

# THE WOLF THEISS GUIDE TO:

Energy Efficiency in Central,  
Eastern & Southeastern Europe

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## Energy Efficiency in Central, Eastern & Southeastern Europe

This 2017 Wolf Theiss Guide to Energy Efficiency is intended as a high level overview of the relevant energy efficiency regimes in the countries included in the publication.

While every effort has been made to ensure that the country reports are accurate as at the date stated on the publication, they should be used as a general reference guide only and should not be relied upon as definitive legal advice. In the rapidly changing CEE/SEE jurisdictions, the laws and regulations are frequently revised, either by amended legislation or by administrative interpretation.

Status of information: Current as of March 2017

**Conception, design, and editing:**

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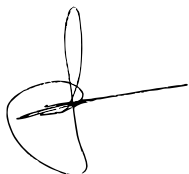
## FOREWORD

Wolf Theiss is pleased to publish this first edition (2017) of the Wolf Theiss Guide to: Energy Efficiency in Central, Eastern & Southeastern Europe (“**WTEE Guide**”).

After seven consecutive editions (2010 through 2016, inclusive) of our successful Wolf Theiss Guide to: Generating Electricity from Renewable Sources in Central, Eastern & Southeastern Europe (“**RES Guide**”), we have decided (with this new WTEE Guide) to focus in 2017 on an area of heightened interest for investors, NGOs, governments and other stakeholders active in the CEE/SEE region. Accordingly, the WTEE Guide attempts to identify the relevant EU legislation in this domain and track how that legislation may or may not have been transposed into domestic legislation in the countries of our region.

Because the WTEE Guide is intended as a high level overview of the relevant energy efficiency regimes in the various surveyed countries and given that the legislation is less developed than for RES generally, we have organised the WTEE Guide by topic chapters rather than country chapters (which is the approach used in the RES Guide). We believe this makes the WTEE Guide a more “user friendly” product.

However, we certainly welcome the readers’ feedback and input as we anticipate that future WTEE Guides will also be published by Wolf Theiss and we are always looking to provide our readers with the most up-to-date and effective work product possible.

A handwritten signature in black ink, appearing to read 'Bryan W. Jardine', with a stylized flourish extending from the end.

**Bryan W. Jardine • April 2017**

Partner, Wolf Theiss





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# PRIMARY ENERGY EFFICIENCY LAW

## EU DIRECTIVE

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency (“**Directive 2012/27/EU**”), amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC Text with EEA relevance.

This directive establishes a set of binding measures to help the EU reach a twenty percent (20%) energy efficiency target by 2020. All EU countries are required to use energy more efficiently. This encompasses all stages of the energy chain from production to final consumption.

EU Member States were required to adopt the following provisions into national laws by 5 June 2014.

Relevant National Laws in:

## AUSTRIA

Austria, as a Member State of the European Union, must transpose Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and repealing Directives 2004/8/EC and 2006/32/EC into national law (Section 3 EEEffG). Accordingly, the Federal Energy Efficiency Act (*Bundes-Energieeffizienzgesetz*, “**EEffG**”) implements the Directive.

On 9 July 2014, the Austrian National Council (*Nationalrat*) adopted the EEEffG with the required constitutional majority as several provisions have constitutional status (*Verfassungsrang*). Consequently, certain parts of the EEEffG entered into force one (1) day after the announcement in the Federal Law Gazette (*Bundesgesetzblatt*) on 11 August 2014. The provisions regarding the energy efficiency of the Federal State already entered into force on 1 January 2014 and the remaining provisions finally entered into force on 1 January 2015 (Article 33 EEEffG).

The EEEffG not only aims at transposing the aforementioned Directive and achieving the objectives specified therein, but also contributes indirectly to reducing future energy consumption by: (i) strengthening the supply reliability; (ii) promoting renewable energy; (iii) achieving targets regarding greenhouse gas emissions; and (iv) strengthening and stimulating competition (Explanatory Notes to Article 2 EEEffG). Final energy consumption shall not exceed 1,050 PJ in the year 2020 (Article 4 Paragraph 1 Item 1 EEEffG). In addition, the EEEffG sets a national cumulative energy efficiency target of 310 PJ (Article 4 Paragraph 1 Item 3 EEEffG).

## Comparison

For reasons related to Austrian competences, the EEEffG stipulates that remittal, amendment, abrogation and enforcement of provisions as contained in the EEEffG are also within the responsibility of the Federal State, even though the Federal Constitution Act (*Bundes-Verfassungsgesetz*) stipulates otherwise (Article 1 EEEffG).

Directive 2012/27/EU establishes an annual energy efficiency savings target between 1 January 2014 and 31 December 2020 equivalent to one point five percent (1.5%). Accordingly, Directive 2012/27/EU sets a mandatory cumulative energy efficiency target for Austria in the amount of 218 PJ as a minimum requirement (*Mindestvorgabe*). In fact – as a measure of self-commitment (*Selbstbindungsmaßnahme*) – Austria set a higher national cumulative energy efficiency target of 310 PJ.

## BOSNIA & HERZEGOVINA

The State of Bosnia and Herzegovina (“**BiH**”) consists of two separate entities (i) the Federation of Bosnia and Herzegovina (“**FBiH**”); and (ii) Republic of Srpska (“**RS**”), and a special autonomous district under direct sovereignty of the state, Brčko District (“**BD**”). FBiH is further divided into ten Cantons. In each of these parts,

different legal regimes essentially apply. However, certain matters are regulated by laws enacted at the State level and (where applicable), in all parts of the country. Furthermore, in many cases relevant legislation regulating a particular matter is harmonised between these state entities. Nonetheless, differences may occur in the application and interpretation by different entities' courts and institutions.

In March 2016, BiH introduced the National Renewable Energy Action Plan ("**NREAP**"). This was an obligation assumed by BiH through the enactment of the Decision on Ratification of the Treaty Establishing the Energy Community in 2006. The NREAP governs and defines: (i) the targets in consumption of renewable energy sources ("**RES**"); (ii) measures for achieving these targets; and (iii) assessment of contributions of use of RES as well as contributions expected from energy efficiency measures. NREAP BiH is harmonised with the strategic and planning documents of FBiH, RS, and BD.

BiH also initiated the financing of the Bosnia Project of Energy Efficiency ("**BEEP**") with credit assets of the International Development Association (IDA). The project was initiated in order to ensure the economic viability of energy efficiency projects and to contribute to the process of accession to the European Union. A financing agreement worth USD 32 million was signed, the funds from which are intended to be used for renovations in the public sector. The Federal Ministry of Physical Planning, through its implementation unit, is responsible for the preparation, coordination, management and implementation of the Project in the FBiH. In RS, the project is implemented by the Ministry for Special Planning, Construction and Ecology of RS.

## **FBiH**

In the beginning of February 2017, the FBiH enacted the Law on Energy Efficiency ("**FBiH Energy Efficiency Law**"), which had been in the process of adoption since 2013. The FBiH Energy Efficiency Law entered into force on 1 April 2017. The main purpose of the FBiH Energy Efficiency Law is to: (i) reduce negative impacts on the environment; (ii) ensure a more secure energy supply; (iii) meet the energy needs of end-consumers; and (iv) fulfil international obligations assumed by BiH in terms of reducing emissions of greenhouse gases through the use of energy efficiency measures.

The FBiH Energy Efficiency Law stipulates that indicative goals in energy efficiency will be determined by the Action Plan for Energy Efficiency (which is yet to be adopted as of the date of publication of this Guide). Also, the FBiH Energy Efficiency Law further requires that the Cantonal authorities in FBiH enact energy efficiency plans at the Cantonal level. Such plans will be relied upon for guidance on programmes for energy efficiency to be adopted by the local government authorities. The failure of (i) large consumers; (ii) operators of energy distribution systems; (iii) suppliers of energy; or (iv) natural persons and legal entities authorised to perform energy audits to comply with the FBiH Energy Efficiency Law may result in financial penalties.

In FBiH, energy efficiency is also promoted in the Law on Use of Renewable Energy and Efficient Cogeneration ("**FBiH Law on RES**"). Specifically, the FBiH Law on RES introduces certain measures to promote the use of renewable energy sources, while also introducing penalties for those who fail to follow the standards.

In 2010, the Federal Ministry of Spatial Planning adopted the Rulebook on energy certification which prescribes, *inter alia*, the obligations for energy certification, the methodology for energy certification, and those constructions and buildings which are obliged to possess these energy certificates. The Rulebook was adopted as a bylaw to the Law on Spatial Planning and Use of the Land in Federation of Bosnia and Herzegovina, but it has not been effectively applied in practice.

Also, in May 2014, the FBiH enacted the Action Plan of FBiH for the Use of Renewable Energy Sources ("**APOEF**"). APOEF sets out the policies, plans and indicative goals for the use of energy from RES, including: (i) in final gross consumption of energy; (ii) cooling and heating energy; and (iii) transport energy. APOEF also outlines regulatory measures for achieving energy efficiency and energy savings by end-users, as well as other measures for the fulfilment of these energy efficiency goals.

### RS

The RS Law on Energy Efficiency ("**RS Law on Energy Efficiency**") entered into force in 2013. The main purpose of the RS Law on Energy Efficiency is: (i) the regulation of energy efficiency in final consumption; (ii) adoption of plans for improving energy efficiency and their implementation; (iii) the organisation of activities to improve energy efficiency; (iv) measures to improve energy efficiency; and (v) means for financing energy efficiency.

In addition, in February 2012, RS introduced the Energy Strategy of Republika Srpska up to 2030 ("**RS Energy Strategy**"). The RS Energy Strategy includes a set of measures and goals for the implementation of the governmental policy of RS in the energy sector. The Strategy is based upon principles of global trends in the energy sector and specific EU legislative measures in the energy sector. The Strategy covers the development of the energy sector based upon the principal of sustainable growth (by relying upon domestic resources and endeavouring to use RES and incentivising the introduction of energy efficiency measures).

### BD

Brčko District does not have specific laws on energy efficiency. However, the promotion of energy efficiency is envisaged by the Law on Electric Energy ("**BD Law on Electric Energy**"). According to the BD Law on Electric Energy, the Government of BD is responsible for conducting an energy policy that promotes efficient energy use and the use of RES.

### Comparison

Although BiH is not an EU Member State, by signing the Stabilisation and Association Agreement, it undertook to harmonise its legislation with that of the EU. Even though the local legislation has been to a large extent harmonised with the legislation of the EU, in terms of energy efficiency this process is still ongoing. By signing the Energy Community Treaty, BiH also undertook certain obligations. In this respect, RES action plans at the entity as well as State levels have been adopted, which, *inter alia*, introduce certain measures for energy efficiency.

## BULGARIA

The Bulgarian Energy Efficiency Act ("**Bulgarian EEA**") was published in the State Gazette ("**SG**") issue No. 32/2015 and entered into force on 15 May 2015. It transposes into the Bulgarian legislation most of the provisions of Directive 2012/27/EU and Directive 2010/31/EU on the energy performance of buildings. It replaces in its entirety the old Energy Efficiency Act of 2008.

The main purpose of the Bulgarian EEA is to improve energy efficiency as part of the national sustainable development policy by:

- using a system of energy efficiency improvement activities and measures in energy production, transmission and distribution, as well as in final energy consumption;
- setting up energy savings obligation schemes;
- developing the energy efficiency services market and encouraging the delivery of energy efficiency services; and
- setting up financing mechanisms and schemes in order to achieve the national energy efficiency targets.

Some of the provisions of Directive 2012/27/EU have also been transposed by amendments to the Bulgarian Energy Act, the Act for Energy from Renewable Sources, the Public Finances Act, the Accounting Act, the National Standardisation Act, the Spatial Development Act, the Public Procurement Act and the Administration Act.

Further, some important aspects of Directive 2012/27/EU have been transposed via secondary legislation. A number of sector specific ordinances have been adopted under the Bulgarian EEA in this respect. The most relevant of these are:

- Ordinance for the methodologies for setting the national energy efficiency target, the setting of the overall cumulative target, the setting up of an energy savings obligation scheme and the allocation of the individual energy savings targets to the obliged parties;
- Ordinance No. E-ПД-04-3 of 4 May 2016 for the eligible measures for obtaining energy savings in final consumption, the manner of proving the energy savings obtained, the requirements to the methodologies for evaluation of energy savings and the manner for confirming energy savings;
- Ordinance No. ПД-16-301 of 10 March 2014 for the circumstances for the entry of qualified energy auditors into the public register, the procedure for entry into the register and for obtaining information, as well as the terms and procedure for the attainment of qualification of the auditors;
- Ordinance No. E-ПД- 04-01 of 22 January 2016 for the terms and procedures for performing an energy efficiency inspection of heating systems with hot-water boilers and of air-conditioning systems, the terms and procedure for preparing an energy savings evaluation;
- Ordinance No. E-ПД-19-932 of 23 October 2009 for the terms and procedures for performing the energy efficiency audit and certification of buildings, of parts of buildings, as well as the terms and procedure for preparing an energy savings evaluation;
- Ordinance No. E-ПД-04-05 of 8 September 2016 for the indicators of energy expenditure, the energy performance of enterprises, industrial systems and outdoor lighting systems, as well as the terms and procedures for performing an energy efficiency audit and preparing an energy savings evaluation in industrial enterprises;
- Ordinance No. E-ПД-04-2 of 22 January 2016 for the indicators of energy expenditure energy qualities of buildings;
- Ordinance No. E-ПД-16-647 of 15 December 2015 for determination of the structure and content and the conditions and procedures for providing information;
- Ordinance No. ПД-16-301 of 10 March 2014 for the circumstances for registration of those persons performing certification of buildings and assessment for energy efficiency of industrial systems, the order to obtain qualification and the necessary technical means for the performance of assessment and certification activities; and
- Ordinance No. ПД-16-346 of 2 April 2009 on the consumption and energy performance indicators of industrial systems and the requirements and procedures for conducting energy efficiency audits on industrial systems.

Some of the secondary legislation in the energy sector, such as the Electricity Market Rules and Natural Gas Market Rules, were also modified accordingly.

### **Comparison**

The adoption of the Bulgarian EEA occurred after considerable delay (since Directive 2012/27/EU should have been transposed into national law by 5 June 2014) and only after the initiation of an infringement procedure by the European Commission against Bulgaria in March 2015. Although the Bulgarian EEA addresses most of the requirements of Directive 2012/27/EU, the European Commission identified transposition gaps in the national legislation and decided to continue the infringement procedure against Bulgaria by sending a reasoned opinion on 22 October 2015.

In order to remediate the gaps in the transposition, the Bulgarian Government proposed further amendments to the Bulgarian EEA and other pieces of primary legislation. The latest amendments were adopted by the Parliament, published in the SG, issue No. 105/2016 and entered into force on 30 December 2016. According to the Bulgarian authorities, Bulgarian legislation should now be fully aligned with Directive 2012/27/EU.

### CROATIA

In November 2014, the Croatian Energy Efficiency Act (*Zakon o energetskej učinkovitosti*, “**Energy Efficiency Act**”) entered into force. The Energy Efficiency Act transposes into national legislation those European Union regulations set out in Directive 2012/27/EU regarding energy efficiency, amending the Directives 2009/125/EC and 2010/30/EU, and repeals Directives 2004/8/EC and 2006/32/EC. The Energy Efficiency Act supersedes the End-Use Energy Efficiency Act (*Zakon o učinkovitom korištenju energije u neposrednoj potrošnji*).

The main purpose of the Energy Efficiency Act is to maintain the goals of sustainable energy development, such as reducing negative environmental impact, improving the security of energy supply, meeting the needs of consumers and fulfilling Croatia’s obligations under international treaties.

#### Comparison

The Energy Efficiency Act and supporting legislation have fully transposed the requirements set out in Directive 2012/27/EU.

### CZECH REPUBLIC

In the Czech Republic, Directive 2012/27/EU has not been transposed by a specific legislative measure, since the energy sector is already regulated by a coherent system of interlinked regulations. Instead, the Czech legislator has passed amendments to the following Czech laws:

- Act No. 406/2000 Coll., on energy management (amended as of 1 July 2015);
- Act No. 458/2000 Coll., energy act (amended as of 1 January 2016); and
- Act No. 165/2012 Coll., on supported sources of energy (amended as of 1 January 2016).

A major part of Directive 2012/27/EU has been transposed into Act No. 406/2000 Coll., on energy management, which aims to increase the energy efficiency of the Czech economy and sets out the rules for effective use of energy in the Czech Republic. This legal framework should help to reach the established national objective for an increase in energy efficiency.

#### Comparison

The transposition of Directive 2012/27/EU into the Czech legal system was delayed and exceeded the 5 June 2014 deadline set out in Directive 2012/27/EU. The transposition into Czech law was made only with effect from 1 July 2015.

Apart from this delay, Directive 2012/27/EU has been transposed in full.

### HUNGARY

In July 2015, Act LVII of 2015 on Energy Efficiency (“**Act**”) as well as Government Decree No. 122/2015 (V. 26) on the Implementation of the Energy Efficiency Act (“**Decree**”) (the Act and Decree hereinafter together referred to as the “**Laws**”) entered into force. The Laws transposed into Hungarian national legislation the European Union regulations set out in Directive 2012/27/EU regarding energy efficiency, amending the Directives 2009/125/EC and 2010/30/EU, and repeals Directives 2004/8/EC and 2006/32/EC.

The Act sets forth the tasks and conditions for implementation of these regulations, which are necessary for the fulfilment of the national energy efficiency target, efficient energy supply and consumption and for the implementation of the EU Directive. The Act establishes the tasks of the Government as well as the Hungarian Energy and Public Utility Regulatory Authority (“HEA”).

Compared to the Act, the Decree contains more technical rules, especially on the National Energy Efficiency Action Plan (“**Action Plan**”), on: (i) the applicability of the so-called “professional energy evaluators”; (ii) the content of energy efficiency-based contracts that public institutions should conclude; and (iii) energy audits.

There are certain other by-laws that are relevant for implementation, such as NFM Decree No. 25/2015 (V. 26.) providing detailed rules on informing energy consumers and market participants concerning energy efficiency, TNM Decree No. 7/2006 (V. 24.) on the determination of the energy specifications of buildings, HEA Decree No. 7/2015 (X. 16.) on registration fees of energy auditors or Gov. Decree No. 201/2016 (VII. 21.) on cooling-related energy efficiency issues. HEA Decree No. 1/2017 (II. 16.) on the data supply of energy auditors and auditor companies, as well as the yearly reporting obligation of contributory organisations, HEA Decree No. 2/2017. (II. 16.) on the data supply of large industries, as well as business entities which are obliged to consult energy evaluators regarding the extent of energy consumption and energy savings.

The HEA also provides certain guidelines on its webpage.

It is worth noting that the national legislation is still developing. For example, a new title to the Act was introduced with effect as of 1 January 2017, which establishes certain tasks for the operators of state- and municipality-owned buildings (elaboration of local energy savings action plans, data provision obligation and mandatory cooperation with the National Energy Network). In addition, certain new by-laws were also introduced in February 2017. It seems Hungarian energy efficiency-related legislation is still developing.

## Comparison

The Laws transpose Directive 2012/27/EU on energy efficiency partially, as “[i]n its role as a Member State of the European Union and by virtue of international treaty, Hungary may – to the extent necessary for exercising its rights and fulfilling its obligations arising from the founding treaties – exercise certain competencies deriving from the Constitution together with the other Member States, through the institutions of the European Union” (Section 2 of Article E of the Hungarian Constitution) whilst “generally binding rules of conduct may be laid down in European Union legislation within the framework set out in Section (2).” (Section 3 of Article E of the Hungarian Constitution). These rules mean that to a certain extent, EU law is part of Hungarian national law without direct transposition. However, concerning the final outcome, the goal is that “[D]uring legislature, it shall be ensured that the legal regulation [...] complies with the obligations arising from international and European Union law.” (Subsection 4 c) of Section 2 of Act CXXX of 2010 on Legislation). Hence, the Laws essentially integrate into the existing body of domestic energy efficiency-related regulations in Hungary.

## KOSOVO<sup>1</sup>

On 23 June 2011, Law No. 04/L-016 on Energy Efficiency (“**Law on Energy Efficiency**”) entered into force.

The Law on Energy Efficiency regulates energy efficiency issues, the preparation and approval of energy efficiency plans and reporting thereof, determines the roles, duties and responsibilities of the institutions and addresses the obligations deriving from the Energy Community Treaty regarding energy efficiency.

Law No. 05/L-081 on Energy (“**Law on Energy**” approved on 28 July 2016) is partially in compliance with Directive No. 2009/28/EC concerning the promotion of use of energy from renewable energy sources. Among

<sup>1</sup> Wolf Theiss in corporation with Pallaska&Associates.

others, the Law on Energy provides that its goals are to promote a more efficient use of energy and to increase renewable energy sources and cogeneration.

Law No. 05/L-084 on the Energy Regulator ("**Law on the Energy Regulator**" approved on 29 July 2016), is partially in compliance with Directive No. 2009/28/EC concerning promotion of use of energy from renewable energy sources.

Law No. 05/L-052 on Thermal Energy ("**Law on Thermal Energy**" approved on 15 January 2016), is also partially in compliance with Directive No. 2009/28/EC concerning promotion of use of energy from renewable energy sources.

Law No. 05/L-101 on Energy Performance of Buildings ("**Law on Energy Performance of Buildings**" published on 22 December 2016) is partially in compliance with Directive No. 2010/31/EU on the Energy Performance of Buildings and Directive No. 2012/27/EU of the European Parliament and of the Council on Energy Efficiency. The purpose of the Law on Energy Performance of Buildings is to promote improvements to the energy performance of buildings, taking into consideration outdoor climatic and local conditions, as well as indoor climate requirements as well as cost-effectiveness.

### Comparison

Most of the laws and other secondary legislation in the field of energy efficiency which have been passed in Kosovo are partially in compliance with Directives and other comparable EU legislation. The EU Directives regarding energy efficiency are binding upon the Republic of Kosovo as party to the Energy Community Treaty. In addition to laws and other secondary legislation, loans were taken by the Government of Kosovo and other awareness campaigns were organised.

## MOLDOVA<sup>2</sup>

Moldova imports roughly ninety four percent (94%) of the resources necessary to cover its national energy consumption. Improved energy efficiency therefore represents a path towards ending this dependency on imported energy and improving Moldova's energy security profile for the benefit of future generations.

The legal framework regulating energy efficiency in the Republic of Moldova mainly includes Law No. 160/2007 on Renewable Energy which is applicable until 25 March 2017. After this date, new and more progressive legislation will be enforced, specifically Law No. 10/2016 on Promoting Renewable Energy Use, which transposes Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. The latter essentially sets forth the primary regulations concerning renewable energy sector activities and methods of organising production and sale of renewable energy and fuel.

Law No. 142/2010 on Energy Efficiency ("**Law**") is meant to create an appropriate background for the implementation of EU Directive 2006/32/EC of the European Parliament and the Council, from 5 April 2006 on Energy End-use and Energy services, repealing Council Directive 93/76/EEC. The Law establishes the premises for energy efficiency improvement, implicitly by supporting business structures involved in developing and implementing programmes, plans, energy services, and other energy efficiency measures.

Equally important is Government Decision No. 833/2011 approving the National Programme on Energy Efficiency 2011–2020 and Government Decision No. 102/2013 approving the Energy Strategy of the Republic of Moldova 2030, both outlining pertinent, specific targets regarding energy efficiency, along with other relevant normative documents and regulations.

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<sup>2</sup> Contributed by ACI Partners Law Firm.

Moreover, in November 2013, Moldova initialled the EU Association Agreement (AA), whereby energy efficiency is identified as a key area of cooperation, referring to domains such as: (i) energy policies and strategies; (ii) development of competitive, transparent and non-discriminatory markets according to EU standards and the Treaty Establishing the Energy Community; (iii) development of an attractive and stable investment climate by tackling institutional conditions, legal, tax and related aspects; (iv) energy infrastructure and projects of common interests by facilitating investments through loans and grants; and (v) scientific and technical cooperation.

Even though the existing legislation is intended to increase energy efficiency and mitigate the negative impact of the energy sector on the environment, Moldova still remains open to regular dialogue in these areas as it moves to align its legislation with the EU regulations and related international standards.

## POLAND

In October 2016, the Energy Efficiency Bill (Journal of Laws 2016 Item 831) entered into force. The Energy Efficiency Bill ("**Bill**") transposes into national legislation Directive 2012/27/EU regarding energy efficiency, amending the Directives 2009/125/EC and 2010/30/EU, and repeals Directives 2004/8/EC and 2006/32/EC.

The main purpose of the Bill is to regulate the development of national legislation and set out guidelines which will allow Poland to achieve the goal of energy efficiency as established by EU law.

### Comparison

The Bill fully transposes Directive 2012/27/EU into national law. According to Article 1 of the Bill, it regulates: (i) principles for the development of the national action plan on energy efficiency; (ii) tasks of the public sector in energy efficiency; (iii) rules for implementing the obligation to obtain energy savings; and (iv) procedures for conducting an energy audit of a company.

## ROMANIA

In August 2014, Law No. 121/2014 on Energy Efficiency ("**Law**") entered into force. The Law transposes the European Union regulations into national legislation set out under Directive 2012/27/EU regarding energy efficiency, amending the Directives 2009/125/EC and 2010/30/EU, and repeals Directives 2004/8/EC and 2006/32/EC.

The main purpose of the Law is to establish a coherent legislative framework for the development and application of a national energy efficiency policy, in order to achieve the national target for increasing energy efficiency.

### Comparison

The Law transposes Directive 2012/27/EU on energy efficiency partially, including Article 1 Paragraph (3): "*Romania is a democracy*", Paragraph (5): "*In Romania, the Constitution, its supremacy and the laws shall be mandatory*", Article 148 Paragraph (2) of the Constitution: "*Following accession, the provisions of the constituent treaties of the European Union and other mandatory community regulations have precedence over the provisions of the national laws with the provisions of the act of accession*". Article 22 Paragraph (1) of Law No. 24/2000 (republished and updated) on legislative technique for drafting regulations states: "*Legislative solutions envisaged by the new regulation must take into account EU regulations, ensuring compatibility with them.*"

## **SERBIA**

Serbia is a candidate country for the accession to the EU and is in the process of harmonising its legislation with the EU *acquis*. In 2013, Serbia adopted the Law on the Efficient Use of Energy<sup>3</sup> (“**Law**”), which came into force on 1 January 2014. It is the first systematic legislative act regulating energy efficiency in Serbia.

The Law and its accompanying bylaws implement: (i) Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products; (ii) Directive 2006/32/EC on energy end-use efficiency and energy services; and (iii) Directive 2010/31/EU on the energy performance of buildings.

However, the Law does not fully transpose the most recent Directive 2012/27/EU on energy efficiency. The Third National Energy Efficiency Action Plan<sup>4</sup> (“**NEEAP**”) provides that the Directive 2012/27/EU should be fully transposed by the end of 2017.

The Ministry of Mining and Energy (“**Ministry**”) is responsible for energy efficiency and further implementation of the Law.

### **Comparison**

Directive 2012/27/EU is only partially implemented by the Law. Specifically, the Law transposes Article 8 of Directive 2012/27/EU concerning energy audits and energy management systems and provisions of the Energy Labelling Directive (Directive 2010/30/EU) and the Energy Services Directive (Directive 2006/32/EC).

In particular, the Law regulates the following: (i) the efficient use of energy in the sectors of production, transfer, distribution and consumption of energy; (ii) energy efficiency policies; (iii) energy management systems; (iv) energy efficiency labelling; (v) the minimal energy efficiency requirements in production, transfer and distribution of electric and heat energy and the delivery of natural gas; (vi) financing, incentives and other energy efficiency measures; and (vii) other issues related to energy efficiency rights and the obligations of legal and natural persons related thereto.

## **SLOVAKIA**

On 1 December 2014, the Slovak Act No. 321/2014 Coll. on energy efficiency (“**Law**”) entered into force. The Law transposes into national legislation the European Union regulations set out under Directive 2012/27/EU regarding energy efficiency, amending the Directives 2009/125/EC and 2010/30/EU, and repeals Directives 2004/8/EC and 2006/32/EC.

The Law is focused on energy efficiency in the whole energy chain and also affects various entities which are not dealing primarily with energy efficiency, such as electricity generators. Nevertheless, the newly introduced obligations are imposed mainly on the owners or operators of larger buildings, as well as industrial buildings. The Law also includes various obligations with respect to energy efficiency in the course of operation of central heating where, for instance, apartment buildings with their own heating systems were obliged to install authorised meters for their heating systems by the end of 2016.

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<sup>3</sup> *Zakon o efikasnom korišćenju energije* (“Official Gazette RS” No. 25/2013).

<sup>4</sup> *Zaključak o usvajanju trećeg akcionog plana za energetske efikasnost Republike Srbije za period do 2018. godine* (“Official Gazette RS” No. 1/2017).

The Law sets out numerous rules and obligations, including:

- measures for support and improvement of energy efficiency for new and refurbished electricity production facilities;
- energy audit requirements;
- power transmission systems and distribution systems evaluation of transmission efficiency requirements;
- obligations for preparation of strategic documents in the field of energy efficiency by the Ministry of Economy (“**Ministry**”);
- obligation of the Ministry to determine energy efficiency targets, make an estimate energy efficiency potential of district heating systems and conclude energy saving agreements with entrepreneurs;
- obligation of the Ministry to ensure strategy development, planning and periodical evaluation of renovation of public buildings with floor areas of 250 m<sup>2</sup> or more;
- rules and obligations related to monitoring, and evaluation of national energy efficiency targets; and
- establishment of 3 types of energy services
  - Support (i.e. “soft”) Energy Service – includes mainly advisory or education activities;
  - Guaranteed Energy Service – realisation of real complete energy services based on a project; and
  - Energy Service for Public Sector – a special type of Guaranteed Energy Service, where either public authorities or public financial resources are involved according to rules specified in the Act.

### Comparison

In line with the EU legislation, (specifically the obligation of the Member States to duly implement directives and achieve a particular result dictated in the directives), Slovakia has implemented the provisions of the EU Directive by way of adopting the new Law and amending other relevant laws.

## SLOVENIA

In March 2014 the new Energy Act (Official Gazette of the Republic of Slovenia No. 17/14, as amended, “**EZ-1**”) entered into force. Representing a new framework law for the energy sector and as such, one of the most extensive amendments to Slovenian law, EZ-1 transposed several EU directives into the national legislation, including, *inter alia*, Directive 2012/27/EU regarding energy efficiency, amending Directives 2009/125/EC and 2010/30/EU, and repealing Directives 2004/8/EC and 2006/32/EC.

The main purpose of the new EZ-1 is to introduce more transparent and coherent regulation to the energy sector in general. In particular, energy efficiency is regulated in a special chapter of EZ-1, together with renewable sources of energy.

### Comparison

Until the deadline of 5 June 2014 for the transposition of Directive 2012/27/EU, Slovenia transposed most of the requirements set out in the Directive in the new EZ-1. Nevertheless, the transposition was completed only after the following legislation was adopted: (i) Long-Term Strategy for Mobilising Investments in the Energy Renovation of Buildings; (ii) Decree on Energy Management in the Public Sector; (iii) Decree on Physical Assets of the State and Local Government; (iv) Regulation on Energy Audits; and (v) Decree on Energy Savings Requirements.

## UKRAINE

The Law of Ukraine “On Energy Saving” No. 74/94 BP (“**Law**”) was adopted on 1 July 1994. It was a framework document devoted to State energy efficiency policy. The Law is rather general in nature. It does not include any express obligations for legal entities or sanctions for non-performance of obligations. Instead, it serves as the basis for the adoption of more specific legal acts.

Upon its accession to the Energy Community in 2010, Ukraine undertook the obligation to harmonise its legislation with the Energy Community *acquis*, including the provisions of Directive 2012/27/EU regarding energy efficiency, amending Directives 2009/125/EC and 2010/30/EU, and repealing Directives 2004/8/EC and 2006/32/EC (“**EED**”). According to the information of the Energy Community, Ukraine must implement EED by October 2017. Moreover, due to obligations undertaken before the Energy Community, Ukraine must also implement Directive 2004/8/EC. It is currently taking actions to comply with this obligation.

Energy efficiency provisions are also included into the EU-Ukraine Association Agreement signed on 27 June 2014. In particular, they include obligations of Ukraine to implement into its national legislation the provisions of Directives 2004/8/EC, 2002/91/EC and 2006/32/EC within three to eight (3-8) years from the date of entry into force of the EU-Ukraine Association Agreement.

According to Article 28 Paragraph 2 of the Law, if the provisions of international treaties concluded by Ukraine differ from the provisions set by the local Ukrainian law, the terms of the international treaties shall prevail. However, under Article 9 Paragraph 1 of the Constitution of Ukraine, international treaties must be ratified by the Ukrainian Parliament in order to become an integral part of the Ukrainian legislation. Currently, the laws in Ukraine are not subject to mandatory verification on their compliance with EU acts. However, the relevant initiatives have been recently raised in the Ukrainian Parliament, including submission of draft laws thereon.





