WB6
Energy Community

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WB6
Energy Transition Tracker

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Energy transition tracker

The winds of change started to make their way through the energy sectors of the Western Balkans, shifting the discourse on the sector's future from coal to energy transition and boosting renewables. While in practice decarbonisation in the WB6 has yet to get off the ground, effects of the energy transition in the European Union, notably of pricing CO_2 emissions, have started to spill over to the energy markets of the Western Balkans.

The absence of structured energy transition plans raises uncertainties about the direction and speed the transition will take in the Western Balkans. These uncertainties are echoed in the calls of market participants and investors for more predictability. That is why agreeing on credible decarbonisation paths towards achieving 2030 and 2050 targets should be the main task of Western Balkan 6 parties in the coming months.

The expected adoption of the Energy Community Decarbonisation Roadmap and the Clean Energy Package by the Energy Community Ministerial Council on 25 November 2021 will bring predictability and set the legal basis for decarbonisation on the Energy Community level, starting with the adoption of 2030 targets and National Energy and Climate Plans (NECP).

Despite these uncertainties, the Western Balkan 6 parties are moving on with the implementation of actions agreed by the Sofia Declaration on the Green Agenda for the Western Balkans. As the process unfolds, the WB6 Energy Transition Tracker continues to monitor and assess the progress through qualitative and quantitative indicators related to reducing emission footprints, improving functioning of the energy markets, scaling up renewables, improving energy efficiency and planning for the decarbonised energy future.

Reducing the carbon footprint

- All fossil-fuel power plants continue to be in operation and production even increased by 4% in 2020, resulting in a rise of CO_2 (4%), NO_x (6.5%), SO_2 (8.7%) and dust (4%) emissions compared to 2019.
- The first large combustion plant (TPP Pljevlja in Montenegro) has reached the end of its opt-out timeframe. As its current emission levels do not meet the standards of the Industrial Emissions Directive, the Secretariat launched an infringement case in April 2021.
- Non-internalization of costs of CO_2 emissions, worth 1.2 billion euros at average EU ETS price in 2020, distorts the level playing field between EU and WB6 electricity markets and puts further market integration at risk.

Making the energy market fit for decarbonisation

- Incumbent companies continue to dominate wholesale and retail markets in WB6, with a downward trend visible only in North Macedonia.
- Day-ahead market price and electricity prices for industrial customers, without taxes and levies, converge to the related prices in the EU in 2020, whereas household prices remained below 50% of the EU average.
- Balancing markets are deregulated in WB6, except for balancing capacity in Montenegro and Serbia; however, price caps still apply except in Albania and Kosovo[1].

Boosting deployment of renewables

- Renewables capacity is growing but at a slow pace, with 188 MW of solar and hydro capacity added in 2020.
- 105 self-consumers are active across four WB6 parties with installed capacity of 2.5 MW at the end of 2020.
- Albania and North Macedonia continue with renewables auctions. In other WB6 parties the first auctions are yet to come.
- Kosovo and Montenegro achieved 2020 renewables targets. Eurostat data for 2020 are expected to confirm that Albania and Bosnia and Herzegovina will follow, whereas reaching the target seems unattainable for North Macedonia and Serbia.

Making energy efficiency the first fuel

- All WB6 parties, with the exception of Bosnia and Herzegovina, are on track with meeting the 2020 energy efficiency target.
- Investments in energy efficiency in buildings picked up in the past year, however, only one third of the estimated investment needs for 2011-2020 have been met.

Reaching a decarbonized energy future

- All WB6 parties have started preparing their National Energy and Climate Plans (NECPs).
- Bosnia and Herzegovina, Montenegro and North Macedonia have submitted their revised Nationally Determined Contributions on greenhouse gas reduction to the UNFCCC.

1 Throughout this Report, this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

The generation mix reality

The installed capacity of fossil fuel fired thermal power plants in the WB6 parties has remained constant since 2016, with a slight increase from 9,14 to 9,17 GW. However, the share of fossil fuels in total installed capacity decreased from 52% in 2016 to 48% in 2020 as a result of newly installed renewables capacity.

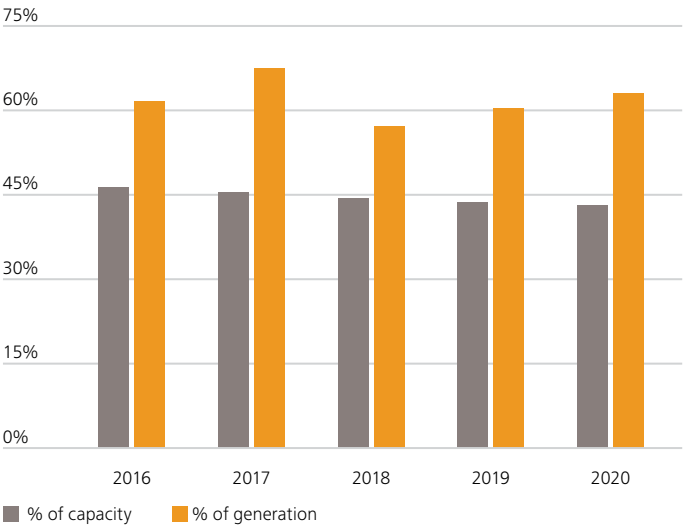
The share of electricity produced from coal remained largely stable with no signs of decline over the five-year period. Despite a decrease in domestic demand in 2020, production from coal increased from 4% to 11% in Western Balkan parties with coal-fired plants, constituting 63% of the total electricity produced. The only exception is North Macedonia, which in 2020 saw a decrease of electricity production from coal power plants of 24% compared to 2019 due to disruption in operation, low quality of coal and floods in 2020.

All but one thermal power plant in WB6 are more than 30 years old and close to the end of their useful lives. The coal mines supplying several existing plants are used up. Site reclamation activities are often delayed or neglected. Investment in plant rehabilitation to improve efficiency, reduce harmful emissions and extend their useful life in combination with extensive land reclamation investments requires serious reconsiderations of the available options.

Only North Macedonia's TPP Oslomej is scheduled for decommissioning in 2021, to be replaced with large scale PV installations. The construction of a new 450MW unit at the TPP Tuzla in Bosnia and Herzegovina has not yet been officially cancelled by the state-owned utility EPBiH despite the Secretariat's infringement case, but the company is moving forward with plans to install large scale PV plants on abandoned coal mine areas and fast growing biomass plantations. The state-owned production company in Kosovo cancelled a tender for a feasibility study on the rehabilitation of the TPP Kosova A in December 2020. The Serbian Government instructed the state-owned production company EPS to suspend activities on building a 350 MW unit in the TPP Kolubara B, while a 350 MW unit in TPP Kostolac B3 is planned to be completed by the end of 2022. In Montenegro, the environmental rehabilitation of the TPP Pljevlja, whose operational hours have been used up according to the Large Combustion Plants Directive, is resumed and planned to be finalised by the end of 2023.

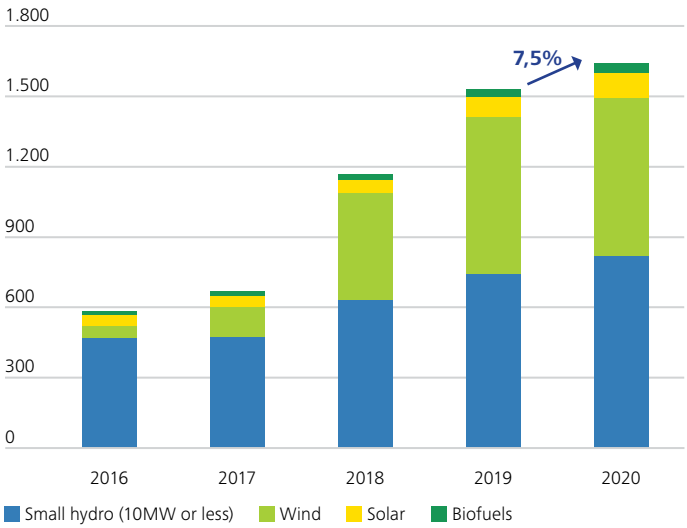
In the WB6, renewables capacity installed since 2016 amounted to 1,35 GW. The significant renewables growth in 2018 and 2019 slowed down in 2020, with only 188 MW of new capacity installed, 26 MW of solar PV and 153 MW hydro. This may be attributed to the Covid-19 crisis, which slowed down licensing, contracting, procurement as well as construction and installation activities.

Share of coal-based capacity/production in total WB6 capacity/production (%)



Source: compiled by the Energy Community Secretariat.

Installed electricity generation capacities from RES (excl. large hydro) (MW)



Source: compiled and calculated by the Energy Community Secretariat.

