# TACKLING THE IMMEDIATE CHALLENGES OF ENERGY POVERTY IN THE WESTERN BALKANS.

## THE POSSIBLE ROLE FOR THE EU

RES Foundation
Partnerships for Resilience

THE GREENS/EFA in the European Parliament

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# 2. INTRODUCTORY REMARKS

It is evident that the geopolitical landscape of the world, particularly in Europe, has experienced a significant transformation with the commencement of Russia's war of aggression against Ukraine and its people. This war represents a direct assault on the established rules-based order and poses a threat to peace, security, and stability on the European continent. It has become crucial for the EU to adapt its foreign and security policies, including its neighbourhood and enlargement policy, in response to this challenge to European security and the EU's role as a geopolitical actor.

This watershed moment has brought about a realization in Brussels, Berlin, Paris, The Hague, and other capitals about the geostrategic imperative of integrating the Western Balkan region into the European Union. The EU's previous lack of engagement, credibility, and its unfulfilled promises in the enlargement processes, along with a lack of genuine political will for fundamental reforms in some Western Balkan countries, has created room for Russian and Chinese interference, which EU leaders have finally awakened to. Furthermore, the lack of progress and a realistic prospect of EU integration has fuelled growing frustration among the citizens of the six Western Balkan countries, which requires urgent attention.

In the wake of Russia's war of aggression, the Western Balkan partners have demonstrated solidarity with Ukraine, with most of them aligning with EU sanctions against Russia and proving to be valuable and reliable allies for the EU. In return, the EU must exhibit solidarity with these countries and their citizens, who are also heavily affected by the repercussions of Russia's aggression.

During the Greens/EFA group's visit to Skopje last October, one of the main takeaways was that, similar to many EU member states, the rise in energy prices is one of the most direct and visible consequences of the Russian war against Ukraine. Given the region's economic capacity compared to the EU27, the impact of these price increases should not be underestimated. Economic instability serves as a breeding ground for social unrest and political instability, and it may even jeopardize the long-term support of citizens for Ukraine and the sanctions against Russia. Illiberal actors, particularly those supported by Russia, are eager to exploit any tensions in the societies.

Hence, it is evident to us that offering and supporting sustainable solutions to the energy crisis in the region is in the EU's best interest, as it serves three primary purposes. Firstly, it combats economic and social instability in the region and provides an opportunity to demonstrate tangible solidarity with the region and its citizens, thereby revitalizing the EU accession process.

Secondly, it facilitates a sustainable energy transition in the region, which is crucial for ensuring a clean and healthy future for its citizens. Lastly, it is necessary to ensure the long-term unity, support, and solidarity of Europe with Ukraine in its resistance against Russian aggression and defence of freedom and European values.

Based on these reasons, the Cluster International Affairs of the Greens/EFA Group in the European Parliament has commissioned this study, which aims to outline current EU-Western Balkan energy cooperation schemes and propose a concrete set of recommendations, with a particular focus on the most vulnerable group affected: the energy poor.

The DNA of our political group, which has always been deeply committed to the enlargement of the EU, is rooted in green and social values that we stand for. These values serve as the foundation of our policy, and this study aims to demonstrate how they can be integrated into the EU's energy policy towards the Western Balkans. By offering concrete solutions and tangible improvements for the citizens, we aim to secure a sustainable, green, and socially responsible future for the region within the EU.

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# 3. EXECUTIVE SUMMARY

This study presents the main features of carbon and energy intensive economies in the Western Balkans (WB). It investigates the energy sector developments and the role of the European Union (EU) in this process, primarily through the critical overview of the main grant support schemes. The study focuses on the energy poverty that affects millions of citizens of the WB. Energy poverty is the most prominent policy challenge in the WB and the obstacle to energy transition. Yet it remains invisible for the existing policy interventions for both the region and also the EU.

The energy poverty, a shared challenge in the WB region, has been marginalised by the decision makers even though its eradication holds the potential to unlock economic, social, health, environmental and technological benefits for the citizens of the WB region. **The rate of vulnerability amongst the energy poor has been heightened by the energy crisis related to the war in Ukraine.** Increased gas prices led to higher electricity prices in the European power market. Meanwhile, the price of pellets and firewood used for household heating has increased across the EU and the Western Balkans.

In the situation of jeopardised energy security resulting from the ongoing war in Ukraine, a portion of the households impacted were forced to rush into securing locally available heating fuels. This created additional pressure on the price of the pellet and firewood in the Western Balkan region, exacerbating the consequences of energy poverty.[1] As a result, the households spend higher shares of disposable income for the provision of energy services. This leaves them with insufficient resources for decent and healthy living standards. **The situation created urgency for design and implementation of effective policy measures to tackle energy poverty in the WB.**

This study highlights the existing governance and financial misconceptions, and resulting gaps when it comes to energy sector developments and support in the WB region. Additionally, it offers a more focused view into the possibilities to increase the benefits of the EU support to the energy sector in the WB by concentrating on the most pressing issues of carbon and energy intensity, energy security, energy poverty and resulting pollution.

**The EU has long been contributing to the energy transition in the WB region.** Current EU candidate countries from the WB include Albania, North Macedonia, Montenegro, Serbia and Bosnia and Herzegovina while Kosovo*[2] is a potential candidate.

1 For example, the price of pellet doubled in the period of one year (summer 2021 to summer 2022) https://pellets-trade.com/price/serbia.html, while the price of firewood is increased for the least 50% https://www.aers.rs/g/vesti/file/Dokumenti/2022-10-14_Grejanje%20CENE%200kt_2022.pdf, https://www.aers.rs/g/vesti/file/Dokumenti/2021-10-21_Grejanje%20CENE%200kt_2021.pdf

2 This designation is without prejudice to positions on status and is in line with United Nations Security Council Resolution 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

In 2005, the WB countries[3] were among the signatories of the Energy Community Treaty that mandates the transposition of the EU energy acquis Communautaire and aims at creating single regional energy market as part of single European energy market.

It includes a legislation that covers environment and market competition, with the aim of creating an integrated pan-European energy market and attracting investments. This has resulted in a higher integration of the WB region with the EU energy markets, although policies are still greatly fragmented across the energy markets, and it is necessary to overcome many barriers to boost investments. The WB region is at an early stage of the EU accession-driven energy transition.

The slow and patchy transposition of the energy and environmental acquis has recently reached somewhat satisfactory levels. However, the energy policies of the WB countries remain burdened by path dependencies related to a carbon-intensive context, implementation deficiencies, and a lack of industry-leading support for renewable energy innovations in both the electricity and heating sectors. This creates an array of challenges for national and local-level energy system transformation. Nearly twenty years down the transposition and implementation road, carbon and energy intensity remain high (Figure 9), with a limited ambition of the WB countries to reverse this trend. **Five years after the expiration of the deadline for the implementation of the Large Combustion Plants Directive the plants in the WB countries emitted more than five times more sulphur dioxide than allowed by the provisions of the Directive** (Figure 13).[4]

Coal represents almost 50% of the entire primary energy supply of the WB region. The share of modern renewables is modest while traditional biomass accounts for 13% of total energy supply. Energy and carbon intensity of the WB region is very high pointing to significant space for improvement in efficiency of energy use and production (Figure 9). Import dependency of the WB region is below the EU average spanning from 27% in Bosnia and Herzegovina to 59% in North Macedonia. **Currently, the region depends on import of the natural gas from Russia. However, the WB countries do not rely on natural gas in their energy supply to the same extent as the EU countries. In 2020, the share of natural gas in the total energy supply of the WB was 8%, while in the EU-27 it stood at 23.7%.**[5]

The residential and transport sector dominate the final energy consumption in all WB countries (Figure 14). Energy is mostly used in the form of oil products, then electricity.

A significant share of final energy is consumed in the form of traditional biomass, while natural gas use in the region is limited (Figure 15).

3 Term 'WB country' in this study is used to mark contracting party of the Energy Community Treaty from the Western Balkan region: Republic of Albania, Bosnia and Herzegovina, Montenegro, Republic of North Macedonia, and Republic of Serbia and Kosovo*

4 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077

5 https://ec.europa.eu/eurostat/statistics-explained/images/2/24/EnergyMixDependencyImports_25-03-2022.xlsx

**Household heating is the single largest type of energy use in the WB (Figure 17). Biomass is the fuel with the largest share in residential energy use (45% in 2020). It is the major heating[6] fuel in all the WB countries accounting for more than 60% of all energy used for heating (Figure 18). For households to embark on a change that will improve benefits of energy consumption they need to have resources including financial assistance. The Household Budgetary Survey data shows (where available) that the majority of households in the WB cannot make any meaningful improvements with the resources that they are currently investing.**

A number of publicly supported schemes are available for the improvement of residential energy efficiency in the WB region. Most of the available public subsidies support beneficiaries who already have income, access to retail banking, and are not considered risky customers for consumer credit. At the same time they fail to provide for the energy poor in the WB countries who usually do not have access to commercial money. The existing schemes discriminate those in poverty and prevent them participating and benefitting from public subsidies as required levels of co-investment of own resources exceed their purchasing power.

The programming mechanisms of the EU support presented in this study do not promise the delivery of the effective assistance to the energy poor. For example, out of all programmed IPA country support 2014 to 2022 that has been labelled in this study as energy related, almost 70% were allocated around only three topics[7], two in Kosovo* and one in Serbia (Table 6). All three-target fossil fuel energy infrastructure, extending carbon lock-in and even increasing the C02 emissions in the case of Kosovo B power plant[8]. Another prominent provisional inconsistency concerns the comparison of the IPA programmed energy support for 2014-2022 to the 2022 energy package for immediate support. The amount allocated for unspecified immediate direct budgetary support to the WB countries is almost double in comparison to the IPA programmed energy support for 2014-2022 (Figure 23).

**The direct budgetary support creates a great uncertainty about the utilisation of the funds for at least two reasons.** The first one relates to the lack of progress in the rule of law of the WB countries on their path to the EU. The EU progress reports for the individual WB countries continuously highlight the challenges in the reform process related to the rule of law. As a result, the progress in the EU integration process is now conditioned with the *fundamentals first* principle[9]. The second one relates to the envisaged design of the immediate support.

By locking in available funds in such a flexible way, the room for other measures to combat energy poverty could be significantly narrowed down.

6 In all WB countries except Albania
7 Involving single or multiple actions
8 Desulphurization and heat extraction processes of Kosovo B further elaborated in the heading labelled - Country level IPA II and IPA III support.
9 The common principles and values that underlie life in the EU: freedom, democracy, equality and the rule of law, promoting peace and stability. https://europeanwesternbalkans.com/2022/11/15/focus-on-the-fundamentals-as-a-basis-for-progress-in-eu-integration/

**To create the benefits for energy poor it is critical for the EU to redesign the existing governance and programming framework. The EU could establish and fund a special regional programme and implementation mechanism for the support for energy poor under the multi-country financial assistance.** The goals of the intervention should be based on the principles laid out in Recommendations on energy poverty of the EC focusing on energy efficiency interventions in the households.[10]

10 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32020H1563&from=EN

# 4. ENERGY AND ENERGY POVERTY IN THE WESTERN BALKANS- PROFILE OF THE REGION AND RELEVANCE FOR THE EU

## 4.1 BASIC FACTS

The Western Balkan (WB) region is populated with more than 17 million people that live in around 5.5 million households (Figure 1). Serbia with its population of almost 7 million people and 2.5 households has the highest regional weight for the processes related to energy sector (Figure 2).

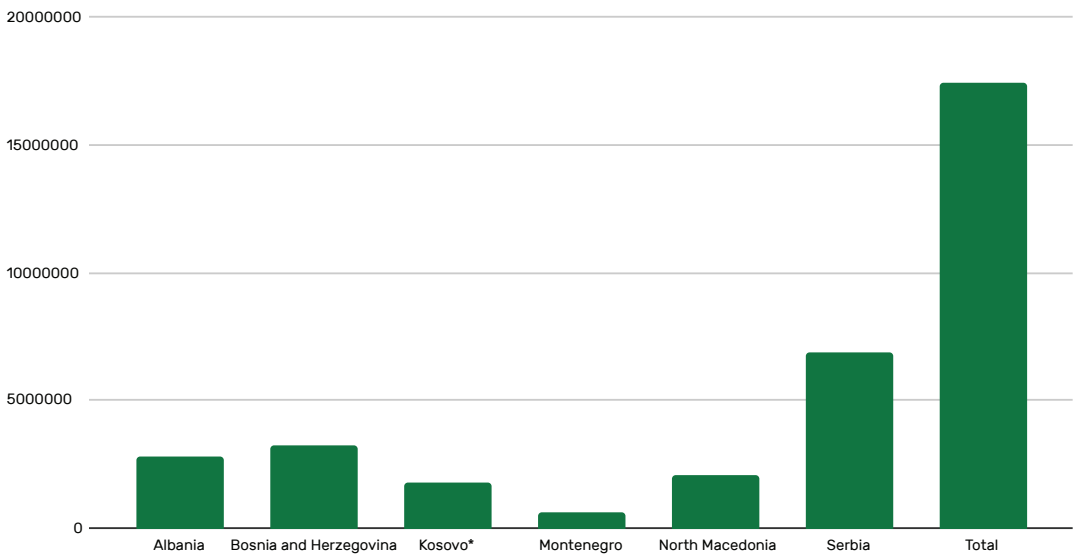


*Figure 1: Population in the Western Balkans in 2021. Source: Eurostat[11], World Bank[12]*

11 https://ec.europa.eu/eurostat/databrowser/view/DEMO_GIND__custom_2330708/settings_1/table?lang=en&bookmarkId=08eec1ad-aee2-47e2-b997-c66eb5b1c7af

12 data.worldbank.org/indicator/SP.POP.TOTL?locations=BA

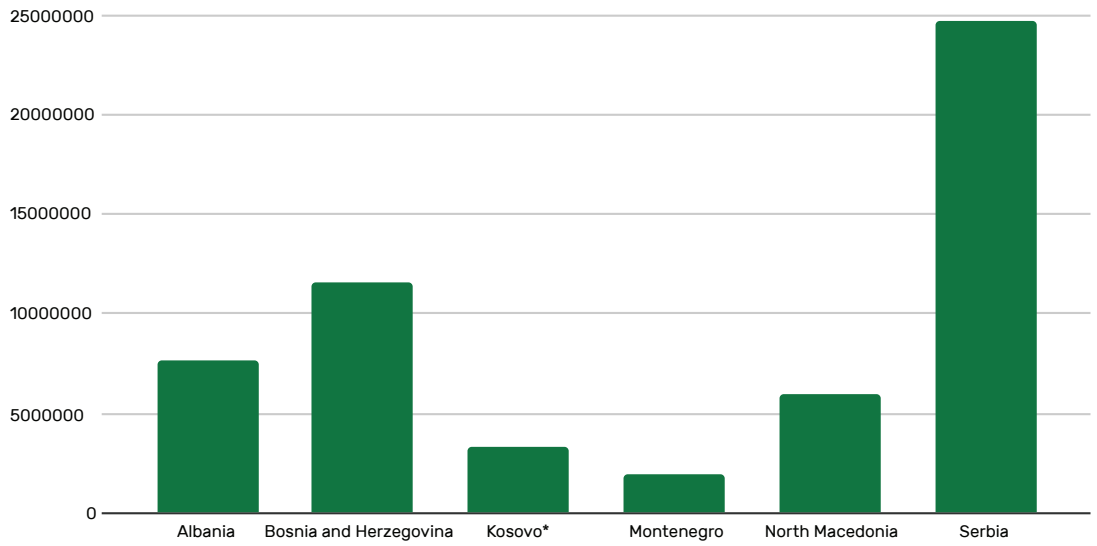


*Figure 2 Number of households in WB in 202113. Source: National statistical offices, Hrvoje Požar for Kosovo**

In 2020, the index of the share of people aged 65 and over in the total population of the WB was above 14%. Adopting the UN definition, these countries are to have an 'old' demographic structure. The fertility rate in the WB is low. This affects natural depopulation and problems replacing generations. The ageing index also shows that the population structures in the WB are ageing. In 2020, in Serbia and Bosnia and Herzegovina, the ratio of people aged 65 and over to people aged under 15 was higher than 1-to-1. This suggests that the WB countries[14] are at an advanced stage of demographic change. Age structure is the one of the driving forces of the labour market. The labour market in its current structure in the WB countries exhibits lower employment and higher unemployment rates compared to the EU27 (Figure 3).

