

WB6

Energy Transition Tracker

ENERGY COMMUNITY SECRETARIAT / July 2020



Energy transition tracker

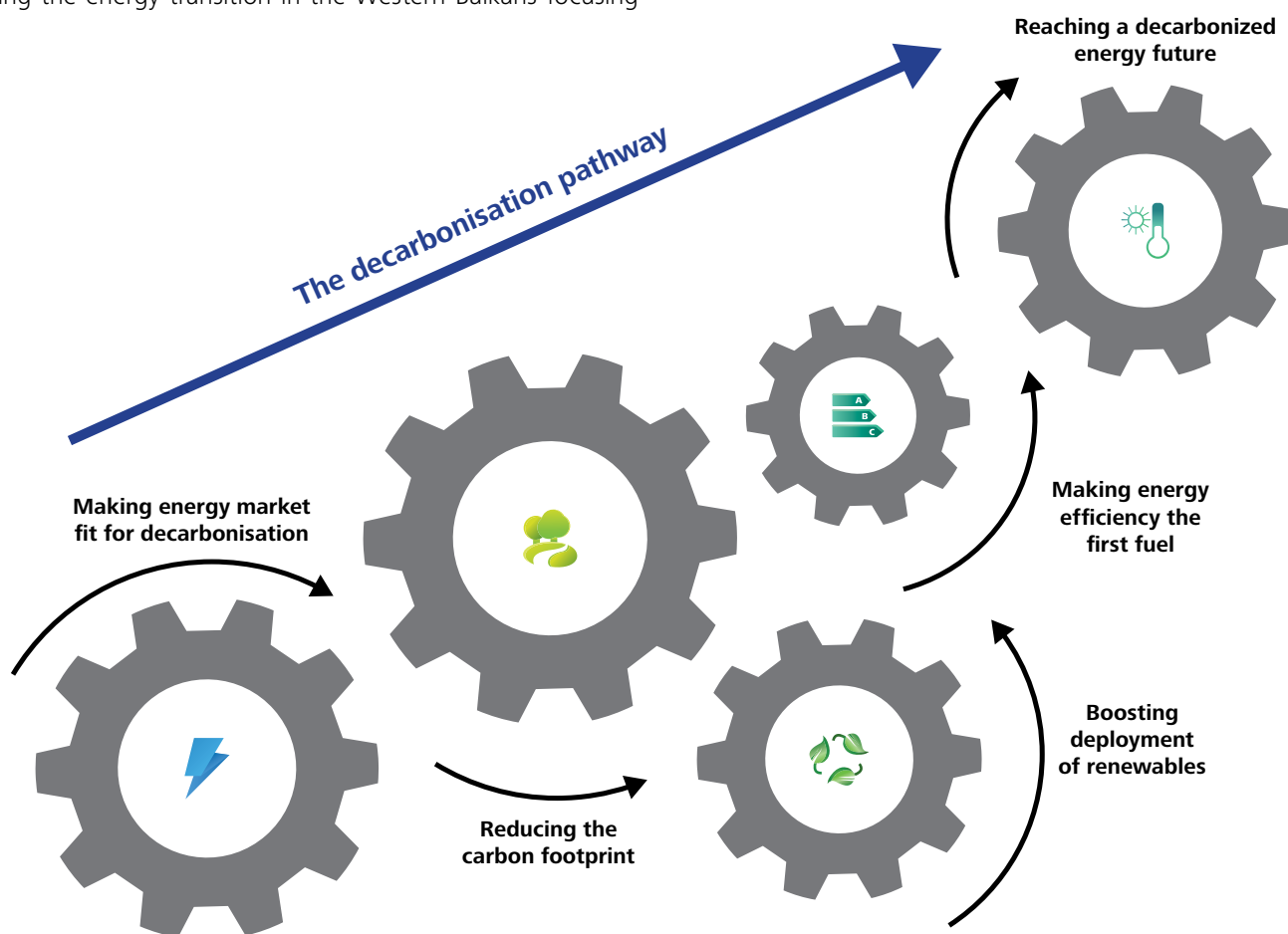
The wheels of the energy transition towards a carbon-free energy sector and an integrated energy market in the Western Balkan parties to the Energy Community Treaty - Albania, Bosnia and Herzegovina, Kosovo¹, Montenegro, North Macedonia and Serbia, have been set in motion. Make no mistake, it will be a steep hill to climb. The path and pace of the transition very much depend on how the gears of this multifaceted process are set and adjusted with time.

The energy transition pathway needs to be ambitious, not least to meet the soon to be adopted Energy Community targets for renewables increase, energy efficiency improvement and greenhouse gas emissions reduction. At the same time, the process needs to proceed in a just and inclusive manner.

With this report, the Energy Community Secretariat starts monitoring the energy transition in the Western Balkans focusing

on its most important dimensions. The report will continuously evolve to reflect new developments and challenges facing the WB6 energy sectors. The first edition marks the point of departure and sheds light on the WB6 emissions footprint, energy market development, penetration of renewables and energy efficiency measures and progress in the development of integrated national energy and climate plans to reach a decarbonized energy future.

The Energy Transition Tracker will monitor endeavors of all relevant stakeholders, including governments, investors, market players and citizens in the energy transition, on the path to decarbonisation.



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

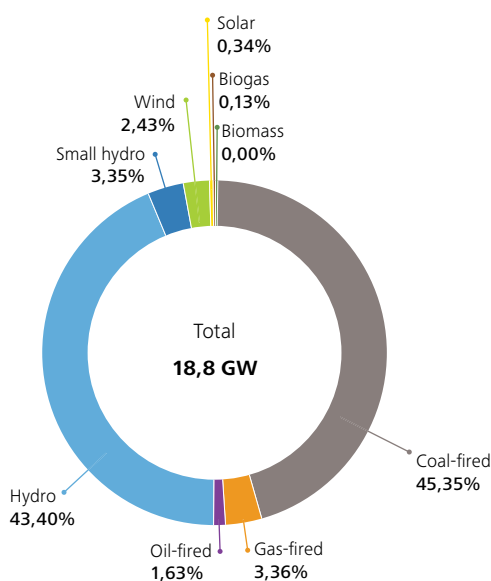
As the first step, the energy transition requires changing the fuel mix for electricity production, currently dominated by a large fleet of coal-fired power plants in the majority of the WB6 parties. While some of the WB6 parties still plan to replace these plants with new coal-based capacities, their lack of financial viability, social acceptance and compliance with the Energy Community acquis have started to halt these plans.

