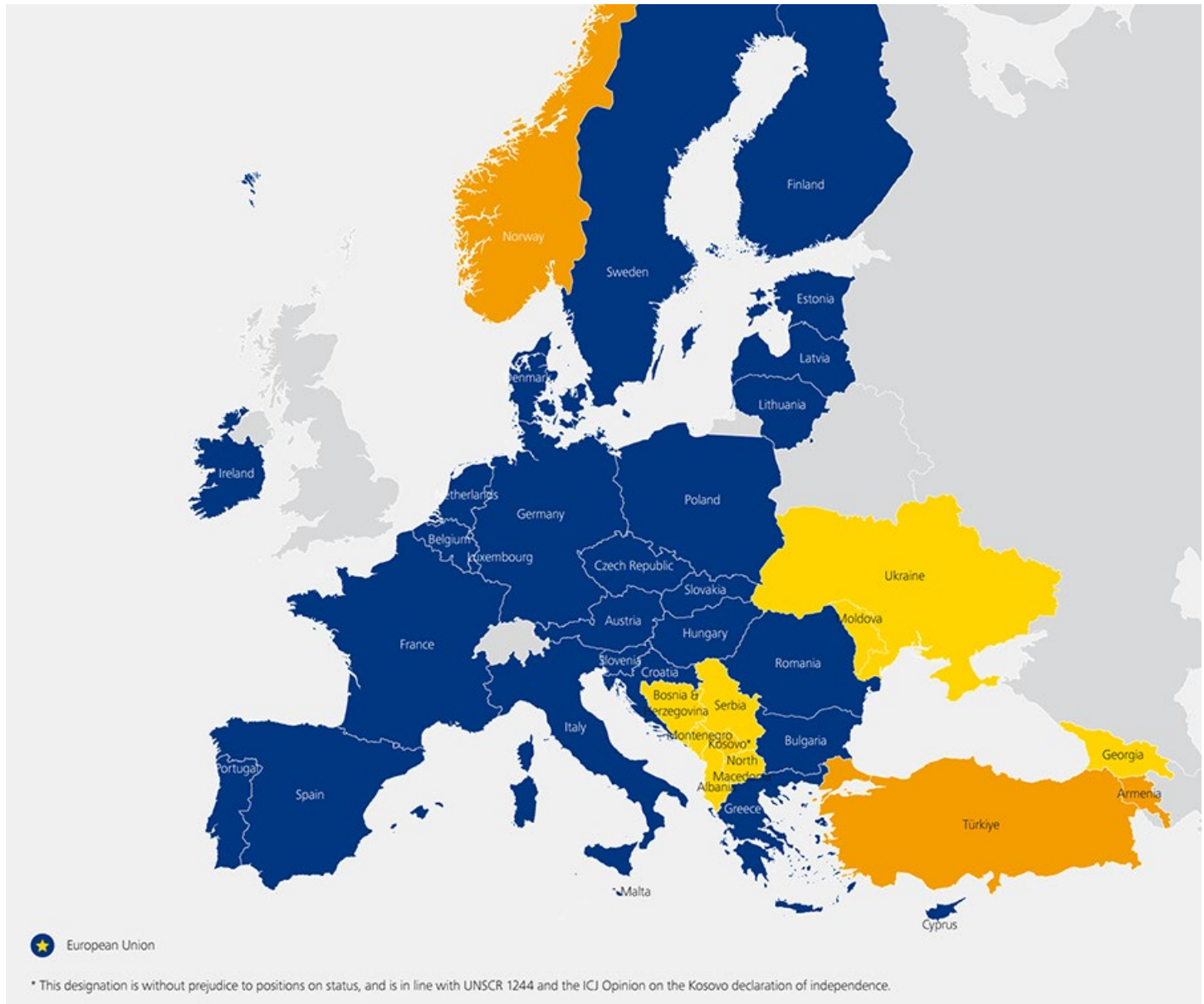


**Analysis of Direct Subsidies to Coal and Lignite Electricity
Production for the year 2021 and 2022 in the
Energy Community Contracting Parties**

**Dijana Ristović
September, 2023**

About the Energy Community

The Energy Community is an international organization which brings together the European Union and its neighboring countries to create an integrated pan-European energy market. The organization was founded by the Treaty establishing the Energy Community signed in October 2005 in Athens, Greece, in force since July 2006. The key objective of the Energy Community is to extend the EU internal energy market rules and principles to countries in South East Europe, the Black Sea region and beyond on the basis of a legally binding framework. Presently, the Energy Community has nine Contracting Parties - Albania, Bosnia and Herzegovina, Kosovo*, North Macedonia, Georgia, Moldova, Montenegro, Serbia and Ukraine.



- Contracting Parties
- Observers
- EU Participants

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Abbreviations

ECS – Energy Community Secretariat
EnC – Energy Community
EPS – Elektroprivreda Srbije
EPCG – Elektroprivreda Crne Gore
ERO – Energy Regulatory Office of Kosovo*
ERC – Energy Regulatory Commission of North Macedonia
ERS - Elektroprivreda RS
EPBIH – Elektroprivreda BiH
ESM – Elektroprivreda North Macedonia
EU – European Union
EUROSTAT - Statistical office of the European Union
GATT – General Agreement on Tariffs and Trade
GDP – Gross domestic product
GGE – General government expenditure
IEA – International Energy Agency
KEK – Kosovo energy corporation
LCPD – Large Combustion Plants Directive
MERA – Montenegro Energy Regulatory Agency
NECP - National energy and climate plan
OECD – Organization for Economic Cooperation and Development
SOE – State-Owned Enterprise
SERC - State Electricity Regulatory Commission of Bosnia and Herzegovina
WTO – World Trade Organization

1 Executive summary

This report analyzes the scale of direct subsidies in the five Energy Community Contracting Parties that owned and operated generation capacities using coal and lignite in 2021 and 2022, namely Bosnia and Herzegovina, Kosovo*¹, Montenegro, North Macedonia and Serbia. Albania, Moldova and Georgia do not have coal-fired electricity generation capacity.

The Report was intended to cover Ukraine too. Due to the rules of data protection and data publication introduced by the martial law, the report on subsidies provided to production of electricity from coal in Ukraine is incomplete and incomparable with historic data and data in other Contracting Parties.

The report builds on previous researches and studies encompassing the periods from 2016 onwards².

The report reveals that all the five analyzed Contracting Parties provided direct subsidies to electricity generation from coal/lignite during 2021-2022. These subsidies amounted to more than EUR 180 million. In absolute terms, the value of subsidies for the observed two-years period was the highest in Serbia (98,67 mill. EUR) and Bosnia and Herzegovina (70,14 mill. EUR).

Table 1: Summary of subsidies for 2021-2022, mill. EUR

Contracting Party	Fiscal support subsidies	Public finance support subsidies	SOE investment subsidies	Total
Bosnia and Herzegovina	13,54	41,36	15,25	70,14
Kosovo*	10,31	0,23	0,00	10,54
Montenegro	0,03	0,14	0,00	0,17
North Macedonia	0,00	0,57	0,00	0,57
Serbia	62,50	35,00	1,17	98,67
Total	86,38	77,30	16,42	180,10

Direct subsidies in EUR per MWh electricity produced from coal in 2021 and 2022 were highest in Bosnia and Herzegovina and lowest in Montenegro.

The World Trade Organization's (WTO)³ definition of subsidies was used to identify and calculate the subsidies, which were classified into three categories:

- fiscal support-type subsidies;
- public finance support subsidies; and
- State-Owned Enterprises (SOE) investment support subsidies.

The most significant and most frequently used type of subsidy falls under the category of fiscal support, reported in all analyzed Contracting Parties except North Macedonia. The most frequent form of this subsidy was tolerating the non-payment or delayed payment of financial obligations to the State and direct transfers from the state budget.

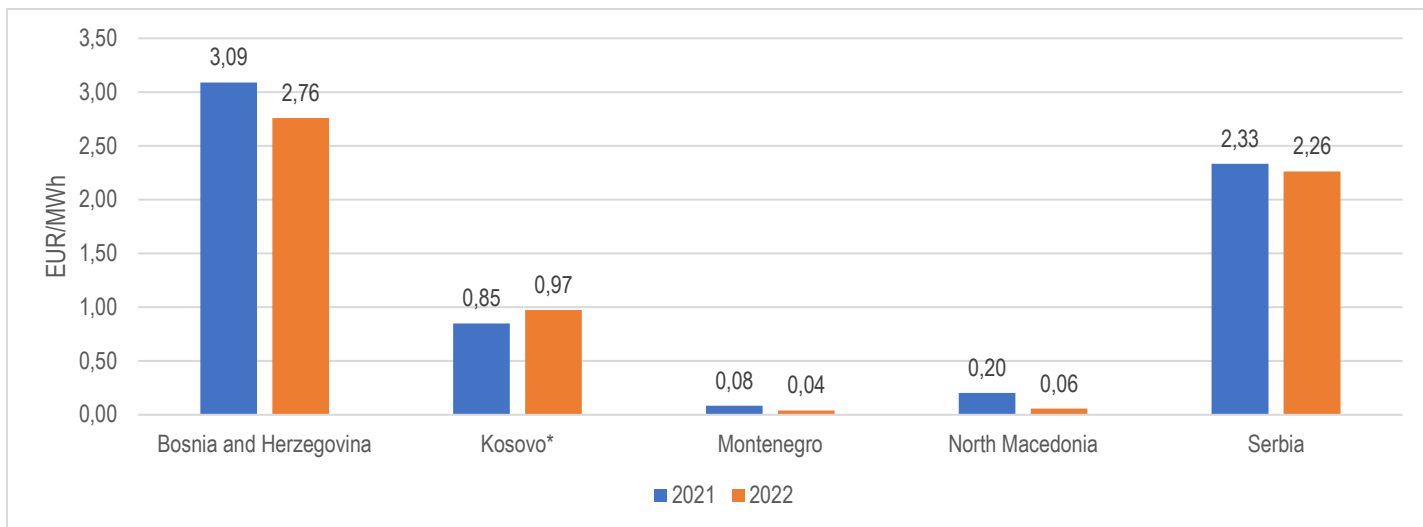
¹ This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

² https://www.energy-community.org/dam/jcr:482f1098-0853-422b-be93-2ba7cf222453/Miljevi%C4%87_Coal_Report_122020.pdf
https://www.energy-community.org/dam/jcr:ae19ba53-5066-4705-a274-0be106486d73/Draft_Miljevic_Coal_subsidies_032019.pdf
https://www.energy-community.org/dam/jcr:9548dd16-b9ed-4bcc-a562-4ebd5061b082/Coal_Subsidies_Study_070222.pdf

³ https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm

During the period 2021-2022, the subsidy levels in absolute terms are the highest in Bosnia and Herzegovina and Serbia, as well as the subsidies per unit of coal-fired electricity generation.

Graph 1: Direct subsidies in EUR/MWh electricity produced from coal in 2021-2022

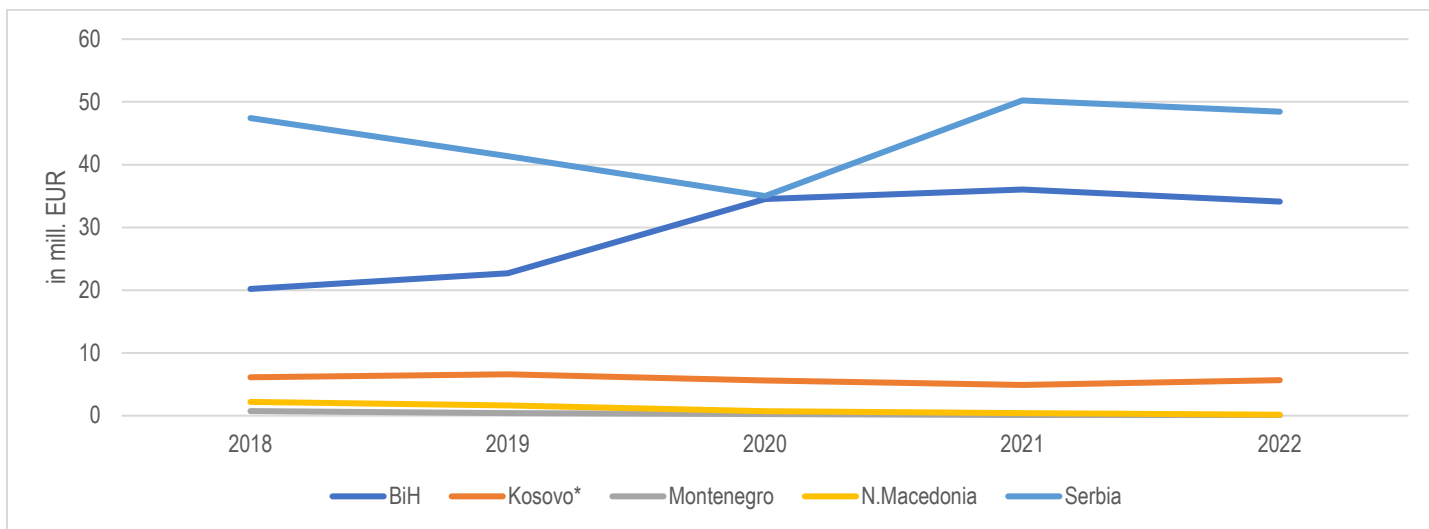


Source: based on calculation in Annexes and data from energy regulators

For time period from 2018 up to 2022, the cumulative value of direct subsidies in five Contracting parties reached the level of 406 mill. EUR. The findings show for the year 2020 an absolute decline in the value of direct subsidies compared to the previous period in all observed Contracting Parties except Bosnia and Herzegovina.

