

5th Annual Report under the Energy Efficiency Directive

BOSNIA AND HERZEGOVINA

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HERZEGOVINA

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A. Key statistics and indicators

This is the Fifth Annual Report under the Energy Efficiency Directive prepared by Bosnia and Herzegovina, based on the Template proposed by the Energy Community Secretariat and fully consistent with the requirements of the Energy Efficiency Directive - EED (2012/27/EU). Explanations for all numbers provided in the following table are given below, including the sources of information.

Data on primary and final energy consumption are given for year 2019.

Estimation of key statistics and indicators in 2019	Value	Unit
Total primary energy consumption (*)	7,230	ktoe
Total final energy consumption (*)	4,193	ktoe
Final energy consumption – Transport (*)	1,322	ktoe
Final Energy consumption – Industry (*)	738	ktoe
Final energy consumption – Households (*)	1,687	ktoe
Final energy consumption – Services (*)	407	ktoe
Gross value added by sector – Industry (**)	3,552	mil. EUR
Gross value added by sector – Services (**)	3,397	mil. EUR
Disposable income of households (**)	-	mil. EUR
Gross domestic product (GDP) (**)	18,046.43	mil. EUR
Electricity generation from thermal power plants (**)	897	ktoe
Electricity generation from combined heat and power (**)	18.1	ktoe
Heat generation from thermal power generation (**)	133.1	ktoe
Heat generation from combined heat and power plants, incl. industrial waste heat (**)	40.3	ktoe
Fuel input for thermal power generation (**)	2,779	ktoe
Passenger kilometres (pkm), if available (**)	1,788,013	thous. pkm
Tonne kilometres (tkm), if available (**)	5,642,532	thous. tkm
Combined transport kilometres (pkm + tkm), in case that separate values for pkm and tkm are not available (**)	7,430,545	
Population (**)	3,500.3	millions

Key energy statistics data.

(*) Energy statistics

(**) State Statistical office

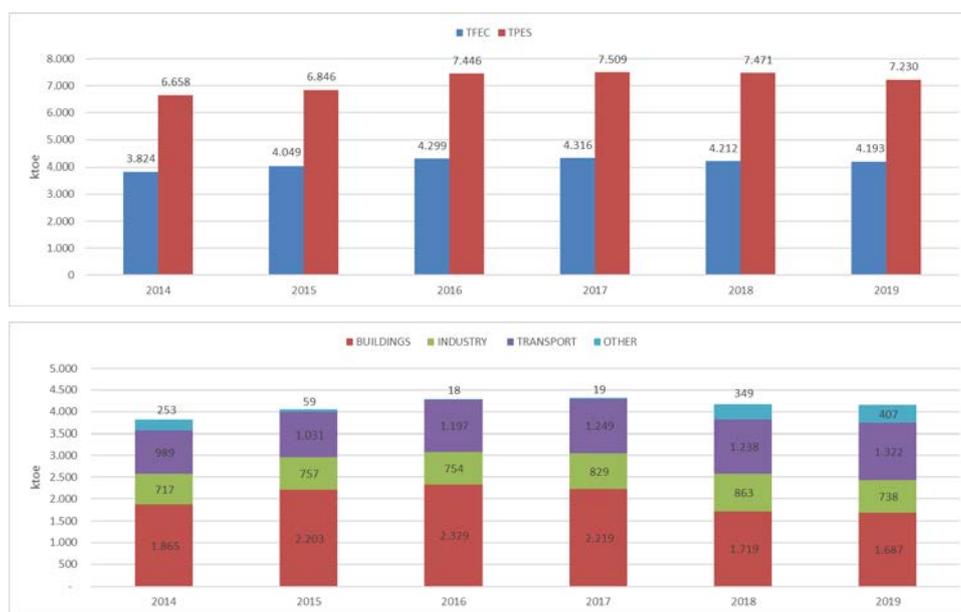
B. Overview of energy consumption trends

The Energy Efficiency Action Plan in Bosnia and Herzegovina (NEEAP 2019-2021, drafted) defines national targets for reducing final and primary energy consumption for the three-year period 2019-2021. The goals are defined based on the trajectories of final (TFEC) and primary (TPES) energy, which are the result of the official LEAP model (Long-range Energy Alternatives Planning) of the energy sector in Bosnia and Herzegovina. The model ensures continuity in planning until 2030 and is the basis for integrated energy and climate planning, defined by the National Energy and Climate Plan (NECP).

Energy statistics

A key step in determining all the objectives towards the sustainable generation, transmission and use of energy is the development of reference TPES and TFEC trajectories for the baseline scenario for the period from 2015 to 2030 without projecting energy efficiency measures, and TPES and TFEC trajectories for several scenarios containing different levels of ambition in terms of increasing energy efficiency in the sectors of transformation, transmission and distribution, and final energy consumption. In this regard, various statistical and other available data sources were used to determine demographic, economic and energy values for the base year 2015 and relevant trends within different scenarios.

The achieved values of energy consumption for B&H are here given for years 2014-2019. In that sense, the energy balances provided by BHAS are used. TFEC/TPES values for the period 2014-2018, as well as the TFEC structure by sectors of energy consumption are shown in the following diagram:



Actual Final and Primary energy consumption (left) and final energy consumption per sectors (right) in 2014 – 2019

C. National energy efficiency targets

Based on the analysis of the results obtained by considering different scenarios for increasing energy efficiency, the moderate scenario has been proposed for determining the indicative targets of Bosnia and Herzegovina for energy savings by increasing energy efficiency. The following decisive factors were considered in making this decision:

- i. The nature, scope and intensity of the implementation of energy efficiency measures envisaged for the considered scenarios within individual sectors of primary and final energy consumption; and
- ii. Real organizational and financial capacity of Bosnia and Herzegovina to implement energy efficiency measures required to achieve certain scenarios.

Main EE targets

In defining the proposed moderate scenario, special attention is paid to the participation of renewable energy sources in 2030, and the goal that the quota of 49.6% from renewable energy sources must be met. This specifically means that the moderate scenario for 2030 envisages the total installed capacity of 1,602 MW of renewable energy sources (1,300 MW for electricity generation, 224.08 for heat production, and 77.92 MW in cogeneration), which represents 22% of total installed capacity for electricity generation, heat generation, and cogeneration. If an amount of 2,454 MW of installed capacity of hydropower capacity was considered, the moderate scenario for 2030 envisages the capacity of the total installed capacity of 4,056 MW of renewable energy sources, which represents a total of 55.16% of the total installed capacity.

Based on these considerations, the indicative targets of Bosnia and Herzegovina for savings in energy consumption through the application of energy efficiency measures are defined as follows:

Target year		Indicative goal of Bosnia and Herzegovina for energy saving by increasing energy efficiency
2020	Primary	Reduction of primary energy consumption by the end of 2020 by 1.86% in relation to consumption projections without energy efficiency measures, which in relation to the projected primary energy consumption of 6,772 ktoe without the application of energy efficiency measures amounts to 6,646 ktoe with the application of planned energy efficiency measures, that is, a reduction in primary energy consumption in the absolute amount of 126 ktoe .
	Final	At the same time, final energy consumption is expected to decrease by 4.4% by the end of 2020 compared to the projections of consumption without energy efficiency measures, which in relation to the projected final energy consumption of 4,445 ktoe without energy efficiency measures is 4,249 ktoe with the planned measures. energy efficiency or reducing unmetered final energy consumption in absolute amount of 196 ktoe .
2021	Primary	Reduction of primary energy consumption by the end of 2021 by 2.94% in relation to consumption projections without energy efficiency measures, which in relation to the projected primary energy consumption of 6,757 ktoe without the application of energy efficiency measures amounts to 6,558 ktoe with the application of planned energy efficiency measures, that is, a reduction in primary energy consumption in the absolute amount of 199 ktoe .
	Final	At the same time, final energy consumption is expected to decrease by 5.3% by the end of 2021 in relation to consumption projections without energy efficiency measures, which in relation to the projected final energy consumption of 4,505 ktoe without energy efficiency measures is 4,264 ktoe with the planned measures. energy efficiency or reducing unmetered final energy consumption in absolute amount of 241 ktoe .
2030	Primary	Reduction of primary energy consumption by the end of 2030 by 11.02% in relation to consumption projections without energy efficiency measures, which in relation to the projected primary energy consumption of 7,123 ktoe without the application of energy efficiency measures amounts to 6,338 ktoe with the application of planned energy efficiency measures, that is, a reduction in primary energy consumption in the absolute amount of 785 ktoe .
	Final	At the same time, final energy consumption is expected to decrease by 13.04% by the end of 2030 in relation to consumption projections without energy efficiency measures, which in relation to the projected final energy consumption of 5,046 ktoe without energy efficiency measures is 4,388 ktoe with the application of planned measures. energy efficiency or reducing unmetered final energy consumption in absolute amount of 656 ktoe .

[Overview of indicative targets for Bosnia and Herzegovina](#)

Additional targets

Additional energy efficiency targets are an integral part of the NEEAP framework and are included in the main targets for reducing energy consumption. Areas for determining additional objectives arise from the developed strategic documents of Bosnia and Herzegovina, which, among other things, contain objectives related to energy efficiency, and objectives for individual articles of Directive 2012/27/EU on energy efficiency (EED).

The following table provides an overview of the relevant adopted additional energy efficiency targets in Bosnia and Herzegovina.

Additional targets	Scope of objectives
Goals from the Framework Energy Strategy of Bosnia and Herzegovina until 2035	<p>Indicative scenarios for the development of the production mix in Bosnia and Herzegovina:</p> <ol style="list-style-type: none"> i. Entity Working Group Scenario; ii. Scenario based on the Indicative Plan 2017-2026 with projection by 2035; iii. Cost optimized scenario; and iv. Moderate renewable scenario that encourages greater participation of renewable energy sources with the encouragement of energy efficiency measures, which was used as a basis for modeling the proposed scenario in the development of APEE BiH 2019-2021
Objectives from the Strategy for the Renovation of Buildings in Bosnia and Herzegovina for the period until 2050.	<p>The strategy considers the following building renovation scenarios:</p> <ol style="list-style-type: none"> i. Light - average annual renewal rate: 1.00%, average renewal depth: 58%; 30% of the renewed fund of heated areas by 2050; ii. Ambitious - average annual renewal rate: 2.2%, average renewal depth: 61%; 66% of the renewed fund of heated areas by 2050; iii. Highly ambitious - average annual renewal rate: 2.8%, average renewal depth: 63%; 84% of the renewed fund of heated areas by 2050. <p>Building renovation scenarios were the subject of an economic impact analysis, the results of which were incorporated into the selection of the optimal scenario from the TPES / TFEC model, which determines the main energy efficiency objectives presented above, according to Article 3 of the EED.</p>
Objectives from the obligation to renovate central government buildings (Article 5 EED)	<p>In accordance with Article 5 of the EED, Bosnia and Herzegovina have drafted the objectives of the building renovation under the authority of the central government. The objectives are an integral part of NEEAP BiH 2019-2021 and the corresponding entity action plans. The goals are as follows:</p> <ul style="list-style-type: none"> ▪ State level of BiH: 43 buildings, 1% target 2,450 m² ▪ Federation of BiH: 26 buildings, 1% target 716 m² ▪ Republic of Srpska: 6 buildings, 1% target 600 m² ▪ Brcko District: 17 buildings, 1% target 196 m² ▪ Total: 92 buildings, 1% target 3,962 m²
Targets for reduction of energy consumption implemented through obligation schemes for energy efficiency (Article 7 of the EED)	<p>By introducing the mechanism of Coverage Schemes for the collection of fees and distribution of incentives for the implementation of energy efficiency measures, primarily in the residential sector, the goals of reducing final energy consumption should be realized, according to the following target schedule and scope:</p> <ul style="list-style-type: none"> ▪ Year 1: 15.99 ktoe ▪ Year 2: 30.94 ktoe (cumulative) ▪ Year 3: 52.58 ktoe (cumulative) ▪ Year 4: 77.33 ktoe (cumulative)
Targets for nearly zero energy buildings for 2020 and 2021	<p>The issue of construction of buildings with almost zero energy consumption has not been addressed in the NEEAP process in BiH, because the conditions for the development of an appropriate strategy and associated action plan have not yet been created. This primarily refers to providing the necessary input data to perform the appropriate analysis. Therefore, targets for buildings with almost zero energy consumption have not yet been set in the planning framework for energy efficiency in Bosnia and Herzegovina.</p>

[Additional energy efficiency targets in Bosnia and Herzegovina](#)

NEEAP indicators

Also, the following table shows the indicative values of key parameters of energy production and consumption in 2020, 2021 and 2030, which are the main indicators for monitoring the implementation of the objectives defined by the NEEAP.

