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(Consortium for Study preparation)

Summary and review on study preparation:

## **Harmonization of the Croatian energy sector and energy legislation with the *Third package* of the European Union energy regulations**

### **1. General statements**

Harmonization of the Croatian energy legislation and energy sector with the *Third package* of the European Union energy regulations is an obligation of the Republic of Croatia acquired within the process of accession negotiations with the European Union. During EU-Croatia negotiations the European Union has defined four criteria regarding the Chapter 15 “Energy” and its closure. Among the above mentioned criteria there was “strengthening of electricity and natural gas market” as well, which functioning has been evaluated as not transparent and not market-oriented. Chapter 15 was temporarily closed by the end of November 2009, determining the obligation of aligning the Croatian energy sector and energy legislation with requirements of the *Third package* of the European Union energy regulations.

In that sense, the Ministry of the Economy, Labour and Entrepreneurship (MoELE) has ordered the preparation of study “Harmonization of the Croatian energy sector and energy legislation with the *Third package* of the European Union energy regulations” by the Consortium, aiming at defining the strategic framework in order to perform the acquired harmonization obligations. The basic scope of the Study preparation is to associate requirements from the *Third package* of energy regulations with actual state of the Croatian energy legislation and energy sector, as well as to suggest the most appropriate way of harmonization. The Study should serve, upon its adoption, as basis for making decisions regarding such important issue from the Republic of Croatia and European Union perspective.

The content of elaboration has been basically determined by the MoELE’s Terms of Reference. According to the Terms of Reference, **the Study is focused on implementing the obligatory requirements of the *Third package* of energy regulations and necessary modifications in order to improve the functioning of the Croatian energy sector.** Due to great importance and sensitivity of elaborated issue, the Consortium has presented to MoELE partial results of elaboration – “Guidelines for Study preparation” and “Working Study material – chapters 3, 5 and 6”. Deadline for Study preparation was only 120 days within the period from June – September 2010. Draft version of the Study was submitted to MoELE within the agreed period, while the version of the Study for public presentation was submitted within the additional period of 30 days.

### **2. Method and structure of elaboration**

Associated with the scope of elaboration the Author’s team respected a fact that the harmonization could be performed along with four to five crucial modifications within the energy sector, providing the major part of required effects, and few dozen of less important modifications on which the remaining part of required effects depends. Concurrent elaboration of all issues, regardless the size of effect, is not desirable as it complicates the elaboration and

aggravates strategic decision making. Accordingly, the Study elaborates only those modifications that are required by the *Third package* of energy regulations, as well as modifications that can significantly contribute in solving the actual issues of the Croatian energy sector. These issues are at the same time the subject of energy legislation harmonization.

The task of the Study is quite complex considering the large number of features of harmonization process, their mutual interaction and potentially large economic and social consequences. Application of usual economic-analytical evaluation procedures is practically impracticable due to difficulties in creating the credible algorithm of process and quantification of calculation data. By following the recommendations from expert literature and own experience of the Consortium in solving the complex tasks, it was determined that the elaboration should be performed by the multi-criteria decision analysis method, along with *Weighted sum model* procedure. The above mentioned procedure is quite suitable for evaluation of various possibilities of procedure in relation to more evaluation criteria. It enables clear structuring of decision-making process and proposing the solution.

Harmonization of the Croatian energy sector with the *Third package* of energy regulations could be performed by various levels of modification. It depends on actual state of energy sector and state that should be achieved in the future period, no matter whether required so by the European Union or needed by the Republic of Croatia. In the Study, without prejudice to modifications, all required and/or possible solutions improving the Croatian energy sector are proposed. According to procedure of evaluating the possible solutions, the method of harmonization of the Croatian energy sector with the *Third package* of energy regulations has been selected, according to which, under the Author's team opinion, the largest possible economic and social benefit could be achieved for the Republic of Croatia.

Structure of elaboration is adjusted to the purpose of Study preparation. The elaboration includes:

- essential features of the *Third package* of the European Union energy regulations,
- state of the Croatian energy legislation and energy sector prior to process of harmonization,
- possible alternatives of harmonizing the Croatian energy sector with the *Third package* of the European Union energy regulations,
- criteria, methodology and evaluation of harmonization alternatives,
- proposition of harmonizing the Croatian energy sector with the *Third package* of the European Union energy regulations,
- proposition of harmonizing the Croatian energy legislation with the *Third package* of the European Union energy regulations,
- performance and implementation plan of harmonization.

Elaboration is submitted in two hundred pages, derived from twice as much text created during elaboration.

### **3. Essential features of the *Third package* of the European Union energy regulations**

European Union has evaluated the state within the European energy sector and determined appropriate solutions in the *Third package* of energy regulations. According to state evaluation, the *Third package* of energy regulations consists of new solutions for establishing the completely liberalized and efficient energy sector. Requirements, regarding the unbundling of network activities from production and supply and establishment of uniform and linked system of energy sector regulation, are of great importance. High level of coordination and supervision has been assumed through the European Union institutions, even coercion, in order to implement new energy regulations. It has already been announced that these measures could even be intensified if required.

The *Third package* of energy regulations is related to electricity and natural gas markets. It was adopted in the European Parliament and Council of European Union on 13 July 2009 and entered into force on 3 September 2009. Application of requirements from the *Third package* of energy regulations is obligatory for all Member States of the European Union, including the Republic of Croatia as well, which is obliged to perform all requirements of the Council of European Union as it is already full member. Deadline for harmonization of energy legislation is 3 March 2011, while for establishment of transmission system operator is 3 March 2012.

The *Third package* of energy regulations is quite extensive set of the European Union documents, consisting of two Directives and three Regulations:

- Directive 2009/72/EC on common rules for the internal market in electricity,
- Directive 2009/73/EC on common rules for the internal market in natural gas,
- Regulation 713/2009 on establishing an Agency for the Cooperation of Energy Regulators,
- Regulation 714/2009 on conditions for access to the network for cross-border exchanges in electricity,
- Regulation 715/2009 on conditions for access to the natural gas transmission networks.

