

## **PART III. NATIONAL REPORTING GUIDELINES FOR CSD-14/15 THEMATIC AREAS**

### **B. ENERGY**

Government focal point: **M. Franckevicius, Director**

Responding ministry/office: **State Institution Energy Agency  
Ministry of Economy**

#### **Decision-Making: Strategies, policies, programmes and plans, legislation, policy instruments and the regulatory framework; involvement of Major Groups**

- *Access to electricity and other energy services, through either grid extension or decentralized energy technologies, in both urban and rural areas, including main programme objectives, impacts and progress;*

Energy users and producers have all the necessary conditions to access the existing grid and to provide energy to the market.

The procedures and conditions to access the power grid are defined in both the Rules for the technical access of wind power plants to the power grid of Lithuania and the Rules for the access of power users and producers' facilities (grid, equipment, systems) to the operated energy facilities, approved by the Minister of Economy of the Republic of Lithuania in 2004.

The Law on Natural Gas of 2000 provides for the right of access to the natural gas distribution network: a right to use transmission network granted to gas suppliers, independent users, distribution companies, companies transit conveying gas; a right to use distribution system is granted to suppliers and independent users; gas suppliers have a right to conclude gas supply contracts with independent users and distribution companies; independent users have a right to conclude supply contracts with any gas supply companies; independent users have a right to conclude network usage contracts for such amount of gas that is necessary for their own purposes; gas company may prohibit the usage of the network when the capacity is too low or when the company is unable to carry out the obligations imposed by the authorized institution or the Government. Refusal to use the system must be substantiated, non-discriminative and impartial.

- *Efficient use of energy in the household and commercial sectors through, e.g., introduction of improved cook stoves or liquefied petroleum gas (LPG) for cooking, minimum energy performance standards for appliances and lighting, energy efficient building codes, and metering.*

Directives of the European Council, European Parliament and European Commission regulate efficient energy use and labelling of energy consumption of household electrical appliances and define the labelling procedure for the said appliances. In accordance with the requirements of these directives the Minister of Economy of the Republic of Lithuania in 2002 approved the technical regulations for the labelling of household electrical kitchen stoves, fridges, freezers or their combinations, washing machines, electrical tumble dryers, lamps, dishwashers, air conditioners.

These Technical Regulations are intended to indicate by labelling energy consumption of household appliances and to provide standard information and thus enable the users to select most efficient appliances.

In order to timely implement the provisions of Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings in the national laws, the Minister of Environment and the Minister of Economy in 2004 approved the measures and terms of the implementation of the provisions of the Directive in Lithuania.

In 1999 Construction Technical Regulation establishing main requirements of energy efficiency and heat conservation in buildings (energy metering devices, minimum requirements for partition walls) was approved.

In 2004 the Government of the Republic of Lithuania approved the Lithuanian Housing Strategy. One of the key objectives of the Strategy is to ensure efficient use, maintenance and modernisation of the existing housing stock, and rational use of energy resources. The Strategy provides for, by 2020, modernisation based on the economic feasibility principle of heating systems in the existing multi-apartment buildings, renovation and insulation of roof structures, change or replacement of windows and entrance doors, removal of joint defects of panel walls and increase of the thermal resistance of external walls, as well as reduction of heat energy costs per unit of useful floor space up to 30 %. The Strategy sets forth that it is necessary to establish an adequate funding and crediting mechanism using the experience gained during the implementation of the Energy Efficiency/Housing pilot project, crediting resources of Lithuanian banks, housing credit insurance and State assistance in cash to low-income households, and also potential support of international financial institutions and funds.

For the purpose of increasing energy efficiency in the housing sector, owners of apartments in multi-apartment buildings are encouraged to form homeowners' associations. Such associations are provided with support and education and consulted on issues of house maintenance and energy management. Owners of multi-apartment buildings, who participate in programmes developed by the Government of the Republic of Lithuania, may receive financial support for the implementation of energy conservation measures in their buildings.

A very general metering and billing principle is that in the private sector electricity is metered and billed individually per user in all building categories. In public sector owned buildings there is normally only one meter per building, except in residential sector where the tenants normally pay their own electricity use, non-depending on the ownership of the building. Usually the customer himself reads the meter every month and sends the consumption figures to the Electricity distribution Company. Representative of the Electricity distribution Company periodically checks the meter.

The most dominant heating modes in Lithuania are district heating. For heating there is normally one meter per building. The heating bill is divided between the users according to the floor area and is paid monthly. Representative of the DH Company with customers reads the meter every month.

Natural gas is metered and billed individually per user. Usually the customer himself reads the meter every month and sends the consumption figures to the Gas distribution company. Representative of the Gas Company with customers periodically checks the meter.

- ***Improved efficiency in energy supply (e.g. energy generation, transmission and distribution).***

Energy sector development trends followed in the past mainly focused on the concentration of the production of energy resources and their centralized distribution in order to facilitate their management. Therefore, the increase in energy demand resulted in construction of major power plants. The systems of resources of the companies were intended for energy export.

The condition of electricity sector during the last year's improved and technological losses of electricity transmission and distribution decreased.

Attempts to preserve the central heat supply systems, while developing CHP, would result in considerable enhancement of efficiency of primary energy consumption and reduction of emissions. The condition of heat sector during the last years improved. Technological and realization losses of heat transmission in 2004 compared with 1996 decreased by 2 times. This was achieved by improving the technical condition of heat networks as well as though the attempts to find optimal alternative heat transmission method.

The existing gas transmission pipelines enable to considerably increase gas consumption.

- ***Policies to facilitate the transfer of modern energy technologies, such as export promotion policies or establishment of an enabling environment for investments, including their objectives, the types of financing available and other incentives***

The legal environment will promote the development of advanced technologies and international co-operation. As from 1 May 2004, the Law on Amendment of the Republic of Lithuania Law on Value Added Tax and a new version of the Republic of Lithuania Law on Excise Duty entered into force, which implemented the provisions required for the de facto EU membership of Lithuania, i.e. these laws, taking into account the EU *acquis*, set forth rules for the taxation of transactions between business entities situated in different Member States. These laws completed transposition of the provisions of EU directives, which regulate the imposition of the said taxes into the national legislation.