Reducing the emission footprint

Carbon dioxide emissions from the power sector

In the WB6 region, fossil fuel combustion emits around 90 million tonnes of CO_2 annually, to which electricity and heat contribute by around 65%. Electricity production in combustion plants burning lignite or brown coal alone contributed to 45 million tonnes of CO_2 emissions in 2020.

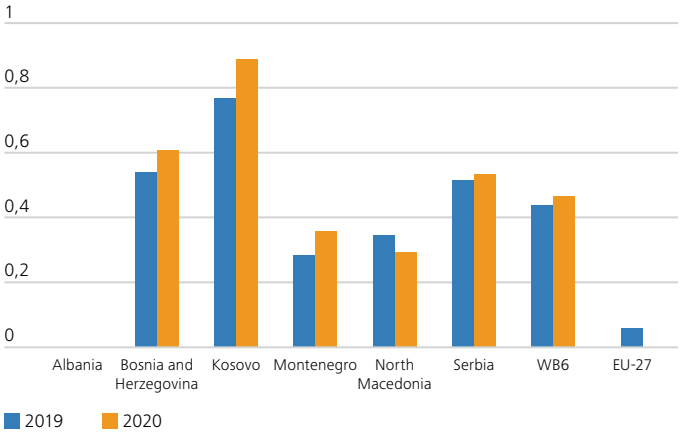
The year 2020 dominated by the Covid-19 pandemic brought a sharp decline of gross domestic product (GDP) compared to 2019 in all WB6 parties, except Serbia, ranging from -15% to +1%. At the same time, electricity production from fossil fuels increased in all WB6 parties except North Macedonia. As a result, CO_2 emissions from fossil fuel combustion for the production of electricity per unit of GDP increased by 7% on average.

The carbon intensity of electricity production in the Western Balkan parties exceeded more than 3 times the average carbon intensity of electricity production of the EU-27 in 2020. Estimates for the EU-27[1] show that production from fossil fuels fell by 111 TWh and corresponding carbon emissions dropped by 14%, whereas WB6 production from fossil fuels increased by 4%.

In 2019 WB6 power plants emitted 10 times more CO_2 than those in the EU-27 to create one unit of gross domestic product, which means that this ratio has unfortunately worsened in 2020.

There is an urgent need to invest in alternatives to coal combustion, inefficient use of fossil fuels, power-intensive economy and inefficient electricity consumption in all WB6 parties.

CO_2 emission from power sector per GDP
(kg CO_2 / EUR GDP)



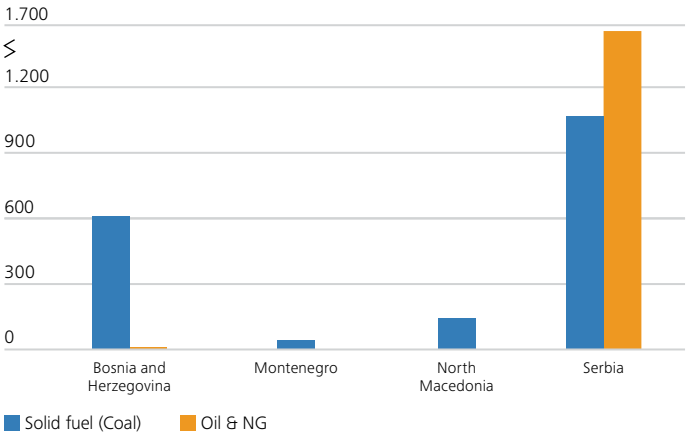
Source: EUROSTAT database, Contracting Parties submission, compiled by the Energy Community Secretariat

Methane emissions in the energy sector

Methane (CH_4) is emitted during the production, processing, transport, use or abandonment of fossil fuels (coal, oil, natural gas) and is a significant climate villain despite contributing in much smaller total amounts to GHG emissions than CO_2.

In the four WB6 parties reporting to the UNFCCC (Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia), methane contributes with only a few percentages (in the range of 1,7-5,5%) to the total emissions of the energy sector. This is due to the structure of electricity production in these parties, which consists mainly of coal, while the share of oil or gas production is either insignificant or non-existent. In these cases, methane is emitted into the atmosphere as a fugitive emission by coal mines. Serbia is the only exception with coal mines making up only 40% of the total methane emitted by the energy sector, with the remainder (60%) attributed to oil and gas.

CH_4 emissions by the energy sector
(kt CO_2eq)



Source: Compiled by the Energy Community Secretariat, on the basis of latest biannual reports on GHG emissions under UNFCC

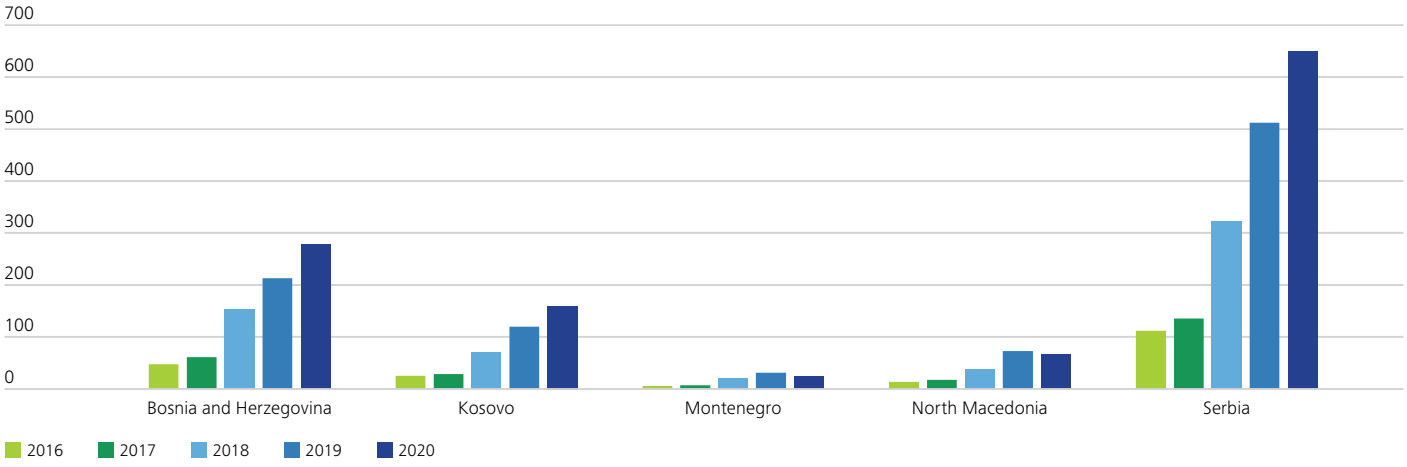
2 from the Quarterly report on European electricity market, EU Market Observatory for Energy

Putting a price on carbon

The cost of CO_2 emissions are recognized only in Montenegro, starting at 24 EUR/t from 2020 with around two thirds of free allowances.

The level playing field between WB6 and EU markets is seriously impeded by the growing discrepancy in the implied cost structure for electricity produced from fossil fuels. The average price of CO_2 allowances in the EU emission trading scheme increased from 4,41 EUR/t in 2016 to 26,32 EUR/t in 2020 and then doubled in the course of 2021 exceeding 50 EUR/t. The avoided costs of CO_2 emitted from coal-fired thermal power plants in the WB6, measured at the average EU ETS price, exceeded EUR 1 billion in 2020 alone and more than EUR 3 billion in the last 5 years.

Avoided costs of CO_2 emission [mio EUR]



Source: Calculated by the Energy Community Secretariat

If WB6 operators had been subject to a carbon pricing scheme, the average wholesale prices in the region might have been higher, but the created funds could have been used for coal areas and vulnerable customers.

As recommended by the study on Carbon Pricing Design for the Energy Community, an indispensable step for the parties to remain part of the European power market is the adoption of a plan to introduce a price on CO_2 from combustion power plants and the gradual development from a national into a regional and European trading scheme.

A stable and reliable system for monitoring, reporting and verification of GHG emissions is a precondition to implement an emission trading scheme. Setting up the necessary legislative and administrative framework alone is expected to take three years.

The Secretariat invited the operators of combustion plants to introduce an internal price on carbon emissions from their plants and operations. The mechanism would be applied at least until the introduction of a legally binding carbon price mechanism.