The *Third package* of energy regulations contains provisions of binding character (part in alternatives) and provisions of guiding character. Directives are transposed into national energy legislation, while provisions are applied directly. The *Third package* of energy regulations is a big step of European Union towards unique internal electricity and gas market. Its main goals are:

- to establish completely open internal electricity and natural gas market, which enables all customers to have a free choice of suppliers,
- impartial access to network and equally effective level of regulatory supervision in all Member States of the European Union,
- safe energy supply, facilitating cross-border access and establishment of internal electricity and natural gas market that would create appropriate incentives for investments into new energy facilities,
- efficient unbundling of production and supply from network activities,
- to secure energy supply for vulnerable consumers in order to prevent the *energy poverty* as rising issue in the European Union,
- to facilitate introduction of renewable energy sources into energy systems, as well as development of *smart* networks and measurements in order to increase the energy efficiency.

The *Third package* of energy regulations transforms a full range of recommendations from previous regulations into obligatory procedures. Such prescribed procedures are primarily intended to achieve an increase of network operators' independence and obligation of national regulators cooperation through ACER (new entity of the European Union with large authorities in the field of regulation). It should be mentioned that business terms are being established with significantly less national impact than it was up to now.

In the segment of transmission, production and supply, Member States are obliged to unbundle vertically integrated undertakings according to models proposed in Directives. Without efficient unbundling of transmission from production and supply, there is a great risk of discrimination regarding the operation and investment into the network, as well as the risk of discrimination regarding the network access. Unbundling of transmission from production and supply could be achieved by selecting the model of ownership unbundling of transmission system operator (TSO) or by selecting the model of functional unbundling of independent system operator (ISO). There was also a compromising model assumed, i.e. forming an independent transmission operator (ITO) within vertically integrated undertaking. All three models of unbundling should have equal external impacts on market participants. However, they quite differ in implementation and operation.

#### 4. State of the Croatian energy legislation and energy sector prior to process of harmonization

Proportions of required harmonization significantly depend on necessary improvements related with actual state of energy legislation and energy sector. In order to establish the proposal of required modifications into energy legislation and energy sector to the best possible, the most important features of actual state have been discussed: functioning of energy market, harmonization and applicability of energy legislation, development and investments, price policy and role and state of existing energy entities.

The analysis of actual state has shown that the Croatian energy legislation is harmonized with the *First* and *Second package* of the European Union energy regulations. On the other hand, actual state of functioning and development of energy sector is significantly worse, with essential functional differences between electric power and gas sector. Gas sector was created while harmonizing with the *Second package* of the European Union energy regulations, and it satisfies even crucial requirements of the *Third package* of energy regulations – especially regarding the transmission system operator status. In electric power sector, although legal unbundling of transmission system operator has already been performed, it is still proprietarily within the system of vertically integrated undertaking (HEP Group), with no actual independence.

Market functioning in both sectors is relatively bad as there are *de facto* only two main subjects prevailing - HEP d.d. and INA d.d. and companies derived from these systems. As there are no new energy entities involved in the market, there is no serious market competition. Mostly, it is a result of price policy, which instead of market principles it is based on decisions of the Republic of Croatia Government, mainly conditioned by the citizens' standard protection.

Performed analysis of actual state indicates on following concrete issues:

- energy legislation is hard to apply,
- regulator's authorities are relatively limited,
- energy prices are formed in administrative way,
- INA d.d. has dominant position in gas production and supply, while HEP d.d. in all activities of energy sector,
- market liquidity is weak – business terms are not incentive for introduction of new energy entities to the market,
- construction of energy facilities is not sufficient, due to which a dependence on energy import – particularly electricity – has increased,
- efficiency of existing energy entities is relatively weak.

Process of harmonization should, along with modifications required by the *Third package* of energy regulations, find solutions for the above mentioned issues in functioning of the Croatian energy sector. There has recently been a number of attempts to solve these issues, but with no significant results. **An expected discrepancy of consumption increase and drop in electricity generation is of special concern.** High level of dependence of the Republic of Croatia on energy import - particularly electricity – with perspective of further increase, could result in significant increase of energy supply prices, even in supply crisis. It would have a bad impact on planned economic and social development of the Republic of Croatia.

It is obvious that the present way of functioning of the Croatian energy sector does not encourage any problems solving and that new solutions are required, verified in practice of certain more developed market economy. The Republic of Croatia has clearly expressed its standing regarding the future state of energy sector. By adopting the "Energy Strategy of the Republic of Croatia", it declared its orientation towards open, liberalized and efficient energy sector harmonized with the European Union principles. **Harmonization of the Croatian energy sector with the *Third package* of energy regulations should enable the achievement of goals determined by the Strategy.**

## 5. Possible alternatives of harmonizing the Croatian energy sector with the *Third package* of the European Union energy regulations

Energy sector has a great number of features, which potentially could be modified in the process of harmonization. The Study distinguishes features, modifications of which are conditioned by the *Third package* of energy regulations or they are important for improving the functioning of the energy sector, from other features not having such significance. Part of features that should be modified is analyzed in alternatives, while the other part is formulated directly. Alternative solutions are indicated in case they are assumed by the *Third package* of energy regulations or evaluation of possible solutions is required prior to selection.

As regards the electric power sector, conditioned modifications in relation to transmission system operator and modifications for improving the sector functioning in relation to distribution system operator and in relation to the level of commercialization have been analyzed in alternatives. As regards the gas sector, where transmission system operator has already been proprietarily separated from vertically integrated undertaking (Plinacro d.o.o.), modifications for improving the sector functioning in relation to distribution system operator and in relation to the level of commercialization have been analyzed in alternatives.

Solutions for harmonization, which the Republic of Croatia should perform in relation to energy sector regulation, authorisation procedure for approving the construction of energy facilities and public service obligation of supply, are directly formulated. For the above mentioned issues the solutions were given *in the spirit of the Third package* of energy regulations, while described within the framework of integral proposal of energy sector harmonization.

### 5.1. Harmonization of electric power sector

Models of establishing the transmission system operator differ regarding the proprietary and functional unbundling of transmission from production and supply, when such activity is performed in vertically integrated undertaking. It is the case in the Republic of Croatia where HEP-OPS d.o.o. is an integral part of HEP Group. Models are mutually distinguished related to the property of transmission network and by unbundling from the vertically integrated undertaking. Three models of establishing the transmission system operator have been proposed:

- **Alternative TSO** – establishment of Croatian transmission system operator (conditional name Croatian OPS d.o.o.),
- **Alternative ISO** - establishment of Croatian independent system operator (conditional name Croatian NOS d.o.o.),
- **Alternative ITO** – establishment of independent transmission operator (conditional name NOP d.o.o.).