There are some taxes exemptions in Lithuania. Standard Rate of Value Added (VAT) is 18 percents.

Rate of VAT for the heat for residents is only 5 percents. The difference between 18 to 5 percent shall be covered from State budget of the Republic of Lithuania in the amount of 13 percent pursuant to the procedure established by Government of the Republic of Lithuania.

Rate of VAT for the construction of the housing, insulation and renovation of buildings is 9 percents. The difference shall be paid from the State budget and municipal funds as well as from soft credits granted by the state and State special funds.

Rate of VAT on export is 0 percent.

The Law on Amendment of the Excise Law adopted in 2004 provides for the power produced from the renewables to be exempt from the excise tax; an excise grace is applied to the part of biofuel corresponding to the part of additives of biologic origin in one ton of the product.

The Law on Environment Tax as well as the Laws on the Supplement and Amendment of the said Law establishes that legal and natural persons shall be exempt from the tax applicable for environment pollution by mobile and stationary pollution sources if the said persons use standard biofuels and provide written evidence of the usage of said biofuels.

- ? ***Reform or restructuring of the energy sector within the last ten years to improve the functioning of energy markets.***

The electricity sector in Lithuania is undergoing the final stage of the reform. Its primary task was to transfer from the regulated system to the one based on market relations and meeting the requirements of the EU directives towards the electricity market. The first step was founding of joint stock company Lietuvos Energija (Energy of Lithuania). In 1995 JSC Lietuvos Energija was reorganised from a state-owned company to a special purpose joint stock company. The second step was separation of economic activity related to heat energy in 1997. District heating companies and thermal power plants in Vilnius and Kaunas were separated from JSC Lietuvos Energija. The third

stage is further restructure of the electricity sector aiming at building up a competitive electricity market in line with implementation of the EU directives' requirements. Since January 1, 2002 Special Purpose Joint Stock Company Lietuvos Energija has been vertically integrated and broken down into five independent companies: two electricity generation companies (Lithuanian Power Plant and Mazeikiai CHP Plant, one transmission company and two distribution companies Rytu Skirstomieji Tinklai (JSC East Electricity Distribution Network) and Vakaru Skirstomieji Tinklai (JSC West Electricity Distribution Network). JSC Lietuvos Energija was deprived of the status of a Special Purpose Company. Lietuvos Energija continues its activities as the Transmission System Operator and Market Operator.

The revision of the Law on Electricity adopted by the Seimas on 1 July 2004 essentially corresponds to the provisions of the EU Directive on Electricity relating to the opening of the market and its supervision. Additional functions are foreseen for the National Control Commission for Prices and Energy (hereinafter the Commission) in supervising the activities of the transmission and distribution network operators (how the rules for the distribution and regulation of the carrying capacity of the lines linking the separate systems are complied with, how quickly new customers are connected, how efficiently the accounting for separate activities is differentiated, etc.), carrying out the monitoring and supervision of the market, and controlling the reliability of the supply and the quality of services. The provision that the Government or an institution authorised by it shall approve requirements for the quality of services and the reliability of the supply of energy and that the Commission shall control how these requirements are complied with has been retained in the law passed by the Seimas. On 1 July 2004, all commercial electricity customers had to become eligible, i.e. to acquire the right to freely choose a supplier and negotiate with them on the supply conditions and prices, and as of 1 July 2007, the remaining customers, i.e. the residents, should also acquire this right. In legal terms, 74 percent of the market was opened in Lithuania. The application of the principles of competition in the electricity generation and supply sectors stimulates higher efficiency gains and enables consumers to be free in choosing their supplier (producer). The market offers trade in three kinds of electricity: contract electricity, electricity supplied according to the commitment to provide services for public interests as well as additional electricity.

The major producer of electricity in Lithuania, capturing 75 percent of the market, is the state-owned company Ignalina Nuclear Power Plant. In 2000 the Law on Decommissioning of the first unit of Ignalina Nuclear Power Plant was adopted. The Law established legal framework for the closing down of the plant. On 31 December 2004 the operation of the first unit of the plant was shut down.

The reform process in District Heating (DH) sector started in 1997 by the separation of the heat activities from special JSC Lietuvos Energija. The first stage of decentralization, during which 6 regional and 13 municipal DH companies were established, was rather successful. Though the newly established DH companies have inherited from JSC Lietuvos Energija quite big debts, the DH prices have grown by 10-30 % in comparison with the previously uniform price applicable for the whole country.

The second stage of decentralization of DH sector was started in 1998 by dividing regional DH companies and establishing new DH utilities in cities and districts. The results of such process were not positive: the heat prices as well as customers' debts increased in individual (the smaller) districts. Large district heat utilities had only fewer possibilities for taking loans for rehabilitation, the customers disconnected from DH networks. Now only one regional DH utility remained in Lithuania.

A good tendency appeared in 2000: private capital has entered in the DH sector. Lithuanian foreign joint companies have taken several DH utilities on lease offering high investments for modernization and stable prices. Now third part of DH heat supplying enterprises is rented by private enterprises.

During 1993-2003 the average annual decrease of heat consumption was 3 %. The overall length of heat network is about 2900 km and more than 500000 customers are connected. The total capacity of DH schemes equals approximately 11000 MW, though the potential is not fully used at present, mainly due to reduced consumption in the industry sector.

According to the Law on Heat the private can be heat production utilities only. Municipalities will own the heat transmission networks through which not less than 5 GWh of heat energy per year will be sold, as well as not less than 30 percent of heat capacity in every district heating network required to satisfy the customers heat demand, including the required heat capacity reserve.

The Law on Heat obligates municipalities to manage their heat economies according to approved special plans. The main objective of the Municipal Heat Plans shall be to satisfy the customers' heat demand on least costs without exceeding the permitted negative impact on the environment.

At the end of 2002 the first CHP (in city Kaunas) was privatized.

The leading company whose main activity is procurement of natural gas (import, transmission, distribution and sale) is JSC Lietuvos Dujos (Lithuanian gas). Lietuvos Dujos as a joint stock company was registered in 1995. Stock company Lietuvos Dujos was restructured in 2000 when a decision was taken to divide it by business activity: natural gas, liquefied gas, and production of gas equipment. Having contracted the number of gas distribution affiliates, instead of previous seven gas distribution companies just five regional gas distribution companies remained and go on working.