This trend took another direction in 2021 echoing extreme challenges in terms of fuel and electricity availability, security of supply and prices after post COVID recovery and again declined in 2022.

Graph 2: Direct subsidies to coal-fired production of electricity 2018-2022



Source: based on calculation in Annexes and data from previous researches

2 Background

2.1 Introduction and Background

All Contracting Parties (except Kosovo*) are signatories to the Paris Agreement and have committed to reduce greenhouse gas emissions and create conditions for climate-resilient development. The Paris Agreement requires the signatory Contracting Parties to review their existing energy policies, harmonize them with the signed obligations and redirect funds to achieve the Agreement's abatement goals. Moreover, the Western Balkan Contracting Parties signed the Sofia Declaration on the Green Agenda for the Western Balkans⁴ in November 2020, again confirming their commitment to decrease and gradually phase-out coal subsidies and strictly respect State aid rules.

On 30 November 2021, the Ministerial Council adopted the General Policy Guidelines on the adoption of a Decarbonization Roadmap a political document outlining the sequence of adoption, transposition and implementation of decarbonization focused rules in order to put the Contracting Parties on a path towards achieving 2030 and mid-century decarbonization targets, including a shared political message on coal phase-out and fossil fuel subsidies.

The Contracting Parties are expected to include such measures in their National Energy and Climate Plans (NECPs). The NECPs are to be adopted on the basis of the Governance Regulation, which was incorporated in Energy Community law also at the 2021 Ministerial Council.

As electricity generation from coal and lignite makes up a significant share of electricity production in the Energy Community, the ECS is committed to update the information on the subsidies to coal and electricity produced from coal, with the aim to align the energy policies in the Energy Community with that of the EU, including elimination of subsidies to fossil fuels and electricity produced from fossil fuels.

The main objective of the report is to identify and calculate the level of subsidies to coal mines and companies producing electricity from coal, classified into three categories: fiscal support, public finance support and investment by State Owned Enterprises. In order to obtain comparable results, the research for 2021-2022 uses the same approach and methodology used to prepare the previous reports, which covered the periods since 2015.

Data obtained and presented in this report are based on information from public and official data sources. This includes the laws and government decisions used as a basis for allocation of direct subsidies to support the generation of electricity from coal/lignite, official information from press releases, annual reports of enterprises, budget execution documents and governmental reports. All data sources and sources of information are noted in annexes of lists of subsidies per country.

Martial law was introduced in Ukraine by the Law "On the Legal Regime of Martial Law". This law determines, in particular, the legal basis of activity of public authorities and local governments, enterprises, institutions and organizations, guarantees of human and civil rights and freedoms and the rights and legitimate interests of legal entities during martial law⁵ and the Decree of the President of Ukraine No. 64/2022 as of 24 February 2022. According to the Decree of the President of Ukraine № 58/2023 as of 06 February 2023, martial law in Ukraine was extended until 20 May 2023 and for another 90 days, until 15th November 2023 and by the latest most Presidential Decree No.451/2023 dd 26.07.2023 has been prolonged from 18 August 2023 for the next 90 days.

⁴ <https://www.rcc.int/docs/546/sofia-declaration-on-the-green-agenda-for-the-western-balkans-m>

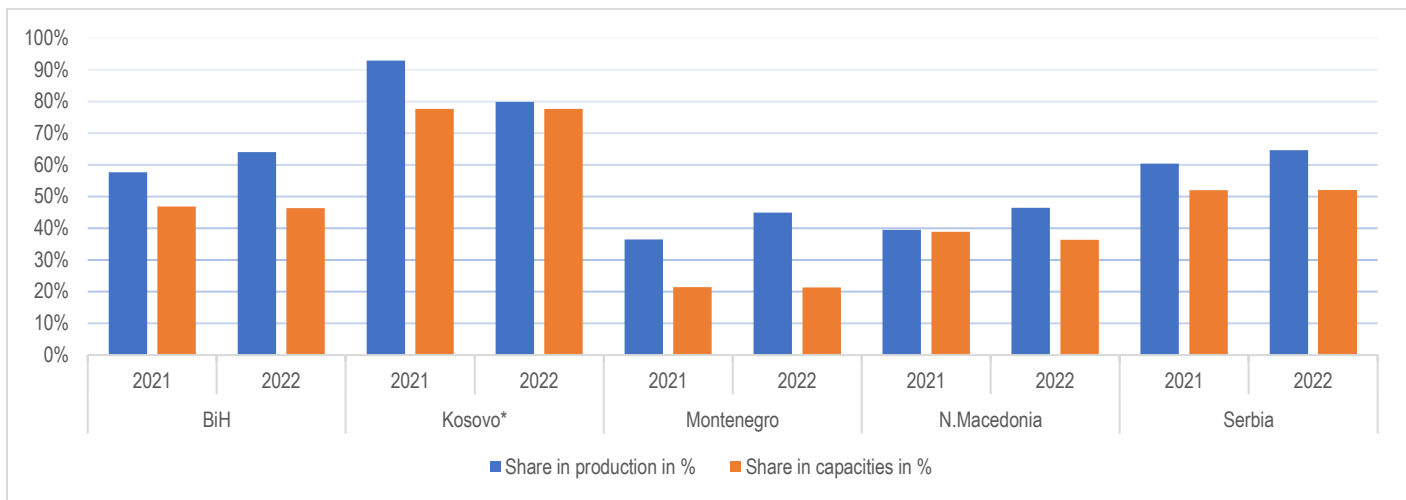
⁵ <https://ukraineinvest.gov.ua/en/response-to-war/helpdesk/martial-law/>

Access to information and data regarding production, generation and consumption of energy, as well as other data provided by official and relevant data sources, is temporarily blocked for the duration of martial law⁶. Still, some information could be found via some websites and news providers. Based on that, some data were extracted from press release provided by former Minister of energy in Ukraine⁷. Further information on Ukraine are presented in dedicated section under subchapter 4.4 Country report.

The Energy Community Secretariat (ECS) has been observing and analyzing Direct Subsidies to Coal and Lignite Electricity Production in the Energy Community Contracting Parties since 2015 based on the research prepared by an extern consultant.

Based on the research and the reports of the Consultant, the ECS published the information about the subsidies to production of electricity from coal in the Energy Community Contracting Parties⁸ (Rocking the boat: Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production in the Energy Community Contracting Parties⁹, covering the period 2015-2017, Investments into the Past, with analysis for the period 2018-2019¹⁰ and the another report for the year 2020¹¹.

Graph 3: Share of coal in the electricity generation fuel mix in 2021-2022



The subsidies committed by the Contracting Parties with their respective value for the year 2021 and 2022 were investigated and presented in this Report.

3 Methodology

In order to be consistent with previous studies, this report have kept the subsidy definitions and classifications which are based on WTA¹² methodology, namely:

- fiscal support subsidies;
- public support subsidies; and

⁶ <https://www.mev.gov.ua/storinka/dostup-do-informatsiyi-tsoho-rozdilu-tymchasovo-zakrytyy-na-chas-divi-voyennoho-stanu>

⁷ <https://interfax.com.ua/news/greendal/790844.html>

⁸ https://www.energy-community.org/dam/jcr:ae19ba53-5066-4705-a274-0be106486d73/Draft_Miljevic_Coal_subsidies_032019.pdf

⁹ https://www.energy-community.org/dam/jcr:23503de3-fccd-48f8-a469-c633e9ac5232/EnC_Coal_Study_092019.pdf

¹⁰ https://www.energy-community.org/dam/jcr:482f1098-0853-422b-be93-2ba7cf222453/Miljevi%C4%87_Coal_Report_122020.pdf

¹¹ https://www.energy-community.org/dam/jcr:9548dd16-b9ed-4bcc-a562-4ebd5061b082/Coal_Subsidies_Study_070222.pdf

¹² https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm1_e.htm

- SOE investment subsidies.

The WTO agreements cover goods, services and intellectual property. They spell out the principles of liberalization, and the permitted exceptions. They include individual countries' commitments to lower customs tariffs and other trade barriers, and to open and keep open services markets. These agreements are often called the WTO's trade rules, and the WTO is often described as "rules-based", a system based on rules. But it is important to remember that these rules are actually agreements that governments negotiated. The agreements for the two largest areas — goods and services — share a common three-part outline, even though the detail is sometimes quite different. The first broad principle is the General Agreement on Tariffs and Trade (GATT) for goods. As one of the specific sector or issue of which these agreements and annexes deal with is "Subsidies and counter-measures".

Respectfully, in WTO Agreement on Subsidies and Countervailing Measures¹³, subsidies are defined as follows:

"Article 1, Definition of a Subsidy

For the purpose of this Agreement, a subsidy shall be deemed to exist if:

- a) (1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:
 - i. a government practice involves a direct transfer of funds (e.g. grants, loans and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees);
 - ii. a government revenue, that is otherwise due, is forgone or not collected (e.g. fiscal incentives, such as tax credits);
 - iii. a government provides goods or services other than general infrastructure, or purchases of goods;
 - iv. a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments; or
- a) (2) there is any form of income or price support in the sense of Article XVI of the General Agreement on Tariffs and Trade (GATT) 1994; and
- b) a benefit is thereby conferred."

The subsidy data are produced based on actual gained from information taken from official documents and estimated data.

This report classifies support and subsidies to coal/lignite-based electricity production into three main categories based on the WTO definition of subsidies for which purposes is used the Overseas Development Institute and Climate Action Network methodology¹⁴:

Fiscal support

Fiscal support is provided by national and subnational governments through budgetary transfers (e.g. direct spending on research and development (R&D) for coal mining), and tax expenditures (e.g. reduced rates or exemptions from value-added tax (VAT) or carbon taxes on the use of coal).

Fiscal support is defined as any direct spending by the government from the budget, tax breaks and income or price support or any government revenue foregone, deferred or not collected and could be divided in two categories:

¹³ https://www.wto.org/english/docs_e/legal_e/24-scm_01_e.htm

¹⁴ <https://odi.org/en/publications/q20-coal-subsidies-tracking-government-support-to-a-fading-industry/>

- i. Direct budget transfers for any purpose for coal mines supplying thermal power plants or for companies involved in coal-fired electricity generation including budgetary direct expenditures and government loans; and
- ii. Foregone revenues, including arrears for taxes, contributions or other public revenues connected with entities involved in coal-fired electricity generation, debt write-offs, and exemptions from payment of costs or reduction of liabilities for such costs, and lower tax rates or other fiscal charges relative to other entities.

Direct transfers from the budget are shown in the amounts transferred in the year when the transactions were completed. All direct budget transfers, with the exception of government loans, were included in full as an amount of the subsidy in the year when they were executed.

