



Croatia

Energy Policy Baseline

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1. INTRODUCTION

This report is part of the baseline analysis of the E-FIX project. The E-FIX project aims at triggering private finance for sustainable energy projects using innovative financing mechanisms. In the target countries of Central and South Eastern Europe as well as the countries of the Caucasus region there is considerable idle potential for sustainable energy products and services. Both potential energy project developers and financiers face diverse financing barriers. An innovative energy financing mix is needed in order to activate new source of finance and facilitate an increased implementation of sustainable energy projects. Accordingly, the objective of the E-FIX project is to facilitate the take up and intensified usage of innovative energy financing mechanisms in the energy sector.

This report provides the first analysis of the regulatory environment in which energy projects are implemented in each of the focus countries. With this part of the baseline study the E-FIX experts conduct an assessment of the energy-related policy framework in order to identify opportunities and challenges for introducing innovative financing instruments for sustainable energy projects. The material will be part of the subsequent Gap Analysis combining financing and energy baseline data.

The present report describes the energy policy framework for Croatia.

2. POLICY FRAMEWORK

2.1. OVERVIEW OF LEGAL FRAMEWORK AND POLICY DEVELOPMENT OF THE ENERGY SECTOR IN CROATIA

Croatia imports about 50 % of the total of about 350 PJ of energy consumed annually. It imports 80 % of its oil needs, 40 % of gas, 35 % of electricity, and 100 % of coal needs. In 2016, the total primary energy supply in Croatia increased by 1.7 % compared to the previous year. At the same time, gross domestic product increased by 3%, which resulted in a decrease in the total primary energy supply intensity by 1.2%. As compared to the average energy intensity in the European Union (EU 28), energy intensity in Croatia was 21.9 % higher. During 2016 consumption of almost all energy forms increased, and only consumption of fuel oil, extra light fuel oil and fuel wood and other types of solid biomass decreased.

The reform of the energy sector in the Republic of Croatia began in July 2001 when the Croatian Parliament adopted a document on the concept of energy sector reform, proposed by the Croatian Government. The reform involved the restructuring of the acquired energy entities, the creation of a new legislative and institutional framework, the establishment of market rules and obligations of public services, and in this regard the clear separation of energy activities into market and public sectors. The principle of the priority of defining the energy market regulation, and only after the privatization process has been established, has been clearly established. At that time the Croatian Parliament adopted five new acts (during years they were revised and some of them changed): Energy Act (Official Gazette 120/12, 14/14, 95/15, 102/15), Act on Regulation of Energy Services (Official Gazette 120/12), Electricity Market Act (Official Gazette 22/13, 102/15), Gas Market Act (Official Gazette 18/18) and the Oil and Oil Derivatives Market Act (Official Gazette 19/14, 73/17), which entered into strength in January 2002. By their adoption, irrespective of their deficiencies which have been shown in their application, the preconditions for the opening of the energy market of the Republic of Croatia and improvement of the quality of energy services and the harmonization of this specific legal area with European Union directives has been accomplished. As a member of the European Union (EU) since July 1, 2013, Croatia has adjusted its energy sector regulations and development plans to enable smooth integration into the European energy market and to ensure diversified and sustainable supply of energy resources and improved energy efficiency.

In Croatia the main strategic documents regarding energy sector on national level are:

- Strategy of Energy Development (Official Gazette 130/09)
- Third National Action Plan for Energy Efficiency for 2014-2016 (the fourth is still in the process of adoption)
- National Action Plan for Renewable Energy Sources to 2020

The basic act for establishing energy policy and planning for energy development is the Strategy of Energy Development. Implementation of the Strategy adopted in 2009 has not been quick, primarily due to the 2009-2015 economic recession in Croatia. The goal of the Strategy is to build a balanced development system between security of energy supply, competitiveness and environmental protection, which will provide Croatian citizens and Croatian economy with quality, safe, accessible and sufficient energy supply. Such energy supply is a prerequisite for economic and social progress.

The Strategy of Energy Development of the Republic of Croatia follows three fundamental energy goals:

- Security of energy supply;
- Competitiveness of the Energy System;
- Sustainability of Energy Development.

