

## CROATIA - COUNTRY REPORT 2006

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## 1. INSTITUTIONAL BUILDING

This chapter aims to review the institutional framework envisaged in Republic of Croatia and the distribution of tasks between the institutions. Only those institutions whose activities fall to the scope of the EnC Treaty are singled out and briefly described.

### 1.1 Ministries

- **Energy**

Topics related to primary and secondary legislation in electricity are under the auspices of the Ministry of Economy, Labour and Entrepreneurship (web: [www.mingorp.hr](http://www.mingorp.hr)), more precisely of its Energy Department. The Ministry is also responsible for setting the tariffs (the Government makes the final decision based on the proposal from the Ministry), whereas the Croatian Energy Regulatory Agency (web: [www.hera.hr](http://www.hera.hr)) for setting the tariff methodologies. The Regulatory Agency carries out regulatory and other activities defined by the Law on Regulation of Energy Activities. The Regulatory Agency signed an agreement with the Croatian Competition Agency (web: [www.crocompet.hr](http://www.crocompet.hr)) related to cooperation in the energy sector. The Croatian Energy Market Operator (web: [www.hrote.hr](http://www.hrote.hr)) carries out the activities of organizing the electricity market as a public service. It promotes the development of the electricity market through its operations which are overseen by the Regulatory Agency. Moreover, it is responsible for making and passing the Market Rules which are binding upon all electricity market participants. The Croatian Electricity Utility (web: [www.hep.hr](http://www.hep.hr)), as a vertically integrated undertaking, has leased its assets and properties to the HEP-TSO (established in April 2005) and HEP-DSO (established in December 2005). Establishment of the transmission and distribution system operators is defined by the new Electricity Market Act (December 2004). Existing legislation (laws and regulations in the field of electricity) are uploaded at given web pages and available for public use.

The relevant institutions in the Croatian gas sector are:

Name	Most important responsibilities in the gas market
Ministry of Economy web: <a href="http://www.mingorp.hr">www.mingorp.hr</a>	Monitoring Security of Supply, approval of tariffs
Regulator (since 2001) web: <a href="http://www.hera.hr">www.hera.hr</a>	Preparation of tariffs based on determined costs (based on IAS), submission to the Ministry of Economy for approval
TSO (100% state owned; no supply activities) web: <a href="http://www.plinacro.hr">www.plinacro.hr</a>	Operation, maintenance, development of the transmission system which is owned by the TSO; long term planning (5 year on a rolling basis) for the extension of the transmission system, co-operation with the Ministry of Economy
DSO (38 DSOs in Croatia, owned by local communities or private ownership)	Operation, maintenance and development of the distribution system and supply of non-eligible customers on distribution level
Storage operator (currently none)	Balance seasonal/daily demand fluctuations; also for production

- **Environment**

Environment related topics belong to the Ministry of Environmental Protection, Physical Planning and Construction (web: [www.mzopu.hr](http://www.mzopu.hr)) and Croatian Environmental Agency (web: [www.azo.hr](http://www.azo.hr)). The Fund for Environment Protection and Energy Efficiency (web: [www.fzoeu.hr](http://www.fzoeu.hr)) deals with both (environment and energy efficiency), while the Ministry of Economy, Labour and Entrepreneurship (web: [www.mingorp.hr](http://www.mingorp.hr)) comprises energy efficiency activities in its Energy Department. Existing legislation (laws and regulations in the field of environment and energy efficiency) are uploaded at given web pages and available for public use. There is no any particular Energy Efficiency Agency as such (such opportunity remains opened in the law), but instead the environmental and energy efficiency issues are addressed by the Energy Institute Hrvoje Pozar (web: [www.eihp.hr](http://www.eihp.hr)) and HEP-ESCO energy service company (web: [www.hep.hr/esco](http://www.hep.hr/esco)). Croatia has proposed through the PHLG/MC to establish the Regional Energy Efficiency Centre within the Energy Institute Hrvoje Pozar in Zagreb.

- **Renewables and Energy Efficiency**

Topics related to renewable sources belong into the domain of the Ministry of Economy, Labour and Entrepreneurship (web: [www.mingorp.hr](http://www.mingorp.hr)), more precisely to its Energy Department. Croatian Energy Regulatory Agency (web: [www.hera.hr](http://www.hera.hr)) is mainly responsible for licensing issues, approval of eligible/privileged producer status and tariff system for electricity produced from renewables (giving opinion). Croatian Energy Market Operator (web: [www.hrote.hr](http://www.hrote.hr)) is in charge of keeping the register of eligible producers and collecting the charges from eligible and tariff customers' suppliers for the promotion of electricity production from renewable energy sources and cogeneration. It also settles and allocates the collected funds to eligible producers based on the contracts and settlement data provided by the transmission system operator (HEP-TSO, overall system operational security and connection to transmission network) and distribution system operator (HEP-DSO, connection to distribution network). The Fund for Environment Protection and Energy Efficiency (web: [www.fzoeu.hr](http://www.fzoeu.hr)) finances a small number of renewable energy projects.

