

IN-DEPTH REVIEW OF ENERGY EFFICIENCY POLICIES AND PROGRAMMES



LATVIA

2007



Energy Efficiency Policies and Programmes of Latvia 2007 - In-depth Review

**Energy Charter Protocol on Energy Efficiency and
Related Environmental Aspects (PEEREA)**



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The Energy Charter

The Energy Charter Treaty was signed in December 1994 and entered into legal force in April 1998. To date the Treaty has been signed or acceded to by fifty-one states¹. The Treaty was developed on the basis of the European Energy Charter of 1991. Whereas the latter document was drawn up as a declaration of political intent to promote East West energy co-operation, the Energy Charter Treaty is a legally binding multilateral instrument covering investment protection, liberalisation of trade, freedom of transit, dispute settlement and environmental aspects in the energy sector.

The Energy Charter Conference, the governing and decision making body for the Energy Charter Treaty, meets on a regular basis to discuss policy issues affecting East West energy co-operation, review implementation of the provisions of the Treaty, and consider possible new instruments and projects on energy issues. All states who have signed or acceded to the Treaty are members of the Conference. Regular meetings of the Conference's subsidiary groups on trade and transit, investment and energy efficiency and environment are held in between Conference meetings.

The Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects

The Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) is a legally binding instrument that was signed together with the Energy Charter Treaty in December 1994 by the same fifty-one states that signed the Treaty itself. It requires its Signatories to formulate energy efficiency strategies and policy aims, to establish appropriate regulatory frameworks, and to develop specific programmes for the promotion of efficient energy usage and the reduction of harmful environmental practices in the energy sector.

Implementation of PEEREA is kept under review and discussion by the Energy Charter Working Group on Energy Efficiency and Related Environmental Aspects. A key feature of the Working Group's activities is the development of a series of in depth reviews of individual states' energy efficiency policies and programmes. Recommendations to the authorities of the states concerned resulting from these in depth reviews are presented to the Energy Charter Conference for discussion and endorsement.

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¹ *Albania, Armenia, Australia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, European Communities, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The Former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, Uzbekistan.*

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Executive Summary

Background

Latvia is in a phase of rapid economic growth and structural reforms. Some 75% of its economic activity is already in the private sector and price and trade liberalisation, enterprise privatisation and effective financial sector reforms have taken place. There is an open foreign trade regime and no major constraints to foreign investment.

Economic reforms in Latvia have been largely driven by the EU accession, while national reforms and integration into the EU have also positively affected economic development. Latvia's economy has averaged an annual growth of 8.1% since 2001. Growth is observed in all leading economic sectors, but especially in the services sector, which has become the dominant sector of the economy.

However, the country faces high average inflation and unemployment rates. Latvia's GDP per capita stands at only 40% of the EU-15 average in PPP terms. Economic activities are unevenly distributed across geographic regions.

Latvia's energy supply is mainly and equally based on oil, natural gas and wood. Latvia has a large and increasing share of renewable energy compared to most European countries, based on exploitation of its natural hydro and biomass resources; yet energy import dependency remains high.

Latvia's overall energy intensity has followed a steep downward trend during the last 15 years, but it still is higher compared to the average of the European OECD countries.

Energy and Energy Efficiency Policy

Market reforms are in progress in Latvia's energy sector. The amended Energy Law and the new Electricity Market Law are the basis for liberalising the energy market. Vertically integrated monopolies exist in the energy sector, therefore prices for electricity and gas supply services and end-sale tariffs for connected customers are regulated. Heat and electricity generation prices for combined heat and power stations are also regulated. The Public Utilities Commission, established in 2001, is the independent state institution responsible for the regulation of the energy sector, but also of the telecommunications, post and railway sectors.

A longer-term vision for Latvia's energy policy has been established by the government through the recently adopted Guidelines for Energy Sector Development for 2007-2016. The energy sector objectives include improving the security of energy supply, expanding the effective use of renewable energy sources and cogeneration, further supporting market liberalisation and competition in the energy sector, ensuring environmental quality and complying with GHG emissions reduction commitments.

These Guidelines also include a firm commitment to promote energy efficiency as one of the key priorities for the energy sector development in Latvia, together with the introduction of extensive energy efficiency measures on the energy end-use. Housing

and district heating are defined as priority sectors for energy efficiency interventions. The Guidelines respectively outline some specific energy efficiency quantitative targets for overall energy intensity reduction, energy efficiency improvements in the heat supply sector, and energy efficiency of buildings.

The Latvian government is creating active strategies to implement the various EU directives on energy efficiency.

The Ministry of Economy has the responsibility for the energy and energy efficiency policy of Latvia, while the Investment and Development Agency of Latvia and the Housing Agency, (both under the supervision of the Ministry of Economy), deal with energy efficiency issues, among other tasks. Being responsible for climate change issues and the implementation of the national Climate Change Mitigation Programme, the Ministry of Environment is very active in energy efficiency and renewables. Given that the significance of energy-related issues is constantly increasing and it is necessary to implement the National Energy Policy, the government plans to establish an energy agency.

Energy Efficiency Programmes

During the last several year Energy efficiency programmes and projects in Latvia have been mainly directed to heat supply systems and heat consumption in buildings. This focus is justified by the considerable potential for increased energy efficiency in these two linked areas.

Under a state support programme and the EU LIFE project, a number of projects to increase energy efficiency of heat supply systems have been implemented in Latvia. A national programme "Improvement of Heat Supply Systems, Reducing the Sulphur Content of Fuel" targeted a decrease in heat losses, increase in energy efficiency at boiler plants including cogeneration and wider use of renewables. The Heat Supply Development Concept of the Riga City Council is a successful implementation programme for efficiency improvement of the District Heating system in Riga.

In buildings, the long-term programme "Housing Energy Performance" of the Housing Agency provided financial support for audits and renovation works of privatised apartment buildings. The programme included a voluntary energy certification scheme for large-scale houses and a prototype of a large-scale house energy certificate. A next phase of the programme for 2007-2010 has been approved. The ENCERB project, implemented in 2004-2006 under the EU LIFE Programme, was also directed to energy certification of buildings in Latvia. Other major projects include:

- Development of Environmentally-Friendly Ventilation Systems - a project under the EU LIFE III programme;
- Housing Renovation Initiative for Energy Saving, initiated as a GHG emissions reduction project by the Ministry of Environment in cooperation with the German Federal Environmental Ministry;
- The IFC/GEF Efficient Lighting Initiative (ELI).

Latvian project actors are participating in a number of projects under the EU Intelligent Energy Programme in cooperation with other European countries.

The Latvian government is making efforts to coordinate and create synergies between different financing mechanisms and funds in order to implement energy efficiency programmes. There are several different funding instruments to support energy efficiency in Latvia. Energy efficiency is generally integrated into the national energy policy and is subject to annual financing from the state budget. There are obvious opportunities to use EU structural funds, combined with national budgetary resources. There are environmental funds and an energy efficiency fund. Furthermore, commercial financing is available at acceptable terms. Important funding for energy efficiency activities is provided through international programmes.

Renewable Energy Policy

Latvia's leadership in using renewable energy is based on the available natural resources, but also on active policy. The growth observed between 1996 and 2002 can be ascribed to the fixed feed-in tariffs for renewable electricity, which were phased out in 2003 and replaced by a quota system on an annual basis. New legislation in this area is currently under development in Latvia.

Economically justified use of the potential of all types of renewable resources in Latvia is one of the key measures for the achievement of self-sufficiency as set out in the Guidelines for Energy Sector Development in 2007-2016. A specific Strategy for Utilisation of Renewable Energy Sources 2006-2013 was accepted to implement the policy included in the respective EU Directives. To reach the required level of 49.3% green electricity consumption by 2010, the Latvian government plans to support the effective use of biomass for electricity generation, use wind energy and utilise to a reasonable extent the potential of small hydro plants.

A national programme Production and Use of Biofuel in Latvia (2003 – 2010) and the Biofuel Law of 2005 aim at promoting biofuels or other renewable fuels for transport.

Overall Assessment of Progress

Improvements in energy efficiency and energy intensities have resulted from structural and energy sector market reforms in Latvia, but some implemented energy efficiency initiatives have also contributed to the descending energy intensity trend. Latvia also has a large and increasing share of renewable energy, based on exploiting its natural hydro and biomass resources. Energy efficiency and renewable energy are well incorporated into the national climate change policy and programme.

There is a declared political will to improve energy efficiency in Latvia. The recently adopted Guidelines for Energy Sector Development in 2007-2016 include a firm commitment to promote energy efficiency with quantitative benchmarks. To reach the ambitious targets, further improvements need to be made, especially in strengthening the institutional capacity for energy efficiency policies development and implementation, improving the coordination between different financing mechanisms, and stimulating the development of a competitive market for energy efficiency services. Transport, industry and the services sectors would also benefit if involved in specific energy efficiency programmes and measures. Further efforts are needed to increase the awareness and change towards energy efficiency behaviour. The review team has formulated recommendations for improvements in these key areas.

1. Introduction

Latvia in the Energy Charter Process

Latvia has ratified the Energy Charter Treaty (ECT) and the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) in January 1996. In fulfilling its commitments under PEEREA Latvia presented a regular review of its energy efficiency policies in November 2003. The current PEEREA In-depth Review is the first for the country.

Purpose and Organisation of the Energy Efficiency In-Depth Review

By ratifying PEEREA, countries commit themselves to establish policies for improving energy efficiency and reducing the negative environmental impacts of the energy cycle (Art.3), and to develop, implement and regularly update energy efficiency programmes (Art.8). Guiding principle of the Protocol is that contracting parties shall cooperate and, as appropriate, assist each other in developing and implementing energy efficiency policies, laws and regulations (Art.3).

The In-depth Review is a peer review, aiming to assess the progress of a country in fulfilling its commitments under PEEREA. Not less it seeks to enhance the level of co-operation among PEEREA Parties and to promote continuous dialogue and transfer of experience and information.

Latvia has ratified the Energy Charter Treaty (ECT) and the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) in January 1996. In fulfilling its commitments under PEEREA Latvia presented a regular review of its energy efficiency policies in November 2003. The current PEEREA In-depth Review is the first for the country.

The In-Depth Review of the Energy Efficiency Policy of Latvia was carried out by a team, comprising officials from four countries-Parties to the Protocol. The review team visited Latvia in the period March 11-15, 2007 and met with representatives of a number of institutions listed in Annex 5. The review team expresses its high appreciation to the Ministry of Economics of Latvia and the Latvian Investment and Development Agency for the organisation of the mission and special thanks to all Latvian participants in the meetings.

The members of the review team were: Mr. Johan Vetlesen from the Ministry of Petroleum and Energy, Norway (team leader), Mr. Peter Nielsen from the Danish Energy Authority, Mr. Vytautas Martinaitis from the Vilnius Gediminas Technical University, Lithuania, and Mr. Sergiy Bezv from the Ministry of Fuel and Energy of Ukraine. The team also included Mr. Tudorel Constantinescu and Mrs. Valya Peeva from the Energy Charter Secretariat. The recommendations were developed as a joint effort of the review team during the mission in Riga. Valya Peeva drafted the report.

The main source of information on the energy efficiency policies and programmes, together with relevant data, is the Regular Review, presented by Latvia to the PEEREA Working Group in 2003 and information provided by Latvian institutions during the country visit. Other sources of information were also used, e.g. relevant publications of the Latvian government, IEA, EU Commission, EBRD, OECD, etc. The statistical information used in the report is primarily based on the IEA energy statistics, including data until 2004.

After being discussed by the PEEREA Working Group and, in a consensus with the Latvian authorities, the in-depth review report was endorsed by the Energy Charter Conference.

2. General and Energy Background

Brief country overview

Latvia is a Baltic country with an area of approximately 65000 km² and population of 2.3 million. Most of the population is urban, the capital Riga being the biggest city with 764000 inhabitants. Latvia borders the Baltic Sea with 494 km of coast line. On land Latvian neighbours are Estonia, Belarus, Russia and Lithuania.

The country has a moderate oceanic climate with fairly long and cold winters, warm short summers and a considerable amount of precipitation. Average temperatures are approximately 15.8°C in summer and - 4.5°C in winter. The heating season's average length is 200-210 days in the year. About 45% of the national territory is covered with forests, wood being an important national resource.

Figure 1. Map of Latvia



Latvia is a parliamentary democratic republic with a 100 seats parliament (Saeima). The Cabinet of Ministers holds the executive power in the country. A coalition of broadly centre-right parties has an absolute majority in the parliament and has formed a new government in November 2006.

There are two major levels of local government structure in Latvia: 527 local municipalities (cities, districts and counties) with elected local governments and 26 regional municipalities, consisting of representatives delegated by the local municipalities.

Since independence in 1991 Latvia's progress in its transition to a functioning market economy has been rapid and the implementation of structural reforms far-reaching. In many areas of structural reforms the country took the lead among the transition economies. Some 75% of economic activity is in the private sector and price and trade liberalisation, enterprise privatisation and effective financial sector reforms have taken place. As a performing market economy, there is an open foreign trade regime and no major constraints to foreign investment.¹

Economic reforms in Latvia were largely driven by the EU accession and the adoption of the EU *acquis communautaire*. Latvia became a member of the European Union in May 2004 and was admitted to the European Exchange Rate Mechanism (ERM II), the central rate per EUR being set at 0.702804 Latvian lats (LVL). Adoption of the Euro as the national currency is planned for 2011.

National reforms and integration into the EU have positively affected economic development. One of the highest growth rates in the EU has been observed in Latvia. The economy grew by 10.2% in 2005, and has averaged annual growth of 8.1% since 2001.² Latvia's rapid economic growth continued in 2006 as well. Growth is observed in all leading economic sectors, but especially in the service sectors, which became the dominant sector of the economy, accounting for over 70% of GDP, mainly due to the growth of trade and communications.

However, average inflation rose to 6.2% in 2004 and kept high levels in 2005 and 2006. Unemployment was approximately 10% in 2003-2004 and is still significant at 6.8% in 2007³. Latvia's GDP per capita stands at approximately 40% of the EU-15 average in PPP terms. Economic activities are unevenly distributed across geographic regions, the Riga region generating most of the country's GDP.

Energy Background

Latvia is a net energy importing country. Its energy import dependency is high with oil and natural gas being imported, mainly from Russia. However, during the last 15 years this dependency was reduced from 86% (1990) to 66% (2004), largely due to an increased use of local wood resources.

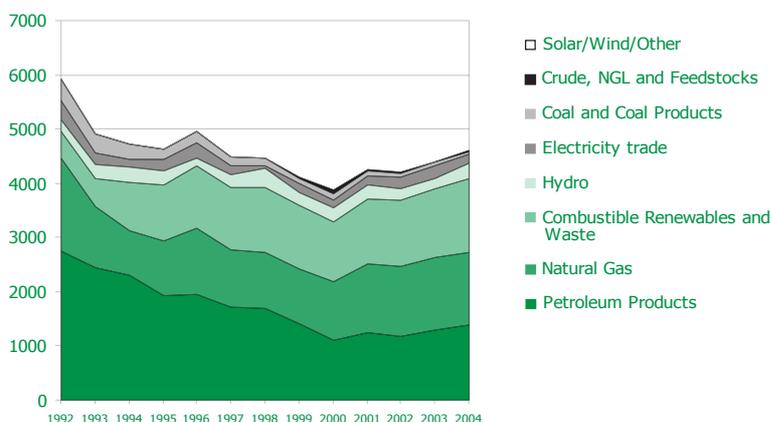
Latvia's total primary energy supply (TPES) underwent a substantial decrease during the 1990s (Figure 2). A major reduction of petroleum products by half and a nearly three-fold increase of combustible renewables and waste are observed. After 2000 energy supply follows a moderate growing trend and has a stable structure. Nearly 90% of TPES is equally based on oil (mainly gasoline and diesel oil), combustible renewables and waste (mainly wood), and natural gas, 5.8% come from hydro.