Indicator		Unit	2020	2021	2030
Indicator 1	Total primary energy consumption	ktoe	6,772	6,757	7,123
Indicator 2	Energy transformation - input (electricity production in thermal power plants)	ktoe	2,421	2,320	2,109
Indicator 3	Electricity transformation - output (electricity production in thermal power plants)	ktoe	1333	1,322	1,631
Indicator 4	Energy transformation - output (production of thermal energy in thermal power plants)	ktoe	62.7	60.2	71.3
Indicator 5	Energy transformation - input (cogeneration plants)	ktoe	257	254	322
Indicator 6	Energy transformation - output (heat production in cogeneration plants)	ktoe	18.9	19.4	35.6
Indicator 7	Energy transformation - output (electricity production in cogeneration plants)	ktoe	36.6	37	49.1
Indicator 8	Transmission and distribution losses (aggregate for all energy sources)	ktoe	125.6	126.2	124.6
Indicator 9	Total final energy consumption	ktoe	4,249.3	4,264.5	4,388.1
Indicator 10	Final energy consumption - residential sector	ktoe	1,753.1	1,739.1	1,605.1
Indicator 11	Final energy consumption - services sector	ktoe	421	422.5	432.3
Indicator 12	Final energy consumption - industry	ktoe	574.8	595.5	781.1
Indicator 13	Final energy consumption - transport	ktoe	1,165.2	1,170.2	1,212.6
Indicator 14	Final energy consumption - other (agriculture and forestry) consumption)	ktoe	28	30.2	50
Indicator 15	Final energy consumption - other (final non-energy consumption)	ktoe	70	70	70
Indicator 16	Final energy consumption - other (own consumption of the energy sector)	ktoe	237	237	237

Target values of the main NEEAP indicators

Final energy savings

NEEAP BiH 2019-2021 practically concludes the first nine-year planning period in the field of energy efficiency in Bosnia and Herzegovina, and whose goals were defined by the framework given by the Directive 2006/32/EC on energy services (ESD). According to the ESD, it was necessary to reduce final energy consumption by 9% compared to the baseline defined for the period before 2010. This plan brings the final report on the implementation of the mentioned goals for the period 2010-2018. year.

The following table summarizes the planned and achieved savings in final energy consumption in Bosnia and Herzegovina:

Period	Indicative target of saving final energy		Achieved savings			
			Estimation by TD method		Assessment based on the implementation of measures	
	Absolute amount (PJ)	% (relative to ESD reference consumption)	Absolute amount (PJ)	% (relative to ESD reference consumption)	Absolute amount (PJ)	% (relative to ESD reference consumption)
2012	0.67	0.49%	-	-	-	-
2015	4.63	3.24%	-	-	5.32	3.84%
2018	12.47	9.00%	-	-	8.22	5.93%

Overview of the realization of energy efficiency goals for the period 2010-2018

Moreover, the following table shows the cumulative savings of final energy in individual sectors of final consumption, achieved in the period so far through the implementation of measures planned in NEEAP BiH 2016-2018.

Indicative target for final energy savings in 2021 (PJ), in final consumption sectors (according to APEE BiH 2019–2021)				15.28 PJ							
Indicative target for final energy savings in 2018 (PJ), in final consumption sectors (according to APEE BiH 2016–2018)				12.47 PJ							
Indicative target for final energy savings in 2015 (PJ), in the final consumption sectors (according to the Final Draft of the EEAP BiH 2010–2018)				4.63 PJ							
Sector	Sectoral objectives (PJ)			Cumulative							
				Energy savings achieved in 2015 (PJ)		Expected energy savings in 2018 (PJ) (according to APEE BiH 2016–2018)		Achieved energy savings in 2018 (PJ)		Expected energy savings in 2021 (PJ) (according to APEE BiH 2019-2021)	
	2015	2018.	2020th	Total (TD)	From measures (BU)	Total (TD)	From measures (BU)	Total (TD)	From measures (BU)	Total (TD)	From measures (BU)
Housing sector	on	5.1910	6.3446	-	2.11	-	5.25	-	4.62	-	9.44
Services	on	4.6189	5.6453	-	2.51	-	1.62	-	2.95	-	3.67
Industry	on	1.8690	2.2843	-	0.34	-	4.79	-	0.38	-	0.77
Traffic	on	0.7900	0.9656	-	0.27	-	0.81	-	0.27	-	1.4
Total (PJ)	on	12.4689	15.2400	-	5.23	-	12.47	-	8.22	-	15.28
% (Of the refer . Consumption of 138.56 PJ)	on	9.00%	11.00%	-	3.78%	-	9.00%	-	5.93%	-	11.03%

Overview of the implementation of energy efficiency targets, by final consumption sectors, for the period 2010-2018, with expected targets in 2021

As in the case of collecting data on savings in the process of drafting the NEEAP BiH 2016-2018, here given the problems related to data collection using TD budget indicators, a market analysis was performed. This analysis was performed using the BU methodology according to the "Recommendations for measurement and verification methods within the Directive 2006/32 / EC on Energy end- use efficiency and energy services - European Commission, Directorate General for Energy " to verify savings based on data collected analysis.

The following table presents a summary of planned and expected final energy savings, by final consumption sectors in Bosnia and Herzegovina and within individual measures to save final energy, and an overview of the methodologies used for their calculation.

Final energy consumption sector	Individual EE measures included	Final energy saving calculation methodology	Achieved savings, period 2010-2015. (PJ)	Achieved savings, period 2016-2018. (PJ)	Achieved savings, period 2010-2018. (PJ)	Savings projection, period 2010-2021. (PJ)
			Cumulative			
Residential sector	Measures R1-R5	BU market analysis based on distributed equipment and materials by years 2016–2018.	2.11	2.51	4.62	9.44
	R1: Renovation of the cladding of existing residential buildings and family houses in order to improve their energy performance		0.99	1.01	2.00	3.96
	R2: Improvement of energy performance of existing and installation of energy efficient technical systems in residential buildings and family houses		1.11	1.41	2.52	5.04
	R3: Production of energy from renewable sources in households		0.012	0.01389	0.02589	0.05152
	R4: Construction of new residential buildings and family houses of prescribed energy characteristics		-	-	-	-
	R5: Procurement and use of energy efficient electrical appliances for households		0,00000011	0.06812	0.06812	0.9525
Public and Commercial Services Sector	Measures U1-U7	BU MVP + analysis of the market of distributed equipment and materials by years 2016-2018	2.51	0.44	2.95	3.67
	U1: Renovation of the envelope of existing non-residential buildings in the public and commercial sector in order to improve their energy performance		1.074	0.039	1.113	1.492
	U2: Improving the energy performance of existing and installing new energy efficient technical systems in buildings		1.07	0.11	1.18	1.437
	U3: Renewable energy production in the public and commercial sector		0.356	0.146	0.502	0.473
	U4: Construction of new buildings with prescribed energy characteristics in the public and commercial sector		-	-	-	-
	U5: Procurement and use of energy efficient electrical appliances and lighting in the public and commercial sector		0.000	-	-	-
	U6: Improving the energy efficiency of water supply and wastewater treatment systems in the public and commercial sectors		0.000	-	-	-
	U7: Improving the energy efficiency of street lighting systems		0.0065	0.145	0.1515	0.27
Industry sector	Measures I1-I4	Loan programs with verified measures and analysis of installed HVAC equipment in BiH	0.344	0.04	0.384	0.776

Final energy consumption sector	Individual EE measures included	Final energy saving calculation methodology	Achieved savings, period 2010-2015. (PJ)	Achieved savings, period 2016-2018. (PJ)	Achieved savings, period 2010-2018. (PJ)	Savings projection, period 2010-2021. (PJ)
			Cumulative			
	I1: Increasing the energy efficiency of industrial processes		0.178	0.015	0.193	0.340
	I2: Improving the energy performance of buildings in the industrial sector		-	0.010	0.010	0.108
	I3: Application of cogeneration and trigeneration in industry		0.014	0.0075	0.0215	0.095
	I4: Renewable energy production in the industrial sector		0.152	0.0075	0.1595	0.233
Transport sector	Measures S1-S2	There is no verified tracking method	0.272	-	0.272	1.406
	S1: Use of energy efficient vehicles in road and city traffic		-	-	-	1.021
	S2: Infrastructure measures on the road network with the effects of energy savings		0.272	-	0.272	0.385
Horizontal measures	Measures H1-H13	There is no reliable way to verify savings for these measures	-	-	-	-
SUM			5,236	2,990	8,226	15,292

Summary of planned and expected final energy savings, by final consumption sectors in Bosnia and Herzegovina and within individual final energy saving measures

D. Update of measures implemented in last year

An overview of developments in the energy efficiency sector in Bosnia and Herzegovina, carried out in 2020-2021, with special emphasis on legislative measures, as well as other measures that contribute to the implementation of the set goals, is given in this chapter. It should be emphasized that due to the COVID 19 lock down period in Bosnia and Herzegovina, which lasts most of the mentioned period, there were limited activities in this segment.

A progress overview of the legislative and non/legislative measures implemented in 2020-2021 and is given as follows:

Legislative measures

In the reporting period, there were no amendments to the primary legislation in the field of energy efficiency in Bosnia and Herzegovina. During this period, the Federation of BiH and the Republika Srpska did not adopt any amendments to the Law on Energy Efficiency or Spatial Planning, which would go in line with the transposition of the requirements 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 or Directive 2010/31/EU of the European parliament and of the Council of 19 May 2010 on the energy performance of buildings.

However, in the mentioned period, some of the legislative measures were implemented, at the entity level. These measures were implemented within the laws on energy efficiency in the Federation of BiH and the Republika Srpska. Implemented legislative / planning measures are as follows:

- As a result of the interdepartmental engagement, at the proposal of the Federal Ministry of Energy, Mining and Industry, the Government of the Federation of Bosnia and Herzegovina, at the 254th session of the Government of the Federation of BiH held on February 4, 2021, adopted the **Energy Efficiency Action Plan of the Federation of Bosnia and Herzegovina for the period 2019-2021 (EEAPF)** published in the "Official Gazette of FBiH 11/21 of 4.02.2021. year, in accordance with Article 12 of the Law on Energy Efficiency in FBiH.
- The Government of the Federation of Bosnia and Herzegovina, at the proposal of the Federal Ministry of Energy, Mining and Industry, at its 261st session held on April 1, 2021. year, passed the Conclusion on the adoption of the **Operational Plan for improving energy efficiency in the institutions of the Federation of Bosnia and Herzegovina**, V. number: 624/2021 from 01.04.2021. ("Official Gazette of the Federation of BiH", No. 29/21 and 33/21), all in accordance with Article 13 of the Law on Energy Efficiency in the Federation of BiH ("Official Gazette of the Federation of BiH", No. 29/21).
- Pursuant to Article 91, paragraph 8 of the Law on Spatial Planning and Construction and Article 76, paragraph 2 of the Law on Republic Administration, the Minister of Physical Planning, Construction and Ecology of Republika Srpska, on April 28, 2021, passed the **Rulebook on regular inspections of technical systems for heating, ventilation and cooling of a building**.

According to the Federal Ministry of Energy and Mining, the following energy efficiency legislation is currently being prepared in the Federation of BiH:

- Integrated Energy and Climate Plan (NECP/ECP), i.e. in one of its five parts, which refers to energy efficiency,
- Building renovation strategy of the Federation of BiH,

- Draft Rulebook on conducting energy audits of communal services of the Federation of Bosnia and Herzegovina, based on Article 28, item d) of the Law on Energy Efficiency in the Federation of BiH,
- Draft Rulebook on conducting energy audits in industry in the Federation of Bosnia and Herzegovina, based on Article 16, paragraph 7 of the Law on Energy Efficiency in the Federation of BiH,
- Draft Rulebook on contracting and implementation of energy service / energy performance contract (ESCO) based on Article 42 of the Law on Energy Efficiency in the Federation of BiH,
- within the REEP + project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products (in the FBiH the development of a new, and in the RS amendments to the existing Ordinance),
- within the framework of TA GIZ, development of the Program for improvement of energy efficiency in the residential / residential sector in FBiH in accordance with EEAPF.

In Republika Srpska, the following energy efficiency policy is currently being prepared:

- Integrated Energy and Climate Plan (NECP/ECP), i.e. in one of its five parts, which refers to energy efficiency,
- Energy Efficiency Action Plan of Republika Srpska for the period 2019-2021 (EEAPRS),
- Building renovation strategy of Republika Srpska.

In Brčko district, the Law on Energy Efficiency is in the drafting procedure.

Review of operational measures in the field of energy efficiency

Energy audits and energy management systems

Article 8 of the EED prescribes the obligation to implement the following main policy measures for the implementation of the EED:

- Establishment of transparent and non-discriminatory minimum criteria for energy audits, in accordance with Annex 6 of the EED;
- Development and implementation of training programs for the qualification of experts in performing energy audits;
- Adoption of the regulatory framework for energy auditors and for quality control of their work, and development and implementation of training programs for the qualification of experts in conducting energy audits;
- Promoting the accessibility of high-quality energy audits that meet the criteria set out in Annex 6 of the EED, among all categories of final energy consumers;
- Establishment of an obligation to large enterprises (which do not belong to SMEs) to perform regular energy audits in accordance with the criteria from Annex 6 of the EED, and development of a list of enterprises to which this obligation applies;
- Development and implementation of programs to encourage SMEs to perform energy audits, implementation of energy efficiency measures recommended on the basis of these audits and introduction of energy management; Presenting to SMEs concrete examples illustrating the benefits that the introduction of an energy management system would bring to their business;

Development and implementation of advisory services programs for households, in order to increase their awareness of the benefits that would bring them to conduct energy audits of their housing units.

At the level of competence of Bosnia and Herzegovina, the following measures in this area have been implemented in the past period:

- The establishment of the Energy Management System and the Energy Efficiency Information System in the institutions of Bosnia and Herzegovina is underway. In this sense, the following activities were implemented:

- The Decision on the Establishment of the Energy Management System and the Energy Efficiency Information System in the Institutions of Bosnia and Herzegovina was adopted¹;
- Representatives of UNDP BiH, the Embassy of Sweden in BiH and the Ministry of Foreign Trade and Economic Relations of BiH are on July 30, 2019. signed the Agreement on additional financing within the GED II program, in the amount of 1.2 million KM. which will enable the management of energy consumption in public institutions at the level of BiH. The project plans to establish energy management and databases within the information system for more than 40 buildings used by BiH or owned by BiH, training of over 80 energy associates and managers in all these institutions and procurement of necessary IT equipment.