The data for government loans is shown as the amount of outstanding debt as of year-end. The data for debt for public revenues is demonstrated as the end-year due balance. The reason is that the failure to collect such claims results in lower budget revenues for the given year. Subsidy levels from loans obtained from governments were calculated by considering the comparison of interest rates on loans provided by governments and interest rates on comparable commercial loans in the domestic markets. In all presented cases, the market loan interest rates were higher than interest rates on the government issued loans. The subsidy amount was calculated as the benefit incurring to the loan recipient arising from the interest rate difference. The interest rate difference on the previous year's outstanding loan portfolio was calculated and shown as a subsidy in the current year.

The subsidization effect of arrears to governments for various taxes and contributions was computed by recognizing that such arrears constituted unrealized budget revenues and governments must borrow equivalent amounts in the financial markets to balance budgetary revenues and expenditures. In this case, the subsidy is equal to the cost to the government of borrowing the amount equivalent to budget revenue arrears. The actual government costs were computed using the yield on government bonds as the rate payable on total arrears in the given year.

Other data in this category were calculated and estimated based on the decisions of the government to grant to the producers of electricity from coal or to the coal mines that supply such producers a privileged status in the market or to reduce their liabilities or charges during the period. This data is shown as an annual amount of foregone revenues.

Public finance support

Public finance support represents the second category of direct subsidies covered in this report and includes loans, grants, guarantees, and equity provided by institutions under government control or by international financial institutions to entities involved in coal-fired electricity generation.

The level of direct subsidies in the form of loans provided by government-controlled institutions was computed by comparing the interest rates on loans received with interest rates on comparable commercial loans to determine the level of benefits obtained by the subsidy recipient. The difference between the two interest rates was used to calculate the amount of the direct subsidy.

In situations where such loans were provided interest-free, the interest rates on comparable commercial loans were applied to outstanding loan balances in the previous year to compute the subsidy amount for the given year.

Grants are treated as subsidies in their total amount in the year when they were provided and shown in the year when the beneficiary received them.

The direct subsidy from government guaranteed loans is calculated as the direct benefit accruing to the beneficiary because of the government's guarantee. The direct benefit and, consequently, the subsidy amount

to the beneficiary results primarily from the fact that, without a guarantee, such beneficiaries might not even receive such loans in terms of size, interest rate or repayment period, which makes it difficult to accurately estimate the received benefit and the actual subsidy amount.

For this study, the difference between the market interest rate and the interest rate on government guaranteed loans was used to calculate the amount of subsidy. This difference is applied to the outstanding balance of the guaranteed loan in the previous year to determine the amount of subsidy in the given year.

SOE investment support

Investment by State-Owned Enterprises (SOEs) constitutes the third category of direct subsidies. All companies, which are majority-owned by a government or government-controlled entities are considered SOEs. As a majority owner, the State, through the governance bodies, has a decisive influence on decisions about investment and allocation of resources.

In the given context, all funds in the form of capital investment loans, debts for electricity, or advances extended by such enterprises to other business entities involved in coal-fired electricity generation (mainly suppliers) could not be justified as rational economic decisions based on market principles as they negatively impact their own business performance and are thus treated as support with direct subsidy elements. They are shown either as the amount extended in the given year (capital investment) or as the total amount at end-year (credits, debts for electricity and advances). The equity investments are identified as subsidies in their full amount, in the year when they were provided.

The level of direct subsidies in the form of loans provided by SOEs was determined by comparing the effective interest rates on received loans from SOEs by the subsidy recipient with interest rates on comparable commercial loans. The difference between the interest rate on loans received and the interest rate on comparable commercial loans was used to calculate the amount of direct subsidy.

In situations where such loans were provided interest-free, the interest rates on comparable commercial loans were applied to outstanding loan balances in the previous year to compute the subsidy amount for the given year.

Advance payments and tolerated debts for consumed electricity are treated as interest-free short-term loans. The interest rates on comparable commercial loans were applied to outstanding loan balances in the given year to compute the subsidy amount.

4 Overview and key findings

4.1 Overall findings

This report analyzes the scale of direct subsidies in the five¹⁵ Energy Community Contracting Parties that owned and operated generation capacities and resources using coal and lignite in 2021-2022: Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia and Serbia. Albania, Moldova and Georgia do not have coal-fired electricity generation capacity. The report builds on previous research and studies encompassing the periods from 2016 onwards¹⁶.

¹⁵ Ukraine is not obtained within this report because of lack of the data officially available or reported

¹⁶ https://www.energy-community.org/dam/jcr:482f1098-0853-422b-be93-2ba7cf222453/Miljevi%C4%87_Coal_Report_122020.pdf
https://www.energy-community.org/dam/jcr:ae19ba53-5066-4705-a274-0be106486d73/Draft_Miljevic_Coal_subsidies_032019.pdf

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The report revealed that the five analyzed Contracting Parties provided direct subsidies to electricity generation from coal/lignite during 2021-2022. These subsidies amounted to more than EUR 180 million. In absolute terms, the value of subsidies was the highest in Serbia (98,67 mill. EUR) and Bosnia and Herzegovina (70,14 mill. EUR).

Table 2: Summary of subsidies by countries for 2021-2022, mill. EUR

Contracting Party	Fiscal support subsidies		Public finance support subsidies		SOE investment subsidies		Total	
	2021	2022	2021	2022	2021	2022	2021	2022
Bosnia and Herzegovina	3,16	10,38	26,17	15,19	6,71	8,54	36,04	34,10
Kosovo*	4,79	5,53	0,11	0,12	0,00	0,00	4,89	5,65
Montenegro	0,03	0,00	0,09	0,06	0,00	0,00	0,11	0,06
North Macedonia	0,00	0,00	0,42	0,15	0,00	0,00	0,42	0,15
Serbia	37,85	24,65	12,02	22,98	0,36	0,81	50,23	48,44
Total	45,83	40,55	38,80	38,50	7,07	9,34	91,70	88,40
Total 2021-2022		86,38		77,30		16,42		180,10

Source: based on calculation in Annexes

The research has shown that all Energy Community Contracting Parties that produced electricity from coal/lignite in 2021-2022 continued providing direct subsidies in various forms. The total calculated amount of all types of direct subsidies for the last two years amounted to EUR 180,10 million.

The following table shows the share of direct subsidies as a percentage of GDP and general government expenditures for the Contracting Parties covered by the Report.

Compared to the level of economy in partner countries, the amount of subsidies in reported period reached up to 0,3% of GDP and 1,6 % of General Government expenditure in Bosnia and Herzegovina where is the highest. Even the fact that amount of subsidies is the highest in Serbia, it doesn't have too big influence on the economy neither on government expenditure.

Table 3: Subsidies in GDP and General government expenditure, 2021-2022, mill. EUR

Contracting Party	Gross domestic product* [EUR mill]	General government expenditures* [EUR mill]	Subsidies for electricity from coal [EUR mill]	Subsidies in GDP [%]	Subsidies in GGE [%]
Bosnia and Herzegovina	23 317	4 420	70,14	0,3	1,6
Kosovo*	8 936	1 049	10,54	0,1	1,0
Montenegro	5 924	1 058	0,17	0,0	0,0
North Macedonia	12 898	2 034	0,57	0,0	0,0
Serbia	60 368	9 824	98,67	0,2	1,0
Total			180,10		

* GDP and GGE data for 2022 obtained from Eurostat database https://ec.europa.eu/eurostat/databrowser/view/NAMA_10_GDP/default/table?lang=en
Data for Montenegro available and published by Statistical Office of Montenegro: <https://www.monstat.org/eng/page.php?id=163&pageid=19>

The subsidies were provided from budget (fiscal support) mainly as direct budget transfers and by tolerating the non-payment of tax and other liabilities to the state or other public authorities and reprogramming such liabilities. In 2021 and 2022, only North Macedonia did not provide subsidies in the form of fiscal support. In most cases, direct fiscal support measures were addressed as support to coal production rather than to thermal power plants.

Public finance support subsidies were mainly in the form of government or government-controlled institutions' loans and guaranties for different kinds of loans taken by public energy enterprises and coal mines.

Based on various support provided from state/government either as tax-loans, loans from the budget or guarantees for loans, total amount of outstanding balance at the end of reporting period reached up to 1,9 bill. EUR for partner countries. This indicates that the state budget could be burdened if decide to close the debt.

Table 4: Outstanding balance support in GDP and General government expenditure, 2022, mill. EUR

Contracting Party	Outstanding balance	% of GDP	% of GGE
BIH	1 022,8	4,4	23,1
Kosovo*	140,9	1,6	13,4
Montenegro	2,1	0,0	0,2
North Macedonia	14,2	0,1	0,7
Serbia	701,9	1,2	7,1
Total	1881,9		

Sources: outstanding balances of guarantees for loans, loans from budget, taxes and other arrears for concessions, presented in country reports in annexes

Based on the level of GDP and GGE, outstanding balance has the biggest impact in Bosnia and Herzegovina. this indicates that if debt is closed it will increase the GGE and GDP and consequently government debt.

In the Contracting Parties where coal mines operate as independent businesses (as is the case in Bosnia and Herzegovina, Serbia), it was possible to identify subsidies classified as SOE investment support. This type of subsidy mainly relates to state-owned energy power companies providing continuous advance payments to coal producers, investments into the capital of the mines, tolerating the mines unpaid electricity bills and preferential loans to support coal production. SOE investment subsidies could not be identified where the coal mines and thermal power plants are integrated in a single electric power company. In such case, if a support is provided, it is provided to the integrated company.

Table 5: Subsidies per country and type, 2018 - 2022

Subsidies	2018	2019	2020	2021	2022
Fiscal support	36,0	33,1	30,6	45,8	40,6
Bosnia and Herzegovina	6,4	4,8	3,6	3,2	10,4
Kosovo*	6,0	6,5	5,5	4,8	5,5
Montenegro	0,4	0,2	0,1	0,0	-
North Macedonia	-	-	-	-	-
Serbia	23,3	21,8	21,4	37,9	24,6
Public finance support	30,0	24,3	33,9	38,8	38,5
Bosnia and Herzegovina	4,8	4,3	20,4	26,2	15,2
Kosovo*	0,1	0,1	0,1	0,1	0,1
Montenegro	0,4	0,3	0,1	0,1	0,1
North Macedonia	2,2	1,6	0,7	0,4	0,1
Serbia	22,5	18,0	12,5	12,0	23,0
SOE investment support	10,7	15,3	11,6	7,1	9,3
Bosnia and Herzegovina	9,1	13,7	10,5	6,7	8,5
Kosovo*	-	-	-	-	-
Montenegro	-	-	-	-	-
North Macedonia	-	-	-	-	-
Serbia	1,6	1,7	1,1	0,4	0,8
Total	76,6	72,7	76,1	91,7	88,4

4.2 Concluding remarks

The data for 2018 - 2022 shows an overall decreasing trend in the level of subsidies, whereas in Montenegro and North Macedonia this decrease was constant and continuous from year to year.

Table 6: Total amount of subsidies for the 2018 - 2022 period in EUR million

Contracting Party	2018	2019	2020	2021	2022	Total
Bosnia and Herzegovina	20,20	22,71	34,53	36,04	34,10	145,57
Kosovo*	6,11	6,59	5,61	4,89	5,65	28,85
Montenegro	0,73	0,41	0,25	0,11	0,06	1,56
North Macedonia	2,19	1,64	0,70	0,42	0,15	5,10
Serbia	47,40	41,37	35,00	50,23	48,44	222,44
Total	76,63	72,72	76,08	91,70	88,40	405,52

Source: Based on calculation in Annexes and data from previous researches

Bosnia and Herzegovina and Serbia are the Contracting Parties where the level of direct subsidies increased in 2021 compared to 2020. The increase is primarily the result from issuing additional state guarantees for loans to thermal power plants and continuing the policy of tolerating the non-payment by coal mines as well as support to production of coal.

In 2022 the total amount of subsidies increased only in Kosovo*.

Serbia and Bosnia and Herzegovina, after sharp rise in 2020 and 2021 respectively, show slightly declining trend in 2022 .

Main driver for increased subsidies in Bosnia and Herzegovina is continuing the policy of tolerating the non-payment of due debts and arrears, SOE investments in coal mines as well as changing difference between the underlying interest rates used for valuation of subsidies in the form of State guarantees.

In Serbia, main driver for increase of 42% is almost doubled subsidy from the state budget to JP PEU Resavica of RSD 8,5 billion (EUR 36 million) in 2021. Fiscal support in the period before 2021 was maintained at stable level of EU 21 million, whilst in 2021 it increased for almost 50%, as a result of the direct budget transfers to public enterprises for supporting underground coal mining and providing part of the funds needed for the reconstruction of the turbines in 2022.