In 2004, the privatisation of JSC Lietuvos Dujos was completed: at the moment 39 percent of the shares belong to E.ON Ruhrgas Inter-national AG, 37 percent to the Russian concern Gazprom, almost 18 percent to the Government, and the remaining shares to various natural and legal persons. In selling the block of shares to Gazprom, it was agreed that a long-term natural gas contract would be concluded and the principal gas supplier on the domestic market would be JSC Lietuvos Dujos, which should capture 70 percent of the domestic natural gas market (excluding +Achema AB and Kauno Termofikacijos Elektrine UAB). Thus the share of Dujotekana UAB fell but Lietuvos Dujos AB, as a supplier, can also apply even a 15 percent margin when supplying gas to eligible customers. In total, in 2004, five gas supply undertakings operated in Lithuania. Two of these aforementioned, Achema UAB and Kauno Termofikacijos Elektrine UAB, used natural gas only for their own purposes.

In Lithuania two primary companies inclusive the oil sector – Stock company Mažeikiu Nafta (Mazeikiai oil) and Stock company Klaipėdos Nafta (Klaipėda oil).

Stock company Mažeikiu Nafta consists of three branches: the only crude oil refinery in the region of Baltic States, in Mazeikiai, oil transportation company Naftotiekis that in 1998 became the Biržai branch of company Mažeikiu Nafta and oil import-export terminal Butingės Nafta (Butingė oil), that became in 1998 the Butingė branch of Mazeikiai Nafta. On 1 January 2005, 40 percent of shares of Mazeikiai Nafta belonged to the Government, the rest share belonged to Russian concern Jukos and others shareholders.

Reorganization of the energy sector in Lithuania with regard to the requirements of the Directives of the European Union is almost completed. The main laws regulating the activity of the energy sector and operative system of the activity control create preconditions for competitive environment and enhancement of the efficiency of energy systems. Reorganization and decentralisation of the energy systems will speed up development of energy market and competitive conditions for industries and will contribute to enhanced efficiency and reduced costs of energy production and supply.

- ***Legal and regulatory frameworks related to overall energy policies that have been adopted.***

The National Energy Strategy, which was approved by Resolution of the Parliament (Seimas) in 2002, formulated the key provisions of the Government on the restructuring and development of the energy sector for the period until 2020. Taking into account the key factors that shape the energy policy, the following strategic objectives of the Lithuanian energy sector have been set:

1) to ensure a reliable and secure energy supply at least cost and with minimum environmental pollution, as well as constantly enhancing the operational efficiency of the energy sector;

2) to liberalise electricity and natural gas sectors by opening the market in accordance with the requirements of EU directives;

3) to privatise energy enterprises subject to privatisation in the natural gas transmission and distribution and power sector, as well as to continue privatisation of oil refining and transportation enterprises;

4) within the terms agreed with the European Union, to develop and start performing a set of measures facilitating the implementation of the European Union environmental directives in the energy sector, as well as to ensure compliance with nuclear safety requirements;

5) to ensure that 90-day stocks of crude oil and petroleum products are built up by 2010 according to the agreed schedule;

6) to prepare for the decommissioning of the reactors of the Ignalina Nuclear Power Plant, the disposal of radioactive waste and the long-term storage of spent nuclear fuel;

7) to integrate the Lithuanian energy systems into the energy systems of the European Union within the next 10 years;

8) to further develop regional co-operation and collaboration with a view to creating a common Baltic electricity market within the next five years;

9) to pursue an active policy of integration into the Western and Central European electricity markets and ensure that conditions conforming to the Energy Charter, EU legislation and practices are applied to the transit of energy resources through Lithuania;

10) to increase the efficiency of district heating systems;

11) to achieve that the share of the electricity generated in the combined heat and power operation mode would account for at least 35 % in the electricity generation balance at the end of the period;

12) to strive for a share of renewable energy resources of up to 12 % in the total primary energy balance by 2010;

13) to improve energy sector management, i.e. strengthen institutions in the sector, improve the skills and knowledge of specialists of those institutions.

New edition of the Law on Energy adopted in 2002 regulates general activity of energy sector, fundamentals of energy development and management and efficient usage of energy and energy resources. Other laws regulate specific activities of individual energy sectors and relations between users and energy companies.

The revision of the Law on Electricity adopted by the Seimas on 1 July 2004 essentially corresponds to the provisions of the EU Directive on Electricity relating to the opening of the market and its supervision. The Law establishes the fundamentals of electricity generation, transmission, distribution and supply in the Republic of Lithuania and relationship of suppliers of electricity services and users as well as conditions promoting competitiveness in electricity sector.

In 1996 The Law on Nuclear Energy was adopted (amended in 2004). This Law shall regulate public relations arising during the use of nuclear energy for generation of electricity and heat. It shall provide a legal basis for the activities of natural and legal persons in the sphere of nuclear energy. The objective of the Law is to ensure nuclear safety when nuclear energy is used to meet peaceful needs, and to prevent proliferation of nuclear arms by illegal disposal of nuclear materials

(including nuclear fuel and nuclear waste).

In 2000 the Law on Natural Gas establishing general principles of functioning of gas sector as well as the activity of gas companies and their relations with users (in supply, distribution and storage of natural gas).

In 2003, the Law on Heat was adopted. The present Law shall regulate the state management in the heat sector, the activity of subjects of economy acting in the heat sector, their relationship with heat consumers, their interrelationship and responsibilities.

The Law on State Stocks of Petroleum Products and Crude Oil adopted in 2002 aiming at ensuring the control of building, accumulation, maintaining and usage of the stock of petroleum products and/or crude oil.

In 2004 the Law on Biofuel, biofuels for transport and bio-oils was adopted. This Law shall regulate legal conditions of the production and use of biofuel, biofuels for transport and bio-oils.

- ***The use of economic instruments, including pricing and tariff reform.***

Energy tariffs regulated by the State are determined by the Commission on the basis of assessment of the validity of the return on investment and activity expenditures. Expenditures required for environmental projects are included into calculations of the prices regulated by the State.