While applying the Alternative TSO, completely independent company Croatian OPS d.o.o. is formed for managing the electric power system owned by the Republic of Croatia, which is owner of transmission network. According to the Alternative ISO, completely independent company Croatian NOS d.o.o. is formed for managing the electric power system owned by the Republic of Croatia, while the owner of transmission network is *daughter company* HEP d.d. - HEP-Prijenosna mreža d.o.o., functionally separated from other companies in HEP Group. According to the Alternative ITO, daughter company HEP d.d. - NOP d.o.o. is formed for managing the electric power system, which is owner of transmission network and functionally separated from other companies in HEP Group.

In the interest of customers and incentives in construction of renewable energy sources and energy efficiency, it is justified to propose modifications at distribution system operator as well, although it is not required by the *Third package* of energy regulations. Similarly as at transmission system operator, possible models of establishing the distribution system operator differ regarding the ownership and functional unbundling of distribution from production and supply. Models are

mutually distinguished related to the property of distribution network and by unbundling from the vertically integrated undertaking. Three models of establishing the distribution system operator have been proposed:

- **Alternative A DSO** - establishment of Croatian distribution system operator (conditional name Croatian ODS d.o.o.),
- **Alternative B DSO** - establishment of independent distribution operator (conditional name NOD d.o.o.),
- **Alternative C DSO** – existing model with HEP-ODS d.o.o. is retained along with implementation of minimum requirements of the *Third package* of energy regulations.

While applying the Alternative A DSO, completely independent company Croatian ODS d.o.o. is formed for managing the distribution system owned by the Republic of Croatia, owner of distribution network. According to the Alternative B DSO, daughter company HEP d.d. - NOD d.o.o. is formed for managing the distribution system, owner of distribution network and functionally separated from other companies in HEP Group. According to the Alternative C DSO, existing solution with HEP-ODS d.o.o. is completely retained along with implementation of additional measures of functional unbundling in accordance with the *Third package* of energy regulations.

The way of forming the electricity prices is a significant feature of energy sector, for energy entities as well as for customers. Expectations of energy entities and customers regarding the prices are opposed, so this issue should be analyzed in alternatives. Related to liberalization of energy prices and customers protection, the Study introduces a new term of *level of commercialization*. By applying such term, the following models of harmonization are being proposed:

- **Alternative A modification at the level of commercialization,**
- **Alternative B modification at the level of commercialization,**
- **Alternative C modification at the level of commercialization.**

Alternative A modification at the level of commercialization presumes market-oriented forming of electricity prices for all customers' categories (regulated fee for network activities), appointment of HEP-Opkrba d.o.o. as entity with a public service obligation and protection of vulnerable household customers through the system of social protection. Alternative B modification at the level of commercialization presumes market-oriented forming of electricity prices for eligible customers (regulated fee for network activities), regulated prices for household customers and appointment of HEP-Opkrba d.o.o. as entity with a public service obligation. Alternative C modification at the level of commercialization presumes market-oriented forming of electricity prices for eligible customers along with the supervision system (regulated fee for network activities), regulated prices for household customers and appointment of HEP-Opkrba d.o.o. as entity with a public service obligation.

## **5.2. Harmonization of the natural gas sector**

In gas sector the issue regarding the transmission system operator is not analyzed as it has already been solved in 2002 according to the TSO model, by establishing the company Plinacro d.o.o. owned by the Republic of Croatia.

Regarding the number of connected customers and total consumption of natural gas, it can be concluded that a number of distribution system operators is unnecessarily large (39 subjects in 2010), which is negatively reflected on their business performance terms as well. In the interest of improving the customers' supply conditions and extending the gas introduction, it is justified to propose an concentration of distribution system operators, although it is not required by the *Third package* of energy regulations. Since the majority of existing distribution system operators is associated with supply activity, procedure of unbundling the distribution from supply is being

arranged through proposed alternatives as well. Three models of enlarging the distribution system operators have been proposed:

- **Alternative A DSO** – unbundling of distribution and supply and economic and legal concentration measures,
- **Alternative B DSO** - unbundling of distribution and supply and economic concentration measures,
- **Alternative C DSO** – existing model of organization remains.

In Alternative A DSO, an obligation of legal unbundling of all distribution system operators from supply has been introduced, as well as economic and legal measures aiming at long-term concentration of distribution system operators. In Alternative B DSO, an obligation of legal unbundling of all distribution system operators from supply, as well as economic measures aiming at long-term concentration of distribution system operators. In Alternative C DSO, the present model of organization of existing distribution system operators is retained, while an concentration is promoted through construction of new gas networks by assigning the concession permit.

As regards the level of commercialization for the natural gas sector, alike electric power sector, following models of harmonization have been proposed:

- **Alternative A modification at the level of commercialization,**
- **Alternative B modification at the level of commercialization,**
- **Alternative C modification at the level of commercialization.**

Assumed modifications in these alternatives are identical to those for electricity, except that for public service obligation company Prirodni plin d.o.o. is appointed as provider and supply entities as suppliers.

## 6. Criteria, methodology and evaluation of harmonization alternatives

The goal of process of harmonizing the Croatian energy legislation and energy sector is, as it has already been mentioned, to reform the energy sector according to requirements and in the spirit of European regulations, as well as to increase the standard of its functioning as an integral part of economic and social development of the Republic of Croatia. Process of harmonization brings inevitably certain changes in relation to actual organizational structure and business method in the sector. Electric power sector and natural gas sector are large, technologically complex business systems. In such systems, modifications are performed quite hard and slow, so it is necessary to perform evaluation of previously proposed alternatives of harmonization in relation to benefits they bring and difficulties of their implementation.

Possible effects of harmonization alternatives, i.e. their relative value, are determined by the procedure of *Weighted sum model*. The crucial part of this procedure is to define evaluation criteria, determine their relative importance and evaluate the value of alternatives according to criteria. The Study proposes five groups with total of 18 evaluation criteria, relevant to determine the public interest achievement of the Republic of Croatia in process in subject. In order to objectify the procedure, an independent group of 11 experts (Delfi group) has determined the relative importance of criteria, while the Author's team of 11 experts has evaluated the value of alternatives.

As regards the main goal and circumstances of performing the process of harmonization, following groups of evaluation criteria has been determined:

- **Group A – Feasibility of each alternative (criteria A1 to A5),**
- **Group B – Impact on macroeconomic stability (criteria B1 to B3),**
- **Group C – Openness towards investments into Croatian energy sector (criteria C1 and C2),**
- **Group D – Possibility of achieving the goals of Croatian and European energy strategy (criteria D1 to D5),**

▪ **Group E – Other criteria (criteria E1 to E3).**

An overview of each criterion, classified according to relative importance (criteria weighted factors) as it was determined by Delfi group, is given in Fig. 1.