1 *Strategy for Latvia, Document of EBRD, 2005, www.ebrd.org.*

2 *Economic development of Latvia, Report, Ministry of Economics, Republic of Latvia, December 2006.*

3 *The National Economy of Latvia: A Macroeconomic Review, Ministry of Economics, Central Statistical Bureau of Latvia, 2007.*

Figure 2. Latvia: Total Primary Energy Supply



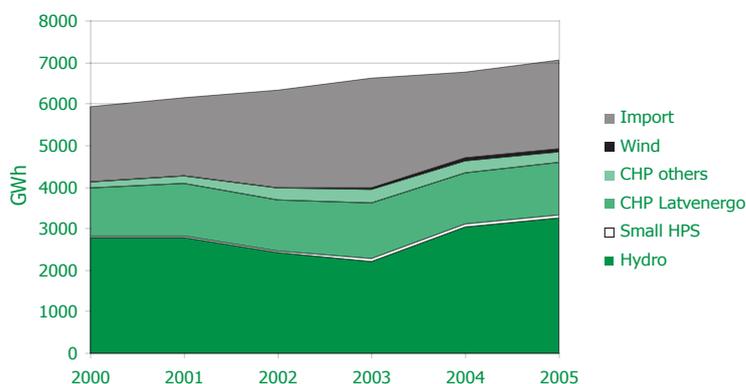
Source: Based on IEA Energy Statistics, Electronic version 2006

Wood is the mostly used local energy resource (firewood, remainders of woodworking, wood chip, wood briquettes and granules), comprising 29.1% of the total energy consumption.

All together, renewables account for 36% of TPES in 2004. This high share of renewables makes Latvia a leader among the EU Member-countries.

Electricity generation in Latvia is currently 66% based on hydropower and 30% on natural gas in CHP plants (Figure 3). Equally small inputs come from wind, combustible renewables and waste, and oil products. Thus electricity production is resulting in low CO₂ emissions, but is also highly dependent on the river flow and precipitation.

Figure 3. Electricity supply in Latvia



Source: Based on data in Economic development of Latvia, Report, Ministry of Economics, Republic of Latvia, July 2006

Electricity imports from Lithuania, Estonia and Russia have a quite substantial role in the electricity supply. The Ignalina Nuclear Power Plant, located in Lithuania, close to the Latvian border and some 30 kms from the Latvian town of Daugavpils (126000 inhabitants), provides an important amount of the imported electricity in Latvia. Ignalina is to be closed in 2009.

Hydropower is produced mainly in three hydro power plants on the Daugava River. In addition 148 small hydropower plants are operating in Latvia. Concerning co-generation, currently, 36 cogeneration plants with the total installed capacity of 590 MW are operational in the country. The biggest cogeneration plants are Riga TPP-1 and Riga TPP-2. The biggest hydropower and cogeneration plants are owned by the state company Latvenergo.

The fuel utilisation efficiency in the overall cycle of electricity production has been increased during the last decade, mainly by reconstruction of the two big TPP plants. Both plants have increased their overall efficiency to 87%, and their electrical efficiency to 46% and 56% respectively. Some of the units of the Daugava HPP also underwent reconstruction and increased their efficiency to 92%. Reconstruction of other units is planned for 2010-2020. Electricity losses in the distribution network have been decreased to 7.7% (from 19.1% in 1996). Losses in electricity transmission are also going down.

District heat output⁴ features a substantial, nearly two-fold decrease since 1992 and currently amounts to about 31 PJ heat for residential and commercial buildings (Figure 4). The use of petroleum products for district heating has been strongly decreased from 40% of the fuel mix in 1992 to less than 7% in 2004, achieved mainly by transforming Riga TPP-1 and TPP-2 to natural gas. Nowadays district heating in Latvia is mainly based on natural gas (78%). Wood biomass (firewood, woodchips) is increasingly used. Nearly half (48%) of the district heat is produced in CHP plants, and the major part of it is produced in Riga. Outside Riga the cogeneration capacities are low. About 52% of the thermal heat is produced in boiler houses.

The average energy generation efficiency in the district heating system in Latvia⁵ is 68.2% and there is a potential for increasing efficiency. According to national statistics, the average loss in heating networks amounts to 17.1%⁶, whereas in some heating systems the losses reach 20-30%. Today, only 19% of approximately 1700 km of the district heating system networks in Latvia have been replaced.⁷

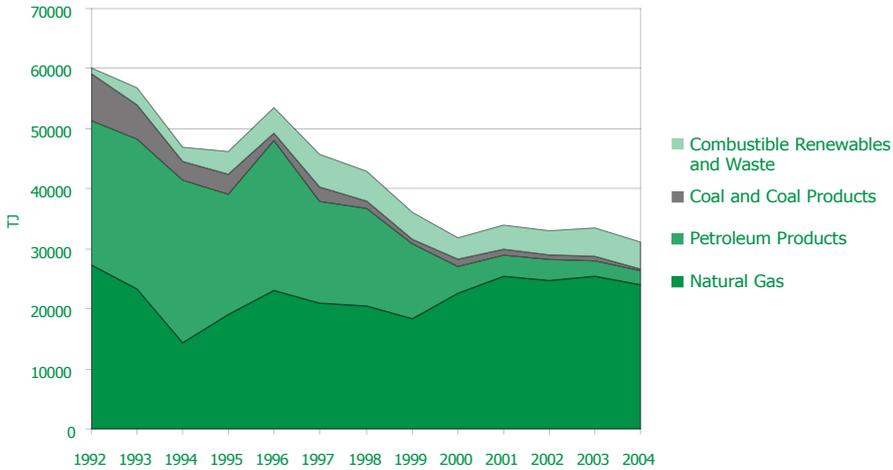
4 Local and individual heating is accounted directly in the consumption of primary energy resources.

5 Local and individual heating is accounted directly in the consumption of primary energy resources.

6 Local and individual heating is accounted directly in the consumption of primary energy resources.

7 Guidelines for Energy Sector Development 2007-2016 (Informative Part) (Draft), Ministry of Economics of Latvia.

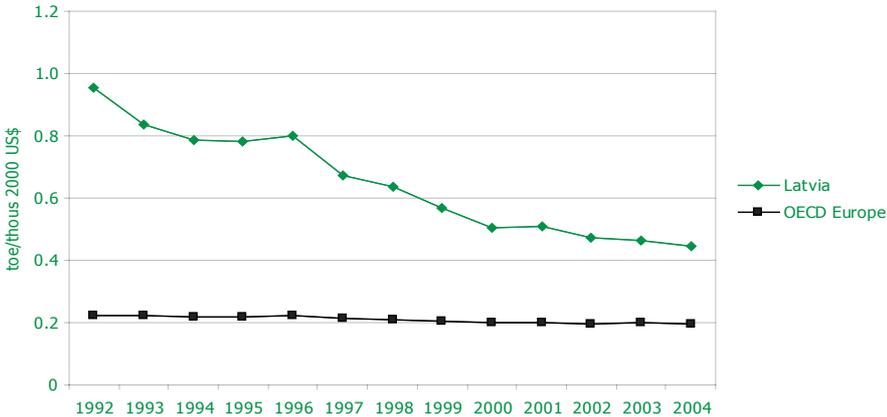
Figure 4. District Heat Output



Source: Based on IEA Energy Statistics, Electronic version 2006

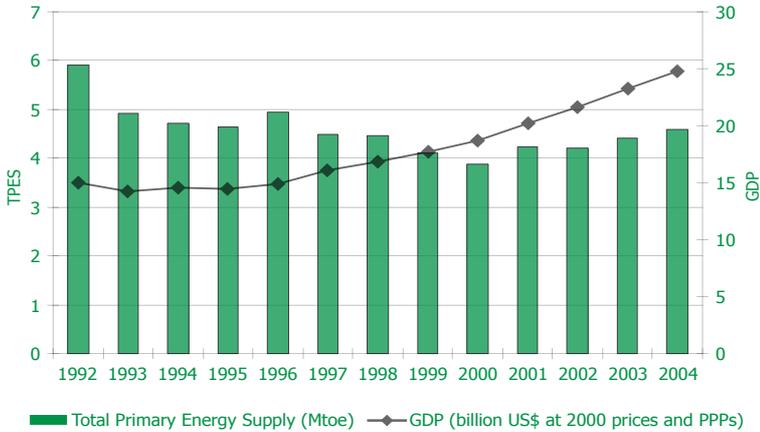
The overall Latvia's energy intensity followed a steep decreasing trend during the last 15 years, but is nevertheless higher compared to the average of the European OECD countries (Figure 5). The high GDP growth of the country has led to a rise in total primary energy supply levels after 2000, but energy supply growth is much slower than the economic growth (Figure 6).

Figure 5. Energy Intensity of Latvia and OECD Europe



Source: Based on IEA Energy Statistics, Electronic version 2006

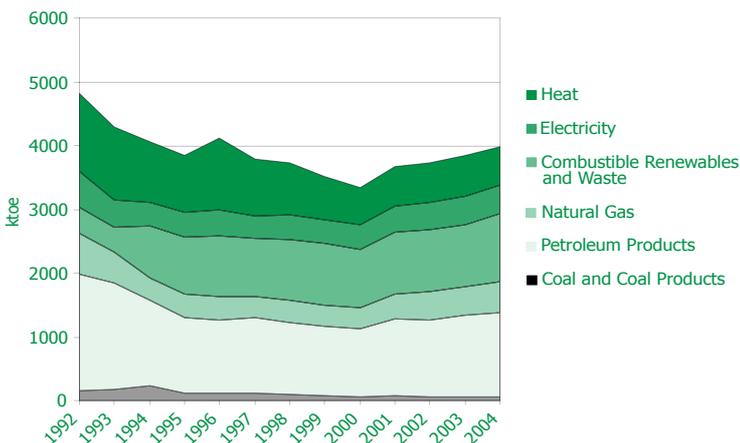
Figure 6. Economic and energy supply growth



Source: Based on IEA Energy Statistics, Electronic version 2006

In Latvia's final energy consumption (Figure 7), oil products permanently hold the highest share, mainly due to transport, where the fuel consumption has been rising since 2000. Combustible renewables and waste have gained an important part, especially in the residential sector, but also in industry and services sectors. More than 75% of the combustible renewables are directly used on the demand-side, mainly as firewood in small boilers in private houses. Wood is the key fuel for local and individual heating.

Figure 7. Latvia: Total Final Consumption by Energy Source 1990-2004



Source: Based on IEA Energy Statistics, Electronic version 2006

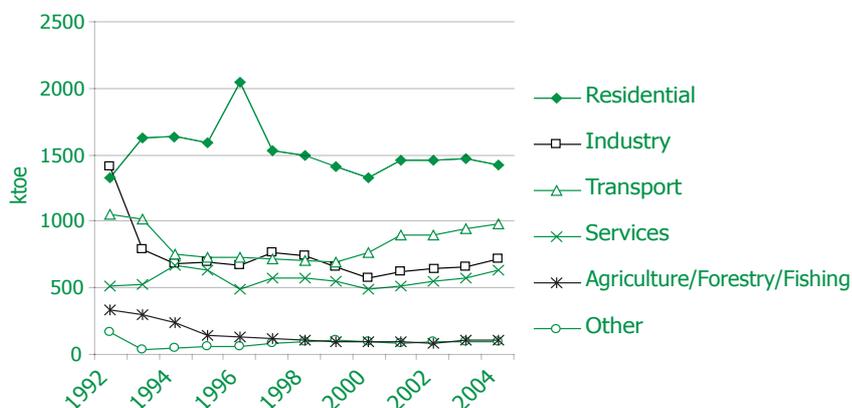
Natural gas is a preferred fuel for heating, but its use is limited by availability of access to network. This explains the limited growth of gas final consumption.

Electricity consumption level is relatively stable, but substantial structural changes occurred as far as consumers are concerned. Commercial and public services have become the biggest electricity consumers to reach 36.8% in 2004, leaving industry (30.4%) and households (27.2%) behind.

End-use Sectors

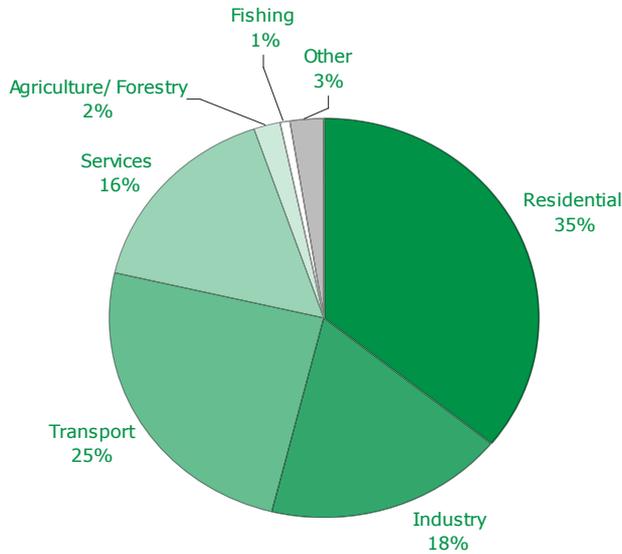
The end-use sectors have started increasing their energy consumption since 2000, presumably as an effect of the high economic growth in the country. The trends of final energy consumption by sectors can be seen in Figure 8. Only the residential sector is keeping nearly the same level of consumption after 2001, but still it is the biggest energy consumer with 35% of the total. Transport is second with 25% of the total energy consumption, followed by industry (18%) and services (16%) (Figure 9).

Figure 8. Latvia: Total Final Consumption by Sector



Source: Based on IEA Energy Statistics, Electronic version 2006

Figure 9. Latvia: Total Final Consumption by Sector in 2004



Source: Based on IEA Energy Statistics, Electronic version 2006

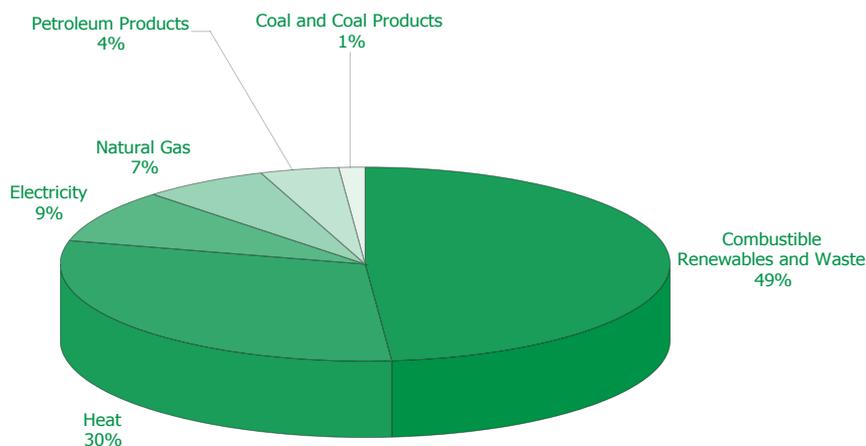
Residential Sector

Passing through some increase in mid 1990s, the energy consumption level in the residential sector is currently within the range of 1992 level. Combustible renewables and waste became the major fuel for the residential sector after the mid-1990s, predominantly by increased local wood pellets heating. District heating is second in total, but most important for households in Riga district. The direct use of natural gas is low, although slowly increasing (Figure 10). Recently, the consumption of thermal energy in the district heating systems tends to decrease due to the impact of energy efficiency measures. The consumption of primary energy resources in local and individual heating tends to grow due to new constructions, as well as to consumers who disconnected from the district heating system.

