

PART III. GUIDELINES FOR NATIONAL REPORTING FOR SESSIONS 14/15 FROM THE UNITED NATIONS COMMITTEE ON SUSTAINABLE DEVELOPMENT (CSD)

Decision-Making: Strategies, policies, programs and plans, legislation, policy instruments and the regulatory framework; involvement of Major Groups¹

- **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;**

In the Second Chapter of the Law on Energy the conditions for supply of energy have been determined, starting from energy systems to all electricity consumer categories. All legal and physical persons may be connected to the electricity system after getting an energy agreement from the consumer of the system to which they connect. The conditions for obtaining energy consent are defined by the consumer of the system.

Major part of the hydro potential lies within the Republic of Macedonia, at disposal through construction of small hydroelectric plants, which may be used as decentralized producers of electricity. Twenty-three small hydroelectric plants have been built and connected to the distribution electricity system, with total installed capacity of 47.6 MW, 11 out of which with total installed capacity of 38.2 MW, owned by Elektrostopanstvo - Joint Stock Company, ED ESM and the rest 12 with total capacity of 9.4 MW, owned by other public enterprises.

In 2001, the ESM - Joint Stock Company prepared a development plan with data that are given in the Financing part of this report. The development plan envisages, among other things, construction of new production electricity utilities as well as construction, revitalization and modernization of the electricity grid, starting from 2001-2015.

The ESM - Joint Stock Company has technical documents for 29 new small hydroelectric plants, with total capacity of 89 MW, part of them in range of 47 MW, to be built until 2015. Also, other small hydroelectric plants are expected to be constructed as projects of independent electricity producers; ESM is prepared to undertake the generation part from them and distribute it to the consumers.

- **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.**

¹ Major Group consists of: Women; Business and industry; Local authorities; NGOs; Children & Youth; Indigenous People; Workers & Trade Unions; Scientific & Technical Communities; and Farmers.

Direct and indirect determinations for energy efficiency are contained in the Law on Energy, the National Strategy for Economic Development, as well as in other related laws and regulations.

The Law on Energy is a main legal framework for this sector. The Law determines the national policy for energy which among other things, emphasizes the importance of increased use of natural gas as an environmental friendly fuel of priority; inclusion of energy efficiency in building standards; inclusion of the necessary financial means for realization of energy efficiency projects; identification of possibilities for efficient energy consumption; adoption of measures and activities for realization of all aforementioned activities.

In 1999, the Government of the Republic of Macedonia adopted a Program on Efficient Energy Consumption in the Republic of Macedonia until 2020. The preparation of this program is legal obligation deriving from the Law on Energy. The Program envisages various measures for increased energy efficiency, among which is the preparation of a Strategy for Energy Efficiency in the Republic of Macedonia until 2020; legal and other stimulating benefits; establishment of a Fund for Financial Support; preparation of an investment-technical documentation for realization of specific papers; preparation of regulations, standards and other acts; information and education activities; publications and guidelines; international activity.

At the beginning of 2004, upon an initiative by the Ministry of Economy, a Strategy for Energy Efficiency of the Republic of Macedonia has been adopted by the Government, in October 2004. The basic goal of the Strategy is development of a framework for speedy adoption of practices for energy efficiency in sustainable manner and through implementation of a number of programs and initiatives, including upgrade of utilities as well as technical activities. The upgrade of institutions and utilities consists of the following activities: establishment of an Agency for Energy Efficiency; certificate from energy auditor; building energy codex; equipment standards; establishment of an Energy Efficiency Fund. The identified and analysed technical programs are included in the implementation plan. The Apartment Buildings Program; Commercial Buildings Program, Public Institution Buildings Program; Industrial Utilities Program and Street Lighting Program are among the significant program initiatives encompassed with the Strategy.

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

Within the frames of the cooperation between the Republic of Macedonia and the Swiss Confederation in the field of energy, there is an ongoing Project for Efficient Energy Distribution. The basic goal of the project is to modernize part of the transmission and distribution electricity system, by which more efficient and stable transmission and distribution of electricity will be achieved and at the same time, it will have positive effects

on the environment. This project envisages fulfilment of the following objectives:

- Decrease of technical and commercial losses;
 - Stabilization of the grid and re-connection with the UCTE system (Union for Energy Transmission Coordination);
 - Decrease of the negative influence on the environment and the health of PCB (polychlorinated biphenyls) contaminated material;
 - Improvement of know-how for PCB - contaminated things and
 - Raise of public awareness for efficient use of energy
- **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 provided to facilitate technology transfer.**

With the adoption of the Strategy on Energy Efficiency by the Government of RM, the basic measures are established for increase of the energy efficiency, and its implementation will make sufficient energy savings until 2020. Specific guidelines are outlined in a separate part of this Strategy (Annex) for increased energy efficiency, such as: co-generation of electricity and thermal energy; modernization of caldron plants; use of energy efficient lighting sources: light bulbs and lighting equipment - lights and introduction of street lighting management systems; thermal waste use from some technological processes. Despite this, the strategy also contains the previously mentioned programs for increased energy efficiency for apartment buildings, commercial buildings, public institution buildings and industrial utilities.

With the aim to applying the basic provisions for institutional capacity strengthening necessary for implementation of the programs from the Strategy, there is an ongoing Project for preparation of a program for sustainable energy. This program is realized with financial assistance from GEF and through the World Bank. The aim of the project is promotion of investments in the field of energy efficiency and renewable energy resources through elimination of institutional and financial barriers. The Project envisages the following major activities:

- Establishment of a state-private partnership named Sustainable Energy Financial Facility (SEFF). SEFF shall provide technical support to users and partly financial assistance of the potential investors to subsidize activities for project preparation;
- Establishment, within a financial institution, of Project Development Assistance Facility (PDAF). The PDAF shall provide means for its own capital, credits as well as operational and guarantee conditions. The possibility is considered for the Government of the Republic of Macedonia, as well as USAID, the European Agency for Development and other institutions to be involved in the financing parts of the program.

The project shall be implemented through the following three components, for which there are ongoing studies:

- **Technical assistance in amount of 2 million USD** (1,5 million USD from GEF): (i) capacity building for strategic, legislative and institutional support of the electricity sector in the Ministry of Economy, with a view of promoting EE and OIE, (ii) financing of the start and the evaluation of projects through SEFF. SEFF shall provide financial and technical support for preparation of projects, organization of workshops and seminars for potential co-financers and clients; marketing and dissemination of information; training courses for consultative teams, ESCOs, etc. (iii) financing of expenses for establishment and work of PDAF, (iv) giving support of public utility enterprises for energy services.
- **Credits or guarantees through PDAF for projects from EE 11 million USD** (2 million USD from GEF). The credits shall be places on commercial basis. They shall be returnable and self-sustaining with an interest rate, and the return of the principal shall finance the next generation of loans. The indicative guidelines for the favourable projects are as follows: (i) projects ranging from 100.000 - 2.000.000 USD, (ii) co-financing with loans from commercial banks and capital financed from sponsors, (iii) diverse portfolio for balanced risk/return of assets for PDAF, percent of co-financing to be increased from 50% in the first year to 75-80% after the fifth year, (iv) payment of assets within four years, (v) at least half of the benefits from the projects to be achieved by energy savings and (vi) technology must be proven. As an alternative for loans, PDAF may offer guarantees.
- **Credits or guarantees through PDAF for projects in the field of OIE 7.5 million USD** (1.5 million USD from GEF). The capital, commercial loans and guarantees should refer to projects for which the analyses have shown that they are financially viable. Indicative guidelines for viable projects are the following: (i) capital investments not to go over 20% from the costs of the fixed assets and not to cross the amount of 100.000 USD; (ii) the size of the project should be between 100.000 and 2.000.000 USD; (iii) financing should be on con-financing basis combined with commercial bank loans or from sponsor capital; (iv) different portfolio for balanced risk/return; (v) technology must be proven. As an alternative to loans, PDAF must offer guarantees.