Value evaluations of each alternative of harmonization according to criteria are multiplied by criteria weighted factors (*weighted values*) and summed. Summed *weighted values* represent relative value of certain alternative of harmonization. It is statistical result of assessment of each harmonization alternative's contribution in achieving the public interest of the Republic of Croatia, according to evaluators' experience and opinion. Relative value of alternatives of harmonization for electric power sector is indicated in Fig. 2, while for the gas sector in Fig. 3.

Alternatives of harmonizing the network activities and levels of commercialization with the highest relative value are proposed as the most favourable way of harmonization. **For electric power sector, it means an organization of transmission system operator according to Alternative TSO, distribution system operator according to Alternative A DSO and Alternative A modification at the level of commercialization. For natural gas sector, it means an organization of distribution system operator according to Alternative A DSO and Alternative A modification at the level of commercialization.**

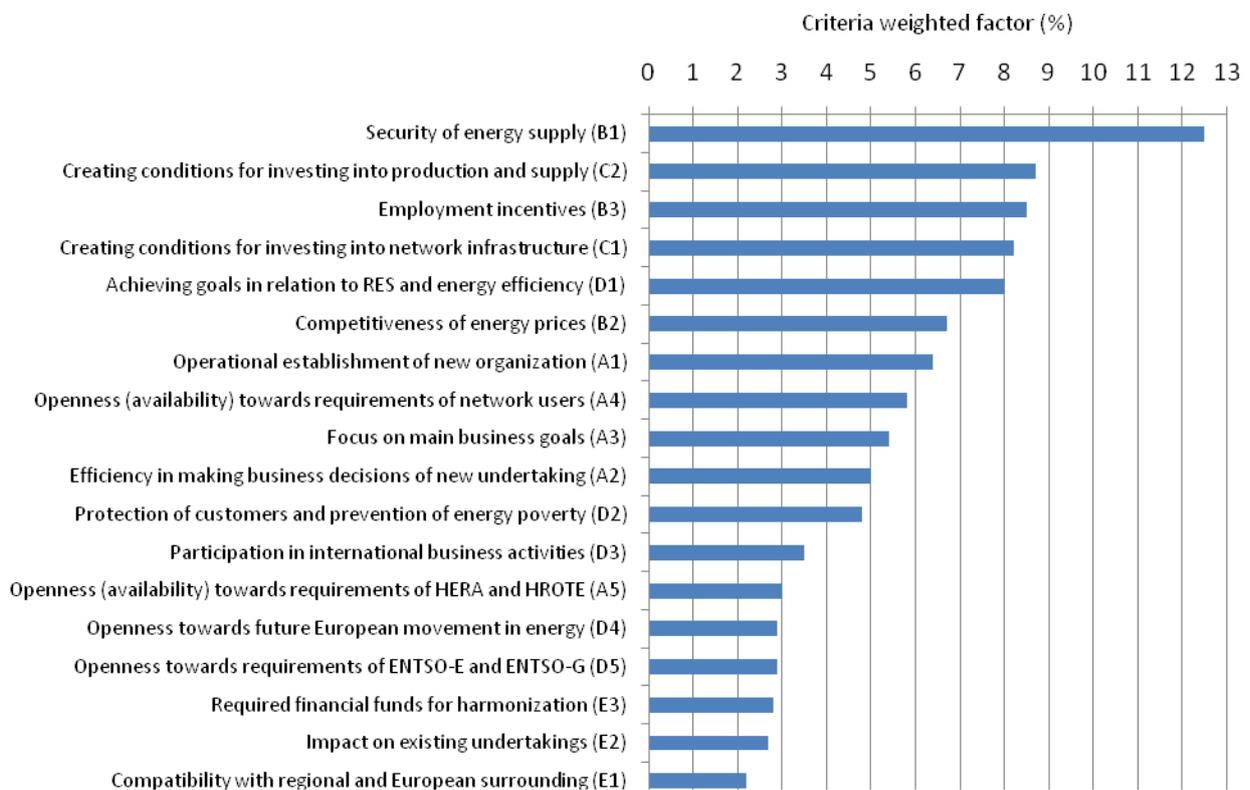


Figure 1. Evaluation criteria of alternatives of harmonization for network activities and the level of commercialization

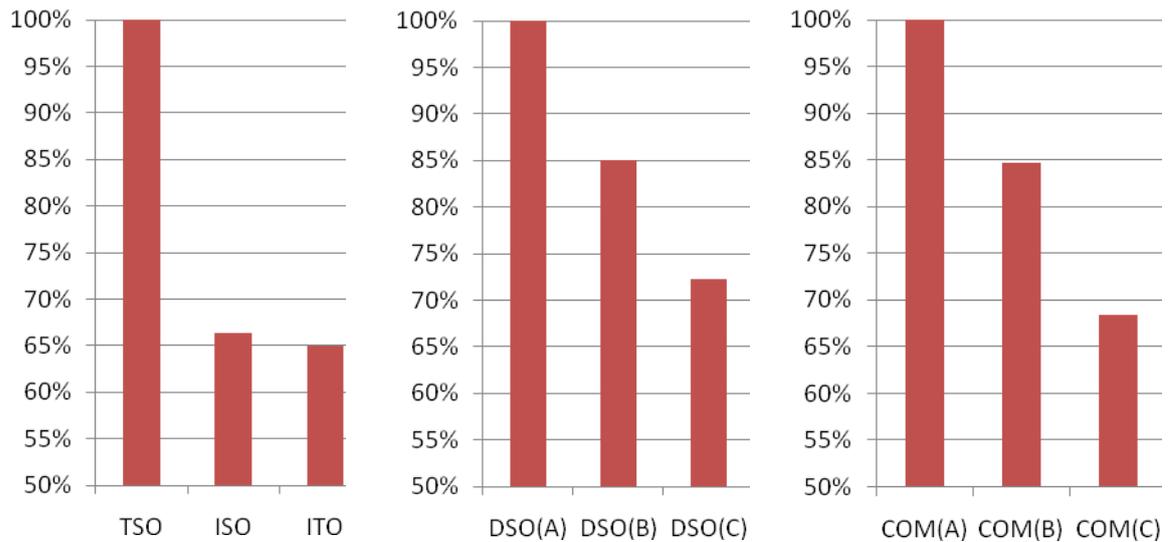


Figure 2. Relative values of alternatives of harmonization for electric power sector

