* that was accepted by Parliament in 1998 (the 'Umbrella Law') is the basic constitution covering the energy sector in Latvia. It determines the role of the energy sector in the Latvian economy and the responsibilities of government in management and control, and the legal and economic relationship between energy suppliers and consumers regulated by Energy regulation Board. The Law on Energy has the following objectives:

1. efficient use of energy and promotion of energy supply efficiency by means of balanced energy consumption,
2. continuous, reliable and high quality energy supply to consumers by means of diversifying kinds of fuel to be used, increasing the reliability of energy supply, improving energy distribution and supply,
3. establishment of favourable conditions for use of local, renewable and secondary energy resources, and diversification of the mix of imported energy resources,
4. promotion of an open energy market, access to transit, modernisation of the infrastructure, and establishing a transparent system of tariffs and prices,
5. right of the energy consumers to freely choose the type of energy,
6. establishment of a favourable investment environment,
7. promotion of a gradual introduction of competition with the purpose to improve energy supply efficiency,
8. increase of environmental protection by influencing the energy industry and by utilisation of environmentally friendly technologies.

5.2.3 Acquis acceptance and international dialogue

Latvia is committed to prepare for the European integration and has set up the following institutions to help with this process:

- The European Integration Bureau to manage the integration process.
- Minister of European Union Affairs to co-ordinate the integration process at the highest administrative level.
- The European Integration Council to create and enhance enforcement of common Latvian policy for EU integration. The Prime Minister, the Minister of European Union Affairs, the Director of the European Integration Bureau, and the Ministers of Foreign Affairs, Finance, Economics, Justice, Agriculture and Transport take part in this council.
- The Parliamentary Commission of European Affairs to ensure political support, encourage approximation of legislation and co-ordinate the integration process within the scope of the Baltic Assembly.

Latvia has ratified the European Energy Charter Agreement (1994) to be valid from 1998 on and has signed an EU Association Agreement.

Agreements have been signed by the three Baltic governments concerning co-operation in developing and implementing energy policy and in the development of a uniform system of standards and norms. They also co-operate in the framework of Baltic 21 on sustainable development in the Baltic Sea region. Regional co-operation between the Baltic States is essential, as many international institutions regard the Baltic countries as an integral entity. There is also continuous dialogue with Russia due to Latvia's heavy reliance on Russian imports of energy resources. Co-operation with the Scandinavian countries and the rest of the European Union is seen as a high priority and leads to a further dialogue on energy related issues.

5.3 Current progress in approximation

5.3.1 Competitiveness and the internal market

Ownership

The government's policy is to introduce privatisation in the energy sector and to increase competition, which is expected to lead to a more reliable and efficient energy sector.

The Latvian government is committed to a process of privatisation and has established the Latvian Privatisation Agency to support this process. The companies Latvijas Gaze and Latvijas Nafta have been partly privatised; the company Ventspils Nafta has been privatised completely. There are also plans to privatise the currently state owned electricity and heat company Latvenergo. In preparation for this process, the district heating business will be separated from the core activities of Latvenergo.

Pricing and taxation

Energy prices are not subsidised, except for the prevailing cross subsidies within the energy company Latvenergo. The calculation methodology of energy tariffs is based on actual costs and net profit by taking into account inflation, energy efficiency, marginal costs etc. Programmes of social assistance will be implemented to protect low-income consumers.

New tariff methodologies have been worked out for electricity, gas and heat energy in 1998. In general, all prices are based on the combination of actual costs and efficiency gains to ensure the reliable operation and development of energy systems. Tariffs include inflation and energy efficiency changes as well as any changes in fuel prices.

There is an excise tax on gasoline, diesel fuel, their substitutes and components. It is predicted that by the year 2000 the excise tax on gasoline - which is currently 44% of the purchase price - should reach EU taxation levels. A Value Added Tax of 18% is applicable to all goods. In the revenue structure of excise tax in Latvia in 1998, 63% is from taxation on oil products.

Tariffs proposed by the energy utilities are reviewed and approved by the Energy Supply Regulation Board, a governmental administration institution operating under the supervision of the Ministry of Economy. This institution is also responsible for issuing licences to energy utilities engaged in business activities.

Electricity and heat market

At the moment, there is still one large state owned enterprise *Latvenergo* (electricity and heat). It generates, purchases, transmits, distributes and sells practically all (99%) of electricity in Latvia, and also provides 30% of the heat supply. A reorganisation of *Latvenergo* has been started as a preparation for privatisation. The presence of a strong monopoly in the power sector, coupled with environmental liabilities and the relatively poor technical state of the power system are an impediment to liberalisation of the power market.

The Latvian Law on Energy complies for a large part with the EU Electricity Directive. However, in order to implement the EU Directive, it is necessary to develop legislation for network access (TPA), network operator and eligible customers. This legislation is under preparation now, and it is assumed that the EU Directive will be approximated by Latvian law and will be implemented by the year 2003. Third party access to energy networks is regarded as a way to support independent electric power producers, to develop competitiveness and to reduce the country's heavy dependence on imported power.

The State District Heating Enterprises now belong to municipalities or are being privatised.

Gas market

Latvijas Gaze is the leading Latvian gas company, which comprises an export company, an underground gas storage company, a transmission and distribution company (Gazes Transports) plus four regional affiliates, which deal with the distribution of gas. On top of these activities this company promotes regional co-operation and attracts international capital. Therefore, it holds a monopoly over gas imports, marketing and distribution in Latvia.

In 1997, the Latvian Privatisation Agency (representing the Latvian State) and a German consortium consisting of Preussen Elektra/RuhrGas and the Russian gas supplier Gazprom signed an agreement on shared purchase of Latvijas Gaze. Each of the parties purchased 16% of the shares, thus finalising the first phase of privatisation of Latvijas Gaze. The second phase of privatisation was implemented by public offering.

Latvijas Gaze has four licenses that give exclusive rights to store, transmit distribute and sell gas within the territory of Latvia for the next 20 years, which makes it difficult to implement the EU Gas Directive in the near future. Besides, there is only one gas supplier in Latvia - Gazprom (from Russia).

The liquefied gas market was liberalised completely in 1998.

Oil markets

Ventspils Nafta operates Latvia's main oil terminal at Ventspils. The Latvian Oil Transit Corridor includes:

- a system of pipelines across the country for crude oil transport (16 million tons annually) and diesel oil (5 million tons annually) by LatRosTrans, a Russian/Latvian joint venture,
- a railroad network with handling capacity of 15 million tons annually,
- transshipment terminals with a total capacity of 950 000 m³ and specialised sea harbour in Ventspils which can ensure complete service of the tankers of 120 000 tons dead-weight.

There is free trade in oil products from the year 1993 on. The system of supply of oil products in Latvia mainly consists of a large number of local and foreign private companies (Gulbenes Nafta, Viada, Neste, Statoil, Shell, Norsk, Texaco, Lukoil and others) which ensures a stable supply of oil products to the customers.

Solid fuels

Very little coal is used in Latvia, except for the decentralised supply of thermal energy (small boilers with a capacity up to 2 or 3MW). There is a free market in the coal supply industry since the year 1993. Purchase and sales of coal is within the scope of competence of private companies. Coal is imported from Poland and the CIS countries and is supplied mainly by railway.

5.3.2 Supply security

Domestic resources and external dependency

Latvia has known resources of oil estimated up to 150 million tons. Latvia possesses approximately 400 million tons (112 Mtoe) of peat reserves, although only about 40% of this can be used as a fuel. Peat is not expected to play a large role in Latvia's fuel mix in the future.

The import of primary energy resources is decreasing. In 1996, the import share was 50% of the electricity consumption and 60% of the heat demand. In 1998, however, only 7% of the electricity consumption was imported. Latvia imports oil, coal, natural gas and LPG from Russia, and a small amount of coal from Kazakhstan, Ukraine and Poland.

Latvia lacks sufficient (base load) electricity generating capacity. It has to import up to 50% of its electricity, mainly from Lithuania but also from Russia and Estonia. There are plans to rehabilitate the Andrejsala CHP plant (200MW heat and 120MW electric) and to build three new CHP plants. It should decrease Latvia's external dependency, as Latvia intends to reduce imports of electricity to 15-20% in the next decade. In order to meet this goal, new capacities of about 300 MW will be required by 2010. These questions are under discussion on different levels in energy sector in Latvia.

There are high expectations of the contribution of biomass in the energy sector as a way to mitigate climate change. The BALTIC 21 task foresees an increase of the contribution of biomass in Latvia from 21 PJ in 1995 up to 96 PJ in 2030.

Stocks and crisis measures

In principle, Latvia does have the capacity to store 90 days of oil product reserves. However, to achieve this goal, many of the storage facilities will require extensive refurbishment. In addition, adequate financial resources are required to ensure that there is sufficient oil in the storage facilities, and it will be necessary to set up an agency to manage the oil stocks.

Around 400,000 tons of heavy fuel oil are required to ensure adequate national fuel reserves for a three-month period during the heating season. The current storage capacity is not sufficient at all, and the available tanks are scattered around the country. Therefore the co-ordination of storage and the efficient use of reserves is complicated, but necessary.