In the last 30 years, only one new coal-fired thermal power plant was commissioned in the WB6, built by a private investor in Bosnia and Herzegovina. Following the Secretariat's concerns regarding non-compliance with Energy Community State aid rules, the plan for construction of a coal-fired power plant in Kosovo, intended to replace an existing plant, was recently stopped. For the construction of a new 450 MW unit at the thermal power plant Tuzla in Bosnia and Herzegovina, the Secretariat also initiated a dispute settlement procedure for non-compliance with State aid acquis. Attracting finance in a compliant way evidently becomes an issue.

Today, coal-fired thermal power plants still make up around 45% of total electricity generation capacities.

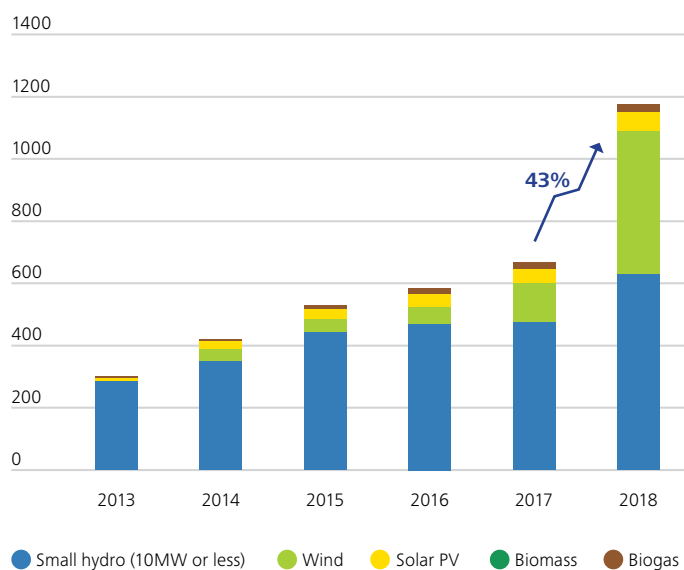
Renewable sources comprise approximately half of the installed capacities. They are primarily based on large hydro power plants constructed several decades ago. Driven by attractive support schemes, other renewables (small hydro power plants but also wind and solar) have started to gain ground, thus their share in the total installed capacity has increased for the last five consecutive years. However, their overall share is still only at around 6% of total installed electricity generation capacity in WB6. Serbia's commissioning of almost 300 MW of wind is the main contributor to the sharp rise in the share of renewables in 2018.

Installed electricity generation capacities (%), 2018



Source: compiled and calculated by the Energy Community Secretariat.

Installed electricity generation capacities from RES (excl. large hydro) (MW), 2018



Source: compiled and calculated by the Energy Community Secretariat.



Making the electricity market fit for the energy transition

Getting the price signal right

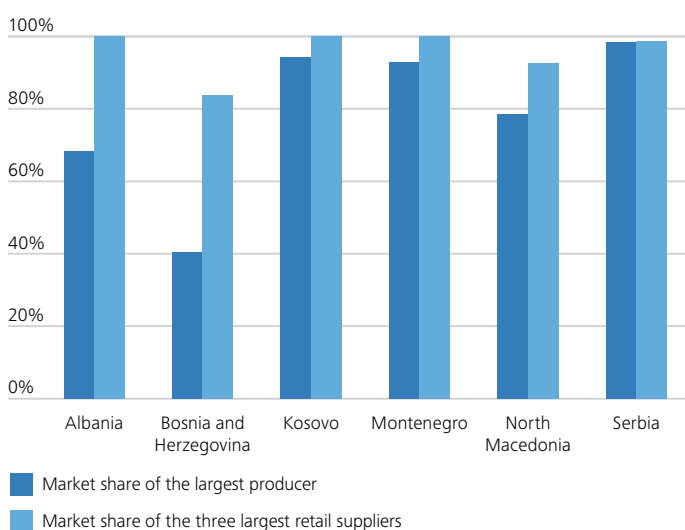
The development of a competitive electricity market remains a key driver to provide reliable price signals and boost necessary investments in the energy transition in the Western Balkans. Electricity markets are based on the Third Energy Package. While substantial restructuring has taken place, resulting in some degree of price deregulation and market opening, real competition is still far from being developed. As a consequence, market-driven investments into the electricity sector come at a slow pace.

High market shares of the state-owned electricity production companies translate into a significant dominance in electricity production in most of the WB6 parties. The dominant position is supported partly by depreciated assets, state subsidies, operation under the profit margin and not internalizing carbon costs. This results in low electricity prices of the incumbent producers, which has a negative impact on wholesale market competition. At regional level, eight incumbent producers (one per party, three in Bosnia and Herzegovina) hold 93% of the total electricity

produced in the WB6. The absence of an organized day-ahead electricity market in most parties remains a major obstacle in the development of competition.

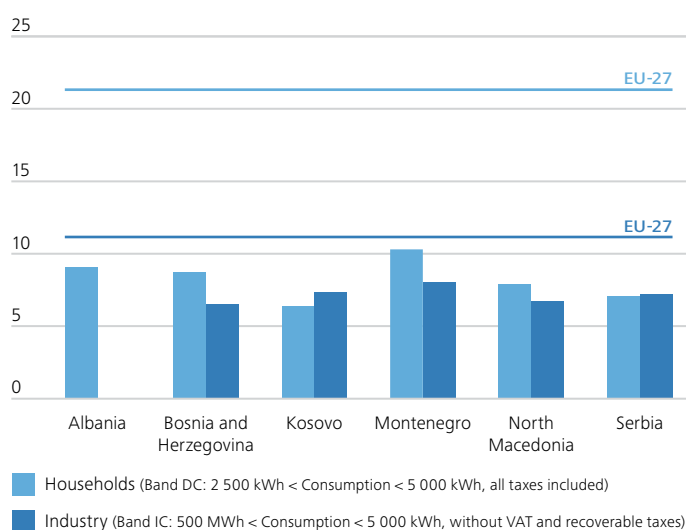
At retail level, competition has also not taken off. Incumbent producers still supply electricity to meet the demand of almost 100% of final consumers under universal service. The small size of the national markets in combination with retail prices at a level well below the EU average do not provide sufficient incentives for new suppliers to enter the market. Retail competition started to emerge in supply of industrial customers, resulting in a certain level of price convergence, with electricity price for industry at around 60% of the respective EU average. Supplier switching in households is still incidental due to a lack of competition and access to universal service at mainly regulated prices. Offers for households are still not made available by suppliers in a transparent manner.