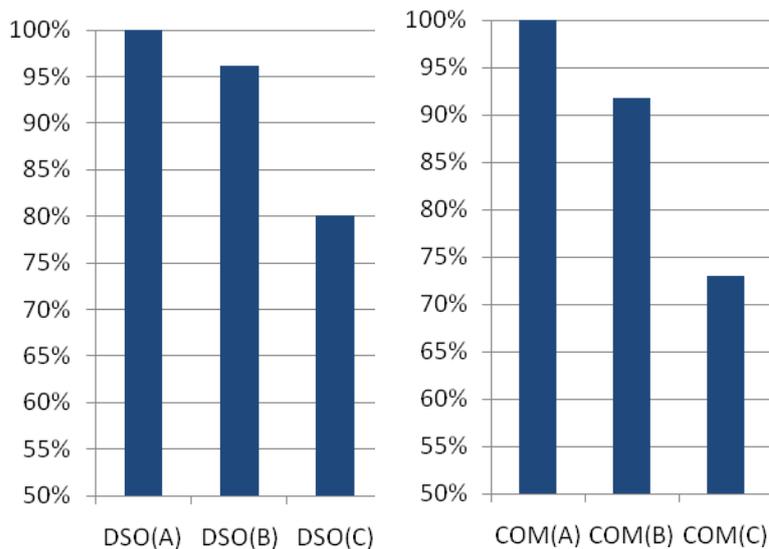


Figure 3. Relative values of alternatives of harmonization for natural gas sector

## 7. Proposition of harmonizing the Croatian energy sector with the Third package of the European Union energy regulations

Proposition of harmonizing the Croatian energy sector contains directly formulated solutions regarding the energy sector regulation, construction authorisation procedure and public service obligation of supply, as well as selected alternatives of harmonization for transmission system operator, distribution system operator and the level of commercialization in electric power sector, and distribution system operator and the level of commercialization in gas sector.

Regulation of energy sector and authorities of national regulator (HERA) will be arranged pursuant to provisions of Directive 2009/72/EC, Directive 2009/73/EC and Regulation 713/2009. Accordingly, HERA shall obtain extensive normative, executive and supervisory authorities, and of great significance is that these authorities shall be extended to energy prices as well. HERA shall be legally and functionally separated from all public and private entities and, accordingly, its responsible persons should act the same way. Members of Managing Council shall be nominated,

appointed and released by the Croatian Parliament. Managing Council shall decide on HERA's budget and its statute. It shall cooperate directly with ACER, shall have greater authorities in supervising the undertakings, shall approve tariff items for regulated activities and shall supervise public service obligations. It shall approve network rules and bring common supply terms. It shall perform the authorisation and tendering procedure referred to construction of new energy facilities.

As regards the electric power sector, the method of harmonization is proposed containing the following: **energy facilities shall be built by applying the authorisation procedure and tendering procedure if required; transmission system operator shall be established as an independent undertaking with related assets; distribution activity shall be separated from supply activity and distribution system operator shall be established as an independent undertaking with related assets; electricity prices shall be formed on market principles for all categories of customers; HEP-Opkrba d.o.o. shall be appointed as entity with a public service obligation for supply (within the period until the establishment of full market relations), while vulnerable customers shall be protected through the system of social welfare or other appropriate measures. Market activities of HEP-Proizvodnja d.o.o. and HEP-Opkrba d.o.o. shall remain within the HEP Group as its main components.** Transformation for selected solution of transmission system operator is indicated in Fig. 4, while for distribution system operator in Fig. 5.

Upon the process of harmonization, the Croatian electric power sector shall still be fully owned by the Republic of Croatia. Performed modifications would enable up-to-date, sustainable electricity supply system with fair prices, as it already exists in the majority of Member States. Unquestionable independence of network activities would create incentives for the necessary investments at the level of large classical power plants and a number of middle and small renewable energy sources power plants. Market-formed electricity prices and technological development of distribution network would result in concrete interest in implementing the energy efficiency measures. Unbundling of network activities from production and supply would provide specific business development in regulated (network) and market activities. Social status of HEP Group's employees would remain the same as all employees would continue to perform activities as in existing organization.

In concrete circumstances of the Republic of Croatia, somewhere there is still a tendency in protecting the HEP Group as an integral energy monopolist, thus such interests should be protected in the future as well. The subject is in short-term policy that actually has an adverse effect on Croatian electric power sector, as well as on Croatian state interests. **HEP's inability to achieve the required construction of energy facilities and so performing supply with less and less own power plants and more and more usage of currently available cheap European excess electricity, could be dramatically reflected on prices and security of electricity supply.** Necessary construction of Croatian electric power system that should guarantee the security of supply, has been determined by the "Energy Strategy of the Republic of Croatia". Low intensity of energy facilities' construction in the last ten years does not guarantee appropriate achievements of necessary construction according to the Strategy within the next ten years (from 2000 to 2010 only 5% of required construction up to 2020 was achieved), which refers to necessary changes in electric power sector.