According to the Strategy, challenges to which special attention should be paid are dependence on oil imports, insufficient security of natural gas supply and insufficient security, ie high import dependence on electricity supply. Energy market development, country openness, risk sharing in investment, development and technological progress, and encouraging greater participation of domestic production and services in the construction and exploitation of energy facilities, are mechanisms for retention but also for increasing the competitiveness of the energy system.

Republic of Croatia is in the process of adopting the Low-Carbon Development Strategy of the Republic of Croatia for the period until 2030, with a view to 2050, where a range of possible measures and scenarios for achieving this objective will be closely considered. Process started because the current Strategy, which was adopted in 2009, has not had a strategic character, and it has covered a period of only 11 years, from 2009 to 2020. The new strategy will represent a comprehensive economic, development and environmental strategy, and through innovation, the transfer of advanced technologies and significant structural changes in all sectors, will stimulate the growth of industrial production, development of new activities, economic competitiveness and job creation.

Also, here in the introduction part, the Energy Act (Official Gazette No 120/12, 14/14, 95/15, 102/15) must be mentioned which regulates: measures for safe and reliable energy supply and its efficient production and use, which are determined and based on energy policy and planning of energy development, energy activities, on the market or as public services, and basic issues performing energy activities. This Act regulates issues and relationships that are of common interest for all energy activities or that are related to more forms of energy. Issues related to the gas, oil and oil products, heat, renewable energy and energy efficiency are regulated by special laws and described in the next chapters.

2.2. EXISTING NATIONAL AND REGIONAL LAWS AND STANDARDS

2.2.1. Standards for Buildings

The existing building fund in the Republic of Croatia represents the sector with the highest potential for energy saving, focusing on increasing the rate of renovation of buildings with an emphasis on public sector buildings which should serve as a model for the implementation of energy efficiency measures for their public visibility.

Building Act (Official Gazette 153/13, 20/17) regulates the design, construction, use and maintenance of buildings and the implementation of administrative and other related procedures, in order to ensure the protection and spatial planning in accordance with regulations regulating spatial planning and ensuring basic requirements for construction and other conditions prescribed for the construction of this Act and regulations passed on based on this Act and special regulations.

Each building, depending on the type and purpose, must be designed, constructed and maintained that during use meets the prescribed energy efficiency requirements. Energy efficiency requirements for certain types of buildings, including minimum requirements for the energy properties of the building and its special parts, the way of calculating the energy performance of buildings, minimum mandatory share of renewable resources in total energy consumption of buildings, criteria for nearly zero energy buildings, content of alternative power supply systems and other requirements related to the energy efficiency of the building, as well as the delivery of the European report related to calculations and results of cost-optimal analysis are prescribed by the Ministry. The energy certificate is issued on the basis of energy inspections carried out. A key obligation is to produce an energy certificate of a building or part thereof for sale and rental and for all existing public buildings with a total surface area of more than 250 m².

Buildings and their installations for heating, cooling, lighting and ventilation must be designed and constructed so that the amount of energy they require remains at a low level, taking into account the users and the climate conditions of the building. Buildings also have to be energy efficient and use as little energy as possible during construction and degradation.

In December 2014 the Ministry of Building and Physical Planning adopted National plan to increase the number of nearly zero energy buildings up to 2020. Croatia is one of the 11 members states of the European Union that has fulfilled its obligation to define a building standard that is almost zero energy. Approximately 77% of buildings are residential buildings with about 1.7 million flats. The largest number of buildings in cities are multi-storey buildings and most of these buildings was built in the period of rapid growth of population in the second half of the 20th century - 60s, 70s and early 80s, which coincides with the remaining regulations in terms of heat and heat protection in buildings.

The Directive on Energy Performance of Buildings 2010/31 / EU defines the requirements for the energy performance of buildings to be met by each Member State. Croatia's standards for the design and construction of residential and non-residential buildings and nearly zero energy buildings are prescribed by the amendments to the Technical Regulation on Rational Use of Energy and Thermal Protection in Buildings (Official Gazette 130/14).

The Plan included the initial situation overview, the definition of nearly zero energy buildings, current initiatives and goals regarding energy efficiency in buildings, policy and measures for introduction of this initiative and obligation, potential financing models and possibilities for further improvement. According to the Plan, further improvements need to be sought through the refinement of the NZEB definition of buildings in view balancing energy flows across the system boundaries, which would further boost their renewable energy sources usage in NZEB buildings. The plan is to increase the number of NZEB buildings which need to be backed up by significant financial resources instruments that will stimulate the market in considering concepts that are in the current moment equally questioned by entrepreneurs and individual builders.