13 Data for Bosnia and Herzegovina are from 2013, while data for Kosovo* are estimation based on the study of Hrvoje Požar

14 Five countries: Republic of Albania, Bosnia and Herzegovina, Montenegro, Republic of North Macedonia, and Republic of Serbia and Kosovo* (This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence)

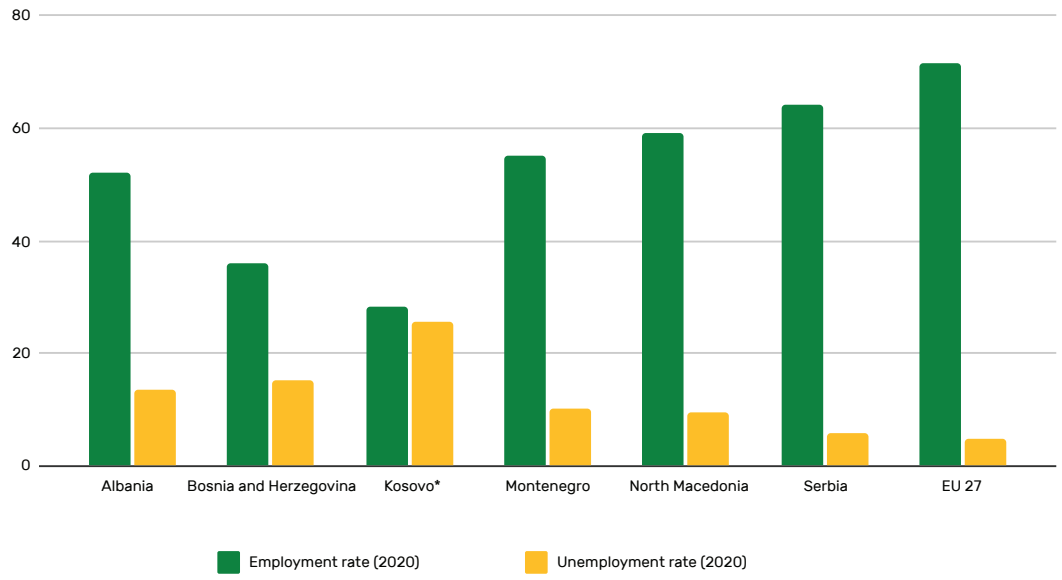


*Figure 3 Employment and unemployment rates in WB. Source: Eurostat*[15]

Combined GDP of the region is 112 billion EUR. While the level of the general government debt seems moderate, its sustainability may be an issue considering the chronic current account deficit of the WB region economies (Table 1). The current account balance would be much worse without sizable diaspora remittance payments in the WB originating mainly from the EU countries.[16]

*Table 1 Selected economic parameters of WB in 2021. Source: Eurostat*[17]*,World Bank*[18] *IMF*[19]

| | GDP in 2021 (billion EUR current prices) | Current account balance (2021) | General government debt as percent of GDP in 2021 |
|---|---|---|---|
| Albania | 15.432 | -7.5 | 73.85% |
| Bosnia and Herzegovina | 19.084 | -2.4 | 35.43% |
| Kosovo* | 7.958 | -8.7 | 22.41% |
| Montenegro | 4.955 | -9.2 | 86.63% |
| North Macedonia | 11.688 | -3 | 53.2% |
| Serbia | 53.329 | -4.3 | 57.85% |
| Bulgaria (EU) | 71.077 | -0.4 | 35.21% |
| Croatia (EU) | 58.254 | 3.0 | 79.79% |
| Hungary (EU) | 154.120 | -3.9 | 74.43% |

15 https://ec.europa.eu/eurostat/databrowser/view/LFSI_EMP_A/default/table?lang=en&category=labour.employ.lfsi.lfsi_emp
16 https://repository.ukim.mk/bitstream/20.500.12188/15917/1/04%2010.47063%3AEBTSF.2021.0004.pdf
17 https://ec.europa.eu/eurostat/databrowser/view/NAMA_10_GDP__custom_4669457/default/table?lang=en
18 https://data.worldbank.org/indicator/BN.CAB.XOKA.GD.ZS
19 https://www.imf.org/external/datamapper/GG_DEBT_GDP@GDD/SWE/AUS

The EU is the main trading partner of the WB region, followed by China and Turkey (Figure 4). More than two thirds of exports of goods from the region goes to the EU, with an additional 20% going to the trading partners in the region who are again critically tied to the EU economy. These critical ties with the EU accompanied by a high carbon intensity set the stage for the extreme sensitivity to one aspect of the Green Deal: carbon border adjustment mechanism (CBAM). The CBAM will be set up to equalise the price of carbon paid for EU products operating under the EU Emissions Trading System and the one for imported goods.

In December 2022, the Council and the European Parliament reached a political agreement on the implementation of the new CBAM. The CBAM will enter into force in its transitional phase as of October 1st, 2023, while the permanent system enters into force on January 1st, 2026. As of that date, importers will need to declare each year the quantity of goods imported into the EU in the preceding year and their embedded GHG emissions. The CBAM will cover iron and steel, cement, aluminium, fertilisers, electricity, and other materials[20]. When it comes to the effect on electricity trade possible impact of the CBAM would vary between WB6 countries, which have different levels of electricity exports to Europe and progress on climate policies, like introducing a price on carbon emissions and phasing out coal. Considering the high level of carbon intensity and the volume of electricity export Bosnia and Herzegovina and Serbia would be mostly affected among the WB countries.

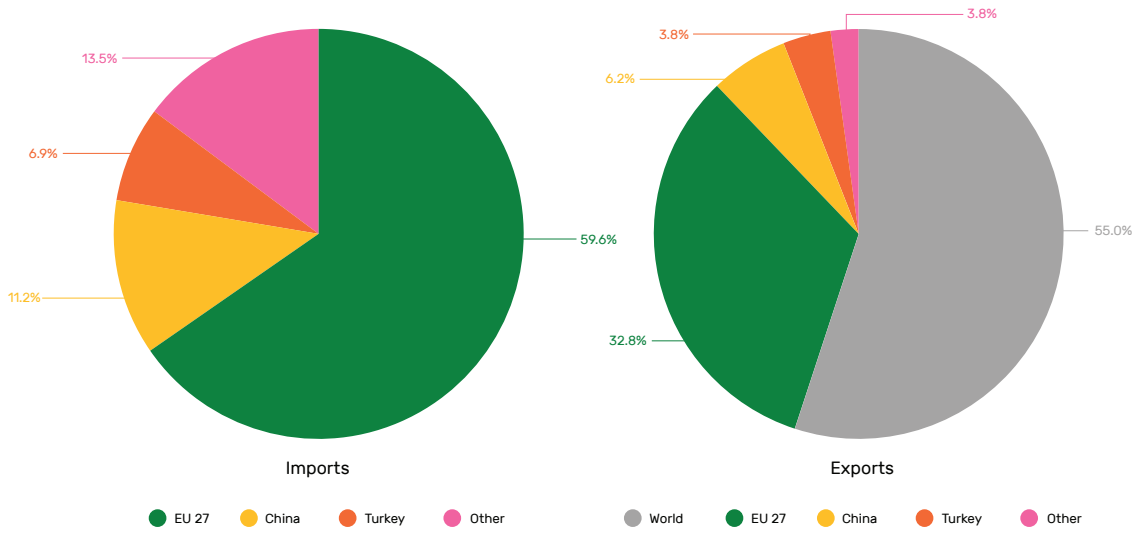


*Figure 4 Share of goods, imports to the WB and exports from the WB by trading partner in 2021. Source: European Commission (inter-regional trade excluded).*

The strength of the economy and dynamic of the labour market are critical for the energy efficiency of the building sector. This is critical for investing in the energy efficiency measures on the demand size and for contracting adequate workforce on the supply side. In the WB region more than two thirds (ranging from 58% in Kosovo* to 72% in Albania) of the occupied

20 https://taxation-customs.ec.europa.eu/green-taxation-0/carbon-border-adjustment-mechanism_en

space is in the individual households while less than one third is in multi-apartment buildings. This is important because the unit costs of intervention for energy efficiency measures in buildings are higher for single apartment buildings. Variations across the region are visible (Figure 5).[21]

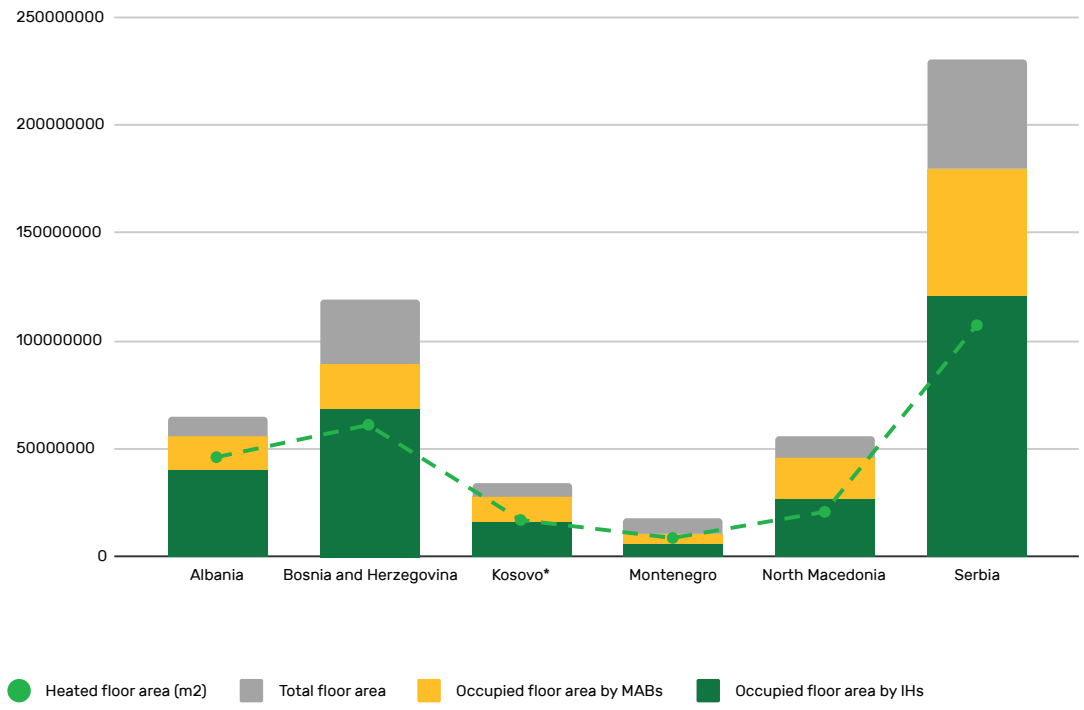


*Figure 5 Number and structure of dwellings in the Western Balkans. Source: RES Foundation[22]*

The Commission proposed to expand the 'EU renovation wave' to the WB in the Economic and Investment Plan[23] that was further elaborated upon in the Sofia Declaration on the Green Agenda for the WB[24]. **Even under much higher renovation rates than those currently implemented the WB region would surpass the 50% share of renovated floor area only by 2038[25]. Therefore, the renovation wave of the buildings will be too inefficient and slow to help mitigate the consequences of the energy poverty in the WB region. In this situation, it would be worthwhile to consider other more effective solutions that include the replacement of the existing heating devices in the households with more efficient once.**

When planning and considering the execution of energy efficiency measures in buildings it is important to consider the climate and seasonal differences in temperature for their most optimal calibration. Heating degree days (HDD) measure how cold temperatures are for a given period of days, resulting in the demand for energy to heat a building. Since the level of HDD should have a direct relationship with the energy needed to heat, they offer a beneficial

21 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
22 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
23 https://neighbourhood-enlargement.ec.europa.eu/system/files/2020-10/communication_on_wb_economic_and_investment_plan_october_2020_en.pdf
24 https://www.rcc.int/docs/546/sofia-declaration-on-the-green-agenda-for-the-western-balkans-rn
25 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf

prediction of future usage. Cooling degree days (CDD) measure how warm temperatures are, resulting in the demand for energy needed to cool a building. They act in reverse of HDD, as they begin to add up when the outside temperature rises above the base temperature.

**The WB region is predominantly influenced by continental seasonal differences in climate and therefore requires a significant calibration of the indoor temperature, heating in the winter and cooling in the summer.** As a result, energy demand (indicated by heating and cooling degree days) of the buildings is high through the year. This underlines the need for a robust energy efficiency intervention (Figure 6).

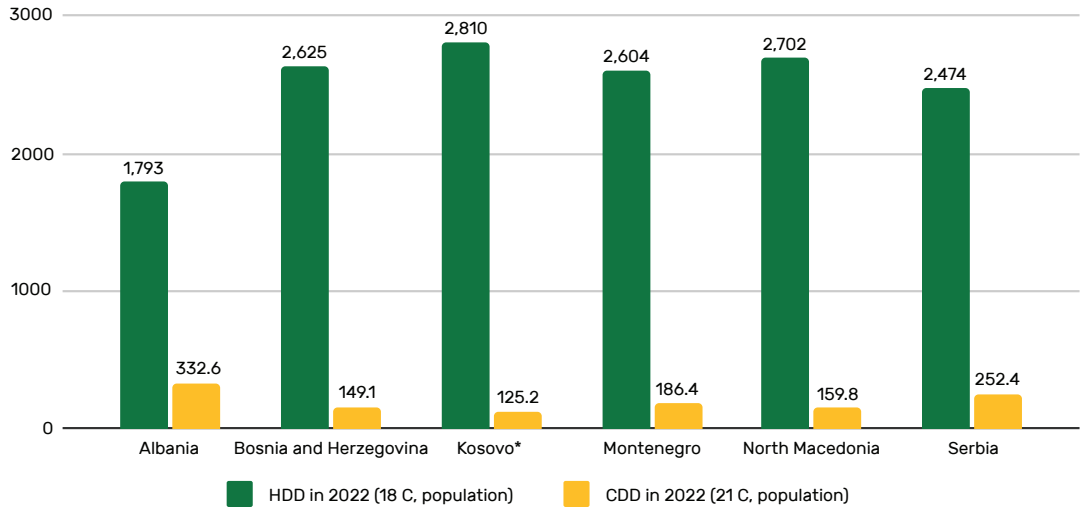


*Figure 6 HDD (18 C, population) and CDD (21 C, population) in 2022. Source: IEA*[26]

26 https://www.iea.org/data-and-statistics/data-tools/weather-for-energy-tracker

## 4.2 WHERE DOES THE ENERGY COME FROM IN THE WB?

Coal represents almost 50% of the entire primary energy supply of the WB region and it is by far the most dominant energy source. The configuration of the supply mix remains stable over time with a slow and so far, very modest share of modern renewables. **Traditional biomass accounted for 13% of total energy supply** (Figure 7).