The level of subsidies in North Macedonia shows decline for the whole time period from 2018 onwards. North Macedonia provided only two subsidy measures in the form of Public finance support as state loan guarantees for modernization of TPP Bitola in the amount of EUR 49 mill. and 30 mill. Their valuation from year to year depends on the outstanding balance of the loan and difference between underlying interest rates.

In Montenegro, tax debt reprogrammed in 2021 was paid out and no new fiscal support occurred in 2022 as well as SOE investments. Still some support was provided in the form of Public finance support as state loan guarantee for filters replacement in the TPP Pljevlja.

Kosovo* shows the stable level and type of support provided since 2018, as the Government did not implement any new measure. The only increase in the level of subsidies in 2022 is the result of an additional Government loan to cover the costs of electricity generation to meet the public service obligation.

From the analysis of the subsidies provided during the five-year period 2018-2022 can be drawn the final remarks:

- highest in 2021 with amount of EUR 91,7 million of which highest in Bosnia and Herzegovina up to 36,04 and in Serbia 50,23
- North Macedonia and Montenegro reaches the lowest level of subsidies in 2022 since 2018
- the highest share in total subsidies has fiscal support subsidies and Serbia is the biggest user
- the biggest users of the public finance support are Bosnia and Hercegovina and Herzegovina
- in 2019 total amount of subsidies was the lowest.
- In 2020 fiscal support was the lowest
- In 2022 subsidies are lower than in 2021 which was the year of the highest level of subsidies during whole period.

The subsidies are still given in an attempt to keep in operation the unprofitable activities of inefficient thermal power plants and/or coal mines and artificially keep the production cost low in order to influence market price and end user prices, thus distorting price signals to potential investors and consumers.

Furthermore, continued reliance on subsidies diverts decision-making about the future development of the electric power sector and hinders the energy transition towards carbon neutrality goals.

4.3 Contracting Party report

4.3.1 Bosnia and Herzegovina

Electricity facts and figures:

Description of data (unit)/period	2018	2019	2020	2021	2022
Electricity production [GWh]	17 873	16 074	15 391	17 055	15 035
Gross electricity consumption [GWh]	13 294	12 330	11 330	12 170	12 058
Final consumption of electricity [GWh]	11 793	10 960	9971	10 673	10 739
Consumption structure [GWh]					
Industrial, transport, services and other non-residential	7 107	6 234	5 176	5 761	5 810
Households (residential customers)	4 685	4 726	4 795	4 912	4 929
Capacity of power plants [MW]					
by source:	Coal-fired	2 156	2 156	2 156	2 158
	Hydro	2 236	2 239	2 249	2 257
	Other renewable	71	113	124	194
Electricity generation in coal-fired TPPs [GWh]	10 954	9 613	10 443	9 821	9 629
Share of coal in total electricity production, %	61,29	59,80	67,85	57,70	64,04
Share of coal in electricity consumption, %	92,89	87,71	104,73	92,21	89,67

Source: SERC Annual reports

In Bosnia and Herzegovina, coal-fired capacities of 2.158 MW accounted from 46,83% in 2021 to 46,35% in 2022 of the total installed electricity generation capacity. The share of coal in total electricity production reached 57,70% in 2021, which was the lowest share since 2018, to 64,04% in 2022. Still, the share of coal in electricity consumption shows decrease during the last period 2021-2022.

Electricity production is ensured by operating of five coal-fired power plants, of which four power plants are owned by the state. State-owned companies “Elektroprivreda BiH” (EPBIH) and “Elektroprivreda Republike Srpske” (ERS) own two power plants each. EPBIH owns TPP Kakanj and TPP Tuzla¹⁷ whose total capacities are 1.256 MW and ERS owns TPP Gacko and TPP Ugljevik¹⁸ whose total capacities are 600 MW. One power plant is owned by Energy Financing Team Group¹⁹ with capacity of 300 MW.

Power plants within the concern EPBIH are supplied from seven coal mines, while other power plants have integrated coal mines.

In period 2021-2022, direct subsidies for electricity production from coal were identified in all three categories.

Regarding the subsidies in the fiscal support category, it reached the amount of EUR 3,16 million in 2021 and EUR 10,38 million in 2022, related to reprogrammed and uncollected tax, social security contributions, concession fees arrears and other unpaid public revenues by the coal mines in Federation of Bosnia and Herzegovina (FBiH); unpaid taxes by two TPPs in Republika Srpska; and a loan provided by Tuzla Canton Government to coal mines Kreka and Djurdjevik.

In terms of public finance support, there are six outstanding state or entity guarantees issued. The sum total of subsidies in this category is EUR 26,17 million in 2021 and EUR 15,19 million in 2022. It is important to note that

¹⁷ <https://www.epbih.ba/eng/page/about-company#epbih-concern>

¹⁸ <https://ers.ba/home-en-template/>

¹⁹ <http://www.eft-stanari.net/index.php/about-us/tehnoloskikoncept>

the primary source of subsidies is the FBiH Government issued guarantee for constructing the new block 7 of the Tuzla TPP.

Capital investments of Elektroprivreda BiH in the mines as well as loans and advance payments to the mines were categorized as SOE investment support subsidies in the amount of EUR 6,71 million in 2021 and EUR 8,54 million in 2022 (see Annex 1).

The sum total of subsidies in 2021 was EUR 36,04 million and EUR 34,1 million in 2022. Comparing the average annual value of identified subsidies with the average yearly coal-fired electricity generation in Bosnia and Herzegovina, each MWh of electricity generated from coal received in 2021 and 2022 an average subsidy of EUR 3,09 in 2021 and EUR 2,76 in 2022. Average amount of subsidies for period 2018-2022 was EUR 2,08 per MWh.

Graph 4: Subsidies per 1MWh produced in TPPs, EUR/ MWh

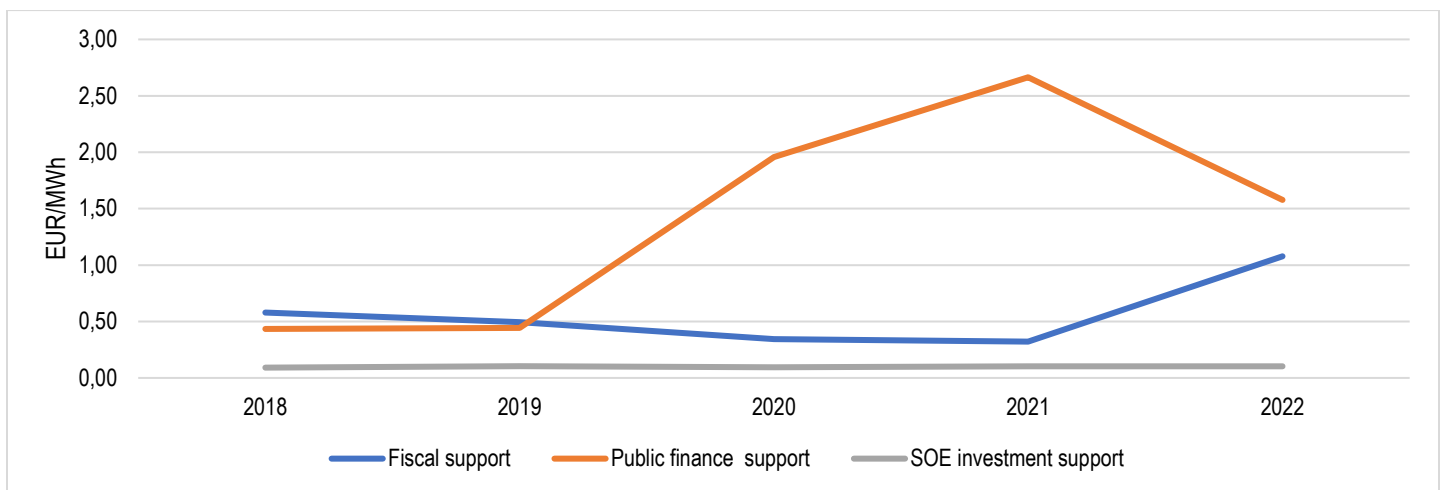


Table 7: Estimated value of direct subsidies provided to coal/lignite electricity producers in million EUR 2018 – 2022

Activity / instrument	2018	2019	2020	2021	2022	Average 2018-2022	Total for 5 years
Fiscal support	6,36	4,75	3,59	3,16	10,38	5,65	28,23
Public finance support	4,76	4,27	20,44	26,17	15,19	14,16	70,82
SOE investment support	9,08	13,69	10,50	6,71	8,54	9,70	48,52
TOTAL:	20,20	22,71	34,53	36,04	34,10	29,51	147,57

Comparing subsidies during the entire period from 2018 onwards, the sharp increase from 2020 was growing further in 2021 mainly due to the valuation of the state guarantees issued on the public companies' loan for coal-fired TPPs. In 2022 the value of fiscal support subsidies increased mainly due to increased yield on government bonds, used in calculation.

4.3.2 Kosovo*

Electricity facts and figures:

Description of data (unit)/period	2018	2019	2020	2021	2022
Electricity production [GWh]	5 311	5 718	6 301	6 207	6 315
Gross electricity consumption [GWh]	5 671	6 001	6 167	6 885	6 547
Final consumption of electricity [GWh]	4 022	4 408	4 558	5 117	4 925
Consumption structure [GWh]					
Industrial, transport, services and other non-residential	1 648	1 893	1 780	1 986	1 804
Households (residential customers)	2 374	2 515	2 778	3 131	3 121
Capacity of power plants [MW]					
by source:					
	Coal-fired	960	960	960	960
	Hydro	76	90	90	128
	Other renewable	40	49	60	148
Electricity generation in coal-fired TPPs [GWh]	5 008	5 404	5 984	5 770	5 678
Share of coal in total electricity production %	94,29	94,51	94,97	92,96	89,81
Share of coal in electricity consumption %	124,52	122,60	131,29	112,76	115,29

Source: ERO Annual reports

In Kosovo*, electricity generation from lignite is dominant, with the share of coal-fired thermal power plants in the total installed electricity generation capacity at 77,67% and 93% of the total electricity production in 2021 and 90% in 2022. The installed capacity consists of two state-owned coal-fired thermal plants (generating units TPP Kosova A and TPP Kosova B), vertically integrated with the mines of KEK (Kosovo Energy Corporation)²⁰.

The fiscal support subsidies for electricity generation from coal in Kosovo* were related to the government loan to cover the cost of KEK's regular operating activities caused by the low operational efficiency of the TPP and problems with the collection of electricity bills, in the amount the EUR 4,79 million and EUR 5,53 million in 2021 and 2022 respectively (see Annex 2).

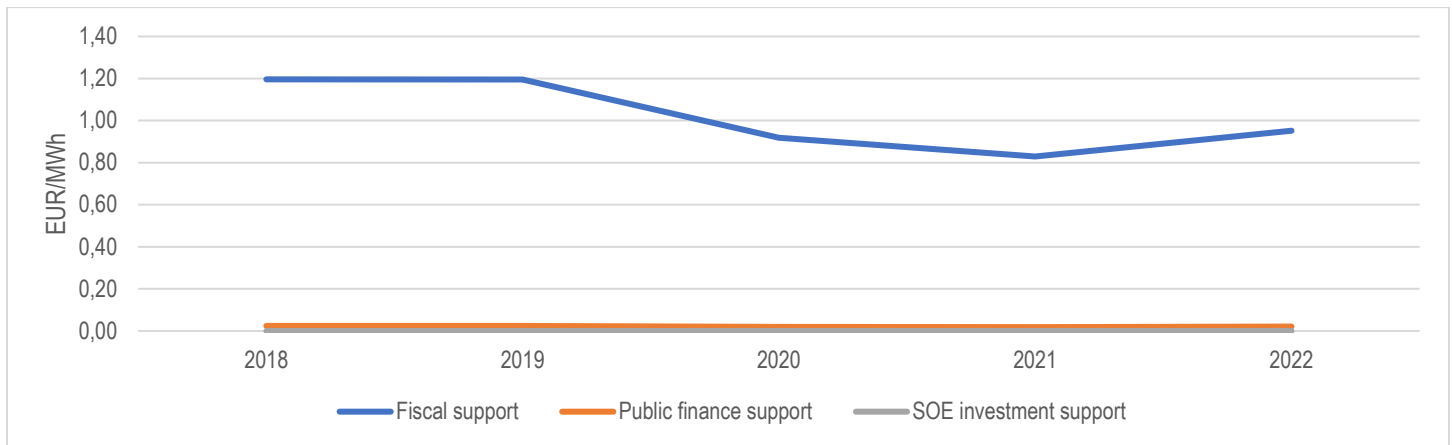
The project "Air reduction pollution in Kosovo A" has been cancelled, since WB Green Belt projects, (Cleaning and maintenance of green areas and Pear Park) , are expected to improve of the air quality for TPP Kosovo A, while due to the age of TPP Kosovo A and uncertainty about the reconstruction / decommissioning, the management does not plan any investment in this power plant.²¹

Electricity generated from coal in 2021 received on average the support of 0,85 EUR /MWh and in 2022 received 0,97 EUR/MWh.