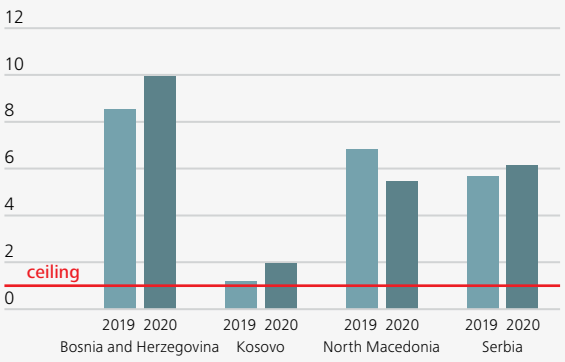
The internal carbon pricing mechanism serves as a calculation tool for investment decisions and, to the extent possible, as a carbon charge on existing emissions, determined and disclosed as an internal cost component of regular operation. In particular, the internal carbon pricing mechanism is applied in assessing the profitability of all new investment projects already in the initial phase of development.

Two utilities (Elektroprivreda Bosne i Hercegovine and Elektrostopanstvo na Severna Makedonija) expressed their intention to introduce an internal carbon price.

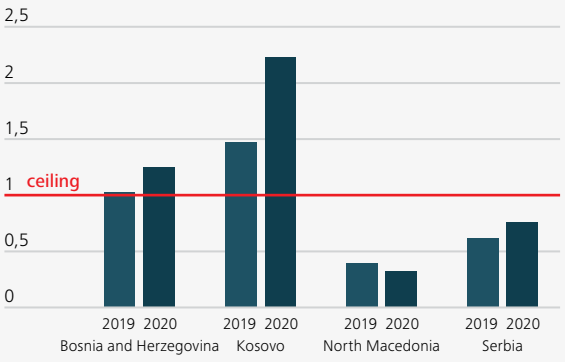
Implementing the Large Combustion Plants Directive

The Large Combustion Plants Directive entered into effect on 1 January 2018 in the Energy Community. This piece of environmental acquis regulates the emission levels of sulphur dioxide (SO_2), nitrogen oxides (NO_x) and dust from existing thermal power plants. The necessary investments triggered by the Directive's implementation put a first price on fossil fuels and thereby marked the beginning of the end of the coal and lignite era in the WB6. The recorded data for 2020 showed large non-compliance with the emission ceilings for SO_2, NO_x and dust in the Western Balkan parties. In order to address these breaches, the Secretariat started dispute settlement cases in March 2021 against the parties where breaches are still present.

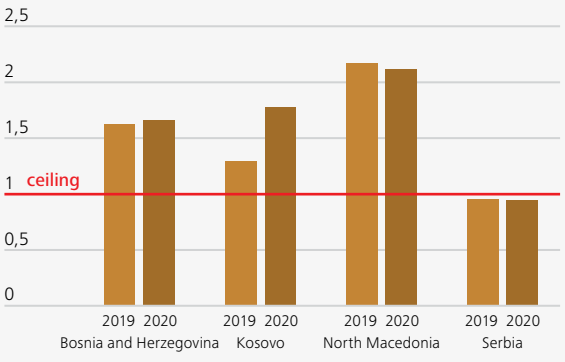
LCP emissions versus NERP ceilings



In 2020, the breach of the SO_2 emission ceiling reoccurred and - with the exception of North Macedonia - even increased in the WB6 parties implementing NERPs. Bosnia and Herzegovina exceeds the ceilings almost ten times. Serbia and North Macedonia surpassed the ceiling by approx. 500%. The negative trend compared to 2019 is caused by the high usage ratio of the plants in 2020, fueled by export.



Bosnia and Herzegovina and Kosovo did not comply with their ceilings for NO_x emissions. NO_x ceilings are to decrease gradually by approx. 50% between 2018 and 2023. The fact that reported emissions are even further away from compliance than they were in 2019 confirms that this will become increasingly difficult in the coming years.



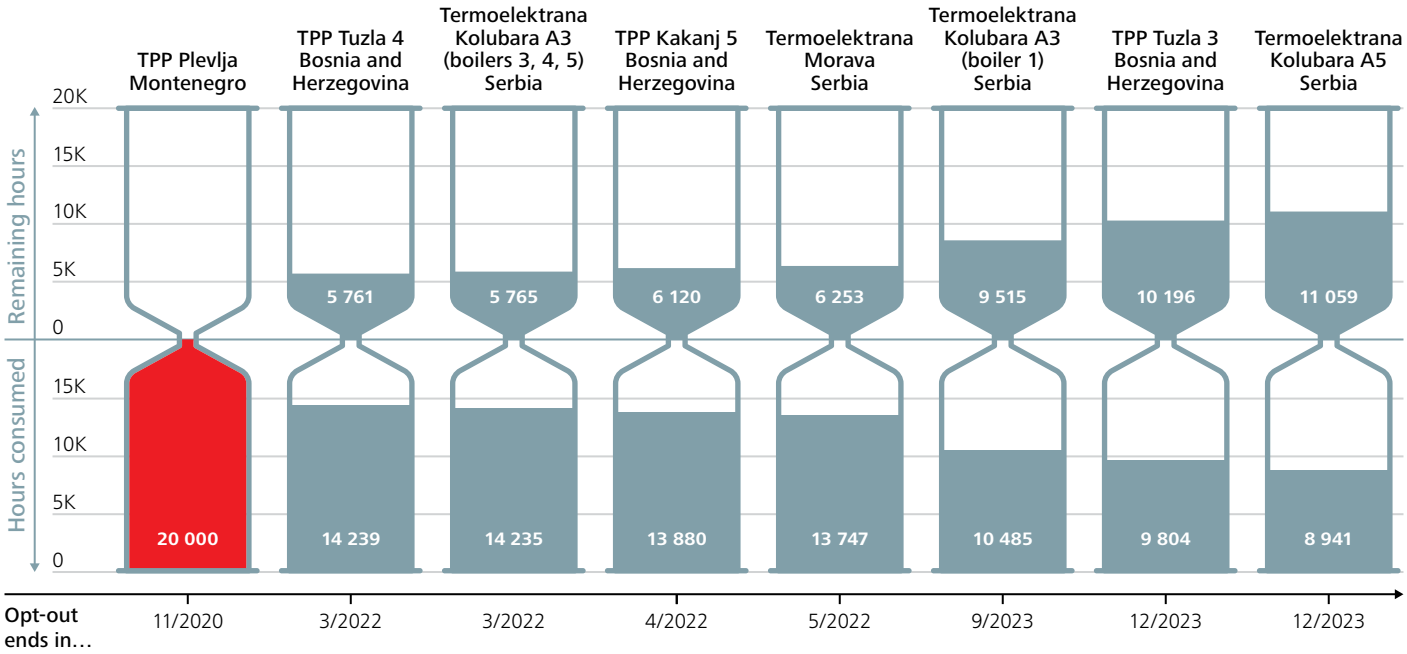
The breach of the dust ceiling limits reoccurred in all three parties concerned (Bosnia and Herzegovina, Kosovo and North Macedonia). North Macedonia emitted more than twice the limit set by the ceiling, while Bosnia and Herzegovina and Kosovo both have an approx. 70% transgression. Serbia achieved compliance with the ceiling also in 2020.

Source: compiled and calculated by the Energy Community Secretariat.

Limited lifetime derogation (opt-out)

Another implementation alternative of the Large Combustion Plants Directive, known as opt-out, provides the possibility for Contracting Parties to exempt individual plants from the Directive's compliance regime. In exchange, these plants cannot operate for more than 20,000 operational hours between 1 January 2018 and 31 December 2023. The first opted-out plant, TPP Pljevlja in Montenegro, had reached the end of its opt-out period by the end of 2020. As the plant cannot meet the stricter requirements of the Industrial Emissions Directive (which is a condition for further operation after the end of the opt-out period), the Secretariat initiated dispute settlement procedures against Montenegro in April 2021. Subject to their current load factor, it is expected that additional plants (Kakanj 5 in Bosnia and Herzegovina and boilers 3, 4 and 5 of Kolubara A3 in Serbia) will reach the end of their opt-out timeframes in the course of 2022.

Expected closure of opted out plants



Source: compiled and calculated by the Energy Community Secretariat.

Making the electricity market fit for the energy transition

Getting the price signal right

The market dominance of state-owned electricity production companies in total electricity production continues in most WB6 parties. A descending trend is visible only in North Macedonia, where the share of the state-owned utility ESM dropped by 6% as a consequence of the continuous downfall of production from thermal capacities and unfavourable hydrology in 2020.

At the retail level, competition has also not taken off. The three biggest suppliers still supply 100% of final electricity consumption in Kosovo and Montenegro. The market share of the three biggest suppliers remains high in Albania (93%), Bosnia and Herzegovina (96%), and Serbia (97%), although slightly decreased in comparison to 2019. Gradual mandatory retail market opening in North Macedonia resulted in the further decrease of the indicator of retail market concentration from 92% to 88%.