### **1.2 Energy Regulators**

- An independent regulatory authority has been established as the Croatian Energy Regulatory Agency (web: [www.hera.hr](http://www.hera.hr)). Its establishment is covered by the Energy Activities Regulation Act. The appointed regulator approves the tariff methodology, and the Government approves the tariffs (art. 28 of the Energy Law). The tariff methodology is in preparation.

### **1.3 Competition Authority**

- The Regulatory Agency works together with the Croatian Competition Agency on competition issues related to energy on the basis of a formally signed agreement. National legislation includes provisions related to prevention, restriction or distortion of competition according to the Act on Protection of Competition from 2003.

## **2. ELECTRICITY SECTOR**

As Croatia is in the process of EU accession, it is currently in a preparatory phase for negotiations regarding the energy chapter of the Acquis which among other topics comprises the electricity. The screening process is ongoing: the explanatory screening part is going to

be held in May 2006 and the bilateral meeting in June 2006 in Brussels where Croatia will present existing legislation and energy policy of the Republic of Croatia to the Commission. The new package of energy laws has been adopted in December 2004. It particularly comprises the Law on Amendments to the Energy Law, the Electricity Market Law, and the Energy Activities Regulation Act, which for the objective have had a harmonization with the EU Directive 2003/54/EC. Based on this set of primary legislation, corresponding set of secondary legislation or by-laws have been prepared. The most important one, General Conditions for Electricity Supply was adopted in February 2006, while Grid Code and Rules for Connection of New Customers and Increase of Contracted Capacity were adopted in the beginning of April 2006.

Ministry of Economy is preparing all screening lists related to alignment to the Acquis in the field of electricity. These lists will be available for public use (including ECS) after their evaluation. Other documents that are of open nature will be sent by e-mail to the ECS shortly after this field visit. Answers to the questionnaire of the European Commission related to the energy sector are publicly available at the web page of the Government (web: <http://www.vlada.hr/Download/2003/10/09/pog14.pdf>).

The Acquis on electricity from the Treaty perspective contains EU Directive 2003/54/EC and Regulation 1228/2003, which are also comprised in the EU accession process. Successful development of electricity sector according to the Directive 2003/54/EC requires among other issues definition of public service obligation and customer protection, monitoring of security of supply, technical rules, generation, TSO/DSO designation and unbundling, third party access, market opening timetable, regulatory authority, safeguard measures... Regulation 1228/2003 aims to set a framework for solution of issues such as inter TSO compensation mechanism, interconnection capacities, congestion management at the interconnectors and penalties. Ongoing screening procedure will show within next few months whether a transposition of these requirements into the Croatian legislation has been done in a proper way or there would be necessary to take other measures.

### **2.1 Public service obligation and customers protection**

- National legislation imposes public service obligations (art. 29 of the Energy Act). It also contemplates the appointment of a supplier of last resort (art. 41 of the Electricity Market Law). However, Croatian national legislation does not include provisions to protect vulnerable customers.

### **2.2 Monitoring of security of supply**

- Mechanism to monitor security of supply is put in place (art. 16 of the Electricity Market Act).

### **2.3 Technical rules**

- Technical rules related to the operation of the system and the grid are put in place (Grid Code, General Conditions for Electricity Supply). The Market Rules are in final stage of preparation accompanied with Rules on Allocation of Cross Border Capacities and Balancing Energy Rules.

### **2.4 Generation**

- The procedure to follow for the construction of new power plants is defined (arts. 7-10 of the Electricity Market Act). Criteria for granting authorisation are defined (art. 9 of the Electricity Market Act). Provisions allowing the tendering of new capacity are put in place (arts. 10 of the Electricity Market Act).