# SPECIFIC PROVISIONS OF THE LAW

## **EU DIRECTIVE**

- Energy distributors or retail energy sales companies have to achieve one point five percent (1.5%) energy savings per year through the implementation of energy efficiency measures;
- EU countries can opt to achieve the same level of savings through other means, such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs;
- the public sector in EU countries should purchase energy efficient buildings, products and services;
- every year, EU governments will carry out energy efficient renovations on at least three percent (3%) of the buildings they own and occupy by floor area;
- empowering energy consumers to better manage consumption. This includes easy and free access to data on consumption through individual metering;
- national incentives for Small and Medium Enterprises (“SME”) to undergo energy audits;
- large companies will make audits of their energy consumption to help them identify ways to reduce it; and
- monitoring efficiency levels in new energy generation capacities.

Relevant National Laws in:

## **AUSTRIA**

The core content of the EEEffG is the following:

- Austria commits itself to achieving a cumulative energy efficiency target in the amount of 310 PJ, reached by supplier obligations in the amount of 159 PJ and strategic energy efficiency measures in the amount of 151 PJ, and correspondingly, an energy efficiency consumption target in the amount of 1,050 PJ in the year 2020.
- The EEEffG includes a variety of energy efficiency obligations for energy suppliers, large (energy consuming) enterprises and the Federal State to ensure the achievement of the target.
  - As an alternative to the implementation of energy efficiency measures, energy suppliers may pay a rate of compensation;
  - large enterprises must conduct mandatory periodical energy audits or implement energy management systems; and
  - an annual renovation rate of three percent (3%) (*Sanierungsquote*) must be fulfilled by means of energy savings contracting, energy management measures and renovation measures.
- In order to coordinate and monitor energy efficiency measures a national monitoring body (the Austrian Energy Agency) was established. This Agency assists the obliged enterprises regarding energy efficiency and coordinates the National Energy Efficiency Action Plan and the annual progress reports (*Fortschrittsberichte*).
- The use of energy audits or energy management systems for enterprises is to be promoted.

### **Austrian National Energy Efficiency Action Plan (“NEEAP”) of 2014**

Due to the reporting obligation, Austria was required to submit the first NEEAP to the European Commission in 2014. The NEEAP particularly focuses on strategic measures to implement Directive 2012/27/EU. The annual Austrian progress report is part of the NEEAP, representing Annex A.

## Comparison

Austria chose an energy efficiency obligation scheme pursuant to Article 7 Paragraph 9 of Directive 2012/27/EU which allows combining obligation schemes with alternative policy measures. Moreover, Austria reduced the amount of the energy savings target (i.e. one point five percent (1.5%)) by so-called “early actions” which are eligible advance savings from the past, leading to an adjusted target of one point one two five percent (1.125%). Energy efficiency information is offered by several organisations in Austria. Accordingly, the Austrian Economic Chamber (*Wirtschaftskammer Österreich, WKO*) offers information about the implementation of energy audits and the use of energy management systems.

## BOSNIA & HERZEGOVINA

The goal of the BEEP project, which is implemented throughout BiH, is to demonstrate the benefits of improving energy efficiency in public sector facilities and to support the development of flexible models for financing energy efficiency. It includes, (but is not limited to), investments in energy efficiency in public sector facilities, support for the development of flexible funding mechanisms, insurance that the project is managed efficiently by the project implementation unit and other related measures.

In RS, the first legal framework for application of energy efficiency measures was the RS Law on Energy, which prescribes the following:

- ensuring cooperation between consumers, manufacturers, and energy suppliers, as well as the public services sector and local governments, in order to reach the required level of energy efficiency;
- the realisation of the given levels for increasing energy efficiency by reducing energy losses, reducing energy consumption by introducing new technological solutions in different sectors (public sector and public services sector, construction, agriculture, industry, traffic, etc.);
- the consumers' education and awareness regarding the necessity of energy consumption reduction (savings) and measures to reduce energy consumption; and
- the establishment of a system of verification and compulsory device marking with the energy class rating as well as the certification of buildings in terms of their energy characteristics.

The FBiH Energy Efficiency Law prescribes the following:

- Indicative goals of FBiH in terms of energy efficiency improvements must be determined by the Action Plan for Energy Efficiency. Furthermore, since FBiH is divided into Cantons, each Canton must enact a plan of energy efficiency which will further be used as a baseline for programmes of energy efficiency improvement enacted at the local government level.
- As for the measures for energy efficiency, the authorities and institutions in the public sector must: (i) perform annual analyses of energy consumption; (ii) perform energy audits and obtain the certificate on energy efficiency; (iii) implement the measures for energy efficiency and adopt the programmes for improvement of energy efficiency; and (iv) introduce and implement criteria for energy efficiency in performing public procurement procedures for goods and services.
- Use of RES is considered as an energy efficiency measure and in this respect legal and natural persons that use RES may benefit from funds intended for energy efficiency projects.
- Advertisements for sale or rent of buildings or a part thereof must include an indicator of the energy characteristics of such space. For new buildings or change of intended use of old ones, investors must have energy efficiency certificates.

- Energy audits must be performed for all end-users in the public utility service sector, (including households, commercial consumers and small and medium sized industrial consumers). Also, public administration, local government units, public companies, etc., which use more than 500 m<sup>2</sup> of usable surface must perform energy audits of their spaces. The FBiH Energy Efficiency Law further prescribes the conditions for such energy audits, the types of authorisations in this respect, and the obligations of legal and natural persons in performing energy audits. Further rules will be set out in the relevant bylaws yet to be adopted.

Also, the FBiH Law on Use of RES and effective cogeneration prescribes the following stimulative measures for use of RES in electricity production:

- priority in connecting to the grid;
- time advantage in dispatching the electricity produced from RES and efficient cogeneration;
- producers of energy who use RES and have the status of a qualified producer have certain advantages including time advantage in dispatching power, and an advantage in delivering electrical power produced to those facilities which have a designated power of less than 150 kW, without the requirement to report to the relevant regulator; and
- producers of electrical energy which use RES and have the status of privileged producers, have the right to conclude a contract with the operator for renewable energy sources and effective cogeneration which shall provide them a secure redemption of produced energy on the basis of granted prices (feed in tariffs) for a period of twelve (12) years.

In addition, laws regulating special planning and building or use of land (both in FBiH and RS) contain provisions which further emphasise energy efficiency measures in construction projects. FBiH went further to adopt the necessary bylaws on certain technical requirements, in order to enhance the energy efficiency requirements, such as a rulebook for technical requirements of doors and windows, ventilation systems, cooling and heating systems, rulebook on energy certification of the buildings, etc.

## **Comparison**

In BiH there are no clear indicators as to what percentage of energy savings should be accomplished by distributors, or what percentage of efficient renovations must be performed (as opposed to those set out in the EU legislation). Also, although certain requirements are prescribed by the applicable laws and bylaws, these are not adequately applied in practice. However, the global indicators of energy savings in BiH and entity level are set out in the action plans for RES (please see Part VI “Targets”, p. 117).

## **BULGARIA**

### **Competent authorities**

In order to implement the measures and to achieve the energy savings targets under Directive 2012/27/EU, Bulgaria has developed a complex framework of primary and secondary level norms.

Pursuant to the Bulgarian EEA, the energy efficiency policy in Bulgaria is to be implemented by a number of public authorities. The National Energy Efficiency Strategy of the Republic of Bulgaria, which defines the stages, means and measures to achieve the national energy efficiency target, is to be adopted by the National Assembly.

The Council of Ministers has a particularly important role in this respect, as it adopts, among others:

- the State energy efficiency policy;
- the National Energy Efficiency Action Plans;
- a National Plan for Nearly Zero-Energy Buildings;
- a national plan for improvement of the energy performance of heated and/or cooled State-owned buildings occupied by the State administration; and
- a long-term national programme to encourage investments in implementing measures to enhance the energy performance of buildings of the public and private national residential and commercial building stock.

The practical implementation of those policies and documents is performed by different ministries – in particular the Ministry of Energy, the Ministry of Economy, the Ministry of Regional Development and Public Works, Ministry of Transport, Information Technology and Communications and other public institutions.

Pursuant to the Bulgarian EEA, the Sustainable Energy Development Agency (“SEDA”) is charged with the implementation of the State energy efficiency improvement policy. This administrative authority has a central role in this respect and its task and powers are frequently being extended to cover further energy efficiency policies and measures.

### **Energy Efficiency Targets**

The Bulgarian EEA provides that the national energy efficiency target shall be set in the National Energy Efficiency Action Plan, i.e. be adopted by the Parliament. The current National Energy Efficiency Action Plan 2014–2020, although adopted before the transposition of Directive 2012/27/EU into the Bulgarian legislation, has been developed in compliance with the provisions of Article 24 (2) of Directive 2012/27/EU.

### **Energy Efficiency Improvement Activities**

The Bulgarian EEA provides for the following energy efficiency improvement activities:

- reduction of energy expenditure in energy production, transmission and distribution, as well as in final energy consumption;
- training and attainment of qualification in the field of energy efficiency of persons delivering energy efficiency services;
- conformity assessment of development-project designs of buildings as regards energy efficient requirements;
- energy efficiency audits and certification of buildings;
- energy efficiency inspection of heating systems with hot-water boilers and air-conditioning systems in buildings;
- energy efficiency audits of enterprises, industrial systems and outdoor lighting systems;
- energy efficiency management;
- delivery of energy efficiency services; and
- raising awareness among households.

## **EU Sectoral Operational Programmes**

Substantial financing for reaching the respective targets is expected to be obtained from the following EU financed Operational Programmes:

- **Operational Programme “Innovations and Competitiveness” 2014–2020 (OPIC)** is the basic programme document on the national level outlining the aid envisaged for Bulgarian businesses from the European structural and investment funds for the period 2014–2020. The total budget of OPIC amounts to EUR 1.39 billion, with financing from the European Reconstruction and Development Fund of almost EUR 1.18 billion (eighty five percent (85%) of the budget), and national co-financing of EUR 209 million (fifteen percent (15%) of the budget);
- **Operational Programme “Regions in Growth” 2014–2020** is a continuation of the programme “Regional Development” 2007–2013;
- **Rural Development Programme 2014–2020** aims to improve living conditions in rural areas by facilitating access to quality infrastructure. The activities eligible under the Programme include investments for the improvement of energy efficiency in municipal buildings or other buildings used for the provision of public services; and
- **Operational programme on “Transport and Transport Infrastructure” 2014–2020** aims mainly to construct, reconstruct and modernise the transport infrastructure of the country as part of the Pan-European Transport Network.

Another actual programme directly aimed at energy efficiency measures is Programme **BG04 “Energy Efficiency and Renewable Energy”**, financed by the Financial Mechanism of the European Economic Area and the Kingdom of Norway, Iceland and Principality of Liechtenstein. Programme BG04 “Energy Efficiency and Renewable Energy” includes two programme areas “Energy Efficiency” (Programme Area 5) and “Renewable Energy” (Programme Area 6). The programme comprises four grant schemes, a bilateral relations fund and a designated project. The total programme budget is EUR 15,600,288, including EUR 13,260,245 (eighty five percent (85%)) in grant assistance and EUR 2,340,043 (fifteen percent (15%)) in national co-financing.

Specific measures for environment, climate change and energy efficiency were also included within the scope of other programmes for the 2014–2020 period.

## **Kozloduy International Decommissioning Support Fund**

In 2015, two projects aimed at improving the energy efficiency of public buildings were implemented, for a total value of EUR 30.4 million, co-financed by the Kozloduy International Decommissioning Support Fund (KIDSF) – administered by the EBRD and funded by international donors within the so-called “non-nuclear window”. The financial support amounts to one hundred percent (100%) of the project value.

KIDSF also financed a project on energy efficiency of municipal street lighting systems, which is valued at EUR 10.655 million and funded entirely from KIDSF.

## **National Programmes**

The main Bulgarian national programme in the field of energy efficiency is the **National Programme for Energy Efficiency of Residential Buildings**. Under this programme, BGN 1 billion (approximately EUR 511 million) are provided by the Government in the form of a bank guarantee, which the Council of Ministers provides to the Bulgarian Development Bank to attract resources and secure financing for the programme’s activities. The programme includes all municipalities and will last for a period of two (2) years, with the option to extend should the financial resources be available. Financing will come in the form of a State grant for all buildings which meet the requirements. Eligible are residential buildings, constructed by industrial means, with more than 36 apartments.

Another important programme addressed to households is the **credit facility for energy efficiency in the household sector**, which is financed by the EBRD. A total of 3,052 residential energy saving projects were financed and implemented in 2015, to a total value of BGN 9,755,101; the estimated equivalent savings are estimated at 14,145 MWh/year in electricity and 9,654 t CO<sub>2</sub>-eq/year in greenhouse gas emissions. The beneficiaries include households and associations of home owners which can receive consumer loans combined with technical and financial assistance provided free of charge via local banks and intended for energy efficiency improvement and RES utilisation. The eligible measures include the installation of energy efficient windows and doors, walls, roofs and floor insulation, high-efficiency burners and biomass-fuelled boilers and systems, water heater solar collectors and systems; energy efficient gas-fuelled boilers and systems; thermal pump systems for heating and air-conditioning; photovoltaic systems for buildings; district heating substations and systems or gas installation in buildings and recuperative ventilation systems.

The **Bulgarian Energy Efficiency and Renewable Sources Fund (FEEVI)** is another possible financing source for energy efficiency projects. It offers to Bulgarian companies, municipalities and private individuals beneficial financial products in the field of energy efficiency such as credits below market interest rates, partial credit guarantees and portfolio guarantees. In 2015, FEEVI extended loans to six energy efficiency improvement projects for a total value of BGN 1,479,253 (approximately EUR 755,751). These are expected to result in annual energy savings of 1,865 MWh and a reduction of annual greenhouse gas emissions of 2,800 t CO<sub>2</sub>-eq.

### Comparison

Since 2007 when Bulgaria became a member of the EU, the country has made important progress in implementing energy efficiency measures. The results achieved with respect to the national target set in accordance with Directive 2006/32/EU evidence that Bulgaria has exceeded its indicative target for the period 2008–2015 by one point four percent (1.4%).

However, the implementation of Directive 2012/27/EU and the achieving of the national energy savings targets and the targets for reducing the energy intensity of the national economy provided for in Bulgaria's Energy Strategy requires implementation of a number of measures and programmes to alleviate the impact on businesses, households and the public sector. The Bulgarian government recognises the importance and positive impact that energy efficiency measures may have on the national economy and energy consumption and are constantly extending the measures and programmes to implement energy efficiency savings for the country.

## CROATIA

Apart from the Energy Efficiency Act and its supporting legislation, a large portion of Croatia's energy efficiency framework is outlined in the National Energy Efficiency Action Plans, as follows:

- National Energy Efficiency Plan 2008–2016;
- First National Energy Efficiency Action Plan 2008–2010;
- Second National Energy Efficiency Action Plan 2011–2013; and
- Third National Energy Efficiency Action Plan 2014–2016.

In 2014, the Third National Energy Efficiency Action Plan ("**NEEAP 3**") was developed and supersedes the First and Second National Energy Efficiency Action Plans. The most important aspect of NEEAP 3 is the implementation of the EU Directive. NEEAP 3 recognises the energy saving goals set out by the EU Directive and anticipates that sixty percent (60%) of the energy savings will be achieved through alternative policy measures and the rest through mandatory savings (Croatia opted for a combined approach).

The calculations made by means of the top-down indicators recommended by the European Commission have led to the conclusion that in 2012, Croatia's final energy consumption savings amounted to sixty one percent (61%)

of the contemplated savings goals for 2016 – suggesting that the final target set for 2016 will be met (the report on whether the target was actually met in 2016 is still outstanding). The highest savings have been registered in industry and transport, but these improvements are generally a result of one-time activities or incidental occurrences rather than a result of systematic structural measures - thereby suggesting the need for further improvements.

In addition to the National Energy Efficiency Action Plans, the Croatian Government and its bodies have also adopted strategic documents governing the energy efficiency framework, the most important of these being the Strategy for Energy Development of the Republic of Croatia (“**Strategy**”) and Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia (“**Renovation Strategy**”). Details of these strategies are outlined in Part V “Strategies”, p. 93 hereof.

Croatian energy efficiency measures are also implemented through many operational programmes, such as:

### **Eco-driving Measure**

By co-financing the purchase of electric and hybrid vehicles in Croatia, the Croatian Government intends to have a gradual, but direct impact on reducing harmful emissions in transport. It is possible to receive state subsidies covering up to forty percent (40%) of the purchase costs of electric, hybrid or plug-in hybrid vehicles.

### **Energy efficient renovation of residential buildings programme**

This programme co-finances the: (i) energy inspection of these buildings and energy certification thereof; (ii) preparation of project documentation for energy renovation; (iii) energy renovation of residential buildings; and (iv) introduction of individual thermal energy devices in existing residential buildings.

### **WEEE disposal programme**

This programme provides for the disposal of old electrical and electronic devices used by consumers in one of four proper ways: (i) devices up to 25 cm in height can be handed over free of charge to retailers carrying the waste electric and electronic equipment (“**WEEE**”) sign with no purchase obligation; (ii) larger devices can now be handed over free of charge to retailers when buying a new device; (iii) devices can be handed over free of charge to recycling yards; or (iv) arrangements can be made for free of charge removal of the devices by an authorised collector. In addition, each servicing provider is obliged to take over WEEE equipment free of charge at their business premises if it is determined that repair of the device is not possible or commercially viable.

### **Energy renovation of family homes programme**

The programme for energy renovation of family homes enables an increase in energy efficiency and use of renewable energy sources, which saves energy while preserving the environment and jobs. With integral energy renovations, home energy consumption can be reduced by thirty to sixty percent (30–60%) and by using renewable energy, these energy savings can be even greater.

### **Comparison**

Specific provisions of EU Directives transposed into Croatian legislation are as follows:

- Energy distributors or retail energy sales companies must achieve one point five percent (1.5%) energy savings per year through the implementation of energy efficiency measures. EU countries can opt to achieve the same level of savings through other means, such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs.

Croatia chose to implement a combination of energy efficiency obligation schemes and alternative policy measures.

The energy efficiency obligation schemes are limited to the obligations of the distribution system and suppliers. These relate to the supply of energy services, the provision of individual metering services and the issuance to their customers of invoices with full information. Distributors/suppliers are under no obligation to achieve savings in relation to energy use by their customers.

The Croatian government decided to also employ alternative policy measures (which, according to NEEAP 3, should account for sixty percent (60%) of all energy savings). The alternative policy measures are described in detail in Part III "Obligations", p. 57 hereof.

The national savings goal is set at 54,250 PJ until 31 December 2020, or 1,938 PJ on an annual level.

- The public sector in EU countries should purchase energy efficient buildings, products and services.

This obligation was transposed into Croatian legislation by the Energy Efficiency Act and corresponding Ordinance on Energy Efficiency Requirements for Energy Related Products in Public Procurement Procedures (*Pravilnik o zahtjevima energetske učinkovitosti proizvoda povezanih s energijom u postupcima javne nabave*). Both sources oblige the central government bodies participating in public procurement procedures to use certain energy efficiency-based criteria when purchasing energy related goods or using energy related services.

The National Energy Efficiency Plan also sets out the rules for implementation of policies geared towards energy efficiency improvement. This Plan contains, *inter alia*, measures necessary for renovation of at least three percent (3%) of the floor area in those buildings owned or used by central government bodies.

- Empowering energy consumers to better manage consumption. This includes easy and free access to data on consumption through individual metering.

The Energy Efficiency Act governs the following topics in detail:

- energy suppliers must provide their customers free of charge, at their request and at least once a year, information on consumption of electricity, heat energy and gas;
- energy distributors are required to provide their customers with individual meters which accurately reflect their consumption; and
- both distributors and suppliers must include information on current prices and actual consumption, as well as a comparison of current and past consumption of the customer, in their contacts, receipts or transactions.

- Large companies will make audits of their energy consumption to help them identify ways to reduce it.

This obligation was transposed into Croatian legislation by the Energy Efficiency Act and corresponding Ordinance on Energy Audit for Large Companies (*Pravilnik o energetsom pregledu za velika poduzeća*). A detailed analysis is set out in Part IV "Mandatory Audit of Large Industry", p.75 hereof.

- Monitoring efficiency levels in new energy generation capacities.

The system for monitoring, measuring and verification of energy savings is generally established within the Energy Efficiency Act. Additionally, NEEAP 3 sets out specific measures, such as improvement of efficiency in energy generation through the reduction of self-consumption in those power plants managed by State-owned operators (reconstruction and installation of replacement equipment) and improvement of energy efficiency in exploration, production and processing of oil (improvement of production processes and utilisation of additional capacities).

## CZECH REPUBLIC

The main programmes that have been implemented in the Czech Republic are the following:

### National Energy Efficiency Action Plans

On the basis of the provisions set out in Directive 2012/27/EU, the Czech Republic was obliged to submit a first national energy efficiency action plan (“**NEEAP**”) containing the national orientation goal to reduce energy consumption. In July 2007, the Czech Republic submitted a first NEEAP (“**NEEAP I**”) and pledged to reduce its energy consumption by nine percent (9%) for the period 2008–2016, compared to the average consumption in the period 2002–2006. The pledged quantitative targets represent savings of 71.3 PJ (19.8 TWh) for the period 2008–2016.

In August 2011, the Czech Republic submitted a second NEEAP (“**NEEAP II**”). The calculation of the consumption of energy in the period 2002–2006 by **NEEAP I** was (according to **NEEAP II**) not entirely correct because the numbers contained therein were estimates. The target was therefore corrected to 73.1 PJ (20.3 TWh) which represents an increase against the **NEEAP I** estimate (of two point three five percent (2.35%)). Although the target was met in the first years, it was not possible to meet the target for the whole period 2008–2016. The final reduction in energy consumption amounted only to 66.8 PJ (18.6 TWh) and lagged behind the target by roughly eight point six percent (8.6%).

The third NEEAP was adopted in April 2014 (“**NEEAP III**”), following the approval of Directive 2012/27/EU. The calculation made by means of the top-down indicators recommended by the European Commission concluded that in 2010 the Czech Republic’s savings amounted to 27.1 PJ (7.5 TWh). This compares to the result of the original calculation made in **NEEAP II** in the amount of 19.7 PJ (5.5 TWh). **NEEAP III** also sets the national orientation goal in accordance with Article 3 of Directive 2012/27/EU of reduction of final consumption in the amount of 47.9 PJ (13.3 TWh) in year 2020. This pledge is for the same amount as the obligatory energy savings stated in Article 7 of Directive 2012/27/EU.

The current, fourth amended NEEAP (“**NEEAP IV**”) was prepared after the final approval of the programmes financed by the European Investment and Structural Funds. The cumulative energy savings target in final consumption under Article 7 of Directive 2012/27/EU on energy efficiency was recalculated according to the Eurostat methodology and was set at 50.7 PJ (14.1 TWh). After the assessment of the current measures of the alternative scheme, additional policy measures in household, industry, the transport and agriculture sectors, and on the level of local governments were added. The Czech Government approved **NEEAP IV** on 16 March 2016 by Governmental Resolution No. 215/2016.

### Sectoral Programmes

- National Programme for Support of Energy Efficiency and Use of Renewable Sources of Energy for 2017–2021

This programme was established by the Czech Ministry of Industry and Trade, with the intention to support the attainment of goals set out in the State Energy Policy.

It has a budget of at least CZK 750 million (approximately EUR 27.8 million) which will be used gradually through the whole period of 2017–2021.

The programme is divided into two sections:

- investment subsidies; and
- non-investment subsidies (e.g. analyses of the appropriateness of the energy performance contracting method, energy management, and education: advice centres, seminars, publications).

- Operational Programme Environment 2014–2020

This programme is aimed at the areas of:

- improvement of water quality and lowering of flood risks;
- improvement of air quality in residential areas;
- waste and resource management, ecological burdens and risk;
- protection of environment and countryside; and
- energy efficiency.

The programme is operated by the Czech Ministry of Environment and has a budget of almost EUR 2,637 billion.

- Other Programmes

Several other programmes are in place which address energy efficiency.

These are not specified here in more detail since either the total amount of the programme is marginal (e.g. the Joint Boiler Replacement Promotion Scheme) or they are focused on other areas and aim to achieve energy efficiency only as a secondary objective (e.g. the Programme of Development of the Countryside 2014–2020).

## Comparison

Through NEEAP, the Czech Republic pledged to achieve the one point five percent (1.5%) annual energy savings target mandated by the EU Directive. It reduced the target in line with Articles 7 (2) a) and d) of Directive 2012/27/EU by the maximum allowed twenty five percent (25%).

In line with Article 7 (9) of Directive 2012/27/EU, the Czech Republic chose an alternative scheme to comply with the energy savings requirements of Directive 2012/27/EU. That means the realisation of the reduction targets will be managed by public bodies or their delegated entities.

## HUNGARY

The Laws provide for the following:

- mandatory renovation of government buildings (all government buildings above 250 m<sup>2</sup> must comply and at least three percent (3%) of these should undergo such mandatory renovation annually);
- public tenders for energy efficiency (where public authorities should conclude contracts only for high energy efficiency products, services or buildings);
- tasks for the operators of state- and municipality-owned buildings like elaboration of local energy savings action plans, data provision obligation and mandatory cooperation with the National Energy Network;
- certain tasks concerning buildings owned or used by public institutions;
- energy audits (large companies not qualifying as SMEs are obliged to carry out energy audits every four (4) years with the exception of those certified by EN ISO 50001 standard);
- energy efficiency webpage; and
- use of professional energy evaluators (by those companies where the energy consumption in question exceeds 400,000 kWh electricity, 100,000 m<sup>3</sup> gas or 3,400 GJ heat. The professional energy evaluator cannot be an employee of the company in question).

The Decree contains more technical rules, especially on:

- the Action Plan;
- the applicability of the so-called professional energy evaluator;
- the content of energy efficiency-based contracts the public institutions should conclude; and
- energy audits.

The main programmes that have been implemented so far are the following:

### Action Plan

According to the provisions of the Directive 2006/32/EC as well as to Section 3 of the Act, Hungary drew up its Action Plan as elaborated by the Ministry of National Development (final version August 2015). Through this document, Hungary pledged to reduce its final energy consumption by an average annual rate of one point five percent (1.5%), i.e. an annual 7.3 PJ reduction of final energy consumption. The total final energy saving for the period 2012–2020 is forecasted as 73 PJ, from which 40 PJ for households, 10 PJ for industry, 14 PJ for transport and 9 PJ for agriculture, trade and services. The factual data of the Action Plan for the period 2008–2012 as well as the energy consumption forecasted as 2020 per sector are:

| UNIT: PJ                         | 2008        | 2012       | 2020        |
|----------------------------------|-------------|------------|-------------|
| <b>PRIMER ENERGY-UTILISATION</b> | <b>1120</b> | <b>992</b> | <b>1009</b> |
| <b>FINAL ENERGY CONSUMPTION</b>  | <b>704</b>  | <b>600</b> | <b>603</b>  |
| INDUSTRIAL SECTOR                | 139         | 96         | 114         |
| TRANSPORTATION                   | 192         | 157        | 147         |
| HOUSEHOLDS                       | 233         | 215        | 207         |
| TRADE AND SERVICES               | 117         | 116        | 118         |
| AGRICULTURE AND FISHING          | 22          | 17         | 17          |

However, it is worth mentioning, that compared to the figures of the National Energy Efficiency Action Plan, the Government accepted forecast targets for planned final energy savings between 2016 and 2020 in its Government Resolution No. 1160/2015 (III. 20.) as:

| UNIT: PJ                              | 2012<br>FACT | 2020        |             | 2030        |             |
|---------------------------------------|--------------|-------------|-------------|-------------|-------------|
|                                       |              | "BAU"       | "POLICY"    | "BAU"       | "POLICY"    |
| <b>PRIMER ENERGY-UTILIZATION</b>      | <b>992</b>   | <b>1101</b> | <b>1009</b> | <b>1217</b> | <b>1028</b> |
| <b>FINAL ENERGY CONSUMPTION</b>       | <b>677</b>   | <b>766</b>  | <b>693</b>  | <b>840</b>  | <b>692</b>  |
| INDUSTRIAL SECTOR                     | 96           | 124         | 114         | 139         | 126         |
| TRANSPORTATION                        | 157          | 161         | 147         | 173         | 151         |
| HOUSEHOLDS                            | 215          | 247         | 207         | 284         | 187         |
| TRADE AND SERVICES                    | 116          | 126         | 118         | 135         | 121         |
| AGRICULTURE AND FISHING               | 17           | 18          | 17          | 19          | 17          |
| CONSUMPTION WITHOUT<br>ENERGY PURPOSE | 77           | 90          | 90          | 90          | 90          |
| ELECTRICITY CONSUMPTION               | 153          | 170         | 164         | 197         | 181         |

The National Energy Efficiency Plan identifies: (i) horizontal measures; (ii) building energy efficiency measures; (iii) public institution-related measures; (iv) industrial and transport-related measures; (v) heating and cooling utilisation measures; and (vi) energy conversion, transport, distribution and demand-related measures to achieve these goals.

The estimated final energy savings for 2008–2012, as well as planned final energy savings for 2016 and 2020 in the National Energy Efficiency Plan are:

| SECTOR                                                              | SAVINGS<br>ACHIEVED UNTIL<br>2008–2012 (PJ) | NATIONAL<br>TARGET<br>2012–2016 (PJ) | NATIONAL<br>TARGET<br>2012–2020 (PJ) |
|---------------------------------------------------------------------|---------------------------------------------|--------------------------------------|--------------------------------------|
| HOUSEHOLDS                                                          | 29.7                                        | 20.0                                 | 40.0                                 |
| INDUSTRY                                                            | 13.1*                                       | 5.0                                  | 10.0                                 |
| TRANSPORTATION                                                      | 26.6                                        | 7.0                                  | 14.0                                 |
| AGRICULTURE, TRADE, SERVICES,<br>OTHERS (INCL. PUBLIC INSTITUTIONS) | 9.9                                         | 4.5                                  | 9.0                                  |
| TOTAL                                                               | 79.3                                        | 36.5                                 | 73.0                                 |

### Sectoral Operational Programmes

Financed by the European Union, Hungary has employed operational programmes to promote energy efficiency under the so-called “Environment and Energy Operational Programme” and from governmental sources the so-called “Green Investment System / Green Financing System” – governed by 18/2011 (III. 11) NFM Order<sup>5</sup>. These are closed now, but the following operational programmes are open or planned:

- Warmth of Home Programme – Support for modernisation of blocks of flats (existing);
- Environmental Product Rating System (existing); and
- Continuation of the Large Household Appliance Replacement Programme (planned).

### National Building Energy Strategy

According to Section 4 of the Act, Hungary drew up its National Building Energy Strategy (final version February 2015) approved by Government Decision No. 1073/2015 (II. 25.) aiming to reach 49 PJ/year (until 2020), as well as to 111 PJ/year primary energy savings of the energy consumption of the buildings through a number of measures:

- the level of energy efficiency should be increased in case of both existing and future buildings;
- special attention should be paid to the renovation of family houses;
- renewable energy methods should be applied (e.g. solar panels);
- new support and financing schemes should be available; and
- improvement of research and development.

<sup>5</sup> A number of programmes on other subsidiary schemes were opened under these systems, such as the GIS Frontal Doors and Windows Replacement Sub-Programme, the Large Household Appliance Replacement Energy Saving Sub-Programme, the Heating Modernisation (boiler replacement) Sub-Programme, etc.

### Comparison

The Laws provide for the most important requirements of the Directive to be carried out. Through the Action Plan, Hungary pledged to achieve the one point five percent (1.5%) energy savings per year target as mandated by the Directive but through alternative measures in line with Article 9 (2) of the Directive. The National Building Energy Strategy declares the targets of primary energy savings as 49 PJ/year (until 2020), as well as 111 PJ/year of the energy consumption of the buildings. Hungary's sectoral operation programmes aim to make funds available for certain activities resulting in energy efficiency.

### KOSOVO<sup>6</sup>

The Law on Energy Efficiency established energy efficiency targets and plans, energy management, energy auditing, and also outlined the role and scope of State institutions and various other organisations dealing with energy efficiency.

The Law on Energy Efficiency obliges the competent ministry to draft and submit for approval to the Government of Kosovo: (i) a plan for energy efficiency in compliance with Directive No. 2006/32/EC, reviewed within a three (3) year period; (ii) a report on its implementation to the Government of Kosovo every three (3) years; and (iii) to develop an Energy Efficiency National Action Plan, in line with Directive No. 2006/32/EC.

In addition to the above, the Law on Energy Efficiency obliges the competent ministry to establish the Kosovo Energy Efficiency Agency ("KEEA"). The KEEA is responsible for: (i) proposing to the Minister the policies to promote energy efficiency; (ii) developing and maintaining the database on energy efficiency; (iii) developing the system of monitoring implementation of the National Energy Efficiency Plan and achievement of the indicative targets for energy saving, (iv) preparing the Progress Report on the Implementation of the National Energy Efficiency Plan; (v) guiding and supporting municipalities for preparation of the municipal energy efficiency plans and their progress reports; and (vi) promoting energy efficiency through public awareness campaigns etc.