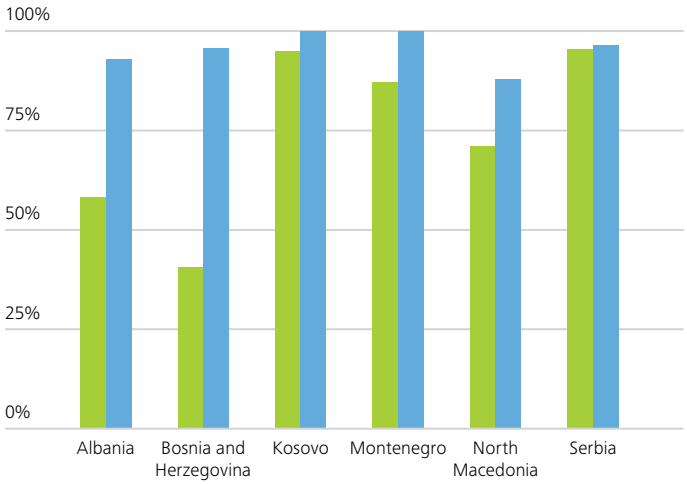
The market share of incumbents remains dominant. In particular, incumbents are still supplying all households in the WB6 parties. Low prices of electricity are commonly made available to households under a universal service regime. As the prices charged to households do not reflect the wholesale market price, switching in the household sector is still negligible in the WB6.

The gap between household prices in the WB6 and the EU-27 remains significant. The prices charged to households consuming annually between 2500 and 5000 kWh did not change much from the first half of 2019 to the first half of 2020, except for an increase of 5% in Serbia and a decrease of 4% in Montenegro. Nevertheless, household prices did not reach even half of the average price charged in the EU-27.

For the prices charged to industry and commercial customers, the situation is different. As regulated prices are mainly available only to small customers, the prices better reflect the wholesale market price, and the electricity price without taxes and charges in WB6 is close to EU-27, or even exceeds it in Albania (28% higher than in the EU-27).

Despite this, the gap between WB6 and EU industry prices remains wide due to the share of taxes and levies in the final price. Since taxes and levies make 47% of the final price in the EU-27, final end-user prices, including all charges and levies in the WB6, are still significantly lower than in the EU.

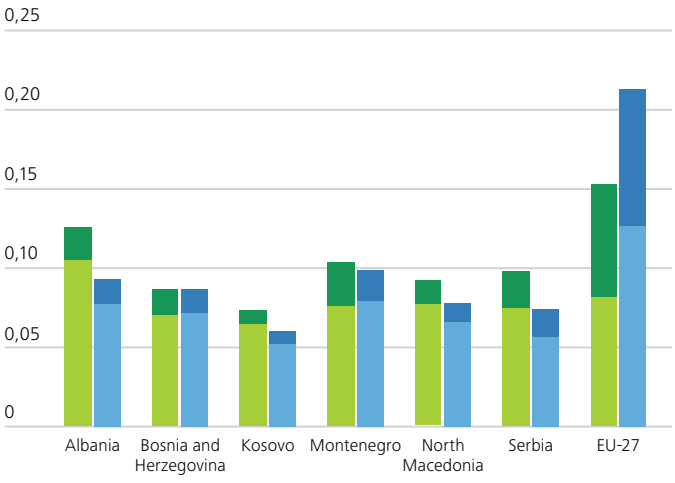
Market share in the wholesale and retail electricity market, 2020



Source: Compiled and calculated by the Energy Community Secretariat

Electricity prices, I semester 2020 in EUR/kWh

band IC consumption 500-2000 MWh
band DC consumption 2500-5000 kWh



Source: EUROSTAT database, AKBN report for Albania

Creating an integrated energy market

The increasing ambition of the Western Balkan parties to attract new market-based investments into renewables is accelerating the establishment of day-ahead markets, a prerequisite for market coupling and development of competition in the region's small electricity markets.

Five years after the launch of Serbian power exchange SEEPEX, the only operational day-ahead market in Western Balkans, all other parties, except Bosnia and Herzegovina, are a step away from setting up a day-ahead market.

In June 2021, the Montenegrin power exchange company BELEN selected a provider of day-ahead trading, clearing and settlement platforms. The contract with the service provider is expected to be signed by mid-July and the day-ahead market to become operational in Q2 2022.

In June 2021, Albanian power exchange company ALPEX launched a new tender for a service provider of a day-ahead and intraday market platform in Albania and Kosovo, as the exchange will operate the markets of both parties. A branch office was established in Kosovo in May 2021. The Albanian day-ahead market should be operational 9 months following the signature of the contract with the successful bidder. The launch of the day-ahead market in Kosovo and the coupling of these two bidding zones is envisaged 11 months after the contract signature.

The ongoing tender for the provision of a day-ahead trading platform with a module for its coupling, launched by the national electricity market operator of North Macedonia, MEMO, is closing on 26 July 2021. Bosnia and Herzegovina has not yet managed to make progress in setting up a legal framework which would define responsibilities for day-ahead market establishment.

While a legally binding framework for market coupling based on the Clean Energy Package and reciprocal application of CACM Regulation is expected to be adopted by the end of 2021, subject to the adoption of Energy Community Treaty changes, voluntary transposition of NEMO designation in line with the CACM Regulation continued. By the recently amended Energy Law, Serbia established a legal framework for the designation of NEMO and market coupling in line with the CACM. Details will be laid out in a governmental act.

Unfortunately, a deadline for the establishment of an intraday market is not set within the laws of the Western Balkan parties. For the time being, only the ongoing tender by ALPEX envisages the go-live of the Albanian intraday market within 12 months after the launch of the day-ahead market coupling with Kosovo and 2 months later the intraday market coupling with Kosovo.

Day-ahead electricity market development and NEMO designation status

	Legal basis for PX establishment	PX company established	Service provider for PX selected	PX operational	Legal basis for NEMO designation
Albania	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●
Kosovo	●	●	●	●	●
Montenegro	●	●	●	●	●
North Macedonia	●	●	●	●	●
Serbia	●	●	●	●	●

● In place ● In progress ● Not in place

Source: compiled by the Energy Community Secretariat.

Balancing market

Decarbonisation and the growing share of intermittent renewable sources are expected to increase system balancing needs. The functioning and liquidity of the WB6 balancing markets must be improved to be fit for the energy transition.

The procurement of balancing services is done in a market-based procedure in all WB6 parties. The balancing capacity price continues to be regulated in Montenegro and Serbia.

In addition to Bosnia and Herzegovina and North Macedonia where auctions for frequency restoration reserve (FRR) are already taking place, Albania started procuring FRR through auctions as of 1 April 2021. Procurement and activation of automatically activated FRR (aFRR) is done for both TSOs of Albania and Kosovo based on a joint agreement between the two TSOs on provision of secondary control services, whereas procurement of manually activated FRR (mFRR) is done by each TSO separately. Common dimensioning of FRR is performed based on the agreement on establishment of the Albania-Kosovo (AK) control block.

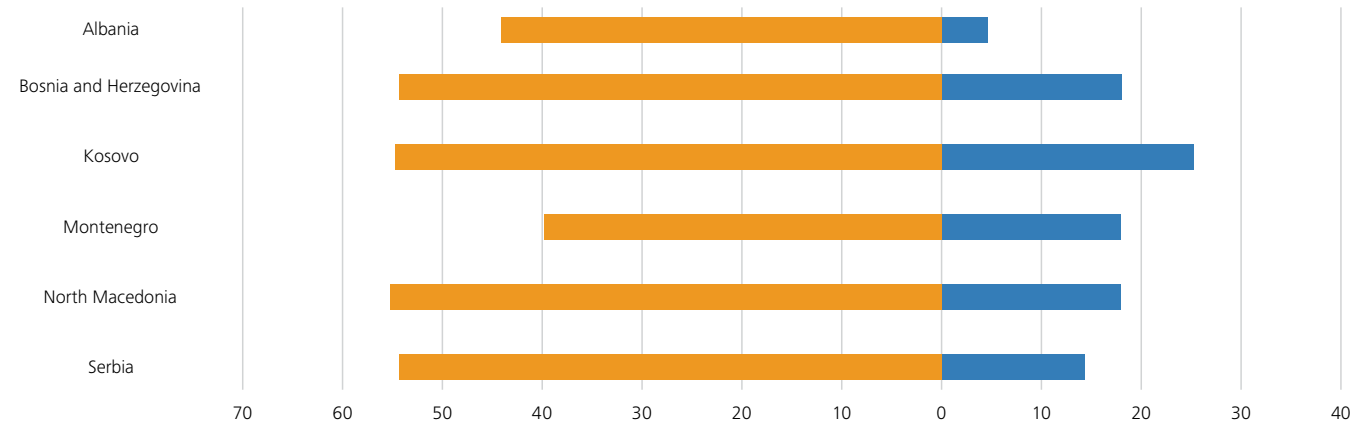
The TSO of Bosnia and Herzegovina also applies common dimensioning and exchange of mFRR within the control block of Slovenia, Croatia and Bosnia and Herzegovina (SHB). The common dimensioning in the control block of TSOs of Serbia, Montenegro and North Macedonia (SMM) is still to be implemented. Cross-border exchange of mFRR is applied on a bilateral basis between TSOs of Bosnia and Herzegovina, Montenegro and Serbia.