The country possesses an extensive storage capacity for natural gas (over 50 billion m³, equivalent to 180 days) which would become more important if the Baltic States would become a gas transit corridor from Russia to the EU. From October to March the entire gas demand of Latvia is supplied from the underground storage reservoirs, that are filled by Russia from April to September. Any spare capacity will be exported to Lithuania and Estonia, according to a letter of intent signed by the three country's gas utilities.

There are coal reserves for 30 days.

Transit and interconnections

The location of the Baltic States between the Nordic countries and the continental EU Member States gives them a strategic position in the strengthening of European networks.

Currently all gas imports come from Russia. Interconnection with a Baltic gas network system is under consideration. The underground gas storage potential in Latvia is likely to be particularly important for developing an efficient Baltic gas network.

A route through the Baltics for transit of natural gas may offer significant strategic advantages to the EU by reducing the number of non-EU countries involved. There is a common interest among EU countries and Russia to reduce the current high dependency on the Ukraine for transit of natural gas. The possibility of gas supplies to the Baltics from the North Sea via Sweden could also be an economically viable option as it would make the Baltic gas network a strategic element in trans-European gas networks.

Currently, there are no electricity links with the Western European grid. Latvia has connected its high voltage lines to Lithuania, Estonia and Russia. The Baltic Dispatch Centre in Riga currently controls power exchanges with neighbouring countries via these networks.

To enhance the integration of networks, the Council for Baltic Power Systems has been set up for the following tasks:

- mutual co-ordination when solving power engineering problems of the Baltic regions,
- working out co-ordinated solutions for joint utilisation, modernisation and construction of power plants and other power facilities,
- co-ordination of the activities in elimination and confinement of emergencies.

The Baltic Assembly and the Baltic Council of Ministers have been set up to encourage further regional co-operation, including shared use of high voltage electricity grids, increased utilisation of Latvia's underground gas storage and also for increasing the transit of crude oil, oil products and natural gas in the Baltic countries.

In addition, the Baltic Ring project has been set up to encourage power exchanges between the Scandinavian countries, the Baltic States, Germany, Poland, Russia and Belarus. In May 1998, the leaders of 17 energy enterprises from the 11 Baltic Sea Region states signed the memorandum on foundation of BALTREL. The basic idea of the BALTREL memorandum is to pool all efforts of the participants for the promotion of the integration process of the national energy systems of the Baltic sea countries, thereby serving the interests of all countries in the region. In fact, the Baltic Ring represents the interconnection of all the high voltage grids around the Baltic Sea (NORDEL, UCPTE, IPS and CENTREL). Overall, 7 billion USD have already been invested in this network, with further investments of about 2 billion USD under consideration.

There are also plans to improve and increase the capacity of the regional gas and oil networks and terminals, and the government is committed to further integration with the European networks, especially for electricity and gas. The EU has been providing assistance through the recently completed Phare Baltic Gas Study and the future Energy TEN funded study on the Nordic gas grid.

5.3.3 Sustainable development

Energy efficiency

In a country with very few indigenous energy resources, energy efficiency is clearly an important objective. According to the World Bank, Latvia currently uses 35% more energy per dollar of GDP than other comparable countries at a similar income level. Therefore, Latvia has recently (July 1999) initiated an Energy Saving Strategy with the objectives to attract foreign capital, increase public awareness, install control and metering equipment for heat consumption and encourage insulation in buildings. Furthermore, fuel prices and production costs are to be reflected in tariffs and (cross-)subsidies are to be abolished. Some measures already implemented are the inclusion of energy efficiency in energy tariffs, including energy efficiency measures in the Public Investment Programme and participation in international programmes.

The Energy Department of the Latvian Development Agency is responsible for implementing the majority of energy saving actions. Various pilot and demonstration projects have been conducted, and several Energy Efficiency centres have been established.

Renewable energy

Renewables play a relatively large role in Latvia, mainly wood and hydro. The government promotes renewable energy sources as a way to reduce import dependency. Biomass is given priority. An increase of biomass use from 21 PJ in 1995 up to 96 PJ in 2030 is foreseen.

There is no separate energy policy document for the promotion of renewable energy. The Latvian National Energy Programme contains a Section 'Renewable Energy'. The Latvia FEMOPET³ activities are mainly in the field of promotion of renewable energy in Latvia.

Environmental protection

Emission levels have fallen since 1990, but this has been due to the decline in economic activity rather than any positive move towards environmental protection. Therefore, emission levels are now beginning to increase again.

Latvia's environmental policy is set out in the Environmental Protection Policy Plan (EPPP). The government has ratified the Framework Convention on Climate Change and plans to stabilise the country's greenhouse gas emissions at 1990 levels by 2000. It is also committed to energy efficiency, reducing the combustion of high sulphur HFO and the introduction of more CHP. The *Natural Resource Tax Law* has been adopted to tax emissions of CO, NO_x, SO₂, V₂O₅ and particles to achieve environmental benefits. However, so far actual taxation has not been implemented. The Latvian National Energy Programme defines a set of measures to be implemented to reduce the impact on environment.

Promotion of energy technology and research

The Latvian National Energy Programme has two goals relating to energy research and development:

- Education: to ensure that specialists of adequate qualifications are available for employment in the energy sector.
- Science: the development of energy equipment and systems, improvements in operational efficiency and environmental protection.

The majority of funding for research is supplied from state funds. Some opportunities are coming with the call for proposals from the Nordic Council of Ministers and EU 5th Framework Programme. Although these funds are limited, the government is committed to Research and Development and it is an integral part of the Latvian National Energy Programme.

5.4 Conclusions and comments

The Latvian energy sector is characterised by the following factors:

- a lack of indigenous energy resources (coal and gas); oil might be a potential domestic resource,
- a heavy reliance on imports of oil, coal, natural gas and LPG from Russia,
- a lack of sufficient electricity generating capacity, leading to a reliance on imports from Estonia, Lithuania and Russia,
- large underground gas storage reservoirs,
- a large potential for hydro-power production and an increasing use of wood (biomass) in the energy sector,
- a large oil terminal at Ventspils which is one of the main transit points for Russian oil exports in the Baltics.

³ Fellow member of the OPET network. The OPET Network is an initiative of the European Commission, which aims to disseminate information on, and promote the benefits of, new innovative energy technologies.

The following key issues need attention in the framework of complying with the EU energy Acquis:

- establishing the capacity to maintain oil and oil product stocks for at least 90 days,
- the insufficient level of energy efficiency,
- compliance with the EU Gas Directive,
- compliance with the EU Electricity Directive.

The consultant observes that the Latvian government is progressing in preparing for the approximation process with respect to the energy acquis. However, there are several obstacles to be tackled before full compliance is achieved.

Energy efficiency

Given the high energy intensity, the current priority given to energy efficiency issues should be continued and enhanced. The reforms in energy prices and tariffs should also be continued, because cost-based energy prices are particularly important for promoting energy efficiency. Of course, first all (cross-) subsidies should be abolished.

Security of supply

The supply security, very important for Latvia given its lack of indigenous resources, will also benefit from more efficient energy use, and from an increased share of renewables. To start the building up of sufficient oil stocks, legislation and institutional arrangements are necessary.

Regional co-operation, in particular in the Baltic Ring, remains important, together with inter-connections with Western Europe for the power and gas networks.

Compliance with EU Electricity and Gas Directives

In the gas sector, a solution must be sought for the difficulties in compliance with the EU Gas Directive. In particular, it concerns the exclusive 20 year licenses issued to Latvijas Gaze, implying a monopoly position for this company, and the fact that there is only one gas supplier in Latvia - the Russian company Gazprom.

The state monopoly in the electricity sector needs to be restructured. To comply with the EU electricity directive, it is necessary to develop legislation for network access (TPA), network operator and eligible customers. The presence of a strong monopoly in the power sector, coupled with environmental liabilities and the relatively poor technical state of the power system are an impediment to liberalisation of the power market.

6. LITHUANIA

6.1 Introduction

Lithuania is the largest of the three Baltic States with a population of 3.75 million and a land area of about 65 thousand km². After the restoration of independence in 1990 it became a democratic state, and started to implement comprehensive reforms. These reforms were necessary as the technical and institutional structure of the energy sector, inherited from the past, did not suit the requirement of Lithuania as an independent country and the conditions of a market economy.

6.2 Policy objectives and priorities for accession

6.2.1 Policy objectives and documents

The *National Energy Strategy* (1994) formulates Lithuania's energy strategy over the next 20 years. The Lithuanian Government approved a revised National Energy Strategy in December 1998 but Parliament returned it for further analysis as the main political issue - the future of Ignalina Nuclear Power Plant has not been decided yet. The new strategy (including the future of Ignalina) is to be adopted this autumn. The main objectives of the National Energy Strategy (NES) are:

- secure and safe energy supply at lowest costs,
- increase of energy use efficiency,
- introduction of market disciplines in the energy sector,
- lowering impacts on the environment,
- regional co-operation,
- preparation of the Lithuanian energy sector for integration into the EU,
- better management in the sector,
- drafting, adopting and implementing the legislation required to facilitate these objectives.