The principle of the Methodology for Pricing of Centrally Supplied Heat and Hot Water approved in 2003 in more environmentally friendly fuel. The period of the base tariffs set observing this Methodology is from 3 to 5 years. During this period enterprises can convert from imported fuel (e.g. heavy fuel oil) to cheaper fuel (in this case – biofuel). When doing annual calculation during the base tariff period the fuel composition is not changed, therefore conversion to cheaper fuel at the beginning of the tariff price period yields profit gained due to the fuel tariff difference, which facilitates return on investments.

Also, every year the Commission approves feed-in tariffs of electricity generated in cogeneration power plants. The average feed-in tariff of such electricity in 2005 is 1.2-1.4 times higher than the average electricity generation tariff in the country.

Pursuant to the Republic of Lithuania Law on Energy, the Commission approves the feed-in tariff of electricity generated from renewable sources. The Commission in 2002 approved feed-in tariffs of electricity generated from renewable and waste energy sources (for hydro power plants - 5.8 €/kWh; for wind power plants – 6.4 €/kWh and for power plants producing electricity from biofuel – 5.8 €/kWh, which are ca. 2.5 higher than the average calculated electricity generation tariff in Lithuania.

Electricity will be exempted from the excise duty if electricity is generated from renewable energy sources.

82 mill EUR were allocated from the EU Structural Funds (namely, the European Regional Development Fund) for the period 2004 – 2006 to upgrade and develop energy transmission and distribution networks (especially District Heating networks), to increase their reliability and efficiency, to introduce renewable energy sources for electricity and heat production and to increase efficiency of the energy consumption in public buildings.

- ***Participation of private companies in the electricity sector, their impact on electricity services and their involvement (e.g. generation; transmission; distribution).***

Most of small hydro plants are private. The share of generated electricity in the electricity

market is insignificant.

At the end of 2002 the first CHP (in city Kaunas) was privatized. There are some private industrial CHP. The electricity produced in these plants using for their own needs only.

Vakaru Skirstomieji Tinklai AB (West Electricity Distribution Network) was privatized in 2003. The main shareholder of the privatized company is Lithuanian capital private limited company NDX Energija. The Company distributes and supplies electric power within the western and midland territory of Lithuania with approximately 1.89 million residents. The Company provides its services to over 656 thousand clients. This number has a tendency of constant growth. The most part of distributes and supplied electric power, i.e. about 34 %, is purchased by industrial enterprises. The company is the owner of electric power distribution network, i.e. overhead lines and cable lines of low and medium voltage, as well as the owner of more than 15,000 transformer substations.

- ***Major Groups<sup>2</sup> participation in energy decision-making, whether at the national or community level.***

National Consumers Federation was establishing in 2000. The objective of Federation is to protect consumer rights, their economical and social interests, to educate consumers and develop the culture of rational consumption, to take objection to manufacturing and realization of inferior goods and supply of services of not high quality. National Consumers Federation positively participates in preparation of legal acts in energy sector.

In preparation of the Municipal Heat Plan, all heat and gas undertakings servicing the territory of this municipality, other legal persons related to the heat sector as well as the organizations protecting the customer rights should take part.

The Municipality Councils shall set the heat and/or hot water prices to be charged by every heat and/or hot water supply undertaking, which is being controlled by the municipality and is selling less than 5 GWh of heat per year; and the maximum tariffs for the maintenance of heat and/or hot water systems in blocks of flats.

- ***Women's participation in needs assessments or planning and policy formulation related to energy at the local and/or national levels; other means.***

For the purpose of realizing the provision of the Government Programme to ensure equal for opportunities, men and women in seeking education, in upgrading their qualifications, in employment, promotion, setting the salaries; to enable women to participate on equal conditions in all areas of political and public life and high-prestige activities, to occupy leading positions in public administration institutions, the National Programme of equal Opportunities for Women and Men for 2003-2004. Programme measures implemented in 2003 were aimed at addressing the problems of ensuring equal opportunities for women and men in the spheres of employment, education, policy and decision-making, combating violence against, and trafficking in, women, specific health problems of women and men improving and developing institutional mechanisms and methods, and in particular, statistics.

21 % of the members of the Seimas (Parliament) of the Republic of Lithuania are women. The Nuclear Energy and Radioactive Waste Management Department and Electricity and Heat Division of the Ministry of Economy are headed by women, the Attaché for Energy at the Permanent Representation of Lithuania to the EU and the Attaché for Nuclear Energy at the Permanent

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<sup>2</sup>Major Group consists of: Women; Business and industry; Local authorities; NGOs; Children & Youth; Indigenous People; Workers & Trade Unions; Scientific & Technical Communities; and Farmers.

Representation of Lithuania to international organisations in Vienna are also women.

- ***Programmes designed to increase the share of renewable energy in the national energy supply mix, including information on their goals and targets.***

The National Energy Efficiency Programme 2001-2005 was revised and updated taking into account the requirements of EU directives, Energy Charter Treaty and Energy Charter Protocol on energy efficiency and energy related environmental aspects, Kyoto Protocol of the UN Framework Convention on Climate Change as well as the state and development forecasts of the national economy and its individual branches, and changes in economy and energy consumption.

The National Energy Efficiency Programme 2001-2005 is being implemented carrying out the key measures of its implementation under the following main directions:

- Drafting of legal acts and regulatory, technical documents intended for the implementation of the National Energy Efficiency Programme;
- Renovation of buildings, modernization of their heat economy;
- Use of renewable, local and waste energy sources;
- Efficient energy use in production processes;
- Information, education and consultation activities.

Further implementation of the Programme will not only have an impact on more efficient use of energy and energy resources but will also ensure that the share of the renewables in the primary energy balance will reach the one indicated in the Accession Treaty, and, taking into account Directive of the European Parliament and of the Council 2001/77/EC of 27 September 2001 on the promotion of electricity produced from renewable energy in the internal electricity market, will ensure that the share of electricity generated from these sources by 2010 will amount to 7% of the gross national electricity consumption.

Further implementation of the National Energy Efficiency Programme carrying out the measures and tasks provided for therein during the coming 20-25 years will result in saving 25-30 % of the current consumption of imported energy resources and replacement of ca. 89 % of these resources with local and renewable energy sources. Currently, the National Energy Efficiency Programme is being revised and updated.