Buildings heating systems operate with big heat losses and high level of specific thermal energy consumption: 231 kWh/m² per year in Riga and 220-250 kWh/m² per year in the remaining Latvian territory. The low thermal resistance of the buildings, poor and imbalanced internal heating systems of buildings, and individual heating substations of inadequate quality explain the high level of the specific thermal energy consumption. Some national experience based on the operation of new or completely reconstructed buildings and internal infrastructure (incl. heating) showed that as a result of introduced energy efficiency measures, up to 40% of the consumed thermal energy could be saved.⁸

⁸ Guidelines for Energy Sector Development 2007 – 2016 (Informative Part) (Draft), Ministry of Economics of Latvia.

Figure 10. Final Consumption of the Residential Sector by Energy Source



Source: Based on IEA Energy Statistics, Electronic version 2006

Privatisation of apartment houses in Latvia started in 1995. There were 418 156 state and local government apartments privatised by September 30, 2006, making up 84.03% of the total number of apartments in the country. Apartment owners so far have taken over management of 8847 apartment houses, where more than 50% of apartment properties have been privatised. Owners of privatised apartments can decide themselves on the most acceptable form of management and maintenance of their apartment house: either organise a co-operative society of apartment owners or sign an authorisation agreement for management of the house. As a result of this process, 337 apartment cooperatives have been founded in Latvia.

An important problem for the implementation of energy efficiency measures in the household sector is caused by the slow process of establishing cooperatives of privatised apartments, and also by low awareness and lack of initiative in households. The introduction of energy efficiency measures in buildings may be also hindered by the inability of people to pay, which creates additional obstacles to collective decision making on energy efficiency investments. Still, the high share of household income spent on consumed energy is an incentive for undertaking energy efficiency. Although this share during the last years dropped from 16% to 13%, compared with other developed countries where this index is within the range of 3-5%, it is still high.

Industry

Industry and construction contribute to Latvian economy with nearly 22% of GDP (2006) and have a stable growth rate between 2001 and 2005. Manufacturing output has been rising on average by 6.7% annually, while output in construction has grown by more than 13% annually.⁹

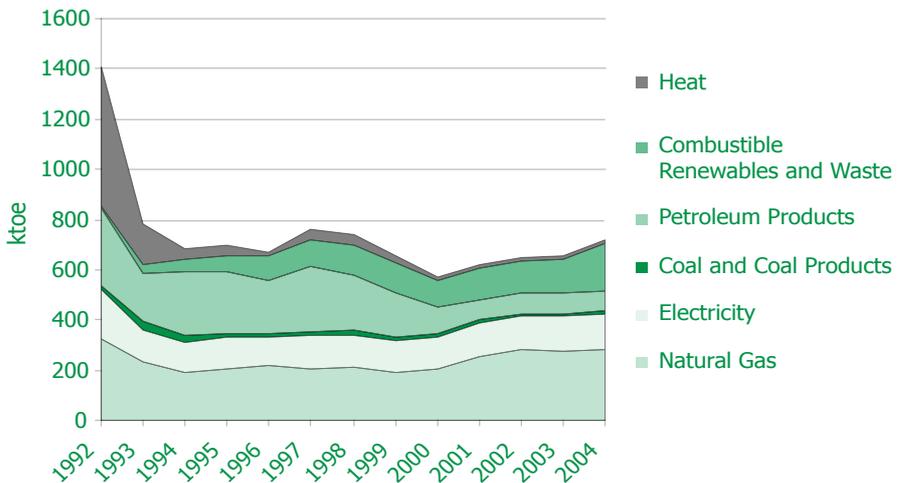
⁹ *Economic development of Latvia, Report, Ministry of Economics, Republic of Latvia, December 2006.*

Construction was favourably influenced by the rapid rise of both national and foreign investments in the country. Construction of streets and roads, residential and commercial buildings, hotels, industrial and other sites has grown fast. It has to be noted, that investment volumes in manufacturing increased rapidly since Latvia's accession to the EU.

Among manufacturing sub-sectors, wood processing is the biggest one. Its value added makes 23% of the total value added of manufacturing. High share of exported products (almost 70% of the production output) is characteristic for the wood processing sector. Food industry is the second biggest sector in Latvian manufacturing and accounts for 20% of the value added in manufacturing. Production of metals and metal articles is third in importance manufacturing sub-sector in Latvia, constituting approximately 9% of the total value added of manufacturing. Metals and metal articles produced in Latvia have high competitiveness around the world and exports account for almost 72% of the total output of this industry.

Industrial energy consumption reflects the level of industrial activity in the country (Figure 11). After the year 2000 there is a moderate, but stable increase in the energy consumed. Wood processing has become the major energy consuming industry, followed by food industry and iron/steel (metal) production (Figure 12).

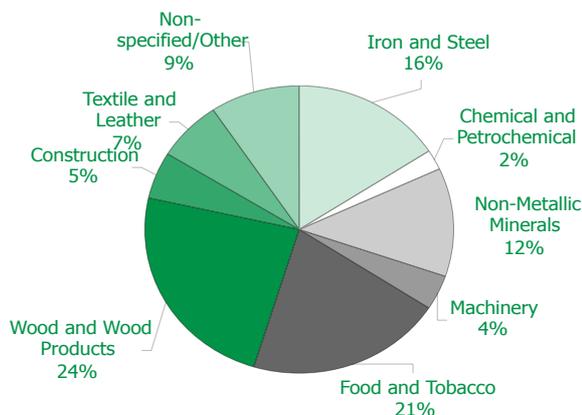
Figure 11. Final Consumption of Industry by Energy Source



Source: Based on IEA Energy Statistics, Electronic version 2006

Some changes in the energy consumption structure have taken place. District heat and coal have strongly decreased their share in the industrial fuel mix, while here too the applications of wood biomass have gained important place. Natural gas is recently the most consumed fuel by industry.

Figure 12. Structure of Energy Consumption in Industry by Subsectors, 2004



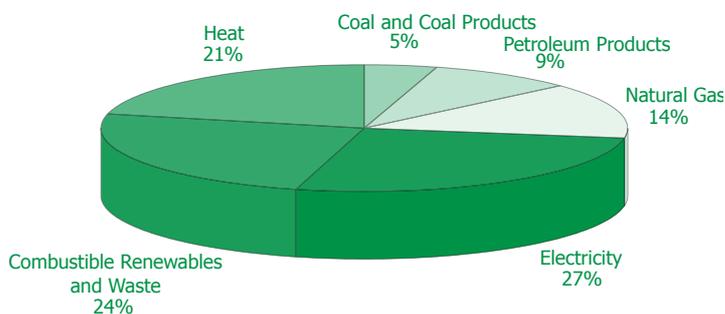
Source: Based on IEA Energy Statistics, Electronic version 2006

Services

Services is the only sector in Latvia with increased energy consumption (with approximately 23%) compared to the first years of economic transition. Largely this is explained with the growth of the sector itself. The contribution of services to GDP in 2005 reached 73.8%, of which 22.1% from trade, hotels and restaurants, 14.2% from public services and the rest – from other commercial services¹⁰.

Electricity, wood products and district heat are most important in the sector's energy mix (Figure 13), while the use of petroleum products has been decreased substantially.

Figure 13. Final Consumption of the Services Sector by Energy Source



Source: Based on IEA Energy Statistics, Electronic version 2006

¹⁰ Economic development of Latvia, Report, Ministry of Economics, Republic of Latvia, December 2006.

Transport

Transport and communications have a share of 13% of GDP. This is a fast growing sector - in the period of 2001-2005, it has grown by 9.6% on average annually. Latvia has a multimodal transport system with road transport being the most significant mode of transport. The number of vehicles is increasing rapidly. After accession to the EU, cargo transportation has increased especially fast and passenger transport services are growing, among them air transport services. Respectively, after 2000 there is a tendency of an increase in transport fuel consumption level (Figure 8).

The fuel required by the transport sector represents 25% of the total energy consumption, and it is 100% imported. This indicates the impact of this sector on the structure of primary energy resources and its role for the level of dependency on energy imports.

3. Energy Policy

Strategic and Legal Basis

The development of the energy sector in Latvia was strategically guided during the last years by several specific policy planning documents: Republic of Latvia Government Energy Policy (adopted 1999, already not in force), Energy Policy in the Power Sector (2001), State Energy Efficiency Strategy (2000). The National Lisbon Programme for 2005-2008 also addressed some strategic problems of the energy sector.

In June 2006, the Latvian Government approved a new policy planning document: Guidelines for Energy Sector Development for 2007-2016. The guidelines state the key principles, aims and course of action of the government in the energy sector for the next ten years, and mark the directions of the sector's long-term development. The stated energy sector objective is to ensure balanced, qualitative, safe and sustainable provision of energy to the country's economy and population. The objectives of the Guidelines address the key problems in the energy sector:

- Improving the security of energy supply - largely by increasing electricity self-sufficiency and diversification of primary energy resources.
- Ensuring the availability and sufficiency of energy to the population - by improving the energy supply infrastructure and by extensively introducing energy efficiency measures in the end-use sectors.
- Expanding the effective use of renewable energy sources and cogeneration.
- Further supporting market liberalisation and competition in the energy sector.
- Ensuring environmental quality and complying with GHG emissions reduction commitments.

The Guidelines set a number of implementation benchmarks to be reached:

- Increased use of local primary energy resources from 65 PJ currently to 82 PJ in 2016, which will constitute a self-sufficiency share of at least 36 – 37% of primary energy resources.
- Self-sufficiency level of electricity generation at 80% in 2012, and 100% in 2016, translated into installing new capacities of at least 700 MW in Latvia, including solid fuel condensation power plants with a capacity of approximately 400 MW and support for the construction of a new nuclear power plant in Lithuania.
- Share of electricity generated from renewable energy resources (RES-E) amounting to 49.3% of the total electricity consumption in the country in 2010.
- Energy intensity¹¹ of 0.35, 0.28 and 0.22 toe/1000 EUR in 2010, 2015 and 2020 respectively.
- During the period till 2016, utilisation of the cogeneration potential of the total heat-load of approximately 300 MWth in the largest cities in Latvia (incl. Riga) and 100 MWth in other towns of Latvia.

¹¹ Expressed as a total ratio of primary energy resources consumption per GDP item.

- Reduction of the specific thermal energy consumption in buildings from 220-250 kWh/m²/per year to 150 kWh/m²/per year until 2020.
- Increased average efficiency level of thermal energy generating facilities from 68% to 80%-90% until 2016, and reduced level of thermal energy losses in transmission and distribution networks from 17% to 14%.

The energy sector legal regulation is mainly based on the Energy Law and the Electricity Market Law.

The **Energy Law** was adopted in 1998 and passed through several amendments, the latest one in May 2005. This Law regulates the energy industry as an infrastructure of the economy that covers the acquisition, utilisation of energy resources and generation, purchase, conversion, storage, transmission, distribution, supply of various types of energy to energy users and the consumption of energy resources. It also prescribes the transmission procedures within the energy industry and the principles for the organisation and development of the activity of energy supply merchants.

The **Electricity Market Law**, approved in May 2005, aimed at opening up the electricity market. The Law contained legal norms arising from the EU Directive 2003/54/EC concerning common rules for the internal market in electricity; the EU Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources; and EU Directive 2004/8/EC on the promotion of co-generation.

Energy Market Liberalisation

The liberalisation of the power sector in Latvia is in progress, but results so far are criticised by the EU Commission¹². The Electricity Market Law aims at finalising market liberalisation according to EU requirements.

The **Latvian electricity market** for all non-household customers was opened in July 2004, while household customers will be eligible to choose supplier as of July 2007. In practice, there are no alternative suppliers in the market and no switching has occurred to date. The main distribution system operator remains vertically integrated, while the transmission system operator has been legally unbundled.¹³

The dominant electricity company is Latvenergo, a state-owned vertically integrated electricity company, which imports, generates, transmits, distributes and supplies electricity to customers. Latvenergo controls more than 90% of installed generation capacity.¹⁴ In addition to Latvenergo there are some **small electricity producers**: 148 small hydropower stations, 14 wind power stations and 36 independent combined heat and power (CHP) plants.¹⁵

¹² As for example in *Implementation report, Prospects for the internal gas and electricity market, Accompanying document to the Communication from the Commission to the Council and the European Parliament, Brussels, 10.1.2007.*

¹³ LATVIA – *Internal Market Fact Sheet, January 2007.*

¹⁴ LATVIA – *Internal Market Fact Sheet, January 2007.*

¹⁵ *Annual report of the Public Utilities Commission of the Republic of Latvia on the national energy sector, prepared for the European Commission, 2006.*

A Transmission System Operator has been created as a separate subsidiary of Latvenergo and distribution has been unbundled from the retail business at an organisational and functional level, with legal unbundling required by July 2007. In addition to Latvenergo, there are seven small local distribution companies. Another 14 have the right to sell electricity. **Despite 76% of the electricity market being opened,** there is no functioning retail market. This is largely due to the low regulated price of the 'default supplier', Latvian consumers paying some of the lowest electricity prices in the EU.

In the **natural gas sector**, the joint stock company Latvijas Gāze enjoys a monopoly in the market, dealing with the imports, transmission, storage and sales of natural gas in the country. Latvijas Gāze is a vertically integrated private company, the shareholders of which are the gas companies German E.ON Ruhrgas International AG and Russian OAO Gazprom, as well as the company SIA Itera Latvija.

Latvia has obtained an exemption from the relevant gas directives until 2010 and therefore the gas market is not yet liberalised. Competition in the gas market is not considered likely to develop for some time, as there are unlikely to be alternative gas sources for the foreseeable future. ¹⁶

Heating industries are regulated on local government level by institutions established by the respective municipalities. There are more than 65 District Heating companies in Latvia. The biggest company is in Riga and the state has shares in it. There are private shareholders in some of the companies as well. Usually the companies are vertically integrated, producing, transmitting and selling heat to end users. Often they also maintain the buildings heating systems. ¹⁷ There is a clear intention, stated in the Guidelines, to transform the provision of district heating services into a commercial activity.

Energy Pricing and Regulatory Policy

Vertically integrated monopolies exist in the energy sector, therefore prices for electricity and gas supply services and end sale tariffs for connected customers are regulated. In addition, heat and electricity generation prices for combined heat and power stations are regulated. The regulatory structure reflects that the energy markets have not yet been liberalised.