Proposal of the Long-Term Strategy for Mobilizing Investment in the Renovation of the National Building Stock of the Republic of Croatia is based on the established economic-energy optimal building renovation model, identify effective measures for long-term incentives for cost-effective integral renovation of the building of the Republic of Croatia until 2050, which includes all residential and non-residential buildings

The Strategy includes 5 thematic units:

1. Overview of the national fund of the building of the Republic of Croatia - data on the number, area and energy characteristics of the National Fund of Buildings
2. Analysis of key elements of a building renovation programme- analysis of technical possibilities for energy reconstruction and determining possible models of sustainable building renewal and estimation of expected energy savings
3. Policies and measures to encourage cost-effective integral renovation of buildings-proposal of solutions and measures for energy reconstruction of buildings and analysis of successful measures and policies of the Member States of the European Union
4. Long-term perspective for directing an individual's decision, industry and finance investments up to 2050.- estimating the required investment in reconstruction
5. Estimation of expected energy savings and widespread use based on computational and model data

The Croatian Government in 2017 adopted the Programme of energy renovation of public buildings sector for the period 2016 – 2020. The objective of the Programme is to raise the level of energy recovery activities to 3% of the total public sector's stock annually, reduce energy consumption by cooling / heating public sector buildings up to 70%, or annual savings of around 50 GWh and meeting energy saving targets of public building sector including alternative policy measures set out in the Third National Energy Efficiency Action Plan for the period 2014-2016.

In order to take full advantage of the existing potential for energy savings, the aim of the Programme is the complete renovation of buildings, with the maximum investment of private capital in public buildings, the continuation of the development of the energy services market and the transfer of experience from public sector buildings to the area of energy services between private entities. Investments that have a positive impact on the state budget are boosted, and through the ESCO model it is ensured that energy efficiency improvements in public sector buildings are implemented without additional expense of owner/user budgeting.

2.2.2. Energy Efficiency Laws and Standards

In 2016, energy consumption efficiency in Croatia continued to improve as compared to the previous period. Energy efficiency expressed as energy efficiency progress index increased by 0.7 index points for all final energy consumers combined. The stated index was lower in the industrial sector by 0.9 index point, whereas the transport sector and households continued a positive trend of lowering the energy efficiency progress index by 1 index point in transport and 0.7 index points in households. In the period from 2000 till 2016, there was a positive trend of lowering the energy efficiency progress index by 16.4% for all final energy consumers combined. This positive trend was due to the all sectors, with the greatest contribution of industry, which improved its energy efficiency index by 24.4%. For households this increase amounted 19.2% and for the transport 8.9%.

Energy Efficiency Act (Official Gazette 127/14) regulates the area of efficient energy use, plans on local, regional (national) and national level to improve energy efficiency and their implementation, energy efficiency measures, energy efficiency obligations, energy regulatory obligations, transmission system operators, distribution system operators and market operators energy related and energy transmission and distribution, energy distributors, energy and / or water suppliers, in particular energy services, energy saving, and consumer rights in the implementation of energy efficiency measures.

The purpose of this Act is to achieve the objectives of sustainable energy development: to reduce the negative environmental impacts from the energy sector, improve energy security, meet energy consumers' needs and meet the international obligations of the Republic of Croatia in the field of greenhouse gas emission reduction by encouraging energy efficiency measures in all sectors of energy consumption.

The Act defines the energy distributor's obligation to improve energy efficiency in final consumption, and if it does not comply with it, it is obliged to pay compensation to the Environmental Protection and Energy Efficiency Fund. Energy distributors are also required to provide, where technically feasible and financially viable, individual energy counters at competitive prices. Distributors must also provide customers with an overview of both current and actual energy consumption, a comparison of energy current consumption and in the same period of the previous year, as well as contact information for organizations, agencies etc, where end users can find more information on measures to improve energy efficiency, technical specifications of equipment and similar.

Large companies have the obligation to produce energy audits every 4 years as in accordance with the issued authorization. Reports of inspections carried out must be kept for at least 10 years. The exemption from producing four-year energy reviews is those companies that have introduced energy management or environmental management systems that imply regular energy audits.