Special Programme for Implementation of Energy saving Measures was established in 2000. This Programme is established for financing programs of energy conservation and its effective utilization and for implementation, operation and development of utilization means of local, renewable and by-product energy resources.

The Programme resources are used for granting loans to finance programmes and projects dealing with energy conservation and effectiveness, for introduction, operation and development of utilization means of local, renewable and by-products energy resources.

- ***Measures and programmes adopted to improve fuel efficiency for transport vehicles. Such as vehicle fuel efficiency standards; vehicle inspection and maintenance programmes; introduction of cleaner fuels; any other.***

The draft Transport Strategy provides for:

- Promotion of creation of a cost-effective transport system coordinating development of all types of transport;
- Giving priority to a more environmentally friendly transport;
- Increase of the efficiency of the energy transport sector;
- Enhancement of the use of alternative and less polluting fuel;
- Reduction of environmental pollution.

One of the key targets of modernisation and development of road transport is to encourage people to use public transport services in order to prevent increase of automobile traffic and road network load, especially in large cities.

Medium-term measures for road public transport are directed towards the balancing of public line transport services and use of automobiles, change of modal distribution of city transport (taking into account national territorial development principles and EU directives), giving priority to public transport, pedestrians and cyclists and are as follows:

1. to modernise stocks of passenger transport companies, to apply “clean” technologies to passenger transportation and to introduce modern information system for the management of public line transport in cities;
2. to integrate services of external and internal passenger transport promoting a single-ticket system, connecting terminals of external passenger transport (air, sea, river harbours and railway stations) with the internal transport system and ensuring qualitative accessibility in cities and towns;
3. to restructure tariff and ticket systems so that they could meet socio-economic conditions and possibilities of inhabitants of Lithuanian cities as well as ensure adequate earnings and facilitate more active use of public transport;
4. to introduce modern public line transport systems, to promote electricity-driven environmentally friendly transport;
5. to adjust use of automobiles to the schedule of the public line transport system, to construct parking places at the points of changing to public line transport, to restrict and to prohibit automobile traffic in old towns and central parts of cities as well as in dense residential centres where pedestrian and non-engine transport zones should be constructed.

One of the short-term objectives provided for in the Transport Strategy is to create economic and legal conditions for the development of more environmentally friendly and safer transport, to enhance the use of less hazardous fuel (liquefied and natural gas, low-sulphur heavy fuel oil) and alternative fuel (biodiesel, bioethanol).

The key objectives of the modernisation and development of road transport include creation of an environmentally friendly road transport system giving priority to transport which has a lower adverse impact on the environment, increasing the energy efficiency of the road transport sector, enhancing the use of alternative and more environmentally friendly fuel thus reducing environmental pollution, encouragement of the use of clean fuel in public transport (applying a substitute amounting to 20 % of all fuel), using electromobles and hybrid automobiles for city tours, especially in the city servicing field, avoid traffic jams and air pollution in intensively-visited city and town places.

The Law on Biofuel and Bio-Oil sets forth that the Government or institutions authorised thereby shall prepare measures ensuring that by 31 December 2005 biofuel must constitute at least 2 % of the total amount of energy of petrol and diesel fuel intended for transport in the national market and by 31 December 2010 this amount shall be 5.75 %. One of the key objectives of the Programme on Promotion of Production and Use of Biofuel for 2004-2010 approved by the Government Resolution is to ensure that by 2010 the production of biodiesel fuel from raw materials of local origin is increased to 40 thou t/year and the production of bioethanol by 2010 is increased to 20 thou t/year, as well as to enhance the use of biofuel, to establish mandatory indicators for the use of mixtures of mineral fuel and biofuel.

The Regulations on the Marketing of Oil Products, Biofuel, Bio-Oil and other Combustible Liquid Products in the Republic of Lithuania approved by the Minister of Economy in 2005 set forth mandatory requirements for mixing oil products marketed and used in the country with biofuel.

With the view to promote development of biofuel production and provide conditions for the use of agricultural products for non-food purposes as well as to improve the ecological situation in the

country, in 2004 Regulations for the Financing of Development of Biofuel Production were approved by Order of the Minister of Agriculture, which provide for monetary compensations to biofuel producers for losses of rape seeds methyl (ethyl) ester and grain-derived bioethanol production due to the high price of the material (rape seeds and grains) used for the production of biofuel. The compensations to producers of biofuel are 46.3 €/t of rapeseeds grown in the Republic of Lithuania and bought for the production of rapeseeds methyl (ethyl) ester, and 17.4 €/t of grains grown in the Republic of Lithuania and bought for the production of bioethanol.

The increase of the excise tariffs for energy products (engine fuels or their additives, fuel intended for heating) for the purpose of final harmonisation of the excise tariffs with the EU acquis, together with the increasing prices of these products will enable more efficient use of the existing energy products and conversion to alternative energy sources.

Pursuant to the said Law, energy products produced from materials of biological origin shall be applied a tariff reduced by such share which is in proportion to a share (in percentage) of materials of biological origin in one tonne of a product.

The Law on Pollution Charges has set forth that legal and natural persons, upon presentation of documents proving consumption of biofuel, shall be exempted from the payment of the charge for air pollutants emitted from mobile and stationary pollution sources.

- ***Existence of nuclear energy programme and information on nuclear materials transported within or across national boundaries; national programmes that ensure nuclear safety; arrangements in place for public review and hearings.***

Ignalina Nuclear Power Plant (hereinafter – the INPP) is the only nuclear installation in Lithuania and is located in the north-eastern part of Lithuania, near the borders of Latvia and Belarus. It contains two RBMK-1500 reactors (Russian acronym for "Channelized Large Power Reactor"). RBMK-1500 reactors of INPP have their own design peculiarities. The first unit of INPP was put into commission at the end of 1983, the second unit in August 1987.

Activities of INPP for safety improvement are based upon priorities to meet modern requirements of national and international safety standards, upon results of the analysis, carried out in SAR-1, RSR scope, and include additional calculations, fulfilment of Lithuanian State Nuclear Power Safety Inspectorate (hereinafter – VATESI) guidelines, and modifications which improve the system reliability thus providing the INPP safety.