Other important energy policy documents are:

- The *National Acquis adoption programme* (November 1998): restructuring the existing legal and institutional frameworks in order to reach approximation with the European frameworks.
- There is also a *Government Action Programme for 1997-2000*. Most of its objectives are included in the *National Acquis adoption programme*. It commits, among others, to monopolise and decentralise the energy sector and reduce expenses of energy supplies, implement projects ensuring alternative resources of oil supplies, create conditions to export electricity.
- The *National Energy Efficiency Programme* (January 1992) was revised in August 1996. In this programme the energy saving potential was estimated together with the necessary investments. The main priorities for the implementation of the programme were also identified.

6.2.2 Legal and institutional framework

The *Energy Law* provides the legal basis for the National Energy Strategy. Together with the *Privatisation Law*, it creates a supportive climate for institutional and structural reforms. The *Energy Law* consists of seven main sections:

1. general,
2. energy resources use,
3. energy strategy and investments,
4. operating rules of the energy sector,
5. principles of regulation of the sector,
6. state supervision of the sector and responsibilities,
7. international activities.

At the end of 1996, a law on *nuclear energy* was adopted. The objective of the Law is to ensure nuclear safety when nuclear energy is used to meet peaceful needs, and to prevent the development of nuclear weapons. The *Environmental Protection Law* was passed by the Parliament in 1992. Lithuania has also committed to creating regulatory laws for different energy sectors, which are currently being drafted.

The *Ministry of Energy*, according to the Energy Law, regulates energy activities representing interests of the state. The Lithuanian *Energy Agency* reports to the Ministry. The *State Energy Inspectorate* performs the state supervision over energy equipment to ensure reliable, efficient and safe supply and utilisation of energy resources. The *State Commission on Pricing and Energy Activities Control* regulates electricity, heating, gas prices, sets energy pricing principles and implements energy policy goals in the control of energy activities. The *State Nuclear Power Safety Inspectorate* (VATESI) was set up to ensure that the operation of Ignalina NPP is in full compliance with the requirements imposed by Lithuanian and international regulations. The Energy Agency, through its department the *Energy Conservation Programme Directorate*, is the main state body responsible for the implementation of the National Energy Efficiency Programme.

6.2.3 Acquis acceptance and international dialogue

The Europe Agreement between the EU and Lithuania entered into force on 1 February 1998. The National Acquis adoption programme envisages seven main tasks to be performed in the energy sector (excluding nuclear energy); two of which have already been accomplished:

- Preparation of the principle schemes for further restructuring and privatisation of enterprises in the energy sector.
- Adoption of the district heat decentralisation law.

The following measures were to be carried out during 1998 but were not fully accomplished:

- Preparation and implementation of the energy system efficiency increase programme.
- Restructuring of the Lithuanian Power Company and the Lithuanian Gas Company – only the first stage is accomplished.
- Preparation of a strategy for energy product export.
- Preparation of a means for decreased influence of energy resource suppliers.
- Adjustment of rules for consumption of electricity and heat.

With respect to harmonisation of the Lithuanian national laws with the Acquis Communautaire: 11 of the 45 EC directives already have been transposed and the remaining 34 are planned to be implemented in 2004-2005. Lithuania ratified the Energy Charter Treaty in September 1998.

Lithuania has dialogues on energy matters with Latvia (on gas and electricity supply), with Poland (on the electricity link), with Scandinavian countries (on possible electricity and gas interconnections), and with the EU (on harmonisation, standards and other general issues). It also has a continuous dialogue with Russia due to its reliance on Russian imports of gas and oil and its ongoing debt to Russia. As Belarus owes some 100,000 USD for supplied electricity there are political efforts to ensure the debt is covered. In addition, Lithuania participates in Joint Baltic Sea Energy Programme (more of political and analytical level than resulting in some action, at least so far). Lithuania also takes part in Baltic 21, the framework for sustainable development in the Baltic Sea region.

The safety and decommissioning of the Ignalina nuclear power plant is an important bottleneck in EU accession. The plant is regarded as in need of safety improvements, although one international safety enhancement programme SIP-1 has been completed and SIP-2 is currently being undertaken. There is international pressure for early decommissioning of the plant. The Ignalina nuclear power plant applied for an international licence for operation of Unit 1 of the plant and in July 1999 the State Nuclear Power Safety Inspectorate (VATESI) granted such a licence for a period of five years. The EU is opposed to rechanneling this unit. The government has decided to construct a spent fuel storage facility at Ignalina and the storage acceptance act was approved in the Government session of March 10, 1999.

6.3 Current progress in approximation

6.3.1 Competitiveness and the internal market

Ownership

Lithuania continues to adapt its energy sector to EU competition and the requirements of the internal market. The main Lithuanian energy companies are joint-stock companies, although they are still predominantly owned by the State. The Lithuanian Power Company is 86.5% state owned, the Mazeikiai refinery (including the merged in Lithuanian Gas and Birzai oil pipeline companies) is around 90% state owned. The Lithuanian Fuel company (oil products retail) consists of 73% state capital. Only the Ignalina nuclear power plant is 100% state owned. The government aims to increase the involvement of private capital in a selected number of companies in the energy and particularly the oil sectors.

Third Party Access and other relations between market actors are to be resolved and regulated by the new sectorial regulatory laws which are currently being drafted. For the electricity and gas sectors, the drafting law will take account of the EU gas and electricity directives.

Pricing and taxation

Prices of coal and petroleum products are deregulated and set by the free market. The refinery sets its own product prices, and the oil transportation companies also assess the tariffs by themselves. The State Pricing and Energy Activities Control Commission assesses prices for district heating, electricity and natural gas. The prices cover reasonable expenses of energy production, transmission and distribution. The cross-subsidies from the electricity sector to the heat sector were abolished in 1996. During the transition period energy production using conventional primary fuels was subsidised by the state. These subsidies have been removed.

There are excise taxes on petrol and diesel. An excise consumption tax is levied on electricity. Other energy products are exempted from taxes, except for electricity production, which has a 1% excise tax. In addition, value added tax is levied (18%). Other taxes/charges applicable in the energy sector are a tax on natural resources, pollution and oil and gas resources.

Electricity and heat market

The Lithuanian Power Company ('Lietuvos Energija') is a vertically integrated, monopolistic company in charge of the production, transmission, and distribution of electricity. Recently the separation of district heat was completed. Independent units were established which are owned by municipalities. The regional district heating companies are subject to further restructuring into more local production units. Electricity distribution networks are to be separated.

The Ignalina nuclear power plant is completely owned by the State and sells all power to the Lithuanian Power Company.

Gas market

The Lithuanian Gas Company ('Lietuvos dujos') is responsible for the import, transmission and distribution of natural gas and LPG. It is also responsible for the gas pipeline network. A restructuring of the Lithuanian Gas Company is scheduled – first by a separation of the LPG and gas facility divisions and next by privatisation of the new companies. A private gas supply company Stella Vitae is also active in the market, purchasing gas from the Russian supply company Gazprom and selling it to Lithuanian Gas.

Third party access already takes place, by allowing the Russian gas company Gazprom to supply gas directly to the mineral fertilisers producer Achema. However, TPA is not yet regulated by law.

Oil markets

Partial privatisation is being prepared particularly in the oil sector. The Mazeikiu refinery is the only refinery in the Baltic three states. It has merged with the oil terminal Butinges Nafta and the Naftotiekis pipeline into one legal entity, thus integrating oil import/export via a pipeline and refinery. Later 'Mazeikiu nafta' is to be privatised according to the normal procedure regulated by the privatisation law. The government has decided to sell two thirds of the shares of Mazeikiu Nafta to a US investor, however, the parties disagree on who will have to cover certain losses.

Lithuanian Fuel (Lietuvos Kuras) for retail trade of oil products and 'Geonafta' (oil exploration) are to be privatised during 1999. Lithuanian Fuel, at present, covers only 20-25% of the wholesale and retail petroleum market. Scandinavian firms such as Neste and Statoil are active in Lithuania, and other foreign firms such as Shell are beginning to enter the market. The Russian firm Lukoil is also becoming increasingly important in Lithuania with increased activity at Mazeikiu refinery and in the retail market.

Licenses or authorisations are needed in the petroleum market (production and the wholesale and retail sale of products). The State Energy Inspectorate issues licenses to energy generators. They are non-discriminatory.

Solid fuels

Coal has only a small share in the primary energy balance and is freely traded in the market. Lithuanian Fuel has a dominant position in coal trade. Peat is one of the indigenous resources.

6.3.2 Supply security

Domestic resources and external dependency

In 1997, 93% of Lithuania's primary energy was imported. The country possesses roughly 270 million tons of peat, only modest oil resources, and some limited hydro resources. The large reliance on imports, especially from Russia is expected to continue and might lead to serious problems, unless new policy measures are put in place.

Gas is supplied entirely by Russia. Interconnection with the Western gas grid is very expensive. The future role of gas is highly dependent on the future of Ignalina nuclear power plant. If it were to be closed the demand for gas would increase, especially if gas-fired power-generating capacity will be installed.