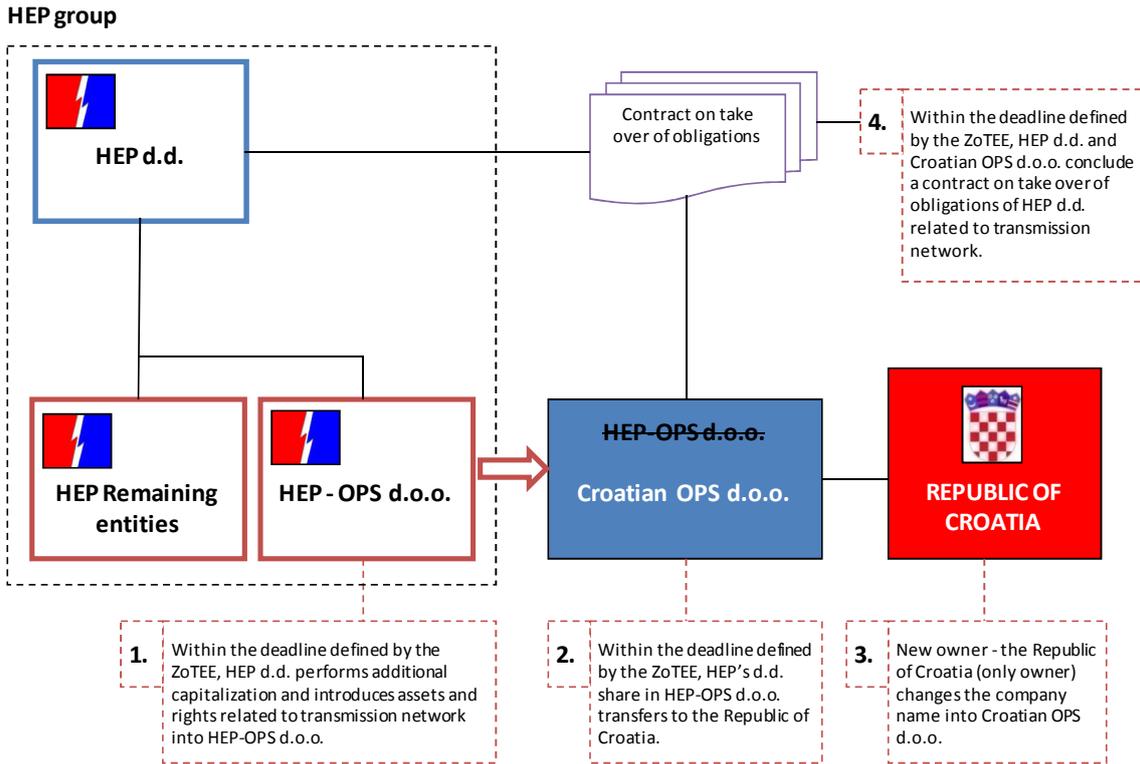


Figure 4. Proposed way of transforming the transmission system operator

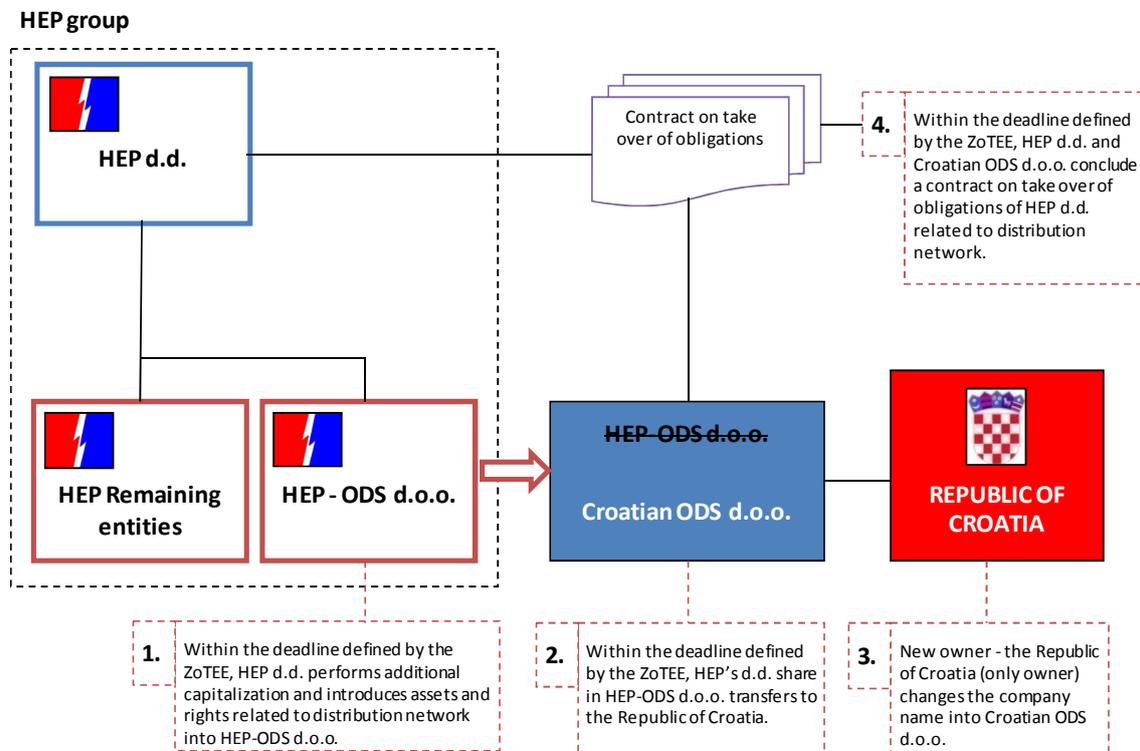


Figure 5. Proposed way of transforming the distribution system operator

Ownership unbundling – model TSO – is a basic model of European Union and accepted by a majority of Member States, as well as by neighbouring states. Accordingly, selected concept corresponds the best with strategic orientation of the European Union and with “Energy Strategy of the Republic of Croatia” as well. Although models ISO and ITO assume efficient functional unbundling, model TSO provides even better guarantee to new market participants to be treated equally as regards the network access.

Ownership unbundling of distribution system operator has similar effects as of transmission system operator. However, as distribution systems depend much more on local actual state than transmission systems, these processes are performed much slower.

As regards the gas sector, the method of harmonization is proposed containing the following: **gas facilities shall be built by applying the authorisation procedure, along with probable temporary release of the *third party* access obligation; distribution activity shall be separated from supply activity and shall promote their concentration through regulations and economic measures; gas prices shall be formed on market principles for all categories of customers; Prirodni plin d.o.o. shall be appointed as entity with a public service obligation of supply (within the period until the establishment of full market relations), while vulnerable customers shall be protected through the system of social welfare or other appropriate measures.**

Current organization and functioning of distribution and gas supply represent a great limitation to further development of natural gas sector. Great number of facilities for distribution and gas supply, out of which approximately three fourths are functioning on the level of business and economic sustainability, does not provide an adequate service to existing customers and it is the main reason of slow expansion of natural gas supply in parts of the Republic of Croatia with no gas network. Proposed modifications would improve mostly bad state of gas distribution and supply, without endangering the interests of existing owners and concession holders. Existing owners and concession holders would carry on with business inside the larger, economically more capable companies, along with more rational business organization. For all customers, transfer on market-formed gas prices is continuation of process already in progress. Modifications in gas sector are streamlined to establishment of sustainable system of natural gas supply within the entire state territory.