The Law on Energy Efficiency states that the Kosovo Energy Efficiency Plan is an obligatory document for implementation, which is prepared by KEEA, in compliance with requests of Directive No. 2006/32/EC and of the Energy Community Secretariat.

The Law on Energy Efficiency obliges the Municipal Energy Offices to develop the Municipal Energy Efficiency Plan, in line with the instructions of the KEEA.

The Ministry shall present to the Government for approval the necessary legal acts to implement the provisions of the EU Directives regarding energy efficiency, which are binding upon the Republic of Kosovo as a party to the Energy Community Treaty.

The Ministry of Environment and Spatial Planning – taking into consideration the obligation to transpose Directive No. 2010/31/EU – in Law No. 04/L-110 on Construction ("**Law on Construction**") has set requirements for the application of energy efficiency measures on buildings.

### Comparison

The Law on Energy Efficiency set the basic rules and procedures in the field of energy efficiency. Establishing the KEEA was an important step toward engaging in energy efficiency measures at the municipal level. Most of the measures foreseen by laws and secondary legislation are addressed to the public sector. Such intention was provided in the Administrative Instruction No. 14/2012 on the Promotion of Energy End-Use Efficiency and Energy Services, which states that the public sector shall serve as a model for encouraging the efficient use of energy.

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<sup>6</sup> Wolf Theiss in corporation with Pallaska&Associates.

## MOLDOVA<sup>7</sup>

The main solutions envisaged by the relevant legislation are the following:

- Implementation of advanced energy production technologies, such as cogeneration and trigeneration, distribution, transportation and use of energy and fuels is to be accomplished by applying energy efficiency standards for installations, buildings, machinery and equipment, as well as compliance supervision;
- Promoting of private initiative and energy service companies that contribute to optimising the exploitation of energy systems based on energy performance contracts;
- Support of cooperation between producers, transporters, distributors, suppliers and energy consumers in order to correlate the common interests and attain the objectives of State policy on energy efficiency;
- Training at all levels of decision-makers to identify and achieve energy efficiency measures;
- Raising awareness and involving the civil society in the decision processes regarding energy efficiency measures and their implementation;
- Compulsory energy audits in an exhaustive list of cases, under specific procedures and requirements, especially if the audits are financed by the Energy Efficiency Fund, or the State and public local authority's budget; and
- An institutional framework consisting of the following authorities: the Ministry of Economy, the Agency for Energy Efficiency, the Energy Efficiency Fund, the National Energy Regulatory Agency.

### National Energy Efficiency Action Plans

The main objectives of the Energy Conservation Programme for the years 2003–2010 were: restoring electricity supplies, preventing continuous collapse of the heating sector, increased consumption of natural gas by substituting out of coal consumption (a rather rudimentary approach which served as a primarily basis for the next strategies, especially for drafting the legal regulatory framework to ultimately stimulate effective energy consumption). The programme was to achieve annual savings of 43.4 ktep or eighteen percent (18%) of the consumption in 2002 as reference year.

According to the provisions of the National Efficiency Action Plan for 2013–2015, all District and Municipal Councils (local authorities) must have developed and approved action plans and regional energy efficiency programmes for further implementation. Moldova has committed to reduce final energy consumption in all sectors of its national economy by one point eight (1.8) percentage points (p.p.) annually compared to the reference year 2009. Thus, these proposed measures were considered to be quite innovative.

Meanwhile, the National Efficiency Action Plan for 2011–2020 targets natural gas reduction in the energy structure and increasing the corresponding renewable energy quota, by stimulating the use of energy from renewable sources (RES) relative to total gross domestic consumption: twenty percent (20%) in 2020, with an interim target of ten percent (10%) in 2015; and ensuring the percentage of all fuels will include, bio-fuels of ten percent (10%) in 2020, with an interim target of four percent (4%).

As far as energy efficiency is concerned, the State intends to:

- reduce energy intensity by ten percent (10%) in 2020;
- reduce losses in transmission and distribution by up to eleven percent (11%) in 2020 (thirteen percent (13%) in 2015) for electricity, by thirty nine percent (39%) in 2020 (twenty percent (20%) in 2015) for gas, and by five percent (5%) in 2020 (two percent (2%) in 2015) for heat;
- reduce emissions of greenhouse gases (compared with 1990) by twenty five percent (25%) in 2020;

<sup>7</sup> Contributed by ACI Partners Law Firm.

- reduce energy consumption in buildings by twenty percent (20%) in 2020; and
- increase the share of energy efficient renovated public buildings by ten percent (10%) in 2020.

Preliminary calculations indicate that energy efficiency is two point six (2.6) times lower than in the European Union, resulting in significant financial losses. Therefore, national targets for improving energy efficiency and increasing the use of renewable sources for 2020 are set at ambitious levels. Specifically, these targets are set in accordance with the European Union while following the decisions, recommendations of the Energy Community, with Moldova recognising the benefits and undertaking the efforts.

The strategy targets 2020 as the year by which Moldova will achieve full integration into the internal energy market of the European Union. Therefore, the country's legislation will be timely harmonised with the Energy Community *acquis* and converged with the EU *acquis*, thus ensuring legal and regulatory compatibility with these markets.

The Energy Strategy for 2030 reflects the European targets and sets highly progressive objectives, particularly oriented towards attracting investments, emergence of competitive markets as well as ensuring increased use of renewable energy (scenarios for long-term availability of technology for carbon capture and storage); improving energy efficiency; introduction of smart electricity grids, etc.

### **Sectoral Operational Programmes**

One of the most important implemented programmes (2011–2014), aimed to contribute to the creation of a sustainable and competitive renewable energy production, called the Energy and Biomass Project, which was oriented especially towards the heating system and households in rural areas. It laid the foundation for the creation of functional biomass markets that remained viable even after its implementation.

Training programmes and a special national awareness campaign combined with school education programmes were intended to change consumers' attitude towards renewable energy. Financial support was allocated by the European Commission and UNDP Moldova. Modern biomass based central systems were installed in 123 public institutions located in rural areas, the costs for heating was reduced by at least thirty percent (30%) for more than 37,000 inhabitants.

Regarding wind power, until 2014 some 25 wind projects were installed, along with 4 other investment projects in this domain. These wind plants however, have a low installed power, and are used mostly for small enterprises, farms, and vineyards. Also, 10 wind units, of 10 kW each, were installed for experimental purposes by the Technical University of Moldova. A country wind map has been executed in order to facilitate and stimulate new projects in the field.

With regard to solar energy, a Japanese project for the Institute of Oncology has been implemented. Solar panels were installed, both on the roof and on the ground (on a surface area of 8,000 m<sup>2</sup>), with a capacity covering thirty percent (30%) of the total necessary amount for this Institute. The number of solar collectors is continuously growing since Moldova enjoys an average of 240 sunny days per year.

Huge financial losses are encountered due to energy loss in distribution systems (because of old equipment and, installations). Improving energy efficiency in buildings, industrial processes and reducing transportation costs could greatly reduce this inefficiency and corresponding demands for energy.

One of the most successful and recognised events promoting energy efficiency in the Republic of Moldova is the "Eco-Energetic Gala". The goal of the contest is to support initiatives in the production, transportation, distribution and promotion of modern technology in the field of renewable energy.

The Agency of Regional Development implemented various Regional Energy Efficiency Programmes for Sectorial Development.

EBRD provides funds through two credit methods: MoSEFF and MoREEFF. The financing line MoSEFF combined a credit line of EUR 43 million, with a grant component ranging between five percent (5%) to twenty percent (20%) for lending Moldovan companies through EBRD partner banks (local banks). Eligible projects must identify targets to reduce primary energy consumption, reduce CO<sub>2</sub> emissions and improve the rational use of energy resources in industrial, agribusiness and commercial buildings.

MoSEFF also provides technical assistance for projects through Fichtner – a leading German company in the field of engineering and consulting. To make investment in energy efficiency and renewable energy sources more attractive, MoSEFF provides grants for eligible projects. The main objective of these grants is to ensure economic viability and feasibility of high-quality projects. Another objective is to encourage the application of advanced technologies in Moldova. This is achieved by offering higher grants for projects using the Best Available Techniques (BAT).

To date, 2,036 loans have been granted for energy efficiency projects through the MoREEFF programme with a total value of EUR 6,817,436 and investment incentives of EUR 1,871,905. The projects concern energy efficient windows, insulation of walls and floors, solar water heating, biomass boilers and stoves, heat pumps systems etc. Therefore due to MoREEFF, around 15,509 MWh/per year was saved and funding projects helped to reduce CO<sub>2</sub> emissions by 3.521 tons per year.

There are numerous opportunities for energy efficiency advancement: (i) in buildings (building envelope, electrical appliances, lighting options, maintenance of the energy system, energy management); (ii) opportunities for municipal energy efficiency (street lighting systems, waste water treatment); and (iii) opportunities for using wind energy, biomass and biogas systems, solar water heaters, heat pumps, etc.

## POLAND

Under obligations derived from Directive 2006/32/EC of the European Parliament and Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC, Poland has introduced the following Action Plans:

The first National Energy Efficiency Action Plan of 2007 (“**NEEAP**”) fulfilled the provisions of Article 14 (2) of Directive 2006/32/EC of the European Parliament and Council of 5 April 2006 on energy end-use efficiency and energy services. The funds and measures proposed under the first NEEAP were aimed at achieving the target for energy savings as required by Directive 2006/32/EC, (i.e. nine percent (9%), in 2016 and achieving an intermediate target of two percent (2%) in 2010). The estimated value of the target for Poland amounted to 53,452 GWh, with electricity intended to constitute sixteen percent (16%) of this value.

The second National Action Plan of 2011 on energy efficiency has been prepared in connection with the transmission of the European Commission's reports under the Directive on energy end-use efficiency and energy services 2006/32/EC and the Directive on the Energy Performance of Buildings 2010/31/EC. This document contained a description of the planned energy efficiency improvement measures aimed at final energy use in various sectors of the economy. The second National Action Plan also provided information on the progress of the national target for efficient energy management and actions taken to remove obstacles to achieving this goal. In 2010, Poland's energy consumption savings amounted to 35,320 GWh in total. Savings in the household sector amounted to 13,816 GWh, in industry 11,851 GWh, and in the services sector 9,653 GWh.

The third National Energy Efficiency Action Plan of 2014 was prepared pursuant to Article 6 (1) of the Act of 15 April 2011 on energy efficiency and in accordance with Article 24 (2) and Annex XIV of Directive 2012/27/EU. The third National Action Plan included a description of measures intended to improve energy efficiency, focusing on energy end-use efficiency by sectors, and calculations concerning energy end-use savings achieved in 2008–2012 and expected in 2016, as required by Directive 2006/32/EC.

All three National Energy Efficiency Action Plans introduced a selection of Programmes in the residential sector, the services sector, the transport sector and in the industry sector, all aimed at improving energy efficiency in Poland.

**Thermomodernisation and Repairs Fund**

The programme was first introduced by the First National Plan and has been continuously ongoing since 2007. This is a systemic measure and there are no provisions providing a fixed time framework. The objective of the programme is financial aid for investors who implement projects involving thermomodernisation, repairs, and renovation of individual houses, using credit obtained from commercial banks.

The programme covers actions aimed at:

- improvements which result in a reduction in demand for energy delivered for heating and service water heating purposes;
- improvements which result in reducing primary energy losses in local heating grids and local heat sources;
- building a technical connection to a centralised heating source to be used instead of a local heating source which results in a reduction in the cost of acquiring heat; and
- a complete or partial change of energy sources to renewable sources or using high-efficiency cogeneration.

Bank Gospodarstwa Krajowego (National Economy Bank) is the main funding body. The Thermomodernisation programme operates on the basis of bonuses that are granted to investors who fulfil certain requirements. To obtain a thermomodernisation bonus the investor must take a loan from a commercial bank for the investment. The amount of the thermomodernisation bonus equals twenty percent (20%) of the amount of loan for the investment but not more than the lesser of (i) sixteen percent (16%) of the expenses incurred for the thermomodernisation investment, and (ii) twice the amount of expected annual energy savings, assessed on the basis of an energy audit. In the years 2007 to 2013 more than 20,000 thermomodernisation bonuses were granted, for a total amount of PLN 1 billion (approximately EUR 225 million).

**Operational Programme Infrastructure and Environment for 2007–2013,  
Urban transport in metropolitan areas and Development of intelligent transport systems**

The objective of the programme was to make the traffic management system more efficient by applying Intelligent Transport Systems in road, maritime, inland water and urban transport, to improve the inter-modal system and logistics, to purchase new vehicles, mainly city buses, and to promote eco-driving among vehicle users, contributing to a reduction of energy use for transport purposes. It lasted from 2007 until 2014 and EUR 2.89 billion of its funding came from contributions from the EU Cohesion Fund and EUR 524.6 million came from national public contributions (the funds of municipalities and towns).

**Energy efficiency certificates scheme (white certificates)**

The energy efficiency obligation scheme was introduced pursuant to the Act of 15 April 2011 on energy efficiency (“Act”), The Act was the regulation in effect prior to Directive 2012/27/EU and in accordance with the Act, the scheme was to operate from 1 January 2013 until 31 December 2016. Currently, due to the implementation of the Directive into national law, the Act will remain effective until 2020.

The programme imposes an obligation on entities selling electric power, heat, and natural gas to either obtain certificates of energy efficiency (white certificates) and submit them for redemption to the President of the Energy Regulatory Office, or to pay a substitution fee.

The objective of the programme is to support a mechanism for measures aimed at improving energy efficiency of the economy, increasing energy savings by end-users and by facilities using energy for their own needs, and reducing losses of electricity, heat and natural gas in transmission or distribution. The implementing body is the President of the Energy Regulatory Office who has approximately PLN 0.7 million (approximately EUR 170,000) per year of funding for the programme at his disposal.

## Comparison

Through the last Third National Energy Efficiency Action Plan of 2014, Poland pledged to make significant progress in the implementation of the national target for efficient energy management (i.e. towards achieving by 2016 a minimum final energy savings of nine percent (9%) of the 2001–2005 national average consumption). As a result of GDP growth being higher than the growth rate of energy consumption, primary and end-use energy consumption has generally decreased, with the exception of 2010. In the years 2006 to 2009, the rate of improvement exceeded five percent (5%) in the case of the primary energy consumption and almost four percent (4%) in the case of end-use energy.

## ROMANIA

The main programmes that have been implemented are the following:

### National Energy Efficiency Action Plans

According to the provisions of Directive 2006/32/EC, in 2007, Romania drew up the First National Energy Efficiency Action Plan. Through this document, Romania pledged to reduce the final energy consumption for the period 2008–2016 to an average annual rate of one point five percent (1.5%), compared to the average in the period 2001–2005 (the directive set the average annual rate of one percent (1%)). The pledged quantitative targets represent 2,800 ktep for 2016 and 940 ktep for 2010.

In 2011, the Second National Energy Efficiency Action Plan was developed. The calculations made by means of the top-down indicators recommended by the European Commission led to the conclusion that in 2010 Romania's final energy consumption savings amounted to 2.223 ktep of which 1.060 ktep was in industry, 782 ktep in the services sector and 281 ktep in the household sector. The total value of these savings is far greater than the intermediate target set for 2010, and is relatively close to the final target set for 2016. This evaluation should take into account the fact that they were registered during a period of recession. The highest values have been registered in industry and services, representing the sectors most seriously affected by the crisis, and the important transformations and restructurings that have taken place in response thereto.

### Sectoral Operational Programmes

Financed by the European Union, Romania benefits from the Sectoral Operational Programme Increase in Energy Competitiveness Priority Axis 4: Improvement in Energy Efficiency and Security of Supply in the context of climate change, Regional Sectoral Operational Programme Priority Axis 1: Support for the sustainable development of towns, and Priority Axis 3: Social infrastructure improvement, and the Programme for the Increase of Energy Efficiency for Residential Blocks of Flats approved by the Emergency Government Decision 1661/2008.

The Ordinance sets out the work necessary for the thermal insulation of residential blocks of flats designed and built between 1950 and 1990. Financing, as well as the obligations and responsibilities of public administration authorities and of owners' associations are set forth therein.

The execution of the works will be financed by the following:

- fifty percent (50%) from the State budget allocations, within the funds annually approved for this goal from the budget of the Ministry of Regional Development and Dwellings;
- thirty percent (30%) from the funds annually approved for this goal from the local and/or other sources legally established; and
- twenty percent (20%) from the repair funds of the owners' associations and/or other sources legally established.

The Ordinance stipulates the obligations and responsibilities of all stakeholders involved in applying this ordinance, as well as the monitoring and control actions related thereto.

- Programme for the Renewal of the National Auto Fleet

Through this programme (*rabla*), individuals receive a scrapping premium of RON 3,800/vehicle (approximately EUR 900) for vehicles more than eight (8) years old that are brought to centres established for this purpose. The scrapping premium is given in the form of vouchers that can only be used for acquiring new cars. The programme is financed through the Environmental Fund.

- Financing mechanism for energy efficiency – Energy efficiency financing facility (“EEFF”)

EEFF is structured as credit line based on grants established from EC and EBRD funds that is carried out through six Romanian banks and is designed for private companies. These companies have the following facilities:

- low-interest loan of up to EUR 2.5 million from one of the participant banks;
- free of charge technical consultancy from a specialised firm; and
- grant amounting to fifteen percent (15%) at the investment completion.

## **Comparison**

Through the NEEAP, Romania pledged to achieve the one point five percent (1.5%) energy savings per year mandated by the EU Directive. Romania's programme for residential blocks of flats aims to address ways to achieve energy efficiency measures through alternative means besides primarily achieving efficiency through retail energy sales companies. Romania's sectoral operations programmes aim to address issues in the public sector in regard to energy efficiency. This is also a way to address the requirement to carry out energy efficient renovations in at least three percent (3%) of buildings. The programme for Renewal of the National Auto Fleet is Romania's way to empower energy consumers to better manage consumption. All of these measures are funded through Romanian banks, budget allocations, and private companies. This addresses the issue with acquiring funding for programmes and audits.

## **SERBIA**

The main programmes that have been implemented are the following:

### **National Energy Efficiency Action Plans**

The First NEEAP for 2010–2012 provided for energy reduction of one point five percent (1.5%) (0.1254 Mtoe) during that period, and set the overall energy reduction goal at nine percent (9%) by 2018 (i.e. 0.7524 Mtoe). The First NEEAP for 2010–2012 was realised by ninety three point three percent (93.3%) (i.e. energy reduction was 0.117 Mtoe (million tonne of oil equivalent)).

The Second NEEAP for 2013–2015<sup>8</sup> provided for energy reduction of three point five percent (3.5%) (0.2952 Mtoe) during that period, and affirmed the overall energy reduction goal of nine percent (9%) by 2018 (i.e. 0.7524 Mtoe). The targeted energy reduction of three point five percent (3.5%) was planned to be allocated between households (twenty three point four percent (23.4%) or 0.0693 Mtoe), the public and commercial sector (sixteen point eight percent (16.8%) or 0.0499 Mtoe), industry (twenty seven point seven percent (27.7%) or 0.081 Mtoe) and the transportation sector (thirty two point one percent (32.1%) or 0.095 Mtoe). Currently available information indicates that for the period 2010–2014 the total energy reduction was 0.3083 Mtoe.

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8 *Zaključak o usvajanju drugog akcionog plana za energetske efikasnost Republike Srbije za period od 2013. do 2015. godine* (“Official Gazette RS” No. 98/2013).

The Third NEEAP for 2016–2018 provides for an energy reduction of four point seven percent (4.7%) (0.3824 Mtoe). The Third NEEAP is cautiously optimistic about achieving the overall aim of 0.7524 Mtoe energy reduction by 2018, noting that up to the end of 2014 approximately fifty percent (50%) of the targeted reduction had been achieved.

### **Rulebook on the Minimal Criteria for Energy Efficiency in Public Procurement of Goods<sup>9</sup>**

Pursuant to Article 68 of the Law, all public bodies and public companies are required to take measures to improve energy efficiency in their objectives. This primarily includes measures that make the most savings in the shortest period of time, and making employees aware of energy efficiency measures.

The Law further provides an obligation for public bodies to take into account energy efficiency concerns in public procurement proceedings. Energy efficiency concerns should be taken into account especially when preparing technical specifications of goods/services or works, tender documentation and criteria for selection of the best bidder.

The Rulebook on the Minimal Criteria for Energy Efficiency in Public Procurement of Goods further elaborates the energy efficiency requirements in public procurement for specific types of goods, office and IT equipment, refrigerators, air conditioners and lightning.

### **The Law on Efficient Use of Energy**

- Information for consumers and individual metering

Companies that distribute and supply electricity and heat energy are required to inform customers at least once per month, together with energy bills, about: (i) the amount of energy used; (ii) the average monthly price of energy; (iii) the price for the used energy; (iv) the total monthly amounts of used energy in the last twelve (12) months; (v) the consumption in the previous month and the same month of last year; (vi) the average amount of energy used by other customers from the same category; (vii) the ways customers can obtain more information about available energy efficiency measures; and (viii) the list of energy efficiency measure that consumers may take, as well as other information which may be of relevance for rational energy use.

The Law further provides for the installation of individual meters and individual metering where possible. In this respect, it imposes obligations on companies active in the distribution of electricity and natural gas to install individual meters that provide information to consumers about the actual amounts of energy used, to the extent that this is technically possible, financially justified and proportionate. With regards to heat energy, companies active in the distribution of heat energy are under the obligation to make available technical documentation and to install individual meters upon request by investors or owners of property. Investors must provide individual meters for heat energy in every newly constructed building.

- Energy audits

The Law distinguishes between:

- energy audits, that are used for obtaining adequate knowledge of the existing energy consumption profile, identifying and quantifying cost-effective energy savings opportunities and reporting findings; and
- energy revisions, which has the aim of verifying the results of energy audits.

Energy audits and energy revisions are performed by authorised energy advisors, which can be either legal or natural persons registered in the Registry of Energy Advisors with the Ministry.

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<sup>9</sup> *Pravilnik o minimalnim kriterijumima u pogledu energetske efikasnosti u postupku javne nabavke dobara* ("Official Gazette RS" No. 111/2015).

The Law provides for energy audits at least once every ten (10) years for:

- objects, or parts thereof, of more than 500 m<sup>2</sup> used by government and provincial bodies, municipalities with populations of more than 20,000, and other public bodies that use objects in public ownership; and
- objects, or parts thereof, that are categorised in one of the energy grades.

Further, an energy audit is required in case objects, or parts thereof, change the purpose of their use, change ownership, or if they are intended for lease. The seller or lessor must provide the potential buyer or lessee with an energy audit, not older than ten (10) years, for the respective object.

“Objects” are broadly defined as any structure connected to the ground that represents a physical, functional and technical unit (for instance, all types of buildings, external and internal networks and installations, public infrastructure, industrial, agricultural and other commercial facilities, sports facilities, etc.).

Although the legal requirement for energy audits is set broadly, there are no fines for non-compliance with the above requirements. It appears the only consequence is that entities cannot apply for funding from the Energy Efficiency Fund if they do not prepare and submit the appropriate energy audit.

- Energy Efficiency Fund

Serbia has established an Energy Efficiency Fund (“EEF”) for financing energy efficiency measures. The users of the EEF can be any natural or legal person with a registered seat in Serbia, and local municipalities. Each year the government allocates funds for the EEF and determines the programmes and measures that will be financed. In 2016, it only allocated funds for local municipalities to introduce and finance energy efficiency measures.

- Monitoring efficiency levels in new energy generation capacities

Every new or revitalised facility for the generation, transportation and distribution of energy should conform to minimal energy efficiency requirements. A request for issuance of an energy permit for energy generation, transportation and distribution facilities should include a special report on energy efficiency that, *inter alia*, proves that minimal energy efficiency requirements for the respective facility are fulfilled.

## Comparison

The Law together with the accompanying bylaws provides a first comprehensive energy efficiency legislative framework in Serbia. The Law partially transposes Directive 2012/27/EU and full implementation is expected in the future. The NEEAPs set out the goal of reducing energy consumption by at least nine percent (9%) by 2018 (0.7524 Mtoe). The Law provides for a general obligation to introduce individual metering and payment for the actual consumption of energy. Further, the Energy Efficiency Fund was established to finance energy efficiency measures for all legal persons, including SMEs, with a registered seat in Serbia. However, funds are currently available only to local municipalities. A special report on energy efficiency is required for procurement of energy permits for each new energy generation facility.

## SLOVAKIA

### Energy Efficiency Action Plans

The Slovak Republic’s Energy Efficiency Action Plans, pursuant to the European Commission Directive on energy end-use efficiency and energy services, are intended to introduce the necessary domestic legislative framework for energy efficiency, establish an effective monitoring and information system, define and implement low-cost organisational and technical measures, and provide for financial support mechanisms. The latter includes the

planned establishment of an Energy Efficiency Fund to provide grants supporting specific energy efficiency related activities.

The First National Energy Efficiency Action Plan (“**1AP**”) was promulgated in October 2007 for the period 2008–2010. 1AP aimed to achieve energy savings in individual sectors of consumption, amounting to nine percent (9%) of the average annual national consumption from 2001–2005. Overall attainable energy savings amount to 37,215 TJ by 2016, with an intermediate target of attaining three percent (3%) of final energy consumption savings by 2010, amounting to approximately 12,405 TJ.

1AP categorises energy-saving measures according to various sectors. Planned measures include, *inter alia*:

- updating and improving building regulations and requirements for new and existing non-industrial buildings;
- establishing a building documentation package, with transparent information on audits and energy certification;
- improving energy efficiency and thermal properties of public sector buildings;
- improving monitoring and verification of building energy performance;
- introducing voluntary energy certificates/audits;
- investment support for refurbishment of prefabricated buildings;
- improving public lighting, setting minimum efficiency requirements for public lighting;
- improving efficiency in manufacturing process;
- promotion of low-emission road vehicles; and
- modernising transport infrastructure.

The Second National Energy Efficiency Action Plan (“**2AP**”) was in force in the years 2011–2013.

The Third National Energy Efficiency Action Plan (“**3AP**”) is the third implementing measure in succession under the Energy Efficiency Policy and builds upon the previous two action plans. The preparation of energy efficiency action plans was originally derived from Directive 2006/32/EC on energy end-use efficiency and energy services whilst the new Directive 2012/27/EU on energy efficiency follows up on this requirement, extends the obligation to submit action plans and expands the scope covered by action plans.

National indicative energy efficiency targets pursuant to Directive 2012/27/EU were set as follows:

- Energy efficiency target, final energy consumption savings  
Annual: 3,416 TJ/year  
Three-year target (non-cumulative): 10,247 TJ  
2020 target (cumulative): 79,695 TJ, i.e. twenty three percent (23%)
- Energy efficiency target, primary energy consumption savings  
Annual: 5,344 TJ/year  
Three-year target (non-cumulative): 16,031 TJ  
2020 target (cumulative): 124,689 TJ, i.e. twenty percent (20%)
- Sectors and their savings in 2014–2016  
Buildings: 3,087 TJ, i.e. thirty six percent (36%)  
Industry: 2,569 TJ, i.e. thirty percent (30%)  
Public sector: 1,672 TJ, i.e. nineteen percent (19%)  
Appliances: 737 TJ, i.e. eight percent (8%)  
Transport: 576 TJ, i.e. seven percent (7%)

The Fourth National Energy Efficiency Action Plan for 2017 (“**4AP**”) is currently under preparation to guarantee the deadline of April 2017, as it includes also various reports from EED for specific articles (Articles 5, 8, 16). 2016 was set as the year for checking the trajectory of energy savings for the 2020 target based on Article 7 obligations. The trajectory checking and updates involving possible new measures will be included in 4AP.

### **Comparison**

Through the APs, Slovakia pledged to achieve the one point five percent (1.5%) energy savings per year mandated by Directive 2012/27/EU. Slovakia has also introduced plans to achieve energy savings throughout various sectors, mentioning indicative tools and ways in which the plan to be implemented.

## **SLOVENIA**

The main programmes that have been implemented are the following:

### **National Energy Efficiency Action Plans**

In accordance with Directive 2006/32/EC, Slovenia has implemented several National Energy Efficiency Action Plans.

- National Energy Efficiency Action Plan for the period 2008–2016 (“**AN URE 1**”)

AN URE 1 provided for Slovenia to achieve cumulative savings of at least nine percent (9%) compared to the baseline end-use energy consumption or at least 4,273 GWh until 2016. Achievement of savings was envisaged through various sector-specific as well as horizontal and multi-sectoral actions in all sectors (households, general consumption, industry and transport).

Most energy savings until 2010 were achieved in households (fifty eight point five percent (58.5%)), followed by multi-sectoral measures (twenty three point one percent (23.1%)), industry (seven point three percent (7.3%)) and transport (seven point zero percent (7.0%)). Those instruments provided under AN URE 1 with the greatest savings in the first three (3) years were: (i) energy labelling of household appliances; (ii) financial incentives for households of Eco Fund (see more information below); (iii) regular inspections of boilers in wide use; (iv) energy advice for citizens; and (v) mandatory division and calculation of heating costs in conjunction with thermostatic valves in multi-apartment residential buildings.

Evaluation of the implemented measures evidences that Slovenia achieved the intermediate savings target of two point eight percent (2.8%) of the reference end-use energy for the period of 2008–2010. This objective was reached only after taking into account the early activities in the period from 1995 to 2007 (since this approach was allowed under Directive 2006/32/EC in order to demonstrate achievement of the energy savings target)

- National Energy Efficiency Action Plan for the period 2011–2016 (“**AN URE 2**”)

In 2011, AN URE 2 entered into force.

Planned additional activities under AN URE 2 were primarily focused on: (i) accelerated development of the energy services market, mainly in the public sector, which is the generator of demand; (ii) the development of energy efficient products and production processes, with the aim of achieving and exceeding the base; and (iii) a series of additional short-term and long-term goals – in particular, the accelerated renovation of buildings in the public sector, achieving the target share of nearly zero-energy buildings among new and renovated buildings, increasing the share of renewable energy, further reducing energy consumption and sustainable economic development.

- National Energy Efficiency Action Plan for the period 2014–2020 (“**AN URE 2020**”)

The latest National Energy Efficiency Action Plan (AN URE 2020) was adopted in May 2015 and regulates the anticipated energy savings for the period 2014–2020.

AN URE 2020 stresses the national objective of improving the efficiency of energy use by twenty percent (20%) by 2020. The target is for primary energy consumption in 2020 to not exceed 7.125 Mtoe (82.86 TWh). This means that compared to 2012, it cannot increase by more than two percent (2%).

The measures in AN URE 2020 have been planned for the household sector, the public sector, industry and transport. Most of the measures include already existing measures that were implemented and in which (until now) intermediate objectives have been achieved. This new action plan has brought some new measures in the public sector, since it is necessary to fulfil the obligation to annually renovate three percent (3%) of government buildings. The objective is to ensure that all new buildings, which are owned and occupied by public authorities, will achieve nearly zero-energy targets from 2018, and in other sectors from 2020. Additional measures such as energy performance contracting, which includes private investments, are planned for the economy since the efficient use of energy is also an increasingly important factor for improving the competitiveness of the economy.

According to AN URE 2020 the existing building stock represents the sector with the greatest potential to achieve energy savings. To achieve this objective, the energy renovation of a quarter of the building stock (which represents around 22 million m<sup>2</sup> of building land) will be necessary by 2020. With this, the energy use in buildings will be decreased by almost ten percent (10%). In addition, these measures will also accelerate economic growth, since they are generating investments of EUR 500 million per year. The effects of these investments are in addition to high savings in energy costs and a consequent reduction in energy imports also in workplaces, namely at the level of 10,000 jobs.

The funds necessary to address these existing and new measures are collected from a special contribution for the efficient use of energy<sup>10</sup>, resources of EU cohesion funds and funds of the Climate Change Fund<sup>11</sup>.

In Slovenia, several incentive programmes aimed at increasing energy efficiency and greater use of renewable energy resources have been carried out over the years. Moreover, a number of regulations have been issued which relate primarily to energy efficiency in buildings, as well as household appliances and other products.

Programme areas that are being implemented in order to promote efficient use of energy include:

- information, education and training of energy consumers investors and other target groups;
- energy advice to the public;
- promotion of consulting services; and
- promoting investment in energy efficiency and renewable energy sources.

Certain financial instruments are also available:

- the allocation of grants from the State budget or loans with subsidised interest rates for investments for companies and individuals;
- providing favourable purchase prices for electricity produced from renewable energy sources or cogeneration of electricity and heat from fossil fuels with high efficiency; and
- exemption from fees for pollution from CO<sub>2</sub> for companies that implement certain energy efficiency measures.

<sup>10</sup> Contribution for the efficient use of energy efficiency is paid by final consumers of electricity, gas and heat from the network and final customers of solid, liquid and gaseous fuels.

<sup>11</sup> The Climate Change Fund is funded by the sale of emission credits at auctions.

- Programme for free energy advice for citizens

Eco Fund<sup>12</sup> (together with interested local communities and municipalities) has organised the network ENSVET, which offers individual, free, independent energy consulting, education and awareness activities for the promotion of energy efficiency measures and renewable energy sources for citizens in the local environment.