Subsidies during period 2021-2022 follow the level in 2018 – 2020 which were significantly lower than in 2016 – 2017 (as presented in the previous studies published by the ECS), as the Government did not implement any new measure which would amount to a new subsidy to KEK.

²⁰ Kosovo energy corporation <http://kek-energy.com/kek/en/>

²¹ <http://kek-energy.com/kek/en/financial-audit-reports/> , page 34

Graph 5: Subsidies per 1MWh produced in TPPs, EUR/ MWh

Public finance subsidies in 2021 of EUR 0,11 and EUR 0,12 million in 2022 were related to the Government's guarantee for the Energy Clean up and Land Reclamation World Bank (IDA) loan. The total sum of subsidies in 2021 was EUR 4,89 million and EUR 5,65 million in 2022.

Table 8: Estimated value of direct subsidies provided to coal/lignite electricity producers in million EUR 2018 – 2022

Activity / instrument	2018	2019	2020	2021	2022	Average 2018-2022	Total for 5 years
Fiscal support	5,99	6,46	5,49	4,79	5,53	5,65	28,25
Public finance support	0,12	0,13	0,12	0,11	0,12	0,12	0,59
SOE investment support	0,00	0,00	0,00	0,00	0,00	0,00	0,00
TOTAL:	6,11	6,59	5,61	4,89	5,65	5,77	28,85

4.3.3 Montenegro

Electricity facts and figures:

Description of data (unit)/period	2018	2019	2020	2021	2022
Electricity production [GWh]	3 744	3 383	3 225	3 656	3 235
Gross electricity consumption [GWh]	3 468	3 461	3 311	3 491	3 101
Final consumption of electricity [GWh]	2 945	2 967	2 819	2 982	2 624
Consumption structure [GWh]					
Industrial, transport, services and other non-residential	1 659	1 677	1 578	1 641	1 250
Households (residential customers)	1 286	1 290	1 241	1 334	1 374
Capacity of power plants [MW]					
by source:					
	Coal-fired	219	225	225	225
	Hydro	681	686	699	705
	Other renewable	72	118	121	123
Electricity generation in coal-fired TPPs [GWh]	1 444	1 390	1 487	1 333	1 454
Share of coal in total electricity production %	38,57	41,09	46,11	36,46	44,95
Share of coal in electricity consumption %	30,05	49,03	46,85	44,70	55,42

Source: REAGEN Annual reports

In Montenegro, the installed capacity for electricity generation from coal reached 21,37% of the total capacity 2022, from 21,43% in 2021 recovering the share to 45% of the total production in 2022, from only 36% in 2021. The thermal power plant Pljevlja operates as a part of the majority State owned company “Elektroprivreda Crne Gore” (EPCG)²². It is supplied with coal from coal mine Pljevlja (RU Pljevlja)²³ owned entirely by EPCG since 2018.

Electricity consumption declined significantly in 2022 (around 12%) mainly because the biggest consumer DOO “Uniprom“ (Kombinat aluminijuma Podgorica - KAP) ceased its operation.

In the period 2021-2022, direct subsidies for electricity production from coal were identified in two categories.

In 2021-2022, the EUR 0,03 million of fiscal support subsidies includes the arrears of the Pljevlja coal mine in tax and contributions, which the Government consolidated and reprogrammed over five years, with repayment starting from 2017. In January 2021 early repayment of the rescheduled tax debt according to Decision No. 03/1-109/3-17 of the Ministry of Finance of Montenegro on the rescheduling of debt to the Tax Administration for outstanding liabilities for taxes and contributions is done.²⁴

Public finance subsidies for 2021-2022 of EUR 0,15 million are related to a government guaranteed loan provided by KfW to the TPP Pljevlja (see Annex 3).

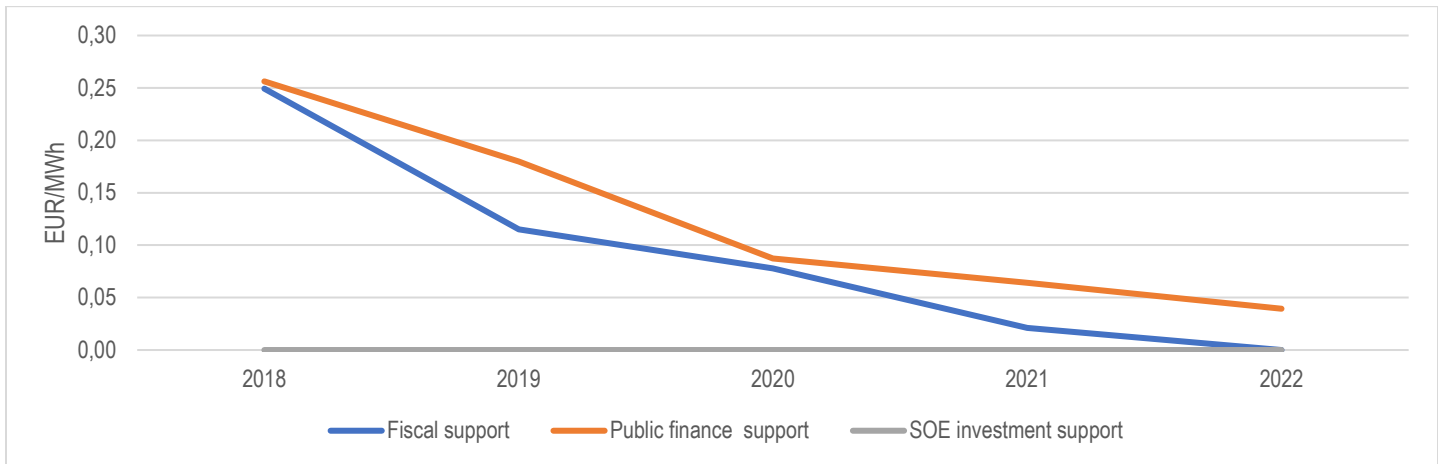
The total sum of subsidies in 2021-2022 was EUR 0,17 million.

Electricity generated from coal received in 2018-2022 support of only 0,22 EUR/MWh on average.

²² Elektroprivreda Crne Gore EPCG <https://www.epcg.com/en/about-us/about-us>

²³ Coal mine Pljevlja RU Pljevlja <http://www.rupv.me/vlasnicka-struktura>

²⁴ Annual report RU Pljevlja <https://www.scmn.me/me/ucesnici-na-trzistu/emitenti/r-s-s-t-u/rudnik-uglja>

Graph 6: Subsidies per 1MWh produced in TPPs, EUR/ MWh

Comparing subsidies during the entire whole time period from 2018 onwards, it shows decreasing trend and the lowest level is in 2022.

Table 9: Estimated value of direct subsidies provided to coal/lignite electricity producers in million EUR 2018 – 2022

Activity / instrument	2018	2019	2020	2021	2022	2018-2022 average	Total for 5 years
Fiscal support	0,36	0,16	0,12	0,03	0,00	0,13	0,66
Public finance support	0,37	0,25	0,13	0,09	0,06	0,18	0,89
SOE investment support	0,00	0,00	0,00	0,00	0,00	0,00	0,00
TOTAL:	0,73	0,41	0,25	0,11	0,06	0,31	1,56

Total amount of subsidies reached EUR 1,56 million for this period and shows decreasing of value for every type of subsidy.

4.3.4 North Macedonia

Electricity facts and figures:

Description of data (unit)/period	2018	2019	2020	2021	2022
Electricity production [GWh]	5 468	5 658	5 128	5 285	5 634
Gross electricity consumption [GWh]	7 391	7 483	7 459	7 906	7 105
Final consumption of electricity [GWh]	6 395	6 504	6 476	6 865	6 133
Consumption structure [GWh]					
Industrial, transport, services and other non-residential	3 406	3 466	3 285	3 548	3 053
Households (residential customers)	2 989	3 038	3 191	3 317	3 080
Capacity of power plants [MW]					
by source:					
	Coal-fired	824	824	824	824
	Gas-fired	287	287	287	287
	Oil-fired	210	210	210	210
	Hydro	693	698	705	705
	Other renewable	63	68	76	90
Electricity generation in coal-fired TPPs [GWh]	2 703	3 294	2 510	2 087	2 621
Share of coal in total electricity production %	49,43	58,22	48,95	39,49	46,52
Share of coal in electricity consumption %	42,27	50,65	38,76	30,40	42,74

Source: Energy regulation commission of North Macedonia - Annual reports

The coal is dominant electric power resource for production of electricity in the electric power system in North Macedonia.

The base energy of the electric power system in the country is founded on the coal potential of Kicevo and Pelagonija Basins with the determined coal deposits: Suvodol, Brod-Gneotino, Zivojno. Oslomej, Popovjani and Stragomiste which have enabled opening of our two large surface coal mines—SM Oslomej and SM Suvodol.

The year of 2021 registered a record decrease of electricity production from thermal power plants of which the main part was produced by thermal power plant REK Bitola. The situation improved in 2022 and the production in REK Bitola was higher but still below the average and planned production. The reasons lied in the numerous breakdowns and in the increased number of outages in the operation of the energy combine Bitola (REK Bitola), in the decrease of extracted qualitative coal and sufficient quantities in REK Bitola, the already overdue life cycle of the thermal power plants, inadequate investments, lower efficiency, and etc. On the other hand, TEC Oslomej significantly increased the electricity production in 2021 and in 2022. Since coal reserves in REK “Oslomej” were already exploited, the increased production in 2021 and 2022 was based on coal purchased from foreign suppliers.

In 2022 the energy crisis hit electricity market in north Macedonia, and it influenced electricity production and consumption. The net consumption of electricity had a significant decrease of 10,66 % partly due to the reduced economic activities as a result of high electricity prices and the Government’s measures for rational use of electricity. This issue with high prices caused a challenge and motivation for investors, who built solar power plants, and a wind power plant. Hence, the installed capacity of renewable sources has increased around 140 MW, which was never the case before.²⁵

Also, in 2022, the total installed capacity of power plants was 2.266 MW, indicating increase by 149 MW compared to the installed capacity in 2021.