In the Federation of BiH, a large part of the requirements listed in the Directive, Article 8, have been implemented through current legislation through the Regulation on conducting energy audits and issuing energy certificates.²; Ordinance on minimum requirements for energy performance of buildings³; Decree on the conditions for granting and revoking authorizations for conducting energy audits and energy certification of buildings⁴; Ordinance on regular energy audit of heating and air conditioning systems⁵, and all remaining obligations related to conducting audits in industry and defining obligations for large consumers should be defined by bylaws, all in accordance with the Law on Energy Efficiency in the FBiH.

At the level of competencies of the Republika Srpska in the past period, the following measures have been implemented in this area:

- The establishment of the Energy Management System and the Energy Efficiency Information System in the Republic of Srpska is in progress. In this sense, the following activities have been implemented:
 - The establishment of regulations on the energy management system and energy efficiency information system in the public sector of the Republika Srpska is envisaged.
 - This regulation should prescribe the obligations of the holders of energy management activities, management of the Energy Efficiency Information System, and reporting on energy consumption and savings in public sector buildings.
 - The Fund, UNDP and GIZ are launching a training program that will enable the management of energy consumption in public buildings in Republika Srpska. The project plans to establish energy management and databases within the information system in all public buildings at the level of Republika Srpska, which includes training of over 100 energy associates and managers in all these institutions and procurement of necessary IT equipment.

So far, no activities have been carried out in the Brčko District of BiH on the establishment of appropriate programs for training persons for energy audits and energy certification of buildings, utilities and industrial plants and production processes, and on the establishment of energy management systems in these sectors of final energy consumption.

The registers of energy certificates of buildings, which have been established in the Republika Srpska and in the Federation of BiH, show that a total of 1203 energy audits of buildings have been performed in Bosnia and Herzegovina so far, i.e. 1203 certificates have been issued. This number does not include energy audits of buildings under the jurisdiction of government institutions at the level of Bosnia and Herzegovina and buildings in the Brčko District of BiH, due to the failure to establish an energy management system and appropriate energy efficiency information systems. There are no data on the number of energy audits of the utility system. industrial plants and production processes, because in

¹Official Gazette of BiH no. 48/19

² Official Gazette of FBiH 87/18

³ Official Gazette of FBiH 81/19

⁴ Official Gazette of FBiH 87/18

⁵ Official Gazette of FBiH 28/19

the Federation of BiH, Republika Srpska and Brčko District of BiH, energy management systems and appropriate information systems for these sectors of final energy consumption have not yet been established.

The plan of priority measures that will be implemented in the coming period in Bosnia and Herzegovina, having in mind the relevant obligations under Directive 2012/27 / EU and the current situation in this area includes the following areas:

- Energy management system and energy efficiency information system in government institutions
- Energy inspection system in residential and non-residential buildings
- Energy management in the public sector
- Energy management in utilities
- Encouraging SMEs to apply energy management

Measurement and billing of consumption

The aim of these measures is to motivate consumers of electricity, gas and heating energy, to use energy rationally and to take appropriate energy efficiency measures. The key obligations set out in Article 9 ("Measurement of energy consumption") are as follows:

- To, as far as technically possible, financially justified and proportional to the potential volume of savings - end customers of electricity, natural gas, district heating and cooling and hot water for households, provide individual meters purchased at competitive prices, which accurately reflect the actual end-user energy consumption and provide real-time energy use information. The installation of such meters is mandatory in the case of replacement of the existing meter to the extent technically possible and financially justified, then when connecting new buildings. and at a significant level of renovation of existing buildings in accordance with the provisions of Directive 2010/31 / EU (EPBD).
- For buildings connected to the district heating, cooling and hot water supply system or to the central system that supplies several buildings, it is mandatory to install energy or hot water meters on the heat exchanger or delivery point, or to introduce a system of measuring consumption and billing according to actual consumption.

Article 10 ("Energy billing information") stipulates that, if end customers do not have smart meters, the information on billing their energy consumption must be accurate and based on actual consumption and comply with the requirements of Annex VII of Directive 2012/27/EU. It is also stipulated that end customers must have easy access to information on their energy consumption in the past period of at least 3 years (for cumulative data) or two years (for detailed data), or from the date of signing the energy supply contract if it is shorter period.

Article 11 ("Costs of access to energy metering and billing information") stipulates that end customers must receive all their bills and billing information free of charge, and must have access to their consumption data free of charge and in an appropriate manner.

The area of electricity distribution in Bosnia and Herzegovina is under the jurisdiction of the entities and the Brčko District of BiH. In the field of electricity consumption in Bosnia and Herzegovina, all customers already have individual meters that read the actual energy consumed, which is invoiced and charged. On the websites of electricity distribution companies in the Federation of BiH and in the Republika Srpska that supply electricity, customers have publicly available information on electricity prices and price structure, electronic insight into the account balance, overview of consumption for the past period, consumption calculator, inquiries and complaints, documents and forms, tips for rational use and saving of energy and the like. Electronic services such as e-invoice and SMS account balance are also available to customers.

As for the Brcko District of BiH, the supply of electricity to end customers is the responsibility of the PE "Communal Brcko". In this company, the project of introducing a remote reading system and

managing electricity consumption (Automatic Meter Management System - AMMS) is underway. This advanced metering system includes Smart Metering as an integral part of the advanced energy network (Smart Grid). From 2016 to 2020, it is planned to install 22,000 smart meters for electricity customers, with the goal that at the end of the project, 80% of customers of all categories will be included in AMMS. The introduction of a system of remote reading and control of meters, in combination with web presentation technology, will enable electricity customers to have access to information on the Internet portal,

In Bosnia and Herzegovina so far, the problem of heating has been mostly solved only at the local level, in individual municipalities and cities in the Republika Srpska, the Federation of BiH and the Brčko District of BiH. The legal framework that would regulate this area does not exist at the level of Bosnia and Herzegovina, or at the entity levels, or in the Brčko District of BiH. As far as the district heating system is concerned, one of the biggest problems facing this sector is the lack of a regulatory framework, primarily the law on district heating and the ordinance on tariff rates. As stated in the final draft of the study "Potential Assessment for the Application of Highly Efficient Cogeneration and Heating and Cooling in Bosnia and Herzegovina" (Sarajevo, November 2018), "Over 80% of the housing stock supplied with thermal energy from the district heating system pays the costs in lump sums per m² of heated space. The activity of heat supply is done according to the principle of production and delivery of energy (MWh) and tariff system KM/m². About 20% of the residential sector in BiH that is on district heating pays for energy according to consumption, where individual heat suppliers have their own tariff rates. Of the total number of district heating systems analyzed in this regard, only two companies charge for heat consumption exclusively according to actual consumption, ie KM / MWh. These are the systems located in Gračanica and Livno, where each facility for which thermal energy is delivered is equipped with a system for measuring the delivered amount of thermal energy. In contrast, a total of 6 systems, which are located in Travnik, Breza, Kakanj (Federation of BiH) and Gradiška, East Sarajevo and Palam (Republika Srpska) are charged exclusively on a flat rate per heated area (KM / m²). The remaining companies charge in combination. Newly built facilities or facilities in which the heating system has been reconstructed have built-in systems for measuring the delivered thermal energy, and in such cases the payment is made according to the actual consumption. "

The plan of priority measures that will be implemented in the coming period in Bosnia and Herzegovina, having in mind the relevant obligations under Directive 2012/27/EU and the current situation in this area includes the following areas:

- Technical and economic justification for the introduction of energy metering systems for end customers
- Measurement and billing according to actual consumption in district heating systems. cooling and hot water supply
- Intelligent systems for measuring electricity and gas supply

Consumer information and training

In the past period, the following activities and programs in this area have been implemented in Bosnia and Herzegovina:

- Several information platforms have been established on the websites of relevant institutions and within various programs to increase energy efficiency supported by international development organizations, which, among other things, contain information and advice in the field of energy efficiency for citizens and other categories of consumers.
- The website "Green Economic Development" was formed within the project of the same name and which contains, among other things, a large amount of information for citizens and other energy efficiency actors (information on the project and project news, information on various energy efficiency measures and their energy and financial effects). and tips for energy efficiency in the apartment, house, workplace and public building managers, as well as appropriate brochures. Professor Atom.

- Websites of electricity distribution companies, which, in addition to other information for households and other electricity consumers, also provide advice to customers on how to rationally use electricity and how to reduce bills by the way they consume;
- Technical and financial information on energy efficiency measures in the housing sector, posted on the websites of banks and micro-credit institutions in the framework of information on loans to increase energy efficiency, which are available to citizens and businesses under energy efficiency programs financed by international financial institutions;
- Within the implementation of the existing alternative energy efficiency programs, several educational and entertainment events were organized, with the aim of informing citizens about the ways and possibilities of smart energy use, saving money and environmental protection.
- Several conferences, educational programs and workshops in the field of energy efficiency have been organized, for representatives of the public and private sector, key actors in energy efficiency.

Qualification, accreditation and certification systems

Article 16 of the EED prescribes the obligation to establish certification or accreditation programs and/or equivalent educational programs for energy service providers, energy auditors, energy managers and installers of energy-related parts of buildings (building envelope elements and technical building systems, in accordance with Article 2 (9) of Directive 2010/31 / EU). These programs must be reliable, contribute to the achievement of energy efficiency goals, and must be publicly available.

In the past period, the following activities and programs in this area have been implemented in Bosnia and Herzegovina:

- In the Republika Srpska and the Federation of BiH, training programs have been established for persons performing energy audits of buildings. In both entities, the establishment of training programs for persons performing energy audits of heating and air conditioning systems, as well as in industry, as well as programs for training and certification of energy managers in public buildings and in industry.
 - In the period from October 2018 to June 2019, within the project "Promotion of energy efficiency in BiH" in the Federation of BiH and in the Republika Srpska **realized educational program called "NovEE buildings - for savings"**. The program was implemented in the organization of the entity ministries, with the support of the German Society for International Cooperation (GIZ). The aim of the training was to strengthen the technical capacity and knowledge of key energy efficiency actors in the building sector and train them to effectively implement the requirements of EU directives and newly established domestic legislation. Participants in the training were employees of municipal and city departments in charge of issuing building permits and authorized design bureaus, auditors of project documentation, supervisory bodies in the process of construction and installation works, members of commissions for technical acceptance of performed works and employees of construction companies. construction and installation works. A total of 171 participants, representatives of these institutions and companies, successfully completed the training.
 - In the period from 2014 to 2018, within the project "Green Economic Development - GED", regular annual trainings of construction, mechanical and electrical professionals who within their job description in the public or private sector work or should work in the field of energy efficiency. At these trainings, engineers had the opportunity to expand their knowledge with new achievements in the field of energy efficiency, renewable energy sources and energy management, sustainable construction, and relevant regulations, technical regulations and standards. In the

three-year period 2014-2016, this educational program was realized under the name "**Professional development program for engineers**", And in 2017 and 2018 as "**Program for financing energy reduction projects and the use of RES as an EE measure in the public and private sector through a revolving fund**". Every year, this training was attended by an average of 150-200 participants, in 2014 and 2015 the training was organized in Bihać, Sarajevo, Tuzla and Mostar, in 2016, in addition to these locations, it also included Banja Luka and Trebinje, and in 2017 and 2018 It was held in Tuzla, Bihać, Zenica, Medjugorje, Mostar, Sarajevo, Banja Luka, Bijeljina, Trebinje and Teslić.

Energy services

Article 18 of the EED prescribes the obligation to promote the energy services market and provide access to that market for small and medium-sized enterprises, primarily in the following ways:

- By disseminating clear and accessible information on: (a) energy service contracts and clauses that should be included in such contracts, in order to guarantee energy savings and the rights of end customers; and (b) available financial instruments, incentives, grants and loans to support projects related to energy efficiency services.
- By making available to the public updated lists of qualified energy service providers, or by establishing communication platforms through which energy service providers can inform stakeholders; and
- Encouraging the public sector to accept offers for energy services, in particular those relating to the energy renovation of buildings, by: (a) providing a publicly available model energy service contract, developed in accordance with the requirements of Annex XIII of the EDD; and (b) providing information on best practices in energy efficiency contracting, including cost-benefit analyzes of the life span of buildings.

Article 18 also prescribes the obligation to support the proper functioning of the energy services market, namely: (a) by establishing publicly available contact points where end customers can obtain all necessary information; (b) if necessary, by removing regulatory and non-regulatory barriers that prevent the introduction of energy service contracts and other models of energy efficiency services for the implementation of energy saving measures; (c) considering the possibility of establishing an independent mechanism, such as an ombudsman institution, to enable effective resolution of complaints and out-of-court settlement of disputes arising from energy service contracts, and (d) enabling independent market intermediaries to play a role in market development on the supply side and demand.

The signatory countries of the Energy Community Treaty must also prevent the activities of energy distributors, distribution system operators and energy retailers which could hinder or impede the demand for energy services or other energy efficiency improvement measures, or which could hinder or disable market development for these services and measures. Such measures include, for example, the abuse of their dominant position or the obstruction of market access by their competitors.

Existing entity energy efficiency laws recognize the ESCO model and energy service contracts that guarantee energy savings by increasing energy efficiency. However, the market for energy services in Bosnia and Herzegovina has not yet been established, due to a number of regulatory and non-regulatory barriers.

Within the Regional Energy Efficiency Program for the Western Balkans (REEP), which provides, among other things, technical support for the establishment of the ESCO model, the EBRD and the Energy Community Secretariat are:

- Identify legal obstacles to the establishment of the energy services market in the existing regulatory framework of Bosnia and Herzegovina, including the Federation of BiH, and
- Created models of energy performance contracts and submitted them to the competent institutions for adoption.