The **Public Utilities Commission (PUC)** is an independent state institution responsible for the regulation of energy, telecommunications, post and railway sectors in accordance with the law "On Regulators of Public Utilities" and the corresponding normative acts in the regulated sectors. PUC was established in 2001 to replace several institutions, among them the Energy Regulatory Council. The goal of PUC is to ensure that consumers can receive high-quality services at reasonable prices, and additionally to stimulate effective operation of the service providers and ensure a reasonable profit.

¹⁶ LATVIA – Internal Market Fact Sheet, January 2007.

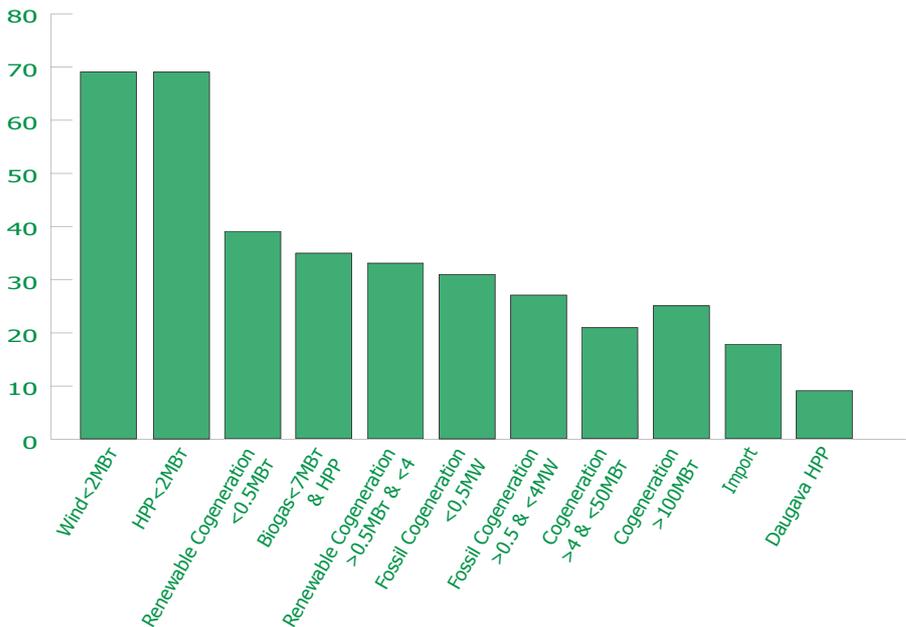
¹⁷ District Heating and Cooling, Country by Country 2005 Survey, Euroheat & Power, 2005.

The Regulator selected price cap tariff setting methods as the most appropriate for Latvia. It is based on the determination of tariff “ceilings” taking into account inflation and the expected efficiency level of utilities’ operation.¹⁸

The Public Utilities Commission approves tariffs for electricity generation in CHP plants, electricity transmission and distribution tariffs, as well as electricity sales tariffs for captive users. Tariffs for captive users are defined for those electricity users in Latvia who have not chosen the option to select electricity suppliers. These tariffs vary among various voltage levels and user groups, taking into account demanded capacity and time zones. Tariffs for captive users cover the cost of electricity generation and imports, including the costs of subsidised electricity that is generated from renewable energy resources, the cost of transmission and distribution system services, as well as sales service costs.

The price of imported electricity is determined in agreements concluded among Latvenergo and Russian, Lithuanian and Estonian electricity suppliers, as well as in agreements with CHP plants with a capacity of more than 4 MW. The tariffs of these are set by the Commission. The purchase price for electricity from CHP plants with a capacity below 4 MW, as well as for power plants which use renewable energy resources, is specified by law and regulations of the Cabinet of Ministers (Figure 14).

Figure 14 Electricity purchase prices in Latvia in 2005



Source: Public Utilities Commission Annual Report 2005

¹⁸ Public Utilities Commission website, www.sprk.gov.lv.

Household electricity prices have increased by 44% since 2004 but they remain approximately 35% below the EU averages. The price of electricity for industrial users is the lowest among all EU Member States.¹⁹

In the natural gas supply sector, Latvia depends on the Russian company "Gazprom", which is the only supplier of gas. Prices for natural gas supply, which are set by "Gazprom", directly affect the gas price for the end users in Latvia. **Import gas prices** are determined by negotiation, while retail prices are approved by the regulator.

Household gas prices have increased by 26.8% since 2004 but remain approximately 55% below the EU averages. Similarly, prices for industrial users are approximately 51% below the EU averages. Prices for industrial users are lower in absolute terms than for households.²⁰

The Public Utilities Commission approves tariffs for thermal energy produced in cogeneration plants with capacity of above 4MW. As for heat only production, heat tariffs and licensing of enterprises are regulated by independent municipal regulators, about 14 in Latvia. District heating tariffs vary widely from 17 to 23 LVL/MWh.²¹ In many places heating tariffs cover only the necessary operational and maintenance costs and hinder investments for modernisation of heat sources and heating networks.²² A methodology for the calculation of two-tier tariffs for thermal energy is under consideration in order to prevent the fragmentation of the heating regulatory framework.

Starting from 2004 some specific energy taxes were introduced in Latvia. A Law on Excise Duties came into force in May 2004, together with Regulations by the Cabinet of Ministers for specific types of fuel. The excise tax is applied to oil products that are imported, exported, produced, processed, stored, sold, received or sent. Tax reductions and exemptions are applied according to the type and use of oil products (for example, for biofuels).

An Environmental Tax was introduced by law since 01.01.2006. The Law determines the GHG emission taxes for different types of emissions.

A Law on Electricity Tax came into force from 01.01.2007. This Law determines the order of taxation of legal entities, producing, distributing, supplying or retailing electricity.

¹⁹ LATVIA – Internal Market Fact Sheet, January 2007.

²⁰ LATVIA – Internal Market Fact Sheet, January 2007.

²¹ District Heating and Cooling, Country by Country 2005 Survey, Euroheat & Power, 2005.

²² Guidelines for Energy Sector Development 2007 – 2016 (Informative Part) (Draft), Ministry of Economics of Latvia.

4. Energy Efficiency Policy

Strategic and Legal Basis

Energy efficiency is stressed as a priority in the national development strategic documents in Latvia. Already the 1999 Energy Policy document included rational energy use among the basic principles for the national energy policy.

Sustainable energy resources use through increased use of renewables and higher energy efficiency is stressed as one of Latvia's priorities in the National Lisbon Programme for 2005-2008. Support for energy efficiency increasing measures, use of cogeneration and renewable energy resources and promotion of environmental technologies are all considered of essential importance.

A specific **National Energy Efficiency Strategy** has been developed and approved in 2000 as the first energy efficiency policy document. Its objective was to promote energy efficiency and to determine a set of measures to reduce the primary energy consumption in Latvia by 25% per unit of GDP by the year 2010. The actions proposed by the Strategy included:

- drafting energy efficiency related legal acts;
- building institutional capacity (e.g. State Energy Inspection);
- introduction of better coordination of energy efficiency programs;
- financing of energy efficiency measures.

An update of the **National Energy Efficiency Strategy**, which incorporated the requirements of the relevant European directives, was approved in May 2004. The Strategy made an assessment of the situation of energy efficiency in Latvia, including aspects related to the environment. Institutional, economic and policy measures in several sectors were considered. The quantitative objective of 25% reduction of energy intensity was confirmed.

The new **Guidelines for Energy Sector Development in 2007-2016** are incorporating a new energy efficiency strategy for Latvia. The Guidelines are based on the understanding that energy efficiency increase will contribute to the two overarching energy development targets in Latvia – energy security and energy independence. So, the Guidelines include efficient energy use among the key priorities for the energy sector development in Latvia, together with the introduction of extensive energy efficiency measures on the energy end-use. Priority sectors for energy efficiency interventions are defined in housing and district heating. Respectively, with the Guidelines some specific energy efficiency quantitative targets were set for overall energy intensity reduction, energy efficiency improvements in the heat supply sector, and energy efficiency of buildings (as presented in the section on Energy Policy).

The priorities of the new energy efficiency strategy are in line with the requirements of the EU Directive on Energy Performance of Buildings, the Directive on Energy End-use Efficiency and Energy Services and the Directive on Cogeneration, and will contribute to the Latvian compliance with these Directives.

The existing legal framework in Latvia for energy efficiency policy implementation includes the Energy Law, the Construction Law and a package of Government regulations.

The **Energy Law** contains a specific chapter with some provisions for energy efficiency increase (the law was adopted in 1998, the energy efficiency chapter was amended in 2001 and 2005). The law provisions include requirements for energy suppliers and consumers to use energy efficient equipment, energy efficiency labelling, and a requirement for heat resistance levels of buildings. The Law also provides for the possible establishment of an energy efficiency fund.

The **Construction Law** (adopted in 1995, last amendments in 2006) defines that a structure shall be designed and constructed so as to ensure the architectonic quality of the environment, accessibility of the environment, rational utilisation of natural resources, as well as energy efficiency.

The Government adopted a package of regulations in 2001 which included requirements in the area of labelling. In 2004, amendments to the Regulations establishing the labelling procedures for household refrigerators, washing machines and other domestic appliances were prepared according to the requirements of Consumer Protection law and the EU Directives 92/75/EC and 94/2/EC relating to the publication of information on the consumption of energy by household appliances, thereby allowing consumers to choose appliances on the basis of their energy efficiency.

Minimum requirements regarding energy consumption in new buildings are transposed into Latvian building regulations for the implementation of the requirements of the EU Directive 93/76/EC on Reduction of Carbon Dioxide Emissions through Energy Efficiency Improvement (SAVE). These are incorporated in Construction Standard LBN 231-03 "Heating and ventilation of dwellings and public buildings" (2003) and Construction Standard LBN 002-01 "Thermal technique of buildings envelope" (amended in 2006).

As an answer to the need to update the existing legislation and to enforce the requirements of the EU Directive 2002/91/EC on the Energy Performance of Buildings in Latvian legislation, a law „On Energy Performance of Buildings“ has been prepared by the Building and the Energy Departments of the Ministry of Economy. This law was twice submitted to the Cabinet of Ministers. However, it was not approved and is now under redrafting. The adoption of this law is an important prerequisite for starting the implementation of the energy efficiency priority actions included in the government strategic decisions.

Latvian energy authorities are also starting up the preparation of the first **National Energy Efficiency Action Plan** to be submitted to the European Commission as required by the EU Directive of Energy End-use Efficiency and Energy Services. The Action Plan should include measures that will lead to the reduction of energy consumption by 1% per annum from 2008 to 2011, compared to the estimated consumption which would

have taken place without any such measures and which could be estimated on the basis of the average energy intensity of the previous five years. More intensive efforts in the public sector will be required.

Energy Efficiency Programmes and Projects

Priorities

Energy efficiency programmes and projects in Latvia during the last several years have been mainly directed to heat supply systems and heat consumption in buildings. This focus is justified by the considerable potential for increased energy efficiency in these two linked areas. Energy consumption in housing for heating and water heating amounts to 85% of buildings energy consumption.

The main challenges and potential for improvements as described in the Guidelines for Energy Sector Development in 2006 point to the same problem areas:

- Low energy efficiency in the whole heat supply cycle: production, distribution/transmission and consumption.
- Low energy efficiency and huge savings potential in the housing sector: potential for saving approximately 60% of heat consumption with appropriate energy efficiency measures in place.

A study for the evaluation of the potential and benefits of different energy efficiency measures is planned to deliver results at the end of 2006. In addition, Latvian participation in the EU Intelligent Energy Europe project on energy efficiency indicators will support the process of further priorities' identification.

Energy Efficiency Activities in District Heating

Under a state support programme, 23 projects to increase energy efficiency in energy generation and transmission have been implemented in Latvia in 2000–2003, including 19 environmentally friendly heat supply projects where biomass, biofuel or biogas is used instead of fossil fuel, thermal energy distribution systems have been renovated, and new boiler-houses have been constructed. ²³

A national programme "Improvement of Heat Supply Systems, Reducing the Sulphur Content of Fuel" was developed to attract funding from the EU structural funds. Support from the structural funds is available to municipalities and businesses that provide public services. Assistance is provided to transition from liquid fuels with high sulphur content to fuels with low sulphur content, as well as to renewables where appropriate. Public investments target decrease of heat transmission and distribution losses, increase of energy efficiency at boiler plants including cogeneration possibilities and promotion of wider usage of renewable energy sources.

23 Fourth National Communication of the Republic of Latvia under UNFCCC, Ministry of Environment, Riga, 2006.

Riga City Council is working for efficiency improvement of the District Heating system in Riga on the basis of its policy, formulated as Heat Supply Development Concept. The first Concept was implemented in the period 1997-2004. During this period Riga City has made a lot of work in rehabilitation of the central heating system, in modernizing heat sources, promoting cogeneration and introducing automatic individual Heat Substations. The performance of the heat supply system was improved – heat was produced with 93% efficiency, heat losses decreased to 14%, cogeneration reached 80% of delivered heat. In 2006 Riga City Council adopted a new Heat Supply Development Concept for the period 2006-2016.

Under the EU LIFE project in 2004 heat supply system reconstruction projects have been implemented in several municipalities (Cesvaine, Skaune, Vilaka, etc.).

Annual funding from the state budget is planned with the Guidelines to support energy efficiency projects in heat production, transmission/distribution, fuel conversion, as well as increase of energy efficiency of public buildings. The state funding allocated for 2007 amounts to 5 MLVL.

Energy Efficiency Activities in Buildings

Under the long-term programme “**Housing Energy Performance**” of the Housing Agency, started in 2003, audits of 208 apartment buildings were carried out in 2004-2006 in different parts of Latvia.

The programme aims at stimulating renovation of privatized apartment houses and promoting energy efficiency. Programme beneficiaries are dwelling owners associations in apartment houses built up from 1945–1990 in different regions of the country. The owners are supported financially by co-financing of 50% of the audit, by providing 50% of the renovation loan guarantee, and 10-20% co-financing of the renovation works. The support is provided by the Housing Agency and private banks in public-private partnership. The audits are implemented by qualified auditors.

There is currently a high interest for auditing and more applications are received than the capacity of the programme is able to handle. There are a number of successful examples of implemented energy performance projects in buildings. In addition to the audits themselves, important overall results are gained from this programme:

- Energy auditing methodology, form and data base were developed.
- Energy efficiency classification voluntary scheme with 14 energy efficiency classes/levels (from A to N) was applied (Figure 15).
- Voluntary energy certification scheme for large-scale houses was implemented and a prototype of a large-scale house energy certificate was developed and tested (Figure 16). The certificate is a three-pages document with 3 groups of recommended measures.
- Large scale housing energy-efficiency calculator was developed and is available on-line.
- Thermographies of the main Latvia building series were done.