Market share in the wholesale and retail electricity market, 2018



Source: ECRB, NRA and generation companies' reports, compiled and calculated by the Energy Community Secretariat

Electricity prices, 2018



Source: EUROSTAT data

The energy transition will require the WB6 parties to step up their efforts to develop competition and deliver an efficient price signal that will attract competitive renewable investments and allow new players to enter the market. One of the segments of

new market players which is to be developed are final customers providing flexible demand and renewables self-consumption, as described in the recent Secretariat's Policy Guidelines on the integration of renewables self-consumption.

Creating an integrated energy market

Given the small size of the regional market, integration into the pan-European market remains essential for facilitating the development of competition and efficient cross-border trading. In this regard, it is also important to ensure a level playing field between EU and Energy Community electricity producers, with the latter currently not subject to a carbon price.






The implementation of day-ahead and intraday market coupling among the WB6 parties and with EU Member States is a key prerequisite for full market integration. While activities on adopting a legally binding framework for market coupling based on the reciprocal application of the Regulation on establishing a guideline on capacity allocation and congestion management (CACM) are ongoing, the Secretariat proposed a concept for a staged implementation of CACM to allow WB6 parties to join Single Day Ahead Coupling on a contractual basis. A crucial precondition for market coupling is an operational day-ahead market, so far implemented only in Serbia.

The remaining WB6 parties, with the exception of Bosnia and Herzegovina where a legal framework is still missing, are in the process of setting up a day-ahead market. Most recently, the

establishment of the Albanian day-ahead market (APEX) and its coupling with Kosovo has been accelerated. The procedure to select the shareholders of APEX was completed on 29 June 2020. The company, with the transmission system operators of Albania and Kosovo as shareholders, is expected to start operation in Q1 2021. Coupling the day-ahead markets of Albania and Kosovo is proceeding in parallel. In North Macedonia, a legal framework for designating a nominated electricity market operator (NEMO) was adopted and a proposal by the regulator to appoint the Macedonian electricity market operator (MEMO) was submitted to the Government. The final decision awaits a new Government following elections in July 2020. The set-up of a day-ahead market in Montenegro is stuck in the absence of agreements with the strategic partner Nord Pool selected in April 2019.

Further to market coupling projects between WB6 parties and EU Member States, the signing of regional agreements between WB6 and neighbouring EU Capacity Calculation Regions on calculating cross-zonal capacities would contribute to the better utilisation of cross-border capacities, currently largely underused.

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.



Reducing the emission footprint

Introducing carbon pricing

Decoupling electricity production and carbon emissions production is a key challenge in the energy transition of the WB6. By acceding to the Paris Agreement, five WB6 parties² have committed to limit the impact of power generation and other activities on the climate.

Large combustion plants are the key contributor to CO₂ emissions in the Western Balkans. They generated 48,9 million tonnes of carbon emissions in 2018. Emissions from electricity and heat production amounted to nearly 70% of total emissions in the WB6. The carbon emissions relative to final electricity demand are 2,5 times higher than the EU-27 average. This underlines the critically high carbon intensity of the WB6 electricity sector.

Comparing the amount of carbon emissions attributable to the

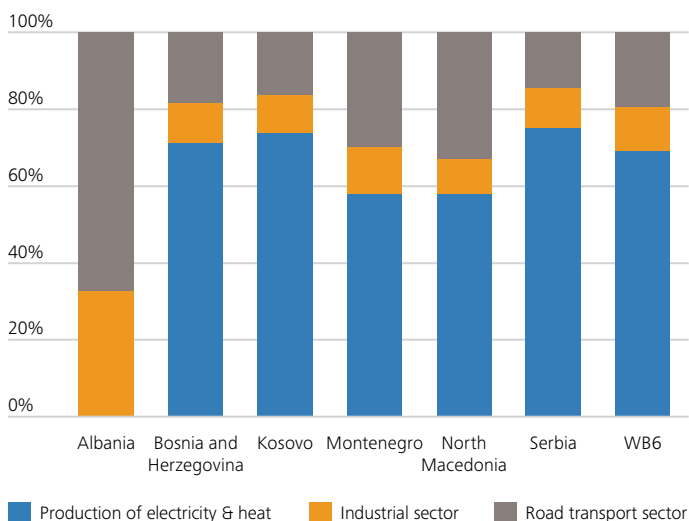
electricity sector relative to GDP, the WB6 on average emit eight times more CO₂ than EU-27 to create the same amount of GDP. On average, the WB6 created 3,5 times less GDP per unit of consumed electricity than the EU-27.

To drive climate-oriented reforms, the efforts in the power sector have to begin with the elimination of State aid and other state subsidies to electricity generated from coal and the internalization of emission costs by introducing a carbon price. A study to elaborate carbon pricing options for the Energy Community is currently being developed, with the aim to assess and propose an effective carbon pricing mechanism in the electricity sector and prepare Energy Community Contracting Parties to join the EU ETS in the future.

Carbon pricing in Montenegro

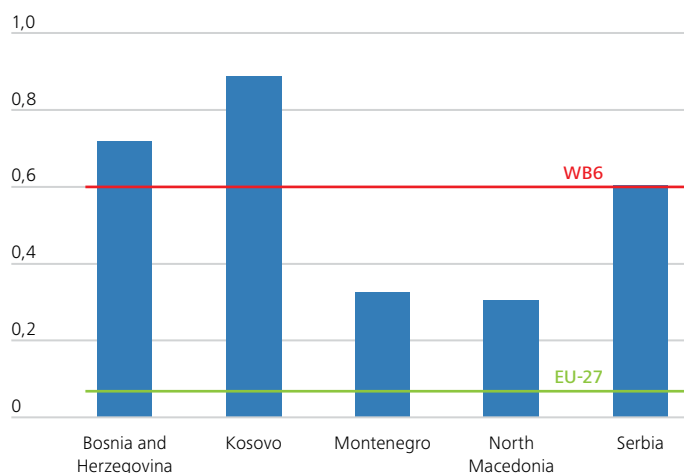
Montenegro introduced an emission trading scheme starting from 2020. The mechanism is coupled with a floor price of 24 EUR/tonnes CO₂eq, with auctions and a decreasing number of defined free allowances. The revenues created from the sale of emission allowances shall be used for nature and environmental protection, incentives for energy from renewable sources and smart innovation.

CO₂ emissions per sector, 2018



Source: compiled and calculated by the Energy Community Secretariat.