The potential for the development of the ESCO market in Bosnia and Herzegovina is significant and primarily includes the following areas:

- Performing energy audits of buildings in the residential sector, and the public and commercial services sector;
- Performing energy audits of heating and air conditioning systems;
- Energy efficiency improvement programs for large energy consumers;
- Programs from the obligations of energy distributors, distribution system operators and energy suppliers;
- Energy effect contracting (ESCO model);
- Energy effect monitoring and verification.

However, **currently there are still no preconditions for the formation of the ESCO market, as well as for the conclusion of energy performance contracts, due to the non-compliance of the relevant legislation and numerous non-regulatory barriers.** The accompanying bylaws to the existing entity laws on energy efficiency, as well as amendments to the Law on Public Procurement of BiH, which would regulate the procurement of energy services, have not been adopted. Budget legislation is also inadequate, especially due to the impossibility of multi-year budgeting. The necessary mechanisms for measuring energy consumption in the heating sector have not been established, where, for example, the payment of delivered thermal energy is still not made according to the amount of delivered energy. Key players in the energy services market are not familiar with this concept.

Meeting EPBD requirements

Entity ministries should provide appropriate financial and other instruments to improve the energy efficiency of buildings and the transition to near-zero energy buildings. The building renovation strategy, when providing incentives for construction or significant renovation of buildings, considers cost-optimal levels of energy efficiency by meeting the minimum requirements that are in line with the Cost-optimal analysis. It also provides a list of existing and planned savings measures for both required and final energy in the building sector. Several programs related to non-residential buildings are currently being implemented at the entity level financed by the International Financial Institutions (EBRD), but opportunities are also opening up to support the same institutions for the non-residential sector (WB, EIB).

- EPBD.BiH.1: Determining the methodology for calculating the energy performance of buildings

EPBD.BiH.1.1		
Requirement that the methodology for calculating the energy performance of buildings, according to the general framework as set out in the EPBD, be included in the relevant legislative framework, and that the necessary resources and instruments be provided for its development and implementation.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Partially ▪ Rulebook on minimum requirements for energy efficiency of buildings⁶ ▪ The mentioned methodology implies the calculation of the required energy $Q_{h,nd}$. Assumptions for defining the budget delivered by E_{del} and primary E_{pr} have not been met. 	<ul style="list-style-type: none"> ▪ Partially ▪ Rulebook on the methodology for calculating en. characteristic of buildings⁷ ▪ The mentioned methodology implies the calculation of the required energy $Q_{h,nd}$. Assumptions for defining the budget delivered by E_{del} and primary E_{pr} have not been met.

⁶ "Official Gazette of FBiH", 81/19

⁷"Official Gazette of RS" 30/15

EPBD.BiH.1.2		
Development of national annexes as an annex to the calculation methodology		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ No ▪ There are no national appendices as an annex to the budget methodology 		
EPBD.BiH.1.3		
Adoption of relevant CEN standards that support the application of the methodology		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Yes ▪ Adopted CEN standards at the Agency of standards (BAS) ▪ Lack of translated documents. 		
EPBD.BiH.1.4		
Development and application of climate database		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Yes ▪ Climate database developed through the GIZ project "Promotion of energy efficiency in BiH" and is applied. 		
EPBD.BiH.1.5		
Development and application of software for calculation of energy performance of buildings		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ National software developed. Other commercial software applications in use. 	<ul style="list-style-type: none"> ▪ Commercial software applications in use. There is no national software.
EPBD.BiH.1.6		
Training of experts related to budget methodology and software application		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Yes ▪ carried out regularly 	<ul style="list-style-type: none"> ▪ Yes ▪ carried out regularly
EPBD.BiH.1.7		
Establishment of software support centers		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ On a commercial basis 	<ul style="list-style-type: none"> ▪ On a commercial basis

- EPBD.BiH.2: Determining minimum requirements for energy performance of buildings

EPBD.BiH.2.1		
Decision on the beginning of the development of minimum requirements for the energy performance of buildings, and the provision of the necessary funds.		
Selecting and defining the approach that will be used to determine the minimum requirements for the energy performance of buildings		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ yes 	<ul style="list-style-type: none"> ▪ yes

	<ul style="list-style-type: none"> Rulebook on minimum requirements for energy efficiency of buildings⁸ 	<ul style="list-style-type: none"> Rulebook on minimum requirements for energy performance of buildings⁹
EPBD.BiH.2.2		
<p>Defining input values for the purpose of cost-optimal calculations. Implementation of energy cost calculations. Determining cost-optimal levels for energy performance of buildings. Harmonization of regulations with the requirements of minimum requirements for energy performance of buildings.</p>		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Yes cost-optimal level included in the minimum energy performance requirements 	<ul style="list-style-type: none"> Yes cost-optimal level included in the minimum energy performance requirements
EPBD.BiH.2.3		
<p>Harmonization of regulations with the requirements of minimum requirements for energy performance of buildings</p>		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Regular progress Implemented by the Federal ministry of spatial planning 	<ul style="list-style-type: none"> Regular progress Implemented by the Ministry of Spatial planning, construction and ecology of Republika Srpska
EPBD.BiH.2.4		
<p>Harmonization of routines and specifications for documenting and verifying the energy performance of buildin</p>		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Regular progress Implemented by the Federal ministry of spatial planning 	<ul style="list-style-type: none"> Regular progress Implemented by the Fund for Environmental protection and energy efficiency of Republika Srpska

- EPBD.BiH.3: Building energy certification system

EPBD.BiH.3.1		
<p>Request to determine the necessary measures for the establishment of a system for energy certification of buildings, as required by the EPBD, and its inclusion in the appropriate legislative framework, and to provide the necessary resources and resources for its development</p>		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> yes Law on Energy Efficiency¹⁰ 	<ul style="list-style-type: none"> yes Law on Spatial Planning and Construction¹¹
EPBD.BiH.3.2		
<p>Development and adoption of regulations for energy certification of buildings. Establishment of an organizational model for the implementation of the building energy certification system (EPC development, certification, quality control, information provision, training and accreditation of experts, reporting, etc.).</p>		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> yes

⁸ "Official Gazette of FBiH", No. 81/19

⁹ Official Gazette of RS 40/13

¹⁰ "Official Gazette of FBiH", No. 22/17

¹¹"Official Gazette of RS", no. 40/2013, 2/2015 - US decision, 106/2015 and 3/2016 - corrected, 104/2018 - US decision and 84/2019)

	<ul style="list-style-type: none"> Regulation on conducting energy audits reviews and issues energy certificates ¹² 	<ul style="list-style-type: none"> Rulebook on conducting energy audits of buildings and issuing energy certificates ¹³
EPBD.BiH.3.3		
Development of a guide for the implementation of energy certification of buildings.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Yes Federal ministry of spatial planning 	<ul style="list-style-type: none"> yes Fund for environmental protection and energy efficiency of Republika Srpska.
EPBD.BiH.3.4		
Development of certification tools.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Yes Energy certificates register operational Federal ministry of spatial planning 	<ul style="list-style-type: none"> Yes Energy certificates register operational Fund for environmental protection and energy efficiency of Republika Srpska.
EPBD.BiH.3.5		
Expert training and accreditation.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Regular progress Implemented by the Federal ministry of spatial planning 	<ul style="list-style-type: none"> Regular progress Implemented by the Fund for Environmental protection and energy efficiency of Republika Srpska
EPBD.BiH.3.6		
Establishment of an independent control system and certificate register.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Regular progress Implemented by the Federal ministry of spatial planning 	<ul style="list-style-type: none"> Regular progress Implemented by the Fund for Environmental protection and energy efficiency of Republika Srpska

- EPBD.BiH.4: Regular inspections of heating and ventilation systems

EPBD.BiH.4.1		
Request to identify the necessary measures to establish a system of regular inspections of heating and ventilation systems, as required by the EPBD, and its inclusion in the appropriate legislative framework, and to provide the necessary resources and resources for its development		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> yes Law on Energy Efficiency¹⁴ 	<ul style="list-style-type: none"> yes Law on Spatial Planning and Construction¹⁵
EPBD.BiH.4.2		
Development and adoption of regulations for regular inspections of heating and ventilation systems.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> yes Rulebook on regular inspections of technical systems for heating,

¹² Official Gazette of the Federation of BiH, No. 87/18

¹³ Official Gazette of RS" no. 30/15

¹⁴ "Official Gazette of FBiH", No. 22/17

¹⁵ "Official Gazette of RS", no. 40/2013, 2/2015, 106/2015, 3/2016, 104/2018 and 84/2019)

	<ul style="list-style-type: none"> ▪ Rulebook on regular energy inspection of heating and air conditioning systems¹⁶ 	ventilation and cooling of a building ¹⁷
EPBD.BiH.4.3		
Establishment of an organizational model for conducting a system of regular inspections of heating and ventilation systems (quality control, information provision, training and accreditation of experts, reporting, etc.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Not operational 	<ul style="list-style-type: none"> ▪ Not operational

- EPBD.BiH.5: Promotion and support in the implementation of EPBD requirements

EPBD.BiH.5.1		
Defining rules and sanctions for non-implementation of legal provisions and their inclusion in the legal framework.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ yes ▪ Law on Energy Efficiency¹⁸ 	<ul style="list-style-type: none"> ▪ yes ▪ Law on Spatial Planning and Construction¹⁹
EPBD.BiH.5.2		
Establishment of a system for monitoring the implementation of requirements and sanctions.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Minimum requirements for energy performance of buildings Efficiency Requested at construction permitting stage (not fully implemented at cantonal/municipal level) ▪ Energy certification Requested at use permitting stage (not fully implemented at cantonal/municipal level) ▪ Regular inspections Not implemented 	<ul style="list-style-type: none"> ▪ Minimum requirements for energy performance of buildings Efficiency Requested at construction permitting stage (in progress) ▪ Energy certification Requested at use permitting stage (in progress) ▪ Regular inspections Not implemented
EPBD.BiH.5.3		
Information campaigns for building owners or tenants on different methods and practices of improving the energy performance of buildings.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Planned to be a part of informational campaigns at Energy efficiency program for residential sector ▪ Program carrier: Fund for environmental protection of FBiH 	<ul style="list-style-type: none"> ▪ Planned to be a part of informational campaigns at Energy efficiency program for residential sector ▪ Program carrier: Fund for environmental protection of RS

Renovation of buildings

The long-term strategy for the renovation of the BiH building stock covers the period up to 2050. In order to achieve the strategic goals of reducing energy consumption in buildings, the adoption of a key energy renovation program for the period from 2021 to 2030 is envisaged for apartment buildings,

¹⁶ "Official Gazette of FBiH", No. 72/19

¹⁷ "Official Gazette of RS" no. 44/21

¹⁸ "Official Gazette of FBiH", No. 22/17

¹⁹ "Official Gazette of RS", no. 40/2013, 2/2015, 106/2015, 3/2016, 104/2018 and 84/2019)

family houses and public buildings, and guidelines for the development of these programs are given below. For commercial sector buildings, the adoption of a new program based on co-financing and / or finding solutions for poor households is envisaged. It is also envisaged that this segment of the building stock will be covered by the activities of suppliers under the system of obligation schemes as well as the energy services market. In addition to these programs, which are based on financial incentives, the implementation of a comprehensive program for the promotion of nZEB construction and renovation standards is also planned.

- SOZ.BiH.1: Adoption of the Integrated Building Renovation Strategy in Bosnia and Herzegovina and entity strategies

SOZ.BiH.1.1		
Confirmation of key participants and data sources.		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> No State level working group was not established 	<ul style="list-style-type: none"> Yes Entity working group established 	<ul style="list-style-type: none"> No Entity working group was established
SOZ.BiH.1.2		
Adoption of technical and economic assessments listed in the strategy for entity levels.		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Yes Through GIZ technical assistance 	<ul style="list-style-type: none"> Yes Through GIZ technical assistance 	<ul style="list-style-type: none"> Yes Through GIZ technical assistance
SOZ.BiH.1.3		
Determining the policy for the implementation of the strategy or program for the renovation of both residential and non-residential buildings.		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> No No formal decision on the strategy. No formal decision on the program. 	<ul style="list-style-type: none"> Partially The Government program 2021 envisaged the drafting of the strategy The program is envisaged to be carried by the Fund of environmental protection – no formal decision up to date. 	<ul style="list-style-type: none"> Partially The Law on Spatial Planning and Construction²⁰ prescribed the adoption of the strategy The program is envisaged to be carried by the Fund of environmental protection and energy efficiency – no formal decision up to date.
SOZ.BiH.1.4		
Publication of the Strategy and its delivery to all participants in the process.		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Not in that stage of the drafting process. 	<ul style="list-style-type: none"> Not in that stage of the drafting process. 	<ul style="list-style-type: none"> Not in that stage of the drafting process.