Figure 15. Voluntary energy efficiency classification of apartment buildings in Latvia

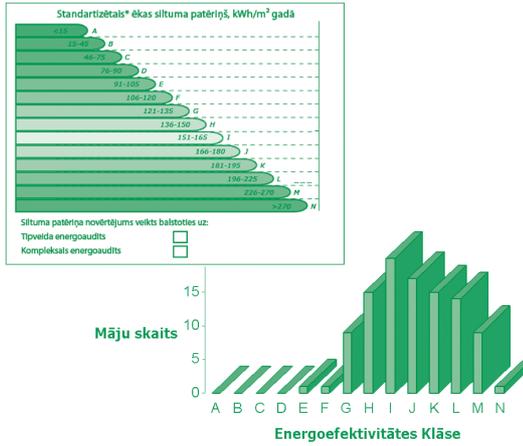


Figure 16. Voluntary energy certificate for buildings

PIELIKUMS Nr. 2

ENERGOPASE

Reģistrācijas numurs: **MA 0001**

Puškina 90, Daugavpils

Ēkas tips: **Daudzdzīvokļu, 467. sērija**
 Apsaimniekotājs: **SIA „DDzKSU”**
 Īpašnieks/Valdītājs: _____/ **Pašvaldība**
 Ēkas būvniecības gads: **1982**
 Ēkas apkurināmā platība m²: **3733**
 Dzīvokļu skaits: **72** (no tiem 43 privatizēti)
 Energoaudita veikšanas datums: **23.03.2005**

Standardizētais* ēkas siltuma patēriņš, kWh/m² gadā

Siltuma patēriņa novērtējums veikts balstoties uz:
 Tipveida energoaudits
 Kompleksais energoaudits

* Enerģijas patēriņš pārreģistrāts uz standarta gadu (apkures ilgums: 203 dienas; vidējā āra gaisa temperatūra sezonā 0°C, vidējā telpas temperatūra +18°C)
 ** Ēkas pašreizējais energoefektivitātes stāvoklis standardizētās ēkas siltuma patēriņa marķējumā

Apkure:
 Centralizēta apkure Decentralizēta apkure
 - Kurināmā veids:
 - Katla kontūru skaits:

Patnējais siltumenerģijas patēriņš karstā ūdens sagatavošanai, kWh/m² gadā

Patnējais elektroenerģijas patēriņš ēkas koplietošanas telpās, kWh/m² gadā

Patnējais CO₂ emisija, kg/m² gadā

Izsniedzējs:

 Mucenieku i. Rīga, LV-1050. T. 7041900
 Izsniegšanas datums:
07.03.2006

It is also planned to develop methodology instructions about living houses energy-efficiency; to evaluate the energy-auditors' work quality; to continue developing inhabitants' awareness on energy-efficient housing management.

A next phase of the programme was approved by the Cabinet of Ministers on 7 March 2007. Financing of approximately 10 million Euro will be allocated for programme implementation during the period 2007–2010. 60 audits, accompanied with thermographic analysis are already planned for 2007.

Another project, directed to energy certification of buildings in Latvia, was the **ENCERB project**, implemented in 2004-2006 under the EU LIFE Programme²⁴ by the Riga Technical University. The project further developed the energy certification and labeling system established by a previous project (ENERLAB), which operated in the town of Ogre and considered only heat consumption.

Within the ENCERB project, energy certification of 139 apartment buildings in Ogre has been carried out. Within the projects, an energy certificate was issued to each of these buildings and each of the buildings was assigned an energy performance category among six (from A to F). The certification scheme is based on standardized annual specific total energy consumption, including heat, gas and electricity consumption.

Figure 17. Energy Certificate for Buildings under the ENCERB/LIFE project



ĒKAS ENERĢETISKĀ PASE

Adrese: Grīvas 27

ĒKAS RAKSTUROJUMS

1. Ēkas tips	103. sērija
2. Stāvi	5
3. Telpums	12894 m ²
4. Dzīvokļu platība	2970,00 m ²
5. Pilnā apkurinātā platība	3652,75 m ²

ĒKAS ENERĢETISKĀS UZVEDĪBAS RAKSTUROJUMS

Reitings gads	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Grādudienas	4119,5	3700,8	3816,3			
Iedzīvotāju skaits	133	133	133			
Q _{ep} , MWh	761,65	660,27	788,34			
Q _{oth} , kWh/m ²	208,51	180,76	184,93			
Q _g , kWh/m ²			11,58			
Q _{el} , kWh/m ²			19,32			
Q _{te} , kWh/m ²	208,51	180,76	215,82			
Q _{st} , kWh/m ²	217,18	201,31	228,23			
Reitings	D	C	C			

Paskaidrojumi:

Reitings gads- pilns kalendrais gads no 01.jūnija līdz nākošo gada 31. maijam;
 Q_{ep} – gada kopējais energopatēriņš (ieskaitot siltuma, gāzes un elektrības patēriņus), MWh;
 Q_{oth} – gada īpatnējais siltuma patēriņš apkurei un karstā ūdenim, kWh/m²;
 Q_g – gada īpatnējais gāzes patēriņš, kWh/m²;
 Q_{el} – gada īpatnējais elektrības patēriņš sadzīves un komunalām nolikumiem, kWh/m²;
 Q_{te} = (Q_{oth} + Q_g + Q_{el}) – faktiskais gada īpatnējais kopējais energopatēriņš, kWh/m²;
 Q_{st} – standartizētais gada īpatnējais kopējais energopatēriņš, kWh/m², koriģēts pēc standarta gada grādudieniem skaita un vienāda apdzīvotības līmeņa.

ENERĢOREITINGU KLASIFIKĀCIJA PĒC STANDARTIZĒTĀ GADA KOPEĀJA ENERGOPATĒRIŅA

Tērcami A ≤166	Ļoti labi B 166,01-201	Labi C 201,01-235	Vidusēji D 235,01-270	Slikti E 270,01-313	Ļoti slikti F >313,1
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²⁴ Launched in 1992, LIFE (The Financial Instrument for the Environment) co-finances environmental initiatives in the European Union and certain third countries.

Development of Environmentally Friendly Ventilation Systems is another project under the EU LIFE III programme, implemented in Latvia by the Riga Technical University in 2004-2006. The project demonstrates the use of ecologically-friendly hybrid ventilation system, bringing low energy consumption and good indoor air quality.

The **Housing Renovation Initiative for Energy Saving** (2003-2006) was initiated by the Ministry of Environment in cooperation with the German Federal Environmental Ministry as a GHG emissions reduction project. The project targeted private and publicly owned housing in apartment buildings.

The project offered an opportunity to receive a loan for financing the complex heat insulation of apartment buildings under very favourable financial conditions. The credit resources to implement the project constituted 5 million EUR. A grant of 2.1 MEuro was provided by the German Federal Ministry of Environment, Nature Protection and Nuclear Safety for interest reduction and grant for the first completed projects. The Latvian Mortgage Bank was acting as an intermediate bank which was accessing the proposals and concluding the loan agreements. The Latvian Environmental Investment Fund provided information dissemination and consultancy on applications development, as well as performance monitoring.

There was a substantial interest in the project, as 127 applications were received and the budget requested was LVL21.6 million. After a selection procedure, six projects were implemented in 2004/2005 heating season, and two projects – in 2005/2006 heating season. Some implemented measures included changing of windows; insulation of walls, roof ceiling and basement; individual heat regulation.

The project identified some problems for the implementation of energy efficiency measures in apartment buildings, mainly connected with co-ownership and lack of experience with joint loan taking.

The IFC/GEF **Efficient Lighting Initiative (ELI)** was a three-year (2000-2003), US\$15 million programme designed by the International Finance Corporation (IFC) and funded by the Global Environment Facility (GEF) to accelerate the penetration of energy-efficient lighting technologies into emerging markets in developing countries. Main objectives of ELI was to lower market barriers to efficient lighting in Argentina, the Czech Republic, Hungary, Latvia, Peru, the Philippines and South Africa through a set of multi-country initiatives, local and global partnerships, and interventions tailored to individual country conditions. **The programme target for Latvia has been to increase efficiency of lighting of streets and buildings and included training programs.**

Latvian project actors are participating in a number of projects under the **EU Intelligent Energy Programme** in cooperation with other European countries (see the attached table of ongoing and starting projects in Annex 4).

Financing of Energy Efficiency Activities

Financing from the State Budget

Since 1995, national investment in Latvia has been implemented within the State Investment Programme (SIP). SIP comprises infrastructure investment projects that are financed from the financial sources available to the country – state budget, guaranteed credits, grants, project developers' own resources. Currently, priorities of SIP are traffic infrastructure, energy and environment protection areas. State support in the energy sector is only given to projects linked to adjustment of heat supply systems, so SIP is financing and crediting projects for the **renovation and reconstruction of municipal centralised heat supply systems**.

Financing of energy efficiency projects from the State budget is assigned on annual basis in compliance with the Budgetary Law and is administered by the Ministry of Economics. Earmarked subsidy from the budget is provided for municipal projects aiming at increasing energy efficiency in heat production, transmission and distribution, at fuel switch to RES, as well as for heating energy efficiency of public buildings. In 2006 support for 62 energy efficiency related projects at municipality level was provided, amounting to 7 million LVL. For 2007 the assigned amount is 5 million LVL.

Energy Efficiency Fund

The Energy Efficiency Fund is a cooperation project between the Ministry of Economics and the European Commission. The Fund is operated by a secretariat under the Public Sector Development Department of the Latvian Investment and Development Agency. The Fund was established in 2000-2001 on the basis of two PHARE grants: one amounting to EUR 1 million to be spent until mid-2008 (EEF-I), and one of EUR 2.6 million, valid until 10.09.2009 (EEF-II). The fund was aimed to support and encourage energy efficiency projects in Latvia by providing **low interest loans**.

The resources of EEF-I were spent to support 15 energy efficiency projects of municipalities and private companies. All loan repayments go on without delays; 10 loans were even repaid in advance. So far, only two municipal energy efficiency projects amounting to EUR 0.208 million were financed from EEF-II. While the procedure for submission, evaluation and approval of project proposals for EEF-I was relatively simple, significantly higher requirements for project preparation and monitoring of implementation were required for EEF-II. Also, initially the support from the Fund was important, as commercial financing was not available and the interest rate for loans provided by the Fund – financially reasonable. Due to changes in the market situation in the country, commercial loans rates dropped considerably and the fund's interest rate of 8-12% was already not competitive. Also, financial institutions do not require so complicated project documentation and implementation monitoring and reports.

When these problems were encountered, a proposal to the European Commission for reorganization of the EEF was made in 2003. A decision about the reorganization of the EEF-I was made and a respective agreement was signed in October 2006. It was

planned to use EEF-I financial resources for co-financing energy efficiency projects funded by the EU Structural funds.

However, the problem of further use of EEF-II financial resources remained open. Latvian authorities are considering closing the Energy Efficiency Fund.

Environmental Funds

Project support and subsidised loans, including to energy efficiency and renewable energy projects, are provided by the state owned **Latvian Environmental Investment Fund** ("Vides investīciju fonds" Ltd.). The Fund was started in 1997. In 1999 a loan agreement has been signed and 2 million euros were provided under the EU PHARE Programme. In December 2005 the assets of the Fund exceeded 7 million lats.

The main activity of the Environmental Investment Fund is to pool together local and foreign financial resources and to provide loan financing to municipal and private environmental projects. The financing possibilities offered by the Fund to energy efficiency projects include loans and special financing schemes for small size projects. Latvian Environmental Investment Fund is providing more favorable loan conditions than the State Treasury, the commercial banks and the Energy Efficiency Fund: lower interest rate, no requirement for co-financing, support for project identification and development, and assistance in project implementation.

The **Latvian Environmental Investment Fund** was an important actor in the Housing Renovation Initiative for Energy Saving (2003-2006) by providing consultancy on application and tendering procedures and disseminating information. It also was providing loan financing amounting to 650000 Euros to municipalities under the financing scheme for biomass promotion in 2005.

The **Environmental Protection Fund of Latvia** is a state budget program. It is administered by a special administration under the direct control of the Environment Ministry. The resources of the Fund are comprised of a set allocation from the general revenue of the main state budget, stipulated by the law "On natural resource tax" of 14.09.1995. The expenditures of the Fund are determined by the Fund Council.

The Latvian Environmental Protection Fund provides financing in 9 areas, among which air protection and climate change mitigation. These two areas, under which energy efficiency projects are also funded, have received about 565000 Euro in 2004-2007, i.e. approximately 5-6% of the resources of the Fund.

International and Bilateral Financing

Under the regional GEF/EU supported project "Commercializing Energy Efficiency Finance", the International Finance Corporation (IFC) maintains an energy efficiency guarantee programme with two banks in Latvia. The objective of the project is to mobilise local financial and energy efficiency industry resources and commercialise energy efficiency finance by engaging key parties – financial institutions, energy efficiency and energy service companies and end-users – to implement energy efficiency projects on commercial terms. The project includes a complementary

technical assistance programme to develop a pipeline of finance-ready energy efficiency projects.

The Nordic Investment Bank (NIB) financed investment loans for major individual projects in energy efficiency, water utility and power generation sectors. Kreditanstalt für Wiederaufbau (KfW) has provided financing in Latvia to projects for improving energy efficiency through building rehabilitation.

In addressing the transition challenges, EBRD activities in Latvia promote SME and municipal financing and energy efficiency through financial intermediaries, enhanced where appropriate with EU or other donor support.

EU Structural Funds

Latvia has access to the EU Structural Funds. Financial assistance from the Structural Funds during the planning period 2004–2006 was provided to support energy efficiency projects. A call for proposals was open under two lines:

- modernization of District Heating networks to comply with the environmental requirements and increase energy efficiency both on the production and consumer side
- proposals within the framework of the National Program "Improvement of Heat Supply Systems, Reducing the Sulphur Content of Fuel".

Total co-financing from the European Regional Development Fund (ERDF) amounted to LVL 7.8 million. Financing from the state budget, provided by the State Investment Program, constituted LVL 5.6 million and financing in the framework of the National Program – LVL 3.8 million.

Energy efficiency and RES are included as Latvian priorities in the Operational programme "Infrastructure and Services" under the ERDF. Support for the renovation of centralised heat supply systems is included in the Reference Framework for Assistance from the Cohesion Fund.

For the planning period 2007–2013, financing from the ERDF is provided under the operational program "Infrastructure and services" within priority action "Housing energy efficiency" and within priority action "Energy". Under Priority action "Energy" assistance is provided to the following activities:

- raising efficiency in all stages of heat supply systems – production, transmission and distribution
- change of fuel aiming at promotion of renewables or local primary energy sources
- development of co-generation using renewable energy sources.

It is planned to allocate approximately EUR 116 million in the energy sector from the Cohesion Fund in the next Structural Funds utilisation period of 2007-2013. This amount will be distributed to measures for increase of efficiency of district heating systems and for development of cogeneration plants that use biomass.

Future Financing Plans

The future energy efficiency investments needed to implement the activities, prescribed with the Guidelines for Energy Sector Development, are substantial (see Table 1).

It is planned that financing will be provided from different sources, including:

- The state budget – LVL 312.8 million
- Municipal subsidies – LVL 173.88 million
- Private financing (paid services and funds from energy suppliers and building owners) – LVL 486.91 million
- EU Structural Funds – LVL 261.9 million
- EU TEN-E Programme – LVL 1.43 million.

It is envisaged to attract additional resources for energy efficiency and renewable energy by participation in the International Emissions Trading and international co-operation programmes for climate change mitigation.