²⁵ Annual report, Energy regulation commission of North Macedonia: https://www.erc.org.mk/page_en.aspx?id=342

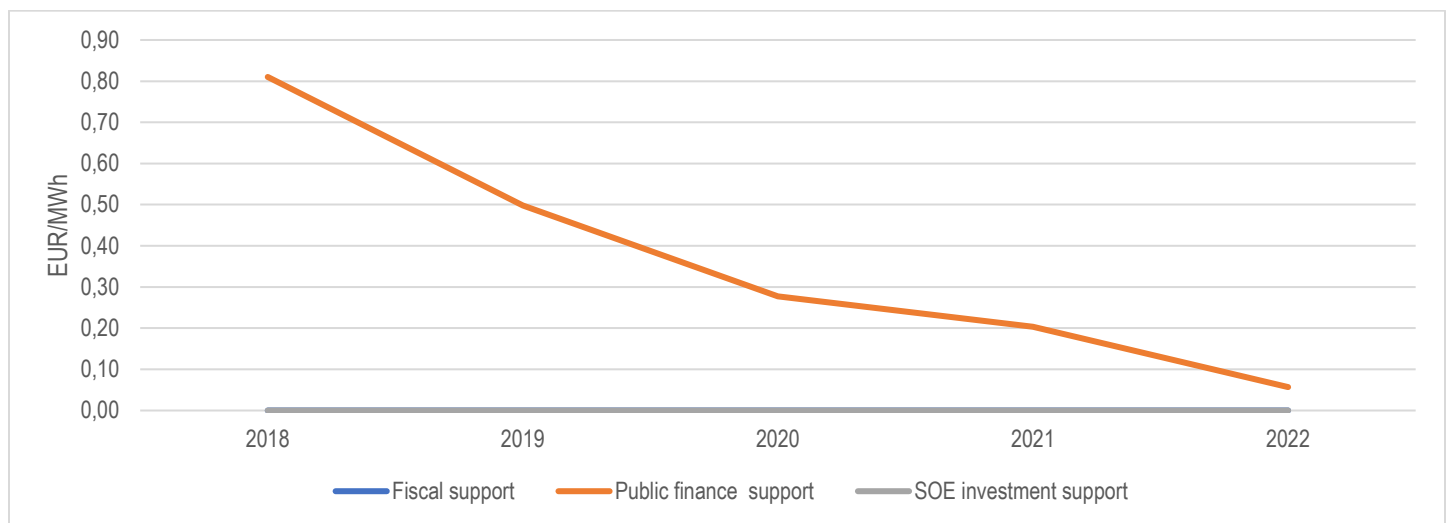
In North Macedonia, coal-fired thermal power plants accounted for 39% in 2021 and 36% in 2022 of installed electricity generation capacity and 39% of the total electricity production in 2021 and 46% in 2022.

This increase in 2022 compared to 2021 is due to the increased production because of the purchase of imported coal destined for electricity production. In the last three-year period, electricity production in coal power plants varied a lot and in 2022 it marked the largest production. Electricity from coal is generated in two TPPs (Bitola and Oslomej), which, together with the coal mines, operate as part of the vertically integrated state company “Elektrani na Severna Makedonija” (ESM).²⁶

There were no new direct subsidies for electricity generation from coal in 2021-2022, except for the existing public finance support in the form of two state loan guarantees for the modernization of TPP Bitola (see Annex 4).

Electricity generated from coal received an average support for period 2018-2022 of 0,37 EUR/MWh and only 0,13 EUR/MWh in 2021-2022. This is related only to support provided as public finance support for which is specific decreasing trend from 2018 (0,81 EUR/MWh) to 2022 (0,06 EUR/MWh).

Graph 7: Subsidies per 1MWh produced in TPPs, EUR/ MWh



In 2021-2022, the total subsidies amounted to EUR 0,57 million, the second lowest of all Contracting Parties.

Table 10: Estimated value of direct subsidies provided to coal/lignite electricity producers 2018 - 2022 in million EUR

Activity / instrument	2018	2019	2020	2021	2022	Average 2018-2022	Total for 5 years
Fiscal support	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Public finance support	2,19	1,64	0,70	0,42	0,15	1,02	5,10
SOE investment support	0,00	0,00	0,00	0,00	0,00	0,00	0,00
TOTAL:	2,19	1,64	0,70	0,42	0,15	1,05	5,10

²⁶ Elektrani na Severna Makedonija <https://www.esm.com.mk/?lang=en>

4.3.5 Serbia

Electricity facts and figures:

Description of data (unit)/period	2018	2019	2020	2021	2022
Electricity production [GWh]	34 336	35 056	35 540	35 656	33 112
Gross electricity consumption [GWh]	35 317	32 536	33 853	35 217	34 789
Final consumption of electricity [GWh]	29 233	26 587	29 468	30 862	30 604
Consumption structure [GWh]					
Industrial, transport, services and other non-residential	15 818	13 247	15 750	16 985	17 225
Households (residential customers)	13 415	13 340	13 718	13 877	13 379
Capacity of power plants [MW]					
by source:					
Coal-fired	4 079	4 079	4 079	4 429	4 429
Oil/Gas-fired	368	329	330	526	526
Hydro	3 045	3 060	3 050	3 068	3 155
Other renewable	291	431	476	492	412
Electricity generation in coal-fired TPPs [GWh]	22 954	23 169	24 330	21 537	21 413
Share of coal in total electricity production %	66,85	66,07	68,46	60,40	64,67
Share of coal in electricity consumption %	78,52	87,14	82,56	69,78	69,97

Source: AERS Annual Reports <https://www.aers.rs/Files/Izvestaji/Godisnji/Izvestaj%20Agencije%202022.pdf>

In Serbia, generation from coal constitutes the primary source of electricity, accounting for 52% of installed capacity and 60% of the total electricity production in 2021 and 52% of installed capacity and 65% of the total electricity production in 2022.

Electricity generation from coal is run by the state-owned “Elektroprivreda Srbije” (EPS)²⁷ in two segments. “Termoelektrane Nikola Tesla” includes the TPP Nikola Tesla A (6 blocks), TPP Nikola Tesla B (2 blocks), TPP Kolubara (5 blocks) and TPP Morava (1 block). “Termoelektrane Kostolac” includes the TPP Kostolac A (2 blocks) and TPP Kostolac B (2 blocks). Coal is primarily sourced from EPS open mines located in the vicinity of the TPPs. In addition, EPS procures coal from underground coal mines owned by the state-owned company PEU “Resavica”²⁸.

In 2021-2022, direct subsidies for electricity production from coal were identified in all three categories.

Table 11: Estimated value of direct subsidies provided to coal/lignite electricity producers 2018 - 2022 in million EUR

Activity / instrument	2018	2019	2020	2021	2022	Average 2018-2022	Total for 5 years
Fiscal support	23,29	21,75	21,37	37,85	24,65	25,78	128,92
Public finance support	22,53	17,97	12,50	12,02	22,98	17,60	88,00
SOE investment support	1,58	1,65	1,13	0,36	0,81	1,11	5,53
TOTAL:	47,40	41,37	35,00	50,23	48,44	44,49	222,44

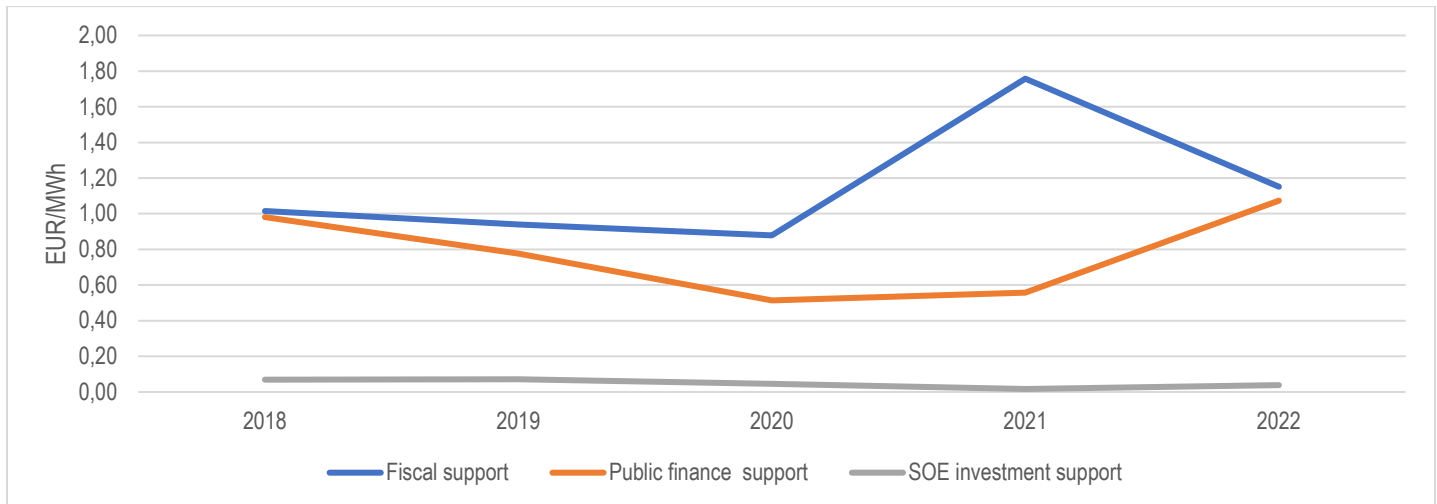
²⁷ Elektroprivreda Srbije <http://www.eps.rs/eng>

²⁸ PEU Resavica <https://www.jppeu.rs/>

The annual level of subsidies in the period 2018-2022 shows a declining level in 2022 compared to previous year. This decreasing in subsidies is related to fiscal support (subsidies to JP PEU Resavica were much higher in 2021 than in 2022).

Electricity generated from coal received an average support for period 2018-2022 of 1,98 EUR/MWh and 2,30 EUR/MWh in 2021-2022. This increase is specially related to fiscal support provided during period 2021-2022.

Graph 8: Subsidies per 1MWh produced in TPPs, EUR/ MWh



4.4 Ukraine

Based on data and other information found regarding electricity production and consumption via news providers and from press release is noted as follows:

*“The general volume of electricity generated in Ukraine in 2022 declined by 27.5% compared to 2021, Ukrainian media reported with reference to a social media post by former Energy Minister Olga Buslavets. In particular, generation by nuclear power plants declined by 28%, by thermal power plants by 35%, by combined thermal and heating stations by 32%, and generation with the use of renewable energy sources by 36%, she said. On the other hands, hydropower plants generated 6.5% more electricity, and generation by pumped-storage hydroelectric plants remained roughly the same as in the previous year, Buslavets said. Overall electricity consumption in Ukraine in 2022 declined by 31.5% compared to 2021, with the consumption by the industrial sector having declined by 45% and by households by 16%, she said. The Energy Ministry reported earlier that electricity generation in Ukraine amounted to 156.57 billion kWt/h and consumption to 154.82 billion kW/h in 2021.”*²⁹

Electricity facts and figures:

Description of data (unit)/period	2021*	2022**
Electricity production [GWh]	156 576	113 518
Gross electricity consumption [GWh]	154 826	106 056
Final consumption of electricity [GWh]	102 438	67 552
Industrial, transport, services and other non-residential	63 779	35 078
Households (residential customers)	38 659	32 474
Electricity generation in coal-fired TPPs [GWh]	37 225	24 196
Share of coal in total electricity production %	23,77	21,31
Share of coal in electricity consumption %	36,34	35,82

*1) <https://www.ukrinform.ua/rubric-economy/3382497-v-ukraini-torik-virobnictvo-elektroenergii-zroslo-na-52.html>

2) <https://www.epravda.com.ua/news/2022/01/11/681292/>, 3) <https://interfax.com.ua/news/greendea/790844.html>

** calculated based on shares published on <https://interfax.com/newsroom/top-stories/88395/>

Regarding subsidies, some of the subsidies are reported in various reports of the institutions of the government and not within statistical data or data from direct provider of the companies. Consequently, complete data on all type of subsidies are not available.

Based on available data collected from data sources noted in details in Annex for Ukraine, final estimates show amount of support in totally up to EUR 489 million in 2021 and EUR 549 million in 2022.

Table 12 Support in 2021-2022

Activity / instrument	2021	2022	Average 2021-2022	Total
Fiscal support	489,20	548,60	518,90	1 037,80
Public finance support	0	0	0	0
SOE investment support	0	0	0	0
TOTAL:	489,20	548,60	518,90	1 037,80

²⁹ <https://interfax.com/newsroom/top-stories/88395/>

Support is calculated specifically for each type of subsidies and final estimates of provided subsidies in 2021-2022 are shown in table:

Table 13 Estimated amount of direct subsidies provided to coal/lignite electricity producers in million EUR 2018 – 2022

Activity / instrument	2018	2019	2020	2021	2022	Average 2018-2022	Total for 5 years
Fiscal support	204,79	388,00	283,01	207,90	210,77	258,89	1 294,47
Public finance support	0	0	0	0	0	0	0
SOE investment support	70,65	88,08	59,73	0	0	43,69	218,46
TOTAL:	275,44	476,08	342,74	207,90	210,77	302,58	1 512,92

The total sum of subsidies was EUR 207,90 million in 2021 and EUR 210,77 million in 2022 and are only related to fiscal support. The average annual amount of identified subsidies was for 2018-2022 period 302,58 million of EUR.

Per unit of electricity produced from coal amounted to 5,58 EUR/MWh in 2021 and 8,71 EUR/MWh in 2022.