- SOZ.BiH.2: Determining the policy for the implementation of the Strategy
The purpose of policy setting for the implementation of the strategy is primarily to assess the current political environment affecting building renovation, and to identify policy changes and additional policies that will need to be enacted to launch the building renovation market. It is necessary through the building renovation program:

SOZ.BiH.2.1		
Establish full-spectrum support for in-depth renovation of buildings through the renovation program		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a full-spectrum support for in-depth 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a full-spectrum support for in-depth renovation of buildings through

²⁰Official Gazette of RS", no. 40/2013, 2/2015, 106/2015, 3/2016, 104/2018 and 84/2019)

	renovation of buildings through the renovation program provided by the program carrier: The Fund of environmental protection	the renovation program provided by the program carrier: the Fund of environmental protection and energy efficiency
SOZ.BiH.2.2		
Establish an independent commission to monitor and report on the progress of the strategy on a long-term basis, including making recommendations for its improvement and periodic amendments		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Not in that stage of the process. 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a full-spectrum support for in-depth renovation of buildings through the renovation program provided by the program carrier: The Fund of environmental protection 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a full-spectrum support for in-depth renovation of buildings through the renovation program provided by the program carrier: the Fund of environmental protection and energy efficiency
SOZ.BiH.2.3		
Undertake a systematic assessment of barriers to reconstruction in each market segment		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Not in that stage of the process. 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have an independent commission to monitor and report on the progress of the strategy on a long-term basis, including making recommendations for its improvement and periodic amendments provided by the program carrier: The Fund of environmental protection 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have an independent commission to monitor and report on the progress of the strategy on a long-term basis, including making recommendations for its improvement and periodic amendments provided by the program carrier: the Fund of environmental protection and energy efficiency
SOZ.BiH.2.4		
Establish a poverty reduction target by improving energy efficiency in the housing stock		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Not in that stage of the process. 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have an identified poverty reduction target by improving energy efficiency in the housing stock provided by the program carrier: The Fund of environmental protection 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have an identified poverty reduction target by improving energy efficiency in the housing stock provided by the program carrier: the Fund of environmental protection and energy efficiency
SOZ.BiH.2.5		
Holistically develop inter-political goals and achieve them in related areas, such as sustainable development and urbanization, resource efficiency, sustainable construction, etc		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Not in that stage of the process. 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a Holistically develop inter-political goals and achieve them in related areas, such as sustainable development and urbanization, resource efficiency, sustainable 	<ul style="list-style-type: none"> Not in that stage of the process. It is envisaged to have a Holistically develop inter-political goals and achieve them in related areas, such as sustainable development and urbanization, resource efficiency, sustainable construction, etc. provided by the program carrier: the Fund of

	construction, etc. provided by the program carrier: The Fund of environmental protection	environmental protection and energy efficiency
SOZ.BiH.2.6		
Establish a broad group of participants as a forum for consultation, policy formulation and feedback on practical issues and obstacles to reconstruction		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Not in that stage of the process. 	<ul style="list-style-type: none"> ▪ Not in that stage of the process. ▪ It is envisaged to have an establish broad group of participants as a forum for consultation, policy formulation and feedback on practical issues and obstacles to reconstruction provided by the program carrier: The Fund of environmental protection 	<ul style="list-style-type: none"> ▪ Not in that stage of the process. ▪ It is envisaged to have an establish broad group of participants as a forum for consultation, policy formulation and feedback on practical issues and obstacles to reconstruction provided by the program carrier: the Fund of environmental protection and energy efficiency
SOZ.BiH.2.7		
Demonstrate a leading role by accelerating the in-depth renovation of public buildings, thus developing supply chain capabilities and providing a knowledge base for the commercial activities involved in the renovation process		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Not in that stage of the process. 	<ul style="list-style-type: none"> ▪ Not in that stage of the process. ▪ It is envisaged to demonstrate a leading role by accelerating the in-depth renovation of public buildings, thus developing supply chain capabilities and providing a knowledge base for the commercial activities involved in the renovation process provided by the program carrier: The Fund of environmental protection 	<ul style="list-style-type: none"> ▪ Not in that stage of the process. ▪ It is envisaged to demonstrate a leading role by accelerating the in-depth renovation of public buildings, thus developing supply chain capabilities and providing a knowledge base for the commercial activities involved in the renovation process provided by the program carrier: the Fund of environmental protection and energy efficiency

- SOZ.BiH.3: Establishing a sustainable legislative framework for the implementation of the Strategy

SOZ.BiH.3.1		
Identify turning points and develop appropriate regulations that can be used to encourage energy efficiency measures or that require their introduction		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ Yes ▪ Included in the EPBD transposition process 	<ul style="list-style-type: none"> ▪ Yes ▪ Included in the EPBD transposition process
SOZ.BiH.3.2		
Introduce energy efficiency obligation schemes as an incentive to start the building renovation process		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ No progress reported 	<ul style="list-style-type: none"> ▪ No progress reported
SOZ.BiH.3.3		
Provide incentives to social categories to improve the energy performance of residential buildings		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ No progress reported 	<ul style="list-style-type: none"> ▪ No progress reported

SOZ.BiH.3.4		
Address restrictive practices related to the implementation of low-carbon technologies to ensure the establishment of a favorable environment for buildings with integrated renewable energy sources		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.3.5		
Implement measures to overcome the restrictive policy in the housing sector that prevents activities to improve the energy performance of buildings		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

- SOZ.BiH.4: Establishing a sustainable technical framework for the implementation of the Strategy

SOZ.BiH.4.1		
Develop appropriate standards that will effectively respond to new challenges using experience and new technological solutions		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.4.2		
Analyze the potential for district heating systems to produce efficient low carbon energy		
BiH level	Federation of BiH	Republika Srpska
	▪ Yes ▪ Several potential maps available	▪ Yes ▪ Several potential maps available
SOZ.BiH.4.3		
Ensure proper monitoring and enforcement in accordance with building regulations		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.4.4		
Develop packages of measures that can be easily replicated in similar types of buildings		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.4.5		
Introduce quality standards, certification systems for installers and product		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

- SOZ.BiH.5: Establishing a sustainable fiscal / financial framework for the implementation of the Strategy

SOZ.BiH.5.1		
Establish secure sources of funding, including those set out in Article 20 of the EED, as well as funding from European Union and other international sources, and develop mechanisms that use private capital efficiently		
BiH level	Federation of BiH	Republika Srpska
	▪ In progress ▪ Technical assistance provided by GIZ	▪ In progress ▪ Technical assistance provided by GIZ
SOZ.BiH.5.2		
Identify the factors by which public savings save indirect benefits (eg health, employment)		

BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.5.3		
Develop financing models tailored to specific market segments, which provide simple ("one-stop-shop") and commercially attractive sources of financing for building renovation		
BiH level	Federation of BiH	Republika Srpska
	▪ In progress ▪ Technical assistance provided by GIZ	▪ In progress ▪ Technical assistance provided by GIZ
SOZ.BiH.5.4		
Develop mechanisms to encourage building renovation through third party funding, eg ESCO and EPC		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.5.5		
Remove incentives to use fossil fuels to eliminate side effects that discourage investment		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

- SOZ.BiH.6: Communication and capacity building for the implementation of the Strategy

SOZ.BiH.6.1		
Establish publicly available databases showing the energy efficiency of renovated buildings and information on how to undertake renovations		
BiH level	Federation of BiH	Republika Srpska
	▪ In progress ▪ Technical assistance provided by GIZ	▪ In progress ▪ Technical assistance provided by GIZ
SOZ.BiH.6.2		
Develop skills and training programs covering key occupations and disciplines		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.6.3		
Establish networks for the exchange of experience and knowledge with neighboring regions and countries		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.6.4		
Encourage the development of local industry and the supply chain in order to achieve macroeconomic benefits and reduce CO2 emission		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
SOZ.BiH.6.5		
Develop promotional activities that provide building owners with better and more meaningful information on the effects of building renovation		
BiH level	Federation of BiH	Republika Srpska
	▪ In progress ▪ Technical assistance provided by GIZ	▪ In progress ▪ Technical assistance provided by GIZ
SOZ.BiH.6.6		
Establish regular communication with the public about the progress of the reconstruction strategy		

BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

- SOZ.BiH.7: Promotion and support to the development and scientific research framework for the implementation of the Strategy

SOZ.BiH.2.1		
Support scientific research, development and demonstration projects related to the development of new and improvement of existing technologies and techniques that can be used in the renovation of buildings, including best practices		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

Eco-labeling and energy labeling of devices

Additional energy efficiency measures in buildings and appliances, within the scope of this plan, relate to the implementation of the framework defined by Regulation (EU) 2017/1369 of the European Parliament and of the Council establishing a framework for energy efficiency labeling and repealing Directive 2010/30 / EU. This Regulation, by Decision of the Ministerial Council 2018/03 / MC of the Energy Community of 29 November 2018, became part of the package of energy efficiency legislation of the signatory countries to the Energy Community Treaty. In this regard, Bosnia and Herzegovina has an obligation to establish a framework for energy labeling and to adopt certain regulations on energy-related products.

This Regulation establishes a framework applicable to energy-related products ("products") placed on the market or put into service. It provides for the labeling of these products and the provision of standardized product information in terms of energy efficiency, energy consumption and other product resources during use and additional product information, allowing customers to choose more efficient products to reduce their energy consumption.

The framework applicable to energy-related products includes the following elements:

- General obligations of suppliers;
- Obligations of suppliers in relation to the product database;
- Other obligations of suppliers and traders;
- State obligations;
- Market surveillance and control of products entering the market;
- Product database, etc.

The following are the main energy efficiency policy measures related to eco-labeling and energy labeling of devices that need to be implemented to establish a framework for energy labeling of products in Bosnia and Herzegovina.

- ECOL.BiH.1: Market assessment and selection of priority product groups

ECOL.BiH.1.1		
Review of existing regulations and protocols related to market surveillance		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products
ECOL.BiH.1.2		
Assessment of product types for transposition in the first phase in BiH, considering indicative annual energy use, likely energy savings and economic benefits (given the level of imports of product types), as well as technical feasibility. The size and content of the list of candidates will be assessed in accordance with the		

available capacities of the relevant government institutions and this project, as well as the state of regulations in the EU.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products
ECOL.BiH.1.3		
Market mapping of major market players and their current activities, including importers, manufacturers, suppliers, distributors and inspectors		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products
ECOL.BiH.1.4		
Assess the current level of market penetration of technologies and efficient / inefficient products, or as a substitute for this, the dominant sources of imports		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products
ECOL.BiH.1.5		
Indicative cost-benefit analysis of the application of eco-design regulations - both at the household level and at the level of market impact. This impact assessment will also include an impact analysis on low-income households		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products
ECOL.BiH.1.6		
Qualitative assessment of any additional market, regulatory and technological barriers that need to be addressed for the application of regulations		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products

ECOL.BiH.1.7		
Preliminary recommendations on which products are considered to have an acceptable market readiness for the full transposition of eco-design and energy labeling regulations		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products

- ECOL.BiH.2: A sustainable legislative framework for the implementation of the Eco-Design Directive (2009/125 / EC) and the Energy Labeling Regulation (2017/1369)

ECOL.BiH.2.1		
Establishment of technical specifications for each of the technologies according to priority regulations		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products

ECOL.BiH.2.2		
Establishment of priority regulations including conformity assessment procedures, and the necessary information to facilitate compliance checks, the timeframe for the compliance of importers and manufacturers, and the period of review of regulations		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products

ECOL.BiH.2.3		
Adoption of appropriate testing methodology for priority technologies		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations on eco-design and labeling of energy class products

ECOL.BiH.2.4		
Drafting of priority regulations and their adoption		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations 	<ul style="list-style-type: none"> ▪ In progress ▪ within the REEP+ project, activities were initiated on the transposition and implementation of regulations

	on eco-design and labeling of energy class products	on eco-design and labeling of energy class products
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- ECOL.BiH.3: Establishment of a system for monitoring, verification and implementation of provisions related to energy eco-labeling and energy labeling of devices

ECOL.BiH.3.1		
Raising awareness among suppliers and customers		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
ECOL.BiH.3.2		
Market surveillance and enforcement, including sanctions for resolving non-compliance		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
ECOL.BiH.3.3		
Availability of product evaluations and service testing		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
ECOL.BiH.3.4		
Other accompanying policies that help transform the market (e.g. financial and technical assistance; approval and procurement)		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

Efficient heating and cooling

Directive 2012/27 / EU in Article 14, which refers to the obligation to promote efficiency in heating and cooling. considers the following cost-effective opportunities to increase energy efficiency in this area:

- use of highly efficient cogeneration;²¹
- efficient district heating and cooling;²²
- heating using waste heat from industrial processes and renewable energy sources;
- application of other variants of efficient heating and cooling. in the event that none of the above is profitable.

In Bosnia and Herzegovina so far, the problem of heating has been solved only at the local level, in individual municipalities and cities in the Federation of Bosnia and Herzegovina. Republika Srpska and Brcko District of Bosnia and Herzegovina. There is no legal framework, nor a strategic and systemic approach to this issue from higher levels of government that would be harmonized with the stated priority areas.