With the ratification of the Kyoto Protocol of July 2004, the Republic of Macedonia, as party not included in Annex I from the United Nations Framework Convention on Climate Change may use the Clean Development Mechanism (CDM), which shall enable in the following period implementation of new clean technologies for generation or implementation of projects for energy efficiency improvement that contribute to the decrease of emissions from greenhouse gases.

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

Electricity Sector:

Until recently, the electricity sector has had a dominant position in the vertically integrated enterprise "Elektrostopanstvo na Makedonija" - a state owned Joint Stock Company for generation, transmission and distribution of electricity, which has been performing all the basic and additional activities for distribution of electricity to all consumers in the electricity system. Exception to that was small part of independent producers within some industrial plants and in public enterprises for water management.

In December 2000, the public enterprise "Elektrostopanstvo na Makedonija" was re-registered as a state-owned Joint Stock Company, by which the process of its future sale started (restructuring and privatisation).

In 2001, the administrative and expert basis for this process was consolidated, through preparation of a Project Task- establishment of an advisory body in the Government (Committee) and a Governing Board for the Project as well as appointment of an international expert (consultant) to the Government in the restructuring and privatisation process of ESM.

During 2002, in cooperation with the ESM, the Consultant - Consortium of eight companies headed by the "Mainl Bank" from Austria, prepared a due diligence analysis for the work of ESM, which served as a basis for the database used for future shaping and focusing of the restructuring and privatisation of this enterprise.

During 2003, in cooperation with several expert teams, the following has been prepared by the Consultant and adopted by the Government: (1) Restructuring Model of the ESM - Joint Stock Company, and (2) Implementation Plan for the ESM-Joint Stock Company Restructuring.

In March 2004, the Law on Transformation of Elektrostopanstvo na Makedonija- state owned Joint Stock Company for generation, transmission and distribution of electricity was adopted, which regulates this state-owned Joint Stock Company to be divided in two new companies: MEPSO Joint Stock Company - owner and operator of the system for distribution and management with the electricity sector, and ESM Joint Stock Company which shall encompass utilities and the generation, distribution and supply with electricity and which may later on enter a privatisation process, with decision and according to strategy that adopted by the Government.

In accordance with this Law, the privatisation may be done (1) dominantly, with a public tender as a transparent procedure with a pre-qualification phase to a private strategic investor; and (2) for a small part- in part that will not disturb management rights of the private investor, to an international financial institution by direct contract.

In September 2004, the Government has adopted a decision to divide ESM Joint Stock Company, by establishing new enterprises in accordance with the Law. On the basis of that, ESM Joint Stock Company carried out a legal procedure for division, which ended with closing of the existing

vertically integrated Joint Stock Company and with a registration of two state-owned joint stock companies, on 31 December 2004. This means that starting from 1 January 2005, there are two totally independent companies operating in the electricity sector, that is: (1) ESM Joint Stock Company for generation, transmission and distribution of electricity, and (2) MEPSO Joint Stock Company for transmission, system and electricity market management.

At the same time, a new technical, commercial and financial due diligence analysis has been made to ESM Joint Stock Company (the new company -without the transmission system), which shall be continuously updated. In the first quarter of 2005, a due diligence analysis shall be made to ESM Joint Stock Company. During 2005, a privatisation procedure for the new ESM Joint Stock Company shall be prepared and a privatisation strategy shall be adopted, determining what and in what amount should be offered to the investor, the tender papers shall be prepared and the implementation shall start.

In 2001, the common interest for cooperation between the Government of the Republic of Macedonia and the European Bank for Reconstruction and Development from London (EBRD) was stated for transformation of Elektrostopanstvo na Makedonija- Joint Stock Company. In the last period many contacts, proposals and negotiations took place, which as a result enabled the signing of the Agreement for a conditional, postponed sale of shares of ESM Joint Stock Company in October 2004, in amount of 45 million euros. During the possible future privatisation of this company or some of its parts, EBRD shall buy shares in those parts, which shall be dominantly privatised by the strategic private investor.

Hence, the shares shall be transferred in possession to the Bank according to the deadlines and conditions accepted during the selection of a strategic investor and according to a discretionary decision by the Bank, related to the amount of the deposit and the parts of ESM offering shares.

The payment of assets shall be made in certain amounts (instalments) starting from signing of the Agreement until completion of the privatisation transaction. Each payment is conditioned by fulfilment of previously defined benchmarks for certain segment from the reforms in the energy sector, and for which the Government committed itself that shall be fulfilled and which relate to the commitments from the Athens Memorandum and the establishment of a regional energy market for South-Eastern Europe.

The main criteria included in the benchmarks are the following:

1. Adoption of a Law on restructuring and privatisation of ESM Joint Stock Company, in accordance with the relevant EU Directives and the Athens Memorandums;
2. Division of "Elektrostopanstvo na Makedonija" Joint Stock Company in two newly-registered companies, which shall include one independent transmission company -operator of the transmission system, and office

division between generation and distribution, in accordance with the EC Directive 2003/54;

3. Adoption of new legislation for the electricity market, including regulation of the market by the Regulatory Committee with regard to liberalization and competition;
4. Implementation of reforms envisaged in (1) and (3) above and of the Restructuring Plan of ESM Joint Stock Company;
5. Précising the percent which EBRD approved as its participation in the privatisation and passing of the Strategy for privatisation and Criteria for pre-qualification by the Bank;
6. Successful realization of the pre-qualification with selection of at least two possible investors; and
7. Consent by at least one of the investors to cooperate and get into shareholders' contract with EBRD.

Part of these terms has been fulfilled in 2004 after the engagement of the Regulatory Committee for Energy and the adoption of a Law on Transformation of ESM. The other, as is the restructuring of ESM, the new tariff system, new law on energy, successful management of the privatisation process and the like, are planned to be implemented during 2005.

The whole process between the signing of the Agreement and the privatisation transaction is planned to last 24- months the most.

Gas sector

At this moment, the gas sector is built around the unique arterial duct from the border with Bulgaria to Skopje. Only part of the industry works on gas, on the territory where this gas-pipeline passes.

There is an ongoing procedure for resolving the ownership rights on the gas-pipeline system between the Government and Makpetrol Joint Stock Company and consequently, creation of institutional and legislative -legal environment for management in accordance with the EC Directive 2003/55.