Managerially this activity is carried out within the framework of Safety Improvement Programmes SIP-1 (1993-1996) and SIP-2 (1997-2005).

The first Safety Improvement Program (SIP-1) was prepared by INPP in 1993-1996. It was a short-term programme, financed from INPP resources, grants of the EBRD/NSA and western countries grants, mainly Sweden, through the Swedish International Project on Nuclear Safety (SIP).

The most essential INPP activity regarding safety improvement was the preparation of a Safety Analysis Report (SAR), developed by Western and Eastern research institutes. In addition to the SAR, this particular project included an independent review of the safety analysis report (RSR) jointly by independent experts. Unit 1 of INPP was the subject of this assessment. However, since no significant differences were identified between Units 1 and 2, the results apply to both units. A complete set of SAR and RSR reports was submitted to VATESI in 1997. A Panel of international nuclear safety experts, Ignalina Safety Panel (ISP), made an assessment of the development process and scope of the INPP SAR/RSR.

Recommendations of Ignalina Safety Panel were submitted to the Lithuanian Government in a written form in 1997. According to the recommendations (such as to prepare Safety Case for Control and Protection System; Safety Case for Accident Localization System; Safety Case for

Primary Circulation Circuit Integrity; Fire Hazard Analysis for all safety systems etc.), plans were prepared and agreed with VATESI, taking into consideration the scope and schedules of the recommendations fulfilment, competent organisations of scientific and engineering support were involved, necessary materials were prepared.

In particular, SAR, RSR and ISP International Panel recommendations became the basis of a new Safety Improvement Programme (SIP-2) for the period of 1997 – 2005 years, which consisted of 185 activities in total. Additionally, SIP-2 included: engineering activity for safety improvement and SIP-1 activities non-completed till the moment of SIP-2 preparation.

As the result of the prime additional safety cases submission, the following conclusion was made: there are neither unexplored problems nor non-compliance with modern standards requirements, which could prevent the operation of INPP Unit 1.

On the basis of such extensive arguments a 5-year license was issued for the operation of INPP Unit 1.

In addition, VATESI formulated license affirmative conditions, which provide for gradual development of safety improvement issues, such as:

- INPP, being an operating organisation, shall improve INPP safety, co-ordinate the license activity for nuclear energy facilities and monitor the performance of the license affirmative conditions;
- In case of adoption of any amendments of the Lithuanian Republic Law or any other legislation which regulate the safety of nuclear energy after the modification or additional safety analysis performance, VATESI has the right to amend the license affirmative conditions;
- In case of adoption of any amendments of the Lithuanian Republic Law or any other legislation which regulate the safety of nuclear energy, INPP is obliged to update the internal documentation in accordance with the amended documents;
- On request of the VATESI, Ministry of Health and Ministry of Environment, within their competence, INPP is obliged to submit all necessary information of INPP activity;
- Corresponding institutions in accordance to their competence shall be informed and updated information or new documents listed in the application for the license shall be submitted thereto in the event of document amendments.

VATESI may change the license conditions, may terminate or cancel the license, if it is ascertained that INPP fails to meet the license affirmative conditions. The license is reinstated or the permission is issued for the Unit start after appropriate safety justifications have been submitted or drawbacks have been eliminated.

INPP shall:

- be staffed with trained and qualified personnel in accordance with the regulatory documents requirements. The simulator shall be used for initial and continuous training of the Main Control Room operators;
- prepare, update and file safety-related documents in accordance with guidelines, rules and norms requirements;
- inform VATESI about normal operation failures;
- submit to VATESI results of operation experience and problems substantiation within the schedule of the license affirmative conditions.

INPP shall proceed with the safety improvement program SIP-2 with respect to INPP Unit 1. SIP-2 program (and its annual consecutive review) has the agreed schedule for the performance of each activity. Upon the recommendations it was agreed that some activity is less urgent, some needs more time for implementation therefore not all SIP-2 activities were completed at the date of the license issue for Unit 1 operation. Nevertheless, it is VATESI requirement to keep the schedule

agreed in SIP-2 program.

Unit 1 was shut down in December 31, 2004.

## **Capacity-Building, Information and Research & Technologies**

- ***Efforts to establish new, or strengthen or reform existing national and local institutions responsible for national programmes on energy for sustainable development.***

With the view to implement the National Energy Strategy and in the process of enforcement of Lithuanian energy legislation the following institutions have been strengthened: the State Energy Inspectorate (hereinafter- VEI), the National Control Commission for Prices and Energy (hereinafter referred to as the Commission).

The VEI under the Ministry of Economy, following the Methodological Guidelines for Energy Efficiency Inspections, carries out energy efficiency inspections in energy enterprises, which generate, distribute, supply and consume energy. 442 energy efficiency inspections were performed during the period 2003-2004. Upon the inspections, instructions were developed for the enterprises listing the facts of inefficient energy use and providing recommendations for the improvement of activities in this area.

The VEI controls that heat generators supplied to the market, delivered for use and used are in conformity with the established efficiency requirements, and the insulation of a heat and hot water supply system meets the requirements of heat losses as indicated in the Technical Regulation on New Hot Water Boilers Using Liquid or Gas Fuel and in the Technical Regulation on Inspection of Efficiency of Heat Generators and Insulation of Heat and Hot Water Supply Systems in Buildings of Non-Industrial Purpose. The regulations have been drafted observing the requirements of EU directives. Information and technical consultations regarding VEI practical use of energy efficiency measures were provided to the staff of the by the state enterprise Energy Agency. As a supporting working means, information publications were distributed to the staff of the Inspectorate.

The Commission is given additional functions to supervise activities of the operators of transmission and distribution networks (compliance with rules of distribution and regulation of throughput of lines connecting individual systems, the rate of connection of new customers, effectiveness of separation of the accounting of different activities, etc.), to carry out market monitoring and supervision, to control reliability of supply and quality of services.