In order to achieve the set goal of reducing primary energy consumption, in Bosnia and Herzegovina in the coming period will be implemented measures in the sector of electricity generation and heating energy.²³

²¹ According to the definition of highly efficient cogeneration given in Article 2 (34) of Directive 2012/27 / EU

²² According to the definition of efficient heating and cooling given in Article 2 (42) of Directive 2012/27 / EU

²³ The presented measures are also an integral part of the documents of the EEAP FBiH 2019-2021 and Amendments to the EEAP RS 2019-2020

GH.BiH.1		
Cost-benefit analyzes for energy efficiency measures in heating and cooling		
Conducting cost-benefit analysis (CBA), based on climatic conditions, economic opportunities, and technical parameters to determine the most cost-effective solutions to cover the needs of heating and cooling in the entire territory of BiH. The cost analysis will be performed in accordance with the requirements of Annex IX of Directive 2012/27 / EU and Chapter C of the EC Directive Guideline for the implementation of Article 14 of Directive 2012/27 / EU (document No. SWD / 2013/449 final).		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance
GH.BiH.2		
Potential Assessment for the application of highly efficient cogeneration and district heating and cooling systems		
Conducting a comprehensive assessment of the potential for the application of highly efficient cogeneration and efficient district heating and cooling in BiH. in accordance with the requirements of Annex VIII of Directive 2012/27 / EU and Chapter B of the document of the EC Directive for the implementation of Article 14 of Directive 2012/27 / EU (document no. SWD / 2013/449 final). and based on the results of the cost-benefit analysis carried out under measure GH.1		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Drafted ▪ within the GIZ technical assistance
GH.BiH.3		
Implementation of measures for the development of energy efficient district heating and cooling infrastructure, highly efficient cogeneration and heating using waste heat and RES		
Promotion, support in the implementation of the entities in the adoption and implementation of appropriate measures for the development of energy efficient district heating and cooling infrastructure, highly efficient cogeneration and heating using waste heat and RES (in case of positive results of a comprehensive potential assessment conducted under measure GH.2), and the purpose of exploiting the estimated potential. These measures must include policy measures to encourage the use of this potential at the local level, taking into account the potential for the development of local and regional heat markets.		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ No progress reported 	<ul style="list-style-type: none"> ▪ No progress reported
GH.BiH.4		
Implementation of the legal obligation to perform cost-benefit analysis.		
<ul style="list-style-type: none"> ▪ construction of a new thermal power plant with an installed capacity of more than 20 MW. for the purpose of estimating the costs and benefits of establishing its operation as a high-efficiency cogeneration plant; ▪ significant reconstruction of the existing thermal power plant with an installed capacity of more than 20 MW. for the purpose of estimating the costs and benefits of its transformation into highly efficient cogeneration; ▪ construction of a new or significant reconstruction of an existing industrial plant with a total installed capacity of more than 20 MW that produces waste heat at a useful temperature level. for the purpose of estimating the costs and benefits of using waste heat to meet economically justified demand. including through cogeneration. and connecting the plant to the district heating and cooling network; ▪ construction of a new or substantial reconstruction of an existing district heating or cooling system. total installed capacity greater than 20 MW. for the purpose of estimating the costs and benefits of using waste heat from nearby industrial plants. 		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ No progress reported 	<ul style="list-style-type: none"> ▪ No progress reported
GH.BiH.5		
Introduction of the obligation to include in the current procedure for approving the construction of new power plants the following criteria for issuing licenses for performing electricity generation activities		

Harmonization of laws and bylaws in the electricity sector, with the provisions of Article 14 (7) and 14 (8) of Directive 2012/27 / EU, by introducing the obligation to include in the current procedure for approving the construction of new power plants the following criteria for issuing licenses electricity generation activities:

- That a cost-benefit analysis has been carried out for the installation in question under the said measure GH.4 (in the case of the production capacity to which this measure applies) and that the results of that analysis have been taken into account in determining the required technical, operational and other parameters of the plant
- That the results of the Comprehensive Potential Assessment for the application of high-efficiency cogeneration and efficient district heating and cooling stated in the framework of the mentioned measure GH.2 have been taken into account for the plant in question

The harmonization of procedures and criteria will be mandatory in accordance with the requirements of Chapter E of the document of the EC Directive for the implementation of Article 14 of Directive 2012/27 / EU (document no. SWD / 2013/449 final)

BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GH.BiH.6		
Harmonization of provisions related to guarantees on the origin of electricity from highly efficient cogeneration, ie to the conditions for providing support to cogeneration and district heating systems		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GH.BiH.7		
Improving the information system and reporting on energy efficiency in the sectors of electricity generation and heating and cooling energy, including efficient cogeneration		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GH.BiH.8		
Establishment and implementation of a system for monitoring the implementation of the main policy measures in heating and cooling		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

Production, transmission, distribution, and response to energy demand

In accordance with its strategic commitments and the requirements of Directive 2012/27/EU on energy efficiency in primary energy consumption by the end of 2021, and having in mind the current situation in this area, which is described in previous chapters, in Bosnia and Herzegovina in the following period, implement the priority measures listed in the following table. Some of these measures are binding requirements of Directive 2012/27 / EU, while others are directly transposed from existing strategic and planning documents.

EPD.BiH.1		
Assessing the potential for increasing the energy efficiency of electricity infrastructure		
Assess the potential for increasing the energy efficiency of electricity infrastructure, in particular about energy transformations, transmission, distribution, load management and interoperability, and the connection of power generation facilities, including access possibilities for microgenerators. The assessment will focus on considering the following measures that may reduce the need to invest in new infrastructure:		
a) optimal use of the existing electricity infrastructure.		
b) possible energy efficiency measures, including the participation of the demand response.		
c) modernization of infrastructure to reduce technical and operational losses		
Guidelines for quality assessment are given in the document "Identifying energy efficiency improvements and saving potential in energy networks, including analysis of the value of demand response, December 18, 2015.", prepared for the needs and commissioned by the European Commission		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

EPD.BiH.2		
Development of a Plan of priority measures for the introduction of cost-effective improvements in the energy efficiency of network infrastructure in the electricity sector in Bosnia and Herzegovina		
Determining concrete measures and investments for the introduction of cost-effective improvements in the energy efficiency of network infrastructure in the electricity sector in Bosnia and Herzegovina, with deadlines for their introduction, based on the results of the potential assessment conducted under measure EPD.1.		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
EPD.BiH.3		
Harmonization of legislation in the electricity sector energy with the provisions of Article 15 of Directive 2012/27 / EU in the field of promotion and enabling the participation of the demand response in the efficient management of the network		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
EPD.BiH.4		
Harmonization of legislation in the electricity sector energy with the provisions of Article 15 of Directive 2012/27 / EU in the field of network tariffs and regulations		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
EPD.BiH.5		
Harmonization of legislation in the electricity sector energy with the provisions of Article 15 of Directive 2012/27 / EU in the field of network design and operation		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
EPD.BiH.6		
Improving the information system and reporting on energy efficiency in the sectors of production, transmission, distribution and demand response		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
EPD.BiH.7		
Implementation of programs, priority measures and activities in the energy transformation sector, transmission and distribution of electricity		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

GTD.BiH.1		
Assessing the potential for increasing the energy efficiency of gas infrastructure in Bosnia and Herzegovina		
Assess the potential for increasing the energy efficiency of gas infrastructure in Bosnia and Herzegovina, in particular with regard to transport, distribution, load management and interoperability, and the connection of power generation facilities, including access options for microgenerators.		
Guidelines for the quality of this assessment are given in the document "Identifying energy efficiency improvements and saving potential in energy networks, including analysis of the value of demand response, December 18, 2015", prepared for the needs and commissioned by the European Commission		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GTD.BiH.2		
Development of a Plan of priority measures for the introduction of cost-effective improvements in energy efficiency of gas infrastructure in Bosnia and Herzegovina		
Identifying concrete measures and investments for the introduction of cost-effective improvements in the energy efficiency of network infrastructure in the gas sector. with deadlines for their introduction. and based on the results of the potential assessment carried out under measure GTD.1		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

GTD.BiH.3		
Coordination on harmonization of legislation related to gas infrastructure with the provisions of Article 15 of Directive 2012/27/EU		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GTD.BiH.4		
Improving the information system and reporting on energy efficiency in transmission and distribution of natural gas		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported
GTD.BiH.5		
Implementation of programs, priority measures and activities in transmission and distribution of natural gas		
BiH level	Federation of BiH	Republika Srpska
	▪ No progress reported	▪ No progress reported

E. Central Government buildings (Article 5)

Public body buildings

The public sector in Bosnia and Herzegovina has been selected as a leading example in the realization of the set energy efficiency goals. The role of the public sector represented by the goals and implementation of policies and measures to improve energy efficiency in final consumption is to achieve sustainable energy development through:

- reduction of negative environmental impacts;
- increasing security of energy supply;
- meeting the energy needs of all consumers;
- reduction of greenhouse gas emissions;
- encouraging responsible behavior towards energy;
- reduction of fossil fuel exploitation;
- rationalization of energy consumption;
- increasing the competitiveness of the domestic economy;
- elimination of energy poverty;
- fulfillment of obligations from international treaties, agreements and conventions.

The leading role in the implementation of energy efficiency criteria in all sectors is assigned to public institutions. The leading institution in this process at the level of Bosnia and Herzegovina is the Ministry of Foreign Trade and Economic Relations, in cooperation with the entity ministries and funds. The activities conducted by the public sector in Bosnia and Herzegovina so far have been carried out individually, by making efforts to establish a strategic, legislative and regulatory framework for energy efficiency, and by implementing projects for energy renovation of buildings in the public sector. On the other hand, the leading role in the promotion of energy efficiency and the implementation of measures to reduce energy consumption have cities, municipalities and cantons in the Federation of Bosnia and Herzegovina, which work on the establishment of local energy efficiency systems.

There is a commitment of the public sector to implement energy efficiency measures respecting the criteria of cost optimality. In Bosnia and Herzegovina, these criteria have not yet been developed, but, as defined by the Roadmap, which is an integral part of this action plan, their establishment is expected in 2017.

- **List of central government buildings at the level of BiH institutions**

The state level of Bosnia and Herzegovina occupies 43 buildings with an area of more than 250 m² (according to the data of the Service for Joint Affairs of BiH Institutions). These 43 buildings occupy an area of 244,993.86 m² heated and/or cooled surfaces. The annual goal of renovation of the heated and / or cooled area of central government buildings under the jurisdiction of BiH institutions 1% is 2,450 m².

- **List of central government buildings in the Federation of Bosnia and Herzegovina**

Central government institutions in the Federation of Bosnia and Herzegovina use 46 buildings, but only 27 buildings with an area of more than 250 m² that are the subject of this census. The total area of these facilities is 71,593.07 m². In addition, the Federation of BiH owns an additional 33 facilities (according to the data Services for joint affairs of FBIH bodies and authorities) used by lower levels of government, cantons and municipalities, and as such are not subject to the obligation under Article 5 of the EED.

The annual goal of renovating the heated and / or cooled area of central government buildings under the jurisdiction of the FBIH institutions of 1% is 716 m².

- **List of central government buildings in Republika Srpska**

Central government institutions in Republika Srpska are housed in 6 buildings with a total area of 60,000 m² (according to the data of the Service for Joint Affairs of the Government of the

Republic of Srpska). The annual goal of renovating the heated and / or cooled area of central government buildings under the jurisdiction of RS institutions of 1% is 600 m².

- **List of central government buildings in the Brčko District of Bosnia and Herzegovina**

Central government institutions in the Brcko District occupy a total of 17 buildings of 19,631.46 m² (according to the BD BiH Public Property Office). The annual goal of renovating the heated and / or cooled area of central government buildings under the jurisdiction of BD BiH institutions of 1% is 196 m².

Considering that the level of BiH institutions includes only administrative buildings of the central government, and the inventory is presented within the obligation to renovate central government buildings in the previous section, the inventory of buildings of other public bodies is shown here, in the Federation of BiH, Republika Srpska and Brcko District.

- **Summary overview of the inventory of buildings of other public bodies in the Federation of BiH**

The total area of non-residential buildings in FBiH is 12,730,000 m², of which the area is commercial building 7,568,713 m² and the area of public buildings 5,161,287 m².

- **Summary overview of the inventory of buildings of other public bodies in the Republic of Srpska**

The total area of non-residential buildings in RS is 5,890,000 m², of which the area of public buildings is 3,614,839 m² and the area of commercial buildings is 2,275,161 m².

- **Summary overview of the inventory of buildings of other public bodies in the Brčko District**

In BD BiH, buildings intended for education have the largest area of 105,492 m², while buildings intended for education (kindergartens) have the smallest, ie 2,311 m².

Public procurement

Article 6 prescribes the introduction of an obligation for central authorities to procure only products, services and buildings with high energy performance, in accordance with the requirements of Annex III of Directive 2012/27 / EU, and to the extent consistent with cost-effectiveness, economic feasibility, broad sustainability, technical suitability and a sufficient level of competition. There is also an obligation to encourage public bodies, including those at regional and local level, to follow the example of the central government and to procure only products, services and buildings with high energy performance. There is also an obligation to encourage public bodies to, when announcing tenders for services for significant energy content, consider the possibility of concluding long-term contracts on energy performance, which ensure long-term energy savings.

In Bosnia and Herzegovina, the segment of promotion of energy efficiency criteria in public procurement is regulated by the Law on Public Procurement of Bosnia and Herzegovina²⁴ which regulates this area at all levels of government, and entity laws on energy efficiency.

The provisions of Article 6 of Directive 2012/27/EU have not been transposed into the said Public Procurement Law. In the procedure of conducting public procurement, the authorities and public bodies are not prescribed any obligation required under this Article. This law nevertheless provides a minimum possibility of fulfilling the obligations from Article 6 of the EDD, but the use of this possibility requires an appropriate level of knowledge and experience of government institutions and other public bodies in the field of energy efficient procurement, as well as technical knowledge and experience related to the subject of procurement. Thus, Article 54 (Technical Specifications) of this Law prescribes, inter alia, that "(2) Technical Specifications, in compliance with the mandatory technical rules of Bosnia and Herzegovina, shall be determined". (b) in the form of performance or functional requirements which may include environmental and energy efficiency elements "...". Article 64 (Contract award criteria) allows that in addition to awarding the contract on the basis of the lowest

²⁴Official Gazette of BiH no. 39/2014

price criterion, the contract may also be awarded on the basis of the most economically advantageous tender criterion, whereby “the contracting authority is obliged to elaborate the most economically advantageous tender criterion to define and elaborate sub-criteria for evaluation in accordance with the nature and purpose of the specific subject of procurement. Sub-criteria must be: quality of the subject of procurement, price, technical capability of the subject of procurement, functional and environmental characteristics, operating costs, economy, after-sales service and technical assistance, delivery deadline or deadline, etc., with the obligation to be in the tender documentation establish a precise methodology for evaluating each sub-criterion ”. However, these regulations do not define any binding minimum energy efficiency criteria, and this law is not accompanied by any bylaws that would enable quality implementation of the requirements of Article 6. The existing Instruction for preparation of model tender documents and bids does not contain any instructions for including energy efficiency criteria in tender documentation in the required manner. Currently, no activities are being carried out to transpose the obligations from Article 6 into the Law on Public Procurement.