Alternative ways of harmonization of electric power sector and natural gas sector could be solutions close to proposed solutions according to determined relative rating. **As regards the electric power sector, it is an identical solution as in proposed way of harmonization, except that distribution system operator would remain within the HEP Group.** Such way of harmonization, if it is evaluated that ownership unbundling of distribution system operator should be left for later, could also have quite positive effects. **As regards the gas sector, it is an identical solution as in proposed way of harmonization, except that distribution and supply concentration would be promoted only by economic measures.**

**Proposition of harmonizing the energy sector is given under assumption that all decisions on modifications necessary to Croatian energy sector in the future period shall be made immediately, while dynamics of their implementation should be determined according to actual circumstances. Transmission system operator is an exception as it should be harmonized with provisions of the *Third package* of energy regulations until 3 March 2012. Energy laws would determine a total scope of modifications, while dynamics of implementation would be determined by their transitional and final provisions.**

## 8. Proposition of harmonizing the Croatian energy legislation with the *Third package* of the European Union energy regulations

Required amendments to energy laws have been determined by selected solutions regarding obligatory requirements from the *Third package* of energy regulations and selected modifications in order to improve the functioning of energy sector. It is at the same time an occasion to improve transparency of energy laws due to easier usage. Harmonization of Croatian energy legislation is demanding not only due to a nature of required modifications, but because it is necessary to modify all legal acts and associated bylaws in the short term.

Fig. 6 indicates legal framework relevant for performing the harmonization of energy sector. The basis for harmonizing the Croatian energy legislation with the *Third package* of energy regulations is in Article 101 “Energy”, Stabilisation and Association Agreement between the European Communities and their Member States, of the one part, and the Republic of Croatia, of the other part, signed in October 2001 and entered into force in February 2005.<sup>1</sup>

The scope of modifications includes Energy Act, Energy Activities Regulation Act, Electricity Market Act and Natural Gas Market Act. Since the Croatian energy legislation is highly harmonized with the European Union’s regulations, harmonization could be performed by technique of amending the acts, which has been done many times within the last ten years. Although usual, such method does not provide qualitative progress in development of energy legislation. It is, therefore, suggested to adopt new acts, which will, taking into consideration good solutions from existing legislation, result in qualitative progress of energy acts system based on Directives and Regulations of the European Union.

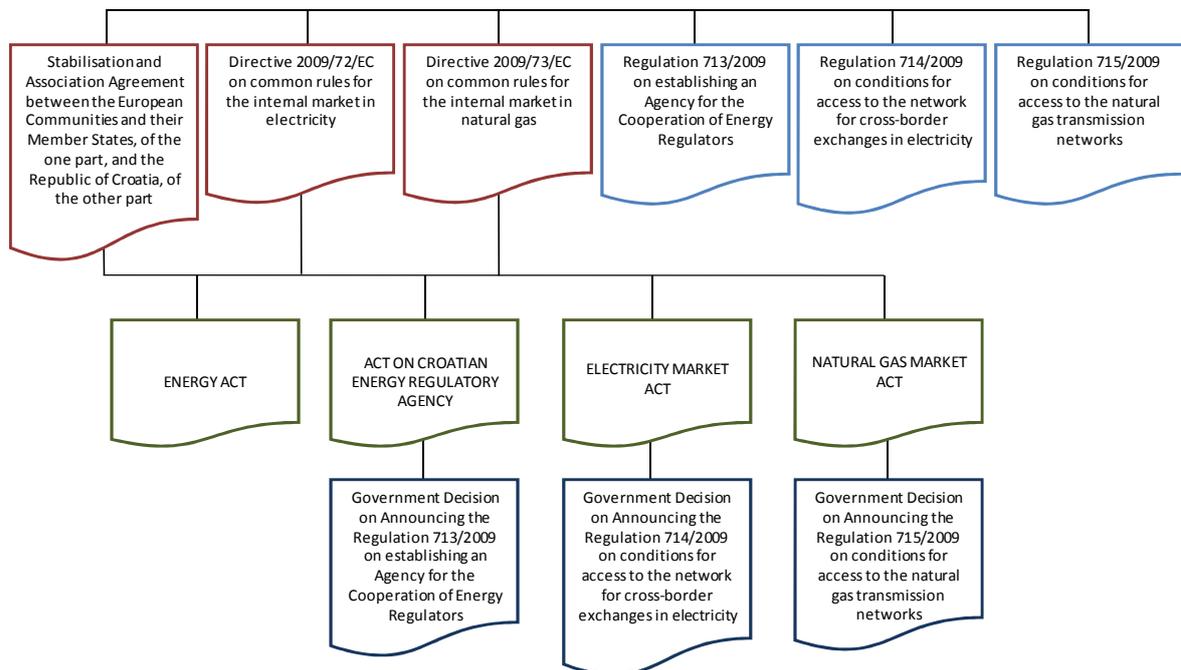


Figure 6. Legal framework of harmonization of energy sector

Due to above mentioned reasons, a new systematization of contents of energy acts is suggested in a way that all basic issues and general legal institutes, including the regulation system as well, would be arranged by new Energy Act. Instead the Energy Activities Regulation Act, the Act on Croatian Energy Regulatory Agency as an organizational and procedural act is proposed. Basic and

<sup>1</sup> Act Confirming the Stabilisation and Association Agreement between the European Communities and their Member States, of the one part, and the Republic of Croatia, of the other part (“Official Gazette” – International Treaties No. 14/01 and 7/05)

general material law provisions for regulation would be covered by the Energy Act, while special provisions would be contained in the Electricity Market Act and Natural Gas Market Act. Concept proposed for preparation of the Energy Act is streamlined towards the codification of energy legislation.

Energy Act would retain a significance of the basic energy act in the Croatian legislation, harmonized with all other energy acts. Such concept presumes that the Energy Act is regulation of general nature (*lex generalis*), while the Electricity Market Act, Natural Gas Market Act and Act on Croatian Energy Regulatory Agency are specific laws (*lex specialis*). Within the current energy legislation there was a conflict with standards, where standards of specific laws had priority over the standards of general laws. In order to avoid the conflict with standards, it is necessary to carefully arrange the system of energy acts, so that their content could be fully harmonized, as it is condition of their efficient application.