The public sector is obliged to maintain public lighting and reconstruct it in a way to reduce electricity consumption, conduct public lighting energy audits once every five years and once a year analyze electricity consumption.

The Act defines the energy service as the implementation of energy efficiency projects and other activities that result in measurable or estimable energy efficiency improvements and / or energy and water saving. Also, the Act stipulates that energy-related products may only be marketed if they meet the requirements for eco-design of products that the minister prescribes in a separate rulebook.

The National Action Plan for Energy Efficiency (NAPEnU) represents a comprehensive implementation document of the Energy Efficiency Policy for a specific three-year period, and also includes a report detailing the activities carried out in the previous three-year period. The third National Energy Action Plan for Energy 2014-2016 is currently in force.

NAPEnU has outlined measures that are planned to achieve a reduction in consumption through energy efficiency measures. Implementing these measures is not saving, but development by encouraging more rational use of energy, through advanced processes and more conscious behaviors. Savings in primary and final consumption are being considered, and the goal of increasing energy efficiency is expressed as the absolute level of primary and final energy consumption in 2020.

The national target of increasing energy efficiency, expressed as the absolute amount of direct energy consumption in 2020, is 293.04 PJ (7.00 Mtoe).

According to Art. 7 of EED in the period from 1 January 2014 to 31 December 2020, the national energy savings target is 1,938 PJ / year, ie cumulatively 54,250 PJ. Of this, 32,094 PJ is planned to be achieved through 40 energy efficiency measures presented in the 3rd NAPEnU. The corresponding target expressed as the absolute amount of primary energy in 2020 is 466.69 PJ (11.15 Mtoe). This means that the total increase in energy efficiency must achieve energy savings:

- 19.77 PJ by 2016
- 22.76 PJ by 2020

From 2008 to 2014, three National Energy Efficiency Plans were created. The National Coordinating Body for Energy Efficiency has produced the fourth National Energy Action Plan for the period 2017-2020 which is still in process of adopting.

2.2.3. Renewable Energy Laws

During the six-year period, from 2011 till 2016, primary energy production in Croatia increased at an average annual rate of 0.8%. The fastest growing production was that of renewable energy with an average annual growth rate of 34.8%, while the increase of hydropower increased at an average annual rate of 6.6%. Production of crude oil and heat from heat pumps also increased in the observed period, with an average annual rate of 2.1%, while the production of fuel wood and other solid biomass had an average annual growth of 1.7%.

The Tariff System for the electricity production from renewable energy sources and cogeneration (hereinafter: Tariff System) regulates the right of eligible producers of electricity to an incentive price of electricity paid by the market operator for the electricity produced and delivered from plants using renewable energy sources and cogeneration plants pursuant to Article 26, paragraph 6 of Energy Act, excluding own consumption.

Since 1 January 2016, renewable energy in Croatia is mainly promoted through a premium tariff. Until 31.12.2015 renewable energies were supported through a feed-in tariff pursuant to the (now obsolete) Tariff System for Electricity Production from Renewable Energy Sources and Combined Heat Power. On 1 January 2016, the new Act on Renewable Energies and high-efficiency and combined heat and power (Official Gazette 100/15) came into force and introduced a premium tariff support scheme. Privileged producers of electricity from renewable energy sources can receive a premium on top of the price of the

electricity, which they have sold on the market pursuant to the Electricity Market Act, if the Croatian Energy Market Operator (HROTE) has selected them as lowest bidder in a public tender. The Market Operator issues a call for tenders at least once a year, provided quotas for the support of certain technologies of renewable energies are available.

The new RES Act replaced a confusing and complicated legal framework which had consisted of multiple acts and regulations and was discouraging to investors. The main objectives behind the Act are the harmonization of Croatian and EU legislation and the integration and harmonisation of Croatian renewable energy sector regulations, in order to increase production and use of renewable energy in line with sustainable development objectives.

Among other things, the Renewable Energy and High Efficient Cogeneration Act:

- regulates the production and use of electricity from renewable energy sources;
- regulates project development;
- stimulates renewable energy production;
- introduces a project register;
- regulates power plant construction and high-efficiency cogeneration; and
- encourages international cooperation in the renewable energy field.

The objectives of the Renewable Energy and High Efficient Cogeneration Act are:

- improve energy policy;
- reduce harmful effects to the environment;
- reduce fossil fuel use;
- lay the groundwork for projects with other EU member and non-member states and an energy network based on renewable energy and high-efficiency cogeneration; and diversify electricity production.