The offices of the ENSVET network are spread across Slovenia, and employ qualified independent energy advisors. Advisors assist with advice and interviews in the selection, design and implementation of investment measures for energy efficiency and use of renewable energy sources in residential buildings. They try to increase energy awareness of citizens, energy savings and reduce greenhouse gas emissions and thereby facilitate the implementation of certain measures and programmes related to energy policy.

Furthermore, in accordance to EZ-1, general education, trainings and awareness-raising campaigns for different target groups with regard to efficient energy use and renewable sources of energy are offered by the Centre for Support of Green Energy Production (*Center za podpore proizvodnji zelene energije*).

### Comparison

Through AN URE 2020, Slovenia has pledged to achieve the one point five percent (1.5%) annual energy savings target mandated by EU Directive 2012/27/EU. It reduced the target in line with Article 7 Paragraph 2 Item a of the Directive by the maximum allowed twenty five percent (25%).

In line with Article 7 (9) of Directive 2012/27/EU, Slovenia chose to combine alternative policy measures (through Eco Fund) and an energy efficiency obligation scheme to meet the national target. The two measures will thus be the basis for achieving the one point five percent (1.5%) annual target in order for Slovenia to comply with the energy savings requirements of the Directive.

## UKRAINE

Ukraine has a huge potential for implementation of energy efficiency measures, considering that since the 1990s, no systemic steps have been implemented in this area. Moreover, sixty one percent (61%) of the buildings in Ukraine were built prior to 1970, there are around 100,000 institutions financed by the local and national budget, only a fraction of industrial capacities have been renewed and public utilities are outdated.

The main programmes being implemented in the energy efficiency area are the following:

### National Energy Efficiency Strategy

Energy efficiency is referred to in a number of the governmental strategies and action plans. Additionally, in order to fulfil the obligations before the Energy Community, the Cabinet of Minister of Ukraine has adopted Order No. 1228-p "On Approval of the National Plan on Energy Efficiency until 2020" on 25 November 2015 ("**National Strategy**"). The document implements, *inter alia*, requirements of Directive 2006/32/EC. Simultaneously, the step plan on implementation of the National Strategy ("**Step Plan**") was adopted.

Considering that Ukraine has not yet implemented the provisions of the EED, it therefore has not included into the local laws those obligations referred to in the EED (e.g. reduction of the final energy consumption by at least one percent (1%) annually). However, the National Strategy refers to targets set by Directive 2006/32/EC and transposes them into the local targets of energy efficiency. In particular, by 2020 the national indicative energy savings target of nine percent (9%) (compared to end-use energy consumption level applicable for the period

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<sup>12</sup> Under the Slovenian Environmental Protection Act (ZVO-1) Eco Fund is defined as Slovenian Environmental Public Fund, which promotes sustainable development by financing investments to prevent, eliminate or reduce pollution of the environment.

from 2005 to 2009) must be achieved through policies listed in the National Strategy and specified by the Action Plan. The intermediate national indicative energy savings target of five percent (5%) shall be accomplished in 2017. The pledged quantitative targets represent 6,501 ktoe for 2020 and 3,612 ktoe (kilotonne of oil equivalent ) for 2017. The estimated investments required for the energy efficiency actions by 2020 total EUR 35,070 billion.

### **Governmental and Municipal Energy Efficiency Programmes**

In 2010, the Cabinet of Ministers of Ukraine adopted the special State programme on energy efficiency and increase of energy production from renewable and alternative sources for the period of 2010–2016. The programme includes quite a comprehensive list of actions to be taken in all spheres to decrease energy consumption and to use more environmentally friendly technologies for its generation. However, only a few of the listed actions have been actually taken during the past three (3) years. These include reimbursement to the owners of private houses or organisations managing residential blocks of flats of interest on banking credits and partial (twenty to forty percent (20-40%)) payment of the loan amounts. The credits should cover the purchase and installation of a wide range of energy efficiency equipment or materials. Within the framework of this programme, in 2016 the Cabinet of Ministers of Ukraine paid UAH 386 million (approximately EUR 14 million). The programme was prolonged for 2017 as well. Additionally, 189 local and municipal budgets previewed expenditure for the same energy efficiency activities.

### **EBRD support**

EBRD is an important supporter of improved energy efficiency in Ukraine. In 2009, within the framework of the Sustainable Energy Initiative, it agreed a Sustainable Energy Action Plan with the Ukrainian Government. As a result of the EBRD technical support, changes were introduced to the tariff methodology. Legal provisions for renewable energy development and energy efficiency in residential and public buildings were introduced.

EBRD continues investing in energy efficiency projects related to industrial energy efficiency, clean power and energy supply, renewable energy projects as well as municipal infrastructure. Additionally, in 2016 EBRD launched Ukraine Residential Energy Efficiency Financing Facility (IQ energy), for which the funding amounts to EUR 75 million. IQ energy is supported by funding of up to EUR 15 million from the Eastern Europe Energy Efficiency and Environment Partnership (E5P) and the Swedish International Development Cooperation Agency (Sida). The IQ energy fund will reimburse up to twenty percent (20%) of loans for individuals (owners of private houses) and up to thirty five percent (35%) of loans for organisations managing residential blocks of flats.



# OBLIGATIONS

## **EU DIRECTIVE**

To achieve the twenty percent (20%) reduction, energy distributors must achieve a one point five percent (1.5%) energy reduction every year from 1 January 2014 to 31 December 2020. This obligation contributes significantly to the reduction, but does not cover the full extent of the reduction.

According to Article 7, Paragraph 4, each Member State is required to ensure that all energy companies comply with the Energy Efficiency Obligation based on objective and non-discriminatory criteria. However, there is an exception for small retail companies to avoid disproportionate administrative burdens.

Member States are required to regularly report progress to the EU Energy Commission by 30 April. Every three (3) years, States have to submit National Energy Efficiency Action Plans that cover significant energy efficiency improvement measures and expected and/or achieved energy savings.

On 30 November 2016, the Commission proposed an update to Directive 2012/27/EU containing amendments related to Article 7, along with an evaluation report of Articles 6 and 7.

Alternatives if energy companies do not participate:

- energy or CO<sub>2</sub> taxes that have the effect of reducing end-use energy consumption;
- financing schemes and instruments or fiscal incentives that lead to the application of energy efficient technology or techniques and have the effect of reducing end-use energy consumption;
- regulations or voluntary agreements that lead to the application of energy efficient technology or techniques and have the effect of reducing end-use energy consumption;
- standards and norms that aim at improving the energy efficiency of products and services, including buildings and vehicles, except where these are mandatory and applicable in Member States under EU law;
- energy labelling schemes, with the exception of those that are mandatory and applicable in Member States under EU law; and
- training and education, including energy advisory programmes, that lead to the application of energy efficient technology or techniques and have the effect of reducing end-use energy consumption.

There is no legislation in place under the 2012 Directive for sanctions if Member States do not meet their targets. The Member States will be referred to infringement proceedings if they do not meet their obligation deadlines. Article 24, Paragraph 10, allows for the Commission to propose more aggressive proposals if they will not meet their 2020 targets.

Relevant National Laws in:

## **AUSTRIA**

Austria opted to take policy measures (e.g. energy taxation) and energy efficiency obligations to achieve total annual savings in the amount of 29,898 terajoule for the year 2014.

Regarding energy efficiency obligations, the EEffG distinguishes between obligations for energy suppliers, enterprises and the Federal State. Non-compliance with the provisions of the EEffG is subject to administrative fines of up to EUR 100,000 (Article 31 EEffG). Such fines may primarily be imposed upon the statutory representatives of legal entities. The appointment of responsible representatives (*verantwortliche Beauftragte*) leads to a limitation of responsibility of statutory representatives (Article 9 Paragraph 2 Administrative Criminal Procedure Act).

### Obligations for energy suppliers

Energy suppliers sell energy to end-consumers against payment. When exceeding the legally stated minimum quantity of sales of relevant energy (i.e. 25 GWh), energy suppliers must provide evidence of energy efficiency measures in Austria undertaken at their own enterprise, at their own end-consumers or at other end-consumers. Measures must be equivalent to at least zero point six percent (0.6%) of energy sales of the previous year to Austrian end-consumers. Accordingly, energy savings in this amount must be achieved. Regarding the 25 GWh threshold, the principle of group-wide aggregation (*Prinzip der konzernweiten Zusammenrechnung*) applies. Specific conditions apply to energy suppliers who have concluded a sector obligation (*Branchenverpflichtung*), allowing them to coordinate and fulfil the obligation collectively.

It is decisive that the measures taken improve the input-output ratio (e.g. of a certain process or device) and are attributable to the specific energy supplier by evidence. However, an actual reduction of energy consumption is not required. Furthermore, a considerable percentage of forty percent (40%) of measures must be implemented for private households or the public transport system. The assessment of energy efficiency measures is determined in the Energy Efficiency Guidelines Regulation (*Energieeffizienz-Richtlinienverordnung*). Instead of the implementation of measures, energy suppliers may make compensation payments of twenty (20) cents per kWh with discharging effect. The fulfilment of the obligation for energy suppliers is monitored by the Austrian energy efficiency monitoring body to ensure compliance with the EEEffG.

### Obligations for enterprises

Large (energy consuming) enterprises shall either implement energy audits or use energy management systems. By law, small and medium-sized enterprises are exempted from the obligation to obtain energy audits or introduce management systems. They may voluntarily use energy consulting (Article 9 Paragraph 3 EEEffG). Please see Part IV "Mandatory Audit of Large Industry", p. 72.

### Obligations for the Federal State

The Federal State shall fulfil an annual renovation rate in the amount of three percent (3%) of relevant public buildings. Please see Part V "Strategies", p. 88.

### Energy Efficiency Monitoring Body

The Austrian Energy Agency acts as the national energy efficiency monitoring body. It has been appointed to carry out the implementation of Directive 2012/27/EU in Austria. The Energy Efficiency Guidelines Regulation entered into force on 1 January 2016. It sets provisions regarding the activities of the Austrian Energy Agency and lays out the essential provisions for enforcing the EEEffG.

### Comparison

To achieve energy efficiency, Austria chose an energy efficiency obligation scheme also including various policy measures. Obligated parties face different forms of obligations. Energy suppliers have several options to fulfil their obligations: (i) to take energy efficiency measures themselves; (ii) to contractually transfer the obligation to third parties; (iii) to transfer the obligation to third parties after calls for tenders; or (iv) to make compensation payments. The Austrian Energy Agency has the task of monitoring the fulfilment of these obligations.

## BOSNIA & HERZEGOVINA

Since BiH is not a member of the European Union, the obligations set out in the Directive No. 2012/27/EU are not applicable to BiH.

Although certain energy efficiency measures are introduced and elaborated in the national Action Plan of BiH for RES, these are not obligatory. On the other hand, energy efficiency laws in both entities impose certain obligations. Still, there are no strict obligations on (for example) the percentage of energy efficiency to be achieved or a strict percentage for the renovation of buildings to be performed.

The following obligations are stipulated in the FBiH Energy Efficiency Law:

- enactment of the programme for enhancement of energy efficiency, delivery of the programme to the supervising authority, and delivery of data on energy consumption (obligation of the large consumers); and
- yearly reports to be delivered to the Federal Ministry of Energy, Mining and Industry, offer of energy services to the end-consumers, including energy services and energy audits; installation of individual devices for measurement of energy consumption to end-consumers (obligation of the operator of distribution systems and suppliers of energy).

The following obligations are established by the RS Law on Energy Efficiency:

- enactment of the consumer plan and providing to the Ministry of Industry, Energy and Mining and the Fund for Environmental Protection of and Energy Efficiency, the yearly plan on realisation of the consumer plan (obligation of the large consumers);
- implementation of the energy management system; and
- applying measures for improving energy efficiency.

### **Comparison**

Since BiH is not a member of the European Union, the obligations set out in Directive No. 2012/27/EU do not apply in BiH. Although certain energy efficiency measures are introduced and elaborated in the national action plans for renewable energy sources, these are not obligatory. Additionally, the entity laws on energy efficiency are not yet fully implemented, especially in FBiH where the bylaws are still to be enacted.

## **BULGARIA**

According to the Bulgarian EEA, the total cumulative target for the 2014–2020 period was set as an accumulation of new energy savings each year of at least one point five percent (1.5%) of the average annual value of the total volume of energy sales to final customers within Bulgaria in 2010, 2011 and 2012, excluding the volume of sales of energy used in the transport sector, under Eurostat Code B\_101900. The target was reduced by up to twenty five percent (25%) by applying the options in Article 7 (2) a) and d) of Directive 2012/27/EU.

According to the Bulgarian EEA, individual targets are allocated to the following three groups of obliged parties:

- energy traders;
- owners of industrial systems with an annual energy consumption in excess of 3,000 MWh; and
- owners of buildings that are within the central or local government estate and are in use, and have a total building floor area of more than 1,000 m<sup>2</sup> (from 2015, the threshold was lowered to 250 m<sup>2</sup>).

In order to achieve their individual targets, the obliged parties may implement energy efficiency improvement measures in different sectors, among others: transport, industry and households, commerce, civil society organisations, agriculture, forestry and fishery, services. The obliged parties may implement measures that achieve energy savings in the energy transformation, distribution and transmission sectors, including by means of efficient district heating and cooling systems infrastructure.

Annually, (not later than 1 March), the obliged persons must submit reports to SEDA on the implementation of the EE measures and the progress towards the achievement of their individual EE targets. Based on the reports submitted to SEDA by 1 March 2016, the evaluation of the EEOS results were included in the annual report on the implementation of NEEAP. For the period 2008–2015 the obliged energy traders achieved forty three percent (43%) of their total energy savings targets.

### **Achieving the individual targets by energy traders**

This measure was set up in Article 10 of the Bulgarian EEA and repealed in 2015, assigning individual energy savings targets to be achieved by energy traders generating energy sales to end-consumers exceeding the equivalent of 75 GWh/year, having more than 10 employees or an annual turnover of more than BGN 4 million (approximately EUR 2,045,167). The overall target to be achieved by energy traders by 2016 was set to 4,644 GWh of energy savings.

The Directive introduced a new energy efficiency obligation scheme for energy traders and the newly adopted Bulgarian EEA in 2015 defined the obliged parties which were included in the obligation scheme. Under Article 14 (4) of the Bulgarian EEA, the overall cumulative target under the obligation scheme is allocated in the form of individual energy savings targets among the following obliged parties:

- end suppliers, providers of last resort, traders holding a license for the activity of “trading in electricity” having annual sales of electricity to end-users in excess of 20 GWh;
- heat transmission undertakings and heat energy suppliers having annual sales of heat energy to end-users in excess of 20 GWh;
- end-suppliers and traders in natural gas having annual sales to end-users in excess of 1 million m<sup>3</sup>;
- traders in liquid fuels having annual sales to end-users in excess of 6,500 t of liquid fuels, with the exception of fuels for transport purposes; and
- traders in solid fuels having annual sales to end-users in excess of 13,000 t of solid fuels.

The energy traders above are required to submit annual reports to SEDA, which provide for their activities and measures to lower energy consumption. The deadline for submission of these reports is 1 March of the following year.

SEDA implemented a project for enhancing the institutional capacity of the Sustainable Energy Development Agency to create incentives and enable energy traders to meet their obligations under the Bulgarian EEA. The project is funded under the Operational Programme Development of the Competitiveness of the Bulgarian Economy. One of the main project goals was to increase the volume and to improve the quality and economic return of implemented energy efficiency measures by creating energy savings market that will function on the basis of tradable white certificates.

### **Achieving the individual targets by the owners of industrial systems**

The energy audits of industrial systems are a statutory energy efficiency measure according to the Bulgarian EEA and Ordinance No. ПД-16-346 as of 2 April 2009 on the consumption and energy performance indicators of industrial systems and the requirements and procedure for conducting energy efficiency audits on industrial systems. Mandatory energy efficiency audits are to be conducted at least once every four (4) years by any of the following:

- large industrial and services enterprises which are not SMEs (i.e. enterprises which have an average annual number of more than 250 employees; and an annual turnover exceeding BGN 97.5 million (approximately EUR 49.6 million) or a fixed tangible assets value exceeding BGN 84 million (approximately EUR 42.95 million) – Article 3 of the Small and Medium-Sized Enterprises Act);
- industrial systems with annual energy consumption exceeding 3,000 MWh; or
- outdoor lighting systems, located in settlements with population exceeding 20,000 residents.

The energy audit may be performed only by qualified and SEDA-accredited auditors, as described in Article 59 of the EEA.

SMEs and the owners of industrial systems subject to mandatory energy audits, which implement an energy or an environmental management system subject to certification by an independent body for conformity to European or International Standards, are exempted from the requirements for mandatory energy efficiency audits, provided that the management system implemented thereby includes an energy audit of the enterprise or industrial system concerned.

Owners of industrial systems with annual energy consumption exceeding 3,000 MWh constitute one of the groups of obliged persons which were allocated individual energy savings targets to be met by 2016, as prescribed in Paragraph 4 of the Transitional and Closing Provisions of the Bulgarian EEA. The overall individual target to be achieved by obliged industrial systems owners by 2016 was 839.2 GWh/year.

### **Achieving individual energy savings targets by owners of buildings**

The individual energy savings targets of the owners of government and local authority public buildings were first set on the basis of a total floor area of more than 1,000 m<sup>2</sup>, in line with the statutory requirements in force at the time the targets were set. Following the transposition of Directive 2010/31/EU into national law, however, the floor area threshold was lowered to 250 m<sup>2</sup>, which is effective since 9 July 2015.

The overall target to be achieved by 2016 by the owners of government and local authority public buildings was set at 521 GWh. More than half of the individual target allocations for this group of obliged persons were achieved during the three (3) year 2011–2013 implementation period of NEEAP. To ensure implementation of individual energy savings targets, the national law stipulates that government and local authorities are to draw up energy efficiency improvement programmes. The full range of energy efficiency improvement measures are eligible to achieve the individual energy savings targets.

The obliged persons report their energy efficiency improvement programme implementation to SEDA on an annual basis by 31 March of the following year. Based on these reports, SEDA analyses the achievement of individual energy targets by obliged public building owners.

### **Comparison**

In accordance with Directive 2012/27/EU, the Bulgarian EEA provided for a total cumulative target for the 2014–2020 period of at least one point five percent (1.5%) of the average annual value of the total volume of energy sales to final customers within the territory of the country in 2010, 2011 and 2012, excluding the volume of sales of energy used in the transport sector, under Eurostat Code B\_101900. The target was reduced by up to twenty five percent (25%) by applying the options in Article 7 (2) a) and d) of the EED.

The “Methodology for the operation of the energy efficiency obligation schemes” was developed in accordance with the requirements of Article 7 of Directive 2012/27/EU. This national methodology has been drawn up in line with the framework provided in Paragraph 4 of Annex V to Directive 2012/27/EU. When designating the obliged persons, Bulgaria does not include transport fuel distributors or retailers in the obligation scheme.

With the new Bulgarian Energy Efficiency Act (adopted and published in SG No. 35 of 15 May 2015) the threshold for obliged persons was changed. In order to reach their targets, obliged persons may implement horizontal measures aimed at increasing the energy efficiency of final customers, such as awareness and promotional campaigns. They may also pay contributions to the Energy Efficiency and Renewable Sources Fund or access other specialised funds, programmes, measures, schemes and mechanisms used to finance measures to increase the energy efficiency of final customers, including agreements concluded with beneficiaries.

## **CROATIA**

Croatia opted for a combined approach in energy savings, combining energy efficiency obligation schemes with alternative policy measures.

These alternative policy measures include:

### **Energy Renovation of Family Housing Units**

This measure includes the renovation of family housing units (emphasis on units of up to 400 m<sup>2</sup> built before 1987) to achieve low-energy grade standards. The renovation should include the change of facades and windows, as well as replacement of obsolete heating systems with gas condensation boilers.

### **Energy Renovation of Large Housing Buildings**

This measure includes the renovation of large housing units (emphasis on apartment buildings built before 1987) to achieve low-energy grade standards. The renovation should include the change of facades and windows, as well as replacement of obsolete heating systems.

### **Energy Renovation of Public Sector Buildings**

This measure includes the renovation of public sector buildings to achieve low-energy grade standards. The renovation should include renovation of facades, thermal, electric and water supply systems, coupled with "before and after" energy certificates.

### **Energy Renovation of Commercial Non-Residential Buildings**

This measure includes the renovation of commercial non-residential buildings to achieve low-energy grade standards. The measure should include "before and after" energy certificates.

### **Individual metering of heat energy consumption**

Individual metering increases consumption awareness and encourages energy savings with resulting financial savings for consumers. Since the installation of individual meters may impose a financial burden on tenants, financial aid is available to assist in the implementation of this measure.

### **Energy Efficient Public Lighting**

This measure includes replacement of obsolete lighting systems with new technologies, financed by central government programmes, local government programmes and the services of ESCO companies.

### **Energy Efficient Vehicles**

This measure includes co-financing of electric and hybrid vehicles, as well as vehicles fuelled by liquefied petroleum gas and compressed natural gas.

### **Eco-Driving**

This measure includes raising awareness of the benefits of eco-driving, especially with drivers achieving above-average annual mileage. The measure includes implementation of eco-driving educational trainings and programmes.

### **Vehicles taxation based on CO<sub>2</sub> emissions**

Taxation of vehicles based upon CO<sub>2</sub> emissions coupled with exemptions for electric and hybrid vehicles is aimed at discouraging the purchase of vehicles with high CO<sub>2</sub> emissions.

**Additional measures**

Additional measures include:

- additional education in elementary schools and high schools, educational campaigns aimed at construction workers and their additional education and prequalification;
- promotion of energy services provided by ESCO companies, which provide energy saving services and are paid on the basis of achieved monetary savings. The award of energy service contracts must be based upon public tenders, allowing for transparency, non-discrimination and value for money. Due to the specifics of financing of ESCO companies, the Croatian Government developed a guarantee scheme to allow for easier financing of those ESCO projects related to public sector building renovation;
- amendments of the construction law regulatory framework with the purpose of implementing the requirements of the EU directives and facilitating the improvement of energy efficiency of buildings;
- increase of the number of buildings with near-zero energy consumption;
- green public procurement – linking energy efficiency to selection criteria and award criteria;
- raising awareness of energy efficiency in industrial segments through consumption analysis and goal setting;
- introduction of highly-efficient electric motors in industry and associated financing related thereto;
- providing financial aid for energy audits of SMEs;
- improving the regulatory framework to promote intermodal transport of goods and integrated traffic solutions (car-sharing, smart parking management, public bicycle system, etc.);
- introducing and enforcing strict speed limits, especially in motorway traffic;
- improvement of efficiency in energy generation through reduction of self-consumption in those power plants managed by State-owned operators (reconstruction and installation of replacement equipment); and
- improvement of energy efficiency in exploration, production and processing of oil (improvement of production processes and utilisation of additional capacities).

**Comparison**

Croatia chose a combined approach with an emphasis on alternative policy measures. The projected combined effect of these measures was sufficient to meet the requirements of the EU Directive. Although NEEAP 3 confirmed that the actual energy savings were on track to meet the projected energy savings for 2016, it was also noted that the savings were to a large extent attributable to a downturn in economic activities and not only to the energy efficiency measures imposed by the Croatian Government. Since the Croatian economy has shown significant signs of recovery in the past period, it remains to be seen whether the energy savings measures imposed by the Croatian Government will be sufficient to cope with this economic growth and offset the corresponding increase in energy demand.

## CZECH REPUBLIC

The criterion used to define those subjects that are obliged to undergo an energy audit is their total annual energy consumption.

The annual energy consumption thresholds are set out in Decree No. 480/2012 Coll., on energy audit and energy assessment, as amended, as follows:

- for natural and legal persons, the individual annual energy consumption threshold is 700 GJ (194 MWh) and the cumulative annual energy consumption threshold for all buildings and energy operations is 35,000 GJ (9,722 MWh); and
- for entities of the State, regional self-governing units and subsidised organisations, the individual annual energy consumption threshold is 700 GJ (194 MWh) and the cumulative annual energy consumption threshold for all buildings and energy operations is 1,500 GJ (417 MWh).

Every constructor or owner of a building or energy operation, who is not subject to the energy audit regulation due to being an entrepreneur other than an SME, is obliged to carry out an energy audit if:

- a building or energy operation exceeds an individual annual energy consumption threshold and if a cumulative annual energy consumption threshold for all buildings and energy operations of the subject is exceeded on average in the past two (2) years; or
- energy effectiveness criteria are not met after a major change of the building is carried out.

In addition, an entrepreneur which is not an SME is obliged to prepare an energy audit for an energy operation<sup>13</sup> it uses or owns and to renew such audit every four (4) years.

An SME is defined in line with the Commission's recommendation<sup>14</sup> as an entrepreneur which:

- employs fewer than 250 persons; and
- has an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

Only those entrepreneurs (other than SMEs) with established energy management systems or environmental management systems containing an energy audit are exempted from the energy audit obligation – provided that the management systems are certified by an authorised person in accordance with harmonised Czech standards.

### National Energy Efficiency Action Plan

The current, fourth amended NEEAP IV was prepared by the Czech Government after the final approval of those programmes financed by the European Investment and Structural Funds. The cumulative energy savings target for final consumption under Article 7 of Directive 2012/27/EU on energy efficiency was recalculated according to the Eurostat methodology and was set at 50.67 PJ (14.08 TWh). After an assessment of the current measures of the alternative scheme, additional policy measures in household, industry, transport and agriculture sectors and on the level of local governments were added. The Czech Government approved NEEAP IV on 16 March 2016 by Governmental Resolution No. 215/2016.

<sup>13</sup> An energy operation is defined as "a complex of operations, installations and buildings used for energy management and consumption".

<sup>14</sup> Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (2003/361/EC).

### **Comparison**

The Czech legislation has been implemented to define the scope of energy audits and to ensure that all subjects comply with the Energy Efficiency Obligation. To comply with Article 7, the Czech Republic has opted to implement a set of other policy measures in accordance with Article 7 (9) of Directive 2012/27/EU.

## **HUNGARY**

Hungary, in line with the preceding Government targets, has opted to meet the energy efficiency targets through alternative measures in accordance with Article 9 (2) of the Directive. These are, according to Section 13 of the Act:

- energy or CO<sub>2</sub> taxes that have the effect of reducing end-use energy consumption;
- financing schemes and instruments or fiscal incentives that lead to the application of energy efficient technology or techniques and which have the effect of reducing end-use energy consumption;
- regulations or voluntary agreements that lead to the application of energy efficient technology or techniques and which have the effect of reducing end-use energy consumption;
- standards and norms that aim at improving the energy efficiency of products and services, including buildings and vehicles, except where these are mandatory and applicable in Member States under EU law;
- energy labelling schemes, with the exception of those that are mandatory and applicable in the Member States under EU law; and
- training and education, including energy advisory programmes, that lead to the application of energy efficient technology or techniques and have the effect of reducing end-use energy consumption.

Concerning the energy audit obligation (see in more details in Part IV “Mandatory Audit of Large Industry”, p. 76), SMEs are exempted as well as those companies which are certified by the EN ISO 50001 standard. There is a unique institution in Hungarian law which is separate from the energy audit obligation – specifically the mandatory use of professional energy evaluators (see in more detail in Part IV “Mandatory Audit of Large Industry”, p. 76.). Companies are exempted from this obligation where their energy consumption does not exceed 400,000 kWh electricity, 100,000 m<sup>3</sup> gas or 3,400 GJ heat.

The Laws also regulate the obligations of certain state entities concerning the progress report to the EU Energy Commission. The HEA is the data manager for companies having obligations under the energy efficiency regulations. The HEA is also the responsible entity in connection with energy audit control, collecting registration fees, imposing fines as well as the registration and supervision of the professional energy evaluator system. The HEA has a separate subdivision to carry out these tasks related to energy efficiency, and issues important by-laws (such as HEA Decree No. 1/2017 (II. 16.) on the data supply of energy auditors and auditor companies or HEA Decree No. 2/2017 (II. 16.) on the data supply of large industries) or “soft” laws (such on guidance on energy audit obligation as well as professional energy evaluators) where it deems appropriate.

### **Comparison**

Hungarian legislation has been put in place to define the scope of energy audits and exemptions thereto, as well as the unique Hungarian institution, the use of professional energy evaluators. Since the EU Directive only stipulates that energy distributors achieve a one point five percent (1.5%) energy reduction every year, Hungary has opted to meet the energy efficiency targets through alternative measures in line with Article 9 (2) of the Directive.

## KOSOVO<sup>15</sup>

Most of the laws in the field of energy and energy efficiency are partially in compliance with the respective EU legislation.

After the Law on Energy Efficiency was approved, various secondary legislation and strategies were issued by the Government.

The Government of Kosovo signed two important loan agreements with the International Development Association (World Bank) and KfW (*Kreditanstalt für Wiederaufbau*), Frankfurt am Main. Both of these above-mentioned agreements were ratified in the Assembly of the Republic of Kosovo and are transposed in the following laws:

- Law No. 05/L-011 on Ratification of Financing Agreement between the Republic of Kosovo and the International Development Association Regarding the Project on Energy Efficiency and Renewable Energy; and
- Law No. 05/L-107 on Ratification of The Loan Agreement Between KfW (*Kreditanstalt für Wiederaufbau*), Frankfurt am Main and the Government of the Republic of Kosovo for the Programme “Energy Efficiency Measures in Public Buildings at Municipal Level in Kosovo”.

In addition to the above, the Government of Kosovo (respectively, the Ministry of Economic Development) approved on 31 January 2013 Administrative Instruction No. 01/2013 on Renewable Energy Targets (“**Administrative Instruction on Renewable Energy Targets**”). Article 3 of the Administrative Instruction on Renewable Energy Targets provides that the mandatory target for renewable energy by 2020 is twenty five percent (25%) of the final gross energy consumption, as defined in Article 4 of the Decision of the Ministerial Council of the Energy Community No. D/2012/04/MC/ - EnC.

Furthermore, the Government of Kosovo approved Administrative Instruction No. 09/2012 on the Labelling of Energy Related Products (“**Administrative Instruction on the Labelling of Energy Related Products**”) which regulates the labelling of energy related products, and defines the shape and content of labels, roles and entities responsible for labelling and control, and other features of such products, with the aim of informing consumers on the energy consumption and other relevant energy efficiency features of these products.

Moreover, pursuant to the mandatory target mentioned above, the Energy Regulatory Office, (“**ERO**”), issued the Rule on Support Scheme (on Support of Generation of Electricity from Renewable Energy Sources) (“**Rule on Support Scheme**”). The Rule on Support Scheme aims at supporting the generation of electricity from renewable energy sources, in order to meet the established Indicative Targets of Renewable Energy Sources.

The Draft Energy Strategy of the Republic of Kosovo 2016–2025 (“**Draft Strategy**”, approved by the Ministry of Economic Development on July 2016), states that its objective No. 5 is the improvement of energy efficiency and energy renewable sources pursuant to the Treaty Establishing the Energy Community and pursuant to the Stabilisation and Association Agreement. The Draft Strategy states that Kosovo, as contractual party of the Energy Community, has undertaken the obligation to implement new policies of the EU that derive from European Directive No. 2012/27/EC on Energy Efficiency. Moreover, the Draft Strategy states that one of its objectives is to promote renewable energy sources over the next ten (10) years by building the needed legal infrastructure in order to achieve the obligatory target of having twenty five percent (25%) of gross final consumption of energy produced by renewable energy sources by 2020.

## Comparison

Although, it is not clear whether Kosovo has chosen to pursue the alternatives offered in favour of energy audits and accountability, based on the administrative instructions and other supporting schemes mentioned above, it can be concluded that Kosovo has chosen to pursue such alternatives. In addition, such conclusion can be inferred based upon the type of audits foreseen in the Administrative Instruction on Energy Audits.

<sup>15</sup> Wolf Theiss in corporation with Pallaska&Associates.

### MOLDOVA<sup>16</sup>

Obligations set forth by the law refer to energy managers, energy service rendering, energy reports, supervision, monitoring and reporting.

District and Municipal Councils must appoint certified energy managers responsible for planning and monitoring the implementation of measures to improve energy efficiency, including those contained in programmes to improve energy efficiency, energy savings record.

Energy managers carry out energy consumption analyses at least once a year in order to determine possible interventions for improving energy consumption, in accordance with the standard developed by the Energy Efficiency Agency (“**Agency**”). Energy distributors and suppliers present data reports on energy consumption to the Agency every three (3) years, in order to develop the national plan, following and filing out a standard form.

Energy Service Companies provide energy services based on energy performance contracts, in which the following is to be stipulated:

- primary energy consumption before the services rendered that are the subject of the contract;
- the energy savings guaranteed and procedures for achieving them;
- arrangements for works financing; and
- ways to recover investments made by the company's management, or, where appropriate, by third parties.

Energy distributors, distribution system operators, as well as energy suppliers will not undertake any activity that would hinder the development of the energy services market and conduct other measures to improve energy efficiency.

Compulsory insurance of metrology records for the entire volume of energy resources extracted, transformed, transported, stored, distributed and consumed is to be made by approved measuring instruments, metrologically verified and included in the State Register of measuring instruments permitted for use in the Republic of Moldova. Energy savings in the country are calculated based on a methodology approved by the Government.

The Agency carries out supervision and monitoring of energy efficiency improvement programmes for national and local action plans and their implementation.