CO₂ emissions from power sector per GDP [kg CO₂/EUR], 2018



Source: compiled and calculated by the Energy Community Secretariat.

² Kosovo is not a signatory to the UNFCCC.

Implementing the Large Combustion Plants Directive

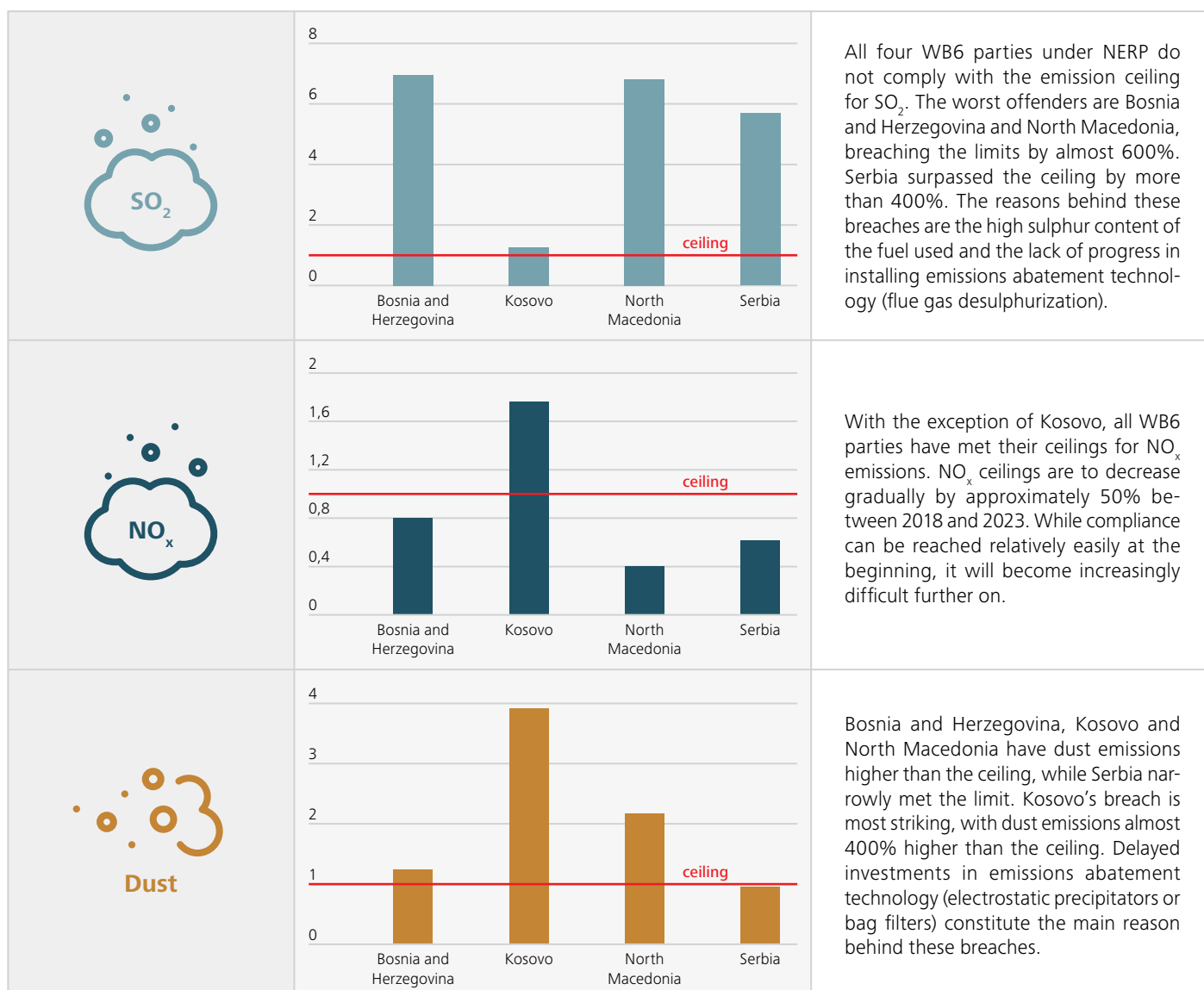
The most effective legal instrument for cleaning up power plants, reducing air pollution and improving public health in the WB6 is the Large Combustion Plants Directive. Having entered into effect on 1 January 2018, it regulates the levels of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and dust emissions from existing power plants. Requiring significant investments or shut-down, the Directive's implementation marks the beginning of the end of the coal and lignite era in the WB6.

Four WB6 parties, Bosnia and Herzegovina, Kosovo, North

Macedonia and Serbia, have opted to use an implementation alternative to comply with the Directive by adopting a National Emission Reduction Plan (NERP), which sets emission ceilings for a group of plants. Compliance is thus not checked at individual plant level but at the ceiling level for the group of plants.

Emission reduction from large combustion plants constitutes a major challenge. This is reflected in the 2019 reporting data, which shows that actual emissions surpass the NERP ceilings in the majority of cases.