Gradual transposition and implementation of separate provisions from the Law on Energy and sub-legal acts and their use in practice shall be undertaken. This also applies to the harmonization of provisions from the Energy Charter Treaty, the Energy Charter Transit Protocol and the Athens Memorandums.

Thermal and Geothermal Sector

The generation, distribution and supply of thermal energy for thermal purposes is used to a great extent in Skopje and to some extent in Bitola. The engine fuel is crude oil (heavy oil) and natural gas.

Generation and supply is made by private companies. The owner of the distribution grid is the Agency for Privatisation of the Republic of Macedonia, and it is given to these companies under lease.

The thermal sector is completely private.

The geothermal energy is used for the needs of the agriculture (greenhouse heating) in Vinica, Kocani, Gevgelija and Strumica, and in Kocani is also used for room heating in urban settlements.

The exploitation, distribution and supply of the Consum in Kocani is done by a public enterprise and of the other systems by private companies.

Coal sector

The coal (lignite) is mostly (around 98.5%) used as a primary fuel for generation of electricity in the existing thermo-electric plants in Bitola and Oslomej. The exploitation and transport of lignite is part of the production process and is in full competence of the ESM Joint Stock Company.

Oil sector

The OKTA Refinery has a dominant position, especially for generation, transport and wholesale trade, supplying also oil derivatives in the Republic of Macedonia. Despite this enterprise, Makpetrol Joint Stock Company has also a strategic position on the derivative market. Both enterprises are dominantly private.

With the Agreement on Sale of Shares and Franchise in 1999, signed between the Government of the Republic of Macedonia and the “EL.P.E.T-Balkanike” Joint Stock Company (managed by Hellenic Petroleum SA and Meton-Etep S.A) as a strategic investor, 54.19% of the shares were sold and the strategic investor became dominant owner of the OKTA Oil Refinery- Skopje. The current percentage of 69.46% was increased with additional share repurchase.

With the sale of the Refinery, and having in mind that the distribution of oil derivatives in the Republic of Macedonia is privatised, the oil sector in Macedonia now is dominantly private.

The idea to build a refinery for crude oil dates from the seventies, as a result of the economic development in that time, with the aim of covering the increasing needs on the market in Macedonia, part of Serbia and Kosovo and creating strong basis for petrochemical industry in Macedonia.

The idea was realized in 1982. The Refinery was built with capacity of 2,500,000 million tons per year (56,610 BPSD). The palette consists of the following products: liquid gas, petroleum, leaded and unleaded products, heating oil, oils and other derivatives.

The OKTA Refinery is comprised of the following units: electricity, water, oxygen and compressed air unit, quality control, storage and shipment, development and research unit, fire fighting unit, etc.

The staff in the OKTA Refinery possesses high quality and experience and follows the world and the European trends. At the same time, the development projects are compatible with the new process technologies and are harmonized with those of EU. The research and development activity is mainly focused on the following:

- enrichment of the range of products within the current technology and oil refining;

- quality improvement of products and satisfying the standards for environment protection;
- optimisation of the oil refining process; and
- equipment protection from corrosion.

At the moment, Hellenic Petroleum is the biggest industrial and commercial corporation in the region, with an intensive investment cycle in many new sectors. The basic activities of the group are: crude oil refining and production of oil derivatives, chemical and petrochemical products, trade and distribution of oil derivatives and petrochemical products, pipeline construction and management, research and development of new technologies, production, trade, and marketing of other types of energy.

The development strategy of the OKTA Refinery comes from the need for a further rational use of the installed capacity, its construction and upgrade for expansion of the refining process, cut of the yields and production of more valuable products.

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

The Law on Energy determines the conditions and the manner of work in the field of energy, protection of energy facilities, equipment and plants, protection of environment and nature from the harm effects of the energy facilities, equipment and plants. The law defines the activities in the field of energy, shipment of some sources of energy from energy systems, connection to energy system by acquiring energy consent, activities in the field of energy by means of license, etc.

With the aim of providing conditions for secure, continuous and qualitative supply of energy, increased confidentiality, transparency and security in the work of the current utilities for generation, transmission and distribution of electricity and construction of new utilities, as well as provision of market conditions for energy management in accordance with the Law on Energy, a Regulatory Committee on Energy of the Republic of Macedonia was established. The competences of this committee shall be to provide conditions for safe, continuous and qualitative energy supply at minimum cost; give proposals of tariff systems for some types of energy; proposals of conditions for supply of some types of energy in accordance with the Pricing Methodology, propose tariff systems of some types of energy and other legal regulations; issue, change and deprive working licences in the field of energy; monitor licence use; initiate and through competent institutions propose adoption of laws and regulations in the field of energy, i.e. give opinions to laws, regulations and other acts in the field of energy; participate and propose measures in dispute settlement; adopt Rules and other acts in accordance with the law.

Pursuant to the existing Law on energy, the following sub-legal acts have been adopted:

- Rules for the manner and the conditions regulating electricity prices;
- Methodology on energy pricing (electricity, thermal, geothermal energy and oil derivatives);
- Conditions for energy distribution to the energy systems: electricity and thermal energy;
- Tariff systems for energy sale: electricity, thermal and geothermal energy; and
- Decision on the criteria and conditions for restriction of energy consumption (electricity and oil derivatives).

It is a general assessment that this law is compatible with the EU legislation, except for matters of transit and energy trade which are in accordance with the Energy Charter through the amendments in the Law from 2000 and the establishment of the Regulatory Committee of the Republic of Macedonia, pursuant to the Directives No 2003/54/EC and 2003/55/EC which amended the Directives 96/92/EC and 98/30/EC, through the amendments in the Law in 2002 and 2003.

The Law on Transformation of Elektrostopanstvo of Macedonia, state owned - Joint Stock Company for generation, transmission and distribution of electricity, was adopted with the aim to implementing government policy for reforms in the electricity sector, taking into account the economic principles for working efficiency and effectiveness, commercialisation, gradual liberalization and controlled deregulation of relations between the parties and by introduction of competitive market criteria, with continuous maintenance of conditions for safe and secure energy supply and stable operation of the electricity system, as well as provision of necessary conditions for transparent, non-discriminatory and impartial privatisation of the energy sector.

This law regulates the transformation of ESM, Joint Stock Company by division of the company in two separate state-owned companies (ESM-Joint Stock Company for generation, transmission and distribution of electricity and MEPSO - Joint Stock Company for transmission of electricity and management of the electricity system), by which transmission of electricity and management of the electricity system and its infrastructure will be separated and legal basis will be created for a possible future privatisation of the other part of the existing integrated company.

The Law is compatible with the request for unbundling of vertically integrated energy utilities contained in the Directive 2003/54/EC.

The following legal acts are under preparation:

a) New Law on Energy

The Law on Energy is one of the fundamental laws that will influence future economic development of the country. This complex law, which will be fully compatible with the European legislation shall define numerous issues in the field of energy, among which the energy policy and energy

development planning, by preparation of strategy for a complex, long-term energy development and monitoring of the implementation of that strategy; creation of conditions for energy market (electricity and gas) and conditions on which this market will operate; transit of energy through energy systems and their use by the domestic and foreign parties; conditions for energy generation, transmission and distribution in market conditions; creation of conditions for major investments in the energy sector for involvement of foreign capital, continuous and qualitative supply to consumers of all kinds of energy, in accordance with the energy balances; specific rules for inclusion of renewable resources of energy in domestic energy consumption, increase of energy efficiency, decrease of negative influence of the energy on the environment, etc.