The main task of the Commission is to supervise the markets of electricity, natural gas, heat and water economy observing the procedure established by legislation. When carrying out the task delegated thereto, the Commission performs the following functions:

1. Approves methodologies for setting prices regulated by the state;
2. Establishes upper limit prices regulated by the state;
3. Establishes the procedure for regulation of prices of electricity and reserve power for electricity generators and independent suppliers who cover more than 25 % of the market as well as the procedure for regulation of balancing energy prices;
4. Approves feed-in tariffs of electricity generated from renewable energy sources;
5. Approves connection tariffs for electricity and natural gas objects (networks, systems, equipment);
6. While setting prices regulated by the state, assesses justification of return on investments and activity expenditure;
7. Issues, suspends, cancels licences for energy transmission, distribution, storage, and supply pursuant to the Licensing Regulations approved by the Government of the Republic of

- Lithuania, controls licensed activities of energy companies;
8. Establishes whether users of electricity and natural gas may be acknowledged to be eligible customers and makes lists of eligible customers available to the public;
  9. Analyses conclusions of audit of activity costs of licensed energy companies;
  10. Controls application of prices and tariffs regulated by the state.

- ***Training or other capacity-building activities undertaken to strengthen energy planning, management of energy efficiency or development of new and renewable sources of energy.***

Information booklets, newsletters, special editions on efficient use of energy and measures in industries are regularly prepared and published. Seminars and training courses for senior management in industry are arranged. 6-10 seminars are arranged and conducted each year, including training courses on possibilities of improvement of energy efficiency in industry.

In implementing Law on Heat, several seminars for specialists of municipalities on the issue on the preparation of Municipal Heat Special Plans were held.

For the purpose of introducing the Western experience in introduction of new technologies taking into account energy efficiency, a book "Efficient Use of Energy in Bread Industry" was prepared and published in 2001.

This year a publication for senior management of small and medium size enterprises on efficient management of the energy sector in enterprises is planned to be prepared.

CD containing information in energy management in industries was prepared and released. Also, the following publications were prepared: "Energy Management Guide" - on energy management in industries, "Guide on Energy Audit in Industries" – on performance of energy audits in industrial buildings, as well as the following information publications: "Energy Management – Energy Efficient Production", "Audit of Energy Consumption in Industry", "Energy Audit in Industry", "Energy Efficiency".

When implementing the Programme on Implementation of the National Education Strategy 2003-2012, the Ministry of Education and Science will continue implementation of the national school renovation plan. 80 % of schools will be renovated during the decade. An important task of the said objective of the School Improvement Programme is to teach the staff and schoolchildren of the schools to save heat, electricity as well as how to operate the renovated building constructions and the newly constructed facilities. To this end the Ministry of Education and Science commissioned preparation of an Energy Management and Training Programme, which is currently used for preparation of training material for school administration and auxiliary staff as well as educational material for schoolchildren and their parents. Also, seminars based on this programme are organised in the renovated schools.

- ***Launching of public information campaigns and educational programmes to raise awareness of energy efficiency and environmentally sound energy systems.***

For the purpose of drawing the attention of both the grown-ups and children to the possibilities of energy conservation and use of technologies, information campaigns for children were organised during 2001-2003:

Advertising campaigns "Saving Pays". During this campaign material on saving of electricity, heat and water in households was shown on TV, special folders were distributed in schools;

Children's drawing competition "We save electricity, water, and heat" was arranged. The best

pictures were collected into a calendar 2002 and all pictures were exhibited in municipalities of Lithuanian towns;  
Schoolchildren's competition "School-Energy-Environment" about energy conservation means and possibilities of using renewables in their schools.

- ***Networking between centers of excellence on energy for sustainable development that has enhanced information sharing, capacity building and technology transfer.***

OPET is the Network of Organization for the Promotion of Energy Technologies in European Union and other countries with focus on the development of a market for non-nuclear energy technologies. European Commission (EC) has established the network in 1995.

The main objective of the network is to promote the implementation of the new advanced energy technologies and to provide the increasingly comprehensive co-operation in energy research, development and dissemination.

A long-term strategic target of OPET network is to make the European Union (EU) the global leader in the exports of most efficient and research-based technologies for industry and energy sectors. This target can be achieved only if all the activities and efforts of national research centres of the region are co-ordinated and united.

In 1997, the EC extended the OPET network to include new organizations from Central and Eastern European countries. The Lithuanian Energy Institute represents the network in Lithuania since 1998.

The main objective of the OPET-Lithuania project is to encourage and support the implementation of new and efficient energy technologies in Lithuania by taking all benefits of being a network member, as well as to transfer the best experience and achievements of other countries to Lithuanian specialists and society. By cohesion of knowledge, experience, skills and activities of both local and foreign specialists, the OPET-Lietuva centre offers assistance to energy consumers, suppliers of technologies, manufacturers of equipment, seeking to respond to their needs related to new energy technologies.

The main tasks of the OPET-Lithuania-project are as follows:

- Assessment of the market needs for new energy technologies in Lithuania and search of technology suppliers;
- Networking with market actors, both Lithuanian and foreign, such as industrial, commercial, public organizations, research centres, decision-making institutions, consumers, in regular collection and dissemination of information;
- Overcoming of barriers and obstacles in co-operation between various countries in the implementation of new energy technologies;
- Assistance to local and foreign organizations in promotion of energy technologies, which have been well-proved in EU Member States, and in implementation of energy projects and programmes;
- Services to investors who invest into new energy equipment and facilities in Lithuania;
- Special assistance to projects demonstrating new energy technologies;
- Market analysis and forecasts for new energy technologies in Lithuania, evaluation of opportunities and barriers for penetration of these technologies;
- Information exchange with OPET network partners and other EU organizations and enterprises concerning rational energy use and renewable energy sources.

The aim of the Project "Energy +++ Info" Dissemination of Energy Information in Estonia, Latvia and Lithuania is to establish energy information units in Estonia, Latvia and Lithuania in order to

start sustainable energy information activities in these countries.

The main project objectives are:

- To contribute to the fulfilment of national and international goals and initiatives in the energy sector;
- To disseminate information on energy related EU policies and international programmes;
- To assist national authorities in their information related tasks;
- To create plans and strategies for energy information activities in the Baltic states;
- To increase knowledge and change attitudes as well as to form public opinion related to energy, renewable energy sources and effective energy consumption in households, industry and public institutions;
- To establish cooperation with different energy sector actors, to ensure sustainable energy information activities;
- To create a platform for further regional Baltic cooperation on information activities, technical solutions as well as implementation methods;
- To facilitate public access to comprehensive energy information.