Table 1. Indicative amounts of Required Financing for Implementation of the Guidelines for Energy Sector Development 2007-2016

Activity	Total LVL Million	%
Implementation of a project of the condensation power plant using solid fuel	343.00	27.73
Investments in increasing district heating efficiency:	277.05	22.40
• in the existing heat sources (excl. cogeneration plants)	110.18	8.91
• in heat transmission and distribution systems	100.17	8.10
• in local heat sources of public buildings and small systems	66.70	5.39
Investments in biomass cogeneration plants	90.00	7.28
Investments to increase the energy efficiency of buildings	418.46	33.83
Establishment and operation of the Energy Agency	7.35	0.59
Financing of education and science	92.00	7.44
Researches	3.85	0.31
Research projects under TEN-E programme	2.86	0.23
Development of technical standards	0.75	0.06
Strengthening the Energy Inspection capacity and operations	1.60	0.13
TOTAL	1236.92	100.00

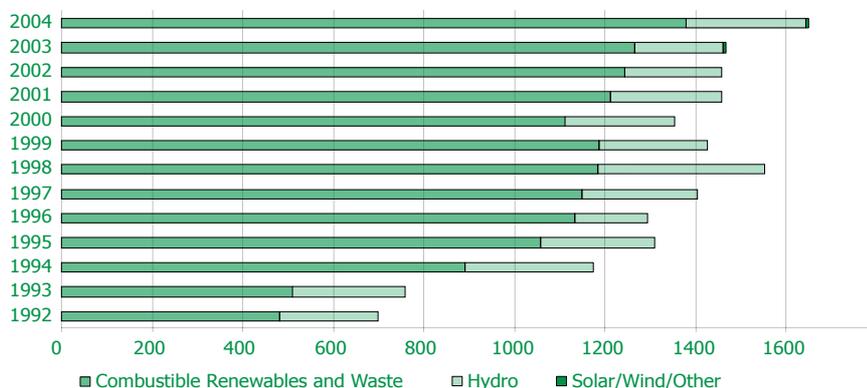
Source: *Guidelines for Energy Sector Development 2007 – 2016 (Informative Part) (Draft)*, Ministry of Economics

5. Renewable Energy Policy

Current status and potential

As already shown in previous parts of this report, renewable resources constitute a considerable share in the balance of primary energy resources in Latvia. Hydropower and different types of biomass are widely used, while wind, straw, biogas and solar energy are also applied, although in a small scale. The amount of renewable energy resources in use has increased more than two-fold between 1992 and 2004 (Figure 18). The share of renewables in primary energy supply has increased from 12% in 1992 to 36% in 2004, the highest level among EU Member countries.

Figure 18. Renewables in Primary Energy Supply



Source: Based on IEA Energy Statistics, Electronic version 2006

It is acknowledged that mainly this more extensive use of renewables has contributed for the reduction of Latvia energy import dependency from 86% in 1990 to 66% in 2004. However, there is an under-utilised potential, whose effective exploitation might contribute to further reduction of the dependency of Latvia on imported primary energy resources.²⁵

Renewable electricity

In addition to the big **hydropower** plants on the Daugava River, there are some 148 small hydropower stations in Latvia with installed capacity of 25 MW, 14 wind power stations with a total capacity of 25.2 MW. There are also three CHP biogas power

²⁵ Guidelines for Energy Sector Development 2007 – 2016 (Informative Part) (Draft), Ministry of Economics of Latvia.

stations with a total capacity of 7.8 MW, and 3 wood CHP plants with a total capacity of 2.2 MW. ²⁶

Future expansion of hydro energy in Latvia is not expected at a large scale. The main source of hydro energy - the Daugava River – has been already used to a great extent. The use of hydro energy resources potential of small rivers is restricted by requirements of nature and landscape protection, including fish migration. However, national studies show that energy output at the existing small hydro power plants could be increased by 10-20% by technology modernisation.

Latvia has gained some positive experience in using **wind** for power generation, although the use of wind energy is carried out on a small scale with wind generators capacity of 27 MW and 1% share of the electricity generated in the country. Still, the largest wind farm in Central and Eastern Europe is operating in Latvia. **Building** off-shore wind generators is possible, but is hampered by the high equipment and construction costs.

Renewables for heating

Wood is the most important local fuel in Latvia. The share of wood in the balance of Latvia's primary energy resources constituted 29.1% of the total consumption of energy resources. Wood is used in district, local and individual heating. Since the middle of the 90-ies, fuel wood is also exported to various European countries, and the export of wood tends to grow to reach 35% of the total Latvian wood resources used in 2004.

In Latvia, solar radiation has rather low intensity. **Solar energy** is only limitedly used for heating, e.g. on sites in Aizkraukle, Bauska and Iecava. However, research on a new type of solar collectors with high heat conductivity is carried out in Latvia, and experimental and industrial solar collectors for obtaining hot water are being developed. Also, combined systems of solar collectors operating together with photovoltaic cells have been developed and tested. Several types of combined systems have been developed to use solar energy together with traditional energy resources (gas, liquid fuel or electricity).

Up to now, **straw** produced as a result of agricultural activities has not been considered to be an important type of fuel in Latvia. Currently, only one boiler house is successfully operating in Latvia, which uses straw as fuel. The total straw residue in Latvia per year is not big, estimated within the range of 150 to 570 thousand tons, and it has an explicitly regional nature – the biggest straw residue is in Zemgale.

Biofuel for transport

In Latvia currently there are three biodieselfuel production facilities with the total capacity of approximately 10000t/per year and one bioethanol production facility with the capacity of 9600t/per year.

²⁶ National Lisbon Programme for Latvia for 2005-2008, Latvia 2005.

Policy goals and instruments

Latvia's leadership in using renewable energy is based on the available natural resources, but also on active policy. The growth observed between 1996 and 2002 can be ascribed to the fixed feed-in tariffs for renewable electricity, which were phased out in 2003. This scheme was replaced by a quota system in 2002, with authorised capacity levels of installations determined by the Cabinet of Ministers on an annual basis. New legislation in this area is currently under development in Latvia.

Economically justified use of the potential of all types of renewable resources in Latvia is one of the key measures for the achievement of the policy objective to maintain the self-sufficiency at the level of 36-37%, as stated in the *Guidelines for Energy Sector Development in 2007-2016*.

In October 2006 a **Strategy for Utilization of Renewable Energy Sources 2006-2013** was accepted. The document reflects measures for rational use of biomass, biogas and other renewables. The Strategy implements the policy included in the respective EU Directives 2001/77/EK and 2003/30/EK. The Strategy also facilitates the implementation of the Convention of Long-range Transboundary Air Pollution and the UNFCCC.

According to the EU Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market, the share of electricity generation from RES that Latvia is required to reach is 49.3% of the gross electricity consumption by 2010 (it was 47.1% in 2004).²⁷ To reach this level, Latvian government plans to support the effective use of biomass for electricity generation, to use wind energy and to utilise to a reasonable extent the potential of small hydro plants. The planned total capacity of cogeneration plants using biomass and biogas as a fuel is 70-80 MW_{el} and that of planned wind energy plants - 135 MW. The state support instruments planned to be applied to achieve the goals are mandatory procurement of generated renewable energy at fixed price, and earmarked investments subsidy from the EU structural funds.²⁸

Project support to a number of renewable energy projects was provided. The Environmental Investment Fund has invested more than 2 million LVL by 2004 in six small hydropower plants, one wind turbine and 17 biomass incineration projects. Economic and Cost-effective Use of Wood Waste for Municipal Heating Systems - a fuel-switch project financed by the UNDP/GEF (2001-2004) was carried out in heat supply companies owned by municipalities, replacing imported fuel (heavy fuel oil, coal, natural gas) with local renewable energy resources – wood residues or other biomass.

A national programme Production and Use of Biofuel in Latvia (2003 – 2010) was adopted for the promotion of the use of biodiesel fuel in diesel engines, in the amount of 40% of the total consumption of diesel fuel used in agriculture. Measures to realise the priorities stated in the programme are described in the Action plan for

²⁷ LATVIA – *Renewable Energy Fact Sheet, January 2007*.

²⁸ *Guidelines for Energy Sector Development 2007 – 2016 (Informative Part) (Draft), Ministry of Economics of Latvia*.

the implementation of the programme, the Law on Biofuel and the Programme of Agricultural Development for 2003.

The **Biofuel Law** of 2005 includes the legal norms arising from the EU Directive on the promotion of biofuels or other renewable fuels for transport. The purpose of this Law is to promote the trade in biofuel. Biofuels should account for 2% of all fuels in 2005, and 5.75% by 2010. Since 2005, the state provides direct support to biofuel manufacturers. Every year financially supported allowances for biodiesel fuel and bio-ethanol are determined.

In 2005, the draft "**Biogas Generation and Development Programme**" was elaborated and it was planned to start the implementation of a pilot project to generate and use biogas from byproducts of animal breeding in 2006.

Institutional set-up

Institutionally, renewable energy issues are the responsibility of the Ministry of Environment. In 2004, a special structural unit was established in the Ministry Climate and Renewable Energy Department. Thus, renewable energy policy is strongly linked to climate change mitigation policy.

Also, there is a Renewable Energy and Cogeneration Division of the Energy Department at the Ministry of Economics.

6. Environmental Policy Related to Energy

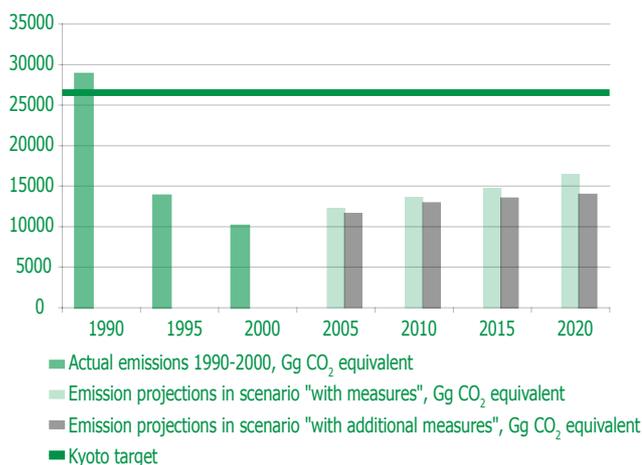
Current Latvia's environmental policy is defined in the **National Environmental Policy Plan, 2004–2008** approved by the Cabinet of Ministers in 2004. This Policy Plan integrated the objectives and measures identified in the 2002 Latvian Sustainable Development Strategy as set to be: water protection, waste management, air quality, research and remediation of contaminated sites, and biological diversity. The air quality set of measures include:

- Reduction of environmental pollution generated by power sites, particularly emissions of air polluting substances,
- Reduction of pollution and noise generated by traffic,
- Conservation of power resources and reduction of nonrenewable raw materials consumption,
- Reduction of greenhouse gas emissions resulting from heat supply systems.

Respectively, priority implementation programs and investments are directed to improvement of water services, development of solid waste management systems and improvement of heat supply systems. Specific Regulations were adopted in 2004 to restrict the sulphur content in certain types of liquid fuel.

Latvia ratified the United Nations Framework Convention on Climate Change in 1995 and since then Latvia has undertaken a series of internationally prescribed commitments. A **fourth National Communication** was elaborated in 2006. The country ratified the Kyoto Protocol in 2005 and committed to an 8% GHG emissions reduction in the First Commitment Period compared to 1990 level. So far, Latvia's GHG emissions are more than 50% below the Kyoto target (Figure 19).

Figure 19. CO₂ emissions in Latvia (Mt of CO₂)



Source: Latvian Ministry of Environment

The main CO₂ emissions are due to fossil fuel combustion - 95% of total emissions in 2003, of them 35% from transport, 33% from the power sector; 12% from the manufacturing industry and construction, and 15% from other sectors (households, trade sector and agriculture, forestry and others).²⁹ A declining trend of energy related CO₂ emissions as of 1990 is observed.

In 2005, the **Climate Change Mitigation Programme for 2005 – 2010** was adopted. The goal of the Programme is to ensure the achievement of Latvia's Kyoto commitment. Major climate change mitigation policy areas are:

- increasing the share of renewable energy sources in the energy balance
- more efficient and rational use of energy resources, and
- developing an environmentally friendly transport system.

Implementation activities in renewables include a wide variety of RES: biomass, biogas, small hydropower plants, wind power production, solar energy use, and biofuel. Energy efficiency projects include CHP construction, support for increased efficiency of thermal energy generation and transmission, and improving the energy performance of buildings. Specific measures are directed to transport.

Taking into consideration investors' interest in Joint Implementation (JI) projects in Latvia under the Kyoto Protocol, specific **Concept and Strategy for the realisation of JI projects** were approved in 2002. The Strategy established the institutional framework for JI projects, incl. JI Commission, JI Supervisory Group, Accredited Independent Entities, GHG register. The Climate and Renewable Energy Department of the Ministry of Environment is acting as a JI Supervisory Group. A number of bilateral cooperation agreements were signed. Latvia also joined the Testing Ground for Flexible Mechanisms Agreement within BASREC. However, one JI project was enacted in Latvia so far – Liepāja municipal waste management project.

Latvia is also participating in the EU emission allowance trading scheme. In the first trading period 2005–2007, 91 stationary installations participate in the scheme.

Latvia is also preparing to participate in International Emissions Trading under the Kyoto Protocol as it has a potential for selling GHG emission allowances. A Green Investment Scheme (GIS) is planned to fund energy efficiency and renewables projects using financial resources from selling emission allowances on the international market during the first commitment period under the Kyoto Protocol. Demand side energy efficiency projects will be greatly involved in GIS and will be supported by the scheme.

In order to effectively implement climate change mitigation policy and reach GHG emissions reduction targets, economic instruments are also used: natural resources tax, excise tax for energy resources, a CO₂ tax.

²⁹ *Fourth National Communication of the Republic of Latvia under UNFCCC, Ministry of Environment, Riga, 2006.*

7. Organisation of Energy Efficiency Activities

Governmental Bodies

According to the Energy Law, energy issues in Latvia are the responsibility of the **Ministry of Economy**. The Ministry of Economy is a leading central government institution with authority also in the field of industry, foreign economic policy, domestic market policy, investment policy, policy for the development of entrepreneurship, the policy for protection of consumers' rights, etc. The Energy Department performs the function of the Ministry in the energy sector. **The Energy, Building and Dwelling departments of the Ministry are involved in realizing the energy efficiency policy of Latvia.**

The Ministry is the holder of the state shares in JSC Latvenergo and the holding company Latvijas Gaze. The Ministry monitors the Latvian Investment and Development Agency, the State Energy Inspection, the Housing Agency, the State Construction Inspectorate, among others.

The capacity of the Ministry of Economics - as the energy sector management policy maker and developer of legislation initiatives, as well as its available resources, are not sufficient. This is acknowledged by the Latvian government and reflected in the strategic Guidelines as a problem to be dealt with.

The Investment and Development Agency of Latvia and the Housing Agency are under the supervision of the Ministry of Economy and both agencies are dealing with energy efficiency issues among others.