In the current law preparation phase, the need is identified for compatibility with the following Directives: 2003/54/EC and 2003/55/EC on internal market in electricity and natural gas and Regulation 1228/2003 on conditions for access to the network for cross-border exchanges in electricity; 68/414/EC, with 98/93/EC for maintenance of minimum stocks of crude oil and/or petroleum products; 73/238/EEC on measures to mitigate the effects of difficulties in the supply of crude oil and petroleum products; 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market, as amendment to the Directive 92/42/EEC; 2001/77/EC on electricity production from renewable energy sources; 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport; and 2002/91/EC on the energy performance of buildings. This law will be adopted in 2005.

b) Law on Amendment of the Law on Energy

The Law Amending the Law on Energy envisages establishment of electricity and natural gas market. In relation to the electricity, a model has been prepared for the electricity market in the Republic of Macedonia, which shall serve as basis for preparation of the Law Amending the Law on Energy of the Republic of Macedonia. At the same time, the Law shall give basis for realization of the commitments from the Athens Memorandums and the Energy Community Treaty.

Despite regulating relations, as in the existing Law on Energy, as the participants and the functions in the sector, working conditions and criteria, security at work, tariff conditions, role and competences of the Regulatory Committee, the law shall also regulate the liberalization of the market, role and protection of competition, international energy trade and relations with other market systems, criteria for investment in the electricity, relations and obligations in the regulated part of the market, principles of sustainable development of the electricity sector, etc. This law shall be compatible with the Directive 2003/54/EC and Directive 2003/55/EC and shall be adopted in the first half of 2005.

c) Law on Establishment of the Energy Agency of the Republic of Macedonia

For a successful and timely implementation of the reforms in the energy sector, preparation and monitoring of the implementation of strategic documents in the field of energy, intensification of the development of the energy system in the state, establishment of open and competitive energy and natural gas market, its integration in the regional European market, intensification of activities in the field of energy efficiency and major inclusion of renewable energy resources in the energy consumption and gaining of financial support for them, etc, it is necessary to organize properly the energy sector in the state, that is to establish Energy Agency of Macedonia. The role of the Agency is to initiate, coordinate, study, together with domestic and foreign specialized companies and experts, prepare the appropriate documents and through the Ministry of Economy to propose specific solutions and activities to the Government. The activities of the Agency shall be to prepare medium-term, long-term strategies and development plans; preparatory coordinative activities for reforms in the energy sector; propose and assess studies and projects for complex energy, separate energy sectors and energy efficiency and renewable energy resources; preparatory and coordinative activities for implementation of investment projects; regional cooperation and coordination of regional projects and other activities. This Law shall be adopted in 2005.

The general assessment is that the existing legislation in the Republic of Macedonia in the field of energy is partly harmonized with the European legislation, but with the adoption of laws under preparation and of the sub-legal acts that will derive from those laws, full harmonization will be made of national legislation with the European legislation in the field of energy.

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

In accordance with Article 11 from the Law on Energy, the Regulatory Committee on Energy of the Republic of Macedonia is competent to lay down pricing methodology and tariff systems for some types of energy, and to adopt price decisions for some types of energy. The manner of decision-making of the Regulatory Committee on Energy is determined in Article 11 from the Law on Energy, according to which decisions adopted by the Regulatory Committee on Energy shall be published in the Official Gazette of the Republic of Macedonia. Also, the Rules of Procedure of the Regulatory Committee on Energy states that its decisions shall be published on the web site of the Regulatory Committee on Energy. This provides infrastructure for transparency in the decision-making of the Regulatory Committee on Energy.

In accordance with the pricing methodology for some types of energy, control is made on the following types of energy:

- electricity
- natural gas

- thermal energy
- geothermal energy
- oil derivatives.

The basic elements for pricing of the aforementioned energy types, in accordance with the methodology are the following:

1. normalized expenses:
 - depreciation
 - insurance
 - maintenance, repair, maintenance conditions
 - supplies, energy, spare parts, inventory
 - gross salaries
 - services for others, besides production maintenance services
 - license for use of natural resources
2. Taxes and contributions from the financial results of the company
3. Other taxes
4. Profit, on the level of 8% from the current value of fixed assets and the working capital.

In December 2004, the Regulatory Committee on Energy of the Republic of Macedonia adopted a Decision for the manner and conditions regulating electricity prices, by which validity of the part for energy in the previously mentioned Methodology ceased. At the same time, a new methodology is under preparation as well as tariff systems for natural gas, thermal and geothermal energy. The model as basis for energy pricing and control of prices is established using “incentive based approach” – through specification of the highest level of income or profit, that is the highest price level, which shall:

- stimulate improved efficiency;
- possibly decrease the investment risk with the price course in several years; and
- stimulate discovering actual expenses of the company.

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

Until recently, the electricity sector was characterized with dominant position of a vertically integrated company- “Elektrostopanstvo na Makedonija”, state-owned Joint Stock Company for generation, transmission and distribution of electricity, which performed all basic and supplementary activities in the supply of electricity to all consumers in the electricity. The exception was only small part of independent distributors in some industrial plants and in public enterprises for water management.

In March 2004, the Law on transformation of Elektrostopanstvo na Makedonija, state-owned Joint Stock Company for generation, transmission and distribution of electricity, has been adopted that regulates this state-

owned Joint Stock Company to be divided in two new companies. With the Decision of the Government of the Republic of Macedonia, the procedure has been started for privatisation of the ESM Joint Stock Company (new), according to which at least 51% of the shares of ESM Joint Stock Company have to be sold to a strategic investor. The ESM Joint Stock Company, simultaneously with the privatisation procedure, shall establish two new companies: company for electricity generation and company for electricity distribution and supply.

In the Republic of Macedonia, there are electricity generation utilities, small hydro-plants, which are connected to the distribution network and owned by the public water management enterprises. The major part of the production of electricity is used for personal needs, while the surplus is bought by ESM joint stock companies by contract price.

According to the Law on Energy, the construction of energy utilities by means of investment by domestic and foreign legal and physical persons may be done on the basis of an agreement between the Government of the Republic of Macedonia and the investor, which should first establish a separate trade company for that purpose.

For inclusion of energy facilities managed by legal and physical persons, an agreement is concluded with the legal persons managing the energy systems or that are part of the energy systems. This agreement stipulates in particular the technical conditions for connection to the energy systems, coordination of energy generation, payment of the distributed energy and conditions for regular and additional supply of these producers, which use part of the production for their own needs.

Legal persons managing energy systems for transmission, transport and distribution of energy are obliged to give services with the available utilities, to persons interested for transmission, transport, distribution and transit of energy and energy types through these systems. The manner of doing services and tariff positions should be impartial and equal for all users and shall be published in the media.