Despite these developments, balancing markets continue to suffer from lack of competition and incumbent generation companies continue to be the dominant or even the only balancing service provider. To prevent dominant players from exercising market power, price caps are applied except in the recently opened balancing markets in Albania and Kosovo. Further development of competition will depend on the establishment of cross-border balancing cooperation and emergence of new balancing service providers, including through the integration of renewables, demand-response, storages and electric vehicles into the market and their aggregation. Even though aggregation is allowed in most of the parties, it does not play a role in practice.

Future flexibility needs and potentials will be assessed by a forthcoming Energy Community study on the flexibility options to support decarbonisation in the Contracting Parties.

Rules for the calculation of imbalance settlement prices are published in all WB6 parties. Weighted average imbalance settlement prices in 2020 are shown in the figure below. Compared to HUPX base average price in 2020, prices were ranging between 1,1-1,45 of the HUPX price for negative imbalances of balance responsible parties, whereas prices for positive imbalances were in the range of 0,12-0,66 of the HUPX price.

Weighted Average Imbalance Settlement Price in 2020 [€/MWh]



Price is calculated as total amount in EUR paid during the year for positive/negative imbalances divided with total positive/negative imbalance in MWh

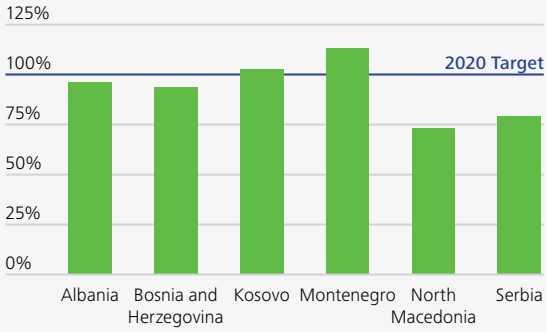
Positive imbalance (balance responsible party had surplus), imbalance settlement price positive (payment from TSO to BRP)
Negative imbalance (balance responsible party had shortage), imbalance settlement price positive (payment from BRP to TSO)

Source: WB6 parties submission, compiled by the Energy Community Secretariat

Boosting the deployment of renewables

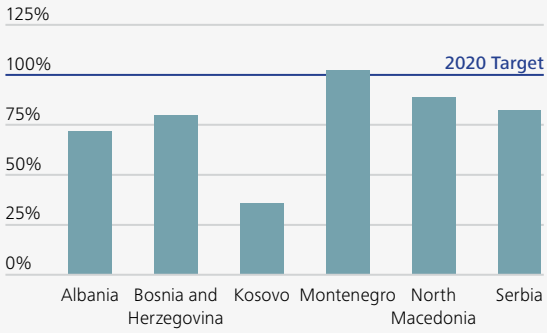
Share of renewable energy in gross final energy consumption in 2019 (relative to 2020 target)

Overall RES target



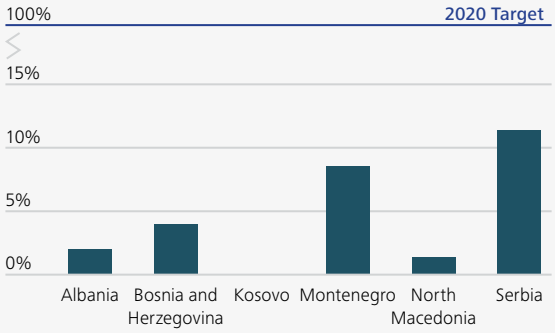
Based on the most recent data available, Kosovo and Montenegro reached their 2020 target for the use of renewable energy in gross final energy consumption already in 2019. Albania and Bosnia and Herzegovina expect to follow in 2020. However, the target seems unattainable for North Macedonia and Serbia. The transport sector remains the least advanced in all parties, however, substantial improvements and investments are needed across the board.

Electricity



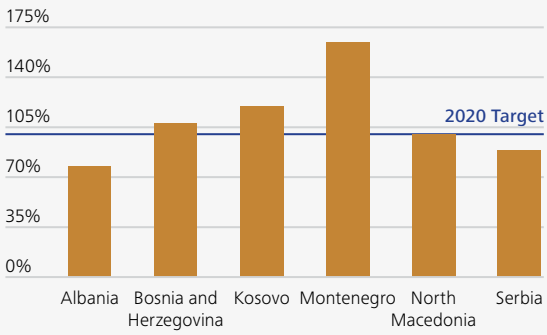
Montenegro is the only party that has achieved its 2020 indicative target for electricity in 2019. North Macedonia is just below the target, followed by Bosnia and Herzegovina and Albania, while Kosovo is the most behind.Despite the significant uptake of wind power in Serbia in recent years, the country will, most probably, not reach its target. Across the region, hydro remains the main contributor to the production of electricity from renewable sources.

Transport



None of the WB6 parties is close to reaching the mandatory 10% target for transport by 2020 as well as establishing an operational system to verify biofuel sustainability. Due to the lack of a sustainability verification system, biofuels placed on the market in Albania cannot be counted towards the target. In other parties, the share of renewable energy in the transport sector is the result of electrified public transport.

Heating and cooling



Increased use of solid biomass in the residential sector is largely responsible for most of the WB6 parties being close to or having exceeded their 2020 indicative target for heating and cooling in 2019. However, replacing fossil fuels with biomass for heating has a negative impact on forestry when the use of biomass for energy production is not conducted in a sustainable manner. A study conducted in 2017 by the World Bank on biomass-based heating in the Western Balkans showed that on average 75% of woody biomass sustainable technical potential is already used.

Source: EUROSTAT data, compiled and calculated by the Energy Community Secretariat.

Renewables support schemes

The era of administratively set feed-in tariffs for renewables is slowly coming to an end as new market-based support schemes come into effect in many WB6 parties. The ongoing reform is the most important driver to sustainably increase the share of renewable energy and provide the necessary investment conditions in the WB6, in line with the Energy Community acquis and the 2020 Sofia Declaration.

Albania and North Macedonia already held their first auctions. In Albania, auctions were designed to convert the fixed purchase price awarded to producers into a Contract for Difference (CfD) once a day-ahead market is operational and liquid. The last auction for 100 MW of solar PV, finalized in March 2021, resulted in the winning price of 29.89 EUR/MWh to be awarded for a period of 15 years. In North Macedonia, auctions were based on bids for an additional fixed Feed in Premium (FiP), on top of the price realized by the sale of each kWh on the wholesale electricity market.

Bosnia and Herzegovina and Kosovo are working intensively on the legal framework to enable auctions for renewable energy projects. Montenegro, with the support of the Secretariat, will draft secondary legislation to provide clarity on the auctions that are prescribed as obligatory for projects above 1 MW by the Energy Law.

In April 2021, Serbia adopted a package of four laws on energy including the first law on the use of renewable energy sources. The law prescribes auctions for market premiums for all projects with installed capacity above 500kW or 3MW for wind plants. However, the details of the scheme for market premiums (fixed or sliding) have to be clarified in secondary legislation, which is currently being prepared.

In addition to the support given through the long-term contract with incentivized price for off-take of electricity, renewables producers are exempted from balancing responsibility. According to the State Aid Guidelines, the establishment of balance responsibility for renewable producers above 500kW of installed capacity is conditioned on the existence of a liquid intraday markets, yet to be established in the WB6. However, for the long-term contracts it has to be ensured that once intraday market is in place and liquid, the exemption is phased out.

This approach is applied in the newly adopted renewable energy law of Serbia, which anticipates the conversion to full balancing responsibility once the intraday market is liquid. The Energy Agency is obliged to monitor the development of the organized intraday electricity market and to publish by the end of February of each year a report on whether a liquid organized intraday market is established. Tangible criteria for determining what constitutes intraday market liquidity is still to be defined in secondary acts.

Albania's renewable energy law prescribes that existing priority producers should be balance responsible as soon as the balance market is established but not later than 31 December 2022, while new producers should be balance responsible from the start. However, this is not functioning in practice.