Regarding electricity, Lithuania has a generating capacity three times higher than its domestic demand, and exports to Russia, Latvia and Belarus have decreased. The Ignalina Nuclear Power Plant is strategically important as it produces the majority of Lithuanian electricity. The Lithuanian system can depend on emergency support and spinning reserve provided by the wider north-west system, including hydropower plants in Latvia, as long as there is substantial surplus capacity in these countries. However, in the longer term, Lithuania would need to enter into more formal arrangements with its neighbours.

All of Lithuania's oil imports come from Russia, and heavy fuel oil from refineries in Belarus. Coal comes from Russia, Ukraine and Poland. All thermal power plants, except Mazeikiai, are dual fired (run on either gas or oil). Further diversification has been achieved by introducing orimulsion from Venezuela and burning it at the same power plants (triple firing) although that considerably increased toxical emissions.

Stocks and crisis measures

In the Lithuanian Energy Law, there is a requirement to have 60 days of oil demand stocks. However, there is no stockpiling law and no special agency responsible for strategic reserves. The obligation in the Acquis to hold ninety days of oil stocks is not met. Support (mostly financial) is sought for setting up the legal and institutional framework for crisis management, drawing on oil stocks and raising the stock level to that of the EU requirements.

There is currently more than 1 Mt of oil product storage capacity in Lithuania and additional storage capacity is planned. In addition, there is almost 0.8 Mt of storage at the Mazeikiai refinery. At present, Lithuania has a possibility to import around 5 Mt of oil products (diesel oil and heavy fuel oil) per year. In the near future, this will increase to 8 Mt crude oil plus 2.5 Mt light oil products annually, after finalisation of the Butinge terminal.

Gas storage is too expensive in Lithuania. Participation in the development of underground gas storage facilities in Latvia seems to be the economically viable option.

Transit and interconnections

The location of the Baltic States between the Nordic countries and the continental EU Member States gives them a strategic position in the strengthening of European networks.

Currently there are no electricity interconnections with Western Europe. Lithuania has interconnected high voltage lines to Belarus, Latvia and to the Russian enclave Kaliningrad. The plans to connect Lithuanian and Western European power systems by building a 400 kV electric power transmission line from Lithuania to Poland (Baltic Ring) have been delayed. The winner of the tender has not started the project, so the Ministry of Economy will prepare a new approach.

Currently, all gas imports come from Russia. Interconnection with a Baltic gas network is under consideration. The underground gas storage potential in Latvia is likely to be particularly important in this process. A route through the Baltics for transit of natural gas may offer significant strategic advantages to the EU by reducing the number of non-EU countries involved. There is a common interest among EU countries and Russia to reduce the very high present dependence on the Ukraine for transit of natural gas. The possibility of gas supplies to the Baltics from the North Sea via Sweden could be very significant as it would give the Baltics a strategic position in the trans-European gas networks.

The Baltic Assembly and the Baltic Council of Ministers have been set up to encourage further regional co-operation, including shared use of high voltage electricity grids; increased utilisation of Latvia's underground gas storage and increased transit of oil, oil products and gas.

6.3.3 Sustainable development

Energy efficiency

The energy intensity of the national economy is high (1.5 toe per 1,000 USD - five times that of Germany). There are relatively high losses from the 52 district heating systems in Lithuania, about twice the level of western European systems.

The first National Energy Efficiency Programme was approved in 1992 and has been revised in 1996. The Energy Conservation Programme Directorate is the main state body responsible for the implementation of the National Energy Efficiency Programme. There is also an energy efficiency policy body called the Energy Conservation Commission. Energy efficiency is promoted by Energy Efficiency Centres in Vilnius and Kaunas. A draft law on Energy Conservation has been prepared. Adoption of a law on Energy Conservation is one of the current priorities within the energy sector. There is also a National Transportation Programme containing sections on energy efficiency within the transport sector.

With respect to the acquis, Lithuania aims to achieve full compliance with the EC legislation by the year 2002. This concerns directives for household appliance labelling, energy efficiency requirements for refrigerators, hot water boilers and (partly) heat generation. Insulation in new non-industrial buildings has achieved European standards in 1998.

Renewable energy

Promotion of renewable energy sources is one of the priorities in energy policy, as it is regarded as a way to decrease the external dependency. However, the use of the domestic resource peat is promoted for the same reason.

Currently, only hydro energy (with total installed capacity of 106 MW) and biomass (wood) are used. Renewables are promoted within the National Energy Efficiency Programme. The Energy Law also encourages the use of renewables and also requires that excess energy produced by independent producers will be purchased into the national grid. The feed-in tariff equals average tariffs to be paid by customers.

Environmental protection

There are large emissions of SO₂ in Lithuania, as there is no abatement equipment installed at the power plants. The energy sector is also responsible for a considerable amount of NO_x emissions, as well as thermal pollution and pollution from liquid effluents, affecting lakes (coolers for the plants). Due to the large amount of electricity production from nuclear (more than 80%), national CO₂ emissions are low. There is potential radioactive contamination around the Ignalina nuclear power plant.

Lithuania has signed several international conventions (on transboundary emissions, on SO₂ and NO_x emissions, etc.). Environmental standards are gradually to be set to the EU levels. The National Environment Protection Strategy was prepared and approved in 1995. The Environment Protection Law was passed on January 21, 1992. The UN FCCC has been ratified in 1995 with the target not to exceed the 1990 emissions by the year 2000. The Kyoto target is an obligation to reduce emissions of greenhouse gases at 8% below 1990 level by 2008-2012.

Promotion of energy technology and research

The National Energy Strategy encourages energy research and development. The Lithuanian Energy Institute is responsible for the majority of energy research, data gathering and long-term investment planning. Research and development is funded from the state budget and from international sources (joint projects, studies, demonstration and pilot projects, etc.).

6.4 Conclusions and comments

The main problems that characterise Lithuania's energy sector are:

- a high energy intensity,
- excessive reliance on imports of fossil fuels and nuclear fuels from the former Soviet Union,
- production capacities which by far exceed national demand, both in the power and refining sectors,
- a high dependence on one nuclear power plant for the total electricity demand.

The key bottlenecks for EU accession are:

- Maintaining oil and oil product stocks for at least 90 days.
- A legal and institutional framework for crisis management.
- The legal regulation of the electricity and gas sectors (mainly implementation of electricity directive (96/92/EC), electricity transit directive (90/547/EEC), gas directive (98/30/EC) and gas transit directive (91/296/EEC)).
- The future of the Ignalina nuclear power plant. The Accession Partnership requires as a short-term priority the establishment of a decommissioning plan for the nuclear power plant Ignalina according to commitments entered into in the Nuclear Safety Account (NSA) agreement.

Reform of the energy sector

The reform of the energy sector itself should be enhanced, particularly directed at the implementation of the EU electricity and gas Directives. Firstly, this requires abolishment of state monopolies, establishing a proper regulatory and a commercial framework for the electricity, heat and gas, unbundling of vertically integrated companies. This for promoting more competition and thereby efficiency in the power and gas sectors.

Nuclear power

On the short term, it is most important that clarity is achieved on the future of the Ignalina nuclear power plant, because it also hampers the approval of the National Energy Strategy by the Parliament. As the main issue, the future operation or closure of the Ignalina plant, has not been politically decided yet and parliamentary proceedings have been postponed to the autumn session. A comprehensive National Energy Strategy is an important basis for future energy policy, and a requirement for EU accession.

Furthermore, the future of Ignalina nuclear power plant has implications for most of Lithuania's key energy policy issues. In particular security of supply, and the level of greenhouse gas emissions will be influenced. There are several reasons to give priority both to energy efficiency and renewable energy deployment. Both reduce the import dependency, which will become even more important if nuclear energy is phased out. If nuclear energy is phased out, Lithuania will also have to make a significant effort to abate greenhouse gas emissions and achieve the Kyoto target. Clearly, the current high level of energy intensity indicates that there is a considerable potential for energy efficiency improvement and thus reduction of greenhouse gases.

Renewable energy

Given the importance of the promotion of renewables both in improving security of supply and in view of the Kyoto targets, Lithuania should develop a separate strategy for renewable energy. The strategy should include official targets, identification of priorities and selection of policy instruments.

7. POLAND

7.1 Introduction

Poland has a rapidly growing economy and has come a long way in completing the process of trade and price liberalisation. Poland's real GDP growth rate has been at least 5% since 1994 and reached 6.9% in 1997. Exports increased by nearly one-fourth in 1994. Consumer inflation was lowered from 650% in 1990 to 11.4% in 1998. On the other hand, unemployment increased largely, to 16.7% in 1995 and thereafter declined to 10.4% in 1998. The growth in private companies in the last years has been enormously. Private companies currently account for more than half of GDP and almost 60% of total employment.

7.2 Policy objectives and priorities for accession

7.2.1 Policy objectives and documents

The Strategy for Poland specifies the aims and means of Polish national economic policy. Some of its important aims that largely influence the country's energy policy include fast EU integration, improvement of international competitiveness, reduction of social reform costs and macro-economic and system stabilisation.

Poland's energy policy was specified in the Energy Policy Guidelines for Poland until 2010, which was accepted in May 1995. The new version of the Energy Policy is currently under preparation, and is expected to be presented in autumn 1999.