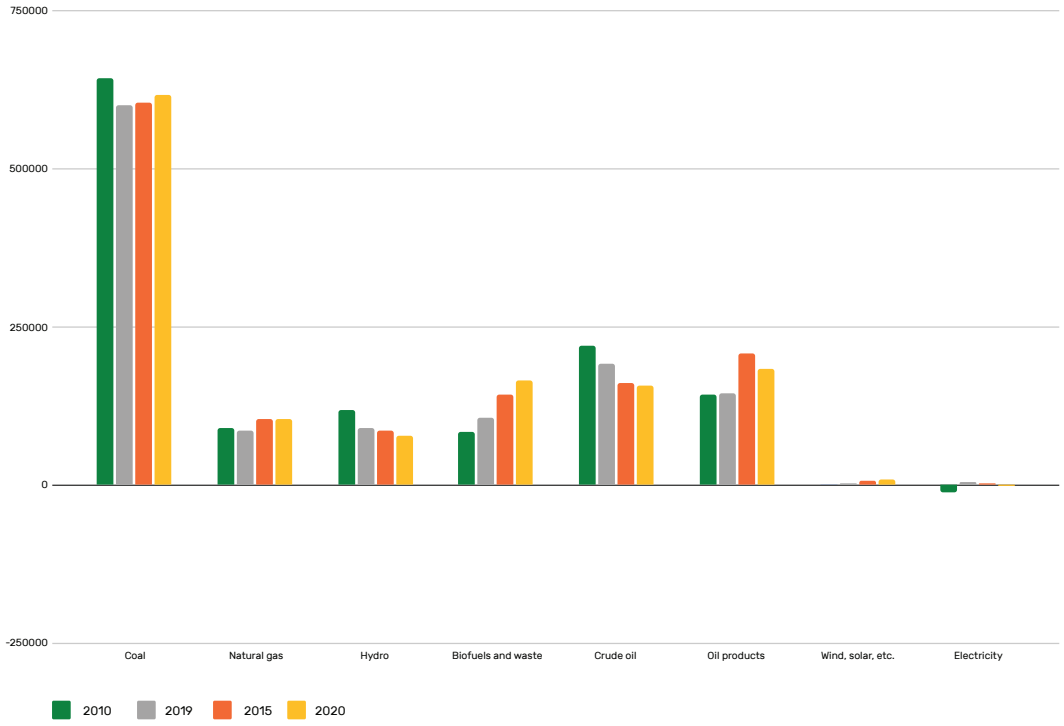


*Figure 7 Total energy supply by source (TJ) in the WB in 2010,2015,2019,2020. Source: IEA*

The WB countries share a similar configuration of total energy supply with a significant lignite dependency, except for Albania (Figure 8). This is because the countries rely on large domestic lignite deposits for electricity production. Most of the lignite power sector infrastructure was built in the 15-year period from 1970 through 1985 (Table 2).

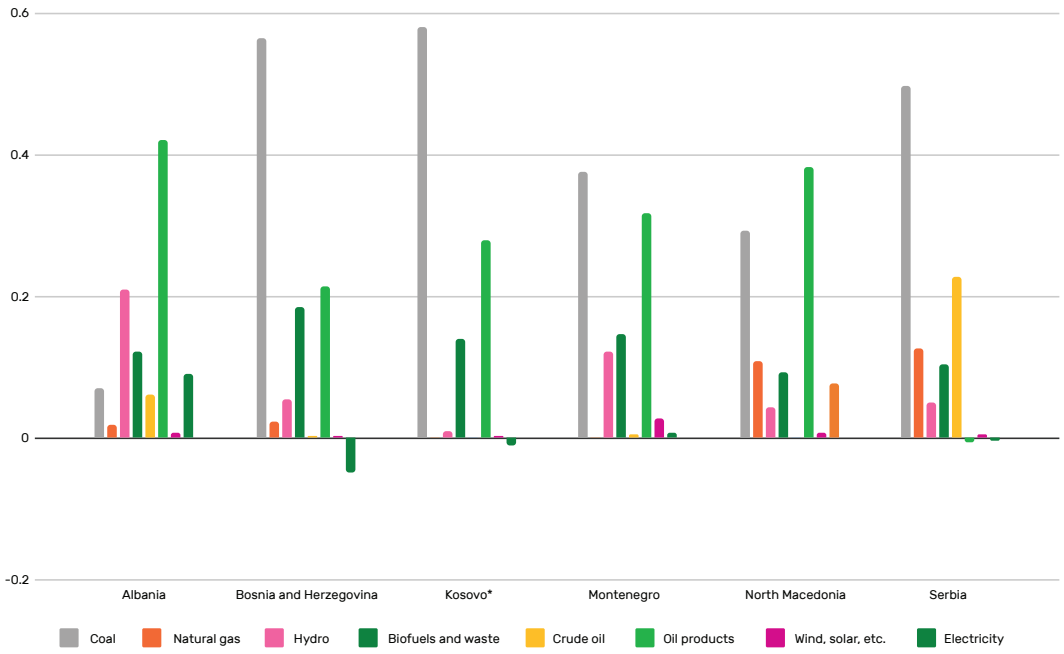


*Figure 8 Total energy supply by source (TJ), 2020. Source IEA*

**Energy and carbon intensity of the WB region is high compared to both the EU and the world average values.** This points out to significant space for improvement in efficiency of energy use and production (Figure 9). In addition to low energy efficiency one of the reasons is related to electricity prices that remain below EU27 average.

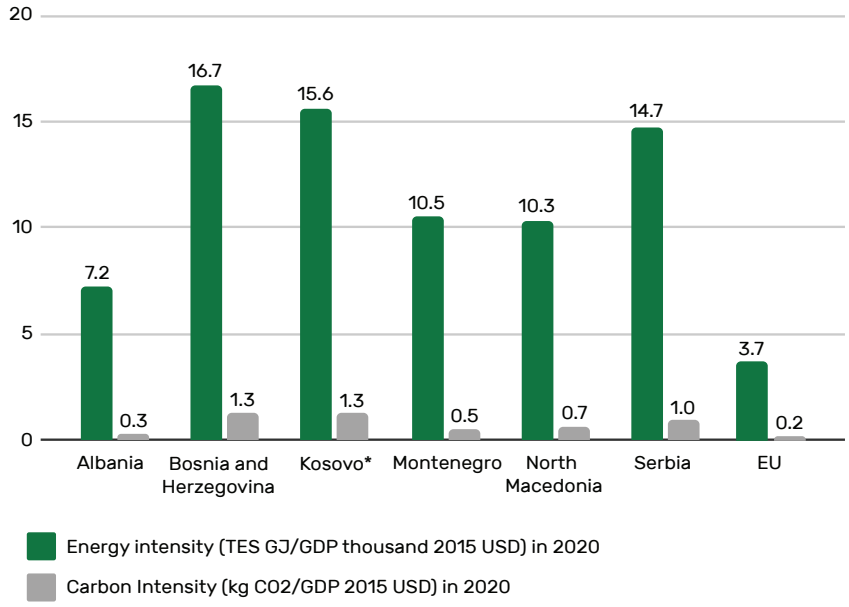


*Figure 9 Energy and carbon intensity of the WB region and the EU. IEA*

Import dependency of the WB region is lower than the EU average spanning from 27% in Bosnia and Herzegovina to 59% in North Macedonia. Currently, the region depends on the importation of natural gas, which all comes from Russia. However, the WB countries do not rely on natural gas in their energy supply to the same extent as the EU countries. In 2020, the share of natural gas in the total energy supply of the WB is 8%, while in the EU27 it stands at 23.7%.[27] Serbia, with 13% share in 2019, has the largest share of natural gas in total energy supply in the region. This share is half of the average share in the EU countries. Natural gas is not consumed in Kosovo* and Montenegro. Bosnia and Herzegovina and North Macedonia completely rely on natural gas imports while Serbia has 15% share of domestic natural gas.

**Domestic production of natural gas in Serbia is performed by Oil Industry of Serbia, owned by Russian companies Gaspromneft for 50% and by Gasprom for additional 6%.** Following the period when Serbia was supplied via Ukraine and Hungary, it became a transit country as one line of Turkish stream coming from Bulgaria passes through Serbia and reaches Hungary. Both Serbia and North Macedonia are supplied through Bulgaria, while Bosnia and Herzegovina is supplied through Serbia from Bulgaria (Figure 10).

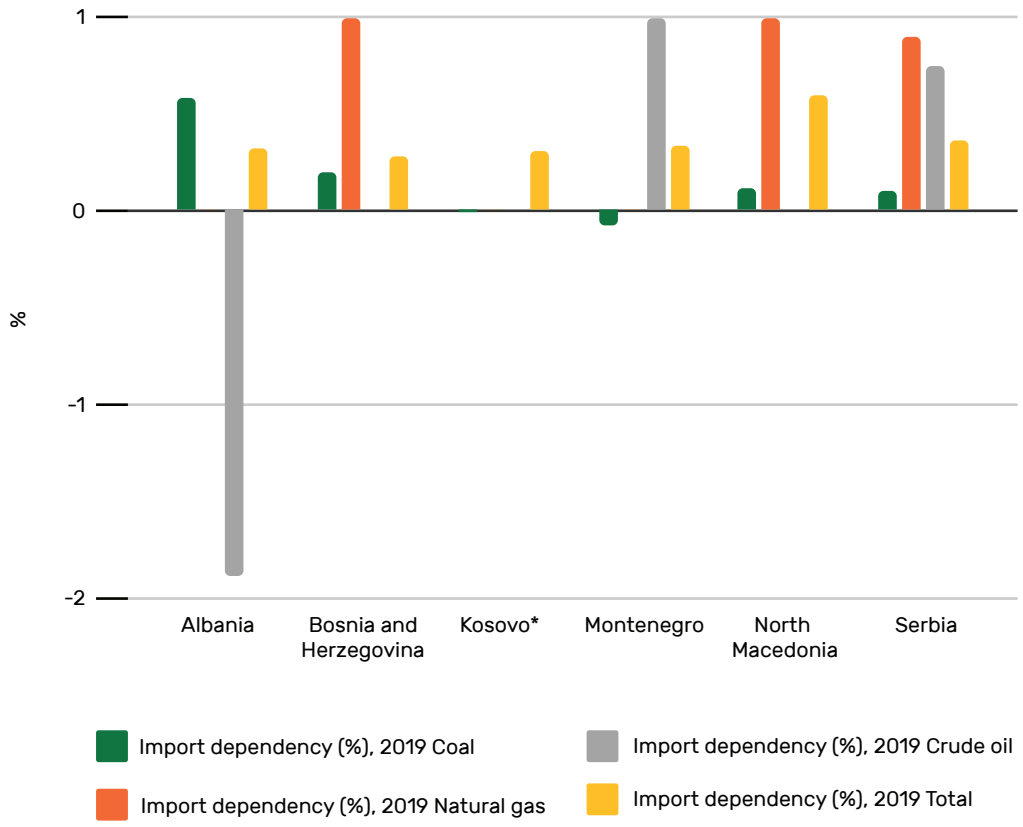


*Figure 10 Import dependency rate in the WB by fuel in 2019. Source: IEA*

27 https://ec.europa.eu/eurostat/statistics-explained/images/2/24/EnergyMixDependencyImports_25-03-2022.xlsx

The WB countries import almost all their oil needs. Serbia and Albania have certain domestic crude oil production while Serbia, Albania and Bosnia and Herzegovina (B&H at significantly reduced volume with only marginal refinery production) produced refinery products in 2019. The oil industry of Serbia has a concession on exploitation of domestic oil, runs refinery production and manages a large wholesale and retail network. In all countries import of oil and oil products is liberalised and performed commercially. Serbia partially imports oil via Adriatic pipeline. Serbia, Bosnia and Herzegovina, and North Macedonia are landlocked countries and Kosovo* is landlocked as well. Poor inland waterways infrastructure also limits to a certain extent the utilisation of the River Danube for transport.

Import by country is diverse. In 2020, a single highest import of crude petroleum from Iraq by Serbia amounted to $435M. The rest of import in 2020 per country of origin and destination was as follows:[28]

• Albania imported $328M in refined petroleum, primarily from: Greece ($91.6M), Italy ($83.4M), Russia ($45.9M), Turkey ($33.1M), and Croatia ($25.6M),

• Bosnia and Herzegovina imported $484M in refined petroleum primarily from: Croatia ($268M), Serbia ($106M), Italy ($48.3M), Slovenia ($27.5M), and Greece ($7.24M),

• Montenegro imported $118M in refined petroleum primarily from: Greece ($61.1M), Croatia ($42.6M), Serbia ($5.87M), Albania ($888k), and Spain ($848k),

• North Macedonia imported $342M in refined petroleum, primarily from: Greece ($276M), Bulgaria ($34.2M), Serbia ($8.51M), Turkey ($3.46M), and Slovakia ($2.92M),

• Serbia imported $370M in refined petroleum primarily from: Hungary ($159M), Romania ($48.8M), Bulgaria ($38.5M), North Macedonia ($29M), and Italy ($17M) and $853M in crude petroleum primarily from: Iraq ($435M), Russia ($303M), Kazakhstan ($97.6M), Romania ($10.9M), and Croatia ($6.64M).

## 4.2.1 ELECTRICITY PRODUCTION IN THE WB

Electricity production in the WB is based on domestic lignite and large hydro facilities. Together they account for more than 95% of electricity production of the region (Figure 11). This allows for relative self-sufficiency excluding the periods of the peak demand when the electricity import is required.

28 https://oec.world/en/profile/hs/mineral-fuels-mineral-oils-and-products-of-their-distillation

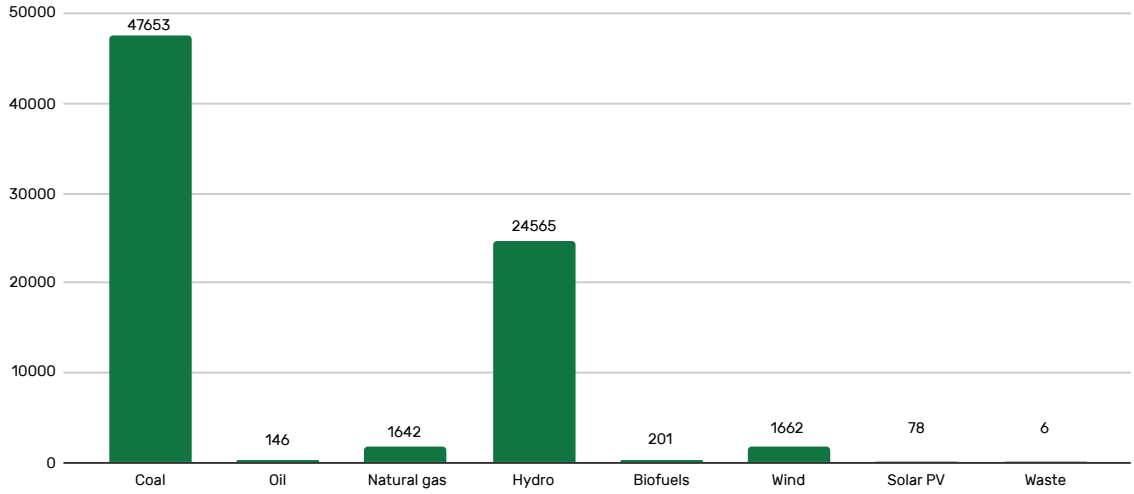


*Figure 11 Electricity production in the Western Balkans by source in 2019 (GWh). Source: IEA*

The largest electricity producer in the WB region is Serbia while Bosnia and Herzegovina is the biggest exporter of the electricity. Kosovo* has the largest share of lignite in electricity production. Bosnia and Herzegovina has the largest share of large hydro in electricity production (Figure 12).