At its session of 28 December 2017, the Government of the Republic of Croatia adopted a new Decree on Amendments to the Law on Renewable Energy Sources and Highly Effective Cogeneration. This decree continues for another year to apply a regulated purchase price of 0.42 HRK / kWh for electricity delivered from eligible producers. In addition, eco-balance sheet implementation is postponed until January 1, 2019.

Croatia is also implementing its EU objectives successfully. The latest Eurostat report on the use of renewable energy in 2013 indicates that Croatia's 18% share of renewables in gross energy consumption is still above the EU average. In addition, Croatia has almost reached its target of 20% by 2020. According to Eurostat, in 2013 the largest increase in renewable electricity generation in Europe was recorded for Croatia, with a growth of 27.9%.

Renewable Energy Sources of Croatia is the economic interest association which represents 70% of the total Croatian electricity production from renewable sources. It brings together all aspects of renewable energy sources: wind, sun, biomass, biogas and ancillary industry, developers and consultants. This has become the central place in Croatia that brings together the energy sector. It is the only association that brings together the economy that deals with the development and production of renewable energy sources.

2.2.4. Related laws or standards impacting energy sector development

Croatia's national energy efficiency legislation is based on EU directives. Each area of activity requires special adaptations and a detailed explanation of all processes of realization, monitoring and reporting of savings. Implementation of the energy efficiency policy implies the preparation of plan documents and their implementation and reporting of results. In this chapter, other acts and regulations impacting energy sector are listed.

Acts impacting energy sector development:

- **Electricity Market Act** (Official Gazette 22/13, 102/15)
- **Gas Market Act** (Official Gazette 18/18)
- **Heat Energy Market Act** (Official Gazette 80/13, 14/14)
- **Petroleum and Petroleum Products Market Act** (Official Gazette 19/14, 73/17)
- **Act on Biofuels for Transport** (Official Gazette 65/09, 145/10, 26/11, 144/12, 14/14)
- **Act on regulation of energy services** (Official Gazette 120/12)
- **Act on Establishing Infrastructure for Alternative Fuels** (Official Gazette 120/16)
- **Act on Environmental Protection** (Official Gazette 80/13, 153/13, 78/15, 12/18)
- **Act on Protection against Light Pollution** (Official Gazette 114/11)
- **Act on Air Protection** (Official Gazette 130/11, 47/14, 61/17)
- **Sustainable Waste Management Act** (Official Gazette 94/13, 73/17)

Ordinances impacting energy sector development:

- **Ordinance on Monitoring, Measurement and Verification of Energy Savings** (Official Gazette 71/15)
- **Ordinance on Energy Efficiency Requirements for Energy-Related Products in Public Procurement Procedures** (Official Gazette 70/15)
- **Ordinance on the EU Environmental Label - EU ECOLABEL** (Official Gazette 110/14)
- **Ordinance on the determination of the requirements for EKO-DIZAJN of energy-related products** (Official Gazette 50/15)
- **Ordinance on systematic energy management in the public sector** (Official Gazette 18/15)
- **Ordinance on Energy Review of the Building and Energy Certification** (Official Gazette 48/14., 150/14., 133/15., 22/16)
- **Ordinance on conditions and standards for persons carrying out energy inspections of buildings and energy certification of buildings** (Official Gazette 81/12, 64/13)
- **Ordinance on the Control of Energy Building Certificates and Energy Inspection Reports of Buildings** (Official Gazette 81/12, 79/13)
- **Ordinance on Conditions and Measures to Determine Service Quality Systems and Certification Works for Renewable Energy Installers - Photovoltaic Systems** (Official Gazette 79/13, 85/13)
- **Ordinance on Conditions and Measures to Determine Service Quality Systems and Certification Works for Renewable Energy Installers - Solar Heat Systems** (Official Gazette 33/15)