The Moldovan Tax Code provides incentives in order to consolidate the efforts towards sustainability combined with economic growth.

### POLAND

The Bill modified previously introduced regulations that were supposed to ensure the reduction of energy usage to the amount required by Directive 2012/27/EU.

#### **Energy efficiency certificates scheme (white certificates)**

White certificates are certificates attesting to the saving of a certain amount of energy as a result of investments to improve energy efficiency. White certificates have property rights and are traded on a Power Exchange.

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<sup>16</sup> Contributed by ACI Partners Law Firm.

The obligation imposed on entities selling electric power, heat, and natural gas to final consumers is the need to:

- implement a project to improve energy efficiency for the final consumer, or
- obtain/purchase white certificates which they then submit for redemption to the President of the Energy Regulatory Office.

In special cases, the obligation may be settled with a replacement fee, but this method will be gradually eliminated. In 2016 only thirty percent (30%) of required energy savings were able to be settled by a replacement fee, then gradually to be reduced to twenty percent (20%) in 2017 and ten percent (10%) in 2018.

To obtain white certificates, an application for a certificate of energy efficiency combined with an energy efficiency audit should be submitted to the President of the Energy Regulatory Office.

### **Energy Audit**

According to the Bill, energy audits of an enterprise are intended to cover detailed and validated calculations for the proposed measures which are designed to improve energy efficiency, and to provide information on potential energy savings.

An energy audit is to be carried out by an independent entity which has knowledge and professional experience in performing this type of audit. If the energy audit of an enterprise is carried out by experts from the audited enterprise, they may not be directly involved in auditing the other activities of that enterprise.

The requirement to carry out an audit applies to entrepreneurs who in at least one of the prior two (2) fiscal years:

- employed on average not less than 250 employees, or
- achieved an annual net turnover from the sale of goods, products, services and financial transactions exceeding the PLN equivalent of EUR 50 million and/or the total assets of their balance sheet at the end of one of those years exceeded the PLN equivalent of EUR 43 million.

An entrepreneur is released from this obligation if it:

- owns an energy management system specified in the Polish Standard PN-EN ISO 50001 on energy management systems, requirements and recommendations of use; or
- owns an environmental management system, referred to in Article 2 Section 13 of the Regulation of the European Parliament and Council Regulation (EC) No. 1221/2009 of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS);

and proves that under one of those schemes an energy audit of the company was conducted.

### **The Third National Action Plan of 2014**

The Third National Action Plan is the first plan that was drafted on the basis of Directive 2012/27/EU. It was prepared in order to continue measures taken in accordance with Directive 2006/32/EC of the European Parliament and Council of 5 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC.

The following assumptions were taken into account for the National Action Plan:

- the policy aimed at increasing energy efficiency of the economy will be continued, resulting in reducing energy consumption;

- the envisaged measures will be based as much as possible on market mechanisms, and budget funding will be limited to a minimum; and
- the objectives will be achieved following the principle of minimum cost, that is the national potential for energy efficiency will be achieved by maximising the use of existing mechanisms and organisational infrastructure.

The Third National Action Plan, which was adopted by the Council of Ministers on 20 October 2014, prepared more than 20 programmes divided into five sectors: services sector, residential sector, public sector, industry sector and transportation sector.

### **Comparison**

Poland has introduced White Certificate programmes as well as energy audits in order to ensure that entrepreneurs and energy companies comply to achieve a goal of at least one point five percent (1.5%) of energy reduction every year. The Bill includes guidelines for large companies on how to efficiently adopt provisions set out by the Directive and how to ensure energy efficiency in all aspects of the energy industry.

## **ROMANIA**

The criterion used to define those companies that are obliged to undergo an energy audit is total annual energy consumption. The threshold is 1,000 toe/year, applied as follows:

- an enterprise with energy consumption higher than 1,000 toe is obligated to carry out energy audits for one hundred percent (100%) of energy consumption every four (4) years;
- an enterprise with energy consumption less than 1,000 toe/year is obligated to carry out energy audits for a selected percentage of their energy consumption (the energy audit beneficiary chooses the percentage of energy consumption) every four (4) years;
- each site that has energy consumption above 1,000 toe is considered as an independent unit and must carry out an energy audit on one hundred percent (100%) of the energy consumption of that unit; and
- those enterprises that annually consume less than 1,000 toe must carry out energy audits on a percentage of energy consumption as chosen by the beneficiary.

SMEs and enterprises that implement a system of energy or environmental management, certified by an independent body in accordance with European or international relevant standards are exempted from this obligation.

### **Establishment of the Energy Efficiency Department**

In accordance with the provisions of the Law, an Energy Efficiency Department (“**EED**”) was established within the Romanian Energy Regulatory Authority (“**ANRE**”) by Order of ANRE’s President No. 95/2014, published in the Official Journal No. 737/2014.

ANRE is responsible for transposing the provisions of the Law into secondary legislation.

### **National Energy Efficiency Action Plan**

The National Energy Efficiency Action Plan (2014–2020) (“**NEEAP III**”) was approved by Governmental Decision No. 122/2015.

The established measures for energy efficiency apply to primary resources, production, distribution, supply, transmission, and final consumption of energy. The measures provided by NEEAP III represent the basis for establishing twelve national EE Programmes, grouped into five sectors.

## Comparison

Romanian legislation has been put in place to define the scope of energy audits to ensure that all energy companies comply with the Energy Efficiency Obligation. Since the EU directive only stipulates that energy distributors achieve a one point five percent (1.5%) energy reduction every year, Romania has defined how large enterprises can achieve this goal through energy audits and a compulsion towards efficiency. Romania has embraced the goal to promote efficiency throughout all stages of the energy chain. Romania chose not to pursue the alternatives offered in favour of energy audits and accountability for Romanian energy producers.

## SERBIA

### Law on Efficient Use of Energy

The Law introduced an energy management system for companies based on the levels of total annual energy consumption; the exact levels were left to be further defined by the Government.

#### **Decree on Determining Annual Energy Consumption Limits for Companies that are Subject to Energy Management System, Annual Energy Savings Plans and the Form of Energy Consumption Notification<sup>17</sup> ("Decree on Annual Energy Consumption Limits")**

The Decree on Annual Energy Consumption Limits was adopted in 2016 and set energy management obligations for the following entities (entities subject to an energy management system):

- companies with their main business activity in the production sector and with (i) annual energy consumption of more than 2,500 toe in at least one business unit; or (ii) annual energy consumption of more than 1,000 toe together in all owned business units;
- companies with their main business activity in trade and services and with annual energy consumption of more than 1,000 toe in at least one business unit; and
- government and provincial authorities, local municipalities with more than 20,000 inhabitants, and other public bodies that use objects in public ownership.

The energy management obligations of the above entities are to:

- achieve the prescribed annual energy consumption savings;
- appoint the appropriate number of energy managers and inform the Ministry thereof;
- adopt the Energy Efficiency Plan and send it to the Ministry upon request;
- fulfil measures from the Energy Efficiency Plan;
- send annual reports on the fulfilment of the Energy Efficiency Plan to the Ministry; and
- perform energy audits at least once every five (5) years, unless specifically provided otherwise.

The Decree on Annual Energy Consumption Limits set a one percent (1%) annual energy savings target for all entities subject to an energy management system.

<sup>17</sup> Uredba o utvrđivanju graničnih vrednosti godišnje potrošnje energije na osnovu kojih se određuje koja provredna društva su obveznici sistema energetskeg menadžmenta, godišnjih ciljeva uštede energije i obrasca prijave o ostvarenoj potrošnji energije ("Official Gazette RS" No. 18/2016).

**Rulebook on Model Annual Report on Realised Energy Savings<sup>18</sup>**

Entities subject to an energy management system must send annual reports to the Ministry on realised energy savings.

**Comparison**

Serbian legislation implemented a broad obligation on all companies in the production, trade and services sectors, with annual energy consumption higher than the prescribed threshold, to make one percent (1%) annual energy savings. This may therefore include energy distributors and retail energy sales companies if their annual energy consumption is above the prescribed thresholds. Yearly reports on realised energy savings should be sent to the Ministry.

**SLOVAKIA**

Only large enterprises are obliged to undergo an energy audit. Large enterprises are defined as entrepreneurs not falling under the definition of micro, small and medium-sized enterprises (SMEs) as set out in the Commission Regulation (EU) No. 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty<sup>19</sup>.

**Establishment of the Slovak Innovation and Energy Agency ("SIEA")**

SIEA was given its current name by the Decision of the Minister of Economy of the Slovak Republic No. 18/2007 as a professional State subsidy organisation which makes an important contribution in the achievement of governmental energy policy objectives, principally by promoting energy efficiency, new energy technologies and renewables.

In the field of regulatory energy efficiency, SIEA is responsible for the operation of monitoring systems for efficiency in energy use, performance of energy audits and follow-up recommendations, management and information point for funds provided for Slovakia under international agreements and support mechanisms (subsidised programmes, support programmes for development of SMEs, etc.).

**Permanent Interinstitutional Commission for the Preparation of Energy Efficiency Action Plans**

One of the important instruments that help fulfil the requirements of the EED (especially in terms of monitoring, evaluation and planning of energy savings) is the Permanent Interinstitutional Commission for the Preparation of Energy Efficiency Action Plans, established in 2007. It includes representatives of various ministries and other central governmental bodies, as well as organisations responsible for energy savings programmes and measures in Slovakia.

**3rd Energy Efficiency Action Plan for 2014–2016 with the prospect for 2020**

The 3rd Energy Efficiency Action Plan for 2014–2016 with the prospect for 2020 was approved by Governmental Decision No. 350/2014. For more details please see Part II "Specific Provisions of the Law", p. 44.

**Comparison**

Slovak legislation has been put in place to define the scope of energy audits to ensure that all obliged energy companies comply with the Energy Efficiency Obligation. Since Directive 2012/27/EU only stipulates that energy

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<sup>18</sup> *Pravilnik o obrascu godišnjeg izveštaja o ostvarivanju uštede energije*, "Official Gazette RS", No. 32/2016

<sup>19</sup> As per Regulation No. 651/2014, the category of SMEs is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million. A micro-enterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

distributors achieve a one point five percent (1.5%) energy reduction every year, Slovakia has defined how large enterprises can achieve this goal through energy audits and strides towards efficiency. Slovakia has embraced the goal to promote efficiency throughout all stages of the energy chain.

## SLOVENIA

In accordance with Directive 2012/27/EU, Slovenia has established a target to improve energy efficiency by 2020, in a way that primary energy consumption by 2020 will not exceed 7.125 million toe (82.86 TWh).

The one point five percent (1.5%) of yearly energy reduction and its corresponding values per year are defined in AN URE 2020. According to the permitted scope of reduction of target under Directive 2012/27/EU, the Slovenian Government decided to reduce the target of one point five percent (1.5%) by twenty five percent (25%). Thus the target percentage of yearly energy reduction will rise gradually (one percent (1%) in 2014 to one point five percent (1.5%) in 2020, one percent (1%) in 2014 and 2015, one point two five percent (1.25%) in 2016 and 2017, and one point five percent (1.5%) in 2018 to 2020).

Slovenia has chosen to implement the provisions of Article 7 (9) of Directive 2012/27/EU, by opting to combine alternative policy measures and an energy efficiency obligation scheme (“**EEO**”) to meet the national target. The Slovenian legislator decided to opt out of providing those alternatives established in accordance with Article 7 (10) of the Directive, except for the option of payments made to the Eco Fund (*Eko sklad*), a Slovenian Environmental Public Fund, which is a public fund (owned by the State).

The two measures (EEO and Eco Fund) are responsible for achieving the one point five percent (1.5%) target annually.

Considering the above, all companies are required to comply with the energy efficiency obligations with regard to the thresholds set out in AN URE 2020. In comparison to the old scheme for the mandatory achievement of end energy savings for companies under previous national energy efficiency action plans, the new scheme determined by AN URE 2020 does not regulate financial incentives for energy efficiency and therefore the burden of expenses of prescribed energy reductions is placed upon the suppliers. In this regard, the energy suppliers may ensure energy reductions by encouraging their customers to use energy efficient products (e.g. change of household appliances, use of energy saving light bulbs, etc.). Although the new scheme might be more costly for energy providers, it grants them more flexibility in the choice of specific savings measures.

In this regard, EZ-1 identifies the following measures which may be undertaken by the suppliers:

- efficient and greater consumption of renewable energy sources in the production of heat in the public and services sector and in industry and households;
- efficient energy consumption in buildings;
- efficient energy consumption in transport;
- measures to increase the efficiency of district heating systems; and
- energy audit programmes.

Pursuant to EZ-1 the energy reduction targets are binding upon suppliers of electricity, heat, gas and liquid and solid fuels to end customers. The alternative to the achievement of targets through customers is for the suppliers to fulfil their energy efficiency obligation by remitting funds to the Eco Fund in an amount equal to the total savings that should have been achieved by final customers and Eco Fund's special costs for energy savings. The target savings are determined on the basis of the amount of energy sold in the previous year.

The achievements of suppliers concerning the targets of energy efficiency are monitored by the Energy Agency. Furthermore, the suppliers must inform the Agency about the achievements of targets every year, by 31 March. The content and the form of the report are determined by the Agency. By 30 April, the Agency will then publish the achieved

energy savings for each supplier. Upon the Agency's request, the suppliers are obliged to provide the Agency with the aggregated statistical data on their end-customers and current data on consumption by end-customers.

The Eco Fund aims at improving energy efficiency through financing investments in energy efficiency, mostly in households. The funds for subsidies of the Eco Fund are collected from the contributions-fee for improving energy efficiency and from charges levied on district heating, electricity and solid, liquid and gaseous fuels, which are paid by final consumers in addition to the price of energy or fuel paid to the operator or supplier of the energy or fuels. These operators or suppliers then pay the levied charges that have been collected to the Eco Fund. The Eco Fund provides various measures to encourage energy efficiency, especially loans for investments in the field of protection of the environment. It also grants collected funds to households in order to co-finance the increase of energy efficiency.

For natural persons, the Eco Fund provides financial incentives for the purchase of electric cars, and favourable loans for the use of renewable energy sources and greater energy efficiency in residential buildings. The Eco Fund also provides favourable loans for various measures in the field of water protection and water efficiency and waste management. The Eco Fund co-finances the following measures relating to efficient use of energy for natural persons:

- outer builder's joinery;
- insulation of facades;
- roof insulation;
- insulation of ground and basement;
- ventilation system with heat recovery;
- hybrid or electric passenger vehicles (car, motorcycle, moped and bicycle);
- electric vehicles;
- complete renovation of residential buildings; and
- nearly zero-energy use buildings.

For legal entities, the Eco Fund offers financial incentives in the form of soft loans for various investments in all areas of environmental protection. There are also non-refundable financial incentives for electric vehicles.

Legal entities that are financed by the Eco Fund may use these funds in the following areas:

- district heating;
- insulation of facades;
- thermal insulation of the roof;
- optimisation of the heating system in an multi-apartment residential building;
- a comprehensive energy renovation of buildings;
- energy renovation of existing buildings;
- electric vehicles;
- energy efficiency measures in manufacturing, commercial and public buildings; and
- construction of new buildings using the nearly zero-energy technology.

Financial incentives in the form of soft loans for various investments in all areas of environmental protection are also available for the local authorities, namely for investments in:

- district heating;
- the construction of nearly zero-energy use buildings of general public importance;

- renovation of existing lighting;
- type of connection to the pipeline or installation of combustion plants, which use gas as an energy source;
- charging stations for electric vehicles in protected areas and nature areas of Natura 2000; and
- grants, intended for the Ministry of Defence of the Republic of Slovenia for new investments in energy renovation of buildings in the public sector.

## Comparison

Slovenia implemented legislation to define the scope of energy audits and to ensure that relevant subjects comply with the Energy Efficiency Obligation. To comply with Article 7, Slovenia has opted to implement a set of other policy measures in accordance with Article 7 (9) of the Directive 2012/27/EU, namely the Eco Fund, which provides for various measures to encourage energy efficiency.

The obligation of energy distributors to achieve energy savings has already existed in Slovenia since 2010 under the Decree on energy savings of final customers. However, the obligations have been increased with the adoption of the new Decree on energy savings requirements in the process of transposition of Directive 2012/27/EU.

## UKRAINE

### Harmonisation with energy *acquis communautaire*

According to the National Strategy, the national indicative energy savings target of nine percent (9%) by 2020 seems to be the only Ukrainian obligation expressly fixed in the law. However, Ukraine is often in delay with the performance of its obligations within the Energy Community, such as changes to its legislation. Therefore, there is a possibility that the above target will not be achieved in due time.

At the same time, due to the strong dependence of Ukraine on the importation of energy materials, coupled with the poor condition of its buildings, utilities and production facilities, there is a huge demand for the implementation of energy efficiency measures. Subsequently, both internal and external factors stimulate the State and local authorities to take relevant measures. However, these measures also require ample financing, which cannot be covered solely by the State or local budgets. Thus, technical assistance from the EU, Energy Community and EBRD combined with financial support could assist Ukraine in achieving these energy efficiency targets.

The Ukrainian law does not expressly oblige energy companies to decrease their own energy consumption; however the incentives to reduce end-use energy consumption are in place. For the holders of State and municipal property, a special law was adopted to allow use of the energy service agreements.

### Establishment of the State Energy Efficiency and Saving Agency of Ukraine

In 2011, the State Energy Efficiency and Saving Agency of Ukraine was established in order to implement measures for the efficient consumption of energy materials, energy saving, and the development of renewable and alternative sources of energy. It is responsible for the implementation of the relevant State programmes and action plans, for control over efficient consumption of energy materials, distribution of information about energy efficiency measures, creation and operation of the energy audit.

### National Strategy

To date, the National Strategy has been adopted only once in Ukraine. However, together with other energy efficiency programmes, it serves as the basis for the implementation of energy efficiency measures.



# MANDATORY AUDIT OF LARGE INDUSTRY

## **EU DIRECTIVE**

Member States can have programmes to support energy audits, but the expectation is that companies pay for their own audits. The rationale is that companies will ultimately profit from energy efficiency, and the audit will pay for itself.

There are no established parameters for how large an industry must be in order to be audited. These will be set by Member States. The Commission states that the industry should be larger than an SME which is a company with less than 250 employees, a turnover less than EUR 50 million and a balance sheet total of less than EUR 43 million.

There is no obligation to implement recommended measures from an audit, but it is contemplated that the potential savings identified through such an audit will be enough to convince companies to invest in energy efficient measures.

Relevant National Laws in:

## **AUSTRIA**

In Austria, all large enterprises must implement an energy audit. By law, large enterprises are enterprises that are neither small nor medium-sized enterprises. If an enterprise employs more than 249 people, it directly qualifies as a large enterprise. If an enterprise employs 249 people or less, additional thresholds have to be exceeded to qualify as a large enterprise. Therefore, the turnover threshold (i.e. EUR 50 million) and the balance sheet total threshold (i.e. EUR 43 million) have to be exceeded. Consuming enterprises (*verbrauchende Unternehmen*) operating in Austria which are more than fifty percent (50%) owned by the parent company are in any case attributable to the parent. Consequently, the whole group is decisive for the calculation of these thresholds.

Large enterprises must implement energy audits or use a certified energy or environmental management system (ISO 50001, ÖNORM EN 16001 or ISO 14000) or an equivalent nationally recognised management system. Management systems have to include an internal or external energy audit (Article 9 Paragraph 2 EEEffG). In case of multinational companies, the parent company is – regarding those parts of the company situated in Austria – responsible for compliance with the EEEffG. Therefore, it may be the case that a parent company is responsible for complying with the EEEffG even though it does not operate in Austria.

The EEEffG defines qualification requirements for energy auditors and guidelines for the implementation of energy audits. Energy audits are defined as a systematic procedure with the purpose of: (i) obtaining adequate knowledge of the existing energy consumption profile of a building or group of buildings, an industrial or commercial operation or installation or a private or public service; (ii) identifying and quantifying cost-effective energy savings opportunities; and (iii) reporting the findings thereof (Article 5 Paragraph 1 Item 3 EEEffG). By law, external energy audits have to be conducted every four (4) years.

Energy audits analyse energy consumption in order to suggest measures to improve energy efficiency. Audits have to fulfil minimum requirements set out in Annex III of the EEEffG. In particular, energy audits must include the three relevant energy consumption areas (i.e. buildings, processes and vehicles) if, in each case, they amount to at least ten percent (10%) of the total Austrian energy consumption of the entire enterprise or whole group. Consequently, if the energy consumption of one of the three areas does not exceed the ten percent (10%) threshold, the energy audit need not include this specific area. However, if the threshold is exceeded, an audit must be conducted for all sites of the group, even though the threshold may not be exceeded by individual enterprises.

**klima:aktiv**

Klima:aktiv is the active climate protection initiative of the Federal Ministry of Agriculture, Forestry, Environment and Water Management (*Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, BMLFUW*). As part of the Austrian climate strategy, one of the aims of the programme is to support energy efficiency by offering different types of funding. Other well-known programmes and institutions (e.g. *Energieinstitut der Wirtschaft*) also promote energy efficiency in Austria.

**Comparison**

The Austrian EEEG defines large enterprises according to the definition used in Directive 2012/27/EU. Regarding multi-national companies, it is important to note that only company parts operating in Austria are decisive. However, it should be considered that foreign parent companies may be responsible for conducting energy audits for Austrian subsidiaries.

**BOSNIA & HERZEGOVINA**

There are no mandatory energy audits required by the applicable legislation in BiH or action plans for RES adopted thus far. However, Article 22 of the RS Energy Efficiency Law states that suppliers of electricity must, at least once a year, inform their customers about the effects of energy consumption on the environment and to educate and guide the consumer to use energy more rationally and efficiently. The information must contain, *inter alia*, information on the Fund for Environmental Protection of and Energy Efficiency, web sites with information on measures for the improvement of energy efficiency, products that are energy efficient and other similar measures.

There is also a system of inspection prescribed by RS Law on Energy Efficiency. Specifically, these inspections are carried out by the Republic Administration of Inspection, through the Republic Inspector. This Inspector has the right to, *inter alia*, ban the flow of products without the proper energy efficiency markings or those that lack required technical documentation. Moreover, the Inspector has the right to impose fines in case of failure to abide by these obligations.

The FBiH Energy Efficiency Law addresses mandatory energy audits and also provides more details as to which entities must perform such audits, authorities and obligations of legal and natural persons performing the audits, type of authorities, requirements for qualified persons to perform the audits, etc. According to the FBiH Energy Efficiency Law, the energy audit of all end-users in the public utility service sector, (including households, commercial consumers and small and medium-sized industrial consumers) must be performed exclusively based upon the rules of the profession in an objective and independent manner. There is also a system of inspection in place, whereby the application of the provisions of the FBiH Energy Efficiency Law is to be confirmed.

**Comparison**

A mandatory energy audit system currently exists only in FBiH through the FBiH Energy Efficiency Law. However, it is still unclear how this system of mandatory audits will actually function in practice, since further enacting bylaws are necessary. Also, in both entities there is a system of inspections in place, which in general needs to ensure the application of the provisions of these laws.

**BULGARIA**

Bulgarian legislation complies with the provisions of Directive 2012/27/EU. The Bulgarian EEA and the respective Ordinances provide a framework of requirements to ensure that energy auditors have the proper qualification and have the necessary experience and equipment to perform energy audits.

### **Qualification of energy auditors**

The EEA provides the general requirements for energy auditors. Details on the procedure for licensing and the requirements are provided in Ordinance No. RD-16-301 of 10 March 2014 on the circumstances, subject to entry in the register of: (i) persons performing certification of buildings and energy efficiency audits of industrial systems; (ii) procedures for obtaining information from records; (iii) conditions and procedures for acquisition qualifications; and (iv) the necessary technical means to carry out inspection and certification activities.

Energy efficiency audits of enterprises, industrial systems and outdoor lighting systems may be performed only by those persons entered in a registry maintained by SEDA.

Auditors should be merchants who have at their disposal certain devices and staff consisting of energy efficiency consultants, who meet the following criteria:

- have completed higher education in the field of technical sciences in a professional field and specialties, which is recognised in the Republic of Bulgaria or in another EU Member State, or in another State, which is a contracting party to the Agreement on the European Economic Area, or in the Swiss Confederation, or have completed secondary technical education;
- have experience in a relevant position of not less than two (2) years for holders of a Masters' degree, not less than three (3) years for holders of a Bachelors' degree, and not less than six (6) years for persons who have completed secondary technical education; and
- hold a certificate of a successfully passed examination for the attainment of the qualification necessary to perform the activities listed above at higher technical schools specialised in the professional fields of energy, electrical engineering, and architecture, civil engineering and geodesy, or relevant education from another EU Member State, or from another State which is a contracting party to the Agreement on the European Economic Area, or from the Swiss Confederation.

Within five (5) years as of the registration in the registry maintained by SEDA, energy auditors must renew their registration by submitting an application stating their current qualifications and experience. SEDA is the authority responsible for controlling the energy auditors' qualifications and for the quality of the energy audits conducted by them.

### **Performance of energy audits**

The energy audits requirements, the indicators of energy expenditure, the energy performance of enterprises, industrial systems and outdoor lighting systems, as well as the terms and procedures for performing an energy efficiency audit and preparing an energy savings evaluation are regulated by Ordinance No. E-RD-04-05 of 8 September 2016.

Annually, not later than 31 January, the owners of enterprises, industrial systems and outdoor lighting systems which are subject to a mandatory energy efficiency audit must submit a template declaration to SEDA containing the characteristics of the respective entity. Information based on these declarations is entered into a public register maintained by SEDA.

Energy efficiency inspections are performed for heating systems with hot-water boilers of an effective rated output for space heating purposes of more than 20 kW and for air conditioning systems in buildings of a rated output of more than 12 kW.

### **Comparison**

Bulgarian authorities have adopted a detailed and strict legal framework in order to ensure that energy efficiency audits will be performed by qualified and experienced specialists. The legal framework also contains detailed instructions on how an energy efficiency audit is to be performed which are the monitored parameters and what are the possible measures to be undertaken.

## CROATIA

This topic is governed in detail by the Ordinance on Energy Audits for Large Companies, issued by the Ministry of Economy, Entrepreneurship and Crafts, and implementing the requirements of the EU Directive (“**Ordinance**”).

The Ordinance establishes the manner by which such audits are conducted, the terms of issuance and cancellation of authorisation thereof, the content and manner of maintaining the register, the audit report’s content and other obligations related to the audit’s implementation.

Large companies are obliged to carry out an energy audit every four (4) years. Companies which implement an energy management system conforming to the ISO 50001 standard, evidenced by a certificate issued by an accredited independent body under relevant European or international standards are exempt.

An energy audit is performed by an independent authorised person, pursuant to the authorisation issued by the Ministry, for a period of five (5) years, with the possibility of extension.

### Comparison

Croatia has also established legislation for the implementation of the EU Directive. According to the Ordinance, large enterprises are those companies that meet at least two of the following conditions: (i) total assets of at least HRK 130 million, yearly income of at least HRK 260 million; or (ii) at least 250 employees on average during the business year. Energy auditors from Croatia and the EU need to prove their professional competence and be authorised/registered by the Ministry in order to provide their services.

## CZECH REPUBLIC

### Requirements on energy auditors – Act No. 406/2000 Coll., on energy management, as amended

The requirements placed on energy auditors are set out in Act No. 406/2000, on energy management, as amended.

A natural person may become an energy auditor if he/she:

- passes an exam organised by the Czech National Energy Inspectorate;
- has a required level of professional qualification, i.e. holds either:
  - a university degree in technical sciences focused on the energy sector and has three (3) years of experience;
  - a higher professional degree in technical sciences focused on the energy sector and has five (5) years of experience; or
  - a high school degree in technical sciences focused on the energy sector and has six (6) years of experience.
- has full legal capacity; and
- has not been sentenced for an intentional crime in connection with his/her activity as an energy auditor.

If the applicant has completed his/her education in a different Member State, such education is recognised in the Czech Republic in accordance with the Czech Act No. 18/2004 Coll., on recognition of professional qualification, as amended.

Once an energy auditor licence is granted, it must be periodically renewed every three (3) years.

### **Requirements on energy audit and energy assessment – Decree No. 480/2012 Coll., on energy audit and energy assessment, as amended**

This legislation includes the criteria for energy audits and energy assessments according to Directive 2012/27/EU.

#### **Use of energy audits and energy assessments**

The energy audits aim to increase energy efficiency of the buildings, and should eventually pay for themselves. In order to save costs, in certain cases energy assessments (a lighter version of energy audits) are permitted.

Apart from their primary use as a way to increase energy efficiency of a building or energy operation, energy audits and energy assessments may be used in certain subsidy programmes as a source of information for assessment of the application.

- A subsidy programme – energy management systems

A subsidy programme has been established for regional self-governing units (regions and municipalities) to promote the creation and improvement of energy management systems.

Every year, roughly CZK 1 million (approximately EUR 37,000) is used to support the creation and improvement of energy management systems.

#### **Comparison**

The Czech Republic has established legislation for certification of energy auditors, as well as guides for energy audit and a distinction between sizes of enterprises.

Energy auditors are required to demonstrate knowledge of Czech legislation and to be authorised by the Czech Republic. The Czech Republic has adopted minimum criteria for energy audits under Directive 2012/27/EU.

## **HUNGARY**

### **The Laws**

The Act provides that large industries must carry out a mandatory audit every four (4) years. Although the Directive sets a deadline of 5 December 2015, sanctions may only be imposed commencing from 30 June 2017. Large industries are all companies which are not considered as SMEs under Hungarian law.

An enterprise qualifies as an SME if it:

- employs fewer than 250 persons; and
- its annual net turnover does not exceed the HUF equivalent of EUR 50 million or its annual total balance sheet does not exceed the HUF equivalent of EUR 43 million.

| CRITERIA TO EXAMINE | POSSIBLE VERSIONS |              |              |                |              |              |              |              |
|---------------------|-------------------|--------------|--------------|----------------|--------------|--------------|--------------|--------------|
| NUMBER OF EMPLOYEES | < 250 persons     | <250 persons | <250 persons | ≥250 persons   | ≥250 persons | ≥250 persons | <250 persons | ≥250 persons |
| ANNUAL NET TURNOVER | ≤ 50 M EUR        | >50 M EUR    | ≤50 M EUR    | <50 M EUR      | ≤50 M EUR    | >50 M EUR    | >50 M EUR    | >50 M EUR    |
| TOTAL BALANCE SHEET | ≤ 43 M EUR        | ≤43 M EUR    | >43 M EUR    | ≤43 M EUR      | >43 M EUR    | ≤43 M EUR    | >43 M EUR    | >43 M EUR    |
|                     | SME               |              |              | LARGE INDUSTRY |              |              |              |              |

The Act also specifies some exceptions. For example, a large industrial company is not obliged to carry out an audit if it operates based upon an EN ISO 50001 energy management system. However, the Decree provides that the National Energy Network particularly encourages SMEs to carry out audits and implement its recommendations.

For the purpose of the mandatory audit implementation, the HEA acts as a supervisory authority. Large industries must register – along with paying a registration fee – at the HEA homepage, as well as fulfil certain data supply obligations towards HEA. The Act also sets forth the control measures, as well as sanctions which are imposed in case of a breach.

The Act also regulates the various conditions and qualifications which entitle persons and companies to carry out audits, as well as the mandatory further education programmes and exams. After the successful registration, HEA operates the nomenclature for auditors.

The Act further specifies the criteria for cross-border services for both EEA and third country members.

The Decree provides detailed rules regarding the content of the audit, qualifications and other requirements. The Act (as well as the Decree) also specifies the applicable rules regarding the “professional energy evaluator”. The professional energy evaluator is – among others – an observer and consultant at the energy audits who makes recommendations regarding efficient energy solutions and compiles monthly and yearly reports. A business entity must engage a professional energy evaluator if its energy consumption average in the last three (3) years exceeds:

- 400,000 kWh electricity;
- 100,000 m³ gas; or
- 3,400 GJ heat.

Apart from energy auditors and evaluators, special “contributory organisations” also assist in the Hungarian audit system by organising professional exams and further education programmes for energy auditors and evaluators. For the time being, the only licensed contributory organisation is the Hungarian Engineer Chamber.

The National Energy Network gives advice to public institutions, municipalities and companies in order to facilitate their energy efficient operation, as well as to households in order to decrease their energy consumption.

In addition to the Laws, HEA decrees provide some further rules. HEA Decree No. 7/2015 (X. 16.) defines detailed regulations regarding the sum, payment and refunding of the registration fee paid by energy auditors and energy audit companies. HEA Decree No. 1/2017 (II. 16.) further specifies the data supply of energy auditors and auditor companies, as well as the yearly reporting obligation of contributory organisations. HEA Decree No. 2/2017 (II. 16.) regulates the data supply of large industries, as well as business entities which are obliged to consult energy evaluators regarding the extent of energy consumption and energy savings.

The first round of data provision was due on 31 March 2017 on auditing activities while the first report on contributory organisations will be due on 31 January 2018. For large industries, the additional data supply obligation is due on 30 June 2017, for companies obliged to use evaluators not qualifying as large industries this deadline is 30 June 2018.