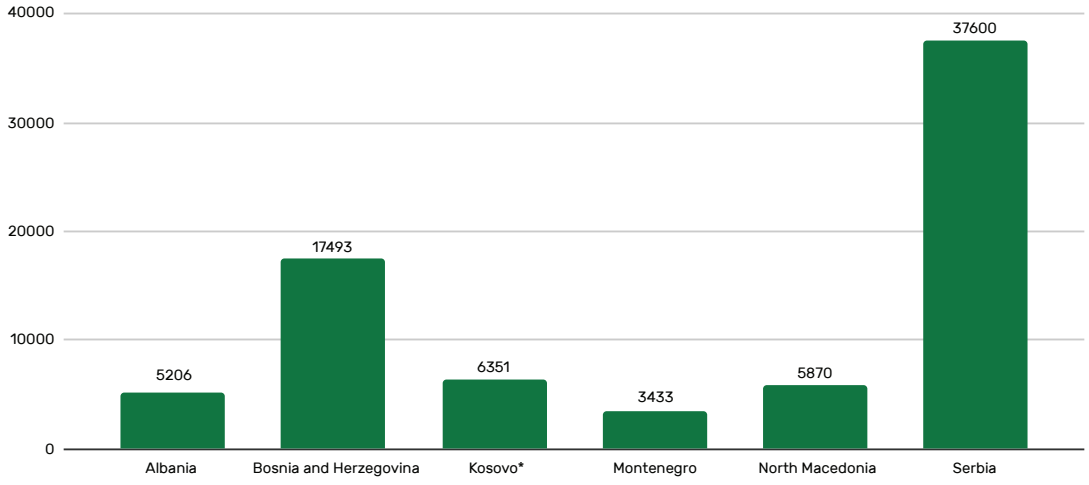


*Figure 12 Electricity production in the Western Balkans by country in 2019 (GWh). Source IEA*

The WB countries share a post-socialist policy setting and a limited tradition in innovative renewable energy policy initiatives that is needed to push energy transition in relation to the EU-accession process. Until 1991, all the countries, except Albania, were part of a unified energy system based on domestic lignite and large hydro. The energy infrastructure, inherited from the Socialist Federal Republic of Yugoslavia, is now outdated, with some being up for closure and others needing reconstruction and major improvements in production

and distribution efficiency.[29] Due to low operational reliability of old lignite fleet and seasonal variation of hydro production the region is exposed to risks related to the security of electricity supply (Table 2). In a time of short supply and high prices (such as during energy crises) fiscal risk is induced in addition to security of supply challenge. The current electricity production mix of the WB region is resulting in a high level of GHG and local pollutant emissions (covered by the EU Large Combustion Plants Directive and Industrial Emissions Directive).

The environmental footprint of electricity production mix in the WB is high. One of the main tools carefully selected to reduce this footprint are National Emission Reduction Plans (NERPs). NERPs are the instrument to comply with the Large Combustion Plants Directive (Directive 2001/80/EC) and as such to enable the reduction of emissions of sulphur dioxide, nitrogen oxides and dust for the group of power plants covered by their scope.

*Table 2 WB lignite power plants basic data, compilation of utility data, EnCT Implementation report 2022[30] and Bankwatch Comply or Close[31]*

| Contracting party of the Energy Community | Name of plant | MW e | Date of starting operation | Opt-out, NERP or direct compliance | Estimated remaining number of hours in opt-out[32] |
|---|---|---|---|---|---|
| Bosnia and Herzegovina | Gacko | 300 | 1983 | NERP | N/A |
| | Ugljevik | 300 | 1985 | NERP | N/A |
| | Kakanj 5 | 110 | 1969 | Opt-out | 836 |
| | Kakanj 6 | 110 | 1977 | NERP | N/A |
| | Kakanj 7 | 230 | 1988 | NERP | N/A |
| | Tuzla 3 | 110 | 1966 | Opt-out | 5777 |
| | Tuzla 4 | 200 | 1971 | Opt-out | 1151 |
| | Tuzla 5 | 200 | 1974 | NERP | N/A |
| | Tuzla 6 | 215 | 1978 | NERP | N/A |
| | Stanari | 300 | 2016 | Compliance | N/A |
| Kosovo* | Kosovo A3 | 200 | 1970 | NERP | N/A |
| | Kosovo A4 | 200 | 1971 | NERP | N/A |
| | Kosovo A5 | 210 | 1975 | NERP | N/A |
| | Kosovo B1 | 339 | 1983 | NERP | N/A |
| | Kosovo B2 | 339 | 1984 | NERP | N/A |
| Montenegro | Pljevlja I | 210 | 1982 | Opt-out | 0 |

29 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077

30 https://www.energy-community.org/news/Energy-Community-News/2022/12/07.html

31 https://docs.google.com/spreadsheets/d/1nywn2w6Sc6SQkfcpvaNH-F8msvONRodaxmcqca009SM/edit#gid=872875485

32 Based on the data from EnCT Implementation report, 2022.

| | | | | | |
|---|---|---|---|---|---|
| North Macedonia | Bitola 1 | 233 | 1982 | NERP | N/A |
| | Bitola 2 | 233 | 1984 | NERP | N/A |
| | Bitola 3 | 233 | 1988 | NERP | N/A |
| | Oslomej | 125 | 1980 | NERP | N/A |
| Serbia | Kostolac A1 | 100 | 1967 | NERP | N/A |
| | Kostolac A2 | 210 | 1980 | NERP | N/A |
| | Kostolac B1 | 348 | 1987 | NERP | N/A |
| | Kostolac B2 | 348 | 1991 | NERP | N/A |
| | Morava | 125 | 1969 | Opt-out | 3034 |
| | Nikola Tesla A1 | 210 | 1970 | NERP | N/A |
| | Nikola Tesla A2 | 210 | 1970 | NERP | N/A |
| | Nikola Tesla A3 | 305 | 1976 | NERP | N/A |
| | Nikola Tesla A4 | 309 | 1978 | NERP | N/A |
| | Nikola Tesla A5 | 309 | 1979 | NERP | N/A |
| | Nikola Tesla A6 | 309 | 1979 | NERP | N/A |
| | Nikola Tesla B1 | 620 | 1983 | NERP | N/A |
| | Nikola Tesla B2 | 620 | 1985 | NERP | N/A |
| | Kolubara A3-1 | 32 | 1956 | Opt-out | 4523 |
| | Kolubara A3-3, 4, 5 | 32 | 1957 | Opt-out | 2815 |
| | Kolubara A5 | 110 | 1979 | Opt-out | 6107 |

In the case of Serbia, compliance with the ceiling for sulphur dioxide presents the biggest challenge, while North Macedonia faces problems with ceilings for sulphur dioxide and dust. Bosnia and Herzegovina and Kosovo* failed to meet the ceilings for all three pollutants.[33] The gap was closed for NOx emissions and narrowed down for dust emissions in contrast to SO2, which remains the biggest challenge (Figure 13). In the case of SO2, the emissions are five times higher than the limit prescribed by the National Emission Reduction Plans (Figure 13). This is even more relevant considering that SO2 emissions are the major secondary source of particulate matter (PM) pollution in the WB region. The current situation is not promising, and countries continue to breach the prescribed limits. For example, the Pljevlja coal power plant in Montenegro spent all its allocated working hours[34] for the period 2018-2023. Despite this, it continues its operations without any consequences (Table 2). Little has been done to reduce SO2 emissions from the power plants in the WB region. EnCT parties see the de-sulphurisation as a preferred option to reduce SO2 emissions from the power plants in the WB region. This option requires the installation of expensive equipment that consumes lots of additional electricity during its operation.

33 https://www.energy-community.org/news/Energy-Community-News/2021/03/16.html

34 Plants that are not covered by the NERPs were allowed to operate without compliance for a limited number of hours in the period 2018-2023. Pljevlja spent all of the allocated hours and remains operational and non-complaint.

This reduces the marketable plant electricity output. As a result, capacities of plants to sell electricity are reduced while the overall carbon emissions can even be increased.[35] This situation clearly jeopardises any meaningful environmental and decarbonisation goals.

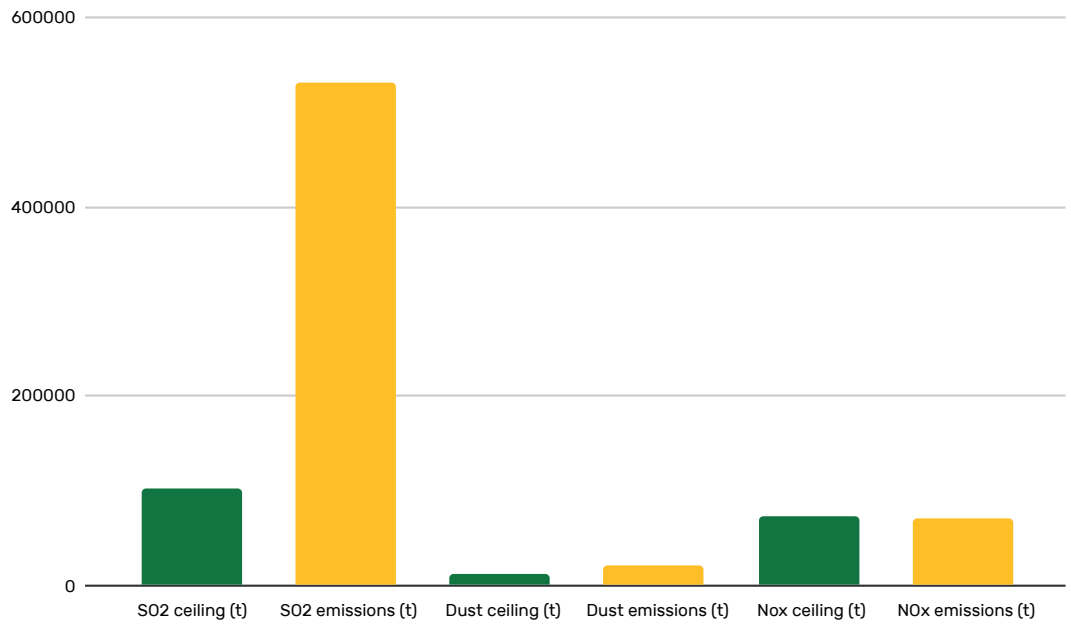


*Figure 13 SO2, dust and NOx ceilings and emissions in 2021 (t). Source: Bankwatch Comply or Close*

The WB countries have large and flexible hydropower potential that may be deployed to support European electricity markets where it is needed as a renewable alternative to the flexibility. For this to happen, it is critical to change consumption patterns to enable secure and reliable energy provision to meet sustainable domestic demand. This creates the space for participation in the European market for flexible hydro resources.

## 4.3 HOW IS ENERGY USED IN THE WB?

The residential and transport sector dominate the final energy consumption in all WB countries followed by industry (Figure 14). Energy is mostly used in the form of oil product and electricity. Significant share of final energy is consumed in the form of traditional biomass. Natural gas use in the region is limited (Figure 15).

35 As a by-product for this process, large quantities of gypsum are created that open issues of its transport and storage. For details see: More than words, 2020. https://www.resfoundation.org/transposing-the-european-green-deal-to-the-western-balkans-more-than-words/

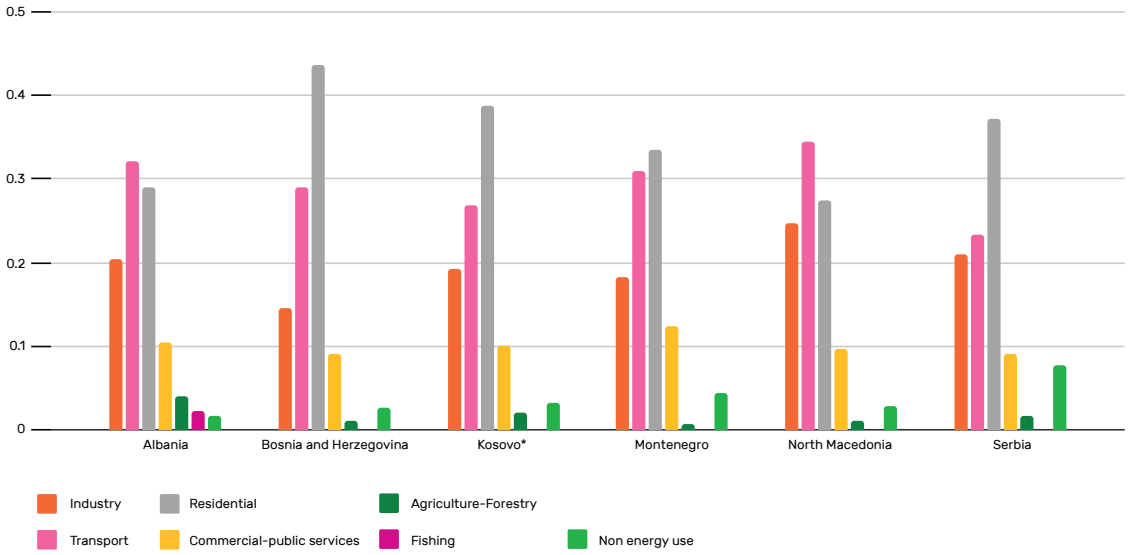


*Figure 14 Total final energy consumption by sector in the WB in 2020 (%)*

The configuration of energy consumption by sectors has remained relatively stable in the last 10 years. Recent residential sector share increase is attributable to manipulation with biomass statistics (Figure 16). The WB countries used data manoeuvring to bring the renewable energy share close to the 2020 target without a major physical change, policy change or innovation. The policy framework has been set by the EU Renewable Energy Directive from 2009, with each WB country having a mandatory 2020 target that was determined using the same methodology. Four WB countries corrected their data on biomass consumption in the energy balances for the years in the run-up to 2020, without correcting the balances that served to establish the baseline for the renewable energy target. Serbia was the last country in the region to manoeuvre biomass data in its official statistics.

To illustrate, the primary production of energy from wood fuels recorded in the energy balance increased by 36.9% (roughly for more than one million tons of wood) in only one year's time from 2019 to 2020.[36] North Macedonia has revised its biomass share for energy balance downward in the baseline year, reducing both the baseline and its 2020 target in consistent manner, while Albania has nearly 100% of RES share in electricity coming from hydro energy.