- **Ordinance on Conditions and Measures to Determine Service Quality Systems and Certification Works for Renewable Energy Installers- Small Boilers and Boilers on Biomass** (Official Gazette 39/15)
- **Ordinance on Energy Review for Large Enterprises** (Official Gazette 123/15)
- **Ordinance on the conditions and the manner of issuing certificates to Croatian citizens and legal persons for the exercise of the right to provide services regulated by the energy certification and energy auditing profession in the Contracting States of the Treaty on European Economic Area** (Official Gazette 47/14)
- **Ordinance on Simple and Other Buildings and Works** (Official Gazette 79/14, 41/15)
- **Ordinance on availability of data to consumers on fuel economy and CO2 emissions of new passenger cars** (Official Gazette 7/15)
- **Ordinance on the management of waste electrical and electronic equipment** (Official Gazette 42/14, 48/14, 107/14, 139/14)

Regulations impacting energy sector development:

- **Regulation on criteria for obtaining status of endangered energy customers from networked systems** (Official Gazette 95/15)
- **Regulation on contracting and implementing energy services in the public sector** (Official Gazette 11/15)
- **Regulation on Responsibility for Environmental Damage** (Official Gazette 31/17)
- **Ordinance on the Environmental Pollution Register** (Official Gazette 87/15)

Other documents impacting energy sector development:

- **National Action Plan to encourage the production and use of biofuels in transport for the period 2011-2020**
- **National Action Plan for Green Public Procurement for the period 2015 to 2017 with a view to 2020**
- **Technical regulation on the rational use of energy and thermal protection in buildings** (Official Gazette 128/15)

2.3. LATEST NATIONAL AND REGIONAL ACTIVITIES AND EFFORTS FOR THE REFORM OF STANDARDS

As already mentioned in the previous chapters, the Ministry of Environmental Protection and Energy has started drafting a new Energy strategy, which needs to define the priorities and key directions for the development of the domestic energy market, taking into account the projections of Croatia's consumption and energy potential. A committee has been appointed, which has made the guidelines and the basis for this document, as well as analyzed the current situation in the energy sector. Although only the outlines are available, it is clear that, among other things, focus will be on the security of supply, integration into the EU single market, reduction of greenhouse gas emissions, strengthening of economic competitiveness and positive investment environment, and within energy mix priority will be given to sources which Croatia has the most.

The Croatian Government, as also mentioned, adopted Programme of energy renovation of public buildings sector for the period 2016 – 2020. The financial assets are secured through the European Regional Development Fund under the Priority Axis 4. Promoting Energy Efficiency and Renewable Energy Sources, Investment Priority 4c Supporting Energy Efficiency, Smart Energy Management and Use of OIE in Public Infrastructure. The Programme ensures continuity of compliance with the Energy Efficiency Directive requiring Member States to refurbish 3% of the total surface area of heated and/or cooled buildings owned and used by the central government each year from 1 January 2014, that is, by means of an alternative approach achieving energy savings in central government buildings equals the savings of energy obtained through a 3% renewal rate. It applies economically justified, energy efficient technologies and measures in public sector buildings in the Republic of Croatia, with priority being given to public sector buildings with the lowest energy performance or the highest energy consumption. It will also contribute to reducing energy consumption, fossil fuels and electricity and increasing the use of renewable energy sources. Indirectly, it will influence the growth of construction sector activities and increased employment in the craft and construction sector, engineering activities as well as construction products. The Programme is managed and co-financed through Ministry of Construction and Physical Planning.

One of the biggest and most controversial Croatian Government project is LNG terminal on Island of Krk which is planned to be put in function by the end of 2020. The project is defined as a strategic investment project which will be realized in two phases – floating terminal and land terminal. The issue of LNG terminal on Krk is of exceptional strategic importance. How important it is to the European Union is the fact that in December 2017 it agreed to allocate 28% of the required funds, ie 101.4 of a total of 383.6 million Euros. Croatia would have become an important factor in Europe, because then European dependence on Russian gas would be reduced, but citizens and ecologists are against its construction. They are mostly opposed to the principle at which the terminal should work. Namely, for the heating of liquefied gas at very low temperatures, sea water would be used. During this process there are consequences that no one has foreseen.