### Comparison

Hungarian Law precisely defines the parameters for large companies which are subject to mandatory energy audits. Furthermore, Hungary has established the National Energy Network which also encourages SMEs to carry out these audits. The HEA acts as the supervisory authority and operates the nomenclature for auditors. Beside the auditors and audit companies, the services of a mandatory professional energy evaluator must also be retained in case of extensive energy use.

### KOSOVO<sup>20</sup>

The Government of Kosovo, (based on Article 12 of the Law on Energy Efficiency) approved the Administrative Instruction No. 01/2012 on Energy Audits (“**Administrative Instruction on Energy Audits**”). The purpose of the Administrative Instruction on Energy Audits is to institutionalise energy audits in an effort to improve energy efficiency in the Republic of Kosovo and to determine the categories of consumers that shall be subject to auditing. The Administrative Instruction on Energy Audits defines three types of audits: (i) simple audits; (ii) standard audits; and (iii) comprehensive audits. Annex I of the Administrative Instruction on Energy Audits explains thoroughly the procedures that should be followed for each of the above-mentioned types of audits.

The Administrative Instruction on Energy Audits provides as follows:

- a simple energy audit is obligatory to be done at least once every ten (10) years for all energy consumers that are partially or entirely funded by the budget of Kosovo, if the surface of their facilities exceeds 1,000 m<sup>2</sup> and/or the overall consumption of various energy sources is up to 20 toe;
- a standard energy audit is obligatory to be done at least once every eight (8) years for all energy consumers that are partially or entirely funded by the budget of Kosovo and the overall annual consumption of various energy sources is between 20 to 50 toe; and
- a comprehensive energy audit is obligatory to be done at least once every five (5) years for all energy consumers that are partially or entirely funded by the budget of Kosovo and the overall consumption of various energy sources exceeds 50 toe.

The Administrative Instruction on Energy Audits provides that the competent ministry shall periodically inform the end-energy consumers that are subject to energy audits. Costs for any type of energy audit shall be borne by the audited consumer(s).

Furthermore, Annex II of the Administrative Instruction on Energy Audits provides the conditions and procedures in order to file the application for becoming a registered auditor. Such application should be filed at the Energy Auditor Certifying Commission. The registry of the registered energy auditors will be kept by the competent ministry.

### Comparison

Similar to the EU Directive, the Administrative Instruction on Energy Audits provides that the costs for any type of energy audit shall be borne by the audited consumer(s). However, the Administrative Instruction on Energy Audits provides that only energy consumers that are fully or partially funded by the budget of Kosovo are subject to energy audits. It should be noted that energy audits (like other energy efficiency measures) are addressed toward the public sector (i.e. energy consumers that are fully or partially funded by the budget of Kosovo). The types of energy audits are based on the amount of consumed energy.

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<sup>20</sup> Wolf Theiss in corporation with Pallaska&Associates.

## **MOLDOVA<sup>21</sup>**

The Government Decision on the Regulation of Energy Audit No. 884/2012 is the legal basis for determining the objectives, sequence of audit phases in all economy sectors, as well as preparation, execution and results presentation.

For instance, it should be noted that companies are required to cover the costs for audits, as these will eventually be recuperated through efficiency savings.

The cost of the energy audit is determined under conditions of free competition and transparency and depends upon the volume and complexity of the audited subject.

There are no established criteria on how large a company must be in order to be audited, but it can be concluded that it is not addressed/recommended to small or medium enterprises. In the Republic of Moldova a large enterprise has more than 250 employees and has profits exceeding MDL 50 million.

The applicants must submit the following documents for auditing: the specification book; commercial and technical reports on energy resources; contracts with energy suppliers; supply schemes and accounting of energy resources; invoices for the consumption of energy resources; construction execution projects; daily schedules, weekly and monthly tasks; data on production volumes, prices and tariffs; the technical documentation of technological and auxiliary equipment (technological schemes, diagrams, maps regime, operating specifications, regulations, etc.); reports on repairs, commissioning, testing and energy efficiency measures; long-term programmes for more efficient use of energy resources; and the project documentation for technological improvements and organisational development plans of the company. The information collected will be registered in a questionnaire drawn up by the energy auditor who will selectively check the veracity of information provided by the customer. In preparing the questionnaire, the guidelines stipulated by the law will be used, where appropriate.

### **Additional Information**

In order to attract investments for the development and modernisation of the energy sector, an Information Centre for information in the field of renewable energy and energy efficiency was instituted under the Energy Efficiency Agency. A statistical database on energy efficiency and renewable energy sources, as well as the communication strategy developed and implemented energy efficiency and renewable energy sources were also created, making it possible to conduct various events, seminars, workshops and trainings in the field.

## **POLAND**

The terms for carrying out energy audits are set out in the Bill. According to the provisions of the Bill, entrepreneurs within the meaning of the Act of 2 July 2004 on the Freedom of Economic Activity (Journal of Laws of 2013 Item 672, as amended 23), with the exception of those running small and medium-sized enterprises within the meaning of Articles 104 to 106 of that Act, are obliged to carry out, (if this is economically justifiable), an energy audit every four (4) years, or to have such an audit performed.

Enterprises that are implementing an energy or environmental management system in compliance with the relevant European Standards are exempted from this requirement. An energy audit must be carried out by an independent entity which has knowledge and professional experience in performing this type of audit. If the energy audit of an enterprise is carried out by experts from the audited enterprise, they may not be directly involved in auditing the other activities of that enterprise. Energy audits of an enterprise must cover detailed and validated calculations for the proposed measures which are designed to improve energy efficiency, and to provide information on potential energy savings.

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21 Contributed by ACI Partners Law Firm.

An energy audit of an enterprise:

- must be carried out on the basis of up-to-date, measured, and traceable data on energy consumption and, for electricity, load profiles;
- should comprise a detailed review of the energy consumption profile of buildings or groups of buildings, in industrial installations, and in transportation; and
- should be based, whenever possible, upon life-cycle cost analysis (LCCA) instead of Simple Payback Periods (SPP) in order to take into account long-term savings, residual values of long-term investments and discount rates.

Operators are required to keep the data used in energy audits for a five (5) year period for control purposes.

### **Comparison**

Due to the recent adoption of Directive 2012/27/EU into the Polish legal system in the form of the Bill in October 2016, Poland is still in the process of preparing a new National Energy Efficiency Action Plan which will set guidelines and regulations for energy audits. Specifically, the Bill requires that every three (3) years, the Minister for Energy Efficiency must prepare a National Plan until 31 January and then the Council of Ministers passes the Plan as a resolution. Once the Plan is passed, it is forwarded to the European Council, by no later than 30 April of that same year. Since the last Plan was passed in 2014, the New National Plan should have been prepared by the Minister until 31 January 2017 and thereafter passed and in effect by 30 April 2017. However, as of the date of publication of this Guide, the Minister has advised that the New National Plan will probably not be prepared until the end of March 2017.

## **ROMANIA**

### **ANRE Decision No. 2794/2014 – Regulation for Certification of Energy Managers, Energy Service Provider Companies, and for Authorising Industrial Energy Auditors**

Accordingly to ANRE's Decision No. 2794/2014, energy auditors authorised in another Member State of the European Union or the European Economic Area are recognised as an energy auditor authorised in Romania, if they demonstrate knowledge of Romanian legislation after undergoing an interview.

The applicants must submit the following documents to ANRE:

- a certified copy of the authorisation issued in a Member State of the European Union or the European Economic Area translated and legally certified;
- references to work carried out as an energy auditor in the past three (3) years; and
- a list of equipment owned by the applicant specific to the work required for energy audits.

Energy auditors from countries outside the European Union or the European Economic Area must attach the documentation, including the documents mentioned above, and a certificate of equivalence/recognition of related university degrees, issued by the National Council for Recognition and Equivalence of Diplomas from Romania.

**Decision ANRE No. 2123/2014 – Guide for Energy Audit**

- includes the minimum criteria for energy audits according to the Energy Efficiency Directive 27/2012/CE; and
- transport companies, or those companies which have a fleet, have the obligation to carry out energy audits on the fleet regarding the fleet composition, the technical characteristics of the vehicles, the number of hours of operation of the vehicles for a reference period, specific indicators – in relation thereto – such as tonnes/km or persons/km, energy consumption and possibilities for reduction thereof, the maintenance programmes for the vehicles, route optimisations and the training of drivers.

**Decision ANRE No. 8/DEE/12.02.2015 – Model for Developing the Programme for Increasing Energy Efficiency for Industrial Units****Decision ANRE No. 7/DEE/12.02.2015 – Model for Developing the Programme for Increasing Energy Efficiency of Establishments with a Population Exceeding 5000 Inhabitants**

Accordingly to the provisions of the Law:

- Article 9 (12) applies to municipalities with more than 5,000 inhabitants and provides that it is obligatory to have:
  - energy efficiency programmes.
- Article 9 (13) applies to municipalities with more than 20,000 inhabitants and provides that it is obligatory to have:
  - energy efficiency programmes; and
  - an energy manager.

Decision No. 13/DEE/2015 Regarding the Approval of the Syllabus of Specialised Courses in the Field of Energy Management and Development of Energy Audits

Decision No. 1765/2013 Regarding the Approval of the Format for the annual Total Energy Consumption Statement and the Analysis Questionnaire for the Energy Consumer

**Additional Information**

The Energy Efficiency Information Point was established in the ANRE headquarters located in Bucharest at No. 4, Sos. Cotroceni. The initiative aims to help all energy consumers achieve a better understanding of energy efficiency matters, from legislation to those measures that help increase energy efficiency.

**Comparison**

The EU Directive provides for energy audits of large industry, but does not establish parameters for distinguishing between large enterprises and SMEs. Because of this, Romania has established legislation for certification of energy auditors, guides for energy audit and a distinction between sizes of enterprises.

Energy auditors are required to demonstrate knowledge of Romanian legislation and be authorised by Romania or another Member State of the European Union. Romania has adopted the minimum criteria for energy audits under the EU Energy Efficiency Directive. This includes specification of what fields of industry are required to be audited and what occurs during an audit. Romania chose to define size of industry by how many inhabitants are in the municipality in which the industry resides, instead of by number of employees, turnover, and balance sheet parameters.

## **SERBIA**

### **Law on Efficient Use of Energy**

The Law provides for a mandatory energy audit at least once every five (5) years for all entities subject to the energy management system explained in Part III "Obligations", p. 65 above.

Energy audits can be performed only by authorised energy advisors.

An energy advisor can be a natural or legal person registered in the Registry of Energy Advisors before the Ministry.

The energy advisor should send information to the Ministry on each performed energy audit.

An energy audit for entities subject to an energy management system may only be performed by an energy advisor that is a legal entity which

- has as a main business activity project engineering, professional construction supervision, technical advisory, scientific research, technical science research, scientific and professional activities in the energy sector;
- has at least two employees with an energy advisor license;
- is not convicted of a commercial offence, and
- is registered in the Registry of Energy Advisors.

Natural persons must obtain an energy advisor license which is issued by the Ministry. A license for energy advisor is issued to a natural person who

- passed an examination for energy advisor;
- holds an appropriate master degree in technical-technological sciences and has at least three (3) years of professional working experience;
- is not convicted of a criminal offence against property or commerce; and
- paid the appropriate fee.

A license for energy advisor is issued for a period of three (3) years and may be further extended.

The Ministry keeps a registry of licensed energy advisors.

The provisions on energy advisors have not yet been implemented in practice. It is expected that the Ministry will soon adopt the appropriate bylaws, such as the bylaw on the content of the energy audit report; methodology for performance of an energy audit and conditions and manner of energy revision; and categories of data, deadlines and the form for submitting the information on performed energy audits and energy revisions.

### **Comparison**

The Law introduced energy audits that can be conducted only by authorised energy advisors. The obligation to perform energy audits is set broadly and covers: (i) all companies in the production, trade and services sectors with an annual energy consumption higher than the prescribed thresholds; and (ii) government and provincial authorities, and local municipalities with more than 20,000 inhabitants. However, the accompanying bylaws which should further implement the conditions and requirements for authorised energy advisors are yet to be adopted.

## SLOVAKIA

Slovakia adopted a number of decrees further specifying the obligations set out in the Law and executing the targets and obligations set out in the Law and various non-legislative documents.

- Decree of the Ministry of Economy No. 319/2015 Coll. about examination of energy auditors;
- Decree of the Ministry of Economy No. 179/2015 Coll. about energy audits;
- Amendment to a decree of the Ministry of Transport, Construction and Regional Development No. 364/2012 Coll. about requirements for Act No. 555/2005 Coll. about energy performance of buildings and on amendment of certain acts as amended;
- Decree of the Ministry of Economy No. 327/2015 Coll. about calculation and meeting targets in energy efficiency;
- Decree of the Ministry of Economy No. 192/2016 Coll. on the energy demands of public buildings;
- Decree of the Ministry of Economy No. 308/2016 Coll. about the procedure for calculating the primary energy factor of district heating;
- Decree of the Ministry of Economy No. 14/2016 Coll. on technical requirements for thermal isolation of heat and hot water network;
- Decree of the Ministry of Economy No. 13/2016 Coll. about data in the energy efficiency monitoring system; and
- Decree of the Ministry of Economy No. 88/2016 Coll. on calculation of energy efficiency of the energy sources and networks.

### Comparison

Directive 2012/27/EU provides for energy audits of large industry, but does not establish parameters for distinguishing between large enterprises and SMEs. Slovakia has established detailed requirements for certification of energy auditors and guidelines for energy audits including definition and distinction between large enterprises and SMEs.

Energy auditors are required to demonstrate knowledge of Slovak legislation and relevant technical information and meet specific education and professional experience requirements.

## SLOVENIA

EZ-1 requires the Ministry for Infrastructure to incentivise energy efficiency through different measures, including, *inter alia*, the encouragement of energy audits.

The energy audit programme is further specified in AN URE 2020. Under EZ-1 large companies are obliged to perform energy audits every four (4) years. Pursuant to the Slovenian Companies Act ("ZGD-1") large companies are those that: (i) have more than 250 employees in a financial year; (ii) have net sales revenues over EUR 35 million; and (iii) have assets totalling over EUR 17.5 million. The methodology for performance of the audit and its mandatory content is specified in more detail in the Regulation on Energy Audits.

According to the minimal requirements of the Regulation on Energy Audits, the basis for the performance of energy audits are up to date, measured, traceable operational data on energy consumption in a building, process or transport of end-user and energy load diagram of the previous period of at least three (3) years on a monthly basis. The energy audit includes a detailed review of energy use of a building or group of buildings, technological processes or industrial installations, including transport. In an energy audit, the costs for the entire life cycle of a

building, process and transport are considered (if possible), in order to take into account the long-term savings, residual value of long-term investments and discount rates.

A report on the energy audit has to be drawn up. The report provides a complete overview of the overall energy performance of the building process and transport, as well as an indication of possible measures to improve the energy efficiency of the end-user. Based upon detailed calculations made within an energy audit, the end-user is provided with information about the possible measures and their savings.

The energy audit may be performed by a legal entity, natural person or internal auditor of the company, which fulfils the criteria regarding knowledge, experience and personal characteristics in accordance with the SIST EN 16247-5 standard. The system of certification of the providers of energy audit services is not yet established.

Due to extensive implementation of the energy audit requirement, large companies are obliged to perform their first energy audit no later than 31 December 2017.

The energy audit obligation is deemed to be performed in the following cases:

- if on the basis of voluntary agreements, the company performs an audit of energy usage in accordance with the Regulation on Energy Audits;
- if the company administers the energy or environmental management system, which has been certified by an independent body in accordance with the EU and international standards, provided that the energy or environment management system includes audit of energy usage which fulfils the criteria of the Regulation on Energy Audits; or
- if an extensive environmental assessment is performed, which includes the audit of energy usage in accordance with the Regulation on Energy Audits.

If a large company can demonstrate that it meets one of the above conditions, it may request from the Slovenian Energy Agency to be exempt from the energy audit obligation. Noncompliance with the energy audit obligation under EZ-1 may be penalised with a fine ranging from EUR 5,000 up to EUR 125,000. The responsible person at the company may also be individually fined from EUR 2,000 up to EUR 10,000.

### **Comparison**

Slovenia has implemented legislation for methodology and mandatory content of the energy audit of buildings, processes and transport of end-users and has adopted minimal requirements for energy audits. Currently in Slovenia, the system of certification of the providers of energy audit services is not yet established.

Under the adopted Rules on Energy Audit, large companies in Slovenia are obliged to perform their first energy audit no later than 31 December 2017.

## UKRAINE

### Legal Requirements

The Law sets forth the requirements for conducting “State energy saving examinations” or “energy audits”.

The Law contains quite broad wording on the applicability of the State energy saving examination, concerning investment, management and other activities related to extraction, processing, transportation, storage, production and consumption of energy materials. The Cabinet of Ministers establishes the fee amount for the State energy saving examination. The following projects are subject to the State energy saving examination:

- technical conditions and construction projects for construction or renovation of facilities and companies having annual energy consumption of at least 1,000 tons of reference fuel, at the request of the owner in order to receive State subsidies or other budget preferences; and
- preliminary project or plan documentation (required for construction of complex facilities).

The Law defines energy audits as actions to define the efficiency of the energy materials consumption and to elaborate recommendations on their improvement. The legal regulations of the energy audit must be defined in a special law, which has not yet been adopted. However, a number of relevant bylaws (including procedures for conducting energy audits) have been passed and the national standards on the energy audit were adopted in 2016. Moreover, starting from October 2017, the international standard EN 16247-5:2016 “Competence of energy auditors” must be implemented as a national standard in Ukraine. Additionally, the working group on implementation of the energy audit system and energy management was established in 2016. Considering the intensified regulatory activity related to energy audits during past years, the adoption of the special law can be expected in the near future.

The Ukrainian law currently does not contain any special requirements applicable to energy auditors. As a matter of practice, these are legal entities incorporated in Ukraine.



WOLF THEISS

# STRATEGIES

## **EU DIRECTIVE**

### **Long-Term Renovation Strategies**

Article 4 calls for Member States to establish long-term renovation strategies to provide a well-planned and ambitious approach to revitalise low renovation rates and to significantly reduce energy consumption of building stock by 2050. Member States must have drafted their national renovation strategies by 30 April 2014 and must update these every three (3) years as part of their National Energy Efficiency Action Plans (“NEEAPs”).

This Article gives no specific timeline, but the Commission published the Energy Roadmap 2050. As stated by the Commission: *“The EU is committed to reducing greenhouse gas emissions to eighty to ninety five percent (80–95%) below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group. In the Energy Roadmap 2050 the Commission explores the challenges posed by delivering the EU’s decarbonisation objective while at the same time ensuring security of energy supply and competitiveness. The Energy Roadmap 2050 is the basis for developing a long-term European framework together with all stakeholders.”*

Member States are not specifically obliged to implement the long-term renovation strategy. However, these strategies will help Member States reach their 2020 targets; therefore, there is an incentive to implement these strategies.

### **Public Sector Energy Efficiency**

Article 2 does not provide definitions for central government, which complicates the measure to increase public sector efficiency. The EED states, *“The obligation to renovate floor area of central government buildings should apply to the administrative departments whose competence extends over the whole territory of a Member State.”*

Member States are obliged to renovate three percent (3%) of the building stock annually. Renovations must be completed even if they go beyond the 2020 target date.

Relevant National Laws in:

## **AUSTRIA**

### **Building renovation strategy in Austria**

The Austrian building and housing stock is part of the NEEAP and outlined in detail in Annex B. Accordingly, the Austrian federal provinces (*Bundesländer*) significantly contribute to building renovation by means of residential building subsidies (*Wohnbauförderung*) for energy savings measures. A calculation based on the national building stock evidences potential savings in heating and hot water in the amount of 2,185 GWh/year in residential buildings and 1,130 GWh/year in non-residential buildings in 2020 compared to 2013. Furthermore, the buildings renovation strategy outlines disparities in funding pursuant to residential building subsidies of the nine Austrian federal provinces.

### **Renovation of federal buildings**

Under Article 16 EEFg, the Federal State is obliged to exercise an exemplary role by fulfilling an annual renovation rate of three percent (3%) of federal buildings between 2014 and 2020, according to the standard specified in Directive 2010/31/EU on the energy performance of buildings. Overall, the three percent (3%) annual rate of building renovation leads to energy savings in the amount of 48.145 GWh until 2020 (Article 16 Paragraph 1 EEFg). Additionally, the Federal State together with the Federal Real Estate Company (*Bundesimmobiliengesellschaft, BIG*) is obliged to make energy savings in the amount of 125 GWh between 1 January 2014 and 31 December 2020 regarding buildings used by the Federal State but owned by the Federal Real Estate Company (Article 16 Paragraph 2 EEFg).

Federal floor area refers to heated or cooled buildings directly owned (according to the entry in the Land Book (*Grundbuch*)) and occupied by the Federal State in the relevant period. In fact, the Federal Ministry of Defence and Sport (*Bundesministerium für Landesverteidigung und Sport, BMLVS*), Federal Ministry of Justice (*Bundesministerium für Justiz, BMJ*) and the Federal Ministry of Agriculture, Forestry, Environment and Water Management almost exclusively own the relevant floor area. Based on the notification pursuant to Article 5 of Directive 2012/27/EU, calculation for 2014 shows overall relevant floor area of 788,283 m<sup>2</sup>; therefore, leading to a renovation obligation of 23,648 m<sup>2</sup> (= three percent (3%) of 788,283 m<sup>2</sup>). According to the calculation for 2020, the overall relevant floor area will amount to 656,618 m<sup>2</sup>; thereby leading to a renovation obligation of 19,698 m<sup>2</sup> in 2020.

In fact, due to this obligation, energy savings will increase yearly from 74 kWh/m<sup>2</sup>a in 2014 to a projected 87 kWh/m<sup>2</sup>a in 2020. Savings shall be achieved by the following measures:

- energy savings contracting;
- energy management measures; and
- renovation measures.

Indeed, the vast majority of savings are achieved by renovation measures and area reduction.

According to the Austrian progress report 2016, the Federal State will meet the three percent (3%) building renovation obligation pursuant to Article 5 of Directive 2012/27/EU. In the years 2014 and 2015 the majority of savings were achieved by means of energy contracting.

## Comparison

Not only building regulations but also residential building subsidies as main policy instruments contribute to the implementation of obligations pursuant to Article 4 of Directive 2012/27/EU regarding building renovation. Accordingly, the nine federal provinces have passed incentives designed to improve energy efficiency. To comply with obligations regarding the exemplary role of public bodies' buildings, Austria decided to adapt an alternative approach in order to take cost-effective measures to achieve the envisaged energy savings target of three percent (3%) of the federal floor area pursuant to Article 5 Paragraph 6 of Directive 2012/27/EU. In Austria, the relevant total floor area of buildings decreased from 788,283 m<sup>2</sup> in 2014 to 656,618 m<sup>2</sup> in 2020. Therefore, the heating demand savings amount should reduce from 74 kWh/m<sup>2</sup>a in 2014 to 87 kWh/m<sup>2</sup>a in 2020. According to calculations, the three percent (3%) renovation rate leads to overall energy savings of 48.145 GWh.

## BOSNIA & HERZEGOVINA

BiH does not have a National Energy Efficiency Action Plan in place. However, certain energy efficiency measures are addressed in the NREAP. The national indicative goal of energy savings for BiH is at least nine percent (9%) of the final domestic consumption for the period until 2018. In this respect, the NREAP foresees that the energy savings goal can be achieved by introducing energy efficiency measures in the following sectors: (i) residential; (ii) commercial and services; and (iii) industry and transport. In the residential sector (which is the largest individual segment of the baseline net final energy consumption in BiH), the following measures are contemplated:

- minimum energy efficiency standards for energy powered household devices;
- reconstruction of existing residential buildings and private houses;
- energy efficient construction of new buildings;
- energy efficient heating systems;
- mandatory distribution and calculation of heating costs in residential buildings and other buildings, in line with the actual consumption;

- domestic production of renewable sources; and
- introduction of “green” public procurement procedures.

In connection with the commercial sector and services, the following energy efficiency measures would apply:

- energy efficient use of electric power in commercial/public buildings;
- energy efficient HVAC systems in existing and newly built energy efficient and passive commercial and public buildings;
- energy efficient reconstruction of existing buildings and sustainable construction of new buildings;
- introduction of energy management systems;
- integrated generation of energy from renewable sources;
- integrated cogeneration/three-generation systems;
- the “Energy Efficiency in Water Supply Networks” Programme; and
- energy efficient lights.

The Energy Strategy of RS also introduces certain energy efficiency measures and future proposals. It states that attention to energy efficiency should be paid in the following sectors due to the fact that the greatest possible impact could be achieved therefrom: (i) direct energy consumption; (ii) buildings; and (iii) industry and transport. The building sector is presumed to be particularly important in energy consumption because it accounts for more than fifty percent (50%) of the total final energy consumption in the RS (a result of increases in consumption corresponding to overall increased standards of living). The measures introduced here are:

- raising the quality of construction, quality design of energy concepts;
- the construction of modern low-energy buildings;
- modernisation and energy renovation of existing buildings;
- increasing the standard and comfort in buildings;
- reduction of maintenance costs through the lifetime of buildings;
- use of innovative technologies and solutions;
- development of an integrated approach to design;
- long-term approach to the analysis of the building, taking into consideration its entire lifetime; and
- reducing energy consumption and the protection of environment.

To achieve the planned savings in the building sector by 2030, it is estimated that 136,960 old housing units or a total of 12.25 million m<sup>2</sup> of surface area must be energy renovated in BiH. Thus, the needed heating energy in buildings would be reduced by sixty percent (60%) at each energy renovation, primarily due to increased thermal protection and the implementation of more efficient technical systems in buildings.

Furthermore, the RS Energy Efficiency Law stipulates that local governments that have more than 20,000 inhabitants must adopt its Energy Efficiency Action Plan, which is aligned with the RS Energy Efficiency Action Plan. The RS Energy Efficiency Action Plan is adopted for a period of three (3) years and includes the following:

- assessment of energy efficiency in the period immediately prior to the adoption of the Action Plan;
- measures to improve energy efficiency;
- indicative targets for energy saving;

- time frame for implementation of measures for achieving goals; and
- assessment of funds required for the implementation of the Action Plan.

FBiH as well as BiH does not have an energy efficiency action plan in place. However, energy efficiency measures, (i.e. their contribution to the energy savings as an overall goal), are discussed in the APOEF.

Specifically, the APOEF provides the same goal of nine percent (9%) of energy savings by 2018 for FBiH (as envisaged for BiH). Also the same sectors and same measures as those prescribed by NREAP are also introduced by the APOEF.

The residential sector is the single largest segment, (by around fifty eight percent (58%)), of the total net final energy consumption, which in 2010 was 95.75 PJ. The APOEF expects the energy savings of the residential buildings sector to be reduced to 5.24 PJ by 2020.

A summarised table of energy savings planned by the APOEF FBiH for 2020 is set out below:

| SECTOR                                | ENERGY (PJ) / YEAR (2020) |
|---------------------------------------|---------------------------|
| <b>RESIDENTIAL (BUILDINGS) SECTOR</b> | 5.24                      |
| <b>SERVICES SECTOR</b>                | 1.59                      |
| <b>INDUSTRY SECTOR</b>                | 4.41                      |
| <b>TRAFFIC (TRANSPORT)</b>            | 1.4                       |

### Comparison

Although neither BiH nor its entities have yet adopted the energy efficiency national plans, the measures for energy efficiency and overall reduction in energy consumption are nevertheless discussed in RES Action Plans of BiH and FBiH and in RS in the Energy Strategy of RS. Also, laws on energy efficiency both in RS and FBiH impose the obligation to enact an energy efficiency action plan, not only at the entity level, but also at the level of local government, with the obligation to periodically renew such plan.

## BULGARIA

The Republic of Bulgaria has adopted several legislative acts to address the requirements of Directive 2012/27/EU.

Energy Strategy of the Republic of Bulgaria until 2020, promulgated in SG issue No. 43/07.06.2011

The main priorities set out in the strategy are to restrain the negative impacts on the climate, reduce the energy consumption of the economy and increase the energy efficiency by twenty percent (20%) in order to limit the external dependency of the EU on imported energy resources, and encourage the economic growth and employment levels possible. The Strategy conveys that energy efficiency is of the highest priority in the energy policy of the Member States.

### National Energy Efficiency Action Plan 2014–2020, adopted in July 2014

The NEEAP 2014–2020 is an acknowledgment that energy efficiency is of high importance in the long range energy strategy of the country. The NEEAP was developed in accordance with the requirements set out in Directive 2012/27/EU. It ensures the inclusion of all obligations under the EE Directive, as well as taking into account the requirements of Directive 2010/31/EU on the energy performance of buildings.

In order to ensure improved energy efficiency, the NEEAP covers the following topics:

- Adoption of horizontal measures
  - Energy efficiency obligatory schemes and alternative policy measures;
  - Energy audits and management systems;
  - Metering and billing measures;
  - Adoption of consumer information programmes and trainings;
  - Availability of qualification, accreditation and certification schemes; and
  - Measures related to energy services.
- Buildings

The NEEAP refers to the National Long-Term Programme for the Mobilisation of Investments In the Implementation of Measures to Improve the Energy Performance of Buildings, which includes an overview of the national building stock (housing and public buildings), formulation of economically efficient approaches to improving the energy performance of buildings, taking into account the building types and the climate zone and the State policy in the area of technical regulation and harmonisation of energy efficient legislation for the buildings sector.

- Buildings of public bodies

Referring to the Bulgarian EEA, the NEEAP provides that the measures to enhance the energy performance of at least five percent (5%) of the total floor area should be taken annually in all heated and/or cooled State-owned buildings occupied by the State administration. The State bodies should develop and adopt energy efficiency programmes and are bound to implement energy efficiency management, including submitting of annual reports on energy efficiency management and the energy efficiency programmes to SEDA.

- Public sector

SEDA and the Public Procurement Agency have jointly developed Guidelines on the Application of Energy Efficiency and Energy-Saving Requirements When Awarding Public Contracts for the Supply of Equipment and Vehicles. In 2010, these Guidelines became an appendix to the Public Procurement Act. As a result, the Government and the local authorities are purchasing energy in a more efficient manner since 2010, further to the Instructions for Implementation of the Requirements for Energy Efficiency and Energy Savings in Public Procurement for the Supply of Equipment and Vehicles to Minimise Costs for the Duration of Their Exploitation.

Also, reference is made to the National Action Plan for the Promotion of Green Public Contracts 2012–2014, which was developed and adopted in 2012.

- Industry

Bulgaria is focusing on overcoming the high energy intensity of its economy. Among others, the following measures have been adopted in the national legislation:

- the application of an integrated approach to the control of emissions from industrial sources on all components of the environment by issuing integrated permits;
- use of biomass in the combustion plants of the systems;
- energy efficiency audits and implementation of the measures prescribed; and
- development of public private partnerships for the implementation of energy efficiency measures.

- Transport

The growing energy demand in the transport sector is driven by the rapidly increasing number of vehicles and their annual mileage, which comes at the expense of a decrease in the use of the more energy efficient rail transport. A non-exhaustive list of measures to address this issue is provided in the National Climate Change Action Plan as follows:

- the rehabilitation and modernisation of the road infrastructure in order to allow for optimal travelling speeds and ensure that vehicle engines operate in the optimum mode;
  - introduction of intelligent transport systems on national roads and in urban environments;
  - reduction the relative share of trips with private motor vehicles by improving public urban transport and promoting non-motorised transport;
  - increasing the share of electrified urban transport by rail, metro, trolleybuses and tramcars;
  - development and promotion of the use of hybrid and electric vehicles;
  - ensuring that fiscal policy stimulates savings and less use of conventional fuels;
  - reduction the number of urban transport vehicles using conventional fuels by 2020; and
  - trainings in energy efficient driving.
- Other topics covered by the NEEAP
    - Promotion of efficient heating and cooling methods; and
    - Energy transformation, transmission, distribution and demand response.

Funding required for the implementation of the measures provided in the NEEAP is provided partly by the State, Operational Programmes “Innovations and Competitiveness” 2014–2020, “Transport and Transport Infrastructure” 2014–2020 and Rural Development Programme 2014–2020.

## Comparison

Bulgaria has implemented all requirements under Directive 2012/27/EU by adopting national plans and strategies, aimed at resolving the problems of energy efficiency in the major sectors with high reliance on energy. The long-term strategy and the NEEAP consider the relevant energy efficiency factors and propose corresponding solutions on how the ultimate goal can be achieved at a national level.

## CROATIA

### Strategy of Energy Development for the Republic of Croatia (“Strategy”)

The Strategy seeks to achieve three basic energy objectives: (i) security of energy supply; (ii) competitiveness of the energy system; and (iii) sustainability of energy development. The challenges that need to be addressed are the dependence on oil imports, insufficient security of natural gas supply, lack of secure supply of electricity, as well as high dependence on its import. The Strategy covers the period up to 2020, which coincides with the time frames set out by the EU Directive. Therefore, the Strategy's objective is to build a system of balanced contribution to the security of energy supply, competitiveness and environmental protection, which will provide a secure and accessible supply of quality energy to all Croatian citizens and the Croatian economy.