Other types of subsidies are not identified caused by the lack of data and/or not existed at all in 2021-2022. More information could be found in following paragraphs:

The Law of Ukraine on the "State Budget of Ukraine for 2021" created a new budget expenditure program "Repayment of arrears of salaries to employees and arrears for the electricity of Nadia PJSC mine" with the distribution of labor costs in the amount of 36,220.8 thousand UAH and 13,649.6 thousand UAH for communal services and energy sources due to the reduction of expenditures in the amount of 49,870.4 thousand UAH within the budget program KPKVK 201070 "Measures for the liquidation of non-profit enterprises"³⁰. Based on the budget 2021, it is planned by Ministry of economy for budget program 201070 "Measures for the liquidation of non-profit coal mine enterprises" amount of 1 032 458,2 thousand of UAH³¹.

³⁰ https://ips.ligazakon.net/document/view/qi06180a?an=11&ed=2021_10_11

³¹ https://ips.ligazakon.net/document/view/t201082?an=4509&ed=2021_07_15

Annex 1. Bosnia and Herzegovina – Detailed list of subsidy measures

Bosnia and Herzegovina - Fiscal support direct subsidies

Fixed exchange rate 1 EUR = 1,955830 BAM

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million BAM)	2021 (million EUR)	2022 (million BAM)	2022 (million EUR)	Average annual amount (million BAM)	Average annual amount (million EUR)
Concession fees in arrears - coal mines in Federation BiH	Government of Tuzla Canton	Concession fees in arrears	state coal mines Kreka, Djurdjevik	21,70	11,09	22,49	11,50	22,10	11,30
Source 2021, 2022: https://koncesije.transparentno.ba/bs-Latn-BA/concessions?page=1&rows=10&searchByConcessionerIds=763									
Taxes and contributions in arrears - coal mines in Federation BiH	Government / Tax administration Federation of BiH	tax and contributions in arrears	state coal mines	525,20	268,53	549,16	280,78	537,18	274,65
Source: 2021: http://pufbih.ba/v1/public/upload/files/31_12_2021_.pdf , accessed 16.05.2023 2022: https://odgovorno.ba/pogledajte-spisak-ove-drzavne-firme-su-najveci-porezni-duznici/									
Loan from Budget	Government of Tuzla Canton	Government Loan	state coal mine Kreka and Đurđevik	7,97	4,07	7,97	4,07	7,97	4,07
Source 2021, 2022: estimation based on 2020 report									
Nonpaid concession fees	Government of ZEDO Canton	Lost revenue	state coal mines Kakanj, Breza and Zenica	2,87	1,47	2,81	1,44	2,84	1,45
Source 2021, 2022: estimation based on electricity generated from coal referred to 2020									

Taxes in arrears TPP Gacko and Ugljevik	Government / Tax administration RS	tax and contributions in arrears	TPP Gacko and Ugljevik	4,02	2,06	0,00	0,00	2,01	1,03
Source 2021, 2022: https://www.blberza.com/Pages/IssuerAnnouncements.aspx?&code=RTEU-R-A https://ers.ba/finansijski-izvjestaji-maticnog-preduzeca/									
Total support				561,75	287,22	582,43	297,79	572,09	292,51

Subsidies calculation

	2021	2022
Yield on government bonds* (%)	1,07	3,48

* Source: Annual reports of Central Bank BiH <https://www.cbbh.ba/Content/Archive/36?lang=bs>

Subsidy calculation (outstanding balance of the arrears multiplied by yield on government bonds)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	553,79	283,15	574,46	293,72
Interest rate difference (%)	1,07	1,07	3,48	3,48
Amount of the subsidy per year	5,93	3,03	19,99	10,22

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	7,97	4,07	7,97	4,07
Interest rate on comparable commercial loan*	3,20	3,20	3,84	3,84
Amount of the subsidy per year	0,25	0,13	0,31	0,16

Summary of calculated subsidies				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Arrears and non-paid concession fees	5,93	3,03	19,99	10,22

Loan from Budget	0,25	0,13	0,31	0,16
Total	6,18	3,16	20,30	10,38

Bosnia and Herzegovina - Public finance support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Amount (in original currency)	Repayment period and interest rate	Beneficiary	International support	2021 (mil. BAM)	2021 (mil. EUR)	2022 (mil. BAM)	2022 (mil. EUR)	Average annual amount (million BAM)	Average annual amount (million EUR)
Loan 1 -Support for coal mining	Ministry of Finance Council of Ministers BiH	Government Loan Guarantee	4,110 million JPY	40 years, 10 years grace period, 0,75%	EPBiH i EPS	Government of Japan	34,29	17,53	29,92	15,30	32,10	16,41
Source: 2021: https://www.mft.gov.ba/Content/OpenAttachment?id=c56e4f18-9189-42d4-b0d0-4e9e9a72b67e&lang=bs 2022: https://www.mft.gov.ba/Content/OpenAttachment?id=d89597c7-8d5d-47c0-a6bc-70c6f92f4c0f&lang=bs												
Loan 2 - IDA Loan RITE Ugljevik and Gacko	Ministry of Finance Council of Ministers BiH	Government Loan Guarantee	N/A	10 -15years, 0,75 %	MH EPS	WB IDA	3,40	1,74	2,61	1,33	3,00	1,54
Source: 2021: https://www.blberza.com/Pages/DocView.aspx?id=104793 2022: https://cms.blberza.com/api/files/cms2/docver/105484/files/RTEU_Note%20uz%20FI%202022.pdf												
Loan 3 -Flue Gas Desulphurization Construction Project for Ugljevik	Ministry of Finance Council of Ministers BiH	Government Loan Guarantee	12,633 million JPY	30 years, 10 years grace period, 0,55%	MH EPS	Government of Japan	166,04	84,89	145,57	74,43	155,80	79,66
Source: 2021: https://www.mft.gov.ba/Content/OpenAttachment?id=c56e4f18-9189-42d4-b0d0-4e9e9a72b67e&lang=bs 2022: https://www.mft.gov.ba/Content/OpenAttachment?id=d89597c7-8d5d-47c0-a6bc-70c6f92f4c0f&lang=bs												
Loan 4 - TPP Tuzla Block 7 construction	Government of FBiH	Government Loan Guarantee	613,99 million EUR+ interest	20 years, 5 years grace period, 6 month EURIBOR+2,3 %	EPBiH	CEXIM Bank China	1200,87	613,99	1200,87	613,99	1200,87	613,99
Source: 2021, 2022: Audit Financial report EPBiH, notices, p. 40: https://www.epbih.ba/stranica/izvjestaji-o-poslovanju#izvjestaji-nezavisnog-revizora Federal Ministry of Finance, Capital projects review: http://www.fmf.gov.ba/v2/stranica.php?idstranica=147&idmeni=15												

Loan 5 - RITE Gacko	Government of RS	Government Loan Guarantee	6 million KM	5 years, 2,4%	MH EPS	Sberbank BiH	3,40	1,74	2,02	1,03	2,71	1,38
Source: 2021: https://www.mft.gov.ba/Content/OpenAttachment?id=c56e4f18-9189-42d4-b0d0-4e9e9a72b67e&lang=bs 2022: https://www.mft.gov.ba/Content/OpenAttachment?id=d89597c7-8d5d-47c0-a6bc-70c6f92f4c0f&lang=bs												
Loan 6 - RITE Gacko	Government of RS	Government Loan Guarantee	12,4 million KM	5 years, 2,39%	MH EPS	Nova Bank BiH	7,76	3,97	5,00	2,55	6,38	3,26
Source: 2021: https://www.mft.gov.ba/Content/OpenAttachment?id=c56e4f18-9189-42d4-b0d0-4e9e9a72b67e&lang=bs 2022: https://www.mft.gov.ba/Content/OpenAttachment?id=d89597c7-8d5d-47c0-a6bc-70c6f92f4c0f&lang=bs												
Total support							1415,75	723,86	1385,98	708,64	1400,86	716,25

Subsidies calculation

Loan 1	2021	2022
Interest rate on government guaranteed loan (%)	0,75	0,75
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	2,45	3,09

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs_html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	37,41	19,30	34,29	17,53
Interest rate difference (%)	2,45	2,45	3,09	3,09
Amount of the subsidy per year	0,92	0,47	1,06	0,54

Loan 2	2021	2022
Interest rate on government guaranteed loan (%)	0,75	0,75
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	2,45	3,09

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs_html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022

Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	7,42	3,79	3,40	1,74
Interest rate difference (%)	2,45	2,45	3,09	3,09
Amount of the subsidy per year	0,18	0,09	0,10	0,05

Loan 3	2021	2022
Interest rate on government guaranteed loan (%)	0,55	0,55
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	2,65	3,29

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs.html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	175,31	89,63	166,04	84,89
Interest rate difference (%)	2,65	2,65	3,29	3,29
Amount of the subsidy per year	4,64	2,37	5,46	2,79

Loan 4	2021	2022
Interest rate on government guaranteed loan (%)	1,93	1,93
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	1,26	1,91

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs.html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	1606,58	821,43	1200,87	613,99
Interest rate difference (%)	1,26	1,26	1,91	1,91

Amount of the subsidy per year	20,31	10,38	22,89	11,70
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Loan 5	2021	2022
Interest rate on government guaranteed loan (%)	2,40	2,40
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	0,80	1,44

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs_html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	4,75	2,43	5,60	2,86
Interest rate difference (%)	0,80	0,80	1,44	1,44
Amount of the subsidy per year	0,04	0,02	0,08	0,04

Loan 6	2021	2022
Interest rate on government guaranteed loan (%)	2,39	2,39
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	0,81	1,45

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs_html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan in previous year	10,46	5,35	7,76	3,97
Interest rate difference (%)	0,81	0,81	1,45	1,45
Amount of the subsidy per year	0,08	0,04	0,11	0,06

Summary of the subsidy calculations (Loans 1- 6)				
Year	2021	2021	2022	2022

Currency	million BAM	million EUR	million BAM	million EUR
Amount of the subsidy per year	26,17	13,38	29,71	15,19

Bosnia and Herzegovina - SOE Investment support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million BAM)	2021 (million EUR)	2022 (million BAM)	2022 (million EUR)	Average annual amount (million BAM)	Average annual amount (million EUR)
Investment in coal mines capital base	JP EPBiH d.d.	SOE Investment	7 coal mines in FBiH	8,05	4,12	8,38	4,29	8,21	4,20
Source: 2021: https://www.epbih.ba/upload/documents/izvjestaji/Izvjestaj_nezavisnog_revizora_JP_Elektroprivreda_BiH_Pojedinacni_2021.pdf 2022: https://www.epbih.ba/upload/documents/75SD_tacka2_REVIZIJA_KRACI.pdf									
Loans for coal mines	JP EPBiH d.d.	SOE Investment	7 coal mines in FBiH	260,68	133,28	333,14	170,33	296,91	151,81
Source: 2021: https://www.epbih.ba/upload/documents/izvjestaji/Izvjestaj_nezavisnog_revizora_JP_Elektroprivreda_BiH_Pojedinacni_2021.pdf 2022: https://www.epbih.ba/upload/documents/75SD_tacka2_REVIZIJA_KRACI.pdf									
Loan from Budget	JP EPBiH d.d.	SOE Investment	7 coal mines in FBiH	20,45	10,45	13,59	6,95	17,02	8,70
Source: 2021: https://www.epbih.ba/upload/documents/izvjestaji/Izvjestaj_nezavisnog_revizora_JP_Elektroprivreda_BiH_Pojedinacni_2021.pdf 2022: https://www.epbih.ba/upload/documents/75SD_tacka2_REVIZIJA_KRACI.pdf									
Total support				289,17	147,85	355,11	181,56	322,14	164,71

Subsidies calculation

Loans for coal mines	2021	2022
Interest rate on SOE loan (%)	1,50	1,50
Interest rate on comparable commercial loan* (%)	3,20	3,84
Interest rate difference	1,70	2,34

*Sources: http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_bs.html.aspx

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)					
Short term loans to coal mines	Year	2021	2021	2022	2022
	Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the loan		260,68	133,28	333,14	170,33
Interest rate difference (%)		1,70	1,70	2,34	2,34
Amount of the subsidy per year		4,42	2,26	7,79	3,98