2019 emissions versus NERP ceilings

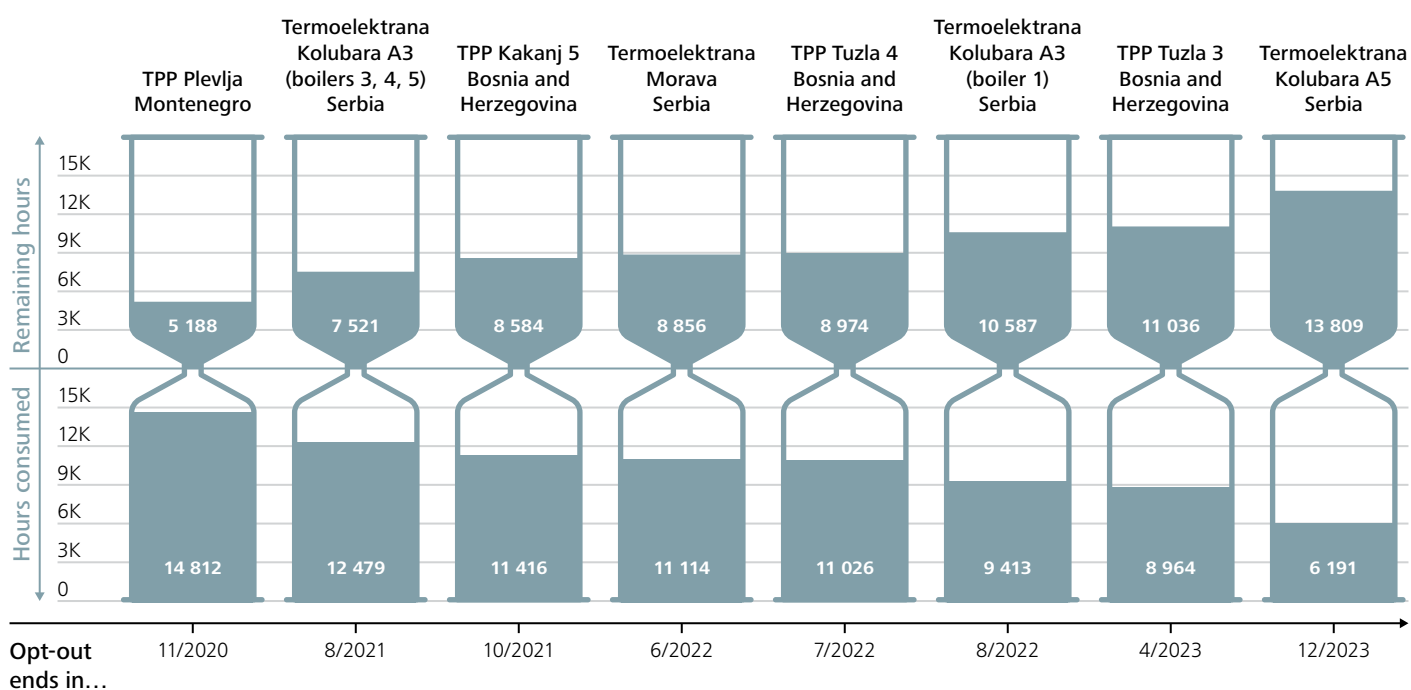


Source: compiled and calculated by the Energy Community Secretariat.

Another implementation alternative under the Directive, known as opt-out, provides the possibility for parties to exempt individual large combustion plants from the Directive's compliance regime. In exchange, these plants are not allowed to be operated for more than 20 000 operational hours between 1 January 2018 and 31 December 2023.

The opt-out period has started for eight plants in the WB6. These are presented below according to their expected closure dates, which are calculated based on the extrapolation of the average usage ratio of the plant in the 2018 and 2019 reporting years.

Expected closure of opted out plants



Source: compiled and calculated by the Energy Community Secretariat.

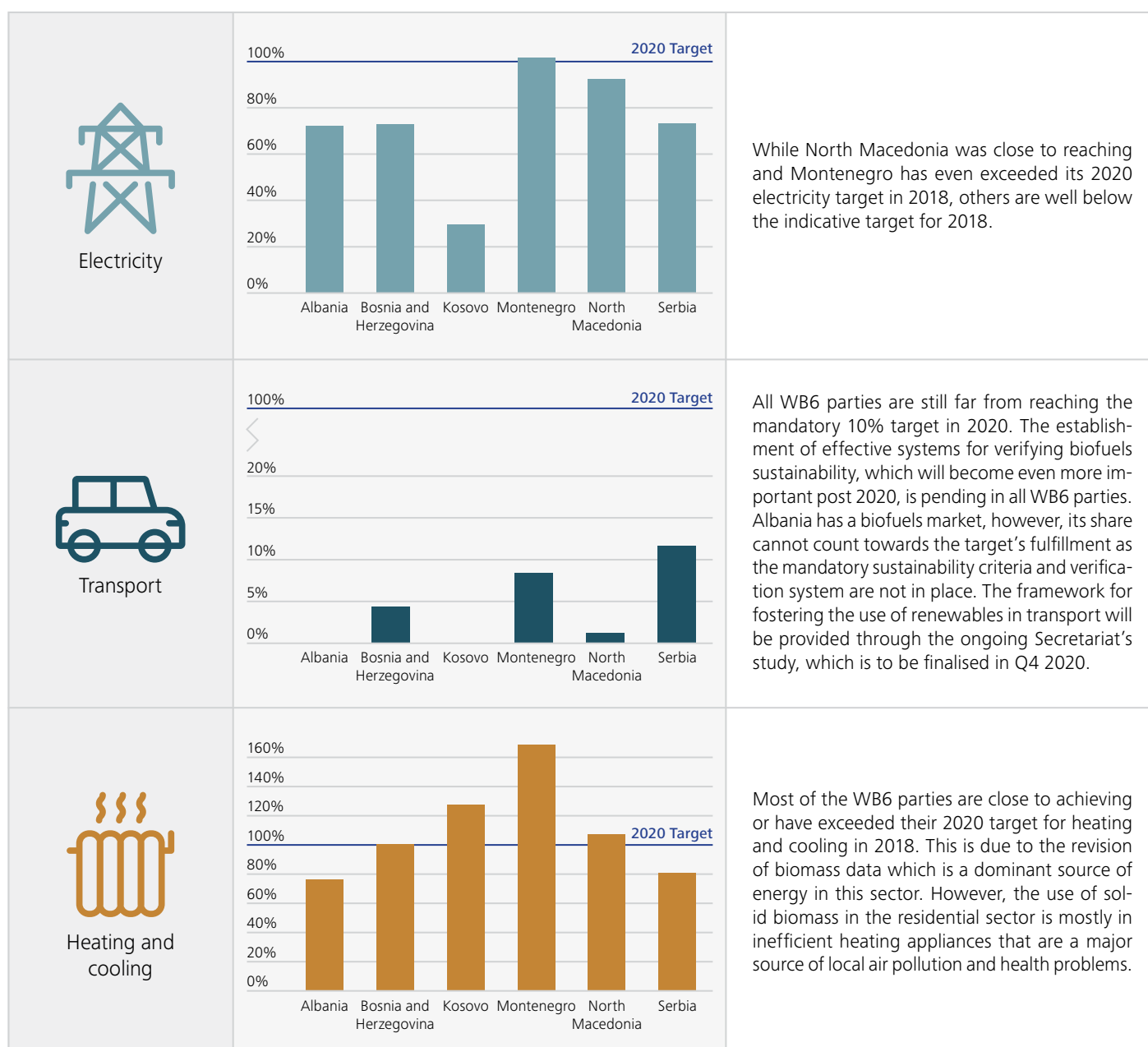


Boosting the deployment of renewables

Setting 2020 national targets gave an important momentum to the uptake of renewable energy in the Western Balkan parties. Incentives helped wind and solar technologies to make a breakthrough in a coal-dominated power mix. However, their full potential is yet to be exploited. Sectoral shares in heating and

cooling and transport for 2020 were supposed to contribute to meeting the target more effectively and a higher penetration of renewables in these sectors. Yet, transformation in these sectors has not started to happen.