There is a great need for Nordic countries' "know-how" on energy information issues in the Baltic countries. The project idea has been developed in collaboration with the Nordic energy information network, and this Nordic network will continue to back and support the Baltic Energy Information Units. Nordic - Baltic cooperation on energy information issues will be developed further in this project. Nordic best practices and know-how on energy (including energy information) will facilitate sustainable development of the Baltic energy sector.

- *Internet websites related specifically to the issues contained in these Energy Guidelines provide homepage addresses (URL).*

[www.ukmin.lt](http://www.ukmin.lt), website of the Ministry of Economy Lithuania, provides a lot of legal information in all energy sectors.

[www.am.lt](http://www.am.lt), website of the Ministry of Environment of Lithuania, provides various information on the environment issues.

[www.ena.lt](http://www.ena.lt), website of the Energy Agency under the Ministry of Economy of Lithuania; the Energy Agency is engaged in organization of international cooperation in the energy sector, coordination of foreign technical assistance to the energy sector in accordance with the priorities laid down in the National Energy Strategy and National Energy Efficiency Program, organization and supervision of harmonization of Lithuanian legislation and the European Union legal requirements and participation in the integration processes of energy sectors of the Baltic States and Baltic Sea States.

[www.eec.lt](http://www.eec.lt), website of the Energy Efficiency Centre, provides information on measures aimed at energy conservation and efficient use.

[www.avei.lt](http://www.avei.lt), website of the Lithuanian renewable energy, provides information on the issues of renewable and local energy resources, as well as on power plants and boiler houses operating in Lithuania which use renewable energy resources, the legal environment in Lithuania and abroad, various calculators, etc.

[www.lei.lt](http://www.lei.lt), website of the Lithuanian Energy Institute, provides a lot of information on the activities carried out by the Lithuanian Energy Institute in the energy development process while implementing the provisions of the National Energy Strategy.

- *Efforts to promote increased research and development of various energy technologies: renewable energy; energy efficiency; advanced energy technologies,*

*including cleaner fossil fuel technologies; any other.*

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The main objective of the network is to promote the implementation of the new advanced energy technologies and to provide the increasingly comprehensive co-operation in energy research, development and dissemination:

Lithuanian Energy Institute represents the network in Lithuania since 1998. The institute is the main institution that working on energy technologies, including renewable energy sources: biogas, solar, wind, hydro and geothermal energy.

The electricity shall be exempted from excise if electricity is generating from renewable energy sources.

## **Financing**

- *Specific measures taken to establish an appropriate enabling environment conducive to attracting investments in the energy sector: pricing/subsidy reform; fiscal and financial incentives; power purchase agreements; other arrangements.*

The following fiscal and legal measures are currently in force in Lithuania:

First of all, there are some taxes exemptions in Lithuania. The standard rate of the Value Added Tax (VAT) is 18 %. However, the rate of the VAT for heat for residents is only 5 %. The difference between 18 to 5 % is covered from the State budget of the Republic of Lithuania in the amount of 13 % pursuant to the procedure established by Government of the Republic of Lithuania.

The rate of the VAT for the construction of the housing, insulation and renovation of buildings is 9 %. The difference is paid from the State budget and municipal funds as well as from soft credits granted by the state and State special funds.

The rate of VAT on export is 0 %.

Electricity will be exempted from the excise duty if electricity is generated from renewable energy sources.

The Procedure for Promotion of Generation and Purchasing of Electricity Generated from Renewable and Waste Energy Sources approved by the Government of the Republic of Lithuania in 2004 provides for promotion of electricity in wind, biomass, geothermal and solar power plants as well in hydro-power plants with the capacity of not more than 10 MW and annual forecasts of the generation capacities and volumes of electricity generated from the said sources. The average feed-in tariffs for electricity generated from renewable and waste energy sources approved by the State Commission for Price and Energy Control (which for hydro power plants are 5.8 €/kWh; for wind power plants –6.4 €/kWh; and for power plants producing electricity from biofuel – 5.8 €/kWh) are approximately 2.5 higher than the average calculated electricity generation tariff in Lithuania. The Procedure sets forth that as from 2010 promotion of purchasing of electricity produced from renewable and waste energy sources will be carried out by introducing a “green certificate” system.

## Cooperation

- *Cooperation with neighboring countries in energy trade and/or interconnection of electricity or gas networks, including through transnational pipelines; nature of such cooperation.*

In 2003 a consultancy company IPA Energy Consulting carried out a study on the electricity market of the Baltic Sea region (Baltic Ring), which would connect the Scandinavian countries, Germany, Poland, the Baltic countries, Belarus and Russia. The missing link is an electricity line between Lithuania and Poland. A proposal was made to connect the electricity grids of the said countries by building a double chain 400 kV 1000 MW capacity electricity line with a back-to-back station. Currently discussions at the state level are going on between Poland and Lithuania on the implementation of the said project. The project would be economically feasible if it receives support from the European Union.

As from 2004 discussions are going on regarding possibilities to implement a project of the small Baltic Ring, which would include the Scandinavian and the Baltic countries. In 2004 Lithuanian, Latvian, Estonian and Finnish electricity companies founded a company Nordic Energy Link, the main objective of which is to connect the Estonian and Finnish electricity grids by a submarine cable of 350 MW. In 2004 a couple of Swedish companies proposed to a joint stock company Lietuvos Energija AB (Lithuanian Energy) to take part in the SwindLit project, which provides for interconnection of the Swedish and Lithuanian electricity networks. The objective of the project is to build an offshore farm of wind power plants in the Baltic Sea. Electricity from this farm would be transmitted to Sweden and Lithuania by a 700 MW cable meanwhile Kruonis hydro plant would be operated as an accumulator of unpredictable wind power. A feasibility study of this project is currently being prepared.

In April 2003, construction of a gas metering station was started on the Lithuanian-Latvian border. The construction was completed in the first quarter of 2005 and accepted as suitable for use. At the moment (2005) necessary preparatory activities for the building of an additional gas supply main to Kaliningrad (Russian Federation) are carried out. Transit gas pipeline from Russia to Western Europe running through the territory of this country would considerably enhance the security of supply.