The 2013 law on renewable energy in Federation of Bosnia and Herzegovina envisages the adoption of a methodology for allocating balancing costs. However, it was never finalized and renewable energy producers under feed-in tariffs remain fully released from balancing responsibility. In Republika Srpska, renewables producers under the support scheme bear 25% of the balancing costs. The same goes for renewable energy producers under the support scheme in Kosovo, which are liable for 25% of their total imbalance costs.

In Montenegro, renewable energy producers receiving support are exempt from payment of system balancing services regardless if the support is granted administratively, applied to projects below 1 MW only, or in a competitive procedure. While in North Macedonia, only producers under administratively set feed-in tariffs are exempt from balancing responsibility and those applying for support via tenders are considered electricity market participants and have balance responsibility.

Renewables self-consumers

The Clean Energy Package puts consumers at the center of the energy transition. Although the package is not yet applicable in the WB6 parties, the interest of citizens to participate in the development of renewable energy projects is increasing. All parties have already put in place, at least partially, an enabling legal framework for renewables self-consumption, but many obstacles remain to be overcome for citizens to fully participate in the energy market.

Albania's legislation enables a net metering scheme for consumers with installed capacity up to 500kW. Surplus electricity can be sold to the universal service supplier. However, the methodology that should define the price at which the surplus is to be redeemed is not yet adopted. This could explain why there are no self-consumption installations in this country.

While Federation of Bosnia and Herzegovina is yet to establish a scheme, Republika Srpska enables net metering for installations up to 50kW. However, the issue of taxing self-generated electricity that is fed into the grid remains unsolved. To date, only one self-consumer is registered in Bosnia and Herzegovina.

In Kosovo, any electricity customer connected to the low voltage distribution network with installed capacity not higher than 100kW can apply to its supplier to obtain the status of a self-consumer using a net billing scheme. This seems to function well in practice with 56 self-consumers connected and many new applications in the pipeline.

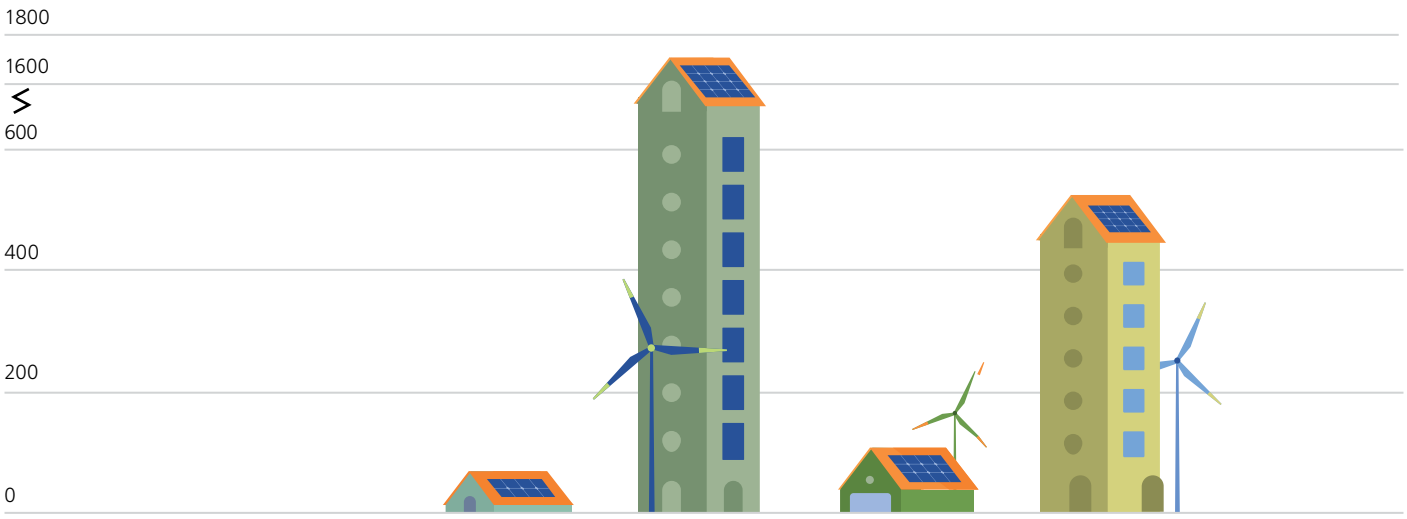
The number of self-consumers is also increasing under North Macedonia's net billing scheme. According to the Rulebook on renewable energy, the threshold for the scheme is 4kW for households and 20 kW for small consumers. In its Strategy for Energy Development and draft National Energy and Climate Plan (NECP), North Macedonia set an ambitious target of 400MW of solar rooftop plants by 2040 with a milestone of 250 MW by 2030.

In the Energy Law, Montenegro defined a netting scheme for self-consumption, obliging suppliers to purchase the surplus of produced electricity after the annual settlement at the price of energy from the supply contract.

In April 2021, the Government of Serbia adopted the first law on renewable energy. The law enables self-consumption schemes, including netting schemes for households and small consumers. Details of the netting scheme are yet to be defined in a secondary act to be adopted within six months upon the law's entry into the force.

Although an enabling legal framework is the first and most important step for the uptake of self-consumption, it has to be coupled with public awareness campaigns about its benefits in order to genuinely kick-off in the Western Balkans. This is especially the case given the low household electricity prices in the region. Raising awareness of energy efficiency measures and their implementation is equally important for self-consumption to achieve its full potential.

Installed capacities of self-consumers in kW



Source: Compiled by the Energy Community

Making energy efficiency the first fuel

Reaching 2020 energy efficiency targets

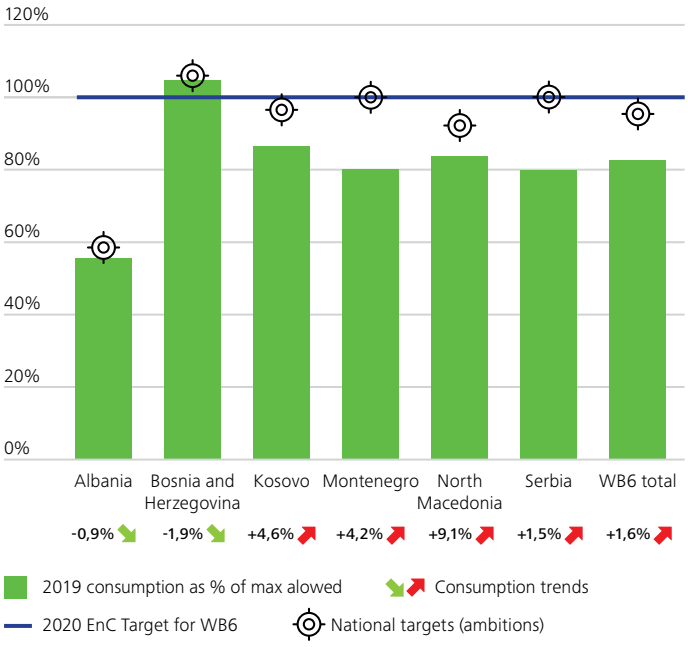
The Western Balkan parties are obliged to meet their 2020 energy efficiency targets for primary energy consumption, as set up by the Energy Efficiency Directive.

The majority of the Western Balkan parties are on track to meet their 2020 targets, meaning that their consumption in 2019 remained below the maximum level set for 2020. Only Bosnia and Herzegovina has exceeded the 2020 consumption cap already in 2018.

However, the commitments under the Green Agenda for the Western Balkans to make energy efficiency the "first fuel" are yet to be transformed from a political declaration to concrete actions.

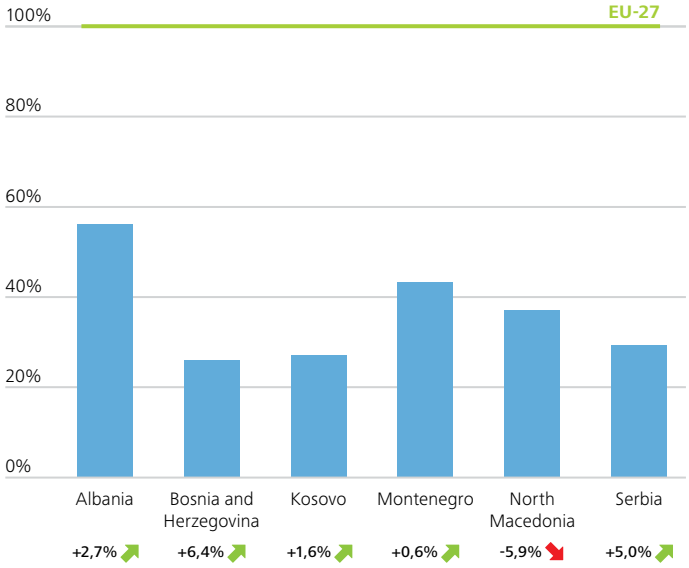
Energy productivity remains low in all parties, compared to the EU average. With the exception of North Macedonia, energy productivity increased in the Western Balkans in 2019, but is still far from catching up with the EU. This indicates that energy efficiency saving measures and investments are not implemented to a large enough extent. The pace at which the economies are transitioning towards an energy-efficient future is still very slow.