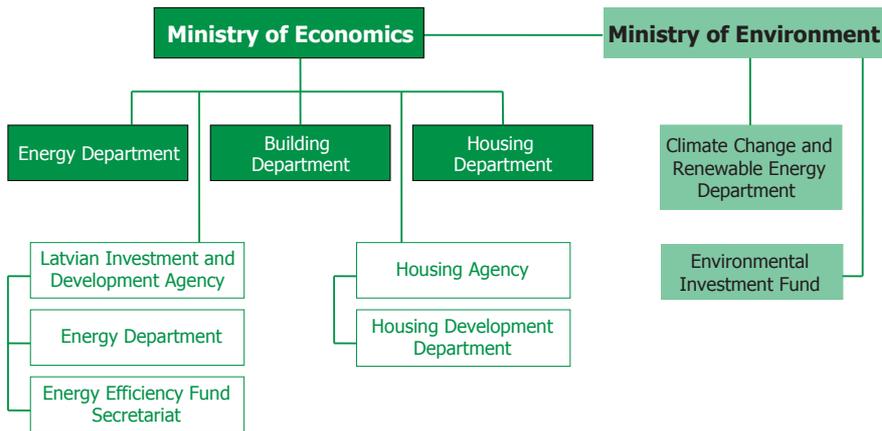
The **Investment and Development Agency of Latvia (LIAA)** is a state institution for investors' assistance. LIAA is also involved in the implementation of national programmes on export and innovation promotion, participates in EU 5th Framework Programmes' projects, the facilitation of Public Private Partnerships and as the implementer of state functions in the energy sector and energy efficiency. **The Energy Division of the Public Sector Development Department of the Latvian Investment and Development Agency realizes the functions of a national energy agency, and also manages the Energy Efficiency Fund. The capacity of the Energy Division is limited to 6 people, insufficient to back up the national energy policy development and implementation. This limited capacity also hampers the participation in the EU programmes and project activities.**

The **Housing Agency** coordinates energy efficiency policy in the housing sector. It initiates and coordinates energy auditing and energy certification of apartment blocks. On the basis of its practical experience, the Housing Agency prepares and disseminates studies and information materials about energy efficiency in apartment buildings. It also organizes local seminars and international conferences on energy efficiency in housing.

The Department of Climate Change and Renewable Energy of the **Ministry of Environment** and the Environmental Investment Fund supervised by this ministry are also involved in energy efficiency policy making and activities. Being responsible

for climate change issues and the implementation of the national Climate Change Mitigation Programme and also for the ETS, the Ministry of Environment is very active in energy efficiency and renewables.

Figure 20. Government bodies mainly involved in energy efficiency policy development and implementation



Energy efficiency in transport and main oil transit and oil product transmission pipelines fall under the jurisdiction of the **Ministry of Transport**.

The **State Energy Inspection** is a direct administration institution subordinated to the Minister of Economy, established in 2004. The purpose of the operation of the Energy Inspection is the state technical supervision and control of the plants and power consumption equipment and installations of the energy supply companies, control and supervision of the fulfillment of the energy quality requirements and compliance, as well as the supervision of the market of the equipment and protection systems used in the energy supply.

Vides Projekti (Environmental Projects) Ltd is a state enterprise supervised by the Ministry of the Environment. **Vides Projekti** is cooperating with the European Union funds and programs, with UNDP, World Bank and the Global Environment Facility for energy efficiency projects in the power and heat supply, for efficient lighting, for efficient use of wood biomass in heat supply systems.

Latvia is one of the few EU Member States, which has still not established a national energy agency. Within the governmental bodies, there is no specific unit for energy efficiency, on ministerial level there is even no specific job position for energy efficiency.

Considering that the significance of energy-related issues is constantly increasing and it is necessary to implement the National Energy Policy, the government plans to establish an energy agency by December 2007. The initial plans as in the Guidelines for Energy Sector Development envisaged the Energy Division of the Latvian Investment

and Development Agency to be reorganised into an Energy Agency. Later plans include transformation of the Housing Agency into a Housing and Energy Agency.

Utilities and Local Authorities

Latvenergo, the electric utility, is interested in improving the energy efficiency of power and heat production, power transmission and distribution and is implementing respective measures. Latvenergo has also created an Energy Efficiency Centre. The Centre renders free of charge consultancy services to Latvenergo customers on electricity consumption efficiency in households and promotes the introduction of the latest and most efficient household electrical appliances. The Centre conducts educational programmes and organizes expositions.

Some local authorities, regional development councils and the Municipality Association are involved in energy efficiency projects. Municipal authorities are responsible for the preparation of heating development plans, which are to comply with the territorial development plan of the respective municipality. **The new energy policy of the Government** recommends that municipalities establish regional/local energy agencies.

In 2006 Riga City Council submitted a proposal to the EU Intelligent Energy Programme for co-financing the creation of Riga Energy Agency, the first and so far the only local energy agency in Latvia. The proposal was approved, the City Council came up with a decision in January 2007, and currently the agency is in a process of setting-up. One of the major tasks of Riga Energy Agency will be to manage and coordinate the implementation of the Riga Heat Supply Development Concept. It will also organise and participate in outreach energy efficiency activities, and will manage a special Energy Efficiency Information Centre.

Other Institutions

Several scientific research and higher education institutions are engaged in analytical and practical studies on energy efficiency technologies and for the use of various renewable energy resources. Considerable scientific research potential in the energy sector is concentrated in Riga Technical University, in the Institute of Physical Energy of the Latvian Academy of Sciences, the Latvian University of Agriculture, etc.

A limited number of private consultancy companies are active on the market of energy efficiency services.

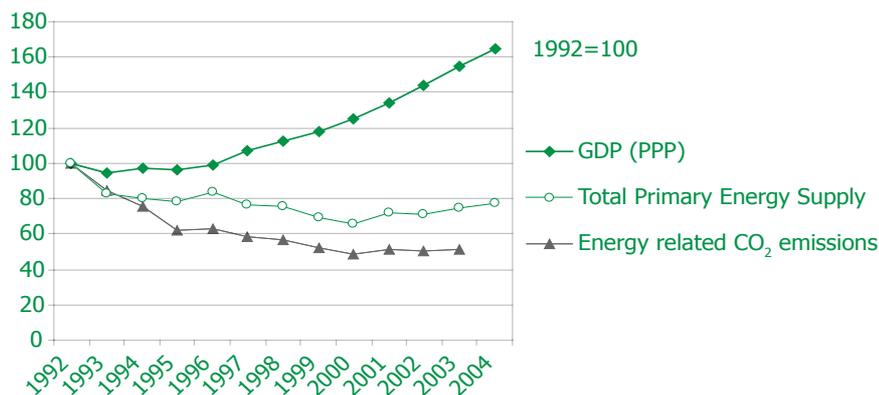
8. Assessment of Progress

Energy Efficiency Policies

Latvia is in a phase of rapid economic growth and structural reforms. In the energy sector, market reforms were initiated as well. Improvements in energy efficiency and energy intensities consequently happen with these developments, but also some implemented energy efficiency initiatives have contributed to the descending energy intensity trend. Latvia has also a large and increasing share of renewable energy compared to most European countries, based on exploiting its natural hydro and biomass resources. Energy efficiency and renewable energy are well incorporated into the national climate change policy and programme.

As a result of these processes, there is a tendency of decoupling energy consumption and carbon dioxide emissions from economic growth during the last years (Figure 21). Still, the high GDP growth rate after 2000 caused a moderate increase in primary energy resources consumption, a tendency, which should be monitored and considered. It is clear that coordinated, targeted and transparent efforts on policies to promote energy efficiency will have added value.

Figure 21. Economic growth, energy supply and CO₂ emissions trends



Source: Based on IEA Energy Statistics, Electronic version 2006

There is a declared political will to improve energy efficiency in Latvia. This will started to materialise with the establishment of a National Energy Efficiency Strategy in 2000. It is mainly driven by the objective of security of supply, combating climate change and stronger EU policies in this area, including a series of new directives to promote energy efficiency. The Latvian government is creating active strategies to implement the various EU directives on energy efficiency.

A longer-term vision for energy policy developments has been established by the government through the recently adopted Guidelines for Energy Policy Developments in 2007-2016. Those Guidelines also include a firm commitment to promote energy efficiency, based on the understanding that efficiency of the energy system and security of supply determine development opportunities and competitiveness, and also contribute for environmental quality.

However, the new Guidelines should in their implementation lead to better clarity in the government's energy efficiency strategy and a better integration in energy policies. There has not been enough clarity about the implementation status of the Latvian government's Energy Efficiency Strategy from 2000, to its up-date of 2004 and until now. It is also expected that the Guidelines for energy sector developments could lead to a better linkage between policy formulation and implementation, which appears to be a necessity in order to achieve further energy efficiency improvements.

Specific energy efficiency programmes and measures

The main priorities in the Latvian energy efficiency strategy have been and are the efficiency of heat production, transmission and distribution and the energy (mainly heating) efficiency in the building sector. These priorities were justified by the big energy saving potential in these areas and the available policy instruments. Clear targets for energy efficiency in the building sector and district heating have been established. Support programmes are implemented and planned.

However, there are no programmes targeted at industry and the services sector. Transport, the second end-use sector in terms of energy consumption, would particularly benefit from the development of specific energy efficiency programmes and measures. All these energy end-use sectors are in growth and are increasing their economic importance for the local consumption and/or for exports. Their energy efficiency potential is not studied and targeted. There are no recent programmes targeted at electricity consumption, although it would help achieving the strategic target of electricity self-sufficiency. The planned research study on the energy efficiency potential of different policy measures should include all sectors. It should also include comparative cost benefit analysis supporting the correct selection of priorities for future energy efficiency actions.

There is a need for specific programme activities directed to increasing the awareness and changing towards energy efficiency behaviour.

Institutions

The organizational policy framework for energy efficiency in Latvia appears to be the right place to start further policies and reforms. The actual setting is somewhat fragmented, and without better definition of responsibilities and at the same time strengthened cooperation between the various actors, it would be difficult to achieve the current policy objectives. The Ministry of Economics has a responsibility within the government to take the lead. However, there is still a scope for improvement as concerns capacity, visible leadership and coordination within and between ministries.

The existing link between policy development and its implementation is very weak. A designated national implementing body/agency for energy efficiency with clear mandate and responsibilities could respond to this challenge. The issue of an energy agency (energy efficiency agency) is being identified in Latvia. There is a need to consider the work of different agencies, such as the Latvian Development and Investment Agency and the Housing Agency in a coordinated effort to improve implementing powers and create tangible results.

There are a limited number of energy consultancy and services companies active on the market. For example, only three qualified auditors are available for the auditing programme of the Housing Agency; Latvia's participation in the EU Intelligent Energy for Europe Programme is largely due to the initiative of one consultancy company. Development of a market for energy efficiency consultancies and services would be undoubtedly beneficial for achieving the national energy efficiency targets and improvements in the link between policy formulation and operational energy efficiency improvements in the end-use sectors.

Energy Efficiency Financing

The Latvian government is making efforts to coordinate and create synergies between different financing mechanisms and funds in order to implement energy efficiency programmes. There are several different funding instruments to support energy efficiency in Latvia. Energy efficiency is generally integrated into the national energy policy and is subject to annual financing from the state budget. There are obvious opportunities to use EU structural funds, combined with national budgetary resources. There are environmental funds and an energy efficiency fund. In addition, commercial financing is available at acceptable terms.

The Energy Efficiency Fund with its current funding conditions is not competitive with the existing environmental funds and with the commercial financing available in the country. The necessity for this fund in the current financial environment is reconsidered. A decision to close it down should not prevent other discussions and analysis of the opportunity to have specially dedicated Energy Efficiency Funds in the future. A reshaped Energy Efficiency Fund has to be based on existing experience and organisational set-up could be coordinated with a possible creation of a new agency or body with dedicated operational tasks on energy efficiency.

Important funding for energy efficiency activities is provided through international programmes, but international support cannot be considered a main funding source, as this fragments the picture and does not ensure the necessary continuity.

Renewables, CHP and District Heating

Latvia has already a high share of renewables in its energy fuel mix but still higher goals to achieve. Cogeneration and use of renewables for electricity and heat production are on the rise, but so is energy demand. The potential benefits and synergies between the use of cogeneration and of District Heating can be further exploited in the context of modernising the existing networks.

At the same, time there are limitations for the use of renewable energy sources. On the other hand, renewables targets are often expressed also as share of the energy consumption. These lead to the need of further efforts to not only expand the use of renewable energy sources, but also to do it in an efficient way and at the same time to combine it with increased efficiency of consumption.

9. Recommendations

General recommendations

- When undertaking analyses of supply and demand scenarios the government should better acknowledge the role of energy efficiency in achieving the overall objectives of energy security and combating climate change.
- The government should take advantage of the ongoing energy policy debate and the momentum created in Europe, and should use the timely opportunity to strengthen energy efficiency policies in Latvia.
- The government should continue the process of reforming the energy market and develop mechanisms for promoting energy efficiency compatible with the process of liberalization and completion of internal EU energy market.

Energy efficiency policy and legal framework

- The government should develop a proactive energy efficiency policy taking into account that Latvia is in a phase of rapid economic growth and structural reforms.
- The government should better identify the potential for cost effective energy efficiency improvements in the various end-use sectors with a view to develop appropriate policies and measures.
- The government should continue to facilitate the implementation of energy efficiency measures in production, transmission and distribution of heat and electricity.
- The government should put significant efforts into the cost-effective implementation of the Buildings Directive and the End-use efficiency and Energy Services Directive (EUESD). The government should use the opportunity of developing a national energy efficiency action plan under the EUESD Directive to further strengthen the energy efficiency policies.
- The government should take better advantage of the projects under the Intelligent Energy Europe (Competitiveness and Innovation) Programme in the implementation of EU Directives and policies.

Institutional framework

- The government should strengthen the institutional capacity at Ministerial level, in particular of the Ministry of Economics, in order to strengthen its leading role in the formulation and coordination of energy efficiency and renewable policies and programmes.
- When developing an energy efficiency strategy, the government should ensure a better link between policy development and implementation.
- The government should establish an agency with clear responsibilities for energy efficiency, properly staffed and funded, to promote energy efficiency and implement national policies in good coordination and building on the expertise of other governmental bodies, such as the Latvian Development and Investment Agency, the Housing Agency, etc.

Energy market and prices

- The government should strengthen the role of the regulator, the Public Utilities Commission, in such a way to ensure that both the EU internal energy market and energy efficiency related legislation are fully transposed taking into account the national circumstances of Latvia.
- The government should stimulate the development of a competitive market for energy efficiency consultancy and services.

Energy efficiency funding

- The government should continue its efforts to finance energy efficiency activities from different financial sources, including the state budget, EU structural funds, investment and environmental funds, Kyoto mechanisms, multilateral and bilateral agreements. Better coordination between these different financing sources would ensure the transparency and efficiency of spending.
- The government should make effective use of the funding from the EU structural funds for national energy efficiency programmes, in coordination with national contributions. However, in a long-term perspective international support should not be considered a main funding source for energy efficiency.
- Based on the favourable environment on the financial market in the country, the government should facilitate further commercialisation of energy efficiency financing.
- Specific incentives should be further considered to stimulate the investments needed to achieve the objective of increased energy efficiency in buildings as outlined in the Guidelines for Energy Sector Development.