The main objectives of the Polish energy reform policy include:

- Price adjustments: phasing-out of subsidies and base energy prices on real economic costs.
- Restructuring the sector: reduce vertical and horizontal integration, create larger enterprises.
- Privatisation of energy companies.
- Establishment of new legal and regulatory framework.

7.2.2 Legal and institutional framework

The New Energy Law, entered into force December 1997, has the following main objectives:

- Define responsibilities of governmental and regional bodies.
- Secure Poland's supply of energy and fuels.
- Achieve efficiency in the production and use of energy and fuels.
- Develop competitive conditions in the energy industries.
- Protect consumer interests.
- Minimise energy system costs.

In the framework of the New Energy law, the Energy Regulatory Authority was created. Its responsibilities include licensing of energy companies and agreement of their energy plans, supervision and approval of quality and prices, promotion of end-use efficiency, and dispute settling.

7.2.3 Acquis acceptance and international energy dialogue

Poland generally accepts the Acquis. Most requirements are already implemented or in the process of becoming so. The areas where problems are encountered and a transition period could be needed include:

- Stock of crude oil and petroleum products: current capacity is about 44 days, extension to comply with the Acquis requires over 2 billion USD.
- Liberalisation of the gas market: the gas sector is currently under restructuring and gas prices are not yet based on economic costs.
- Stranded costs: problems of long-term contracting when companies are separated and competitiveness of existing companies (with historical obligations) compared to new market entrants.

Poland expects the accession to support its diversification of energy supply, but only to a limited extent.

Poland signed the Association agreement with the EU in 1993. Poland has also signed the Energy Charter Treaty and has completed national procedures for ratification. Actual ratification has not yet taken place, but may be completed by the end of this year. Poland will continue its co-operation with international organisations, including the WEC, UN-specialised organisations, the EU, IAEA and the IEA. In 1992, the Polish government signed a letter of intent to the World Bank concerning the energy sector restructuring.

Poland signed a number of international conventions on the reduction of environmental emissions, including the FCCC, SO₂ and NO_x protocols. Poland also signed international agreements concerning the ozone layer and rational waste management.

Poland's power system is connected to the UCPTE since 1995.

7.3 Current progress in approximation

7.3.1 Competitiveness and the internal market

Ownership

The New Energy Law created conditions to introduce competition in all sectors of the energy market. Restructuring and privatisation programmes are designed and implemented, or in the process of being so. A description of the restructuring and privatisation process for each market segment is included below. With the publication of the New Energy Law, the Energy Restructuring Group that was established to support the restructuring process was dissolved. Some of its tasks and experts are now part of the Energy Regulatory Authority (ERA).

The state keeps full or controlling interest in the hard coal and brown coal mines as well as the Polish Power Grid Company. After restructuring the Polish Oil and Gas Company the following companies will be created in which the state is expected to keep controlling interest: crude oil and gas mining enterprises, transmission and distribution of gas. Controlling interest of the State is expected to be kept also in the Polish Oil Company (established in 1997) to co-ordinate the financial and capital strategy of the liquid fuels sector. It is envisaged that the state will gradually reduce its ownership.

Pricing and taxation

Energy prices are liberalised since January 1999, with the exception of gas prices. Prices are no longer controlled by the Ministry of Finance. The Ministry of Economy and the ERA supervise the tariff structure and prices for electricity, gaseous fuels, brown coal and heat. Based on a special article in the law, the Minister of finance retains the right to set prices until the year 2000. This because of the concern with persistent inflation, which has been partly, caused by rising energy prices. As soon as the ordinance for gas tariff calculation is issued, ERA will supervise these tariffs as well. For the year 1999 maximum price increases for individual consumers were set at 13% for electricity and 15% for heat.

7.3.2 Electricity and heat market

The Polish electricity industry has undergone a process of restructuring since 1989. The sector is currently under restructuring into three subsystems: generation, transmission and distribution and trade activities. Power generation will be privatised by the end of the year 2001. The independent Polish Power Grid Company (PPGC) is likely to remain state-owned. Based on the new Energy Law, the responsibility for district heating has been shifted to the regional level (Voivoidships). The district heating companies are now joint-stock companies, partly owned by state, partly by municipalities, partly by private investors. Full restructuring and privatisation is planned. CHP companies are also re-organised as joint-stock companies. A programme for privatisation of public CHP stations is currently being prepared. The new privatisation programme of the power sector was presented to Economic Committee of the Cabinet in July 1998.

There are no dominant positions in the generation of electricity, however there are local monopolies with a kind of yardstick competition. Industrial autoproducers account for 10% of capacity; its share in production is only around 7%. There is no nuclear power in Poland and there are no construction plans.

Implementation of the EU Electricity Directive is under preparation in the framework of the new Energy Law. Poland chose to implement regulated TPA in the electricity sector, which (at the moment) only concerns domestic electricity. By the end of the year 2002 full compliance with the EU Directive is expected.

7.3.3 Gas market

The Polish Oil and Gas Company (POGC) is still a fully integrated monopoly, but is subject to restructuring at the moment. A restructuring plan for the gas industry has been sent for approval to the Government. This plan includes the division of POGC into separate units for production, transportation, wholesale trade and distribution, and ancillary services. POGC comprises of 23 separate units, operating their own budget.

A number of foreign companies has received concessions for exclusive right to certain areas for exploring natural resources. However, the majority of the territory is still reserved exclusively for POGC, and is exempted from the concession procedure. The licensing system, entered into force in December 1997, authorises the President of ERA to issue licenses to energy companies that meet certain specified requirements and its application is in accordance with social interest and energy policy guidelines.

The New Energy Law is believed to introduce full competition into the gas sector by implementing regulated TPA. Unlike the electricity market, TPA is not introduced yet, since the ordinance related to tariff setting has not been completed yet. At the moment, gas prices - particularly for households - are still not cost-based, but fixed by the Minister of Finance.

Oil markets

The oil sector has been dominated by the POGC, which had a fully integrated monopoly. As was explained above, the POGC is currently under restructuring. Oil transportation and storage will not be privatised, but the remaining part of the oil sector is expected to be fully privatised. Currently, wholesale and retail trade as well as distribution of liquid fuels are operated by the state-owned joint-stock company CPN and private and foreign companies. CPN has a significant share in the Polish liquid fuels market, being involved in trade and distribution, and owning petrol stations, tanks etc. In May 1999, the shareholders of CPN decided to merge the company with Petrochemia Plock S.A.

Prices for oil and gasoline were liberalised by January 1997.

Solid fuels

The coal sector restructuring programme that was approved and started in 1996 was amended by the Parliament on November 26, 1998. The new restructuring programme of 1998 lays down the strategy for the sector for the period 1998-2005 and is aimed at making the industry profitable by 2002. A list of mines to be closed has been published and a new agency has been created to manage the programme. The programme foresees sixteen coal mines to be closed down and 57 coal mines are prepared for restructuring. At the moment, coal is still partly subsidised and makes large losses. Attractive early retirement schemes and other policy measures have resulted in a larger reduction in the number of employees than foreseen for 1998.

There are no dominant positions in coal mining. Most of the 70 coal mines have been grouped together into 6 joint-stock companies. Coal prices are negotiated between the mines and the power plants.

7.3.4 Supply security

Domestic resources and external dependency

Coal is the dominant fuel in Poland, accounting for about 95% of total production and over 70% of total consumption. Power production is almost exclusively based on coal (90%). Domestic coal reserves are huge: 65 million tons of recoverable coal reserves, of which one-fourth is mineable. The high quality hard coal reserves are mainly concentrated in Upper Silesia. Brown coal or lignite resources are sufficient to supply 40% of TPER to 2010.

Indigenous gas supplies provide around 35% of demand. The remaining is imported, up till now only from Russia. Diversification policy resulted into long-term contracts with Gazprom (via the Polish part of the Yamal pipeline, planned to start operation in 1999), and ongoing negotiations with Norway and Netherlands. Furthermore, Poland is interconnected with the German gas market. Town gas is not manufactured any more in Poland. The share of gas continues to increase. The contract signed between Poland and Gazprom to import an additional 14 bcm of gas through the Yamal pipeline is expected to double gas supplies by the year 2020.

Oil consumption strongly increases in Poland. Since domestic crude oil and condensate production is very small, Poland almost entirely (99%) depends on imports. About 75% of Poland's oil imports now come from Russia.

There is little potential for renewable energy, given the high costs. Of this, large hydropower has the largest potential. In the future, coal-bed methane could become important: there is 47 bcm of extractable methane in the Upper Silesian hard coal mines. The same amount is expected in other domestic deposits.

Stocks and crisis measures

Current oil stock capacity is 30 days. Liquid fuel reserves can cover around 40 days. To comply with Acquis requirements, stocks of imported fuels should be increased by the year 2005, but large investments are needed. The capacity of Poland's underground gas storage facilities currently corresponds to 70 days of consumption, which is planned to increase to 105-110 days in 2010. POGC is studying the feasibility of converting depleted gas fields to underground storage. Presently two additional storage tanks are under development. Currently, Poland has hired gas storage capacity in Ukraine.