## **2.5 Unbundling provisions and access to accounts**

- The TSO has been designated and its duties have been defined (arts. 11-14, arts. 15-17 of the Electricity Market Act). It is unbundled in its legal form, organisation and decision making (although with leased assets). The rules regarding the dispatching of generation facilities and the rules regarding the balancing of the system are in preparation, and once drafted the TSO intends to publish them.
- The DSO has been designated and its duties have been defined (arts. 11-14, arts. 18-19 of the Electricity Market Act). It is unbundled in its legal form, organisation and decision making (although with leased assets). The DSO performs duties other than the operation of the distribution grid (supplying and billing end users until July 1, 2007).
- Combined TSO-DSO is not an option.
- The Regulatory Agency has been entitled to access the accounts of electricity undertakings (art. 13 of the Electricity Market Act). The unbundling of accounts of transmission and distribution from competitive activities has been envisaged in the national legislation (art 14 of the Electricity Market Act). The accounts of electricity undertakings have been audited and published (HEP web page).

## **2.6 Third party access**

- The TPA to transmission and distribution grids is put in place (art. 22 of the Electricity Market Act). The TSO and DSO are obliged to justify to the interested party the denial of access to the grid (art. 22 of the Electricity Market Act). Legislative provision for a cost reflective methodology for determining network access tariffs is put in place (art. 26 of the Energy Act).

## **2.7 Market opening**

- The calendar for the opening of the retail market is established as it follows: now for consumers of more than 20 GWh, July 2006 for consumers of more than 9 GWh, July 2007 for industrial consumers, and July 2008 for all consumers (art. 31 of the Electricity Market Act).
- Criteria for granting the construction of direct lines are stated (art. 25 of the Electricity Market Act).
- There are provisions regarding safeguard measures in case of sudden crisis (art. 23 of the Energy Act).

## **2.8 Cross border trade mechanism**

- Regarding the adoption of the **Regulation 1228/2003** the work remains to be done and split within several by-laws in the next period. National legislation does not envisage specific penalties upon breaching the Regulation 1228/2003.
- The TSO does not participate in a voluntary dry-run project for a coordinated explicit flow based auction for cross border capacity allocation. The Regulatory Agency has recently approved carrying out of common auctions with Hungary at the Croatian-Hungarian border, and starting from July 1, 2006 the explicit auctions will take place on a monthly basis. The Hungarian counterparty (Mavir) will be responsible for auctions in both directions during the first 6-month test period. The whole interconnection HUN→HR→SLO→ITA is considered to be congested, and these

capacity auctions at the HUN-HR border may contribute to better understanding of the interconnection loading pattern.

- The TSO applied to the ETSO ITC mechanism, but the ETSO decided not to change the perimeter before adoption of ITC guidelines under Regulation 1228/2003. It means that the TSO still waits for the ETSO ITC 2007. The TSO plans to join the ETSO ITC (or common ETSO/SETSO ITC) starting from January 1, 2007, either as a separate party or together with other ETSO ITC parties (so called 'mini-cluster'). The TSO plans to apply for the ETSO membership by mid 2006. The TSO is reported to be charging a transit fee of 2.8 €/MWh for transit. The Regulatory Agency has not received any official complaint with respect to this fee.
- The Regulatory Agency currently prepares the following four documents that are expected to clarify cross border issues by the end of 2006: (1) Tariff methodology for transmission and distribution, (2) Tariff methodology for production for captive consumers, (3) Tariff methodology for retail supply for captive consumers, and (4) Tariff methodology for energy balancing.

### **3. GAS SECTOR**

Like many of the countries of the South East Europe, Croatia is neither a major natural gas producer nor consumer. Although Croatia does hold considerable proved gas reserves, these resources are not significant on a world scale.

To fulfil the requirements stated in the Treaty establishing the Energy Community amendments to the existing Law on Gas Market have to be accomplished in compliance with the Directive 2003/55/EC.

This process is ongoing and it is foreseen to finish with the process at the end of 2006.

In order to continue with the efficiently ongoing process the most important provisions of the Directive 2003/55/EC, taking the experience of EU-MS partially into account, were discussed.

#### ***3.1 Public service obligation and customer protection***

- If there will be obligations to store strategic gas volume (in addition to the working volume necessary to cope with seasonal demand fluctuations) has not been decided yet. There is little experience with provisions for vulnerable customers in the gas sector. Discussions if it is possible to provide the same regulations for electricity and gas are ongoing. Activities with public service obligations are: transport and distribution of natural gas, gas supply to the tariff customers (non-eligible customers).

#### ***3.2 Monitoring of security of supply***

- Currently the Ministry of Economy is in power of security of supply (SoS) issues. Which institution is going to monitor SoS (establishment of monitoring mechanism; regulations for data provision and data workflow) and which take safeguard measures, notification of safeguard measures etc. after having amended the Gas Law has not been decided yet.