WB6 implementation of renewable energy 2020 targets



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

Renewables support schemes


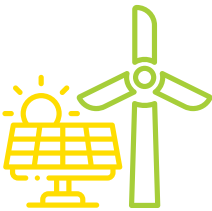
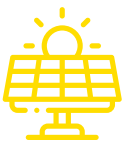
All WB6 parties introduced administratively set feed-in tariffs (FiT) and most of them defined dynamic quotas per technology to reach the 2020 targets. This contributed to the construction of first onshore wind and solar PV plants and gave rise to the development of small hydro power projects in the region, but failed to reflect the decline in the price of technologies and/or meet increasing environmental concerns.

With the development of the renewable energy sector and electricity markets, support policies need to be adapted. To provide transparency in the allocation mode and to effectively drive prices down, WB6 parties need market-based support schemes in line with the new Renewables Directive and Guidelines on State aid for environmental protection and energy.

FiTs might still be kept for projects below 500 kW, while aid for larger projects should be granted only as a result of a competitive bidding process. However, all parties still have FiTs in place for hydro power, in some cases, like in Albania, even up to 15 MW installed capacity. Most parties also apply non-compliant FiTs to other technologies.

While some of the WB6 parties are on a good path to reform their support schemes and already held first renewable energy auctions (Albania, Montenegro and North Macedonia), others must accelerate the process. Bosnia and Herzegovina conducted a comprehensive analysis for the reform of its support scheme, while Kosovo and Serbia are only starting the process.

Auctions in action

Albania	Montenegro	North Macedonia
Fixed purchase price/Contract for Difference	Market price	Feed-in premium (FiP)
		
Best achieved price: 24,89 EUR/MWh	Bids for land lease price	Average FiP: 4 - 11 EUR/MWh

The auction/tender design depends on many factors and can vary from country to country. For example in Albania, auctions were designed to convert the fixed purchase price awarded to producers into Contract for Difference (CfD) once a day-ahead market is operational. In May 2020, Albania announced results of a second solar PV auction for 70 MW where a remarkable price of 24,89 EUR/MWh was achieved. On the other hand, Montenegro held locational auctions for solar PV and onshore wind where investors were offering a land lease price to gain the right to build plants on state-owned land and sell electricity at the market price. In North Macedonia, auctions were based on the bids for an additional fixed Feed in Premium (FiP), on top of the price realized by the sale of each kWh produced on the wholesale electricity market. The average achieved FiP for offers on state-owned land was 4 EUR/MWh, while the average FiP for offers on private land was 11 EUR/MWh.

Source: compiled by the Energy Community Secretariat.

Guarantees of origin






Guarantees of origin (GoO) are an important tool to facilitate trade of renewable electricity and raise awareness of consumers to make a choice on the source of their electricity. The introduction of GoO could contribute to a higher penetration of electricity produced from renewable energy in the Western Balkans.

A necessary precondition for mutual recognition and cross-border trading of guarantees of origin among the WB6 and with the EU Member States is the establishment of a standardized and reliable electronic system for the issuing, transfer and can-

cellation of GoO for renewable energy. At the European level, the exchange of guarantees of origin between national registers is enabled through a centralized mechanism, operated by the Association of Issuing Bodies (AIB).

As required by the Renewables Directive, all WB6 parties have in place the legal framework governing guarantees of origin and have designated the competent bodies to manage the schemes. However, implementation does not take place, with the exception of Serbia and Montenegro.

Implementation of guarantees of origin obligation

	Step 1	Step 2	Step 3	Step 4	Step 5
	Legal basis	Designated competent body	Electronic mechanism for issuing, transfer and cancellation	Observer status in the Association of Issuing Bodies (AIB)	Full member of the Association of Issuing Bodies (AIB)
					
Albania	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●
Kosovo	●	●	●	●	●
Montenegro	●	●	●	●	●
North Macedonia	●	●	●	●	●
Serbia	●	●	●	●	●

● In place ● In progress ● Not in place

Source: compiled by the Energy Community Secretariat.



Making energy efficiency the first fuel

Reaching 2020 energy efficiency targets

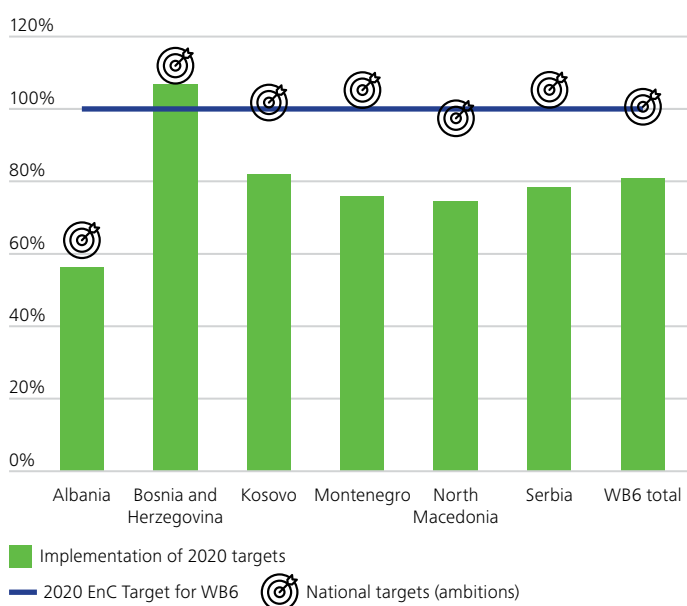
While meeting their 2020 energy efficiency targets for primary energy consumption, the Western Balkan parties are not tapping their potential for energy efficiency improvement. Energy productivity remains low in all parties, indicating that energy efficiency saving measures and investments are not implemented to a large enough extent. The pace that the economy is transitioning towards an energy efficient future is still very slow.

As Contracting Parties to the Energy Community Treaty, the WB6 are obliged to implement Energy Efficiency Directive 2012/27/EU since 15 October 2017. The Directive set a 20% headline target for the Energy Community in 2020 and a maximum cap on the consumption of primary and final energy to be achieved collectively by all Energy Community Contracting Parties, which were required to adopt indicative national energy efficiency targets of equal ambition. The overall target for the WB6 translates to 36,3 Mtoe in primary energy consumption and 26,2 Mtoe in final energy consumption.