- **Major Groups participation in energy decision-making, whether at the national or community level.**

The implementation of energy policy of the Government of the Republic of Macedonia is made through the Energy Sector within the Ministry of Economy. The Energy sector is in charge of the activities related to electricity, liquid, firm and gas fuels, renewable resources, efficient use of energy, trade and transit of energy and energy types, investment activities in the field of energy and transformation of the public electricity sector; also proposes theses for preparation of legal, sub-legal and other regulations in the field of energy and monitors the enforcement of the legal regulations in the field of energy, organizes and coordinates preparation and adoption of strategic development papers in the field of energy in the State.

During the preparation of the legislation in the field of energy it is a regular practice to organize public and experts' debates which always involve

representatives of the energy companies, public and private companies, local self-government, consumers, educational and scientific institutions, NGOs and other experts. The observations, comments and suggestions are taken into account before the laws in this field are adopted.

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

Draft law has been prepared on Equal Opportunities for Men and Women and it is expected to be adopted by the end of 2005. The objective of this Law would be to promote gender equality thus, advancing the equality between men and women in all aspects of social activities. At the same time, the objective of the Law is to raise the awareness about the need to reach full gender equality. In the practice so far, special attention has been paid to a greater representation of women on local and national level of political decision-making, and within that, to the assessments, planning and formulation of policy related to energy. Underway are also activities for realization of certain projects for building institutional capacities to carry out the programs for increase of energy efficiency and greater use of renewable sources in the production of energy. The successful realization of these activities will enable creation of new jobs and new energy posts where the representation of women is expected to be greater.

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

Renewable energy sources (RES) are subject matters of many foreign and domestic studies, which at the same time deal with the energy efficiency. Three especially important studies, developed with the support of foreign funds are:

- "Potential of renewable energy sources in the Republic of Macedonia" Electrotek Concepts and Macedonian Academy of Science and Arts, financed by USAID, 1999;
- The Program EU SYNERGY of March 2001: "Energy Policies in the EU Member States related to Protection of Environment and Energy Efficiency: Possibilities for Implementation in Macedonia";
- The Program EU PHARE "Possibilities for Investment in Energy Sector", by Exergia, S.A., Greece.

These studies inter alia, give assessment on the potentials of the renewable sources in the Republic of Macedonia, as well as potentials for energy efficiency.

One of the long-term objectives of the Government of the Republic of Macedonia in regard to the energy sector is increased use of the renewable energy sources in line with the available resources, technological development and overall economic policy. In order to accomplish this objective preparatory activities are underway for development of Basic Study for Use of the

Renewable Energy in the Republic of Macedonia. The study will include analysis of the needed expenses and benefits of using RES, and it is envisaged to contain the following parts: defining the sorts of RES, available RES in Republic of Macedonia, economic justification for use of RES, possible consumers of particular RES, possible participation of domestic enterprises in the production of materials and equipment for use of RES, reduction of the emission of green house gases, i.e. global warming (CO₂), proposal for amendment or preparing new laws and regulations to support the use of RES in the Republic of Macedonia, institutional organization and strategy for increased use of RES in the Republic of Macedonia.

The need to increase of the use of RES in the overall consumption of energy in the Republic of Macedonia also derives from the legal obligations taken on with the ratification by the Assembly of the Republic of Macedonia of the international conventions and protocols, such as the United Nations Framework Convention on Climate Change (UNFCCC), Convention on the Drought and Desertification (UNCCD), The Kyoto Protocol, as well as obligations that derive from the planned accession to the European Union, which means, transposition of the Directive 2001/77/EC (on promotion of production of electricity from RES) and the Directive 2003/30/EC (for promotion of the use of bio-fuels and other renewable fuels for transportation) into the domestic legislation.

By the end of 2005 planned to be realized is a project on preparation of the program for renewable energy, which will enable obtaining a grant of 5,000,000 \$ from the Global Environmental Fund (GEF) through the World Bank as an implementation agency. The basic aim of the program is to foster investment in the energy efficiency and use of renewable energy by removing institutional and financial barriers. The realization of this program will create a Fund for renewable energy, which will be used for co-financing projects for energy efficiency and use of the renewable resources.

Within the cooperation with the Republic of Austria, a realization of the program is underway for promotion of use of thermal solar energy, and for the period 2005-2007 the program envisages training of experts and professionals on solar energy as well as realization of a program for improvement of technology and production of equipment and systems of thermal energy.

- **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 existing standards in Macedonia for quality of liquid fuels (motor gasoline, unleaded gasoline, diesel fuel, fuel for jet motors and fuels for flaming) were made in 1999 and the valid European standards of that time were used as basis. The entering into force and implementation of these standards has been regulated with the Rules for Quality of Liquid Fuels, according to which:

- the quantity of lead in the gasoline is:
- for leaded gasoline, 0,15 g.Pb/l (in the previous period it was 0,6g.Pb/l)

- for unleaded gasoline 0,013 g.Pb/l (in the previous period it was 0,02 g.Pb/l)
- The quantity of sulphur in the diesel fuels is:
- 0,26% (in the previous period it was 0,6%)

The National Technical Committee "Oil for Lubrication" is working on the translation of the texts of the standards: EN-228 2004 and EN-590 2004.

The adoption of these standards as well as the standard EN-589 2004 for a car fuel is envisaged for 2005.

With the adoption of the Rules for Quality of Liquid Fuels, the first phase of the strategic recommendations has been completed, and the implementation of the second phase is underway. It includes:

- establishment of an independent laboratory for testing the quality of the fuels;
- appointing competent institution to follow the quality of the fuels and to prepare national system for systematic supervision of the data for the fuels;
- adoption of legal provisions (by-laws) of the Law on Accreditation of the Laboratories for Control of the Quality of the Fuels;
- setting a precise date for banning the use of leaded gasoline;
- technical committee for standardization which should prepare new Macedonian standards related only to unleaded gasoline, that will include all new moments from the EU Directives;
- preparation of Rules that will bring into force the new Macedonian standards for gasoline, that will deal only with the unleaded gasoline, and
- preparation of the strategy for communication and champagne for raising the public awareness, in order to inform all relevant organizations on the date of ban of use of the leaded gasoline. Thus, the requirements of the Directive 98/70/EC for quality of the gasoline will be met.

- **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.**

At the moment the Government does not have plans or declarations for using the nuclear energy except for the use of radioisotopes in medicine and industry. The following text contains information on current and future activities in the Republic of Macedonia in this field.

In the Republic of Macedonia there is no regulatory body for nuclear safety. The setting up of a Direction for Radiation Safety is underway, in accordance with the Law on Protection from Ionic Radiance and Radiation Protection. This activity will be completed in 2005. In the Law on Protection from Ionic Radiance and Radiation Protection there are no special provisions related to nuclear safety, except the general provisions for protection from ionic radiance, since there are neither nuclear facilities nor nuclear material on the territory of the Republic of Macedonia.

There are no nuclear reactors (for research nor energy) and therefore nuclear fuel is not being used. In the accordance with the abovementioned, the Republic of Macedonia does not import nuclear fuel.

The license related to purchase, possession, selling, import, export and trade in nuclear equipment, materials, new and used nuclear fuel and permission for physical handling of nuclear material are not subject of the existing legal regulations.

The Republic of Macedonia does not have nor is planning to build facilities for storage of nuclear waste.

The Republic of Macedonia has not signed international agreements and conventions with other countries for cooperation in the field of nuclear energy and protection from radiation.