36 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077

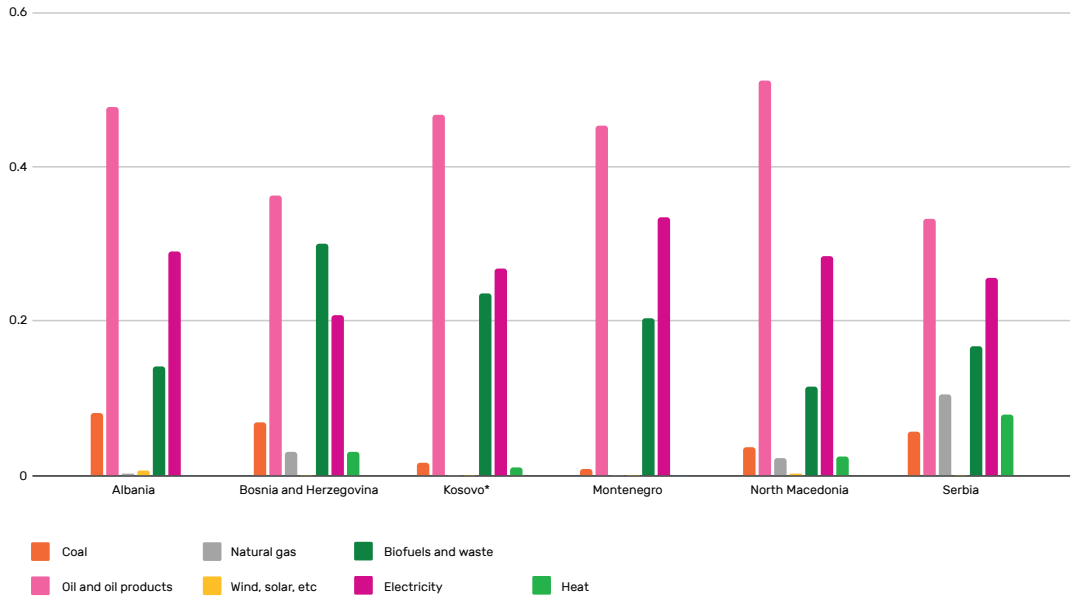


*Figure 15 Total final energy consumption in the WB by fuel in 2020(%)*

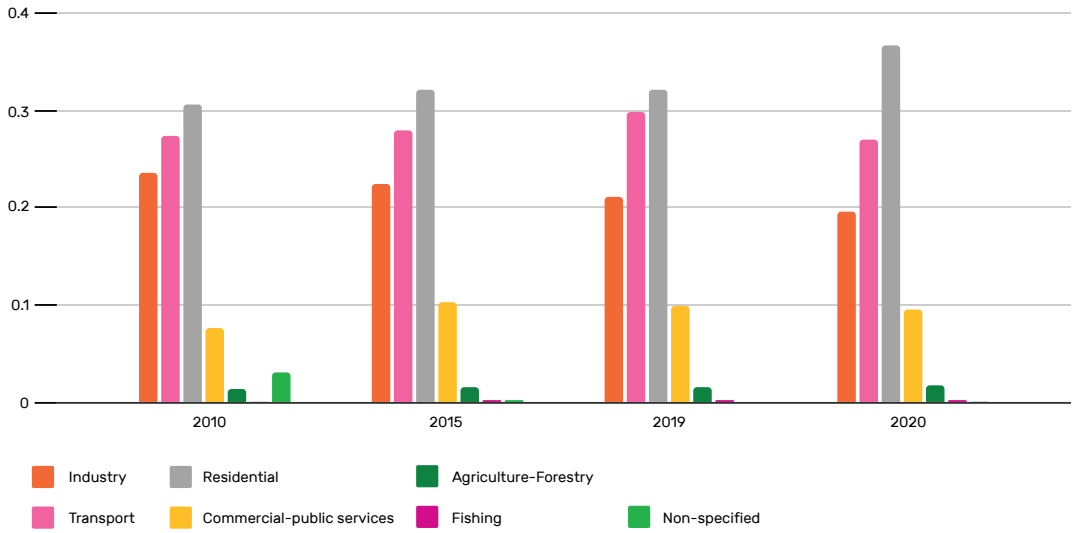


*Figure 16 Shares of sector in final energy consumption in the WB in 2010, 2015, 2019, 2020.*

# 4.4 HOW IS ENERGY USED IN HOUSEHOLDS IN THE WB?

Household heating is the single largest type of energy use in the WB (Figure 17). Biomass is the fuel with the largest share in residential energy use (45% in 2020). It is the major heating fuel in all WB countries accounting for more than 60% of all energy used for heating[37] (Figure 18). The configuration of energy use per type of use remained stable over time showing sensitivity to weather and reflecting already explained data manipulation (Figure 19).

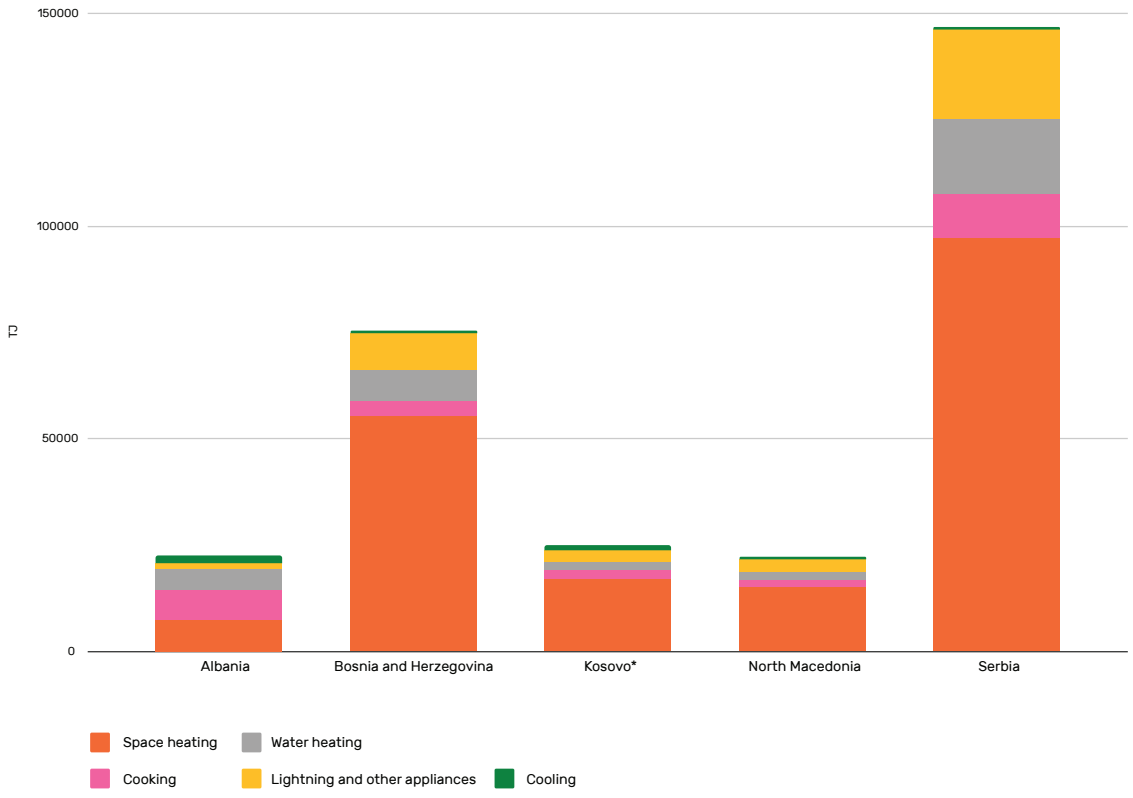


*Figure 17 Final energy consumption (TJ) in households per type of energy use in 2020*

37 In all WB countries except Albania.

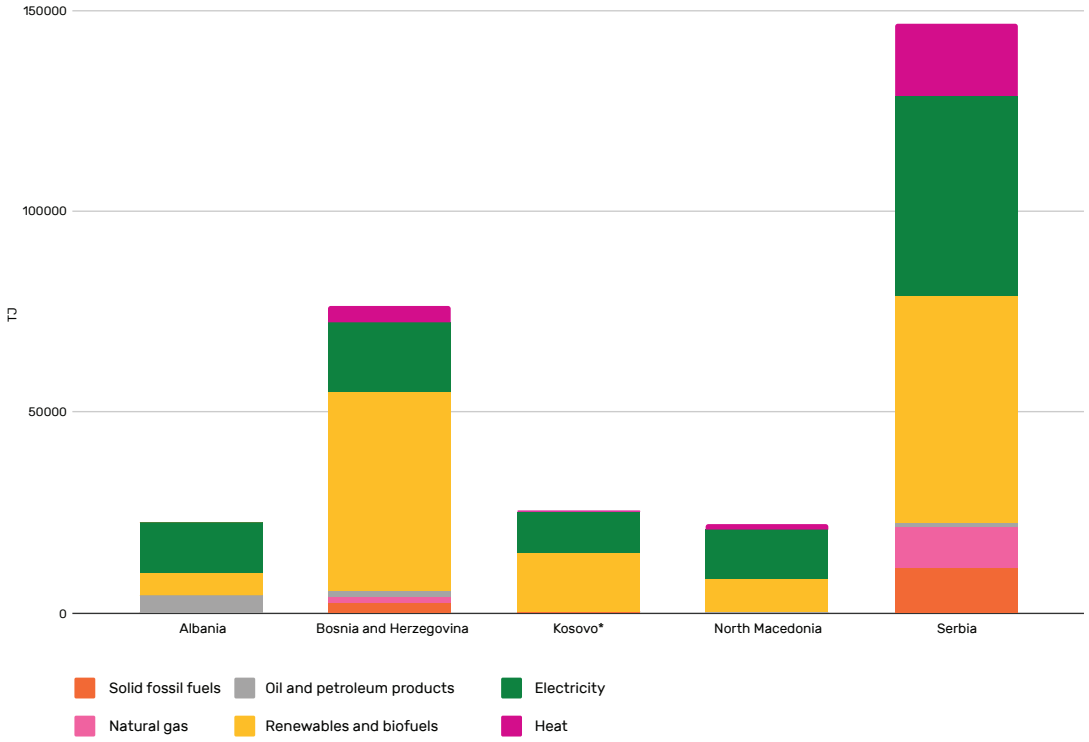


*Figure 18 Final energy consumption (TJ) in households per fuel type/energy carrier in 2020*

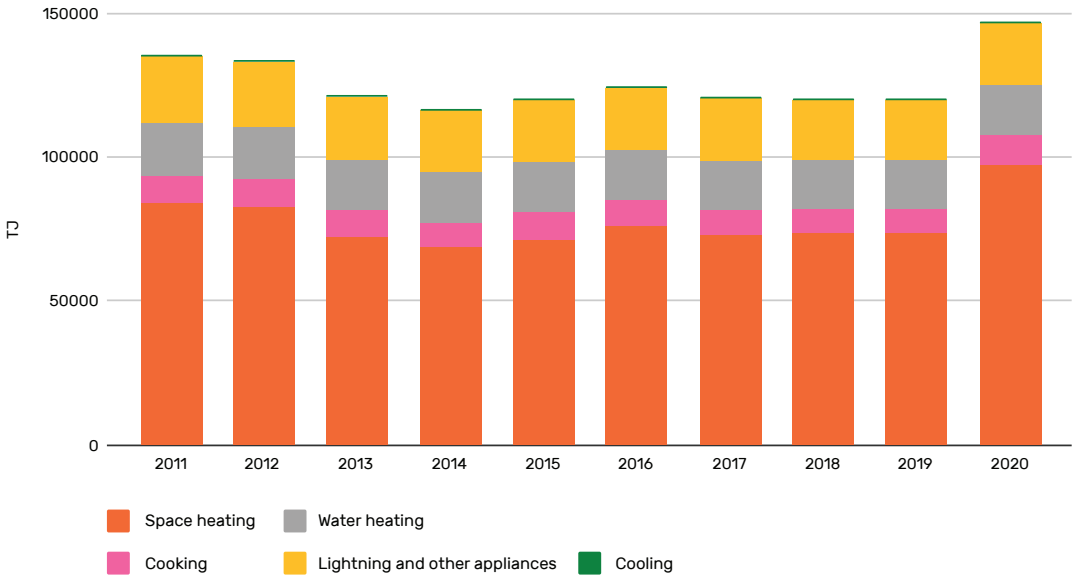


*Figure 19 Final energy consumption (TJ) in households per type of energy use in Serbia, 2011-2020*

The WB countries suffer from the highest levels of air pollution in Europe. Air pollution is particularly alarming during the heating season. Household heating is the main primary source of particulate matter (PM) emissions in the WB. According to the European Environmental Agency, citizens of the WB region are at higher risk of dying from the consequences of air pollution than any other European citizens.[38] **In 2020, the estimated number of premature deaths due to air pollution was 39,190 in the WB countries. EEA surveys 41 European countries for health effects of air quality. Six of the seven countries with the largest number of years of life lost per 100,000 inhabitants associated with exposure to PM2.5 in 2020 were WB countries. The environmental consequences of energy sector activities in the WB region spill over its borders and affect the quality of life of citizens in the EU as well due to geographical proximity.[39] For example, one health modelling exercise shows that due to the total emissions of coal-fired power plants in the Western Balkans there were around 10,800 premature deaths in the EU Member States in the period of 2018-2020.[40]**

**Individual heaters (stoves, ovens, masonry stoves) are the most widespread devices used for heating in the WB. Almost three million households (out of 5.5 million) rely on the heat produced in such devices. Biomass will continue to be used for heating in the WB for the foreseeable future. Using biomass for heating in an efficient manner is a skill mostly taken for granted, yet in short supply or neglected among the WB users.[41]**

**Real-life efficiency of these devices[42] is estimated to be in the range from 30-40%. Seasonal efficiency of 65% is minimal type test efficiency required for eco-design certified appliances while the benchmark value set by the EU Regulation is 86%.[43]** Even when the deviations of real-life efficiency from lab tests are considered there is a significant space for improvement. In certain instances, the real-life efficiency may be increased by 100% and more. Real life emissions of PM, OGC and Benso(a)piren when measured vary significantly. The reasons are various and include type of testing and skills of the operator. Wood moisture can influence the increase of emissions of particulate matter by a factor of 8 in new appliances.[44]

**The replacement of the devices with the eco-design certified devices through transposition and implementation of stringent EU standards for heating devices would bring reductions in emissions that may go as high as 90% in the WB countries.[45]** The legislation in question concerns Commission Delegated Regulation (EU) 2015/1186 of 24 April 2015 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of local space heaters OJ L 193, 21.7.2015 Commission Regulation (EU) 2015/1188 of 28 April 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to eco-design requirements for local space heaters OJ L 193, 21.7.2015.[46]

38 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077
39 https://www.eea.europa.eu/publications/air-quality-in-europe-2022/health-impacts-of-air-pollution-table3
40 https://energyandcleanair.org/wp/wp-content/uploads/2021/09/En-COMPLY-OR-CLOSE-How-Western-Balkan-coal-plants-breach-air-pollution-laws-and-cause-deaths.pdf
41 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
42 With annual sales of new inefficient devices still exceeding 125,000 pcs in the region
43 This Regulation is still not envisaged for the transposition in the WB countries.
44 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
45 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
46 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western

## 4.4.1 ENERGY POVERTY IN THE WB

Household income, knowledge and skills, and access to a forest resource, are among the factors that determine whether a household will be able to achieve indoor thermal and air quality comfort. Sometimes households decide to achieve this comfort at the expense of good quality food, transportation, education, recreation or revert to the use of non-standard, low-quality fuel.

**The relative shares of energy costs as part of the entire household expenditures in the WB are high standing at 12% in Serbia in 2021.[47] As an illustration, the average share of energy expenditure in the EU27 stood at 4.46% in 2021.[48]** When median shares are known they are usually somewhat lower than mean shares. However, only by looking at the absolute expenditures for energy and knowing the fuel and energy prices in the WB region, it is possible to understand the environment in which energy supply to households takes place. This analysis of Serbian energy costs has been presented due to the significant availability of data.

The Survey of Income and Living Conditions (SILC) shows whether households can provide warmth to their houses that is perceived as adequate by its members, whether they notice roof leakage, condensation, or dump creation, or whether they manage to pay their utility bills on time (Figure 20).

Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077

47 https://publikacije.stat.gov.rs/G2022/Pdf/G20225687.pdf

48 https://ec.europa.eu/eurostat/databrowser/view/NAMA_10_CO3_P3__custom_5649726/default/table?lang=en

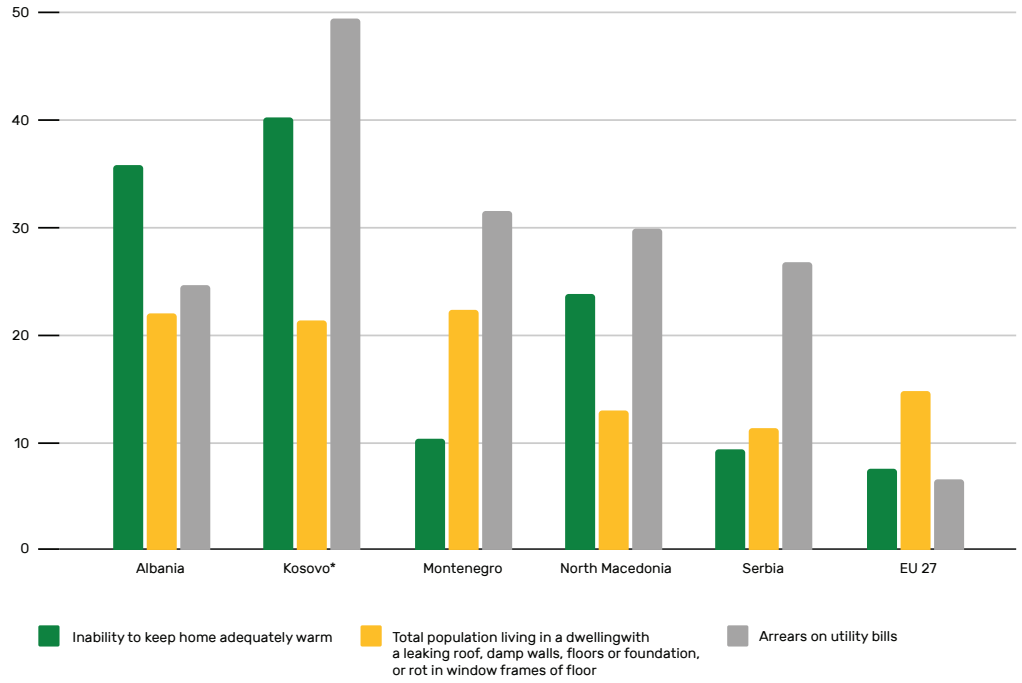


*Figure 20 Selected SILC indicators for the WB (latest available year) and EU 27 (for 2020)*

When these are combined with the data on the perception of the households related to financial burden caused by housing costs the more realistic picture is obtained (Figure 21). Even when people manage to pay for housing costs, and obtain sufficient comfort, they perceive housing cost as a financial burden or a heavy financial burden. More than 50% of Serbian households estimate housing costs as a heavy financial burden. An additional 40% state that housing costs are a financial burden for them. An ongoing energy crisis is a major threat for the improvements in indoor comfort achieved in the past.

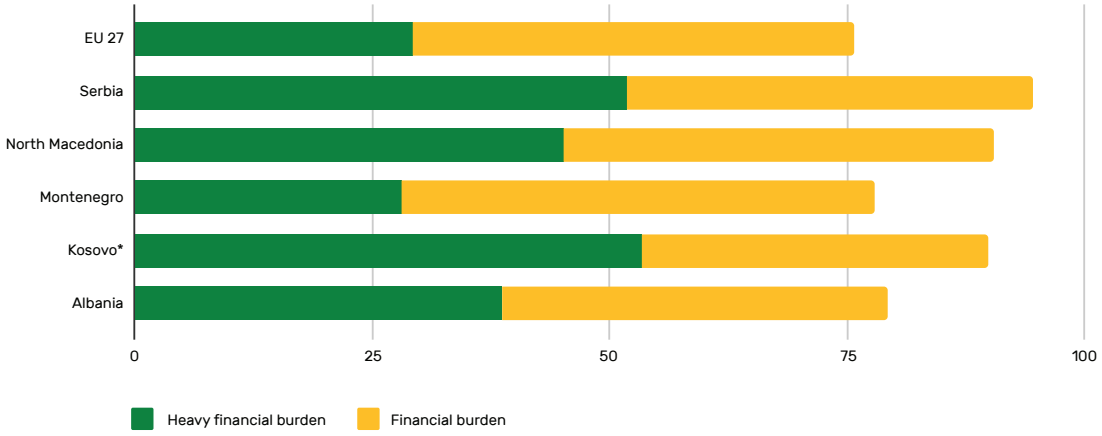


*Figure 21 Share of households experiencing "financial burden" and "heavy financial burden" due to the housing costs (%)*

Households need to have resources including sufficient funds, to embark on a change that will provide them with improvements towards their energy consumption. The Household Budgetary Survey data shows (where available) that most of the households cannot make any meaningful improvements with the resources that they are currently investing in the buildings and equipment. The SILC data helps us understand how significant this inability is. The share of households who responded that they are unable to cover minimal unexpected costs from their budgets (including the borrowing capabilities) is strikingly, but not surprisingly, high, and ranges from 35.1% in Serbia to 62.2% in Montenegro (Figure 22).

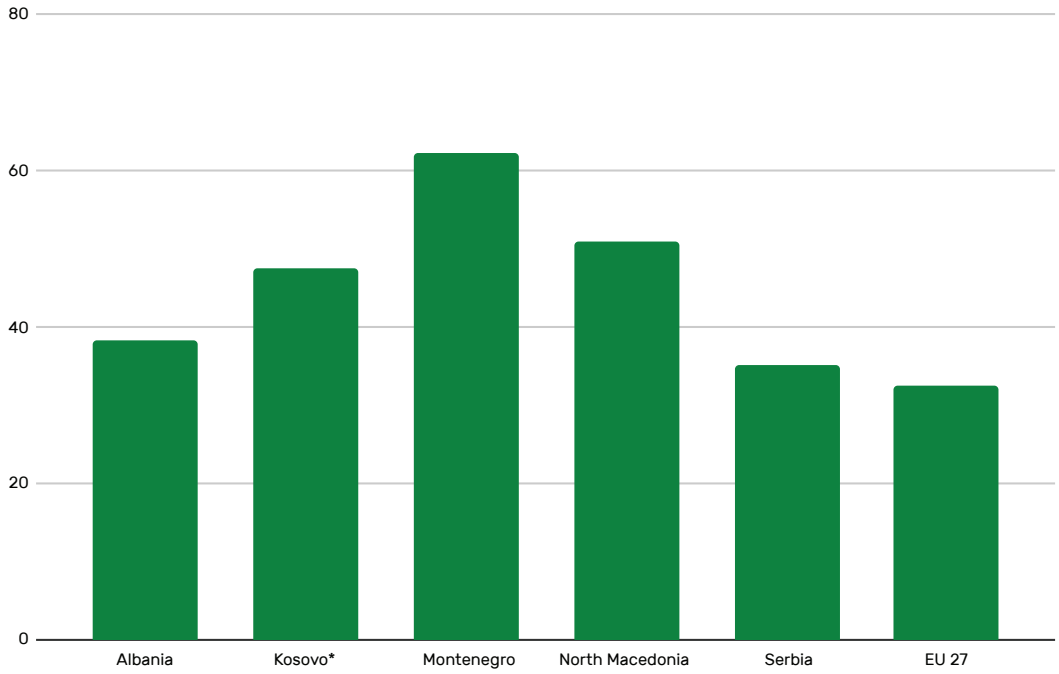


*Figure 22 Inability to face unexpected financial expenses.*

The median and mean shares are useful to describe energy poverty. However, absolute figures on median energy expenditures combined with the energy prices, and deeper understanding of the context, portray a picture that is more useful for decision making. For the effective public intervention, it is important to keep in mind that the vast majority of energy poor in the WB do not have central heating installed in their households.[49] Solid fuels and in particular firewood is the fuel of choice in most households across the WB region. **This implies that more efficient individual space heaters should be prioritised in any meaningful policy intervention.**[50]

49 Almost 60% of all households Serbia did not have central heating installations in 2021. https://publikacije.stat.gov.rs/G2022/Pdf/G20225687.pdf . This share is even lower in other WB countries

50 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf

A Serbian household[51] that uses 80% of heating energy from a wood stove and 20% from electricity obtains a modest amount of energy for the money spent.[52] This amount of energy produced with the technology they currently own and use in their energy inefficient buildings is insufficient for proper indoor comfort. At the same time, current median energy expenditures represent a very high share of total household income for more than one million households in Serbia (Table 3). Access to their own wood resources of many households is the key factor that prevents further detrimental consequences of energy inefficient heating.[53]

*Table 3 Calculated wood and electricity consumption with decile analysis of dwelling surface and energy expenditures. Source: Statistical office, own calculations[54]*

| | Consumption of wood (Stack $m^3$) | Consumption of electricity (kWh) | Useful energy for heating from wood (kWh) | Average surface of the dwelling (m2) | Median energy expenditures (EUR) | Median share of energy expenditures (%) | Number of households below M/2 |
|---|---|---|---|---|---|---|---|
| Decile 1 | 3.5 | 1630 | 2608 | 64 | 306 | 16 | 76000 |
| Decile 2 | 4.1 | 1902 | 3043 | 68.1 | 357 | 12 | 48000 |
| Decile 3 | 4.7 | 2174 | 3478 | 71.3 | 408 | 10 | 42000 |
| Decile 4 | 5.0 | 2309 | 3695 | 71.6 | 434 | 10 | 42000 |
| Decile 5 | 5.9 | 2717 | 4347 | 76.9 | 510 | 9 | 24000 |

Energy inefficiency of the residential sector also hampers an optimal use of the available power system as well. Inefficient lighting appliances that are still widespread across the WB region and supplementary electricity heating participate in the unsustainable peak demand of electricity. This locks in expensive hydropower capacities to cover a low-paying, unsustainable demand. In addition, it induces unproportionally high network losses.

**As fuel wood prices are effectively hiked to electricity prices, a widespread inefficient fuel wood use makes energy poor more vulnerable to electricity price increase. This puts the pressure on keeping regulated prices at the levels that may be below cost recovery.**

51 Serbia has better data availability and somewhat higher household income comparing to other countries in the region while sharing similar household energy profiles.
52 It is a fair interpretation of Serbian household energy balance.
53 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf
54 This calculation is based on the energy prices from 2021 and on the assumption that individual heaters convert fuel energy into useful heating energy with 40% efficiency which is probably a generous assumption.

## 4.5 ENERGY COMMUNITY TREATY, EU AND THE WB

Current plans for the implementation of transformative energy policies in the WB by 2030 rely on the existing mechanism - Energy Community. So far, the Energy Community Treaty (EnCT) has not secured the delivery of less ambitious goals related to emissions from large combustion plants over a longer period which raises the question of its fitness for this purpose. The Energy Community Treaty is currently set to expire in 2026. While the need for its continuation is undisputable, it is important to highlight that the European Commission has not reported to the European Parliament on the implementation of the Energy Community Treaty since 2011.[55]

Another example of lack of clear communication with the European Parliament concerns the answer to the Parliamentary question - E-005361/2021. Parliament asked the EC the following: "How will the Commission ensure that the Western Balkan countries comply with their NERPs in the upcoming years?"

The EC's response was incomplete. It referred to the EnCT process without providing the information to the Parliament about the deadlines set by the EnCT. The deadline for compliance of the WB plants covered by NERP with the requirements of the LCPD expired on January 1st, 2018 and none of the signatories with lignite electricity production were compliant.

The EnCT secretariat does not have sufficient power to enforce compliance, but it needs to urgently seek additional remedies that would bring the emissions to the prescribed levels to reduce life threatening risks for the citizens of the WB and EU neighbours. In its response the EC referred to the accession process to monitor the progress on emissions reduction from industrial and other sources.[56] However, contracting parties were using the argument of the accession process as an attempt to postpone the already existing (and breached) obligations to comply with the requirements of the LCPD.

55 More than words, 2020.
https://www.resfoundation.org/transposing-the-european-green-deal-to-the-western-balkans-more-than-words/
56 https://www.europarl.europa.eu/doceo/document/E-9-2021-005361_EN.html

# 5. CRITICAL OVERVIEW OF ENERGY RELATED SUPPORT OF THE EU TO THE WESTERN BALKANS 2014-2023

## 5.1 ENERGY RELATED EU SUPPORT TO THE WB BEFORE FEBRUARY 2022

While the EU support to the region lasts much longer, we have decided to analyse the period from 2014 to the present day. Since 2014, the support through which the EU provides financial and technical support to achieve the priorities in the energy sector in the WB countries has been channelled through two pre-accession instruments: IPA II and IPA III. Starting with IPA III, all supported investments should be in line with the Economic and Investment Plan[57] for the WB, and other relevant EU policies, including the Green Agenda for the WB and relevant macro-regional strategies. These investments should also follow the national development objectives, be compliant with sectoral strategic documents, and address a significant socio-economic need with major impact.

In October 2020, the EC adopted a comprehensive Economic and Investment Plan for the Western Balkans, with the aim to spur the long-term economic recovery of the region, support a green and digital transition, foster regional integration and convergence with the EU. The Economic and Investment Plan sets out a substantial investment package mobilising up to €9 billion of funding for the region which will be channelled to projects in 10 identified investment flagships grouped in six areas.[58]

**Clean energy** is included in three flagships:

• Flagship 4 – **Renewable energy**, where increased use of renewable energy sources will be supported, in line with the region's potential and national preferences.

• Flagship 5 – **Transition from coal** to more sustainable and green sources of energy production. The Commission believes that future-proof gas pipelines supportive of the low carbon transition and transit of decarbonised gas and hydrogen will play a key role, as well as performant electricity transmission lines and smart grids for increased use of renewable energy sources in line with the region's potential.

• Flagship 6 – **Renovation wave**, where the Commission proposes to expand the 'EU Renovation Wave' to the WB. A building renovation wave implemented with the help of the Energy Community will assist the WB in decarbonisation of public and private building stock,

57 This EIP is an essential component of the programming framework for IPA III
58 https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1811

with a strong emphasis on digitalisation **and considering energy poverty**. The EU together with international financing institutions, will support the efforts of the WB partners to triple the current renovation rate and energy savings in existing buildings and achieving nearly-zero energy and emission standard in new buildings. For this purpose, the EU will use, among others, the existing platforms such as Green for Growth Fund and Regional Energy Efficiency Programme which have so far enabled green investments of a total of EUR 700 million.[59]

Since the adoption of the Economic and Investment Plan in October 2020, the WBIF endorsed 40 flagship investments for €5.6 billion investments in key railway, road and waterway interconnections, renewable energy, energy efficiency and power interconnectors, waste and water management, new health and education facilities, digital infrastructures, and private sector development. The EU and bilateral donors contribute €1.8 billion in grants to these investments. Furthermore, 12 guarantees will benefit from up to €729 million in EU guarantee coverage. These guarantees aim to crowd-in private investments to increase the investment capacity of the region across the EC policy priorities.