In order to meet these targets, the WB6 are required to adopt national action plans and implement energy efficiency and buildings renovation measures, decrease energy transformation, transmission and distribution losses, promote use of efficient heating and cooling, etc. Energy efficiency obligation schemes and the procurement of public goods and services with energy efficiency criteria are some of the key instruments used.

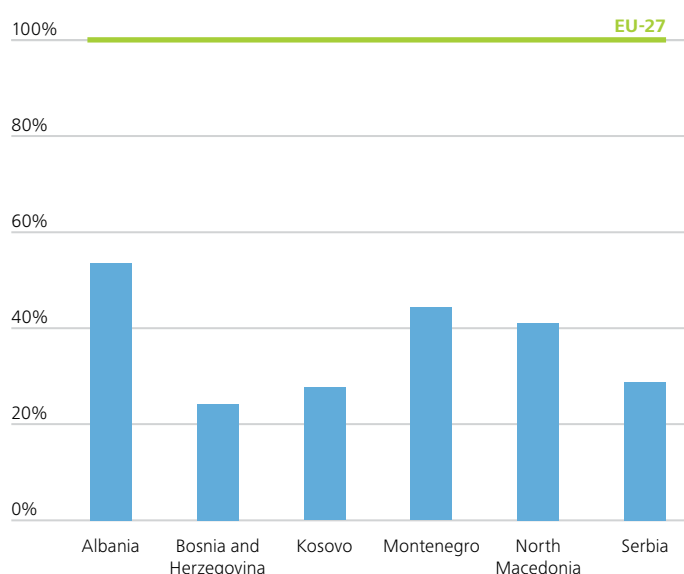
A current analysis of the target achievement, based on 2018 primary energy consumption data and the 2018 WB6 target trajectory, shows that the WB6 parties' consumption, with the exception of Bosnia and Herzegovina, is well below the maximum cap for 2018. However, energy productivity (the output and quality of goods and services per unit of energy input) of all Western Balkan parties still remains low in comparison with the EU.

Implementation of energy efficiency 2020 targets



Source: compiled and calculated by the Energy Community Secretariat.

Energy productivity [% of EU average], 2018



Source: compiled and calculated by the Energy Community Secretariat.

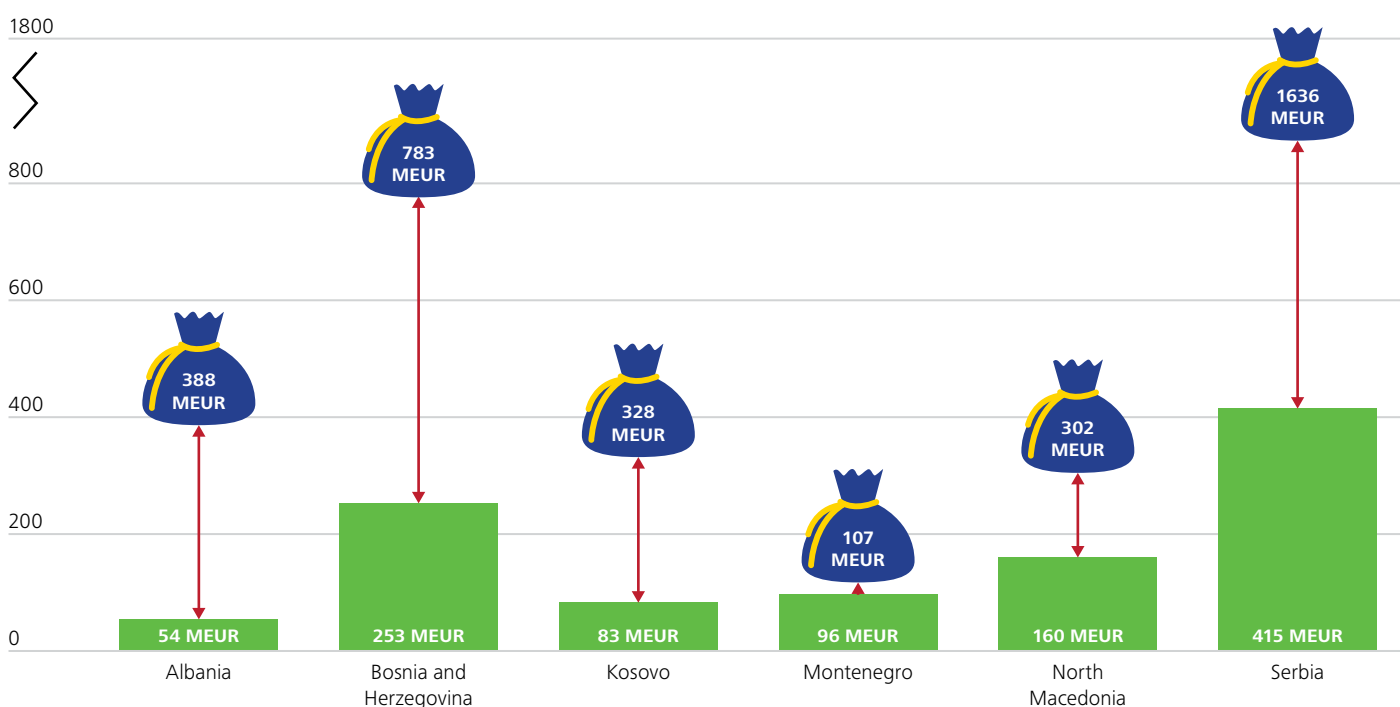
Investing in energy efficiency in buildings

In the Western Balkans, the building sector is the largest final energy consumer with approximately 43% of total energy consumption. Renovating buildings to meet the minimum energy performance requirements set in the Energy Performance Buildings Directive will ensure higher living, health and comfort standards for citizens and achieve energy savings as high as 40% in the building sector.

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 amount of investments in building renovations amounted to approximately EUR 1,060 million between 2010 and 2020. This represents only 30% of the investment needs (approx. EUR 3,543.75 million) for 2011-2020.

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

💰 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

Source: compiled and calculated by the Energy Community Secretariat.

Green Energy Financing Facility (GEFF) - Energy efficiency in residential buildings programme

GEFF is an EBRD lending facility of EUR 85 million for improving buildings' energy performance, supported by investment grants and technical assistance financed by the EU in the amount of EUR 17.5 million. After two years of operation in five WB6 parties, EUR 68.5 million, out of the available credit line of EUR 85 million, were already committed to 15 "green banks". The cumulative annual energy savings to date can be compared to the annual heating energy consumption of about 700 households or carbon emissions reduction of about 2 300 cars.