In 2002 a Law on Protection from Ionic Radiance and Radiation Protection (Official Gazette of the RM no. 48/2002) was adopted, in accordance with the International Basic Safety Standards (BSS), published by International Agency for Nuclear Energy (IANE) in 1994 and verified by the legal department of the IANE. Pursuant to article 3 of the Law, setting up of an independent Direction for Radiation Safety is underway. This activity is expected to be completed during 2005.

With the expert support of the IANE the following has been prepared:

1. Three draft Rules:

- Rules for limits on exposure to ionic radiance, conditions for exposure in special circumstances and carrying out interventions in cases of emergencies;
- Rules for conditions and measures for protection from ionic radiance when dealing with radioactive sources;
- The Rules for conditions and measures for protection from ionic radiance when dealing with Roentgen apparatus, accelerators and other devices that produce ionic radiance;

2. Country Program Framework (CPF) is a base for realization of national projects in the field of radiation protection and building capacities and human resources for consistent implementation of BSS.

The Physical Plan of the Republic of Macedonia adopted by the Assembly of the RM (Official Gazette of the RM No. 39/04) in the part of energy sources and energy infrastructure does not envisage construction of nuclear facility for production of electricity or other facility that would use nuclear material on the territory of the Republic of Macedonia.

The Republic of Macedonia does not expect any regulatory problems in the process of harmonization of the national legislation with the provisions of Chapter VII of the EURATOM related to implementation of the protective measures, having in mind that there are no nuclear facilities.

Building of capacities, information, research and technologies

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

The institutional capacities of the Republic of Macedonia for implementation of the new energy policy are vested in the Sector for Energy and

Mineral Raw Materials within the Ministry of Economy. The basic competences of the Sector for Energy are related to drafting of laws, follow up and implementation of laws, organization and coordination in preparation and adoption of strategic development documentation in the field of energy. The Sector also manages the investment activities in the field of energy. Besides that, in the beginning of 2004 a Regulatory Committee on Energy was set up with strictly defined competences for adoption of secondary legislation in the domain of energy which will regulate the behaviour in competitive environment for doing business, prescribing and issuing of licenses for certain activities in the domain of energy, prescribing the methodology for formation of prices of certain types of energy, resolution of disputes, promotion of the protection of consumers of energy, etc.

In order to achieve successful and timely implementation of the reforms in the energy sector, to prepare and monitor the realization of the strategic documents from the field of energy, to intensify the development of the energy system in the Republic of Macedonia, to establish open and competitive market of electricity and natural gas and to integrate it in the regional European market, to intensify the activities in the domain of energy efficiency and greater inclusion of renewable energy sorts in energy consumption by providing financial support for the said and other, it is necessary to properly organize the energy sector in the country, i.e. to establish Energy Agency in the Republic of Macedonia. The role of the agency would be to initiate, coordinate, study and together with domestic and foreign specialized companies and experts, prepare appropriate documents and through the Ministry of Economy propose to the government actual solutions and activities. The concrete activities of the Agency will be in the direction of: preparation of middle term, long term strategies and development plans; preparatory coordination activities for introduction the reforms in the energy field; initiation and assessment of studies and projects for complex energy, individual energy sectors and energy efficiency and renewable energy sources; preparatory and coordinative activities for implementation of investment projects; regional cooperation and coordination of regional projects and other activities.

The Draft Law on setting up an Energy Agency in the Republic of Macedonia has been prepared and it is expected to be adopted in 2006.

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

The Plan for Implementation, which is integral part of the Strategy for Energy Efficiency in the Republic of Macedonia, contains the program that foresees training of energy auditors. The program entails training and certification of energy auditors, and this is expected to help in making sure that appropriate improvements in the energy efficiency have been identified and recommended, especially for buildings and industrial capacities and that the recommendations have been identical throughout the country. The consumers would feel more comfortable knowing that the energy auditor

they have engaged can demonstrate that they have successfully passed the certification program and that they are competent for the techniques and principles for energy auditing.

The energy consumption in the buildings is considerable, and in that, large part of the consumption is for heating. Although it is unpractical to think that it is possible to eliminate the annual consumption of the energy in the buildings, one typical building can considerably reduce the consumption of energy for heating and cooling of the premises in various ways. These activities involve putting additional isolation on the walls and roofs, replacement of old, badly fit windows with new, energy more efficient windows, upgrade of the heating system, etc. In order these changes to take place, it is advisable to have energy auditors who will work with the proprietors of the buildings and industrialists to identify necessary energy improvements. This group of energy auditors should be trained and certificated in order for the same standards to apply all over the country. The assumption is that the largest demand for the auditors will be in the business buildings and public institutions and in the industry, followed by the residential buildings.

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

In order to identify the level of public information for energy efficiency, a survey has been launched among households on the whole territory of the Republic of Macedonia. On the basis of the analysis of the data and results gained, a realization of certain number of pilot projects will be proposed with an aim of improving the energy efficiency in the households taking into account the economic parameters, energy conservation and environmental impact. Furthermore, it has been envisaged to organize workshops and public campaigns to raise the awareness of energy efficiency and environmentally sound energy systems in the forthcoming period, and for this aim the results from the pilot projects will be used.

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

All centres that are related to energy such as competent ministries, energy companies, Macedonian Academy of Sciences and Arts, educational and scientific institutions, NGOs, as well as other expert subjects are linked on the Internet, and thus the advantages of modern technology are used to a great extent for fast and efficient exchange of information, capacity-building and transfer of knowledge on the state-of-the-art technology. In practice, the networking between competent centres in the field of energy is constantly developed, and the use of Internet for exchange of information also notes increase in the process of drafting new regulations, strategic documents, programs as well as various programs for energy for sustainable development.

Networking between parts of the centres in charge of energy in the Republic of Macedonia is carried out also through their joint participation in international projects, that to a large extent enable exchange of information and knowledge. A good example is the RISE project, which involves the University Ss Cyril and Methodius, the Macedonian Academy of Arts and Sciences and the newly established Joint Stock Company MEPSO. This is an international project with participants from several countries, and some of its achievements are exchange of experiences, knowledge and scientific and research practices among the institutions involved in the project. This project also intensifies the regional cooperation and transfer of technologies.

Apart from this project, there is another one underway (CEFES: Cost-Effective and Environmentally Friendly Energy Sources), carried out within the TEMPUS Program and is related to establishment of international master studies dealing with cost-effective and environmentally friendly energy systems. One of the objectives of this program is to increase the exchange of experiences and information among the Balkan countries and the EU member countries. The project also envisages improvement of the capacities of the universities in the Balkan by setting up complementary laboratories in each of them in order to intensify their mutual cooperation and communication.