Transit and interconnections

Poland's involvement in Trans-European Networks includes:

- Electricity interconnections with Belarus, Czech Republic, Germany, Slovak Republic and Ukraine. Cable with Sweden under construction.
- Participation in the Baltic Ring interconnector.
- Connection with the UCPTE system since 1995.
- A Polish segment in the Yamal pipeline.

7.3.5 Sustainable development

Energy efficiency

Although the Polish Government recognises the importance of improving energy efficiency, there are very few policies or programmes to support this. Although energy efficiency is nominally the responsibility of the Energy Department in the Ministry of Economy, no official government unit is officially responsible for developing and implementing a coherent energy efficiency policy, neither are their recent documents and programmes to promote energy efficiency in Poland.

A programme on energy efficiency in the housing sector was accepted by the Government in 1995 and a law on thermal insulation has been approved and published in December 1998. Furthermore, a number of organisations have undertaken studies on energy efficiency potentials, information campaigns and training and licensing of energy efficiency auditors. The New Energy Law requires energy enterprises to include integrated resource planning in their development plans.

Renewable energy

Renewable energy currently provides less than 2% of TPER. None of the renewables has a very large potential in Poland, but the regional potential of some carriers can be quite high. Hydropower is the most important renewable energy source in Poland. The New Energy Law includes a purchase obligation for electricity from renewable sources.

Environmental protection

Improvement of environmental protection is stated to be one of the most important targets of the Polish Government Policy. Poland signed a number of international conventions on the reduction of environmental emissions, including the FCCC, SO₂ and NO_x protocols. Poland also signed international agreements concerning the ozone layer and rational waste management. Desulphurisation technologies in power production plants need to be improved.

The document 'National Environmental Policy' (approved by Parliament in 1991) and the implementation programme (approved by Parliament in 1995) is the basis of environmental policy for the Polish environmental policy, including investment projects until the year 2000.

Promotion of energy technology and research

In 1991, the State Committee for Scientific Research (KBN) was established. Its objectives include:

- increasing the efficiency of energy processes,
- rationalisation of energy consumption,
- environmental protection in energy sector,
- development of rational technologies of RES and non-conventional energy.

In 1993, KBN allocated 77.7 billion Zloty to energy related research. Because of budgetary shortages the funds for R&D have been reduced. Generally, priority was given to projects that may enhance international competitiveness of the Polish industry, raise the living standard and contribute to environmental protection.

7.4 Conclusions and comments

The key bottlenecks in the accession process, as identified in this document, include:

1. increase of oil stocks from 30 days currently to required 90 days,
2. restructuring of the Polish coal sector,
3. restructuring of the oil and gas sector,
4. distorted gas prices,
5. lack of capital for investments in the energy sector.

In addition to these issues, the consultant recommends to focus on the following issues.

Restructuring of the gas sector

It can be expected that Poland will need a transition period to comply with the Acquis requirements concerning the restructuring of the gas sector. It is recommended to set up a clear scheme of objectives, actions and time frame for this restructuring process. Within this scheme, issues of stranded costs, TPA and gas pricing should be dealt with. To support its strategic position as gas transit country, it is recommended to focus on transparent tariff setting for gas transit.

Energy efficiency

Energy efficiency and energy conservation should be taken seriously. A coherent national energy efficiency policy should be implemented, including setting official targets, analysing market barriers and drawing up an energy efficiency action plan and implementation scheme. This should be supported by appropriate legislation and updated ordinances on energy efficiency. It is certainly not adequate to limit efforts to undertaking some studies and implementing some small projects such as insulation of buildings! The energy conservation agency seems to have inadequate means and possibilities to carry out the tasks it was designed to do. Additional support is required.

Energy Charter Treaty

Poland is the only one of the accession countries that has not ratified the Energy Charter Treaty. Although the responsible Ministry expects that this could be completed this year, this is doubted by national and international consultants. To support the international dialogue it is recommended to conclude the ratification process as soon as possible.

8. SLOVAK REPUBLIC

8.1 Introduction

The Slovak Republic has a population of 5.4 million and a land surface of about 50,000 km². It became independent in 1993. The Slovak Republic has few domestic resources and the dependence on oil and gas imports from Russia and the Ukraine is high. The Slovak Republic is also an important transit country for Russian gas to the Western-European markets.

In 1997, the Slovak Republic recorded the GDP growth of 6.5%. The inflation rate achieved 6.1% and the unemployment rate was 13%. However, the economic performance is expected to deteriorate in 1998. The most serious delay in the structural economic reform process has occurred in privatisation policy.

8.2 Policy objectives and priorities for accession

8.2.1 Policy objectives and documents

The Slovak Republic produced a document setting out the overall policy objectives for the energy sector. *The Energy Concept for the Slovak Republic until the year 2005* defines the basic goals and initial stages of energy policy, analyses the current status of the energy sector and determines an economic strategy for the future underpinned by advancements in the energy sector. The document is focused on a rational approach to generation and energy use, with emphasis on energy savings that could be achieved by macro-economic measures, upgrading production processes and pricing policy. The policy document emphasises the role of state supervision in energy sub-sectors, formation of a control body and the necessity for energy conservation. The *Updated Energy Concept of the Slovak Republic up to 2005* was approved by the Government Resolution No. 684/1997, dated from 30 September 1997. A new *Energy Policy* of the SR is in preparation.

The main objectives of the draft Slovak Energy Policy are:

1. To produce energy at the lowest costs and with minimum environmental impact, especially with electricity generation.
2. To provide easy and reliable delivery to the consumer.
3. To ensure the most effective and efficient transport and resource utilisation through better utilisation of reusable and secondary resources and the introduction of energy saving technologies and appliances.

Generally, the Slovak Republic wishes to reduce its dependency upon Russia for imports of oil and gas, to upgrade the existing power plants, and to encourage energy efficiency improvements in the end use.

Free trade in industrial goods is also a key objective and the process of liberalising trade in industrial goods is expected to be phased in over a ten-year period.

8.2.2 Legal and institutional framework

The Energy Act was passed and came into effect on July 1, 1998 as the Act No. 70/1998 Coll. on the Energy Industry. No substantial changes are under preparation.

Pending legislation include the draft Act on Energy Management (under preparation), and the draft Act on Oil and Oil Products and on Oil Products Supplies in the Contingencies (under preparation).

The purpose of state regulation in the energy industry is to create and encourage the environment nearing to a competitive environment, to protect the consumer, the licence holder and to provide a reliable, economic and quality energy supply. State regulation in the energy industry is performed by three state authorities - (Ministry of Economy of SR - the conditions of business activities, Antimonopoly Office - the competition, Ministry of Finance - prices and tariffs).

8.2.3 Acquis acceptance and international energy dialogue

The process of convergence of the energy policy of the Slovak Republic and the energy policy of the EU is under way. The government is committed to joining the EU, and applied for membership in 1995 and is now party to an Association Agreement. Slovak Republic is not included in the first group of applicants for the accession to the EU.

Four state authorities carry out the State regulation in the energy industry:

1. The Ministry of Economy of the SR (business activities, licensing of new energy generating facilities, etc.).
2. Antimonopoly Office of the SR deals with the competition.
3. Ministry of Finance of the SR is responsible for prices and tariff regulation.
4. The Slovak Office of Nuclear Control was established on January 1, 1993. It has considerable power in the nuclear industry and has been evaluated positively by EU and IAEA experts. The Slovak Republic is a party of the International Convention on Nuclear Safety and the Office will ensure that the requirements of this Convention are met.

The Slovak Republic co-operates with the IEA and the OECD (which the Slovak Republic is interested in becoming a member). The Slovak Republic has signed the European Energy Charter and an Association agreement with the EU.

A protocol between the Slovak government and the Russian government has been established on the supply of crude oil from Russia to the Slovak Republic. There are also similar agreements concerning the supply of natural gas and uranium.

8.3 Current progress in approximation

8.3.1 Competitiveness and the internal market

Ownership

The energy sector in the Slovak Republic still appears very politicised. The most serious slippage in the structural reform process has occurred in privatisation policy. The government has scaled down the second wave of the privatisation programme, and in June 1995 cancelled the voucher privatisation scheme altogether. For most privatisation, priority is now given to direct sales to strategic investors. The government has also removed some key enterprises from the privatisation list. There are plans to restructure the energy sector, within which the state-owned utilities will be transferred into joint-stock companies. However, the majority of strategic energy companies remains in public ownership, and act as operating agents for the state monopoly.

Prices and taxation

According to the World Bank study, wholesale fuel prices to industry and power plants cover economic costs for all fuels except coal. Retail prices to households in most cases do not cover economic costs.

Tax duties in the energy sector currently represent the following types of revenue for the state budget of the Slovak Republic:

- income tax,
- levies from the volume of wages,
- property tax,
- VAT,
- excise duties,
- road tax,
- turnover tax installations for past years,
- import tax,
- import duties.

An amendment of the Act on Taxes is in preparation. Presently the Government pays much attention to tax incentive measures for the entry of foreign investors, which is one of the top priorities of the Government in attracting foreign investments, and the harmonisation with the EU.