#### ***3.3 Technical rules***

- Currently technical rules are not harmonised because of the historical development of distribution grids (see Unbundling of TSO/DSO). In the process of fulfilment of the

requirements of the Directive 2003/55/EC, the technical safety criteria, technical rules for the operational requirements etc. will be elaborated.

### **3.4 Unbundling provisions and access to accounts**

- Currently the TSO is unbundled. DSO(s) will be unbundled in compliance with the Directive (legal, organisational and decision making form) as is foreseen for the year 2008. At the moment one DSO will have to be unbundled, but there are ongoing discussions on how to improve the cost structure and efficiency of small and medium sized DSOs (the high number of DSOs is a result of the domestic production, since gas which was produced in combination with oil production was supplied to local communities in order to avoid flaring of the gas and so small DSOs developed). This could happen by merging some of them.
- The regulatory authority has an access to the regarding accounts.

### **3.5 Third party access**

- There will be a regulated access to the transmission and distribution system, and LNG facilities in compliance with the Directive 2003/55/EC in the future. The procedure of how to handle the supplier switching process (e.g. owner of the capacity of existing grid connections)/Use it or lose it provisions has to be defined. Rules on refusal of access will be elaborated and also the validity of old contracts, if any, will be taken into account. Currently the TSO allocates available capacity by the First Come First Serve principle. If the principle „capacity goes with the customer“ or other principles, which support an easy supplier switching process will be installed, is being discussed. The supplier switching process has not been defined yet.
- Access to storage facilities and line-pack will be in compliance with Directive 2003/55/EC. If regulated or negotiated access will be applied has to be defined. Of course these procedures will be operated in accordance with objective, transparent and non-discriminatory criteria.

### **3.6 New infrastructure and exemptions**

- Identification of necessities and legal justification; granting of exemptions has to be defined. The Guidelines for New Gas Infrastructure Investment Regulation will be taken into account.

### **3.7 Balancing regime**

- It is foreseen that at the beginning of the liberalisation process the physical balancing will be handled by the TSO on a cost reflective basis.

### **3.8 Grid tariffs**

- Tariffs for the transmission system are cost reflective. The postage stamp method is being applied.
- There is not separate tariff for the distribution grid usage so far; all in price (usage of grid plus commodity gas) for non-eligible customer. For the calculation of tariffs for the usage of the distribution grid a preliminary study, prepared by external consultants, might be necessary.

### **3.9 Market opening**

- Eligibility threshold is 100 MCM/year.
- Technical requirements to open the market are at least load profiles in order to enable a switch of suppliers in an easy way. In addition inter-connector capacity has to be determined in order to assess the impact on possible future cross border trade.
- Gas release programs in order to improve liquidity and subsequently competition on the gas market are not in place.

### **3.10 Cross border trade mechanism**

- So far there are no provisions for interconnection capacities; congestion management; cross border tariffs etc. in place. These regulations will be elaborated in course of the fulfilment of the Directive 2003/55/EC.

### **3.11 Next steps/probable sticking points**

As stated above, to fulfil the requirements stated in the Treaty establishing the Energy Community amendments to the existing Law on Gas Market have to be accomplished in compliance with the Directive 2003/55/EC. This process is ongoing and it is foreseen to finish with the process at the end of 2006. In order to provide solutions at reasonable costs, lessons learned from the EU-market, either positive or negative experience gathered in the Member States of the European Union, should be considered by elaborating the primary and secondary law in accordance with the Directive.

The probable sticking points are:

- ❖ **Balancing regime:**
  - Balancing energy should be provided by charging efficiently incurred costs on a non-discriminatory basis.
- ❖ **Third party Access:**
  - The supplier switching process should be as easy as possible for the customer. The implementation of a one stop shop principle should be analysed.
- ❖ **Capacity management:**
  - Existing infrastructure capacity should be used at the best level. In order to avoid hoarding of capacity, efficient allocation rules for available existing capacity should be put in place (primary market), Use it or Lose it (UIOLI) provisions should be elaborated by taking the regional specificities into account. A secondary market should be installed, if possible.
  - The owner of capacity (capacity goes with the customer, etc.) when switching the supplier should be defined.
  - The utilisation of the transmission grid and subsequently the available capacity should be calculated.
  - Cross border unbundling should be taken into account to avoid capacity hoarding.
- ❖ **Technical Rules:**
  - Operational balancing agreements should be defined.