In clean energy area, the WBIF endorsed projects with an estimated worth of more than 1.2 billion EUR, **providing almost 120 million in investment grants to support electricity production projects with state owned electricity utilities.[60] This figure raises calls for re-discussing the programming design to better target the needs of the citizens who have a much reduced capacity to attract other sources of financing compared to state-owned electricity production companies.**

59 https://neighbourhood-enlargement.ec.europa.eu/system/files/2020-10/communication_on_wb_economic_and_investment_plan_october_2020_en.pdf

60 https://www.wbif.eu/storage/app/media/Library/12.%20Economic%20and%20Investment%20Plan/WBIF%20EIP%20Endorsed%20Flagship%20Investments%202020-2022.pdf

*Table 4 Investment grants for 9 electricity production projects- basic data.*

| | Grant value (million EUR) | Capacity of the plant (MW) | HUPX 22 MWh yearly price (EUR) | Full capacity hours required to repay the grant at 2022 HUPX electricity price | HUPX 23 MWh yearly price[61] (EUR) | Full capacity hours required to repay the grant at 2023 HUPX electricity price |
|---|---|---|---|---|---|---|
| Solar4Kosovo - Photovoltaic Plant | 33.10 | 100 | 271.66 | 1,218 | 149 | 2,221 |
| Rehabilitation of Six Hydropower Plants Phase 3 | 11.20 | 439 | 271.66 | 94 | 149 | 171 |
| Bogdanci Wind Park Phase 2 | 9.30 | 15 | 271.66 | 2,282 | 149 | 4,160 |
| Reconstruction of Vlasina Hydropower Plant | 16.10 | 136 | 271.66 | 436 | 149 | 794 |
| Kostolac Wind Farm | 31.20 | 66 | 271.66 | 1,740 | 149 | 3,172 |
| Vau i Dejës Floating Solar Photovoltaic Power Plant | 2.70 | 12.9 | 271.66 | 770 | 149 | 1,404 |
| Rehabilitation of Fierza Hydropower Plant | 8.70 | 500 | 271.66 | 64 | 149 | 117 |
| Oslomej 1 Solar Photovoltaic Power Plant | 1.60 | 10 | 271.66 | 589 | 149 | 1,074 |
| Oslomej 2 and Bitola Photovoltaic Power Plants | 5.20 | 30 | 271.66 | 638 | 149 | 1,163 |

61 On 24th February 2023, https://hupx.hu/en/market-data/dam/historical-data

### 5.1.1 COUNTRY LEVEL IPA II AND IPA III SUPPORT

To be eligible for IPA support, large infrastructure projects should feature in the National Single Project Pipeline (SPP) of the beneficiaries and produce no significant harm to climate and environment. They should also be in line with the medium-term budget plans. The investment plans should systematically provide information on the planning process and the allocation of resources against the government policy priorities and foresee the implementation of projects on time and on budget in the short, medium, and long-term perspective. Such investment plans should also include possible financing sources from the budget, borrowing plans, donor contributions, private sector participations and financial constraints.[62]

The country's national investment projects should be prepared and prioritised on the basis of sectoral priorities. The SPP is the result of a process, starting with project identification at line ministry level, followed by a strategic relevance assessment, involvement of key stakeholders (such as the EUD, IFIs, etc.) and a prioritisation process, resulting in Single Sector Project Pipelines (SSPP). The SSPPs are subsequently merged into the SPP which is then endorsed by the National Investment Committee (NIC) in each Beneficiary. The National Investment Committee brings together national high-level political and financial decision makers as well as the NIPACs and line Ministries of the respective sectors.[63]

The EUDs, the financial institutions and other donors are involved at various stages of the SPP development process. At least once per year, these SPPs are formally adopted by the NIC, generally chaired by the Deputy Prime Minister or the Minister of Finance. The SPP is supposed to be a basis for all high priority national financing needs irrespective of the source of financing, be it national budget, WBIF, other EC funded programmes or funding by any other donor.[64]

**There is a concern regarding the transparency of the process, prioritisation, and the selection of the projects. Documents related to decision making of the NIC and SPPs are not available. The latest SPPs available online are from 2018 and only for some WB countries. Also, the latest available evaluation of the NIC and SPPs dates to 2018.[65]**

62 https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-01/C_2021_8914_COMMISSION_IMPLEMENTING_DECISION_EN.pdf
63 https://www.wbif.eu/storage/app/media/Library/11.Funding/WBIF%20Guide_Update_March2020.pdf
64 https://www.wbif.eu/storage/app/media/Library/11.Funding/WBIF%20Guide_Update_March2020.pdf
65 https://www.wbif.eu/storage/app/media/Library/7.%20NIC%20Framework/2.%20IFICO-NIC-Update-Report-2018-Oct18.pdf

*Table 5 Total IPA programmed energy support 2014-2022 per country*

| Country | IPA 2014-2022 programmed energy support |
|---|---|
| Albania | 5,000,000 |
| Bosnia and Herzegovina | 13,998,200 |
| Kosovo* | 141,100,000 |
| Montenegro | - |
| North Macedonia | 7,590,000 |
| Serbia | 94,250,000 |
| WB6 | 261,938,200 |

A relatively large number of infrastructure projects are included in IPA actions such as:

• Support to LCPD/IED compliance in Kosovo* and Serbia

• Cross border gas infrastructure in Serbia

• District heating systems (Kosovo* and Serbia)

• Non focused small infrastructure investments in EE and RES in public sector and community energy (Bosnia and Herzegovina)

• Public infrastructure EE in Kosovo* and public buildings in Serbian capital Belgrade

• Replenishment of REEP in Serbia

• Solar and other RES on WWTP (Albania, North Macedonia)

**Out of all programmed IPA country support 2014 to 2022 that we labelled as energy related, almost 70% were allocated around only three topics,[66] two in Kosovo* and one in Serbia (Table 6). All three target fossil fuel energy infrastructure.**

*Table 6 Three largest areas of IPA energy support 2014-2022*

| Area of support | EUR |
|---|---|
| Kosovo A and B coal power plants | 95,000,000.00 |
| District heating in Priština | 33,600,000.00 |
| Niš - Dimitrovgrad | 49,600,000.00 |

66 Involving single or multiple actions

Electricity production in Kosovo* lignite complex was, through multiple actions, programmed for support related to environmental aspects including for desulphurisation. Desulphurisation is activity that yields increase in CO2 emissions. The IPA 2021 document envisages support in the design of desulphurisation in Kosovo B and even states that the outcome will be the '...first step towards Kosovo's alignment with the EU Directives Large Combustion Plant Directive (2001/80/EC) ...'

The Deadline for implementation of the Energy Community Treaty regarding Large Combustion Plant Directive expired on 31st December 2018.

Support to district heating in Priština included the distribution of heat extracted from Kosovo B plant. **This activity produces an increase in CO2 emissions** as heat is extracted at the expense of electricity production, thus requiring more lignite burning to maintain the electricity output. Considering 2022 WBIF support,[67] 15,000 households and businesses using Termokos district heating services in Priština[68] will also benefit from more than 55,000,000 EUR in grants from the EU, while at the same time they remain connected to the heat source based on lignite, currently in violation of the LCPD norms.

Niš-Dimitrovgrad gas pipeline connects Serbia with Bulgaria, as part of the wider system that extends to Hungary in the north. The existing infrastructure, according to the Energy Community, is operated so that there is no capacity allocation at the interconnection points and the capacity at the interconnection point Horgos, with Hungary, is still hoarded by the incumbent shippers. Srbijagas thus effectively prevents new entrants to the Serbian market from more liquid central European hubs breaching the Energy Community law and increases the security of supply risks for the entire region.[69]

Another notable imbalance concerns the comparison of the IPA programmed energy support 2014-2022 to the 2022 energy package for immediate support. The amount allocated for nearly unspecified immediate direct budgetary support to the WB countries is almost double in comparison to the IPA programmed energy support for 2014-2022 (Figure 23).

67 For solar thermal heating
68 And 2,000 customers in Gjakova. District heating in Kosovo* provides less than 5% of all space heating needs.
69 Annual implementation report, Energy Community Secretariat 2022, https://www.energy-community.org/implementation/IR2022.html

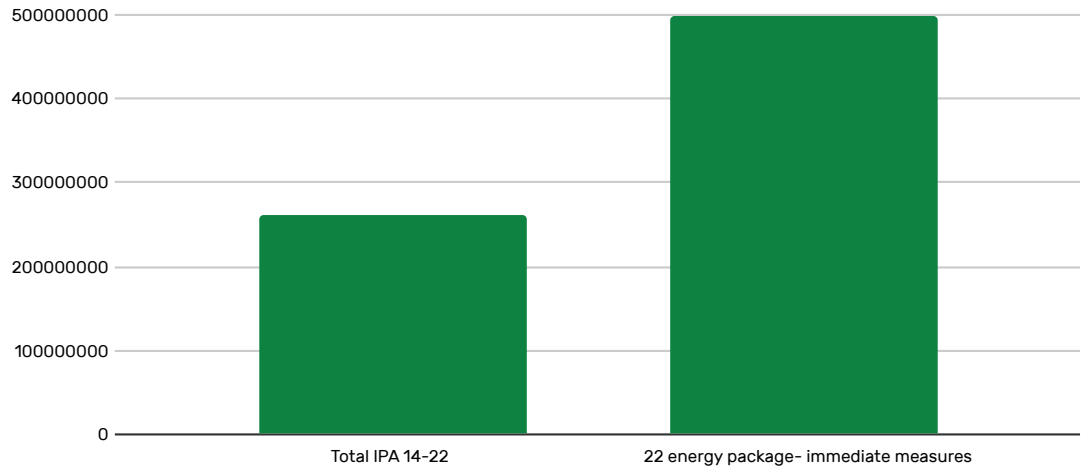


*Figure 23 IPA 2014-2022 programmed energy support vs. energy package 2022*

## 5.1.2 MULTI-COUNTRY IPA

This support provided from the Multi-Beneficiary IPA promotes the regional cooperation and addresses the issues of general interest to all IPA beneficiaries.

The process of preparing and implementing support programmes under this instrument is carried out in a centralised manner, which means that most of the activities during the preparation of projects and the preparation of tender documentation take place at the headquarters of the European Commission in Brussels. Participation of relevant national institutions from the region is ensured through consultations which lead to the harmonisation of the content of these projects and the expected results.

*Table 7 Multi-country programmed IPA budgets for energy sector 2014-2023 by country*

| Country | EUR |
|---|---|
| Albania | 33,419,107 |
| Bosnia and Herzegovina | 1,242,300 |
| Kosovo* | 63,036,620 |
| Montenegro | 26,570,000 |
| North Macedonia | 57,385,848 |
| Regional | 179,596,329 |
| Serbia | 80,683,765 |
| WB total | **441,933,969** |

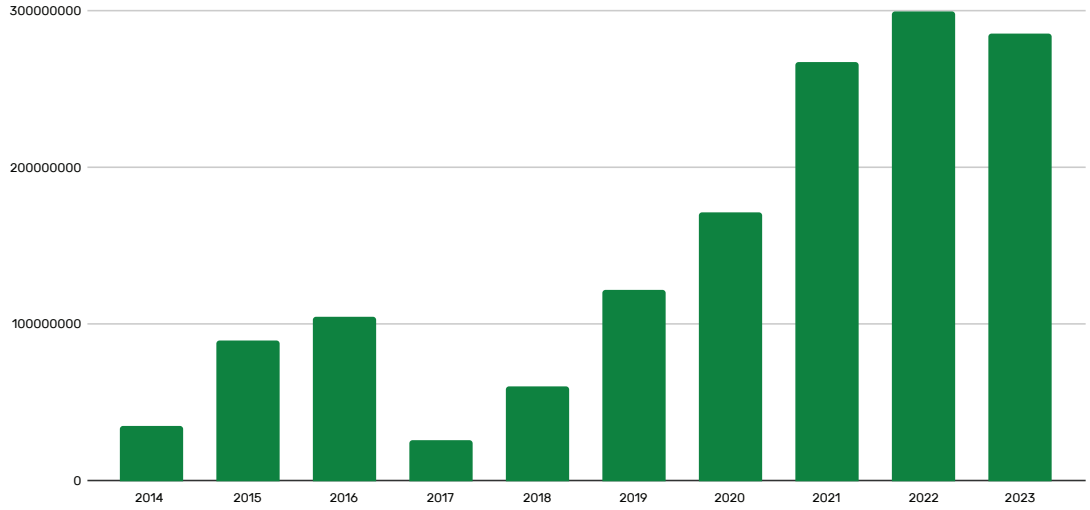


*Figure 24 Multi-country IPA programmed support for energy for 2014-2023*

## 5.1.3 WESTERN BALKANS INVESTMENT FRAMEWORK (WBIF)

The Western Balkans Investment Framework (WBIF) is a joint initiative of the EU, financial institutions, bilateral donor, and beneficiaries, aimed at enhancing harmonisation and cooperation in investments for the socio-economic development of the region and contributing to the European perspective of the Western Balkans. Once the SPP is adopted and WBIF identified as the best funding source for a project, the Beneficiary can proceed to applying whenever a suitable WBIF call for application is open. The WBIF application process can be broken down into seven steps (see below). While these steps are identical for both Technical assistance and Investment grants, the application cycles vary regarding eligibility requirements, frequency, and timing.[70]

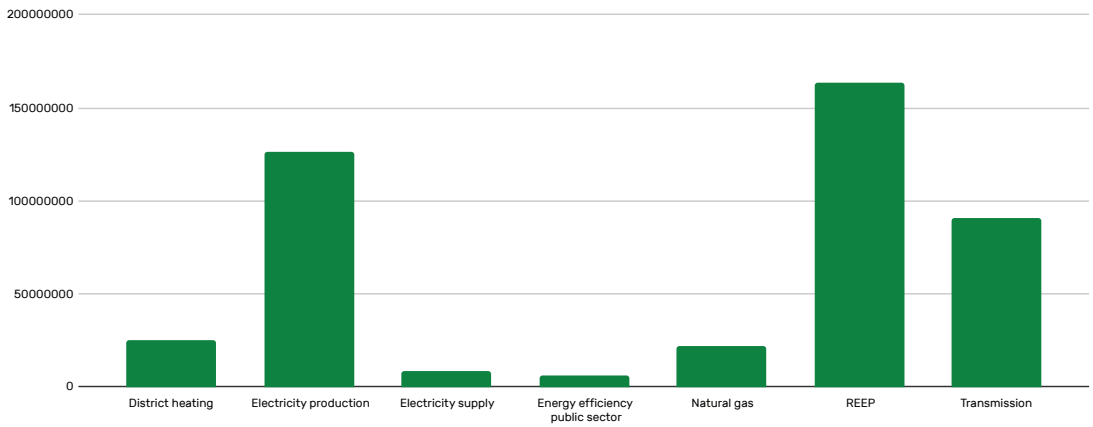


*Figure 25 WBIF project grants in energy sector by purpose, 2014-2022*

70 https://www.wbif.eu/storage/app/media/Library/11.Funding/WBIF%20Guide_Update_March2020.pdf

**So far, this programming falls short of delivering the benefits to the energy efficiency of the residential sector and the energy poor in the WB region although the highest amount is allocated for the Regional Energy Efficiency Programme (REEP). This is followed by the second biggest portion of funding for the electricity production in the WB region (Figure 25). These facts raise concerns considering that the electricity production is a commercial activity and parties could have access to abundant commercial financing while they also benefit from the provision of sovereign guarantees for their financing.**

## 5.1.4 THE REGIONAL ENERGY EFFICIENCY PROGRAMME (REEP)

The Regional Energy Efficiency Programme was established by the Western Balkans Investment Framework in 2012. Various organisations cooperate within it including the Energy Community, the European Bank for Reconstruction and Development, European Commission and KfW Banking Group. It comprises more than €600 millions of investments from the EBRD and KfW Banking Group, which are combined with grants from the WBIF.[71]

Its programmatic focus was defined through four main windows:

• ESCO (energy efficiency energy service company) projects aim to support public authorities to prepare and implement energy efficiency projects,

• Intermediated financing through credit lines of partner financial institutions (WeBGEFF) and direct financing (WeBSEDFF) through investments in renewable energy and energy efficiency enterprises,

• Direct financing (public buildings) through lending to state entities and municipalities for public buildings,

• Policy dialogue support to enable policies for the transition to sustainable energy efficiency markets.[72]

**At this moment,** intermediated financing through credit **lines of partner financial institutions is the only option offered to the residential sector through one of the REEP windows. The REEP mechanisms are generous in financial allocations, however, so far, they do not target those individuals who are in most need of assistance in the WB countries. The energy poor in the WB countries in most cases do not have access to commercial money.**

71 https://www.wbif.eu/reep
72 https://www.wbif.eu/reep

## 5.2 ENERGY RELATED EU SUPPORT TO THE WB SINCE FEBRUARY 2022

At the Berlin Process Summit of 3rd November 2022, the European Commission (EC) put forward an Energy Support Package of €1 billion for the Western Balkans. The package aims to address the immediate, short-term, and medium-term needs in the Western Balkans in the context of the ongoing energy crisis.