Implementation of energy efficiency 2020 targets



Source: compiled and calculated by the Energy Community Secretariat.

Energy productivity[7] [% of EU average], 2019



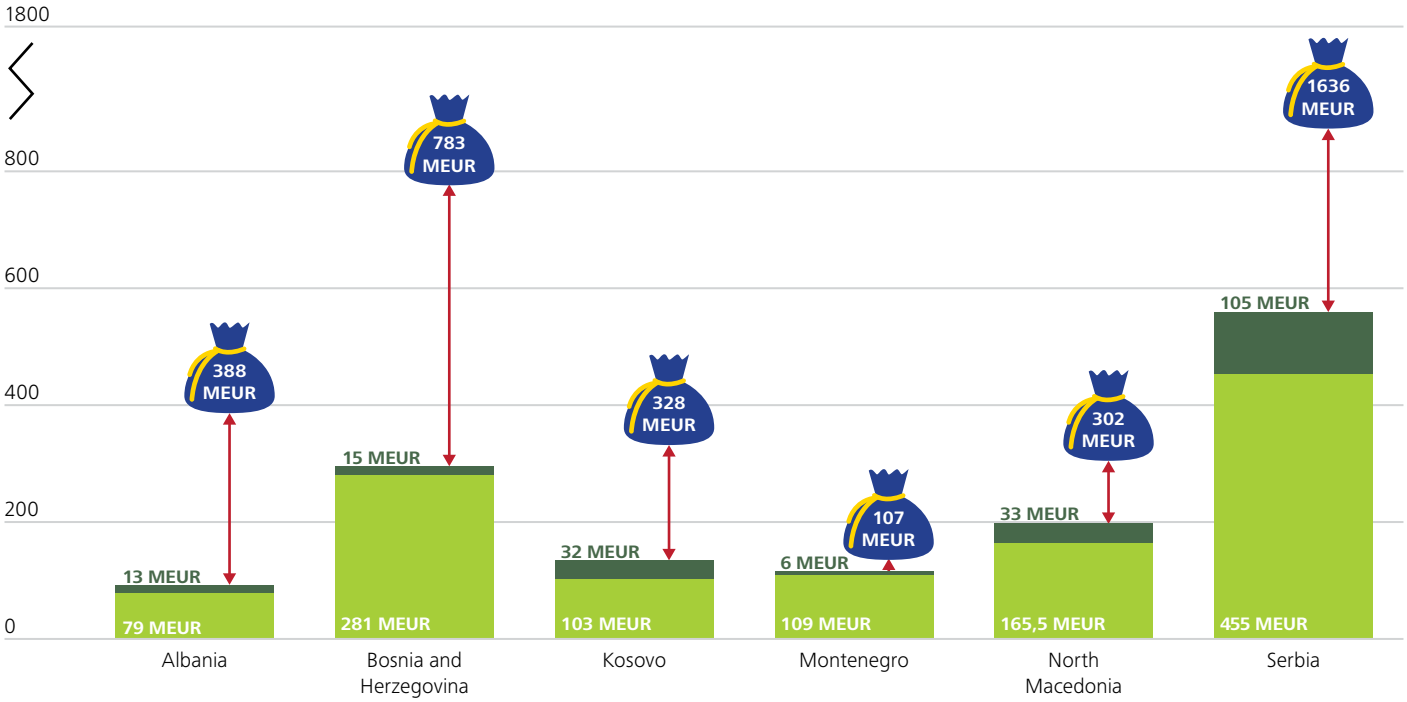
Source: compiled and calculated by the Energy Community Secretariat.

Investing in energy efficiency in buildings

In order to make the region's economies truly energy efficient, the countries need to harvest the potential for increasing energy efficiency in the building sector, as the largest final energy consumer with approximately 43% of total energy consumption and an energy saving potential as high as 40%. Nevertheless, the amount of investments needed exceeds by far the current rate of deployment. As of February 2021, the amount of investments in building renovations in the Western Balkans increased by 17%, amounting to approximately EUR 1394.23 million between 2010 and 2021. Nevertheless, this represents only 39% of the estimated investment needs of approx. EUR 3543,75 million for 2011-2020. The EU, international financial institutions and donors have all made substantial contributions to support the WB6 in this area, however, the overall investment level remains very low compared to the needs. The most notable increases in investment between January and May 2021 were observed in Serbia (approx. EUR 105 million), North Macedonia (approx. EUR 35.6 million) and Kosovo* (EUR 31.95 million).

In order to be able to fill the financing gap, the European Commission is putting a lot of emphasis on buildings in the Economic Investment Plan and the Green Agenda for the Western Balkans.

Investment gap in energy efficiency in buildings programmes



Energy efficiency investments in all types of buildings in WB6 CPs 2010-2020 in EUR million
Source: Energy Community's own data collection

New energy efficiency investments since WB6 ETT2
Source: Energy Community's own data collection

Energy efficiency investment needs in all types of buildings in WB6 CPs 2011-2020
Source: Energy Efficiency in Buildings in the Contracting Parties of the Energy Community Report; Energy Community Secretariat

Investment gap

Buildings Renovation Wave – an opportunity and a challenge

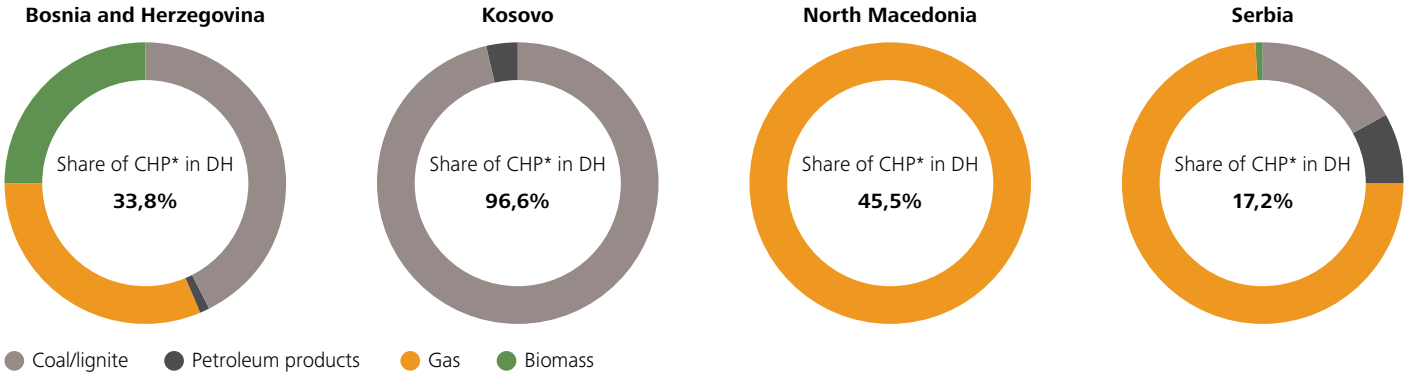
On 6 October 2020, the ***European Commission*** published the ***Economic Investment Plan for the Western Balkans***, which includes the "renovation wave" as a flagship initiative. Its main objectives are to: triple the renovation rate of existing buildings; triple energy savings in existing buildings; and achieve nearly zero energy consumption in new buildings.

Introducing renewable energy in district heating systems

The region's heating sector, which is mostly based on hydrocarbons and coal/lignite or inefficient use of wood, is a significant contributor to air pollution and GHG emissions.

Around 14% of total heat demand (~900 ktoe) is produced and distributed to final users in district heating systems. It is based predominantly on fossil fuels (coal/lignite ~21%, petroleum products ~9% and natural gas ~67%), with renewable energy such as biomass and waste heat only reaching approximately 3% of total production, 20% of which is produced in co-generation plants.

Fuels used and share of co-generation in district heating (%), 2019



*combined heat and power
Source: compiled and calculated by the Energy Community Secretariat.

The ***Green Agenda for the Western Balkans and the Economic and Investment Plan*** identified energy efficiency, including modernisation of district heating (DH) systems, as a solution for greening cities. District heating based on renewable energy or residual heat is the most economic, clean and efficient solution for supplying heating services to high population density urban areas. The current situation in the WB6, where hydrocarbon based district heating is dominant, is changing.