- Interconnection agreements should be defined.
- EASEE gas rules should be taken into account.
- ❖ Grid tariffs:
  - Tariffs have to be cost reflective; based on efficiently occurred costs.
  - Cross subsidies has to be avoided.
  - Incentives for investment should be given.
- ❖ Unbundling provisions:
  - Legal, organisational and decision making form unbundling should be implemented.
  - Cross border unbundling should be taken into account.
- ❖ New infrastructure and exemptions:
  - The Guidelines for New Gas Infrastructure Investment Regulation should be taken into account.

Although good progress has been made it can be seen from the list of crucial issues that the implementation will be highly time consuming. Since the human resources of all relevant institutions, which are involved in the process, are restricted, it seems to be necessary to outsource tasks, if possible.

In order to provide solutions on regional level, studies which are prepared for a particular country could be probably used also for other countries by taking the specificities of each country into account. By doing so harmonised provisions, as long as they make sense from an economical point of view, could be implemented.

#### **4. COMPETITION**

Regarding the Acquis on competition, national legislation includes provisions related to prevention, restriction or distortion of competition. Agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between states are prohibited (art. 9 of the Act on Protection of Competition from 2003). Moreover, national legislation includes provisions prohibiting any abuse by one or more undertakings of a dominant position within the market (art. 15 of the Act on Protection of Competition from 2003). Furthermore, national legislation prohibit for any public aid granted by the State which distorts competition by favouring certain undertakings (Act on State Aid 140/2005). There are no direct nor cross subsidies for electricity or gas. There is no state aid in electricity or gas. The Regulatory Agency works together with the Croatian Competition Agency on competition issues related to energy on the basis of a formally signed agreement. So far, only one complaint/opinion has been filed in from the EFET to the Regulatory Agency and the Ministry of Economy regarding a need to pay for a licence fee.

#### **5. ENVIRONMENT**

As Croatia is in the process of EU accession, it currently carries out negotiations regarding environment. The screening process is ongoing: the multilateral part is finished and the bilateral meeting with EU is going to be held during the 2<sup>nd</sup> week of May 2006 in Brussels where Croatian representatives will present legislation and environmental policy of the Republic of Croatia to the Commission. Ministry of Environment has prepared all screening

lists related to alignment to the Acquis. These lists will be available for public use (including ECS) after their evaluation.

Answers to the questionnaire of the European Commission related to the environment are publicly available at the web page of the Government (web: <http://www.vlada.hr/Download/2003/10/09/pog22.pdf>). The Acquis on environment is larger for the EU accession than for the Energy Community Treaty, and therefore from the Treaty perspective there are no problems foreseen if the EU accession one would be fulfilled.

The Council Decision on the Principles, Priorities and Conditions contained in the Accession Partnership with Croatia lists the following short-term and medium term priorities:

#### Short-term

- Continue to develop horizontal legislation, including on environmental impact assessment and public participation;
- Clearly define responsibilities and strengthen the administrative and operational capacity at national and regional level to ensure planning, including preparation of financial strategies;
- Continue to strengthen the capacity of national and regional inspection services and enable them to effectively enforce environmental legislation;
- Urgently adopt and start implementing a national waste management plan.

#### Medium-term

- Ensure the integration of environmental protection requirements into the definition and implementation of other sectoral policies. Develop an environmental investment strategy based on estimations of the costs of alignment. Continue to implement horizontal legislation;
- Continue work on the transposition of the EU acquis, with particular emphasis on waste management, water quality, air quality, nature protection and integrated pollution prevention and control. Increase investments in environmental infrastructure, with particular emphasis on waste water collection and treatment, drinking water supply and waste management;
- Ratify the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

National Environmental Strategy and National Environmental Action Plan are prepared in 2002. Strategy and Action Plan to UNFCCC and Kyoto Protocol in Croatia will be prepared by the end of this year.

The CARDS 2002 project "*Strategy for EU Environmental Law Approximation*" commenced in June 2004 and will be implemented over a two-year period by Project Management Ltd., Ireland. The overall objective of this project is to support the Croatian Government's objective of EU accession, by providing a basis for approximation of Croatian environmental legislation with the EU environmental *acquis*.

The CARDS 2004 project "*Capacity Strengthening Measures for the Croatian Environment Agency*" commenced in October 2004 and will be implemented over a two-year period by ENTISA Internacional, S.A. The overall objective of the project is to strengthen the capacity of the Environment Agency to provide timely, accurate and reliable environmental data and support the establishment of the Environmental Information System.

The Draft of National Communication on climate change (2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>) covering the period 1996-2003 has been prepared. After reviewing by the Committee for Preparation of the National Communication on Climate Change, the State Council for the Environmental Protection and the Parliament Committee for the Physical Planning and Environmental Protection, the Croatian National Communication on Climate Change will be submitted to the UNFCCC Secretariat in June 2006.