- **Internet websites related specifically to the issues contained in these Atmosphere/Air Pollution Guidelines, providing homepage addresses (URL).**

The below listed Internet sites are part of the more important addresses where information on energy and energy efficiency may be obtained:

- www.economy.gov.mk (Ministry of Economy)
- www.moepp.gov.mk (Ministry Of Environment and Physical Planning)
- www.sei.gov.mk (Sector on European Integration)
- www.erc.org.mk (Regulatory Committee on Energy in the Republic of Macedonia),
- www.manu.edu.mk (Macedonian Academy of Sciences and Arts)
- www.mchamber.org.mk (The Chamber of Commerce of Macedonia)
- www.esmak.com.mk (ESM - Joint Stock Company)
- www.etf.ukim.edu.mk (Electro-technical Faculty - Skopje)

- www.cefes.untz.ba (Cost-Effective and Environmentally Friendly Energy Sources)
- www.mf.ukim.edu.mk (Faculty of Mechanical Engineering - Skopje)
- www.tfb.uklo.edu.mk (Technical Faculty – Bitola)
- www.proaktiva.org.mk (Proaktiva)
- www.euba.ork.mk (Euro – Balkan)
- www.rec.org.mk (Office of REC – Regional Centre for Protection of the Environment – Central and Eastern Europe)

- **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.**

The participation in the scientific and research work is the most efficient way for building scientific capacities. This especially concerns the participation in scientific and research projects internationally financed, since they provide selection of competitive topics, application of top and innovative methodologies, as well as strict review of the research results. In the Research Center for Energy of the Macedonian Academy of Sciences and Arts (ICEIM-MASA) in the last decade the European Commission and other foreign sources have financed 14 research projects from the domain of renewable sources of energy, energy efficiency, impacts of energy and other technologies on the environment and climate changes. The titles of the projects as well as the financier and duration are given below:

1. Renewables for Isolated Systems – Energy Supply and Waste Water Treatment (RISE), Specific Target Research Project – STREP, FP6-2002-INCO-WBC-1 (European Commission, 2004-2007)
2. Production Process for Industrial Fabrication of Low Price Amorphous-Microcrystalline Silicon Solar Cells (LPAMS), Specific Target Research Project – STREP, FP6-2002-INCO-WBC-1 (European Commission, 2004-2007)
3. Capacity Building for Improving the Quality of Greenhouse Gas Inventories, Europe/CIS region (UNDP/GEF, 2003-2006)
4. Technology Needs Assessment (TNA) – Expedited Financing of Climate Change Enabling Activities, Top-up activity (UNDP/GEF, 2003-2004)
5. Energy Efficiency Strategy (USAID/Nexant, 2002-2004)
6. Undertaking GHG Abatement Analysis in the Republic of Macedonia, First National Communication to UNFCCC (UNDP/GEF, 2001-2002)
7. Undertaking Inventory of GHG Emissions from Sources and Removals by Sinks in Macedonia, First National Communication to UNFCCC (UNDP/GEF, 2001-2002)
8. Capacity Building in Balkans in Order to Deal with the Climate Change Problem (Greek Government, 2001-2002)
9. Energy Sector Development Strategies (USAID/Electrotek, 1999-2000)
10. Fossil Fuel Energy Strategy (USAID/Electrotek, 1998-1999)
11. Renewable Energy Strategy (USAID/Electrotek, 1998-1999)
12. Optimisation of Building-Integrated and Grid Support Photovoltaic Solar Systems for Macedonian Conditions (US-Macedonian Fund, 1997-2000)
13. Establishment of a Country Specific Database for Macedonia, Containing Technical, Economic and Environmental Data for Electricity Supply Options and Strategies (UN IAEA, Vienna, 1996-1999)
14. National Development Strategy for Macedonia, Energy Sector (UNDP and Rep. of Austria, 1995-1997)

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 Government of the Republic of Macedonia adopts three-year program for public investment, and through this program the government organizes, supports, regulates, promotes and fosters the development activities in the domain of public sector. This program also envisages future investment projects in the field of energy. In a situation when the energy systems are being built following market conditions incorporated in the energy systems in the region, in the forthcoming period the investment activities will be directed towards: revitalization of the existing energy capacities for production; transfer and distribution of different sorts of energy; more intensified exploitation of the available hydroelectric sources by building new hydroelectric plants in the country; building of co-generative facilities for production of electric and thermal energy, which as a primary fuel would use natural gas and liquid fuels; inclusion of more consumers in the natural gas line in the country; expansion of the gas line system in the western and south-eastern part of the country; interconnection of the electric, gas and oil sector to the energy systems of the neighbouring countries; more intensified exploitation of the renewable sources of energy through economically acceptable projects; as well as more efficient use of the produced energy. This investment, through actual projects, will be realized mainly by concessions, direct and joint ventures, donations and other forms of investment.

In 2001 Joint Stock Company ESM worked out plan for building, rehabilitation and modernization of the production, transfer and distribution capacities by 2015, which encompasses restructuring of the electric and energy sector in the Republic of Macedonia, projection of the needs for electricity, production capacities of the existing facilities, construction of new production capacities, new mining capacities, rehabilitation and modernization of the existing production capacities, construction, rehabilitation and modernization of the electric and energy network, development of the technical system of management and telecommunications in the electric and energy system, structure and dynamics of the needed finances for construction and rehabilitation of the electric and energy facilities by 2015 and financial resources for support of the development plan until 2015.

The power purchase agreements are concluded in accordance with the Article 13 and 13a of the Law on Energy. For connection to the energy facilities an agreement is concluded with the legal entities that deal with energy systems or are part of the energy systems. These agreements determine: the technical conditions for connection to the energy systems, the adjustment of the production of energy, payment of the delivered energy and conditions for regular and additional provision of energy to those

producers that use part of the production for their own needs. The legal entities dealing with energy systems for transfer, transport and distribution of energy are required to offer services with the free capacities to those interested in transfer, transport, distribution and transit of energy through these systems. The conditions for these services and tariffs are objective and equal for all users and are published in the media.

Cooperation

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

Electricity

Besides the Athens Memoranda signed in 2002 and 2003, the Republic of Macedonia is holding negotiations and intends to sign the Agreement for Energy Community, which will enable for creation of regional energy market.

In addition to this legal framework, the Republic of Macedonia is in the process of strengthening the existing corridors for interconnection: in direction North-South (Serbia and Montenegro and Greece) through:

- Upgrade of the existing connection level of 150 kV to the level of 400 kV between Bitola (Republic of Macedonia) and Florina (Republic of Greece). The value of the project on the Macedonian side amounted to 4.5 million EURO. In March 2003 this project was submitted to the Government of the Republic of Greece for financing from the Program "Greek Plan for Economic Reconstruction of the Balkans". Having in mind the uncertainty of the start of the realization of the program, the possibility is considered to finance this project with own or other commercial sources;
- Construction of new long distance power line of 400 kV between Skopje (Republic of Macedonia) and Nis (Serbia and Montenegro). This long distance power line is 200 km long and the investment is assessed to 42 million EURO. The preparation of feasibility study is underway and this project was submitted in March 2003 to the Government of the Republic of Greece for financing from the Program "Greek Plan for Economic Reconstruction of the Balkans";

Establishment of the new corridors for interconnection East-West through:

- Construction of new long distance power line of 400 kV between Stip (Republic of Macedonia) and Cervená Mogila (Republic of Bulgaria). This project has value of 50 million EURO, is in phase of realization and it is expected to be operative by the end of 2006. EBRD provides around 40 million in a form of a loan to the ESM. ESM and NEK (Republic of Bulgaria) cover from their own sources the remaining 10 million EURO. During the construction NEK will pay its share of the project to ESM. The whole arrangement is covered with package of agreements.
- There is an initiative and so far two options were considered to connect Republic of Macedonia and Republic of Albania with 400 kV (especially within SECI): Skopje – Tirana and Bitola – Zembjak. Additional inquiries will reveal

whether this is needed and which option would be realized. There is preliminary interest on the side of EBRD and WB for financing the connection with Albania. The connection Bitola – Zembjak would have exceptional value should the connection between Albania and Italy with a cable under the Adriatic Sea become reality. In such case, a very important corridor would become available for transport of electricity from East (Ukraine and Turkey) through Romania, Bulgaria, Macedonia and Albania to Italy.