Electricity and heat market

The Slovak Republic has a total installed capacity of 7,114 MWe, which is dominated by thermal and nuclear plants. Most of the thermal power plants are coal fired, the rest burns fuel oil and gas. Coal fired power plants were originally designed for imported hard coal and domestic lignite. The Slovak Republic produced about 43 PJ of district heating in 1997 in state power plants, state heating plants and via auto producers. Hard coal and lignite were the source for about 20% of this production, with natural gas providing 72% and crude oil and other fuels providing the remainder. Total production of district heat remains roughly at the same level for a longer period of time, no significant change is expected in future years, either. District heating is used mainly in the country's larger towns and the system is in need of serious upgrading. However financing for the renewal of the system is very insufficient mainly because of the low prices at which the heat is sold to consumers.

The electricity sector is dominated by the state-owned Slovenske Elektrarne (SE), which owns 86% of generation capacity of production, and the high voltage network. SE operates some district heating plants. Three state-owned distribution companies have regional monopolies and also operate district heating plants. Regional and municipally-owned enterprises own local distribution networks and some production capacity.

In the period 1993-1998, electricity prices were not increased. The new Government has increased electricity prices for households by 30% on 1st January, 1999. Subsidies governed by law for heat supplies to households are included in prices of fuels. The subsidies for residential heat are planned to be gradually phased out. In 1998, they were about 30% lower than in the previous year.

The strategic objectives of the power industry are as follows:

- the completion of Mochovce nuclear power plans,
- the extension of the working life of some of the country's coal-fired plants including desulphurisation work,
- increased use of hydro generation,
- increased use of natural gas through CHP,
- strengthening of interconnections of the national network with neighbouring countries to enhance electricity trade.

Gas market

SPP is the sole owner and operator of the transit, transportation and distribution network, and holds a monopoly on imports. SPP is one of the companies designated as 'strategic' by the government in 1995 and is to remain in state-ownership indefinitely. The company will be transformed into a joint-stock company of which a sole owner will be the National Property Fund of the Slovak Republic. The company will retain its position as a natural monopoly.

Natural gas prices are slightly lower than OECD prices at the wholesale level, but significantly lower at the retail level as Slovak prices represent 1/6 of the OECD prices.

Oil markets

Slovnaft provides the oil refinery, storage and import. The enterprise was transformed from the state-owned enterprise into a joint-stock company. Slovnaft provides the oil refinery, storage and import. The enterprise was transformed from a state-owned enterprise into a joint-stock company. Slovnaft's dominant position in the products market was enhanced two years ago when the Slovak Anti-monopoly Office gave the go-ahead for Slovnaft's acquisition of a majority stake in the state-owned petrol and lubricant retailer Benzinol Bratislava, giving Slovnaft a virtual monopoly in the retail market.

Benzinol was part of Slovnaft until it was sold in 1992 in an attempt to create competition in the retail market. The Antimonopoly Office is further controlling this market and for this reason it did not permit Slovnaft to operate more than 290 filling stations which is being run by Slovnaft after taking over a controlling stake of Benzinol. This will open the way for foreign retailers to increase their share in the Slovak market

Transpetrol is a joint-stock company with a 100% ownership of the state, and the exclusive administrator, operator and distributor of crude oil by pipeline with the SR.

Solid fuels

In the upcoming years, the Government is anticipating a decrease in consumption of solid fuels from 29% of the PES use in 1997 to almost 25% in 2010. One of the reasons of a decrease in solids consumption, brown coal in particular, are environmental aspects. Lignite production in some regions represents the main source of employment and the production capacity will be maintained through three coal companies till 2005.

The coal sector will remain partially state-owned. The stocks of two mining companies (Hornitrianske Mines Prievidza and Záhorie Mine) were after the privatisation split into the employee stock and the National Property Fund's stock.

Coal prices for industry and electricity generation are substantially lower than those in the OECD. The subsidies allocated to the mining companies are provided in the three areas: assorting coal types, legal allowances for miners, and social production (introduced in 1997 to maintain the employment in a respective region). After restructuring and privatisation, these benefits will be gradually phased out before 2005.

8.3.2 Supply security

Domestic resources and external dependency

The dependency on oil and gas imports from Russia and the Ukraine is high. The petroleum reserves of the Slovak Republic are small. Crude oil is mainly imported from Russia. The Slovak Republic is dependent upon imports from Russia for virtually all of its natural gas requirements, but it has the advantage of being an important transit country for Russian supplies on their way to the Czech Republic, Germany and Austria. In April 1997 SPP and Gazprom (Russia) signed a new long-term gas supply contract until 2008, with an option for extension. In addition, SPP has signed a gas transit contract that guarantees long-term transit of Russian gas to western markets. Based on this agreement the Russian gas will remain the sole import resource in a medium term.

The 1997 coal production in Slovak Republic achieved a level of about 3.9 Mt, but in the same year Slovak Republic had to import about 7.6 Mt to meet its demand, most of which came from the Czech Republic and the Ukraine. Over the past years consumption of coal is on decline, especially in the case of small consumers who have other fuels available (e.g. natural gas).

The dependence upon imported energy has led to the development of nuclear energy facilities at Bohunice, which is scheduled to be replaced by facilities at Mochovce. However, currently, all of the country's uranium comes from Russia. The nuclear sector is state-owned and operated by SE. A new unit of the Mochovce nuclear power station was put into operation at the end of 1998, the second unit is expected to be commissioned a year later. The question of completion of two remaining units is still outstanding. A new energy policy, also dealing with these issues, is presently under preparation.

The Slovak Republic's overall position in terms of security of supply is cause of concern. The Slovak Republic has few domestic resources, so accession will slightly increase the external dependence of the EU on imports of energy.

Stocks and crisis measures

Legislation for the expansion of supply reserves is under preparation at present (*Draft Act of the Slovak National Council on Oil and Oil Product Stocks and on Supplies of Oil Products in Emergency Situation*). This Act imposes an obligation to have a 90-day stock of oil products, based on the previous year consumption. The draft act respects the requirements resulting from EU directives. Due to the capital intensity of such a solution, it has been proposed to achieve a targeted level, i.e. 90-day stocks, by the year 2006 to 2008.

Slovak Republic is already endowed with a large storage capacity for gas in relation to its consumption.

Transit and interconnections

The Slovak Republic is also an important transit country for Russian gas. The accession of the Slovak Republic would bring one of the major transit countries for natural gas into the Community legal system and would reduce some of the perceived risks of bringing gas from Russia across a series of non-EU transit countries. SPP is expanding its capacity up to 90 bcm by 2000 by constructing a fifth pipeline on the Slovak territory.

The Slovak power system is connected to both the UCPTTE and CENTREL systems. Cross border electricity sales are an example of the mutual co-operation between the Slovak Republic and Poland, the Czech Republic and Hungary.

8.3.3 Sustainable development

Energy efficiency

The promotion of energy efficiency is a main objective of Slovak energy policy and will be addressed in the draft Energy Policy. The Ministry of Economy of the Slovak Republic has set up the Slovak Energy Agency (SEA) to co-ordinate the efficient implementation of the national energy policy and regional energy concepts. The Slovak Energy Agency co-ordinates energy conservation programmes.

The Draft Act on Energy Management under preparation will provide a legal framework for the promotion of energy efficiency, including combined heat and power production (CHP). It applies the regulations and recommendations of the EU, the IEA and the Energy Charter Protocol on energy efficiency and the related environmental aspects.

However, no comprehensive official Energy Efficiency Policy exists. No official targets for the increase of supply and demand efficiency have been adopted yet.

Renewable energy

The present use of renewable energy sources in Slovak Republic is low and covers about 3.3% of the total energy consumption. A dominant position is occupied by the hydro power and biomass.

It is necessary to take supporting measures relating to legislation, pricing and tax policy, financial support and promotion. The promotion of renewable energy will be included as a general objective in the Energy Policy, which is in preparation at the moment. The Act on Energy Efficiency will establish the legal framework for a higher utilisation of renewable secondary sources in line with the legal regulations of the EU countries.

However, specific policy for renewable energy has been elaborated and no policy targets for the future contribution have been adopted.

Environmental protection

The use of low quality lignite in power and heat plants has contributed significantly to air pollution in the Slovak Republic. However, SO₂, NO_x, CO, and particulate emissions have declined substantially in recent years as a result of the decrease of share of coal, in particular the use of low-quality lignite, the decrease in electricity production, and the retrofitting of power plants. CO₂ emissions have decreased mainly as a result of the decrease of share of coal, and the decrease in demand.

The main law designed to protect the environment of the Slovak Republic is the Environmental Act 17/1992 as later amended, which provides a framework act that defines basic concepts and determines fundamental principles to protect the environment

Since 1990, the Slovak Republic has aimed to increase the amount of power produced from CHP and renewables in an attempt to reduce the environmental impact of energy production in line with international agreements.

These agreements include:

1. 1985 Helsinki Protocol aiming the reduction of SO₂ emissions by 30% from 1980 levels by the end of 1993.
2. 1988 Sofia Protocol aiming the maintenance of NO_x emissions at 1987 levels by the end of 1994.
3. 1992 UN Framework Convention on Climate Change. The 1997 Kyoto protocol listing the further requirements for the greenhouse gasses emission reduction. By 2008-2012 Slovak Republic plans to cut down the overall emission production by 8%, against the base year (1990).