Introducing renewable energy in district heating systems

The carbon intensity of Kosovo, Bosnia and Herzegovina and Serbia is more than six times higher than the EU average, and a significant share of it is generated by heating.

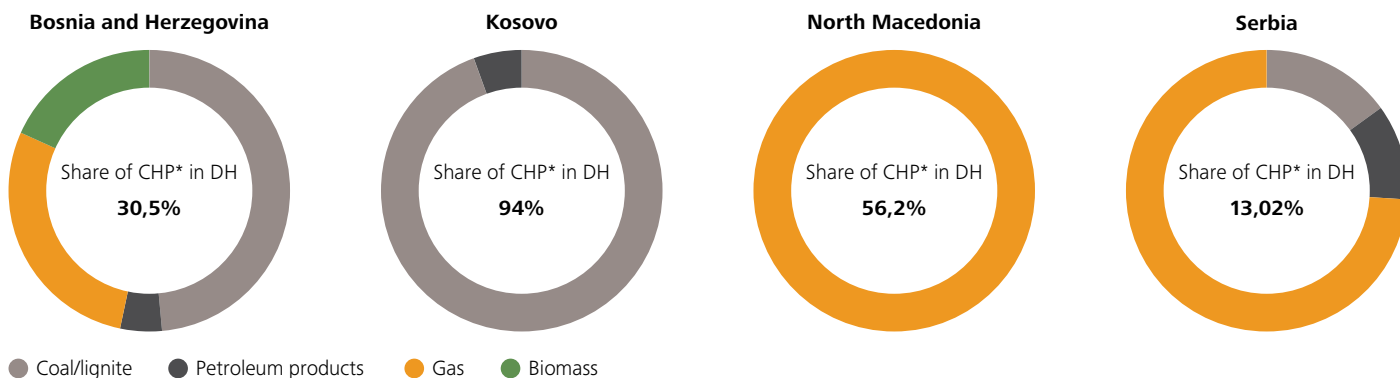
District heating based on renewable energy or residual heat is the most economic, clean and efficient solution for supplying heating services to high population density urban areas. The Western Balkans have a good potential for using renewable energy (biomass, solar, geothermal) in efficient district heating, and in turn phasing out coal and petroleum products. Yet, significant investments and ambitious political decisions are necessary in order for sustainable district heating to become a reality in the Western Balkans.

In the Western Balkans, 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 what is produced in co-generation plants.

Four of the six Western Balkan parties have district heating systems in place (Bosnia and Herzegovina 33; Kosovo 2; North Macedonia 4; and Serbia 58). However, only Bosnia and Herzegovina and Serbia are home to district heating systems that use, at least partially, renewable energy sources in their networks (Bosnia and Herzegovina: Livno - biomass and solar thermal, Banja Luka - biomass, Prijedor - biomass, Gradiška - biomass, Ugljevik - biomass; and Serbia: Pancevo - solar thermal and gas).

Fuels used and share of co-generation in district heating (%), 2018



● Coal/lignite ● Petroleum products ● Gas ● Biomass

*combined heat and power

Source: compiled and calculated by the Energy Community Secretariat.

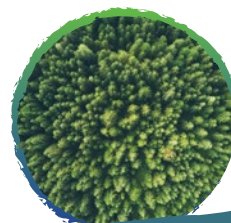
The development of city-wide infrastructures such as district heating faces many challenges, including integrated planning, stakeholder engagement, high up-front investments and long-term return on investment. However, national or local invest-

ment efforts can be supported by bilateral or multilateral donors and international financial institutions, such as the European Commission, EBRD, KfW and EIB.

ReDEWeB - Supporting renewable district energy in the Western Balkans

Introducing more renewable energy in district heating is supported by the regional programme Renewable District Energy in the Western Balkans (ReDEWeB), funded by the Austrian Government and implemented by EBRD in cooperation with the Energy Community Secretariat.

The programme has identified the following candidate projects for use of renewables in district heating: Bosnia and Herzegovina: Sarajevo - heat pumps with geothermal, Banja Luka - use of industrial residual heat; Kosovo: Pristina - use of solar thermal in an extension of the district heating system; Montenegro: Zabljak - new district heating system based on biomass; Serbia: Pancevo, Bor, Novi Sad, Nis and Belgrade - solar thermal, Valjevo and Sabac - heat pumps based on waste water heat.



Planning for a decarbonized energy future

National Energy and Climate Plans (NECPs) constitute the framework for integrating energy and climate policies and driving the decarbonisation of the energy sectors and the economy as a whole, in line with the 2015 Paris Agreement. To date, four WB6 parties – Albania, Bosnia and Herzegovina, Kosovo and North Macedonia – have begun to draft their plans, starting with the designation of dedicated working groups, development of integrated methodological tools and consultations with national stakeholders. Albania and North Macedonia have already submitted the drafts to the Secretariat for informal review. Montenegro and Serbia should start drafting their NECPs without delay. Summarizing current policies and measures and building up a reference scenario as part of a sound analytical basis for their NECPs may be low hanging fruits in this respect. The timeline for NECP finalization, as set by the Secretariat's non-binding Policy Guidelines, is the end of 2020.

Following the general structure of NECPs (decarbonisation, energy efficiency, energy security, internal market, research and innovation and competitiveness), the WB6 should set ambitious objectives and targets, together with adequate policies and measures. A longer-term view towards 2050 should also be included. The European Commission is expected to table 2030 targets for the Energy Community alongside the clean energy package in the first half of 2021.








Successfully defining pathways to the 2030 goals requires strong cross-sectoral coordination at the national level and close regional coordination. Coordination and consultation across all government departments, with all stakeholders and the public as well as with regional partners, is an indispensable step in developing the NECPs.

Furthermore, it is crucial that the NECPs and related processes are harmonised with other climate and energy plans, such as the update of Nationally Determined Contributions and the Long Term Strategies under the UNFCCC, both also due this year.

The Secretariat works to support timely consultations among the WB6 parties to ensure that regional challenges are tackled in the most secure and cost-effective way. This process is also supported through the framework of a Memorandum of Understanding between the Secretariat and the German Corporation for International Cooperation (GIZ).

Once the drafting process is finalized, the Secretariat will issue its recommendations on the submitted NECPs and monitor the progress in achieving the targets and implementing the policies and measures set therein at the national and Energy Community level on the basis of biannual national progress reports.

State of National Energy and Climate Action 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.