Systematization of contents of the Energy Act encompasses chapter on energy efficiency and renewable energy sources as well. The intention is to point out a significance of efficient usage of energy and renewable sources and to create a connection with specific laws. As regards the area of efficient energy usage, Act on Efficient Usage of Final Energy Consumption<sup>2</sup> has already been adopted. As regards the area of renewable energy sources usage, adoption of specific law on Renewable Energy Sources is proposed as well. Such approach takes into consideration a significance, which the European Union gives to renewable energy sources through special Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

Legal framework in Fig. 6 indicates Regulation 713/2009, Regulation 714/2009 and Regulation 715/2009 as well. Unlike Directives, which are being transferred from the European Union legislation into national legislations by national standards, Regulations are, on the other hand, rules of direct application, which by unique European standard substitute existing domestic legal standards of all Member States. The Republic of Croatia is obliged to take over the European Union's standards and introduce them into its legislation based on the Stabilisation and Association Agreement between the European Communities and their Member States, of the one part, and the Republic of Croatia, of the other part. According to existing practice, take over of the European Union's regulations is performed by publishing a direct translation in "Official Gazette".

## 9. Performance and implementation plan of harmonization

Process of harmonizing the energy sector of the Republic of Croatia shall have large economic and social consequences. In order to harmonize the sector with the *Third package* of energy regulations, participation and agreement in principle of all interested parties are required. Arrangement of relations is a complex task and certain time period is required. Additional circumstance that increases the task complexity is aggravated economic and social conditions in the Croatian society, followed by disorders in functioning of institutions due to a lack of budgetary funds. Therefore, it is very important to determine real forms, ways and time of operationalization of measures coming from proposed harmonization of the Croatian energy sector and energy legislation.

Participants in process of harmonization are represented by institutional and legislative level, existing undertakings, associations dealing with energy issues and customers' protection, unions and general public. **It would be quite useful if institutional and legislative level will make a political decision on a way of harmonization of energy sector, taking into consideration overall circumstances of this process.** The role of existing undertakings is perceived in implementation of measures in order to improve competitive abilities. Associations, unions and public would facilitate the process of harmonization by defining the modifications that have long-term positive

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<sup>2</sup> Act on Efficient Usage of Final Energy Consumption ("Official Gazette" No. 152/08)

effects to energy sector. Media has very important role to provide objective informing on reasons and features of the process of harmonization.

Communication with public in the process of making decisions regarding the harmonization of the Croatian energy with the *Third package* of the European Union energy regulations is particularly important, as the project is literally related to all legal and physical entities in the Republic of Croatia and to all Croatian citizens. Information on electricity and natural gas availability, quality and price, as well as on possibility of changing the energy supplier, etc. are of great significance for all the above mentioned participants. General right to clear and comprehensible information on all affecting the above mentioned indicators is one of the crucial rights implemented within the Treaty on European Union.

As regards the harmonization of energy legislation, quite detailed activity planning is required due to extremely short period of implementation; as regards the harmonization of energy sector, preparation of framework plan is enough for the start due to much longer period of implementation.

It is proposed the following after the Study is finished:

- to present the Study to interested parties and to perform required consultations (partially performed),
- to accept the platform for implementing the process of harmonization by the Government of the Republic of Croatia,
- to determine operational plan of harmonizing the energy legislation,
- to appoint interdepartmental group led by the MoELE in order to prepare propositions of new energy acts and to supervise the process of adoption,
- to determine framework plan of harmonizing the energy sector,
- to appoint the group led by the MoELE for coordination of energy sector harmonization.

The entire process of harmonization of energy legislation should be achieved in only two months, which is a quite short period for such an extensive operation. Implementation plan should contain an overview of all activities, their duration and interactions, as well as names of responsible persons. The entire process should be managed by person with appropriate authorities. As regards the extremely short period of implementation, the activities should be performed in parallel where possible.

## 10. Final statements

The Study proposed harmonization of the Croatian energy sector and energy legislation taking into consideration the requirements of the *Third package* of the European Union energy regulations and necessary modifications in order to improve the functioning of energy sector.

Along with binding modifications in energy sector, modifications proposed in alternatives and additional modifications have been selected that should have large impacts on solving the main difficulties regarding the sector's functioning. Relatively radical solutions have been chosen due to a fact that in electric power sector and partially in gas sector, market-based business activities are still not in function, not even ten years after the first harmonization of the Croatian energy legislation with European regulations, while the investments are significantly below the required scope of construction. Market-based business activity in energy sector is the basic expectation of the European Union. Therefore, soon accession of the Republic of Croatia to the European Union imposes a need of more efficient problem solving within the energy sector.

It can be expected that modification of organizational structure and business activities in energy sector, as well as modification in a way of defining the energy prices and opening the sector to new undertakings and investors would cause great discussions and opposing to modifications or consent to only minimum modifications at the majority of participants. Such reaction is

understandable, although not justified. In order to discuss and assess properly whether proposed modifications are required, the following questions should be answered:

- are there problems in current functioning of the Croatian energy sector that endanger future economic and social development of the Republic of Croatia,
- could Croatian energy sector contribute more to economic development,
- could necessary construction envisaged by the “Energy Strategy of the Republic of Croatia” be achieved without any significant foreign investment,
- does domination of HEP Group and partially INA d.d. harm development of energy market,
- could implementation of market-based energy prices be further postponed,
- why do existing energy-based undertakings lag behind in efficiency ratios according to comparable European undertakings,
- could competitive and solvent energy sector be organized with lower level of modifications than the proposed one?

Initial discussions confirm expectations that part of participants will oppose to proposed solutions. They believe *a priori* that only *powerful HEP and INA* are guarantee of secure energy supply and preservation of national and social interests. Such approach excludes a possibility of impartial structured discussion, which would bring to objective perception of the situation.

It should be mentioned one more time that modifications are organized in a way and range expected of the Republic of Croatia as soon-to-be European Union Member State and country, which should intensify investments into energy sector due to supply security, economic development incentives and new employment. **As regards the potentially negative effects of the process of harmonization, it should be mentioned that all segments of energy sector, owned by the Republic of Croatia up to now, remain still its property, which represents a guarantee of preserving the national interest.**

Modifications in energy sector shall not cause any job cuts and all employees will continue to perform their business activities as before. Transfer on market-based prices will be facilitated by implementing certain transitional period and by implementing measures of social welfare for really endangered customers. Modifications in organization of transmission system operator in Alternative ITO, which the HEP stands up for, shall include a transfer of assets from HEP d.d. to NOP d.o.o. and full functional independence within the HEP Group. Accordingly, separation of assets of transmission towards distribution is performed, which is delicate and extended operation, thus the proposed alternative of harmonization and this one are practically the same regarding the costs and duration.

Detailed presentation of the subject matter is given in the Study and additional explanations could be obtained by the Author’s team if required.

Zagreb, 30 December 2010