The work on documents needed for implementation of the UNFCCC and the Kyoto Protocol has commenced in 2005. By the end of 2007, it is planned to draft the following documents: 1) "Analysis and estimation of the training needs for implementation of the UNFCCC and the Kyoto Protocol" (study, 2005), 2) "National Strategy for Implementation of the UNFCCC and the Kyoto Protocol (including the Action Plan, implementation acts related to GHG emission allocation and flexible mechanisms based on the Kyoto Protocol)" (2007), 3) "Guidelines for operational programmes in the sectors of energy, transport, industry, agriculture, forestry and waste management" (2006), 4) "Foundations for establishment of the Register of the GHG Emissions" (2006.), 5) "Guidelines for implementation of the flexible mechanisms based on the Kyoto Protocol" (2007). A team of international and domestic experts will be composed to work on these documents with financial and technical aid provided by the LIFE – Third Countries programme and by the European Commission.

Intensive work on the law on monitoring of emissions is ongoing. The Ministry of Environmental protection has recently started a project related to a capacity building in implementation of UNFCCC and Kyoto Protocol. The first national UNFCCC report was done in 2001 and submitted in February 2002, showing GHG emission between 1990 and 1995. Currently, the second UNFCCC national report has been put in the procedure for the period 1996-2003 and will be submitted during the first half of 2006. The timeframe for complying with the Kyoto Protocol envisages its ratification in the first quarter of 2007.

The GHG emission level from the 1990 (which is taken as a base year and a subject to decrease in 2008-2012) has a large impact to electricity generation planning in Croatia. Without further negotiation of the emission level for its reference year it would be almost impossible to build any new thermal power plant in Croatia. Only the emissions that originate from the territory of the country are accountable, while the 1990 starting level also included emissions from generation plants located in other neighbouring countries. Currently, the negotiations take place in order to allow Croatia a certain level of flexibility with respect to the referent level. Croatia has asked for an increase of the base year emissions for 4.46 mil t eq CO<sub>2</sub>, which would increase the emission for 14% in comparison to standard IPCC approach. The decision is expected in November 2006.

Implementation of two huge projects has begun, co-financed by GEF, through the World Bank and UNDP: 1) Croatian Energy Efficiency Project, and 2) Removing Barriers for Implementation of Energy Efficiency in the Service and Household Sector. The total budget for these projects is 43.5 million USD. The Croatian Renewable Energy project is in its final stage of preparation and with a budget of 13.4 million USD it shall stimulate the utilisation of biomass, wind energy and small hydro-power plants.

Environmental Protection and Energy Efficiency Fund was established in 2003 and became operational in 2004 with revenues from air emission charges, charges from environment users, motor vehicle charges and waste charges. In 2006 application of the charge for greenhouse gas emissions to energy plants is starting. The Fund's budget for subsidising energy efficiency and renewable energy sources projects amounted to 10.3 million EUR in 2004, and in the period 2005-2006 a total budget of 77 million EUR is planned. The fund has allocated grants for co-financing remediation of 151 municipal waste landfills and some audits, demonstration projects and renewables. The taxes on CO<sub>2</sub> do not exist and therefore

utilities do not participate in the mechanism of revenue collection. The Fund collects the Environmental Fee for motor vehicles, which is paid once a year, at the time of vehicle registration.

Overall institutional capacity strengthening in the Ministries, new staffing and training programs are needed. One possible pipeline of how to achieve this is related to various CARDS and LIFE projects. There seems to appear a barrier since as according to information from Brussels Turkey and Croatia are not enabled to participate in the LIFE + (ongoing till 2013) with proposed projects in the fields of emissions trading schemes and climate change issues.

Usage of the EU pre-accession instruments for Croatia should be intensified as they may provide active support for the reform of the Croatian energy market. Reinforcement of the institutional and administrative capacity is currently facilitated through instruments such as TAIEX, Twinning and SIGMA, aimed at implementation of the Acquis and preparation for participation in EU policy. From 2007 to 2013, IPA (an accession driven instrument) will be the main tool of EU assistance with concentration on institution building and alignment to the Acquis. It intends to facilitate the entry into the EU of candidate countries (Turkey, Croatia) and potential candidate countries.