### **Long-Term Strategy for Mobilising Investment in the Renovation of the National Building Stock of the Republic of Croatia (“Renovation Strategy”)**

The Renovation Strategy was implemented in 2014 and includes:

- a breakdown of the national building stock by category (large housing units, family housing units, public sector buildings and commercial sector buildings);
- an analysis of key elements of energy renovation, including heating and cooling systems, lighting, water consumption and utilisation of RES capacities;
- policies and incentives for cost-efficient integral building renovation, including domestic and foreign financing resources;
- a long-term perspective for managing the decision making process of individuals and the construction industry in terms of financial investments; and
- an assessment of expected energy savings and social benefits.

### **Comparison**

Croatia chose a combined approach with an emphasis on alternative policy measures. The EU Directive calls for long-term renovation strategies, specifically in the public sector.

The Croatian Government has highly emphasised the need to renovate the buildings in public, residential and commercial segments, with the savings achieved in these sectors accounting for most of the projected energy savings. Further measures include the audits of large industry, improving energy efficiency in the transportation system (especially through smart systems), renewal of the national car fleet through incentivising the purchase of electric and hybrid cars), increased efficiency in the industry and higher utilisation of renewable energy sources.

## **CZECH REPUBLIC**

There are several strategies approved by the government that concern energy efficiency.

### **State Energy Policy 2015**

On 18 May 2015, the Government of the Czech Republic approved an updated version of the State Energy Policy for the following twenty five (25) years. The main reason for the update of the State Energy Policy was a need for clearly formulated priorities and strategic objectives in the energy sector, which should give stability to investors, citizens and State authorities.

By approving the State Energy Policy, the Czech Republic acknowledged its intention to fulfil all of its responsibilities in terms of common European targets and policies and to ensure the stability of the investment environment in the energy sector and related sectors.

### **National Programme for Support of Energy Efficiency and Use of Renewable Sources of Energy for 2017–2021**

This programme has been established by the Czech Ministry of Industry and Trade with an intention to support the attainment of goals set out in the State Energy Policy.

It has a budget of at least CZK 750 million (approximately EUR 27.8 million), which will be used gradually through the whole period of 2017–2021.

The programme is divided into two pillars:

- investment subsidies; and
- non-investment subsidies (e.g. analyses of the appropriateness of the energy performance contracting method, energy management, and education: advice centres, seminars, publications).

### **Operational Programme Environment 2014–2020**

This programme is aimed at the areas of:

- improvement of water quality and lowering of flood risks;
- improvement of air quality in residential areas;
- waste and resource management, ecological burdens and risk;
- protection of environment and countryside; and
- energy efficiency.

The programme is operated by the Czech Ministry of Environment and has a budget of almost EUR 2.637 billion.

### **Other Programmes**

Several other programmes are in place which are concerned with energy efficiency.

These are not specified here in more detail, since either the total amount of the programme is marginal (e.g. the Joint Boiler Replacement Promotion Scheme) or they are focused on other areas and concern energy efficiency only as a secondary objective (e.g. the Programme of Development of the Countryside 2014–2020).

### **National Action Plan of Energy Efficiency of the Czech Republic 2016**

The plan was prepared and is updated every three (3) years in accordance with the requirements of Directive 2012/27/EU.

To comply with the requirements of Article 7 Directive 2012/27/EU, the Czech Republic has opted to implement other policy measures under Article 7 (9) of Directive 2012/27/EU. For implementation purposes, these measures are called an “alternative scheme” in the Czech Republic.

Of the other policy measures allowed under Article 7 (9) of Directive 2012/27/EU, the following measures were selected:

- financial engineering instruments;
- investment grants; and
- non-investment grants (analyses of the appropriateness of the energy performance contracting method, energy management, education: advice centres, seminars, publications).

The Czech Republic has decided that the alternative scheme will channel support into the following sectors:

- industry
  - increase in the energy efficiency of technologies; and
  - improvement in the energy performance of buildings.

- services
  - improvement in the energy performance of buildings;
  - increase in the energy efficiency of technologies; and
  - savings in outdoor lighting.
- households
  - improvement in the energy performance of buildings.

### **Comparison**

The Czech Republic addressed the requirements of Directive 2012/27/EU in the area of renewable energy sources and reduction of consumption of energy through appropriate adjustments in the national legislation, in order for it to correspond to the needs of Directive 2012/27/EU.

## **HUNGARY**

### **National Building Energy Strategy approved by Government Decision No. 1073/2015 (II. 25.)**

The objective of this strategy is to achieve 49 PJ/year (until 2020), as well as 111 PJ/year primary energy savings from the energy consumption of buildings.

For this purpose, the strategy sets forth the following measures to be taken:

- the level of energy efficiency should be increased in case of both existing and future buildings;
- special attention should be paid to the renovation of family houses;
- renewable energy methods should be applied (e.g. solar panels);
- new support and financing schemes should be available; and
- improvement of research and development.

### **Laws**

In line with the Directive, the Act establishes which public buildings are subject to renovation requirements and to which exceptions may apply. According to the Act, these buildings, their floor area, as well as energy efficiency data must be duly registered. The following public buildings are not subject to mandatory renovation:

- buildings for religious use;
- historical buildings and buildings subject to local protection in case of which the compliance with the minimum requirements of energy efficiency would result in an unacceptable amount of change of its historic or protected value; and
- buildings for national defence used by armed forces or central Government.

The Act also establishes a special public procurement procedure in the framework of which only highly efficient energy products, services or buildings may be acquired above a certain procurement limit. Furthermore, the Act encourages public bodies to achieve greater energy efficiency by drawing up an energy saving action plan, as well as a report on its implementation. The Decree establishes the National Energy Network, which assists public bodies, companies and people by offering free energy consultancy and other services.

The Action Plan sets out the necessary measures for the fulfilment of both the long-term renovation strategies and public sector energy efficiency. The National Plan for Nearly Zero-Energy Building is an annex to the Action Plan.

In the framework of the long-term renovation strategies, the Action Plan defines the various tasks for the implementation of the National Building Energy Strategy:

- establishment of financial resources;
- administrative regulations and programmes for renewable energy supply (with special regard to solar panels);
- revision and specification of the energy regulations regarding new buildings and renovations, including nearly zero-energy buildings;
- development of energy certification and classification;
- research and development of innovations, as well as smart solutions;
- education for consumers, companies and further education programmes for professionals; and
- data collection and databases.

In terms of public sector energy efficiency, the Action Plan defines the mandatory renovation of three percent (3%). Furthermore, the Action Plan also specifies how Hungary encourages other public bodies which are not subject to this obligation as follows:

- an energy efficiency web site maintained by HEA;
- establishment of a new database called National Building Energy System; and
- introduction of special support schemes for these public bodies and municipalities to cover the costs of renovation.

The list of the buildings of public bodies which are subject to mandatory renovation are found in an annex to the Action Plan. The Action Plan also emphasises the special public procurement procedure, in which case only highly efficient energy products may be obtained by the public sector.

#### **Government Decree No. 176/2008. (VI. 30.) on the certification of the energy specifications of the buildings**

This Government Decree specifies the applicable requirements for energy certification of buildings. The Government Decree establishes a wide scope for mandatory energy certification, including new building, sale and purchase, as well as leasing.

#### **TNM Decree No. 7/2006. (V. 24.) on the determination of the energy specifications of the buildings**

The TNM Decree defines further detailed, technical regulations regarding certain energy specifications of buildings, including the definition of nearly zero-energy buildings, as well as the minimum requirements of energy efficient renovations for the public sector.

### **Comparison**

Hungary specifies various tasks necessary to implement long-term renovation strategies. Hungary defines the exact scope of the renovation for public buildings and also encourages other public bodies to achieve greater energy efficiency. The implementation of the various measurements is also supported by the National Energy Network and National Building Energy System maintained by HEA.

## KOSOVO<sup>22</sup>

The Government of Kosovo undertook several actions since the Law on Energy Efficiency entered into force. Respectively, the KEEA was established, which published on its web site numerous public awareness campaigns and strategies regarding energy efficiency.

With respect to the Public Sector Energy Efficiency, the two loan agreements entered into and mentioned in Part IV "Mandatory Audit of Large Industry", p. 78 were very important steps in relation thereto.

On 22 January 2016, the Government of Kosovo signed a loan agreement with KfW (*Kreditanstalt für Wiederaufbau*), Frankfurt am Main for the Programme "Energy Efficiency Measures in Public Buildings at Municipal Level in Kosovo". This loan agreement is in the amount of EUR 7.5 million and four of the largest municipalities in Kosovo will benefit therefrom.

Also, on 15 January 2015, the Government of Kosovo signed a loan agreement with the International Development Association Regarding the Project on Energy Efficiency and Renewable Energy.

Supervision, monitoring, verification and evaluation of measures of energy efficiency in schools and hospitals in Kosovo is another project in the amount of EUR 15.6 million, financed by the European Commission.

Energy efficiency in the private sector is supported by the European Bank for Reconstruction and Development. This is a EUR 12 million project and first contracts have already been signed with TEB Bank and Kreditimi Rural i Kosovës.

With respect to secondary legislation, the Government of Kosovo approved Administrative Instruction No. 14/2012 on the Promotion of Energy End-Use Efficiency and Energy Services, ("**Administrative Instruction on the Promotion of Energy End-Use Efficiency and Energy Services**"), which states that the public sector shall serve as a model for encouraging efficient use of energy.

Furthermore, the following strategies and plans were approved by the Government of Kosovo:

- Energy Strategy of the Republic of Kosovo 2009–2018, approved by the Ministry of Economic Development in 2009;
- Draft Energy Strategy of the Republic of Kosovo 2016–2025, published by the Ministry of Economic Development in July 2016;
- The First Medium-Term Action Plan of the Kosovo for Energy Efficiency, approved by the Ministry of Economic Development in September 2011;
- The Second National Action Plan of Kosovo for Energy Efficiency, approved by the Ministry of Economic Development in June 2013;
- National Action Plan for Resources Renewable Energy 2011–2020, approved by the Ministry of Economic Development in 2013; and
- Decision of the Government of Kosovo No. 05/23 on approving the Concept Document for Energy Performance in Buildings, dated 15 April 2015.

## Comparison

Kosovo has approved legislation and other measures in numerous sectors. However, most of the adopted legislation and strategies are addressed toward the public sector. In addition, loans and other projects that were taken by the Government of Kosovo are also addressed to the public sector. This is in line with the purpose stated in the Administrative Instruction on the Promotion of Energy End-Use Efficiency and Energy Services, based upon which the public sector should serve as a model for encouraging the efficient use of energy.

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<sup>22</sup> Wolf Theiss in corporation with Pallaska&Associates.

## MOLDOVA<sup>23</sup>

**National Programme for Energy Efficiency 2011–2020**, approved by Government Decision No. 833/2011, generally encourages the best allocation of resources and aims to provide a stable integrated framework with the following general sectorial objectives:

- The electricity sector
  - stimulating investments in electricity production;
  - promotion of electricity production from RES; and
  - promotion of household appliances and energy-related products which correspond to the EU energy efficiency standards.
- Natural gas sector
  - examination of the National Gasification Programme through the use of the opportunities offered by RES. Local authorities, with the support of Energy Efficiency Agency will study the potential and possibility and use of biogas for public buildings; and
  - examining the possibility of using the difference in pressures from the transmission and distribution of natural gas for electricity production.
- Thermal energy sector
  - reducing losses in transportation and distribution systems;
  - optimising the existing capacity of production of thermal energy;
  - use of renewable thermal energy purposes;
  - promotion of cogeneration as a measure to save energy. To this end, the central public authority responsible for managing the thermal energy sector will promote high-efficiency cogeneration based on useful heat demand. Efficient use of energy from cogeneration will contribute positively to the security of energy supply, considering the potential benefits of cogeneration with regard to saving primary energy, avoiding network losses and reducing emissions, especially greenhouse gas emissions;
  - reducing and optimising energy use heat to final customers;
  - diversification of energy for hot water, heating and cooling;
  - improving the regulating of indoor climate; and
  - effective promotion of new technologies and equipment designed to help reducing heat consumption.
- Industry sector
  - stimulating investment in the industrial sector regarding technological retooling plants with low yield; and
  - use of equipment, machinery and technology with lower power consumption.
- The construction sector
  - rational use of natural resources, petroleum products, natural gas and solid fuels;
  - reducing carbon dioxide emissions;
  - management of energy demand in buildings;
  - improving the security of energy supplies in the medium- and long-term;
  - the development of administrative, legal and financial potential, in order to enable widespread implementation of a complex of energy efficiency measures in housing; and
  - public and private sector incentives for investments in energy efficiency in housing.

<sup>23</sup> Contributed by ACI Partners Law Firm.

- The transport sector
  - promoting bio-fuels as a blending component for traditional fuels, which will contribute to a gradual reduction in CO<sub>2</sub> emissions and dependency upon imported energy;
  - increasing safety and economic efficiency and ecological road transport by promoting efficient tyres in terms of fuel consumption, safer and low noise levels; and
  - reducing the consumption of electricity and liquid fuel to electric transport and rail transport by replacing old units with new more efficient ones in terms of energy.
- Public sector
  - informing individuals and businesses about best practices, costs and benefits of efficient equipment and tools, renewable energy, etc.; and
  - launching programmes to improve street lighting, rehabilitation of publicly owned buildings and social facilities, construction of passive or low energy consumption or close to zero, and the use of renewable energy for heating social objects, etc.

## **POLAND**

Strategies dealing with energy efficiency were introduced in Poland over a period of years as part of the National Energy Efficiency Action Plans.

### **Measures in respect of energy efficiency of buildings**

Green Investment Scheme – Energy management in public utility facilities

Thermomodernisation of public utility facilities, including equipping facilities with appliances of the highest, economically justified energy efficiency standards, directly related to the thermomodernisation of the facilities, in particular:

- insulation of buildings;
- replacement of windows;
- replacement of external doors;
- alterations in the heating system (including changing the source of heat);
- replacement of ventilation and air conditioning systems;
- preparation of technical documentation for the investment;
- the use of energy management systems in buildings;
- the use of technologies of renewable energy sources; and
- replacement of internal lighting by an energy efficient one (as additional work performed together with thermomodernisation).

### **Energy efficiency measures in public institutions**

Operational Programme PL04 – “Energy savings and promotion of renewable energy sources” under the EEA Financial Mechanism in 2009–2014 (c 5 – energy efficiency, and area No. 6 – renewable energy).

The objective of the programme is to reduce emissions of greenhouse gases and air pollution, and to increase the share of energy originating from renewable sources in the total balance of energy use. Thermomodernisation of public utility buildings is necessary to achieve a lower consumption level for electricity necessary for use in buildings. Examples include modernisation or replacement of existing energy sources (together with replacement

or renovation of outdated local networks); supplying public utility buildings with modern, energy efficient and ecological sources of heat or electricity with a nominal rating up to 5 MW, including: those originating from renewable energy sources or from heat and electricity sources generated in a combined manner (cogeneration/three-generation). Another example is the installation, modernisation, or replacement of district heating with a total nominal rating of up to 3 MW and using it to supply public utility buildings.

### **Energy efficiency measures in industry and SMEs**

Support for operators with regards to low-emissions and resource saving business and the increase of energy efficiency.

The objective of the programme is to increase the energy efficiency of enterprises. It will consist of investment measures, covering the support mechanism and leading to an efficient use of energy, or to measurable energy savings. Investment measures accessing co-financing must be based upon the recommendations of an energy audit, where the energy effect may not be lower than seven percent (7%).

The material scope of investments will include:

Implementation of energy management systems and quality management systems and implementation of management of electrical energy grids in business facilities. Technologies providing rationalisation of the use of electricity by means of:

- energy efficient drive systems;
- drive control systems;
- energy efficient engines;
- inverters for pumps and fans;
- energy efficient compressors and compressor control systems;
- internal energy transmission grids, including limiting passive power flows;
- energy efficient lighting systems;
- network drive rectifiers; and
- higher efficiency transformers in local electric energy systems and internal distribution networks.

Technologies providing rationalisation of the use of heat by means of:

- insulation and dewatering of steam systems;
- renewable energy sources, including geothermal systems, solar collectors, heat pumps;
- thermomodernisation of industrial and office buildings;
- recuperation and heat recovery from processes and devices;
- modernisation of internal heating networks;
- using energy from waste generated in industrial processes; and
- construction/modernisation of internal energy sources, including cogeneration.

### **Energy efficiency measures in transport**

The Operational Programme Infrastructure and Environment 2014–2020

The objective of interventions in the operational programme will be the development and greater use of low-emission urban transport, serving the inhabitants of functional areas of cities.

Programme actions:

- infrastructural investments: adaptation, construction, reconstruction, development of the urban transport network (linear infrastructure), including rail systems, road system, energy network and tramway sub-stations, construction, reconstruction, and development of hubs;
- investments concerning rolling-stock: purchase, modernisation of rolling stock (trams) and bus fleets, together with the necessary infrastructure for maintenance (e.g. technical support for servicing and maintenance of the bus fleet, places and facilities for refuelling with alternative fuel);
- comprehensive investments covering infrastructural elements and bus fleets;
- arrangements in the area of ITS, improving the functioning of public transport, as elements of an infra-structural, fleet-related, comprehensive project, including: light signalling systems, activated by buses, trams, ticket distribution and identification systems, satellite navigation systems for improved traffic efficiency and increased safety of public transport, information systems for travellers – electronic bulletin boards, including on-line systems, security monitoring systems, installed at stops, platforms, stations, hubs, parking lots, and on-board carriages or vehicles; and
- preparatory work for investments under the measure. The possibility to implement projects integrating the above-mentioned types of projects.

### **Efficiency in energy generation and supplies**

The Operational Programme Infrastructure and Environment 2014–2020 (Investment Priority 4.v). Promoting low-emissions strategies for all kinds of territories, in particular for urban areas, including support for sustainable multi-modal urban mobility and adaptive measures with mitigating influence on climate changes, by reduction of losses in the heat/cold distribution process in order to ensure an “efficient heating and cooling system”.

Programme actions:

- construction, development, or reconstruction of heating and cooling networks which, following the implementation of the project, will meet the requirements of an “efficient heating and cooling system”, in order to connect new customers to the network; and
- modernisation of heating/cooling networks to reduce energy losses in the heat distribution process, also through the implementation of heat and cold management systems, together with the supporting infrastructure.

### **Comparison**

Poland chose to address several sectors in which, (in its national view), energy efficiency is in most demand. All of these actions have led to a strategy of achieving energy efficient targets. Programmes are carried out according to the Directive and aimed at fulfilling long-term strategies, including renovations of buildings in the both the private and public sectors.

## **ROMANIA**

There are several strategies approved by the government that explicitly deal with energy efficiency.

### **National Energy Efficiency Strategy approved by GD 163/2004**

The objective of the strategy was by 2015 to reduce primary energy intensity by forty percent (40%) compared to 2003. However, there have not been records published after 2012 to indicate if this has occurred.

### **National Strategy on the Supply of Heat to Localities by Means of District Heating Systems approved by GD 882/2004**

Based on an analysis of the existing situation, this document establishes the main areas for intervention, including thermal insulation for residential blocks of flats, and rehabilitation of heat transport and distribution networks.

### **The Energy Strategy of Romania in the Period 2007–2020 approved by GD 1069/2007**

The general objective of this energy strategy is to *“cover the present and future energy demand for the lowest price, in the conditions of a modern market economy and civilised standard of living, ensuring quality and security of supply and observing the principles of sustainable development”*.

In order to reduce energy consumption in the large energy consuming sectors and attain those targets proposed both by the National Energy Efficiency Strategy and the National Energy Efficiency Action Plan corresponding to the Directive 2006/32/EC, measures will be taken in the following directions:

- **Industry**
  - information campaigns;
  - energy audits and efficient energy management; and
  - energy efficiency improvement by supporting financing from Community funds.
- **Transport**
  - energy consumption reduction by passenger and cargo railway transport modernisation;
  - increase the quality of public transportation so that people will use it more frequently than private cars;
  - expansion of public transport with new routes;
  - increase traffic and parking efficiency;
  - providing means of public transportation to employees by employers;
  - increase development of rail transport within urban transport (e.g. trams, trolleybuses);
  - increase energy efficiency of vehicles by establishing minimum efficiency criteria;
  - introduction of standards to support the most efficient and least polluting vehicles; and
  - use of gaseous and bio-fuels in the transport sector.

In order to implement these measures, the population needs to be educated. Romania's citizens need to understand the energy efficiency plan in order to achieve success on a larger scale.

- **Residential** (final energy consumption in buildings: heating, hot water and lighting): Specifically rehabilitation of the building envelope through thermal rehabilitation measures and financial support for low-income owners. This is achieved through the following:
  - increasing the efficiency of the existing thermal installations;
  - increasing the efficiency of lighting, and utilisation of low consumption lamps;
  - obligation to apply the provisions of Directive 2012/27/EU and the European standards on new buildings;
  - increasing energy efficiency by supporting financing from Community funds;
  - continuing final consumer thermal energy metering;

- development of the national energy saving education programme for the population, in schools and through mass-media, aimed at saving energy, protecting the environment, and encouraging locally used renewable energy sources; and
- stimulation of functioning of energy service company (ESCO).
- **Public sector**
  - increased efficiency and reduction in public lighting consumption;
  - increased efficiency and reduction in water supply installation consumption; and
  - increased efficiency in public buildings.
- **Agriculture**
  - increase efficiency and use of bio-fuels;
  - development of energy crops, both for producing bio-fuels, electricity, and heat through cogeneration; and
  - increase energy efficiency of irrigation.
- **Cogeneration**
  - promotion of highly efficient cogeneration;
  - identification of the national cogeneration potential;
  - energy auditing of cogeneration units; and
  - rehabilitation and modernisation of the existing installations for increasing efficiency and reducing environmental impact.
- **Renewable energy sources**
  - increase in the degree of RES utilisation under high economic efficiency conditions for producing electricity and heat. This is accomplished through access to the electrical network in the investment phase;
  - green certificate improvement with a view to attract private capital in the RES field of investment;
  - promotion of mechanisms for supporting utilisation of RES that produce heat and hot water for domestic use; and
  - utilisation of structural funds.
- **Bio-fuel utilisation**
  - By 2020, the percentage of bio-fuel utilisation will amount to at least ten percent (10%), through the use of new generations of bio-fuels.

#### **National Strategy for Romania's Sustainable Development 2013–2020–2030 approved by GD 1460/2008**

The strategy establishes that the efficient utilisation of energy and promotion of RES are essential for ensuring sustainable development in the long-term.

#### **Comparison**

Due to the lack of specificity within the EU Directive, Romania has chosen to address several sectors in order to develop a strategy to achieve energy efficiency targets. Directive 2012/27/EU calls for long-term renovation strategies, specifically in the public sector.

Romania addresses the need for audits in industry, the need for a major overhaul in the transportation sector, new residential standards, increased efficiency in the public sector, focus on biofuels in agriculture, and the heavy utilisation of renewable energy sources.

## SERBIA

There are several strategies approved by the government that set various energy savings goals:

### Energy Development Strategy for 2025, with Projections for 2030

The Energy Development Strategy set the following strategic goals for Serbia with respect to the efficient use of energy:

- consistent application of the Law;
- adoption and implementation of NEEAPs;
- defining national energy savings goals (in total and in sectors) and monitoring implementation;
- use of combined electricity and heat generation in industry;
- introduction of energy management systems;
- capacity building in energy statistics; and
- public information and education.

The priority actions according to the Energy Development Strategy are:

- Energy reconstruction in the buildings sector. Namely, Serbia largely transposed Directive 2010/31/EU on the Energy Performance of Buildings by the Law on Construction and Development<sup>24</sup>, the Rulebook on Energy Efficiency of Buildings<sup>25</sup>, the Rulebook on Conditions, Content and Manner of Issuance of Certificates of Energy Performance of Buildings<sup>26</sup>, the Rulebook for Control of Heating Systems<sup>27</sup>, and the Rulebook for Control of Air Conditioning Systems<sup>28</sup>. Accordingly, all new and reconstructed buildings should comply with energy efficiency requirements.
- Introduction of energy management systems in the public sector.

The main conditions for energy efficiency identified by the Energy Development Strategy are creation of an energy market and market pricing of energy. It specifically singled out that the price of electricity should reach a level that will discourage its irrational use, especially by using it for heating purposes. Further, heating energy should be paid for based upon its actual use and priced accordingly, so that it is used more efficiently.

<sup>24</sup> *Pravilnik o energetskejoj efikasnosti zgrada* ("Official Gazette RS" No. 61/2011).

<sup>25</sup> *Pravilnik o uslovima, sadržini i načinu izdavanja sertifikata o energetskim svojstvima zgrada* ("Official Gazette RS" No. 69/2012).

<sup>26</sup> *Pravilnik o kontroli sistema za grejanje i o bližim uslovima koje moraju da ispunjavaju ovlašćena lica za kontrolu sistema za grejanje* ("Official Gazette RS" No. 82/2016).

<sup>27</sup> *Pravilnik o kontroli sistema za grejanje i o bližim uslovima koje moraju da ispunjavaju ovlašćena lica za kontrolu sistema za grejanje* ("Official Gazette RS" No. 82/2016).

<sup>28</sup> *Pravilnik o kontroli sistema za klimatizaciju* ("Official Gazette RS" No. 82/2016).

**Third NEEAP**

The aim of the Third NEEAP for 2016–2018 is to achieve energy reduction in this period of 0.3824 Mtoe, with the ultimate goal of reaching nine percent (9%) energy reduction in the 2010–2018 period (0.7524 Mtoe in total).

The following energy efficiency measures have been planned in different sectors:

- **Households**
  - introduction of energy efficiency measures in buildings;
  - new rules for planning and construction of buildings, energy performance of buildings and certification; and
  - promoting the use of energy efficient lighting and household appliances.
- **Public and commercial sector**
  - introduction of energy efficiency measures in public and commercial buildings;
  - new rules for planning and construction of buildings, energy performance of buildings and certification;
  - modernisation of public lightning system in cities and municipalities;
  - introduction of energy management system in public and commercial sector;
  - energy efficiency criteria in public procurement proceedings;
  - incentivised tariffs for combined production of electricity and heating; and
  - regular controls of heating and air conditioning systems.
- **Industry**
  - introduction of energy management system for large energy users;
  - introduction of energy efficiency measures;
  - incentivised tariffs for combined production of electricity and heating; and
  - minimal energy efficiency requirements for new and reconstructed facilities for electricity and heat generation and combined electricity and heat generation.
- **Transport**
  - implementation of Regulation EC 443/2009 on setting emission performance standards for new passenger cars;
  - promoting eco driving and car sharing schemes;
  - mobility management (i.e. measures aimed at energy efficient use of parking spaces, increasing the use of non-motor vehicles in transport, improving infrastructure for the greater use of bicycles);
  - improving energy efficiency in public transportation of passengers;
  - improving energy efficiency in transportation of goods;
  - introduction of EU standards regarding emissions of imported used motor vehicles;
  - introduction of efficient tyres for motor vehicles;
  - improving the quality of regular annual technical inspections of motor vehicles;
  - modernisation of vehicles for fulfilment of technical requirements for domestic and international transport;
  - marking and monitoring the quality of fuels; and
  - mandatory replacement of summer tyres.

- **District heating system**
  - reconstruction of the heat energy distribution system;
  - reconstruction and modernisation of heating plants;
  - controlling the burning of gaseous, liquid and solid fuels in heating plants;
  - controlling the distribution of heat energy;
  - reconstruction of the Nikola Tesla thermal power plant; and
  - minimal energy efficiency requirements for new and reconstructed facilities for electricity and heat generation and combined electricity and heat generation.
- **Power system**
  - improving the efficiency of boilers in thermal power plants;
  - coal quality management system;
  - improving the efficiency of steam turbines in thermal power plants;
  - reducing the energy consumption in thermal power plants;
  - reconfiguration of the distribution network;
  - voltage regulation of the distribution network;
  - improvement of the distribution network;
  - installation of smart meters; and
  - minimal energy efficiency requirements for new and reconstructed facilities for electricity and heat generation and combined electricity and heat generation
- **Annual Energy Savings**

As mentioned in Part III “Obligations”, p. 65 above, government and provincial authorities and local municipalities with more than 20,000 inhabitants must reduce their annual energy consumption by one percent (1%).

This energy savings obligation applies to objects that consume more than 1,000 toe annually (in the education, science, culture and health sectors), more than 2,500 toe annually (in the transportation, energy, road and communal services sectors), or are larger than 2,000 m<sup>2</sup> (objects belonging to government and provincial authorities).

### **Comparison**

As Serbia is not an EU Member State, it does not have the obligation to adhere to the EU's energy savings strategies. Articles 4 and 5 of Directive 2012/27/EU appear not to have been transposed. However, Serbia has its own energy saving targets and measures. Its plan is to reduce energy consumption by nine percent (9%) (0.7524 Mtoe) by 2018 and introduced various energy efficiency measures to that end.

## **SLOVAKIA**

### **Energy Policy of the Slovak Republic from October 2014**

The Energy Policy is a strategic document defining the energy sector's primary objectives and priorities until 2035 with a view to 2050. The Energy Policy is a component of Slovakia's national economic strategy given that ensuring sustainable economic growth is conditioned by the reliable supply of affordable energy.

The Energy Policy is influenced significantly by EU targets of a twenty percent (20%) reduction of greenhouse gas emissions, a twenty percent (20%) increase in energy efficiency and a twenty percent (20%) utilisation rate of RES by 2020. Energy Policy targets and priorities are defined so as to fulfil the targets defined at the EU level.

### **Concept of the Energy Efficiency of the Slovak Republic**

The main goal of the Energy Efficiency Concept is to identify the main trends in energy consumption, set priorities and oversee targets, analyse the existing state of, and potential and barriers for, energy efficiency and to define the framework of energy efficiency measures to overcome the identified barriers. More detailed specification of the measures implementing this concept is gradually being developed through Energy Efficiency Action Plans; the first of these (1AP) for the years 2008–2010, 2AP for the years 2011–2013 was approved in June 2010, 3AP for the years 2014–2016 with an outlook up to 2020 was approved in June 2013 and 4AP for the year 2017 is currently under preparation to be approved by April 2017.

The following main goals are set out:

- match the energy efficiency of the original 15 EU Member States;
- reach the national indicative energy savings in the years 2008–2016 of nine percent (9%) of the final energy consumption, i.e. 37,215 TJ;
- reach the national indicative energy savings in the years 2017–2021 of zero point five percent (0.5%) of the final energy consumption; and
- in the years 2022–2030, zero point one percent (0.1%) of the final energy consumption.

### **Comparison**

Slovakia has fulfilled its obligations arising from the EU Directive which requires, *inter alia*, long-term renovation strategies, specifically in the public sector.

## **SLOVENIA**

### **Long-Term Strategy for Mobilising Investments in the Energy Renovation of Buildings**

In October 2015, Slovenia adopted the Long-Term Strategy for Mobilising Investments in the Energy Renovation of Buildings. The starting points of the strategy have been determined in two other strategic documents: the Operational Programme of measures to reduce greenhouse gas emissions by 2020 and the Operational Programme for the implementation of the cohesion policy 2014–2020 (“OP EKP”).

With the adoption of the Strategy, Slovenia established the target of achieving a significant improvement in the energy efficiency of its building stock. The targets are set for the years 2020 and 2023 (final year of implementation of OP EKP) and 2030 where the expected energy savings, required public funds and jobs have been evaluated. For 2050 there is only an estimate of the expected energy savings.

The strategy provides for the following operational objectives:

- renovation of three percent (3%) of public buildings of the core public sector annually;
- renovation of 1.8 million m<sup>2</sup> of buildings in the wider public sector in the period 2014–2023;
- improvement of the relationship between the invested public funds and solicited investments in the public sector to 1:3; and
- execution of 5 renovation pilot projects of energy renovation of different types of buildings.

To use public bodies' buildings as an example, in October 2015 the Ministry of Infrastructure established a special Project Office for Building Energy Renovation. The Project Office is a coordinating body concentrating knowledge and experience for the implementation of investments in the energy renovation of State-owned buildings, with special emphasis on the energy performance contracting model. It provides an expert team to assist in designing invitations to tender, conducting Public Private Partnership procedures, evaluating tenders, overseeing the implementation of measures, overseeing the implementation of the contract on the provision of energy savings and transferring knowledge and good practice to the entire public and other sectors.

Additionally, the Ministry of Infrastructure plans to publish a call on a yearly basis to all interested investors who plan comprehensive energy renovation of their public buildings, helping them with grants from the Cohesion Fund.