In the Federation of BiH and the Republika Srpska, the promotion of energy efficiency criteria in public procurement is partially regulated by the provisions of the entity laws on energy efficiency.

The Law on Energy Efficiency in the Federation of Bosnia and Herzegovina partially includes the requirements of Article 6 of the EDD, but with an indefinite degree of obligation. Article 21 of this Law prescribes that: “(1) in accordance with the regulations governing the field of public procurement, users of budget funds of the Federation of BiH, or the budget of cantons or local self-government units shall, when deciding on suppliers in the public procurement procedure, service shall be evaluated together with other criteria and priority shall be given, under equal conditions, for the procurement of equipment and services that enable a higher degree of energy efficiency, (2) part of the building for the needs of the public sector entity,

The Law on Energy Efficiency of the Republika Srpska also partially includes the requirements from Article 6 of the EDD, but also with an indefinite degree of obligation. Article 16 of the law stipulates that “beneficiaries of the Fund for Environmental Protection and Energy Efficiency, the budget of the Republika Srpska or the budget of local self-government units assess the energy efficiency of goods and services together with other criteria when deciding in the public procurement procedure. equipment and services that enable a higher degree of energy efficiency ”, Article 18 of the same law also stipulates that when purchasing or leasing facilities, the beneficiary of the Fund for Environmental Protection and Energy Efficiency,

Regarding the relevant legislation, the Brčko District does not have an energy efficiency law, and the requirements of Article 6 of the EDD have not been transposed in any other way into the existing legislation.

Due to vaguely defined obligations to procure goods. high energy efficiency services and buildings in the existing legislation on public procurement and energy efficiency. and insufficient education of authorities and other public bodies on how to include energy efficiency criteria in the public procurement process within existing laws. in Bosnia and Herzegovina procurement of products. services and goods with high energy characteristics were not recorded to any significant extent.

Main policy measures

JKS.BiH.1		
<p>Operational plan for the renovation of central government buildings</p> <p>The holders referred to in Article 5 of the EED will prepare operational plans for the renovation of this category of buildings for a period of five years, considering the realization of the objectives defined in the previous activity. In order to arrive at operational plans, it is necessary to: 1) identify the potential savings in energy use in institution buildings; 2) conduct a CBA analysis of energy efficiency programs in institution buildings; 3) determine financial instruments for financing the implementation of measures; 4) determine programs of priority measures.</p>		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) 	<ul style="list-style-type: none"> ▪ Yes ▪ The Government of the Federation of Bosnia and Herzegovina, at the proposal of the Federal Ministry of Energy, Mining and Industry, at its 261st session held on April 1, 2021. year, passed the Conclusion on the adoption of the Operational Plan for improving energy efficiency in the institutions of the Federation of Bosnia and Herzegovina, V. number: 624/2021 from 01.04.2021. ("Official Gazette of the Federation of BiH", No. 29/21 and 33/21), all in accordance with Article 13 of the Law on Energy Efficiency in the Federation of BiH ("Official Gazette of the Federation of BiH", No. 29/21). 	<ul style="list-style-type: none"> ▪ No progress reported
JKS.BiH.2		
<p>Establishment of a framework that would enable the establishment of energy management in BiH institutions</p> <ul style="list-style-type: none"> ▪ Adoption of regulations for the establishment of energy management systems, ▪ Development of training and development programs for energy managers and other staff involved in energy management ▪ Conducting training and continuous training of energy managers and other staff involved in energy management. 		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ Yes ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Yes ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ Yes ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) within the GIZ technical assistance
JKS.BiH.3		
<p>Establishing sustainable financial mechanisms to improve energy efficiency in institutions</p> <p>Public budgets are adopted according to the relevant laws of individual levels of government for a period of one fiscal year. From public budgets, a certain part of the funds is already invested in various direct and indirect programs and measures to increase the energy efficiency of all levels of government in Bosnia and</p>		

<p>Herzegovina. Increasing investment through public budgets is needed to ensure the implementation of the programs envisaged in this action plan.</p> <p>It is also necessary to create the necessary preconditions for budget financing with the repayment of investments by reducing future budget expenditures (Budget capturing), and to provide funds for reinvestment in energy efficiency measures through existing budget lines.</p>		
BiH level	Federation of BiH	Republika Srpska
▪ No progress reported	▪ No progress reported	▪ No progress reported
JKS.BiH.4		
Establishment and promotion of energy service systems for energy saving in public bodies		
<ul style="list-style-type: none"> ▪ Introduction of multi-annual budgets that would enable users (institutions) of the public budget to implement energy efficiency measures with a shorter payback period, without major investments and efforts to purchase, supply and maintain heating systems, and which would be the basis for developing and establishing ESCO markets, ▪ Development of legislative solutions that would enable the work of ESCO companies in providing services to public bodies at the level of BiH, ▪ Promotion of the framework for the provision of energy services among BiH institutions. 		
BiH level	Federation of BiH	Republika Srpska
▪ No progress reported	▪ No progress reported	▪ No progress reported
JKS.BiH.5		
Further improvement of the information system and reporting on energy efficiency in public bodies		
<ul style="list-style-type: none"> ▪ Establishment of a register of public buildings at the level of BiH institutions ▪ Collection and processing of data on energy consumption of public buildings at the level of BiH ▪ Reporting on energy consumption in public buildings at the level of BiH 		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance
JKS.BiH.6		
Establishment and implementation of a system for monitoring the implementation of the main energy efficiency policy measures in public bodies		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance 	<ul style="list-style-type: none"> ▪ In progress ▪ within the Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP) ▪ within the GIZ technical assistance
JKS.BiH.7		
Transposition of Article 6 EDD provisions into existing public procurement legislation		
<ul style="list-style-type: none"> ▪ Development and adoption of amendments to the Law on Public Procurement for the purpose of introducing mandatory application of energy efficiency criteria in public procurement; ▪ Development and adoption of a rulebook on the application of energy efficiency criteria in public procurement; ▪ Development and promotion of a guide for the application of energy efficiency criteria in public procurement, with clear models and instructions to public institutions in the preparation of tender documents and bidders when preparing bids ▪ Promotion of the obligation to apply energy efficiency criteria in public procurement. and appropriate education of all levels of government and other public bodies. and bidders; ▪ Control over the implementation of the mandatory application of energy efficiency criteria in public procurement 		

BiH level	Federation of BiH	Republika Srpska
▪ No progress reported	▪ No progress reported	▪ No progress reported

Funding programs

Value of the **Energy Efficiency in Bosnia and Herzegovina Project** (Bosnia Energy Efficiency Project - BEEP), amounts to 32 million USD, and funds for project financing are distributed between the Republika Srpska and the Federation of Bosnia and Herzegovina in the ratio of 40: 60%, through subsidiary agreements. Republika Srpska's loan to the World Bank - International Development Association (IDA) is \$ 12,800,000, which is 40% of the total loan amount for Bosnia and Herzegovina, while in the Federation of BiH it is \$ 19,200,000.

Given that good results have been achieved within the existing Project and the scope for improving energy efficiency in the public building sector has been increased, additional funding has been proposed as a continuation of the BEEP Project. Decisions were made on accepting the indebtedness of the Federation of BiH and the Republika Srpska to the World Bank - International Bank for Reconstruction and Development for additional financing under the Energy Efficiency Project in Bosnia and Herzegovina (8906-BA) in the amount of 27,276,989 euros.

In the period 2016 - 2020, the following effects of the program were achieved:

- In the FBiH, 55 public buildings with a total area of approx. 167,000 m². It is estimated that savings of 17.7 million kWh / year were achieved with a reduction in CO₂ emissions by 4,564 t / year. About 25 million KM have been invested in works and equipment.
- In Republika Srpska, during 2016, 2017, 2018 and 2019, tender procedures were conducted for the selection of contractors in accordance with the World Bank Guidelines for 27 public complexes and 32 facilities. The total value of the works is around 23.1 million KM.

In accordance with the intergovernmental consultations between the Federal Republic of Germany and Bosnia and Herzegovina held on 16 November 2016, an **Energy Efficiency Project (EEiPB)** was proposed, to be funded by KfW. The overall development goal of the EEiPB is to contribute to the global climate and local environmental protection and to sustainable economic development in Bosnia and Herzegovina. The project promotes energy efficiency and improves public services in schools and kindergartens (including higher education institutions) by investing in energy efficiency (EE) measures. An additional goal and benefit of this project is to improve public services and reduce poverty. The project itself will focus on schools and kindergartens. The Council of Ministers approved the Proposal of the Agreement on Amendments to the Financing and Project Agreement concluded on 17 December 2019. (original Financing and Project Agreement) between KfW, Frankfurt am Main (KfW), and Bosnia and Herzegovina (recipient), represented by the Ministry of Finance and Treasury, and Republika Srpska, represented by the Ministry of Finance and Treasury of Republika Srpska and the Ministry of physical planning, construction and ecology of the Republic of Srpska (project execution agency), in the amount of EUR 10,000,000.00 - energy efficiency in public buildings, with the Basis for concluding the said agreement. At the end of 2019, the Financial Agreement of KfW from Bosnia and Herzegovina was signed and the preparation of the Special Agreement on project implementation with the Federal Ministry of Physical Planning as the institution in charge of project implementation is in progress. represented by the Ministry of Finance and Treasury, and the Republika Srpska, represented by the Ministry of Finance and Treasury of the Republika Srpska and the Ministry of Physical Planning, Construction and Ecology of the Republika Srpska (project execution agency), in the amount of EUR 10,000,000.00 - energy efficiency in public buildings, with the Basis for concluding the said agreement. At the end of 2019, the Financial Agreement of KfW from Bosnia and Herzegovina was signed and the preparation of the Special Agreement on project implementation with the Federal Ministry of Physical Planning as the institution in charge of project implementation is underway. represented by the Ministry of Finance and Treasury, and the Republika Srpska, represented by the Ministry of Finance and Treasury of the Republika Srpska and the Ministry of Physical Planning, Construction and Ecology of the Republika Srpska (project execution agency), in the amount of EUR

10,000,000.00 - energy efficiency in public buildings, with the Basis for concluding the said agreement. At the end of 2019, the Financial Agreement of KFW from Bosnia and Herzegovina was signed and the preparation of the Special Agreement on project implementation with the Federal Ministry of Physical Planning as the institution in charge of project implementation is underway. in the amount of EUR 10,000,000.00 - energy efficiency in public buildings, with the Basis for concluding the said agreement. At the end of 2019, the Financial Agreement of KFW from Bosnia and Herzegovina was signed and the preparation of the Special Agreement on project implementation with the Federal Ministry of Physical Planning as the institution in charge of project implementation is in progress. in the amount of EUR 10,000,000.00 - energy efficiency in public buildings, with the Basis for concluding the said agreement. At the end of 2019, the Financial Agreement of KFW from Bosnia and Herzegovina was signed and the preparation of the Special Agreement on project implementation with the Federal Ministry of Physical Planning as the institution in charge of project implementation is underway.

Green Economic Development project funded by Sweden, and implemented by the United Nations Development Program (UNDP), in cooperation with the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, the Environmental Protection Fund of the Federation of BiH and the Fund for Environmental Protection and Energy Efficiency of Republika Srpska, entity ministries of energy, cantonal ministries, local self-government units and other partners. The project aims to create conditions for investment in energy efficiency projects, increase the number of "green jobs", and contribute to market development, which leads to economic development.

In the period from 2013 to 2019, the following was achieved through the Project:

- in cooperation with the Environmental Protection Fund of the Federation of Bosnia and Herzegovina, the institutionalization of energy management / energy management was introduced in eight (8) cantons, and the decision on mandatory entry of consumption data in the Energy Management Information System (EMIS) was adopted in six (6) cantons ,,
- in cooperation with the Fund for Environmental Protection and Energy Efficiency of the Republika Srpska, institutionalization is carried out at the level of line ministries, and has so far been carried out with the Ministry of Education and Culture of the Republika Srpska and the Ministry of Health and Social Welfare of the Republika Srpska,
- over 2000 people trained for independent use of the EMIS system,
- Since 2016, the Revolving Fund has been established for energy efficiency projects of public buildings, small and medium enterprises and energy efficiency improvements in public lighting systems within the FBiH Environmental Protection Fund, and internal acts have been prepared for the operationalization of the Revolving Fund in the Environmental Protection Fund. energy efficiency of the Republic of Srpska,
- increased public awareness of energy efficiency, reduction of greenhouse gas emissions and renewable energy sources,
- in order to identify the most efficient measures to improve energy efficiency, more than 300 detailed energy audits of public buildings were conducted,
- modernization of the public lighting system in the municipalities of Maglaj, Živinice, Bihać, Donji Vakuf, Ljubuški, Široki Brijeg and Banja Luka.
- over 67,000 people attended entertainment and educational events and workshops.

Infrastructure measures to improve energy efficiency at 233 public buildings and 13 public lighting systems will contribute to:

- savings in public budgets of over 5.5 million KM per year,
- reducing energy consumption by an average of 59 percent,
- creating over 2,090 green jobs,
- reducing CO₂ emissions by about 14,500 tons per year,
- improving working and living conditions for over 150,000 users.

F. Energy efficiency obligations (Article 7)

EEE energy efficiency obligation schemes

Article 7 of the EED prescribes the obligation to establish a system of energy efficiency obligation schemes, which will ensure that energy distributors and/or energy suppliers designated as obligated parties achieve the set cumulative goal of energy savings in final consumption. At the annual level, the value of the stated goal for achieving new savings every year from January 1, 2017 to December 31, 2020 must be at least 0.7% of the annual amount of energy delivered by all distributors and / or suppliers to end customers, and according to the average for the last three years before January 1, 2016. However, the signatory countries of the Energy Community Treaty may apply values of 0.5% for the years 2017 and 2018 and then 0.7% for the years 2019 and 2020 when calculating these objectives. Article 7.