The National Coordination Body for Energy Efficiency participates in a number of European projects, both as a partner and project implementer or as a beneficiary of funds, ie certain outcomes of individual projects. Bellow are mentioned some of the projects affecting national energy policies:

- **SUPPORT Interreg Europe**- the aim of the project is to assist local and regional self-government units in the process of planning and implementing energy efficiency projects
 - <https://www.interregeurope.eu/support/>

- **PUBLEnEF Horizon 2020**- aimed at implementing effective and energy-efficient policies in the Member States and providing support for the implementation of processes highlighted as best practices at national, regional and local level
 - <http://publnef-project.eu/>
- **SMIV**- The Energy Saving, Measurement and Verification System (SMIV) was developed within the MFA SEE project in co-operation with the German Association for International Cooperation (GIZ). SMIV is an internet application managed by the National Coordinating Body for Energy Efficiency in accordance with the Energy Efficiency Act and the provisions of the Ordinance on the System for Monitoring, Measurement and Verification of Energy Saving
 - <https://www.enu.hr/komercijalni-sektor/smiv/>
- **ENSPOL**- the project Energy Saving Policies and Energy Efficiency Obligation Schemes (ENSPOL) is aimed at the effective and valid implementation of Article 7 of the EED Directive in all Member States and beyond
 - <http://enspol.eu/>
- **multEE**- Project MultEE (Facilitating Multi-level governance for energy efficiency) is aimed at raising the quality and facilitating the energy efficiency planning process and its implementation at the level of the project partners of the Member States. It particularly addresses the challenges of energy efficiency planning within multi-level governance systems in terms of vertical consistency of the national, regional and local level of policy implementation and the improvement of horizontal coordination
 - <https://multee.eu/>

2.4. STATE, REGIONAL, MUNICIPAL AUTHORITIES RESPONSIBLE FOR ENERGY/EE/RE POLICY DEVELOPMENT

Energy policy in the Republic of Croatia is determined by the Government of the Republic of Croatia, including the principles of environmental protection, energy efficiency and renewable energy sources.

The Ministry of Environment and Energy (<http://www.mzoip.hr/>) as the energy authority proposes to the Government the energy needs, policy and drafts for the general regulations related to energy and environment protection while the Ministry of Construction and Physical Planning (<http://www.mgipu.hr>) are in charge of developing regulations related to energy efficiency in building sector (public buildings, commercial buildings and households). The Ministry of Economy (<https://www.mingo.hr/>) is in charge of adopting laws and energy efficiency plans. For this purpose, the new Act has designated the National Coordinating Body for Energy Efficiency (<https://www.enu.hr/>) which is the umbrella body responsible for planning the coordination and implementation of energy efficiency policy in the Republic of Croatia and acts within the Energy Sector and Investment Activity Monitoring Center (CEI). It has the role of a national energy efficiency agency that has information on all energy efficiency activities in the Republic of Croatia and has a savings data base that is a key reporting tool and a new cycle of measures needed to achieve the national energy saving target. In the near future it is foreseen their merge with Ministry of Environment and Energy.

At the same time, regional and local authorities regulate energy services at the regional and local level, including production and supply of heat, public lighting and gas distribution, participate in decision-making for the placement and construction of new power plants, networks and other infrastructure energy facilities. According to the Energy Efficiency Act, each county in the Republic of Croatia is obliged to draw up the Energy Efficiency Action Plan and the Annual Energy Efficiency Plan. The Action Plan is a planning document for a three-year period in accordance with the National Action Plan, which sets out the implementation of policies to improve energy efficiency in the area of regional self-government or the area of a large city. The Annual Plan is a draft document to be submitted by the end of the current year for the next year, which sets out the implementation of energy efficiency improvement policies in the area of regional self-government unit, or large city, in accordance with the National Action Plan and the Action Plan. In Croatia, a total of 555 units of local self-government were established, namely 428 municipalities and 127 cities, as well as 20 regional self-governments or counties. The City of Zagreb, as the capital of the Republic of Croatia, has a special status of the city and the county, so in that regard there are a total of 576 units of local and regional self-government in Croatia.

Croatian Energy Regulatory Agency- HERA (<https://www.hera.hr>) was established by the Act on Regulation of Energy Services in 2001. Its mission is to implement effective energy regulation activities in the territory of the Republic of Croatia, by performing the tasks prescribed by the Croatian energy legislation as well as EU legislation. HERA supports economic sustainability, a clear and efficient performance of energy activities in Croatia, in the context of underlying principles of European energy policy, long-term security of energy supply and the benefits to end-customers through cost-based and competitive market for postponed energy prices, greater selection of choices and high quality of services provided.