Compliance with the Kyoto Protocol may be problematic. Since it asks for an integrated approach to tackling climate change, electricity generation planning in Croatia may be brought in a difficult situation. The GHG emission level from the 1990 (which is taken as a base year and a subject to decrease/negotiation) has a particularly large impact to electricity generation planning in Croatia. Without further negotiation of the level it would be almost impossible to build any new thermal power plant in Croatia. Gas and coal fired TPPs are the only realistic possibilities, since hydroelectric resources are used almost up to the ceiling. One of a few rare remaining locations for hydro generation is a subject to trans-border issue between Hungary and Croatia (HPP Novo Virje, river Drava). Further on, it means that special attention should be also paid to energy efficiency issues and increased use of renewables.

Action plan on energy efficiency is needed with commonly agreed objectives. Road map for renewable energy is needed in order to set up a predictable framework for the long term development of renewable sources. Strategic energy technology plan should include development of both energy efficiency and renewables technologies. Action plan is needed at state level to comply with the Directive 2003/30/EC (promotions of use of biofuels and other renewable fuels for transport). Currently, initiatives come only from the side of private investors.

## **6. RENEWABLE ENERGY**

As Croatia is in the process of EU accession, it is currently in a preparatory phase for negotiations regarding the energy chapter which among other topics comprises renewable sources. The screening process is ongoing: the explanatory screening part is going to be held in May 2006 and the bilateral meeting in June 2006 in Brussels where Croatia will present legislation and energy policy of the Republic of Croatia to the Commission. Ministry of Economy is preparing all screening lists related to alignment to the Acquis in the field of renewable sources. These lists will be available for public use (including ECS) after their evaluation.

Answers to the questionnaire of the European Commission related to the energy are publicly available at the web page of the Government (web: <http://www.vlada.hr/Download/2003/10/09/pog14.pdf> ).

The Acquis on renewables from the Treaty perspective contains EU Directive 2001/77/EC, which is also comprised in the EU accession process.

A plan for the implementation of the Directive 2001/77/EC has been drafted by the Ministry of Economy.

However, there is no national plan setting indicative targets for production of electricity from renewable sources and for reduction of GHG emissions.

The feed-in tariff support scheme is put in place for the production of electricity from renewables (art. 26, par. 5 of the Energy Act).

There is no institution appointed to certify the energy source from which the electricity was produced.

Specific authorisation procedures applicable to power plants which use renewable sources are put in place (Energy Act and Electricity Act).

Grid system issues are covered by the Grid Code which was recently enforced (April 2006). It contains special provisions in the TSO's operational standards and the DSO's grid codes regarding the treatment of electricity from renewable sources.

Successful development of renewables from electricity generation viewpoint requires setting of national indicative targets, introduction of support schemes, criteria for guarantee of origin, rules for administrative procedures and solutions to grid issues. Ministry of Economy and Regulatory Agency have drafted five by-laws which treat majority of these issues in detail and intend to put them in procedure in July 2006.

It is expected that majority of requests and applications for renewable sources will come from wind energy generation side as the dominant one among all of the renewable sources. The TSO currently conducts extensive system studies related to security of system operation with a high penetration level of intermittent electricity sources such as wind power plants. To be able to maintain system security under such conditions the TSO will publish specific technical requirements for connection and operation of intermittent electricity sources.

A plan for the implementation of the Directive 2003/30/EC has been drafted by the Ministry of Economy.

Overall institutional capacity strengthening in the Ministries, new staffing, training programs and larger working premises are urgently needed. One possible way of how to achieve this is related to EU CARDS projects pipeline, especially since USAID as the major initiator/financier in the preceding period has concluded its support to Croatia as it has reached a sufficient development level. Nevertheless, further initiative/finance/advisory help is needed, especially to the Croatian Energy Regulatory Agency which is currently engaged in drafting several important methodologies and other rules and regulations.

Special attention should be paid to increased use of electricity produced from renewables, since a compliance with the Kyoto Protocol may be problematic due to low referent emissions level which can prevent a realization of development plans related to construction of thermal power plants.

Problems that are specific to electricity generation from renewable sources are the following:

- Governmental Decree (which came from the Ministry of Environment Protection, and not from the Ministry of Economy) on not allowing to build wind power plants neither on shore at distance less than 1000 m to the coastline nor on islands;
- Use of land for renewable energy projects;

- Acceptance of local communities of renewable energy projects;
- Technical problems (connection to the network and system operation);
- Administrative problems (Private investors come to the Regulatory Agency to apply for licence, but the rules for its issuing were prepared 4-5 years ago. The Agency can not issue a licence based on these rules due to their insufficiencies, and transfers the problem to the Ministry of Economy which should draft a new set of rules. Once the licences are issued, the TSO should check conditions under which operation of renewable electricity sources will be possible. Currently, it is foreseeable that the requests and applications will be administratively filed in amount up to 600-700 MW of generation capacity installed in wind power plants, while it is assessed that the system can accept only half of that. Moreover, balancing energy for the intermittent electricity sources is a problem, and the methodology will be drafted by the end of 2006).