As part of these obligations, a retrofitting programme for power and heat plants is underway. Furthermore, the State Environmental Fund provides funding for environmental protection, using collected emission fees.

Promotion of energy technology and research

The Ministry of Economy promotes research and development programmes. A total of 426 support programmes are focused on energy savings, with the ultimate aim of saving energy both in secondary and renewable sources. A number of promotional projects has also been installed, and represented 0.6% of the total energy consumption in 1995.

8.4 Conclusions and comments

The conclusions and comments focus on the harmonisation of the energy policy of the Slovak Republic with the EU.

Bottlenecks

The key bottlenecks in the accession to the European Union are:

- slow introduction of an EU-oriented policy and legislative framework,
- slow introduction of competition and TPA,
- slow privatisation process,
- removal of price subsidies and distortions,
- crisis management (oil stocking),
- the recent decision on extending the life time of Bohunice nuclear power plant,
- lack of energy efficiency and renewable policy.

Energy policy

The finalisation of the Slovak Energy Policy is the main priority. The new draft for the document energy policy of the Slovak Republic was submitted by the Ministry of Economy of the SR for public discussion at the beginning of July 1999. The preparation has been delayed several times, also as a result of changes in government. In particular, with the acceptance of the Energy Policy document, the Slovak Government should commit herself to clear objectives and targets in the energy field.

The privatisation and liberalisation process and the introduction of competition are still at an early stage. Concepts for third party access in the gas and electricity market still need to be developed. This speed of this process needs to be increased in order to achieve accession as planned.

Import dependency

The Slovak Republic's overall position in terms of security of supply is cause of concern, in particular in the gas sector.

Energy efficiency

At the moment, the Slovak Government focuses on the harmonisation with the EU of the legislation in the field of energy efficiency (draft Energy Efficiency Act). However, its commitment to energy efficiency in energy policy is lower than in the European Commission and in most EU Member States. In the draft Slovak Energy Policy, energy efficiency is addressed only briefly. It is necessary to develop specific policies for the promotion of energy efficiency, of which energy efficiency regulation would be a component. Official targets should be adopted. A separate Energy Efficiency Policy Document for the Slovak Republic should be developed.

Renewable energy

The commitment of the Slovak Republic to the promotion of renewable energy sources is lower, than in the European Commission and in most EU Member States. In the draft Slovak Energy Policy, renewable energy is addressed only briefly.

Similar to the field of energy efficiency, it is necessary to develop specific policies for the promotion of renewable energy. Official targets that are harmonised with EU targets should be adopted. A separate Renewable Energy Policy Document for the Slovak Republic should be developed.

Electricity and heat sector

In the electricity sector, there are few strategic consequences of accession. The Slovak Republic has an adequate power system and is a part of CENTREL and the UCPTTE network. An important part of the Slovak Republic's energy development programme is the strengthening of connections with neighbouring countries to enhance the electricity trade. The remaining price subsidies to households need to be removed, with consideration for the social impact.

District heating is used mainly in the country's larger towns and the system is in need of serious upgrading. However, the financing for the renewal of the system is very difficult, mainly because of the very low prices (not cost-covering) at which the heat is sold to consumers.

Nuclear power

The Government recently decided to extend the service life of the Bohunice nuclear power plant, which is expected to cause some resistance in the EU.

9. CONCLUSIONS

In general, it is observed that all seven CEECs considered in the underlying study are working seriously and effectively on their approximation of the energy acquis in order to qualify for entering the EU in the future. For some countries, such as Poland, Hungary, the Czech Republic, Slovenia and Estonia, the negotiation process with the European Commission has already started.

Following the main division of issues used in our country reviews, which are relevant for the implementation of (the essence of) the energy acquis communautaire, namely competitiveness and the internal market, pricing and taxation, supply security and sustainable development, we can draw the following general conclusions:

- *Pricing*
In many countries still cross-subsidies of energy consumer prices, particularly for households, prevail and no clear timeframe exists for a gradual and socially acceptable rises of prices towards coverage of economic costs. Sometimes it is forgotten that deregulation of gas, electricity and oil markets and effective energy efficiency programmes need as a prerequisite the abolishment of the cross-subsidies to different consumer categories, such as households and using economic cost as a basis for pricing. In several countries, however, the progress in pricing according to EU practices is impressive, i.e. in Poland where a regulatory body is very active to ensure efficient pricing and in Hungary where the Energy Office secures competitive behaviour in line with EU provisions and practices, and subsidies are abolished.
- *Crises and emergency measures*
A majority of accession countries has insufficient oil stocks to meet crises conditions as stipulated by IEA and EU provisions. Funding and appropriate legislation are the main barriers for building up and maintaining these stocks. Furthermore, several countries, in particular those of which the dependency on imports from Russia is high, are lacking sufficient interconnections for their national gas and power grids to effectively ensure import and supply diversification to satisfy national consumption.
- *EU gas and electricity Directives*
With respect to the adoption of the EU gas and electricity Directives, it can be observed that several countries have already privatised their power sector, but still missing a concise, transparent and consistent new energy market legislation and regulation framework to provide for the implementation of the provisions of the EU gas and electricity Directives. And, if entering the EU, secure an 'equal level playing field' to allow for sufficient competition and thus for meeting the challenges of the single market of the EU envisaged in the next decade. As most notably barriers for full implementation of EU Directive are observed, the perceived stranded costs of investment decisions are made before the opening up by the Directive and lack of diversification of supplies and thus available trade options.

Other barriers are lack of understanding of the required energy legislation and a clear schedule for the implementation of the EU Directives and provisions. But also missing are basic prerequisites such as high dependency on one single fuel and sufficient interconnections with international Trans-European networks. With regard to the preparations of legislation and institutions necessary to implement the EU Gas and Electricity Directives countries such as Estonia, Poland and to a lesser extent Hungary and the Czech Republic are front runners. But even these countries face many obstacles and delays in opening up their gas and electricity markets according to the EU provisions.

Finally, it must be mentioned again that a well focused and underpinned (i.e. by demand analysis, programmes, action plans, legislation and policies) energy efficiency strategy is missing in almost all CEECs, even in those accession countries that are front runners in the overall approximation process. Delays in getting in place effective efficiency policies and programmes is particularly harmful for the accession countries. It should be a first priority in CEECs to increase the efficiency and thus competitiveness of the energy sector and economy in the next decade.

Because of the difference between these countries in terms of energy endowment, structure of the energy production, transport and consumption and also their policies, the progress of approximation of the energy acquis is different in the seven CEECs. Therefore, we generally mention below some of the key issues, which deserve more attention in these individual countries.

Estonia

Although the main legislation for introduction of competition is in place (1998), Estonia faces difficulties in implementation of the complete context of the EU gas and electricity Directives. Furthermore, the inclusion of shale oil reserves in the oil stocks for crisis situations needs to be dealt with as soon as possible. The dependency on imports from Russia is also extreme.

Hungary

Although privatisation of the energy companies is successful, it does not mean that the regulatory regime is clearly defined and complying with the EU Directives. Also cross-subsidies for energy prices to households (electricity and heat), which still prevail, need to be abolished as soon as possible.

Latvia

Lack of domestic energy resources causes a severe dependency on imports from Russia. Furthermore, much more approximation work needs to be accomplished, particularly with respect to establishing sufficient oil stocks for crisis situations, achieving compliance with EU Directives provisions and integrating the national energy system in the international (Baltic) grids and networks.

Lithuania

Key issues in the approximation process are establishing sufficient oil stocks and crisis management measures in general, implement the EU Directives and take definite decisions on the future of the nuclear power plant Ignalina.

Poland

Some of the key issues still to be resolved are, ofcourse, the restructuring of the natural gas sector according to EU Directives and prepare the gas grid for transmission of natural gas from Russia to the EU. But, also the issues such as gas pricing, determining the grid access (tariffs) and stranded costs (i.e. for the power sector) require extra attention. Finally, it is hoped that the Energy Charter will be signed.

Slovak Republic

The Slovak government is recently actively making preparations for extra efforts to make up for delays in the approximation process. That means that all the key issues, such as establishing appropriate pricing levels, implementing the EU gas and electricity Directives, development of effective efficiency programs get extra attention. Nevertheless much work is still to be executed before the energy acquis is achieved in Slovak Republic.

In conclusion, it can be stated that continuing support from the EU and other international bodies is required for assisting the accession countries to adapt their energy market institutions and policies towards the EU provisions and practices.

Particularly almost all countries require substantial support in preparing for the internal market, including implementation of the EU gas and electricity Directives, energy pricing, emergency preparedness and development of energy efficiency programmes and policies.

Clearly, in the next years a lot of work still needs to be conducted in all seven accession countries. Of course in some countries more is required than in others, before the countries can enter the EU. On the other hand, in the long run, this process leads to great benefits for both the new and current member states. Therefore, it is of the utmost significance that both the EU, with their support and the accession countries with their willingness to change the energy sector, are and remain committed to this approximation process in the next years.