Specific energy efficiency programmes and measures

- Based on past experience with energy efficiency activities and the analysed energy efficiency potential the government should consider new possible programme areas.
- The government should continue its targeted efforts in buildings and district heating. Coordination between different actors involved in programmes in the building sector should be improved.
- The government should ensure that energy efficiency considerations are taken into account in urban development and infrastructure projects, in public transport, public lighting and district heating.
- The government should facilitate energy efficiency measures in industry and services sectors, as e.g. benchmarking, auditing and advice.
- The government should identify possible ways to promote energy efficiency of the transport sector.
- The government should increase its efforts in raising the public awareness for energy efficiency.

Renewables and CHP

- In the context of increasing the capacity of electricity generation, the government should continue to facilitate development and modernisation of CHP and DH systems with a view to achieve higher efficiency levels and environmental benefits.
- The government should further define the support for high efficient cogeneration and renewable electricity production, at the same time ensuring fair access to the grid, notably for new entrants.
- The government should find appropriate forms to extend the support for biofuels for transport by addressing the entire chain from agricultural production to distribution, retail and use.

Data collection and monitoring

- The government should facilitate collection of data required to establish indicators necessary to monitor energy efficiency improvements.

Annexes

Annex 1: General economic and energy data for Latvia

Table 2. Energy Balance

Indicators	1992	1995	2000	2001	2002	2003	2004
Total Primary Energy Production	794	1483	1543	1672	1831	1977	2140
Net imports	5406	3327	2267	2548	2440	2685	3059
Total Primary Energy Supply (TPES)	5908	4637	3887	4246	4202	4401	4598
Total Final Consumption (TFC)	4810	3850	3342	3671	3729	3841	3975

Source: IEA Energy Statistics, Electronic Version 2006

Table 3. Total Primary Energy Supply Structure

Product	1992	1995	2000	2001	2002	2003	2004
Petroleum Products	2742	1915	1097	1237	1164	1288	1288
Natural gas	1725	1010	1092	1269	1291	1347	1332
Combustible Renewables and Waste	482	1056	1111	1212	1244	1266	1377
Hydro	217	253	242	244	212	195	267
Electricity trade	351	194	154	162	202	226	180
Coal and Coal Products	392	209	111	100	75	66	50
Crude, NGL and Feedstocks	0	0	80	22	14	8	3
Solar/Wind/Other	0	0	0	0	1	4	4
Total Primary Energy	5908	4637	3887	4246	4202	4401	4598

Source: IEA Energy Statistics, Electronic Version 2006

Table 4. Total Final Energy Consumption

Energy Products	1992	1995	2000	2001	2002	2003	2004
Electricity	558	384	385	394	420	448	464
Heat	1217	905	590	630	628	641	587
Petroleum Products	1824	1187	1073	1198	1198	1277	1319
Natural Gas	628	366	329	390	447	456	492
Coal	160	114	57	75	62	59	58
Combustible Renewables and Waste	423	893	909	985	975	960	1055
Total Final Consumption	4810	3850	3342	3671	3729	3841	3975

Source: IEA Energy Statistics, Electronic Version 2006

Table 5. Basic Energy Related Indicators

Indicators	1992	1995	2000	2001	2002	2003	2004
Population (million)	2.632	2.515	2.372	2.359	2.338	2.325	2.313
GDP (billion 1995 US\$)	6.182	5.946	7.726	8.345	8.883	9.523	10.316
Primary Energy Intensity (TPES/GDP) (toe per thousand 2000 US \$)	0.956	0.780	0.503	0.509	0.473	0.462	0.446
Primary Energy Intensity ^{PPP} (TPES/GDP) (toe per thousand 2000 US \$)	0.393	0.322	0.207	0.21	0.194	0.189	0.186
TPES/Population (toe per capita)	2.245	1.844	1.639	1.800	1.797	1.893	1.988
Final Energy Intensity (TFC/GDP)	0.778	0.647	0.433	0.440	0.420	0.403	0.385
TFC/Population (toe per capita)	1.828	1.531	1.409	1.556	1.595	1.652	1.719
Energy related CO ₂ emissions (Mt)	14.06	8.74	6.87	7.22	7.08	7.21	n.a

Source: IEA Energy Statistics, Electronic Version 2006

Table 6. Electricity generation

Products	1992	1995	2000	2001	2002	2003	2004
Hydro	2521	2937	2819	2833	2463	2270	3109
Natural Gas	1010	526	1128	1304	1314	1533	1433
Petroleum Products	302	418	107	95	139	82	60
Coal and Coal Products	151	98	78	42	38	22	0
Solar/Wind/Other	0	0	4	3	11	48	49
Combustible Renewables and Waste	0	0	0	3	10	24	32
Total electricity generation	3984	3979	4136	4280	3975	3979	4683

Source: IEA Energy Statistics, Electronic Version 2006

Table 7. Heat production

Products	1992	1995	2000	2001	2002	2003	2004
Natural Gas	27232	19199	22654	25437	24720	25547	24142
Petroleum products	24196	19834	4376	3640	3458	2595	2155
Coal and Coal Products	7688	3383	1227	886	751	601	271
Combustible Renewables and Waste	958	3692	3610	3974	4119	4773	4525
Electricity	0	4	0	0	0	0	0
Total Heat Production	60074	46112	31867	33937	33048	33516	31093

Source: IEA Energy Statistics, Electronic Version 2006

Annex 2: Selected end-use data tables

Table 8. Total Final Energy Consumption by Sector

Sectors	1992	1995	2000	2001	2002	2003	2004
Residential	1325	1592	1324	1463	1455	1467	1427
Industry Sector	1407	699	573	621	646	655	719
Commercial and Public Services	518	633	491	509	551	569	638
Transport Sector	1057	732	764	895	892	943	982
Agriculture/Forestry	337	95	69	69	68	76	77
Other	141	45	27	36	27	37	38
Total Final Consumption	4810	3850	3342	3671	3729	3841	3975

Source: IEA Energy Statistics, Electronic Version 2006

Table 9. Final Energy Consumption of the Residential Sector

Energy Products	1992	1995	2000	2001	2002	2003	2004
Electricity	115	100	102	107	113	123	126
Heat	659	601	440	469	466	476	433
Oil Products	65	32	33	58	58	58	60
Natural Gas	117	100	63	72	79	88	95
Coal and Coal Products	100	43	11	29	19	19	19
Combustible Renewables & Waste	269	716	674	729	720	704	696
Total Residential Sector	1325	1592	1324	1463	1455	1467	1427

Source: IEA Energy Statistics, Electronic Version 2006

Table 10. Final Energy Consumption of the Services Sector

Energy Products	1992	1995	2000	2001	2002	2003	2004
Electricity	132	124	133	126	149	160	171
Heat	0	247	133	144	145	147	136
Oil Products	212	60	39	48	47	51	56
Natural Gas	141	44	44	47	70	75	90
Coal and Coal Products	33	50	32	32	30	30	29
Combustible Renewables & Waste	0	107	109	112	111	106	156
Total Services Sector	518	633	491	509	551	569	638

Source: IEA Energy Statistics, Electronic Version 2006

Table 11. Final Energy Consumption of the Industry Sector

Energy Products	1992	1995	2000	2001	2002	2003	2004
Electricity	199	123	123	133	131	138	141
Heat	558	47	16	15	15	15	15
Oil Products	307	247	108	80	80	81	83
Natural Gas	321	206	207	254	282	275	284
Coal and Coal Products	19	13	12	12	11	10	10
Combustible Renewables & Waste	4	63	107	127	127	136	187
Total Industry Sector	1407	699	573	621	646	655	719

Source: IEA Energy Statistics, Electronic Version 2006

Table 12. Energy Consumption of the Industry Sector by Subsectors

Subsectors	1992	1995	2000	2001	2002	2003	2004
Iron and Steel	190	71	111	114	110	110	113
Chemical and Petrochemical	46	117	15	18	18	17	17
Non-metallic Minerals	76	103	47	63	72	91	88
Machinery	43	30	24	30	26	27	27
Food and Tobacco	163	172	138	139	150	136	149
Wood and Wood Products	16	61	119	137	127	140	172
Construction	18	27	26	23	28	27	27
Textile and Leather	21	57	54	53	53	53	49
Non-specified/other	834	61	39	44	62	54	67
Total Industry Sector	1407	699	573	621	646	655	719

Source: IEA Energy Statistics, Electronic Version 2006

Annex 3: Energy Prices

Table 13. Electricity prices to residential end users

"Latvenergo" (differentiated) rates for the electricity end users in the residential sector, including VAT, starting with the 1st of January 2007, approved by the Public Services Regulatory Commission by Board Resolution No 292 of 22 November 2006

Tariff Type	Units	Tariff
T-1 (for users with the inlet protection apparatus current up to 40A including)		
Charge for electricity	Ls*/kWh	0.051
T-2 (for users with the inlet protection apparatus of current above 40A)		
Charge for electricity	Ls/kWh	0.0494
Charge for the inlet protection apparatus current value		
T-3** (for users irrespective of the inlet protection apparatus current value)		
Subscription fee	Ls/year	50.4
Charge for electricity:		
• Night zone and weekend	Ls/kWh	0.02838
• Day Zone	Ls/kWh	0.04479
• Charge for the inlet protection apparatus current value	Ls/A/year	2.21

* the central rate is 0.702804 Latvian lats per EUR (1 lat=1.42 EUR)

** Differentiated T-3 time zones: Day zone – working days from 7:00 to 23:00; Night zone - working days from 23:00 to 7:00; on Saturday and Sunday – 24 hours a day

Source: "Latvenergo", www.latvenergo.lv

Annex 4: Project in Latvia under the EU Intelligent Energy Programme

Project Title	Area of activities	Brief Description	Duration	Participant from Latvia
Innovative Financing of Social Housing Refurbishment in Enlarged Europe (INOFIN)	Energy Efficiency in Buildings	Building refurbishment, financing schemes - grants, commercial and soft loans, third party financing, revolving investment funds for energy efficiency and renewable energy sources, structural fund means and public participation models for social housing	01/2006 – 12/2008	EKODOMA, Latvia
Monitoring Electricity Consumption in the Tertiary Sector (EL-TERTIARY)	Energy efficient products and services	Promoting more efficient use of electricity in the Tertiary Sector, providing detailed and reliable know-how on the electricity consumption structure, differentiated by purpose (lighting, office equipment, ventilation, air conditioning, etc.) and for specific types of buildings	1/2006 – 6/2008	EKODOMA, Latvia
European Efficient Residential Lighting Initiative (EnERLIIn)	Energy efficient equipment and products	Promoting the use of Compact Fluorescent Lamps for more energy efficiency residential lighting	01/2006 – 12/2008	EKODOMA, Latvia
The European GreenLight Programme in New Member States (NEW GREENLIGHT)	Energy efficient equipment and products	Transfer and market the GreenLight know-how for reducing the energy use for lighting, promotion of energy efficiency in lighting in non-residential buildings and streets.	1/1/2006 – 31/12/2008	EKODOMA, Latvia

Project Title	Area of activities	Brief Description	Duration	Participant from Latvia
GreenLabelsPurchase – making a greener procurement (GREENLABELSPURCHASE)	Energy efficient equipment	Promoting the increased use of energy labels in the procurement process of public authorities, the tertiary sector, industry and SMEs	01/2006 – 06/2008	EKODOMA, Latvia
Short Term Actions to Reorganize Transport of goods (START)	Energy efficiency in transport	An efficient distribution of goods, establishment of local freight networks, access restrictions	02/2006 – 01/2009	Riga City Council Traffic Department
Commercial Finance for Sustainable Energy Projects (CF-SEP)	Financing mechanisms & incentives	Assistance to project developers with basic information about the financial market, training the bank staff and dissemination of information	01/2006 –06/2007	EKODOMA, Latvia
Evaluation and Monitoring of Energy Efficiency in the New Member Countries and the EU25 (EEE-NMC)	Energy efficiency policies evaluation	Quantitative evaluation of energy efficiency policy measures	01/2006 – 06/2007	Latvian Investment and Development Agency (LIDA)
Energy Service Communities in New Member States - Energy Planning and Financing Tools at Local Level (SEC-Tools)	Sustainable energy communities	Local energy planning, activation of the energy market and end-user mobilisation	01/2006 – 12/2008	Strasa, Latvia

Project Title	Area of activities	Brief Description	Duration	Participant from Latvia
Sustainable Energy Actions for Europe's Cohesion (Energy 4 Cohesion)	Financing mechanisms & incentives	Design of Master Plans that aim at the implementation of RE projects in selected regions (in Latvia: Limbazi Region). It will identify the best funding mechanisms and elaborate suitable cooperation schemes	01/2006 – 06/2008	EKODOMA, Latvia
Developing local supply chain networks, linking bio-fuel producers with public sector users (Bio-NETT)	Alternative fuels	Development of local supply and greater use of liquid bio-fuels	12/2005 – 08/2008	Riga Managers School (RMS) – Latvia
Magnify Success: Extension of the European Energy Trophy competition to 18 countries (Energy Trophy+)	Energy efficiency in buildings	A competition between companies and public administrations for saving energy in office buildings using cost-free or low cost measures only i.e. behavioural changes	To start 2006-2007	n.a.
Energy Exploitation and Performance Contracting for Low Income and Social Housing (ECOLISH)	Energy efficiency in buildings	Pilot EPC organised, elaborated and evaluated in low income social housing	To start 2006-2007	n.a.
European Smart Metering Alliance (ESMA)	Energy efficient equipment and products	Promote the use of smart meters and foster best practice	To start 2006-2007	n.a.

Project Title	Area of activities	Brief Description	Duration	Participant from Latvia
Achieving Energy Sustainability in Peripheral Regions of Europe (ASPIRE)	Sustainable energy communities	Education, capacity building and Sustainable Energy Action Plans	To start 2006-2007	n.a.
Actions and Strategies for Sustainable Growth through Community Networking and Innovative Thinking (INNOVATIVE THINKING)	Sustainable energy communities	Establish and implement an action plan in communities as a joint agreed document with key community stakeholders, such as utilities, buildings owners, transport companies, the municipal/district council and NGOs.	To start 2006-2007	n.a

Annex 5: Organisations contacted by the review team

Ministry of Economics

Ministry of Economics, Department of Energy

Ministry of Economics, Housing Policy Department

Ministry of Economics, Buildings Department

Ministry of the Environment, Climate and Renewable Energy Department

Ministry of Finance

Latvian Investment and Development Agency

State Agency "Housing Agency"

Latvian Environmental Investment Fund Ltd.

Administration of Latvian Environmental Protection Fund

Public Utilities Commission of Latvia

AS Latvenergo

Latvian District Heating Association

JSC "Rīgas Siltums" (Riga District Heating Company)

Riga City Council

Central Statistical Bureau of Latvia

Riga Technical University

Institute of Heat, Gas and Water Technology, Riga Technical University

Institute of Energy Systems and Environment (IESE), Riga Technical University

Institute of Physical Energetics, Riga Technical University

Ekodoma, Ltd

Latvian Small Hydropower Association

Rapeseed Growers Association "Latvijas Rapsis"

Environment Protection Club

Annex 6: Information sources

Annual report of the Public Utilities Commission of the Republic of Latvia on the national energy sector, prepared for the European Commission, 2006, Public Utilities Commission website, www.sprk.gov.lv

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