## 7. ENERGY INFRASTRUCTURE PROJECTS

The Croatian-Hungarian cross-border interconnection has been proposed for construction. The OHL 2x400 kV is planned to connect buses Ernestinovo (Croatia) and Pecs (Hungary) along 80 km route. The project has been preliminary agreed between two governments and corresponding companies (HEP/HEP-OPS and MVM/MAVIR). Pre-feasibility study has been made. Border crossing points are defined and the right of way has been acquired. Approval status is pending by regulatory bodies. Preparation of the contract for construction is awaited in 2006, and its commissioning is expected after 2008. Total costs are estimated to € 35 mil.

A group of companies joined in the ADRIA LNG STUDY COMPANY have expressed its interest to build a LNG receiving terminal at Island Krk in Croatia. The proposal is in its foreseeable phase.

System of connecting natural gas pipelines is proposed having for the major objective an evacuation of natural gas from receiving LNG terminal at Krk Island to the consumption areas in the countries of the region such as Hungary, Romania, Italy, Slovenia and Austria. The proposal is at a foreseeable stage.

Underground gas storage project has been proposed at the location of Benicanci in Croatia (eastern Slavonia province). The location is chosen due to existence of the old oil field Benicanci, where it would be possible to further develop a solution for building of new UGS with capacity 2 Bcm/year. The proposal is at its foreseeable stage and has dominantly national significance.

Underground gas storage project has been proposed at the location of Okoli b2 in Croatia (western Slavonia province). Already existing UGS Okoli has a capacity of 0.55 Bcm/year and a new one is expected to increase this capacity up to 1 Bcm/year. The proposal is at its planning stage and has dominantly national significance.

Peak-shaving facility has been proposed by INA for further development in the surrounding area of Zagreb, Croatia. The proposal is motivated by unfavourable structure of natural gas consumption and a fact that the existing seasonal underground gas storage has a limited send out capacities (daily underground storage, LNG peak-shaving, LPG peak-shaving with air mixture).

## 8. CONCLUSIONS

As Croatia has recently become the **EU candidate country** and entered the process of EU accession, it has started a screening process related to alignment to the *acquis*, including chapters common to the four main areas of the Energy Community Treaty (energy, environment, renewables, competition). Ongoing thorough screening process will show within next few months whether a transposition of the EU requirements into the Croatian legislation has been done and implemented in a proper way.

As for conclusion of the country visit, institutional and primary legislative framework in the **electricity** sector is well developed. Secondary legislation still remains to be implemented, especially in the field of **renewable** sources and energy efficiency. The by-laws are needed with respect to setting indicative targets for production of electricity from renewable sources and for reduction of GHG emissions, appointment of institution to certify the energy source from which the electricity was produced, putting in place a tariff support scheme and specific authorisation procedures applicable to renewable sources of electricity. The proper functioning of the regulatory agency, transmission system operator, distribution system operator, and market operator has to be ensured. The regulatory agency works together with the **competition** agency on competition issues related to energy on the basis of a formally signed agreement. The tariff methodology is under jurisdiction of the regulatory agency, whereas the Government makes the final decision on tariffs based on the proposal from the Ministry in charge with energy. The Croatian Electricity Utility HEP, as a vertically integrated undertaking, has leased its assets and properties to the HEP-TSO (established in April 2005) and HEP-DSO (established in December 2005). Both operators need to implement a compliance program to ensure their impartiality in exercising daily operation routine with respect to all market players.

In the **gas** sector, the Ministry in charge of energy is responsible for the approval of the tariffs submitted by the regulatory agency which is in charge of determination of the costs and of the preparation of the tariffs. The transmission system operator Plinacro, owned 100% by the state, owns, operates, maintains and develops the transmission system. At the moment there are 38 DSOs in Croatia - owned either by local communities or privately. A storage system operator has not been installed yet. Amendments to the existing Law on Gas Market have to be accomplished in compliance with the Directive 2003/55/EC in the ongoing process which is foreseen to finish by the end of 2006.

In the following short-term period it is necessary to continue development of horizontal legislation related to **environment**, including environmental impact assessment and public participation. In the medium-term, it is necessary to ratify the Kyoto Protocol to the UNFCCC (related to the EU accession). Overall institutional capacity strengthening, new staffing and training programs are needed. Usage of the EU pre-accession instruments for Croatia should be intensified as they may provide active support for the reform of the Croatian energy market.