Most of the strategies relating to energy efficiency have been introduced in the National Energy Efficiency Action Plans:

- **Measures on energy efficiency of buildings and facilities**
  - measures for efficient use of electricity in households – promoting the purchase of energy efficient household appliances;
  - compulsory division and calculation of heating costs in multi-apartment and other buildings; and
  - in the future more attention will be brought to the energy rehabilitation of cultural heritage buildings with regard to design and selection of measures, and in general consideration of architectural aspect of the energy rehabilitation (pilot projects, development and deployment of technologies, financial support schemes).
- **Measures of energy efficiency in the public sector**
  - obligation to introduce an energy management system in the public sector;
  - measures for efficient use of electricity in the public sector, in particular, incentives for energy efficient public lighting;
  - the implementation of projects for the energy rehabilitation of buildings of the central Government with Public Private Partnerships – principle of energy performance contracting<sup>29</sup>; and
  - preparation of sustainability criteria, as an instrument for decision-making regarding economic, environmental and social adequacy of public buildings renovation.
- **Measures of energy efficiency in the industry**
  - introduction of energy management systems;
  - increasing the efficiency of electricity use: installation of efficient electric motor drives, lighting, steering-control equipment, etc.;

<sup>29</sup> For this purpose the Ministry of Infrastructure in cooperation with the Ministry of Finance prepared Guidelines for the implementation of measures to improve the energy efficiency of buildings in the public sector according to the principle of energy performance contracting.

- reduction of heat use and promotion of exploitation of renewable energy sources and waste heat: optimisation of the use and supply of heat by introducing advanced solutions for the exploitation of renewable energy sources (solar, geothermal, biomass, etc.) and waste process heat;
  - increasing the volume of cogeneration with high efficiency and electricity production from RES: modernisation of existing and installation of new cogeneration with high efficiency units especially in processing-intensive industries (pulp and paper, chemical, rubber, etc.) to natural gas and renewable energy sources (biomass, biogas, sewage from treatment plants, etc.) and an increase in production of hydroelectric power, wind power and solar power; and
  - development and production of new sustainable products and services: energy and material efficient technological solutions, technologies for the exploitation of renewable energy sources, IT-support (smart measurements and networks, energy management, etc.), in accordance with the industrial policy of Slovenia and smart specialisation strategy of the Republic of Slovenia.
- **Measures of energy efficiency for transport**
    - modernisation of the existing transport infrastructure;
    - construction of optimal transport infrastructure;
    - introduction of modern means of transport;
    - promotion of sustainable mobility;
    - promoting of sustainable freight transport;
    - increasing the energy efficiency of road vehicles; and
    - construction of cycle paths and support facilities and promotion of cycling.
  - **Decree on energy management in the public sector**

Under EZ-1, public sector entities are required to establish an energy management system, and in this context, define the objectives and measures to increase energy efficiency and use of renewable energy sources. In 2016, the Slovenian Government adopted the Decree on energy management in the public sector as an implementation of these provisions.

The Decree introduces the requirement that all public bodies perform energy bookkeeping and achieve energy efficiency and RES goals in those buildings owned and used by them.

Regarding the transposition of Directive 2012/27/EU, the Decree defines minimum energy performance requirements for buildings which central Government will purchase or rent.

Under the provisions of the Decree, energy management systems must be set up in buildings and parts of buildings which are owned by the Government or local authorities or used by State authorities, local communities, public institutions, public commercial institutions, public funds, public agencies and institutions whose founder is the Republic of Slovenia or a local authority, and the area of which is more than 250 m<sup>2</sup>. The Decree is setting an example to the private sector in the field of energy efficiency.

Energy management systems include also implementation of energy accounting, identification and implementation of measures to improve energy efficiency, increase in the use of renewable energy sources and reporting to the responsible person on energy consumption, the associated costs and implementing measures.

## Comparison

Slovenia chose to address energy efficiency in all areas – production, transport and end-use of energy (e.g. renovation of buildings in both public and private sector). For that purpose, Slovenia addressed the requirements of Directive 2012/27/EU through appropriate adjustments in the national legislation – particularly concerning renewable energy sources and reduction of consumption of energy.

## UKRAINE

### National Strategies

As mentioned in Part II “Specific Provisions of the Law”, p. 48 above, while implementing Directive 2006/32/EC Ukraine has adopted a National Strategy and Action Plan on its implementation. In addition, the Special State Programme on Energy Efficiency and Increase of Energy Production from Renewable and Alternative Sources for the Period 2010–2016 was adopted and is partially performed.

### National Strategy

The National Strategy contains recommendations on the implementation of policies and regulatory actions in order to use technological innovations and to attain the indicative target for the reduction of total energy consumption. Such recommendations are grouped for industries as follows:

- **Residential**
  - introduction of one hundred percent (100%) commercial metering of energy use;
  - improvement of construction norms and standards (including annual increase in the number of newly constructed buildings with energy consumption rate close to zero);
  - implementation of energy audits and certification, energy labelling and indication of information on the consumption of energy by energy-using devices;
  - introduction of minimal energy efficiency standards;
  - financial support for households to implement measures on increase of energy efficiency of residential buildings; and
  - conduct of information campaigns on energy saving by changing consumer behaviour and arranging for larger scale events.
- **Public and commercial premises**

Implementation of thermal modernisation (in particular, through involvement of energy service companies) and introduction of model role for the public sector (as required by Directive 2006/32/EC) by

- introduction of one hundred percent (100%) commercial metering of energy use;
- improvement of construction norms and standards; and
- implementation of energy audit, management and certification.

- **Industry**

The priority task is the modernisation of production processes. The necessary measures include:

- involvement of energy service companies;
- energy labelling and information on the amount of consumed energy and other resources during the production of energy-using products;
- implementation of energy audit and energy management;
- introduction of minimal energy standards for industrial equipment; and
- conducting information campaigns to raise awareness of industrial manufacturers of energy saving potential in production.

- **Transport**

The main priorities include development of the local market for cleaner, more energy efficient and safer transport means via the following incentives:

- easier access to the city downtown by public transport;
- creation of parking locations;
- optimisation of public transport circuits; and
- development of electric transport.

- **Bio-fuel use**

From 2016 through 2020, the percentage of bio-ethanol in motor petrol in Ukraine must increase to at least seven percent (7%), through the use of new generation bio-fuels. Ukraine has great potential in the production of bio-fuel; therefore more ambitious targets on use of bio-fuel can be attained.

Apart from the necessity to improve energy efficiency in all areas of the economy, Ukraine is focused on increasing energy generation and cogeneration from renewable energy sources to reduce carbon pollution and increase energy independence.





# TARGETS

## EU DIRECTIVE

This Directive only sets an indicative energy savings target for 2020, unlike targets set for climate change and renewable energy. These targets are binding for Member States.

The three main cross sectoral targets are:

- twenty percent (20%) EU energy savings target. Defined in Article 3.1(a) as a maximum of 1,474 Mtoe primary energy or 1,078 Mtoe final energy consumption in 2020. The energy savings gap under current policies is estimated to be around 190 Mtoe;
- The indicative national efficiency targets. Defined in Article 24.7, Member States must set their own energy efficiency targets that are at least as efficient to achieve the twenty percent (20%) reduction by 2020. This will be assessed by the Commission, and will then consider proposing a binding target; and
- The national binding target for end-use savings. Defined in Article 7, sets a general binding target to deliver one point five percent (1.5%) cumulative annual energy end-use savings.

Relevant National Laws in:

## AUSTRIA

Enhancing energy efficiency is a key priority for Austria. According to data from the Austrian Energy Agency, end energy consumption increased by seventeen point nine percent (17.9%) between 2000 and 2013. The current programme 2013–2018 of the Austrian Federal Government emphasises measures to ensure “*an efficient, affordable and socially acceptable energy system*”. According to the EEffG, the national energy efficiency target of end energy consumption shall not exceed 1,050 PJ in 2020.

Besides the EEffG, energy efficiency targets are pursued as follows:

- **Federal Law on Climate Protection (*Klimaschutzgesetz*, “KSG”)**

The KSG is decisive for the Austrian climate policy. It establishes annual maximum quantities for greenhouse gas emissions on a sectoral basis for the commitment periods 2008–2012 and 2013–2020. It pursues the target of coordinated implementation of effective climate protection measures for the sectors: (i) waste management; (ii) energy and industry; (iii) fluorinated gases (*fluorierte Gase*); (iv) buildings; (v) agriculture; and (vi) traffic (Article 1 KSG).

- **Energy Strategy Austria**

In the Energy Strategy Austria, the achievement of the climate and energy targets of the European 2020 climate and energy package is described. Furthermore, energy efficiency is one of the three pillars of the Energy Strategy Austria. The Strategy aims to develop a sustainable energy system in Austria, considering the relevant legal framework. Initially, the stabilisation of final energy consumption at the level of the year 2005 shall be achieved in 2020; therefore, not exceeding 1,100 PJ.

Specific energy efficiency policies regarding buildings, infrastructure and transportation exist.

- **Buildings**
  - building refurbishment programme;
  - energy audits for households; and
  - smart meters and informative billing.

- **Infrastructure**
  - Environmental Support Programme (*Umweltförderung im Inland*); and
  - energy efficiency in companies (a klima:aktiv programme)
- **Transportation**
  - general transport plan for Austria;
  - car registration tax; and
  - klima:aktiv mobil – National Action Programme for Mobility Management.

### Comparison

Energy efficiency targets are promoted through various means in Austria. Besides the EEfG, these include principally the KSG and the Energy Strategy Austria, which all aim to achieve energy efficiency targets. In addition, energy efficiency policies contribute towards the achievement of defined targets.

## BOSNIA & HERZEGOVINA

The NREAP sets a goal of nine percent (9%) energy savings by 2018 in BiH. Furthermore, one of the goals is having a forty percent (40%) share of its RES in the final consumption of electrical energy and a ten percent (10%) share of RES energy in transport.

Also, the activities envisaged to be implemented under the BEEP are expected to have the following results:

- reduced CO<sub>2</sub> emissions (the transition to cleaner energy sources should reduce air pollution during the winter season, which is caused by improper and inefficient combustion of currently used fuels);
- increase the level of comfort in facilities, which should create a positive impact on employment in the construction sector;
- increase the awareness of energy efficiency in the participating communities; and
- reduce local pollution.

The RS Strategy stipulates that by using specified measures of energy efficiency, final energy consumption in households would be reduced by fifteen percent (15%) by 2030 compared to the scenario without energy efficiency measures and as compared to the baseline 2005 year, consumption would increase by only twenty two percent (22%). The overall share of energy consumption in residential buildings, households and services, in total final energy consumption, should thus get closer to the European average.

NREAP, APOEF and RS Strategy all discuss the goals and measures to achieve energy efficiency divided into the following sectors (which are presumed to produce the best results in energy savings): (i) building, (ii) industry and (iii) transportation systems.

The anticipated impact is:

- increasing energy efficiency targets by reducing loss of energy and reducing consumption of energy through improved technological advances;
- increasing the use of RES, according to adopted targets, which will add to energy efficiency in total;
- proceeding with structural improvements in industry with an aim of increasing the efficient use of energy and by discarding obsolete manufacturing methods;

- creation of a local energy market for RES heat energy by introducing a register of heat energy origin and by introducing an obligation for large consumers of heat energy (industrial and city heating plants) to have some of the heat energy generated from RES; and
- keeping registries of energy consumption and monitoring the results of large consumers in meeting their energy efficiency targets.

### **Comparison**

The applicable laws on energy efficiency do not establish clear criteria for the achievement of energy efficiency targets. Although certain criteria are set out in the NREAP, APOEF and RS Strategy, these are not currently obligatory.

## **BULGARIA**

According to Directive 2012/27/EU, Bulgaria is obliged to set an indicative national energy efficiency target, taking into account national circumstances.

The NEEAP sets out a national indicative energy savings target for 2020 of 716 ktoe/year in final energy consumption (FEC) and 1,590 ktoe/year in primary energy consumption (PEP), of which 169 ktoe/year is from conversion, transmission and distribution in the energy sector. The contribution of each source to the achievement of the 2020 national energy savings target of 716 ktoe/year in FEC is as follows:

- 203 ktoe/year from optimal utilisation of available financial resources; and
- 486 ktoe/year from fulfilment of the individual targets of energy traders under the obligations scheme.

The national indicative energy efficiency target is defined as a forty one percent (41%) reduction in Bulgaria's primary energy intensity ("PEI") in 2020 compared to its PEI in 2005.

The NEEAP is developed in accordance with the EED requirements on the basis of a template which ensures the inclusion of all obligations. The requirements of Directive 2010/31/EU on the energy performance of buildings are also taken into account.

The annual report on the implementation of the NEEAP in 2015 contains an evaluation of the progress towards the achievement of the national target – twenty six percent (26%) of the whole target was achieved in the period 2014–2015.

Article 4 of Directive 2012/27/EU requires Bulgaria to establish a long-term strategy for the renovation of buildings. The Bulgarian national long-term programme for the mobilisation of investments in the implementation of measures to improve the energy performance of buildings is part of the NEEAP. It includes an overview of the national building stock (housing and public buildings), formulation of economically efficient approaches to improving the energy performance of buildings, taking into account the building types and the climate zone and the State policy in the area of technical regulation and harmonisation of energy efficiency legislation for the buildings sector. The Programme creates a financial framework for guiding the investment decisions of investors, builders and financial institutions. Currently the Programme is under the process of revision and update.

### **Comparison**

Bulgaria's set national indicative energy efficiency target is defined as a forty one percent (41%) reduction in Bulgaria's PEI in 2020 compared to its PEI in 2005.

## CROATIA

### NEEAP 3

Under NEEAP 3, Croatia defined its energy savings targets as 11.15 Mtoe primary energy or 7 Mtoe final energy consumption in 2020.

### Comparison

The EU Directive establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. Croatia has established energy saving goals correspondent to the EU Directive requirements, but there is little information indicating if that target is actually going to be reached. A new energy saving report is scheduled to be published later in 2017, but the earlier projections have indicated that the Croatian energy saving goals will be met and exceeded.

## CZECH REPUBLIC

### Act No. 165/2012 Coll., on the supported sources of energy, as amended

The law has been amended to address the requirements of Directive 2012/27/EU, the most noticeable change being the transfer of the control competence from the State Energy Inspectorate to the Energy Regulatory Office.

### Act No. 406/2000 Coll., on the energy management, as amended

The law has been amended to address the requirements of Directive 2012/27/EU, most importantly of Article 7 of Directive 2012/27/EU, and parts of Directive 2006/32/EC.

### Act No. 458/2000 Coll., the Energy Act, as amended

This act represents the most important piece of Czech legislation concerning the energy sector and it has been amended to address the requirements of Directive 2012/27/EU.

### Comparison

Directive 2012/27/EU establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. In line with Article 7 (9) of Directive 2012/27/EU, the Czech Republic chose an alternative scheme to comply with the energy savings requirements of Directive 2012/27/EU. That means the realisation of the target will be managed by public bodies or their delegated entities.

## HUNGARY

As a Member State of the European Union, Hungary must transpose EU Directives into its internal legislation and observe the energy policy measures established by the European Commission.

### Action Plan

In line with Article 3 of the Directive, the indicative national energy efficiency target of Hungary was 1,113 PJ of primary energy consumption until 2020, which was duly notified to the Commission in 2013. However, this target was not reached by 2012 and remained at the amount of 992 PJ. Based on the 2012 values, Government Resolution No. 1160/2015 updated the target and thus the target for primary energy consumption is 1,009 PJ. The target for final energy consumption totals 693 PJ. In accordance with this, the gross final energy consumption will

be 603 PJ/year by 2020. Through this document, Hungary pledged to reduce the final energy consumption by an average annual rate of one point five percent (1.5%), i.e. an annual 7.3 PJ reduction of final energy consumption. However, Hungary chose to introduce the obligations gradually, along the following path:

| YEAR | PRO-<br>JECTION<br>BASE<br>(TJ) | PRESCRIBED ANNUAL SAVINGS (%) |    |       |       |      |      |      | FINAL<br>ENERGY<br>SAVING<br>PER<br>YEAR<br>(PJ) | FINAL<br>ENERGY<br>SAVING<br>IN<br>TOTAL<br>(PJ) |
|------|---------------------------------|-------------------------------|----|-------|-------|------|------|------|--------------------------------------------------|--------------------------------------------------|
| 2014 | 489.08                          | 1%                            |    |       |       |      |      |      | 4.89                                             | 4.89                                             |
| 2015 |                                 | 1%                            | 1% |       |       |      |      |      | 4.89                                             | 9.78                                             |
| 2016 |                                 | 1%                            | 1% | 1.25% |       |      |      |      | 6.11                                             | 15.9                                             |
| 2017 |                                 | 1%                            | 1% | 1.25% | 1.25% |      |      |      | 6.11                                             | 22.01                                            |
| 2018 |                                 | 1%                            | 1% | 1.25% | 1.25% | 1.5% |      |      | 7.34                                             | 29.34                                            |
| 2019 |                                 | 1%                            | 1% | 1.25% | 1.25% | 1.5% | 1.5% |      | 7.34                                             | 36.68                                            |
| 2020 |                                 | 1%                            | 1% | 1.25% | 1.25% | 1.5% | 1.5% | 1.5% | 7.34                                             | 44.02                                            |

The total final energy savings for the period 2012–2020 is forecasted as 73 PJ, from which 40 PJ for households, 10 PJ for industry, 14 PJ for transport and 9 PJ for agriculture, trade and services. The factual data of the Action Plan for the period 2008–2012 as well as the energy consumption forecasted as 2020 per sector are:

| UNIT: PJ                  | 2008 | 2012 | 2020 |
|---------------------------|------|------|------|
| PRIMER ENERGY-UTILISATION | 1120 | 992  | 1009 |
| FINAL ENERGY CONSUMPTION  | 704  | 600  | 603  |
| INDUSTRIAL SECTOR         | 139  | 96   | 114  |
| TRANSPORTATION            | 192  | 157  | 147  |
| HOUSEHOLDS                | 233  | 215  | 207  |
| TRADE AND SERVICES        | 117  | 116  | 118  |
| AGRICULTURE AND FISHING   | 22   | 17   | 17   |

However, compared to the figures of the Action Plan, the Government accepted forecast targets for planned final energy savings between 2016 and 2020 in its Government Resolution No. 1160/2015 (III. 20) differently, see above.

### Comparison

The EU Directive establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. Hungary has established its national energy efficiency target as 1113 PJ of primary energy consumption until 2020, meaning a 73 PJ total final energy saving for the period 2012–2020. Concerning the steps to achieve these targets, the reduction of the final energy consumption would take an average annual rate of one point five percent (1.5%), i.e. an annual 7.3 PJ reduction of final energy consumption. However, there is little information indicating if that target is actually going to be reached.

## KOSOVO<sup>30</sup>

The Ministry of Economic Development approved the Administrative Instruction on Renewable Energy Targets on 31 January 2013. Article 3 of this Administrative Instruction provides a mandatory target for renewable energy of twenty five percent (25%) of the final gross energy consumption by 2020, as also specified in Article 4 of the Decision of the ministerial Council of the Energy Community No. D/2012/04/MC/-EnC.

In addition to the above, on 31 December 2013 the Ministry of Economic Development issued Administrative Instruction No. 02/2013 on Use and Support of Energy Generation from Renewable Sources, ("**Administrative Instruction on Use and Support of Energy Generation from Renewable Sources**"). The Administrative Instruction on Use and Support of Energy Generation from Renewable Sources regulates the support of utilisation of renewable energy sources for energy generation purposes, the categorisation of capacities by type of renewable energy source, and support schemes for energy generated from renewable energy sources, statistical transfers and joint processes.

The Rule on the Support Scheme defines the criteria and procedure for application and admission to the Support Scheme in order to support the generation of electricity from renewable energy sources.

In the Strategy approved by the Government of Kosovo, the energy sector is one of the priorities. The Draft Strategy provides for four measures to improve the energy sector – two of which include the reduction of energy consumption through efficiency measures and rational use of renewable energy resources.

### Comparison

Laws that were approved in Kosovo in the field of energy efficiency are partially in compliance with the respective EU directives. According to the Draft Strategy, Kosovo's Action Plan for Energy Efficiency 2010–2018 foresees an energy saving target up to nine percent (9%) (around 92 ktoe) until 2018. In addition to that, the National Action Plan for Energy Renewable Sources 2011–2020 provides that Kosovo aims to achieve a twenty nine point four seven percent (29.47%) ratio of participation of renewable energy in gross final energy consumption by 2020. Furthermore, the National Action Plan for Energy Renewable Sources 2011–2020 also provides for sector-based targets with regard to energy from renewable sources as follows: twenty five point six four percent (25.64%) of gross final consumption of electricity, ten percent (10%) of gross final consumption in the area of transportation and forty five point six five percent (45.65%) of gross final consumption in the sector of heating and cooling.

## MOLDOVA<sup>31</sup>

In order to reduce its dependence upon energy imports and the impact of the energy sector on climate change, the national programme provides the following key objectives for Moldova, relative to the reference year 2009:

- streamlining global consumption of primary energy to twenty percent (20%) by 2020;
- increasing the amount of renewable energy in the total energy mix from six percent (6%) in 2010 to twenty percent (20%) in 2020;
- increasing the share of bio-fuels to at least ten percent (10%) of all fuels by 2020; and
- reduction by 2020 of greenhouse gas emissions by at least twenty five percent (25%) compared to 1990.

<sup>30</sup> Wolf Theiss in corporation with Pallaska&Associates.

<sup>31</sup> Contributed by ACI Partners Law Firm.

The expected economic effect following the completion of the programme is characterised by the achievement of the following targets relative to the reference year 2009 and taking into account the increase of energy consumption by 2020, calculated based on trends in the last five (5) years:

- National target for energy savings

According to the energy efficiency goals of the EU and given the commitments of the Republic of Moldova aligned with the *acquis communautaire*, the programme identifies as the national target for energy savings in the long-term, by 2020, amounting to twenty percent (20%) which represents 14,167,857 TJ and will help reduce greenhouse gas emissions by 761,498.7 tons effect CO<sub>2</sub>eq.

- Intermediate target for energy savings:

Intermediate energy saving target will be reached by 2016 is established in the amount of nine percent (9%) which is equivalent to 6,021,350 TJ and will help reduce greenhouse effect gas emissions by 323,637.5 tons of CO<sub>2</sub>eq.

- The annual energy saving target is set at the level of one point eight percent (1.8%), compared to the year 2009.

State policy in the field of renewable energy is implemented through national, sectorial and local programmes. Their implementation is monitored by the Ministry of Economy.

Finally, the State policy in the field of RES, according to national policy documents, is reflected in:

- continuous adjustment of national legislative framework to European Union norms and standards;
- promotion of energy from renewable sources, energy efficiency and energy saving through schemes and support measures in accordance with best international practices; and
- ensuring social and territorial cohesion, as well as access of individuals and businesses to information on the production and use of renewable energy and energy efficiency.

The Republic of Moldova reaffirms its strong commitment towards building a modern welfare state within nature's limits, by safeguarding the environment and by building a functional infrastructure for the use RES.

Given the fact, that Moldova is not an EU Member State and rather recently acknowledged the importance of addressing ways to implement environmentally-sound, cost-effective and logistically-feasible measures, there is great hope and emphasis within the country to achieve these ambitious targets.

## **POLAND**

Poland, like other Member States of the European Union, is under the obligation to transpose EU Directives into national legislation and to fulfil the requirements imposed by EU regulations.

### **Energy Efficiency Bill 2011**

Introduction of the Bill in 2011 allowed Poland to fully transpose provisions of Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services, repealing Council Directive 93/76/EEC, into Polish law.

### **Energy Law Act**

Amendments made on 11 September 2013 to the 1997 Energy Law Act introduced resolutions of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources, and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, into Polish law.

### **Energy Efficiency Bill 2014**

Repealing the 2011 Energy Efficiency Bill and introduction of a new Energy Efficiency Bill in 2016 consequently brought in regulations of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.

By adopting all the relevant EU law that was introduced in the form of Directives, Poland has ensured that it is up to date with all ongoing procedures that lead to energy efficiency, and to consequently fulfil its obligations as a Member State. It has introduced strategies and legislation which launched a number of programmes financed by European funds and State budgets.

### **Comparison**

The 2012/27/EU Directive establishes an indicative target of at least twenty percent (20%) energy efficiency for each Member State. Poland, in the Third National Action Plan of 2014, declared the adoption of a standard programme for implementation, i.e. one point five percent (1.5%) annually until 2020, which is a total of ten point five percent (10.5%), in accordance with Article 7(1) of Directive 2012/27/EU which corresponds to end-use energy savings by 2020 amounting to 3.675 Mtoe.

## **ROMANIA**

As a Member State of the European Union, Romania must transpose the EU Directives into its internal legislation and observe the energy policy measures established by the European Commission.

### **GD 1043/2007 on the eco-design requirements for energy-consuming products**

The decision transposes Directive 2005/32/EC, which sets a framework establishing the eco-design requirements that apply to energy-consuming products.

### **Law 220/2008 on the establishment of a system for the promotion of energy production from RES with its subsequent modifications and completions**

In its present form, the law transposes the provisions of Directive 2009/28/EC into Romanian legislation.

### **EGO 152/2005 on the prevention and integrated control of pollution with its subsequent modifications and completions**

In its present form, the Ordinance transposes Directive 2008/1/EC into Romanian legislation.

### **EGO 40/2011 on the promotion of the non-polluting and energy efficient road transport**

The Ordinance transposes Directive 2009/33/EC into Romanian legislation.

**Several Government decisions** on the establishment of the requirements relating to labelling, energy efficiency and the introduction of receivers in the market (refrigerating equipment, air conditioners for household utilisation, electric ovens, dryers, washing machines, dish washers, electric lamps, ballast for fluorescent lighting devices, etc.).

In order to implement the strategies and adopted legislation towards national energy efficiency, programmes have been initiated and financed through European funds, State budget or other centralised funds.

### **Comparison**

The EU Directive establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. Romania has established an ambitious forty percent (40%) energy efficiency target; however there is little information indicating if this target is actually going to be reached. They have established many strategies and implemented legislation towards the effort of achieving these targets.

## **SERBIA**

The main goal of the NEEAPs is to reduce energy consumption by nine percent (9%) by 2019 (0.7524 Mtoe).

Apart from energy efficiency measures described in the above Parts, Serbia has also introduced energy labelling obligations pursuant to Directive 2010/30/EU and supports the public sector in taking up energy services (ESCO) pursuant to Article 18 of Directive 2012/27/EU.

### **Energy labelling**

The Law introduced an obligation to label certain products that affect energy consumption and indicate their energy consumption and energy efficiency.

The Decree on Labelling of Energy-Related Products<sup>32</sup> provides for energy labelling of a number of products. Special rulebooks have been adopted on energy efficiency labelling of household cooling appliances<sup>33</sup>, televisions<sup>34</sup>, washing machines<sup>35</sup>, dish washers<sup>36</sup>, electric ovens<sup>37</sup>, air conditioners<sup>38</sup>, electric bulbs and lamps.<sup>39</sup>

### **Energy services**

The Law defines energy services as services that lead to a verifiable and measurable increase in energy efficiency of objects, technical systems, production processes, private and public services and/or primary energy savings. Energy services can be performed by legal entities or natural persons, on the basis of a written agreement.

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<sup>32</sup> *Uredba o proizvodima koji utiču na potrošnju energije za koje je neophodno označavanje potrošnje energije i drugih resursa* ("Official Gazette RS" Nos. 92/2013, 80/2016).

<sup>33</sup> *Pravilnik o označavanju energetske efikasnosti mašina za pranje veša u domaćinstvu* ("Official Gazette RS" No. 24/2014).

<sup>34</sup> *Pravilnik o označavanju energetske efikasnosti televizora* ("Official Gazette RS" No. 24/2014)

<sup>35</sup> *Pravilnik o označavanju energetske efikasnosti mašina za pranje veša u domaćinstvu* ("Official Gazette RS" No. 24/2014).

<sup>36</sup> *Pravilnik o označavanju energetske efikasnosti mašina za pranje sudova u domaćinstvu* ("Official Gazette RS" No. 24/2014).

<sup>37</sup> *Pravilnik o označavanju energetske efikasnosti mašina električnih pećnica* ("Official Gazette RS" No. 24/2014).

<sup>38</sup> *Pravilnik o označavanju energetske efikasnosti uređaja za klimatizaciju* ("Official Gazette RS" No. 24/2014).

<sup>39</sup> *Pravilnik o označavanju energetske efikasnosti električnih sijalica i svetiljki* ("Official Gazette RS" No. 24/2014).

The Ministry has issued a Rulebook on Model Energy Service Contracts for the Implementation of Energy Efficiency when Users are from the Public Sector<sup>40</sup>. It provides for two model agreements – one related to energy efficiency of public buildings and the other for public lightning.

### Comparison

As Serbia is not an EU Member State, it does not have an obligation to adhere to the EU's indicative energy saving targets. Nevertheless, Serbian NEEAPs aim to cut energy consumption by nine percent (9%) by 2019 (0.7524 Mtoe).

## SLOVAKIA

As a Member State of the European Union, Slovakia must transpose the EU Directives into its domestic legislation and observe the Energy Policy measures established by the European Commission.

### **Act No. 529/2010 Coll. on Environmental Designing and Using of Products**

Act on Ecodesign implements into Slovak law the Directive of the European Parliament and of the Council No. 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products.

### **Act No. 309/2009 Coll. on Support of Renewable Energy Sources and High Efficiency CHP**

In its present form, the act transposes the provisions of Directive 2009/28/EC into Slovak legislation.

### **Act No. 39/2013 Coll. on integrated prevention and environmental pollution control and on amendments and supplements to certain laws**

In its present form, the act transposes Directive 2010/75/EC into Slovak legislation.

### **Act No. 158/2011 Coll. on Promotion of Clean and Energy Efficient Motor Vehicles and on amending and supplementing of certain acts**

The Act transposes Directive 2009/33/EC into Slovak legislation.

### Comparison

Directive 2012/27/EU establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. Slovakia follows this by establishing a target of achieving a twenty percent (20%) energy efficiency target for primary energy consumption savings and a twenty three percent (23%) energy efficiency target for final energy consumption savings. Few strategies were adopted and there is little information indicating if and how the targets are actually going to be achieved.

An important tool for implementing energy savings measures based on Directive 2012/27/EU are the EU structural and investment funds for the period of 2014–2020. Directive 2012/27/EU has supported the creation of various contacts with industries for enabling to enable voluntary agreements on energy efficiency.

<sup>40</sup> *Pravilnik o utvrđivanju modela ugovora o energetske usluga za primenu mera poboljšanja energetske efikasnosti kada su korisnici iz javnog sektora* ("Official Gazette RS" no 41/2015).

## **SLOVENIA**

As a Member State of the European Union, Slovenia has an obligation to transpose EU Directives into national law and must fulfil the requirements of the EU Regulations.

### **Energy Act (EZ)**

In order to transpose the provisions of Directive 2006/32/EC of the European Parliament and of the Council on energy end-use and energy services and repealing Council Directive 93/76/EEC the first Slovenian Energy Act was amended. The EZ is no longer valid and was replaced by the new Energy Act (EZ-1).

### **Energy Act (EZ-1)**

In 2014, a completely new Energy Act transposed several EU directives and among them also Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.

### **Environmental Protection Act (ZVO-1)**

The Act transposed the Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control.

Several Governmental decrees and regulations have been adopted for the implementation of the efficient energy use, among others:

- Decree on energy management in the public sector (transposing Directive 2009/28/EC);
- Rules on the financial incentives for energy efficiency, district heating and use of renewable energy sources;
- Decree on energy savings requirements;
- Decree on labelling of energy-related products as regards the use of energy and other resources (transposing Directive 2010/30/EU);
- Decree on ecodesign requirements for energy-related products (transposing Directive 2009/125/EC); and
- Decree on green public procurement (transposing Directive 2009/33/EC and Directive 2010/30/EU).

### **Comparison**

In its third national action plan AN URE 2020, Slovenia stressed the national objective to improve the efficiency of energy use by twenty percent (20%) by 2020 in accordance with the minimal indicative target of Directive 2012/27/EU. The target for primary energy consumption in 2020 should not exceed 7.125 Mtoe (82.86 TWh). This means that compared to 2012, it cannot increase by more than two percent (2%).

The national target is set at the primary level of energy, as energy transformations may also contribute to the increased energy efficiency. In terms of such energy transformations, efficiency improvements are planned as a result of technological upgrading and increasing the share of renewable energy sources.

## UKRAINE

### National Plans

According to the Special State Programme on Energy Efficiency and Increase of Energy Production from Renewable and Alternative Sources for 2010–2016, the target of this programme is to decrease (compared to 2008) the rate of energy consumption of gross domestic product by twenty percent (20%). This target is similar to the one introduced by the EED. The target for energy generation from renewable energy sources for 2015 is set at the rate of fifteen percent (15%). In fact, only about one percent (1%) of energy was generated from renewable sources in Ukraine in 2016. Thus, this market has huge potential for growth, considering that the special feed-in tariff for such type of energy sources is applicable up to 2030 in Ukraine.

Based on the Action Plan, by 2020 the modernisation of thermal insulation is expected to cover twenty five percent (25%) of private households and twenty percent (20%) of State (budget) buildings.

The EED establishes an indicative target of at least twenty percent (20%) energy efficiency for Member States. Ukraine has set a similar target in its energy efficiency programme. However, considering the actions taken by Ukraine as of now, this target is unlikely to be achieved in 2020.

### EU Ecolabel

Ukraine has implemented Regulation (EC) No. 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel into the local legislation. Starting from 2014, Ecolabel must be used on all consumer goods sold in Ukraine (except for medical and veterinary products).

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