In the municipalities of Mali Zvornik and Priboj, Serbia, new biomass based boilers will supply the district heating system from January 2022. Another project under construction is in the city of Gjakova, Kosovo, where a biomass based cogeneration plant will produce electricity and heating for the city; completion is expected in 2021.

Similar game-changing projects are in the pipeline, supported by the Renewable District Energy in the Western Balkans (REDEWeB) programme implemented by the EBRD, with financing from the Austrian Government and the Swiss State Secretariat for Economic Affairs (SECO), in partnership with the Energy Community Secretariat, as follows:

Albania:	1 (new greenfield DH system based on several renewable heat solutions)
Bosnia and Herzegovina:	2 (heat pump utilising geothermal heat and industrial waste heat)
Kosovo:	1 (solar thermal)
Montenegro:	1 (greenfield biomass-based DH)
Serbia:	8 (5 solar thermal, 3 heat pumps utilising heat from a waste water treatment facility)

Reaching a decarbonized energy future

Contributing to global climate change efforts

Nationally Determined Contributions (NDCs) summarise countries' plans to reduce greenhouse gas (GHG) emissions under the Paris Agreement. All Western Balkan parties, with the exception of Kosovo[3], ratified the Agreement and submitted their initial NDCs to the UNFCCC. In line with the Agreement's call on countries to submit new or updated NDCs (NDC2s) ahead of the next Conference of the Parties (COP26, November 2021), North Macedonia, Montenegro and Bosnia and Herzegovina have already submitted their respective NDC2 to the UNFCCC. NDC2 should also pave the way towards meeting the political pledges under the 2020 Sofia Declaration. Moreover, their ambition level and targets should be harmonized with the NECPs.

Albania drafted its NDC2 and opened it for public consultation in April 2021. In its current form, the document foresees mitigation targets that are lacking in ambition and sufficient emphasis on reducing GHG emissions from transport and industry. The NDC2 includes actions on AFOLU and adaptation, with focus on coastal zones.

Bosnia and Herzegovina submitted its NDC2 to the UNFCCC Secretariat in April 2021. The document includes increased investments in coal capacity and the proposed targets are less ambitious than the GHG emission reduction targets put forward in the draft NECP. The unconditional target of reducing GHG emissions for 2030 is 12.8% (excluding GHG sinks) compared to the 2014 level. The conditional target (with more intensive international assistance, especially for the fair transition of mining areas) for 2030 is 17.7% (excluding GHG sinks) compared to 2014.

The Montenegrin NDC2 was submitted to the UNFCCC in June 2021. It puts forward a target of 35% GHG emission reduction by 2030 compared to 1990. The document includes both mitigation and adaptation measures and focuses on disaster risk reduction and calculation of GHG emissions for land use, land-use change and forestry (LULUCF). Measures on gender equality and vulnerable groups are also reflected and reference is made to alignment with the NECP. Harmonization with the drat NECP remains to be verified upon its submission.

North Macedonia submitted its NDC2 to the UNFCCC Secretariat in April 2021. The document went through stakeholder consultation. It is focused on mitigation, while the adaptation component will be included in a separate submission. Policies and measures on AFOLU are also reflected. The NDC2 echoes the green scenario from the National Strategy for Energy Development up to 2040 and is fully aligned with the draft NECP. The NDC2 includes a 51% reduction in GHG emissions by 2030 compared to 1990 levels.

Serbia's NDC2 is under finalization. It contains economy-wide mitigation measures, set to contribute to a just transition low-carbon development roadmap. It is expected to reflect on nature-based solutions and strengthening the synergy between air protection measures and reducing GHG emissions. Harmonization with the drat NECP is to be verified upon finalization of both documents.

State of Nationally Determined Contributions (NDC2) preparation

	GHG other than CO_2 covered	All emission sectors covered	Adaptation strategy	Participatory process	Gender sensitivity	NDC2 submitted to the UNFCCC
Albania	●	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●	●
Montenegro	●	●	●	●	●	●
North Macedonia	●	●	●	●	●	●
Serbia	●	●	●	●	●	●

● In place ● In progress ● Not in place

Source: compiled by the Energy Community Secretariat.

3 Kosovo* is not a signatory to the UN Framework Convention on Climate Change and to the Paris Agreement, therefore it has not submitted an Intended Nationally Determined Contribution.

Planning for a decarbonized energy future

In the first half of 2021, the six Western Balkan parties continued to make progress in developing integrated National Energy and Climate Plans (NECPs) under the Energy Community umbrella. Nevertheless, no party has adopted its final NECP.

In the reporting period, Montenegro submitted the policy-related section of its draft NECP to the Secretariat for review outlining the present policy context and a first draft of actions. It is clear that the planned measures related to the TPP Pljevlja will have a major impact on the country's overall national policy framework.

Albania is in the process of finalizing its modelling activities and the list of policies and measures to be included in the final version of its NECP, which is to be submitted to the Secretariat for review in the second half of 2021.

Starting from early 2021, Serbia accelerated its activities. The country set up the necessary working groups, embarked on establishing the key assumptions for modelling and initiated data collection. The package of laws on energy, renewables, energy efficiency and mining adopted on 20 April 2021 created the legal base for the NECP.
A first informal draft of Bosnia and Herzegovina's NECP was reviewed by the Secretariat at the end of 2020. In North Macedonia, the adoption of the NECP is still pending.

In parallel, the European Commission's activities to define 2030 GHG reduction, energy efficiency and renewables objectives for the Energy Community parties are ongoing. The relevant legislative package is planned to be adopted in the second half of 2021.

Further information on the process, the status of the plans and the Secretariat's recommendations can be found on the NECP sub-page on the Energy Community's public website.

State of National Energy and Climate Plans preparation

	Legal basis adopted	Working group operational	Modelling capacity exists	Policy section (A) drafted	Analytical section (B) drafted	Submitted to the Secretariat for peer review	Final version submitted to the Secretariat
Albania	●	●	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●	●	●
Kosovo	●	●	●	●	●	●	●
Montenegro	●	●	●	●	●	●	●
North Macedonia	●	●	●	●	●	●	●
Serbia	●	●	●	●	●	●	●

● Finished ● Started ● Planned

Source: compiled by the Energy Community Secretariat.

Towards a comprehensive climate framework

The 2020 Sofia Declaration foresees the alignment of the Western Balkans with the future European Climate Law, which proposes a legally binding target of net zero GHG emissions by 2050 at the EU level.

While all WB6 parties continued preparing the necessary elements of a climate legal framework, notable progress was made in Serbia. With the adoption of the Law on Climate Change, the country introduced the main elements for monitoring, reporting and verification (MRV), including provisions for penalties, although additional technical and procedural regulations are still needed. The law also established the national GHG inventory and inventory report, with additional technical rules still to be developed (e.g. definition of the scope of bodies and organizations responsible for managing information systems and databases). In North Macedonia, the adoption of the draft Long-Term Strategy and the draft Law on Climate Action is pending.

Even though certain steps have been taken, no Low Carbon Development Strategy has been finalised by the Western Balkan parties yet, and only Montenegro has put in place a national GHG inventory system.
The MRV systems as well as other elements of the ETS require several implementation steps some of which have already been undertaken. However, the process is yet to be completed in all countries.

Apart from Montenegro, where the main elements of a cap and trade carbon pricing mechanism are implemented, there were no developments related to the introduction of carbon pricing via an ETS mechanism or by other means. Discussions with the WB6 parties related to the monitoring of emissions and the potential introduction of emission trading in the mid-term will be intensified in the framework of the Energy Community Decarbonization Roadmap steered by the European Commission. The aim is to help mobilize the parties to move towards their GHG reduction commitments under the Sofia Declaration and the UNFCCC respectively.

Elements related to a Climate Law

	Low Carbon Development Strategy	Legally binding national 2050 climate neutrality objective	National GHG inventory system	Monitoring, reporting and verification systems	Other requirements for an ETS	ETS establishment
Albania	●	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●	●
Kosovo	●	●	●	●	●	●
Montenegro	●	●	●	●	●	●
North Macedonia	●	●	●	●	●	●
Serbia	●	●	●	●	●	●

● Finished ● Started ● Planned

Source: compiled by the Energy Community Secretariat.

Energy Community Secretariat
Am Hof 4, 1010 Vienna, Austria
Tel: + 431 535 2222
Fax: + 431 535 2222 11
Internet: www.energy-community.org
Twitter: https://twitter.com/Ener_Community
E-mail: contact@energy-community.org