With the realization of all or part of the abovementioned projects Macedonia will be connected to each of its neighbours individually, will have transportation capacity for exchange by far larger than its internal needs, so that as a small system in the central part of the region it will contribute to increase regional flows of energy and thus create possibilities for setting up new transit corridors for transport of electricity in the region and wider.

Natural gas

At the moment Macedonia is connected to one transport gas pipeline with a capacity of 800 million m³/annually, that is the gas pipeline from Bulgaria to Skopje. However, within the strategy for extension and connection of the gas pipeline to the networks of the neighbouring countries, several options are being considered:

- Construction of regional gas pipeline from Bulgaria, through Macedonia and Albania to Italy with a capacity of 800 billion m³/annually;
- Construction of main gas pipeline from Republic of Turkey through Republic of Macedonia to the north to the Republic of Austria;
- Revitalization of the of the local main gas pipeline for connection with Kosovo (Serbia and Montenegro).

The realization of the potential projects for construction of regional gas pipelines is related to the results of many studies that are underway especially the study of the World Bank as well as the interest and the needs imposed by the natural gas market in the region.

Oil

Dominant manufacturing facility in the oil industry in Macedonia is OKTA. The main activities of OKTA include: refinement of crude oil and production of oil derivatives, chemical and petrochemical products, trade and distribution of oil derivatives.

After the construction of the oil pipeline Thessalonica – Skopje, and after all preconditions were fulfilled for greater exploitation of the installed capacity for refinement of crude oil in the single refinery in Macedonia OKTA, conditions were created for accelerated development and promotion of sale and distribution of oil derivatives for the needs of the markets in Serbia and Montenegro, or more precisely in Kosovo and South of Serbia.

In 2002 preparatory activities commenced for construction of product pipeline from OKTA to Kosovo. It is expected to provide fast, cheap and safe

transfer of the products in quantities necessary to satisfy the needs of this market. The product pipeline to Kosovo will enable flow of 65 m³/h of oil derivatives. The Republic of Macedonia is also included in the process of preparation and potential realization of a project for construction of regional oil pipeline in the Corridor 8 (East-West) from Burgas (Republic of Bulgaria) through the territory of Macedonia to Vlore of the Adriatic coast in Albania.

CASE STUDY OF A SUCCESSFUL NATIONAL ENERGY PROGRAMME/STRATEGY

1. The problem or issue addressed: **increasing the energy efficiency**
2. Name of the programme: **Strategy for Energy Efficiency of the Republic of Macedonia by 2020**
3. Timeframe: **15** years Year started: **2005**
4. Status: Ongoing Completed in year **2004**
5. Main objectives:
 - **The main objective of the strategy is to develop a frame for accelerated adoption of the practices for energy efficiency in a sustainable manner through implementation of series of programs and initiatives that will focus on efficiency of the final consumers, and which are also related to the creation of critical mass of relevant and dedicated professionals through free of charge counselling and training activities that will maximize the involvement of the private sector.**
 - **The strategy for energy efficiency will primarily serve for giving direction to policy makers about the approaches to increase the energy efficiency in the Republic of Macedonia.**
 - **This document will provide the wider public an access to numerous information related to energy.**
6. Lead institution: **Ministry of Economy**
7. Other implementation arrangements and stakeholders involved (public, private, NGOs, CBOs, international support, etc.):

Local Self-government

The recently commenced transfer of power to the local governments, which is still underway, and which included transfer of a wide spectrum of competences and responsibilities of management, represents huge potential and challenge for implementation and adoption of energy practices that are more efficient. This role of the municipalities, which is still developing, has been strengthened by the Law on Local Self-

Government and represents one of the main drivers proposed in this energy efficiency strategy for promotion and realization of the benefits of energy efficiency for a large number of the energy consumers in the Republic of Macedonia. With the transfer of the responsibility for management and maintenance of facilities to the municipalities – including the schools, clinics, administrative public buildings and public apartments, public lightning – the municipalities will have to pay the energy consumed by these facilities. The potential for conservation is huge as is the potential for setting an example in their environment.

Private sector

The private sector represents all sectors and organizations that are independent of government budget and it has an important role as a potential actor and investor in the energy efficiency, as well as a main consumer of energy.

NGOs

The existing NGOs can give effective contribution to the realization of the programs for energy efficiency by providing training, contacts with the consumers and services for raising the awareness. They can also have important role in the drafting and implementation of projects for energy efficiency. Below are given several NGOs that are currently active in this domain, having potential to do more:

- **OPM (Organization of Consumers of Macedonia)** is the main protector of the rights of the consumers in Macedonia. OPM has engaged experts familiar with the regulatory and technical aspects of the programs for energy efficiency. OPM has prepared and distributed materials for isolation of homes and use of more efficient consumer appliances.
- **Macedonian Centre for Clean Production** is a NGO ready to assist the industries in identifying potentials for improved energy efficiency and to help in designing and implementation of the modifications.
- **MACEF (Macedonian Centre for Energy Efficiency)** is actually a new subject in the NGO sector. Supported partially through its links to the regional network for energy efficiency, RENEUER (financed by USAID and implemented by the Alliance for conservation of energy), MACEF expects to play important role in the activities for promotion and education on energy efficiency. Most probably MACEF will serve as a starting central spot for MUNEE, another regional project financed by USAID, the main objective of which is to support the municipality programs for energy efficiency.
- **ZELS** represents a network of municipalities in the Republic of Macedonia.

8. The results achieved (if possible, please address the social, economic and environmental impacts of the programme):

The plan for implementation, which is an integral part of the Strategy, contains the following program initiatives: Program for Residential Buildings, Program for Commercial Buildings, Program for Buildings and Public Institutions, Program for Industrial Facilities and Program for Street Lightning. With the successful realization of these programs in the foreseen time frame, the Strategy is expected to yield on average 16% savings of the energy consumption.

The energy efficiency is a necessary element of any attempt to follow the more and more strict criteria for the environment. The increase of the energy efficiency will reduce the energy expenses per unit of product, and thus the Macedonian products will become more competitive in the EU and other markets.

9. The relationship of the programme to internationally agreed goals and targets:

The efforts of the Republic of Macedonia to increase the role of the private sector and to comply to the international, bilateral and regional agreements for energy and environment such as the European Chapter for Energy from 1991 and the subsequent Agreement for Energy Chapter from 1994 and the Protocol for Energy Efficiency and related aspects on the environment of the energy Chapter from 1994, represent a change of the political milieu that can be used to promote the energy efficiency in the country.