With this substantial support in place, the EC will help the Western Balkans partners in the region to begin decreasing their dependence on Russian fossil fuels, accelerate decarbonisation, and improve the energy security of the region.

1. In terms of immediate measures, the EC will provide up to €500 million in urgent budget support to the Western Balkans partners to implement their National Action Plans to:

i. Mitigate the impact of high energy prices for small and medium-sized enterprises,
ii. Keep energy prices affordable especially for vulnerable households,
iii. Support policy measures to accelerate the energy transition.

It was planned that 90% of the funds will be disbursed in January 2023. The second disbursements will be made against the successful implementation of national action plans by the beneficiaries.

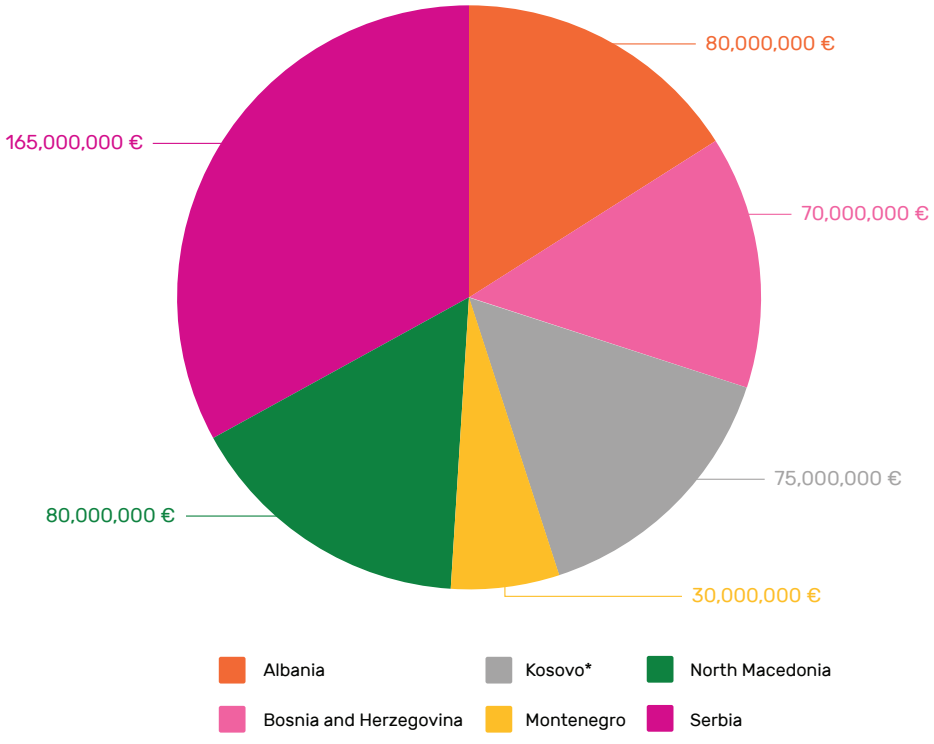


*Figure 26 Energy package immediate support allocations by country*

**The direct budgetary support creates a great uncertainty about the utilisation of the funds for at least two reasons.**

**The first relates to the lack of progress in the rule of law of the WB countries on their path to the EU. The EU progress reports for the individual WB countries continuously highlight the challenges in the reform process related to the rule of law. As a result, the progress in the EU integration process is now conditioned with the fundamentals first principle.** [73]

**The second is in regards of the envisaged design of the immediate support. By locking in available funds in such a flexible way, the room for other measures to combat energy poverty could be significantly narrowed down.**

**In a situation of challenging reform process of the WB countries burdened with a deficient framework to effectively fight the corruption, lack of rule of law and transparency, continued lack of ambition to transpose and implement the EU standards including the Large Combustion Plants and Industrial Emissions Directives, the utilisation of immediate support needs to be better monitored and conditioned. In addition, the lack of progressive and effective energy poverty policy will keep the energy poor in the same situation for years to come with no sustainable solution.**

All the WB countries manage certain subsidy schemes for vulnerable customers to support them in paying their energy bills (Table 8). These schemes provide a needed relief to targeted vulnerable families. However, they are not instrumental in improving their position in terms of capability to procure better comfort at lower specific costs because they are not addressing any of the root causes of energy poverty.

Some local self-governments across the WB region also provide support for the payment of utility bills, procurement of fuel, or directly donate fuel to vulnerable households. Again, these local schemes are also leaving targeted beneficiaries with the unchanged capabilities to sustainably improve the energy services provision, primarily heating. A notable and the most sizeable example of this is the subsidy scheme of the City of Belgrade supporting district heating consumers.[74]

73 The common principles and values that underlie life in the EU: freedom, democracy, equality and the rule of law, promoting peace and stability. https://europeanwesternbalkans.com/2022/11/15/focus-on-the-fundamentals-as-a-basis-for-progress-in-eu-integration/

74 City of Belgrade, that received EU support for the efficiency of public buildings, set aside 18 M EUR, a third of its social protection budget for 2022 for untargeted support to all minors to procure sports equipment from one vendor. City of Belgrade is also receiving the transfers from the Serbian budget to which EU provided direct budgetary support.

*Table 8 Support for payment of energy bills in the contracting parties. Source: Energy, Community, RES Foundation.*

| | Coverage | Amount | Year |
|---|---|---|---|
| Albania | 213,000 | 22.2 | 2020 |
| Bosnia and Herzegovina | 69,268 | 12.3 | avarage over longer period |
| Kosovo* | 36,648 | 4.5 | 2019 |
| Montenegro | 14,700-21,700 | 2.7 | 2018 |
| North Macedonia | N/A | 0.1 | 2021 |
| Serbia | 71,993 | 10.3 | 2020 |
| WB 6 | | 52.1 | |
| Subsidies for the district heating in the city of Belgrade | N/A | 7.0 | Repeats annually with some variations in budget |

Even if the current subsidy schemes are extended to cover more beneficiaries, the volume of resources offered through the 2022 energy direct budgetary support package exceeds the size of annual support envelopes for the vulnerable customers by order of magnitude.

The budgetary support package was also aimed at mitigating the impact of high energy prices for small and medium-sized enterprises in line with the National Action plans. The recipient of the largest budgetary support, Serbia, defines the support measure to the SMEs to ensure business continuity in its action plan. The number of SMEs guaranteed supply that benefitted from financial support ensuring business continuity is an indicator that is used whilst monitoring the level of progress. Its baseline value from November 2022 is claimed to be 70,000 SMEs and the reports of the EPS supply company were indicated as the source of verification.

*Table 9 Support measure to SMEs from Serbian Roadmap for the Energy Support Package State and Resilience Building Contracts. Source: Government of the Republic of Serbia.*[75]

| Measure: Support Small and Medium Enterprises to ensure business continuity | | | |
|---|---|---|---|
| **Indicator** | Baseline | Target (short and medium term) | Source of verification |
| Number of SMEs guaranteed supply that benefitted from financial support ensuring business continuity | Cca. 70.000 SMEs benefitted from financial support (November 2022) | Short term (2023) To maintain the same number of SMEs in the conditions of the energy crisis-70.000 or increase it by November 2023 | Reports from EPS supply company |

75 https://ekonsultacije.gov.rs/viewPdfAttachment/bb987b2e-09aa-45e3-b7f3-b48d4316ad19.pdf/startingWorkOnDocumentFile/102/1/0/0

According to the electricity legislation most SMEs in Serbia are defined as 'small customers'[76] and are entitled to purchase electricity at regulated prices. SMEs and households in other WB countries are also entitled to procure electricity at regulated prices. This arrangement is unaffected by energy crisis and regulated prices have increased in Serbia since the beginning of 2022 by an average of 15%.[77]

There is no public record of any energy related support to SMEs. The reports of EPS supply company do not contain any data on SMEs or small customers either. It is difficult to determine from the available sources the target group for this measure. However, based on the available official data the entire annual electricity bill (without taxes and levies) of all small customers in Serbia amounted to approximately 110 million EUR in 2021.[78] With 165 million EUR of direct budgetary support Serbia can pay **the entire annual electricity bill** of all small customers, pay subsidies to the envisaged tripled number of vulnerable customers,[79] and keep some change.

2. With regard to **short- and medium-term measures**, a further €500 million will be provided to advance the energy transition and energy security of the region through the Western Balkans Investment Framework.

A half of the energy support package, consisting of €500 million provided by the EC through the WBIF to advance energy diversification, renewable energy generation, gas and electricity interconnections, and support to the energy transition of the business sector over the short and medium term **has already been allocated in IPA III before the crisis in the following way:**

€170 million is envisaged for the flagship investments. **Out of that the total of €122.5 million has already been allocated for five electricity production projects and one district heating project with state owned utilities.**[80] The remaining figure of around €100 million is ring-fenced for the REEP while €230 million has been set aside for guarantees.[81]

76 Small customers are legal entities with less than 50 employees, annual turnover below 10 million EUR, connected to voltage level below 1 kV and with annual consumption in previous calendar year less than 30,000 kWh.
77 Total of two increments: July 2022 and January 2023
78 Annual report of Energy regulatory agency for 2021 p 42 and own calculation https://www.aers.rs/Files/Izvestaji/Godisnji/Eng/AERS%20Annual%20Report%202021.pdf
79 Scheduled increase in number of vulnerable customers is not related to energy crisis. The draft decree envisaging broadened scope of the support mechanism was prepared in October 2021.
80 Representing almost one quarter of total required investments in these predominantly commercial activities
81 https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-12/WBIF%20Energy%20support%20pack%20221202.pdf

# 6. HOW TO INCREASE BENEFITS OF THE EU ENERGY RELATED SUPPORT TO THE WESTERN BALKANS?

To respond to the energy poverty challenge in the WB region two major building blocks need to:

• introduce new dedicated programming and implementation mechanism on the WB/national level and
• thoroughly rethink and redesign the EU support programming accompanied with the appropriate national framework.

Firstly, in these processes, the EC Recommendations on energy poverty should be used as guiding principles. The WB countries need to translate and accommodate to its context the following:

• Produce integrated policy solutions as part of energy and social policy,
• Assess the distributional effects of the energy transition, in particular energy efficiency measures in the national context, and define and implement policies that address associated concerns,
• Develop measures to address energy poverty that build on close cooperation between all levels of administration, enabling close cooperation between regional and local authorities on the one hand, and civil society organisations and private sector entities on the other,
• Develop all policies to tackle energy poverty based on meaningful and accountable processes of public participation and broad stakeholder engagement. [82]

Secondly, to increase the benefits of energy poor in the WB the Policy guidelines on identifying and addressing energy poverty in the Energy Community Contracting Parties need to be adjusted before implementation in three ways. [83]

• The number of energy poor needs to be recalculated as the prescribed methodology underestimates its number in the WB. Therefore, the design of any policy intervention needs to take this methodological issue into account.
• Measures listed in the Policy guidelines need to be carefully prioritised to achieve the biggest impact in the shortest period. Focus should be placed on the improvement of energy efficiency of systems in a way that delivers feasible solutions to the millions of energy poor in the WB. As an illustration some 900,000 households with the lowest purchasing power[84] in Serbia do not have central heating installations. In other countries of the WB region the share of households without central heating installations is even higher. To effectively mitigate

82 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32020H1563&from=EN
83 The Secretariat of the Energy Community Treaty issued the Policy guidelines on identifying and addressing energy poverty in the Energy Community Contracting Parties https://www.energy-community.org/dam/jcr:56632fbf-baf6-49c5-ad23-d997b552e1e6/PG2022-02-ECS_poverty-082022.pdf
84 The lower 5 deciles of consumption

the impact of energy poverty, the required energy efficiency intervention should start with the replacement of households' existing heating devices with more efficient and more environmentally friendly ones. The marginal benefits of this measure are the highest. The energy efficiency of the building is also desirable, but it takes much more time and resources. Ideally, these two measures should be implemented simultaneously.

• To choose the replacement heating device it is recommended to adopt the standards laid out in the EU.[85] The legislation in question concerns Commission Delegated Regulation (EU) 2015/1186 of 24 April 2015 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of local space heaters OJ L 193, 21.7.2015 Commission Regulation (EU) 2015/1188 of 28 April 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to eco-design requirements for local space heaters OJ L 193, 21.7.2015.[86] Although this legislation is not yet transposed in the WB countries, the EU could mandate the usage of these standards for this particular purpose through the IPA programming framework.

Thirdly, to deliver the effective response it is necessary to introduce a new dedicated programming and implementation mechanism on the WB/national level and to thoroughly rethink and redesign the programming of the EU support. This is needed as the findings of this study clearly show that none of the existing support mechanisms can be used unchanged to effectively target those who are at risk from serious and adverse consequences of energy poverty. This will hold true until national and local governments in the WB countries are committed and capacitated to lead the energy poverty eradication. In this respect, some actions from the EU can target a stronger political commitment of the WB governments and help to build the required policy and technical capacities to address the energy poverty. As demonstrated by the findings of this study, it is also necessary to better use funds available through the EU instrument for pre-accession to assist the energy poor. Possible immediate steps include:

• Initiate and enforce the change in the EU and national programming procedures for the Western Balkan countries allowing also for the increased transparency, broadened participation, and broadened choice of project proponents for the creation of the Single Project Pipeline.

• Set aside a separate budget for energy poverty eradication in the IPA multi country support framework that is currently missing to deliver on energy poverty.

• Support the establishment of the project based special purpose vehicle for energy poverty eradication in the WB region. This is due to the multi-sectoral nature of the issue, its vast territorial coverage, alarming environmental consequences, and immense number of potential beneficiaries. In this respect, consider creating regional partnerships with national and local governments, civil society organisations and engage the UN system that through its mandate (the Agenda 2030) and operational capabilities represent a good match to considerably contribute to the energy poverty eradication in the WB region.

85 https://smarterstoves.resfoundation.org/wp-content/uploads/2022/02/Smarter_Stoves_Report.pdf

86 Young, J.; Macura, A. Forging Local Energy Transition in the Most Carbon-Intensive European Region of the Western Balkans. Energies 2023, 16, 2077. https://doi.org/10.3390/en16042077

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