Croatian Energy Market Operator- HROTE (<http://www.hrote.hr>) started their work on April 4, 2005. HROTE performs the activity of organizing the electricity market and the gas market as a public service under the

supervision of the Croatian Energy Regulatory Agency. Also, the core business of the company is to encourage the production of electricity from renewable energy sources and cogeneration and to encourage the production of biofuels for transport.

The Environmental Protection and Energy Efficiency Fund (<http://www.fzoeu.hr>) is the central point for collecting and investing extra budgetary resources in the programmes and projects of environmental and nature protection, energy efficiency and use of renewable energy sources. In the system of management and control of utilisation of EU structural instruments in Croatia, the Fund performs the function of Intermediate Body level 2, for the specific objectives in the field of environmental protection and sustainability of resources, climate change, energy efficiency and renewable energy sources. The activities of the Fund comprise the tasks related to financing of the preparation, implementation and development of programmes and projects and similar tasks in the field of conservation, sustainable use, protection and improvement of the environment, and in the field of energy efficiency and use of renewable energy sources.

In Croatia there are 5 energy agencies. Even though they don't cover the whole territory of Croatia, their role is to promote and encourage regional sustainable development in the field of energy and environmental protection through the use of renewable energy sources and introduction of energy efficiency measures, good practices of energy management, promotion of sustainable development, provision of information and advice and a wide range of other services based on specific local energy needs. One of the most important activities of regional agencies are the development of already mentioned Energy Efficiency Action Plans and the Annual Energy Efficiency Plans.

- North-West Croatia Energy Agency- REGEA (<http://www.regea.org>) was the first energy agency in Croatia founded in 2008 by Zagreb County, Karlovac County, Krapina-Zagorje County and City of Zagreb under the framework of the Intelligent Energy Europe programme
- Medjmurje Energy Agency Ltd. – MENEА (<http://www.menea.hr>) was founded in 2008 within the EU project “Creation of the energy agencies in Lleida (ES), Medjmurje (HR) and Montpellier (FR)” financed by Intelligent Energy – Europe (IEE)
- Regional Energy Agency Kvarner- REA Kvarner (<http://www.reakvarner.hr>) was founded in 2009 by the Primorje Gorski Kotar County under the framework of the Intelligent Energy Europe programme
- Regional Energy Agency North- REA North (<http://www.rea-sjever.hr>) was founded in 2009, within the framework of the Intelligent Energy Europe programme by the Cities of Koprivnica, Varaždin and Virovitica
- Istrian Regional Energy Agency Ltd. Labin- IRENA (<http://www.irena-istra.hr>), was founded in 2009 by the County of Istria, under the Intelligent Energy Europe programme

3. CONCLUSIONS

In the last few years crossing the energy sector and announcing a new energy strategy, moved existing relationships to market. The energy profile of Croatia shows that we are “getting greener” and the question is how much the new energy strategy which is planned in the next period will make it even better. In that sense, the low-carbon transition is mandatory and should be done as soon as possible. The Croatian government and the related ministries are changing, turning to the energy policy so far. Certainty of supply, price accessibility and competitiveness, a system harmonized with European policy that will reduce environmental burdens - these are the new challenges which must be overlapped and solved through strategical projects on national, as well as regional/municipal level.

By the end of the year the new Energy Development Strategy of the Republic of Croatia should see the light of the day and the old one which never had a strategic character, will formally go into the history rocket. A well-organized energy sector of the Republic of Croatia with clear strategic determinants and proactive institutions, which will be the driver of economic growth, energy market development and systematic transformation, and the way citizens and the economy understand and use energy is of utmost importance. Energy is very closely related to environmental protection and the joining of these two areas is a clear indicator of the need to create new sources of energy and the recognition that the Republic of Croatia has a very responsible approach and plans its capital projects to achieve its energy security.

The energy market expects new challenges in which the share of electricity produced from renewable sources will increase from 25% to 50% in 2030. Today, the energy market of the Republic of Croatia as part of an integrated EU market is at the same time the most cost-effective way to secure affordable materials for EU citizens. The market should provide quality incentives for consumers to become more active and thus contribute to maintaining a stable electricity system with constant adaptation and change in all market participants.

Investments in energy plants, advanced energy grids and energy efficiency are drivers of new economic activities, and the use of its own energy sources in the context of low-carbon development is the backbone for innovation and excellence that enables industrial growth and the advancement of science, which will be the cornerstone of Croatia's energy policy development.

ANNEX : BIBLIOGRAPHY

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