EEO.BiH.1		
Amendments to the existing entity laws on energy efficiency which include the EEO mechanism		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Proposals for amendments to the existing Entity Energy Efficiency Laws incorporating the EEO mechanism have been made through the technical assistance of the USAID Energy Sector Assistance Project (EPA). Consultations within the institutional working groups are still ongoing, and amendments to the entity laws have not yet begun 	<ul style="list-style-type: none"> Proposals for amendments to the existing Entity Energy Efficiency Laws incorporating the EEO mechanism have been made through the technical assistance of the USAID Energy Sector Assistance Project (EPA). Consultations within the institutional working groups are still ongoing, and amendments to the entity laws have not yet begun
EEO.BiH.2		
Drafting of the Regulation / Regulations on the implementation of EEE		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> A draft Regulation / Regulation on the implementation of EEE through the technical assistance of the USAID Energy Sector Assistance Project (EPA) has been prepared. However, there are still no legal preconditions for its adoption. 	<ul style="list-style-type: none"> A draft Regulation / Regulation on the implementation of EEE through the technical assistance of the USAID Energy Sector Assistance Project (EPA) has been prepared. However, there are still no legal preconditions for its adoption.
EEO.BiH.3		
Secondary legislation for the implementation of EEE		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> The drafting of secondary legislation for the implementation of EEE is envisaged after the adoption of amendments to the entity laws on energy efficiency. 	<ul style="list-style-type: none"> The drafting of secondary legislation for the implementation of EEE is envisaged after the adoption of amendments to the entity laws on energy efficiency.

Alternative energy efficiency programs

Unlike obligation schemes, alternative programs target all final consumption sectors. Thus, for example, programs aimed at energy efficiency measures in public buildings and utilities are financed exclusively from alternative programs. Programs in industry, the commercial sector, and

transportation use some combination of alternative programs and self-financing for funding. On the other hand, programs in the housing sector use a combination of all three funding mechanisms. The Energy Efficiency Action Plans in Bosnia and Herzegovina provide an architecture of alternative programs in terms of providing different sources and ways of financing that provide this mechanism with the necessary financial resources. In this connection,

Possible sources and ways of financing are the following:

- Sources of funding
 - Energy taxes
 - CO2 tax
 - Air protection fees
 - Environmental charges
 - Public budgets
 - Funds of International Financial Institutions (IFI)
 - EU funds
 - Private financing.
- Ways of financing
 - Preferential loans from domestic sources
 - Subsidies and grants
 - Foreign (preferential) credit lines
 - Public budgets / regular budget lines / multi-annual budget
 - Incentive tax incentives (investment benefits)
 - ESCO market and PPP.

The current situation in Bosnia and Herzegovina with sources of funding for alternative programs is as follows:

ALT.BiH.1		
Energy taxes to finance energy efficiency programs		
Introduction of energy taxes to finance energy efficiency programs. Activities focus on the following:		
<ul style="list-style-type: none"> ▪ Introduction of charges for electricity consumption in households, but in combination with support for socially vulnerable categories - included in EEE ▪ Introduction of charges for electricity consumption for small and medium enterprises and industry, if it does not affect the competitiveness of exports ▪ Introduction of fees to produce electricity from petroleum products (especially "dirty" products such as heavy fuel oil or bunker fuels) and coal ▪ Introduction of fees for the consumption of thermal energy from the district heating system, according to the type of energy source used to produce thermal energy ▪ Introduction of energy fees in real estate transactions, about energy class 		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> ▪ According to the Law on Allocation and Direction of a Part of the Revenues of Enterprises Achieved by the Operation of Thermal Power Plants²⁵the taxpayers, the amount and manner of allocating and directing part of the company's revenues generated by the operation of thermal power plants and the use of space and infrastructure where there are installations, facilities and plants for electricity production of slag, ash and 	<ul style="list-style-type: none"> ▪ Energy taxes are partially collected by directing 10% of funds collected through renewable energy taxes to the Fund for Environmental Protection and Energy Efficiency, but only a small part of the collected funds is directed to energy efficiency projects and programs.

²⁵ "Official Gazette of the Federation of BiH", number: 80/14

	similar waste generated by thermal power plants and coal dumps are determined. For example, the planned revenue of the City of Tuzla in 2020 on this basis amounted to 5 million KM ²⁶ . In the Municipality of Kakanj, this revenue for the same period was 3.86 million KM.	
ALT.BiH.2		
Air protection fees		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Currently, a fee for air pollutants is charged in the Federation of BiH. The fee is paid by environmental pollutants (for emissions of SO₂, NO₂ and particulate matter into the air). These funds are collected by the Environmental Protection Fund of the Federation of BiH. According to the Law on the Fund, funds are automatically allocated in the ratio of 70% to the account of the canton and 30% to the Fund. The Fund's funds are earmarked for financing environmental protection and energy efficiency projects. 	<ul style="list-style-type: none"> There is currently no air protection tax in Republika Srpska
ALT.BiH.3		
Environmental charges		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Currently, in the Federation of BiH, a special environmental fee is charged for each registration of motor vehicles. According to the Law on the Fund, funds are automatically allocated in the ratio of 70% to the account of the canton and 30% to the Fund. The Fund's resources are earmarked for financing environmental protection and energy efficiency projects. Other environmental fees collected by the Fund (fee for plastic bags of suspenders, fee for packaging and packaging waste management, fee for electronic waste management, and fee under the Water Act) cannot be directly directed to energy efficiency measures. 	<ul style="list-style-type: none"> In the Republika Srpska, there is a legal basis for the introduction of certain fees as a way to finance the Fund for Environmental Protection and Energy Efficiency, namely: fees paid by environmental polluters, fees for environmental pollution by waste and fees for water protection. However, the manner of calculating these fees, the amount, and all other important issues will be elaborated by special laws. Currently, in the Republika Srpska, only the fee for loading the environment with packaging waste is collected, which is paid to the account of public budget revenues and distributed to the account of the Fund.

²⁶ <https://grad.tuzla.ba/wp-content/uploads/2014/11/NACRT-BUD%C5%BDETA-ZA-2020.-GOD.-.pdf>

ALT.BiH.4		
CO2 taxes to finance energy efficiency programs		
BiH level	Federation of BiH	Republika Srpska
	<ul style="list-style-type: none"> Currently in the Federation of BiH there are no CO2 taxes for the possibility of financing and providing support for investment in energy efficiency measures. 	<ul style="list-style-type: none"> Currently in the Republika Srpska, CO2 taxes are not used as an opportunity to finance and support investments in energy efficiency measures.
ALT.BiH.5		
Mechanisms for using public budgets to finance energy efficiency programs		
BiH level	Federation of BiH	Republika Srpska
<ul style="list-style-type: none"> Currently, at the level of BiH, the Federation of BiH and the Republika Srpska, the public sector largely finances energy efficiency measures through regular budget lines, within the regular maintenance of buildings and equipment. For the implementation of a sustainable method of financing from public budgets, additional mechanisms have not yet been provided to ensure multi-year planning of investments in energy efficiency measures, and financing from the realized savings. In this regard, the introduction of the following instruments is envisaged: <ul style="list-style-type: none"> Multi-annual budget planning to enable the implementation of multi-annual energy performance contracts; Budget capturing mechanism that defines the book value of energy savings and allows clear financing from savings. 		

Funding programs

The funds are provided under the 85m-euro EBRD program, the Green Economy Financing Program (GEFF) for the Western Balkans. Incentives and technical assistance to support investments in green technologies will be provided by the European Union (EU), the Austrian Federal Ministry of Finance and the European Common Fund for the Western Balkans under the Western Balkans Investment Framework. The new 5m-euro loan followed a previous investment in 2017, for a total of 22m euros available for green housing loans in Bosnia and Herzegovina.

- The EBRD is granting a 5m-euro loan to ICF Partner, a microcredit foundation in Bosnia and Herzegovina, to support urgently needed investments in energy efficiency in the country's housing sector. The funds will be lent to individuals, associations, manufacturers, service providers, suppliers and distributors of green technologies, for investments that modernize the existing number of housing units and support the use of sustainable energy technologies.
- UniCredit in BiH** and the European Bank for Reconstruction and Development (EBRD) signed contracts worth a total of EUR 12 million, of which EUR 7 million will be realized through cooperation with UniCredit Bank dd Mostar and EUR 5 million through cooperation with UniCredit Bank ad Banja Luka. The ultimate goal is to invest through these loans to reduce energy losses and improve energy efficiency through the construction and modernization of existing housing, apartments and buildings. Examples include investing in households through the replacement and introduction of energy efficient household appliances such as refrigerators, air conditioners, refrigerators, water heaters, then energy efficient windows and glass, roofs, thermal insulation and more.
- Sparkasse Bank** with a dedicated energy efficiency loan wants to support households in projects such as installing new windows and doors on a housing unit, building a roof or thermal facade, buying pellet stoves or lighting devices that save electricity. This line of loans for individuals is placed within the Green Economy Financing Program (GEFF), provided by the European Bank for Reconstruction and Development (EBRD), and is aimed at improving the energy efficiency of households.

- The European Bank for Reconstruction and Development (EBRD) supports investments in improving energy efficiency in households in Bosnia and Herzegovina through a loan to ProCredit Bank dd BiH in the amount of EUR 2 million. The funds will be available to clients for investments in improving insulation, windows, heat pumps, solar panels and other types of improvements, with the aim of increasing the energy efficiency of homes and reducing energy intensity. Upon successful implementation, borrowers will be entitled to a refund of up to 20 percent of the loan amount, an incentive funded by the European Union (EU).

Green for Growth Fund (GGF) invests in measures designed to reduce energy consumption and CO2 emissions and improve resource efficiency in 19 markets in Southeast Europe, the Caucasus, Ukraine, Moldova, the Middle East and North Africa. The fund finances local partners who lend to businesses and private households, and invests directly, primarily through the contribution of higher debt, in renewable energy projects. The GGF Technical Assistance Fund maximizes the impact of the fund's investments by supporting the capacity building of local financial institutions and partners.

- is in partnership with Mikrofin to promote energy efficiency measures among households and small agricultural enterprises in Bosnia and Herzegovina. The impact of the 2m-euro loan will be strengthened by capacity building measures, which will enable Mikrofin to develop and market a dedicated credit product for energy efficiency.
- In partnership with the LIDER microcredit foundation in Bosnia and Herzegovina to promote energy efficiency in the country through a 1m-euro (\$ 1.1m) loan. The loan is intended to improve LIDER's green loan portfolio and enable the microfinance institution to develop loans for renewable energy and energy efficiency as a separate product line, the GGF said in a statement. LEADER has so far shown a significant loan portfolio in agriculture, home improvement and micro-enterprises. In addition, the free consulting services it offers to its clients also show great potential for raising awareness about energy efficiency and renewable energy.
- The Green for Growth Fund (GGF) has approved a 1.5m-euro loan to the SUNRISE Microcredit Foundation (MCF Sunrise) Sarajevo in Bosnia and Herzegovina to support energy efficiency measures and raise awareness of energy efficiency in the country. The 1.5m-euro loan will be used to finance a new energy efficiency loan product for MCF Sunrise customers through its 43 branches across the country.
- **Partner** In 2018, the Microcredit Foundation and GGF (Green For Growth Fund) signed a loan agreement in the amount of KM 10 million to finance energy efficiency measures. In 2012, the partner microcredit foundation started financing energy efficiency. With the technical assistance of the Green for Growth Fund for Southeast Europe (GGF), the Partner enabled its clients to invest in energy efficiency measures in residential buildings in the amount of over 22 million KM. The funds were most often used through microcredits to replace external windows and doors, insulate external walls, floors and roofs, as well as replace heating systems.
- GGF (Green for Growth) has provided a € 1 million loan to MI-BOSPO to promote energy efficiency among micro-enterprises and private households. MI-BOSPO will use GGF funds to finance microcredit clients who want to improve energy efficiency, such as improving construction or purchasing new business equipment. Access to green loans for the microfinance sector of Bosnia and Herzegovina is important for fostering energy efficiency in the country, which the Fund helps to achieve through a strong network of local partners.

Ministry of Physical Planning, Construction and Environmental Protection of Sarajevo Canton has, in cooperation with the Sarajevo Regional Development Agency (SERDA), developed a Model for improving energy efficiency in buildings in the Sarajevo Canton in order to increase the number of users (mass), (Model EE). The Government of Sarajevo Canton adopted the EE Model in December 2017. The EE model is a universally applicable, transparent, non-discriminatory and socially sensitive framework for the promotion, implementation and support of energy efficiency projects in Sarajevo

Canton, and its main goal is long-term and systematic support to citizens in improving energy performance, ie warming housing under more favorable conditions.

- In the municipalities of Novo Sarajevo, Hadžići, Vogošća and Ilidža, works are underway on the implementation of energy efficiency measures in individual residential buildings. In 2021, a public procurement of contractors was carried out on individual residential buildings for which detailed energy audits were performed. The public procurement was performed for municipalities that provided funds for co-financing energy efficiency measures, ie:
 - Novo Sarajevo and Vogošća - for all individual residential buildings,
 - Ilidža and Hadžići - part of individual residential buildings.

The Sarajevo Cantonal Housing Fund has signed a framework agreement with selected contractors for 56 individual residential buildings, of which the owners of 17 individual buildings have signed co-financing agreements (55% own participation).