Subsidy calculation for advanced payment to coal mines (amount of advanced payment x Interest rate on comparable commercial loan*)					
Advanced payment	Year	2021	2021	2022	2022
	Currency	million BAM	million EUR	million BAM	million EUR
Outstanding balance of the advanced payment		20,45	10,45	13,59	6,95
Interest rate on comparable commercial loan* (%)		3,20	3,20	3,84	3,84
Amount of the subsidy per year		0,65	0,33	0,52	0,27

SOE investment support					
Summary of calculated subsidies	Year	2021	2021	2022	2022
	Currency	million BAM	million EUR	million BAM	million EUR
Equity investment		8,05	4,12	8,38	4,29
Loans to coal mines		4,42	2,26	7,79	3,98
Advanced payment		0,65	0,33	0,52	0,27
Total		11,45	6,71	16,70	8,54

Annex 2. Kosovo* – Detailed list of subsidy measures

Kosovo* - Fiscal support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million EUR)	2022 (million EUR)	Average annual amount (million EUR)
Loans from Budget	Ministry of Finance	Government loans	KEK	138,2	126,8	132,5

Source http://kek-energy.com/kek/en/financial-audit-reports/						
Total support				138,2	126,8	132,5

Subsidies calculation

Loan	2021	2022
Interest rate on government guaranteed loan (%)	2,5	2,5
Interest rate on comparable commercial loan* (%)	5,7	6,5
Interest rate difference	3,2	4,0

*Sources:2021: https://bqk-kos.org/wp-content/uploads/2022/03/BQK_VT_TM4-2021-1.pdf

2022: https://bqk-kos.org/wp-content/uploads/2023/04/BQK_VTE_TM4_2022.pdf

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)		
Year	2021	2022
Currency	million EUR	million EUR
Outstanding balance of the loan in previous year	149,5	138,2
Interest rate difference (%)	3,2	4
Amount of the subsidy per year	4,79	5,53

Kosovo* - Public finance support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Amount (in original currency)	Repayment period and interest rate	Beneficiary	International support	2021 (mil. EUR)	2022 (mil. EUR)	Average annual amount (million EUR)
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Energy clean up and land reclamation project	Ministry of Finance	State loan guarantee	2,8 million SDR	20 years, 2%	KEK	WB IDA	2,7	2,53	2,62
Source: https://mf.rks-gov.net/page.aspx?id=2,29									
Total support							2,7	2,53	2,62

Subsidies calculation

Loan	2021	2022
Interest rate on government guaranteed loan (%)	2,0	2,0
Interest rate on comparable commercial loan* (%)	5,7	6,5
Interest rate difference	3,7	4,5

*Sources:2021: https://bqk-kos.org/wp-content/uploads/2022/03/BQK_VT_TM4-2021-1.pdf

2022: https://bqk-kos.org/wp-content/uploads/2023/04/BQK_VTE_TM4_2022.pdf

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)		
Year	2021	2022
Currency	million EUR	million EUR
Outstanding balance of the loan in previous year	2,85	2,70
Interest rate difference (%)	3,7	4,5
Amount of the subsidy per year	0,11	0,12

Annex 3. Montenegro – Detailed list of subsidy measures

Montenegro - Fiscal support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million EUR)	2022 (million EUR)	Average annual amount (million EUR)
RU Pljevlja	Ministry of Finance/Tax administration	Tax and contributions in arrears	RU Pljevlja	1,10	0,00	1,10
Source: 2021/2022: Annual reports of the company https://www.scmn.me/me/ucesnici-na-trzistu/emitenti/r-s-s-t-u/rudnik-uglja						
Total support				1,10	0,00	1,10

Subsidies calculation

	2021	2022
Yield on government bonds* (%)	2,55	2,55

* <https://www.cbcg.me/en/publications/regular-publications/central-bank-of-montenegro-annual-report>

Subsidy calculation (outstanding balance of the arrears multiplied by yield on government bonds)		
Year	2021	2022
Currency	million EUR	million EUR
Outstanding balance of the tax and contributions	1,10	0,00
Yield on government bonds (%)	2,55	2,55
Amount of the subsidy per year	0,03	0,00

Montenegro - Public finance support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Amount (in original currency)	Repayment period and interest rate	Beneficiary	International support	2021 (mil. EUR)	2022 (mil. EUR)	Average annual amount (million EUR)
Filters replacement in TE Pljevlja	Ministry of finance	State Loan guarantee	9,5 million EUR	9 years 6m Euribor+1%	EPCG	KfW	2,06	0,56	2,67
Source: 2021/2022: Annual reports of the company https://www.scmn.me/me/ucesnici-na-trzistu/emitenti/e-f-g-h/elektroprivreda-cme-gore									
Total support							2,06	0,56	2,67

Subsidies calculation

	2021	2022
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Interest rate on government guaranteed loan (%)	0,51	2,10
Euribor*	-0,491	1,1
Interest rate	1	1
Interest rate on comparable commercial loan** (%)	4,24	4,88
Interest rate difference	3,73	2,78

*Sources: <https://www.global-rates.com/en/interest-rates/euribor/2022.aspx>

** <https://www.cbcg.me/en/statistics/statistical/interest-rates>

Subsidy calculation (outstanding balance of the loan in previous year x Interest rate differential)		
Year	2021	2022
Currency	million EUR	million EUR
Outstanding balance of the loan in previous year	2,29	2,06
Interest rate difference (%)	3,73	2,78
Amount of the subsidy per year	0,09	0,06

Annex 4. North Macedonia – Detailed list of subsidy measures

North Macedonia- Public finance support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Amount (in original currency)	Repayment period and interest rate	Beneficiary	International support	2021 (mil. MKD)	2021 (mil. EUR)	2022 (mil. MKD)	2022 (mil. EUR)	Average annual amount (million MKD)	Average annual amount (million EUR)
Modernization of Units 2 and 3 of Boilers in TPP Bitola (loan 1)	Ministry of finance	State Loan guarantee	49,2 million EUR	12 years 6month EURIBOR + 1,675%	AD ESM	Deutsche Bank	625,1	10,1	373,5	6,1	499,3	8,1
Source: 2021: https://www.esm.com.mk/wp-content/uploads/2023/04/AD-ESM-GODISEN-IZVESTAJ-2021.pdf 2022: https://www.esm.com.mk/wp-content/uploads/2023/04/AD-ESM-Godisen-Finansiski-izvestaj-za-2022.pdf												
Modernization of TPP Bitola (loan 2)	Ministry of finance	State Loan guarantee	30 million EUR	14 years, 1month EURIBOR + 2,6%	AD ESM	Stopanska banka	252,1	4,1	83,9	1,4	168,0	2,7
Source: 2021: https://www.esm.com.mk/wp-content/uploads/2023/04/AD-ESM-GODISEN-IZVESTAJ-2021.pdf 2022: https://www.esm.com.mk/wp-content/uploads/2023/04/AD-ESM-Godisen-Finansiski-izvestaj-za-2022.pdf												
Total support							877,3	14,3	457,4	7,4	667,3	10,8

Subsidies calculation

Loan 1	2021	2022
Interest rate on government guaranteed loan (%)	1,152	2,357
EURIBOR*	-0,523	0,682
Interest rate	1,675	1,675
Interest rate on comparable commercial loan** (%)	3,46	3,50
Interest rate difference	2,31	1,14

*Source: [Euribor interest rates 2022 \(global-rates.com\)](https://www.euribor.com/)

**Source Central bank: <https://nbstat.nbrm.mk/pxweb/en/MS%20i%20KS/>

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
	million MKD	million EUR	million MKD	million EUR
Outstanding balance of the loan in previous year	876,9	14,2	625,1	10,2
Interest rate difference (%)	2,31	2,31	1,14	1,14

Amount of the subsidy per year	20,24	0,33	7,15	0,12
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Loan 2	2021	2022
Interest rate on government guaranteed loan (%)	2,039	2,694
EURIBOR*	-0,561	0,094
Interest rate	2,60	2,60
Interest rate on comparable commercial loan** (%)	3,46	3,50
Interest rate difference	1,42	0,81

*Sources: [Euribor interest rates 2022 \(global-rates.com\)](https://www.global-rates.com/)

**Source Central bank: <https://nbstat.nbrm.mk/pxweb/en/MS%20i%20KS/>

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million MKD	million EUR	million MKD	million EUR
Outstanding balance of the loan in previous year	420,6	6,8	252,1	4,1
Interest rate difference (%)	1,42	1,42	0,81	0,81
Amount of the subsidy per year	5,98	0,10	2,03	0,03

Summary of the subsidy calculations (Loans 1- 2)				
Year	2021	2021	2022	2022
Currency	million MKD	million EUR	million MKD	million EUR
Loan 1	20,24	0,33	7,15	0,12
Loan 2	5,98	0,10	2,03	0,03
Total subsidies	26,22	0,42	9,18	0,15
Average amount of the subsidy per year	13,11	0,21	4,59	0,07

Annex 5. Serbia – Detailed list of subsidy measures

Serbia - Fiscal support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million RSD)	2021 (million EUR)	2022 (million RSD)	2022 (million EUR)	Average annual amount (million RSD)	Average annual amount (million EUR)
Budgetary expenditure for underground coal mines	Government	Direct Budget transfer	JP PEU Resavica	4 239,31	36,06	2 412,97	20,54	3 326,14	28,30
Source: Financial statements, Annual reports and Audit reports available on Serbian Business Registers Agency https://www.apr.gov.rs/registers.1608.html									
Note: Calculated 50% of total amount (50% of total coal production goes to electricity production)									
Taxes, contributions and other public revenues in arrears (underground coal mines)	Tax administration	Taxes and contribution in arrears	JP PEU Resavica	610,48	5,19	356,90	3,04	483,69	4,12
Source: Financial statements, Annual reports and Audit reports available on Serbian Business Registers Agency https://www.apr.gov.rs/registers.1608.html									
Note: Calculated 50% of total arrears (50% of total coal production goes to electricity production)									
Taxes and contributions in arrears reprogrammed (underground coal mines)	Government / Tax administration	Taxes and contribution in arrears	JP PEU Resavica	1 839,33	15,64	1 839,36	15,66	1 839,34	15,65
Source: Financial statements, Annual reports and Audit reports available on Serbian Business Registers Agency https://www.apr.gov.rs/registers.1608.html									
Note: Reprogrammed by RS Tax Administration Calculated 50% of arrears (50% of total coal production goes to electricity production)									
Budgetary expenditure for filters in TENT	Government	Direct Budget transfer	JP EPS Belgrade	158,34	1,35	416,50	3,55	287,42	2,45
Source: Financial and annual reports of the company https://www.eps.rs/lat/Stranice/Finansijski-izvestaji.aspx									
Loan to JP PEU Resavica from budget (loan 1)	Government	Government loan	JP PEU Resavica	561,09	4,77	622,84	5,30	591,97	5,04
Source: Financial statements, Annual reports and Audit reports available on Serbian Business Registers Agency https://www.apr.gov.rs/registers.1608.html									
Note: Calculated 50% of total amount (50% of total coal production goes to electricity production) no repayment, no interest rate - Conditional loan									
Total support				7 408,55	63,01	5 648,57	48,09	6 528,56	55,55

Subsidies calculation

	2021	2022
Yield on government bonds* (%)	2,16	2,99

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Subsidy calculation (outstanding balance of the arrears multiplied by yield on government bonds)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	2 449,81	20,84	2 196,25	18,70
Interest rate difference (%)	2,16	2,16	2,99	2,99
Amount of the subsidy per year	52,92	0,45	65,67	0,56

Loan 1	2021	2022
Interest rate on government conditional loan	0,00	0,00
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	3,52	5,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 1

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	561,09	4,77	622,84	5,30
Interest rate differential (%)	3,52	3,52	5,34	5,34
Amount of the subsidy per year	19,75	0,17	33,26	0,28

Fiscal support summary of calculated subsidies				
Year	2021	2021	2022	2022

Currency	million RSD	million EUR	million RSD	million EUR
Budgetary expenditures	4 397,65	37,40	2 829,47	24,09
Taxes and contributions in arrears	52,92	0,45	65,67	0,56
Government Loans	19,75	0,17	33,26	0,28
	4 450,56	37,85	2 895,14	24,65

Serbia - Public finance support-direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Amount (in original currency)	Repayment period and interest rate	Beneficiary	International support	2021 (mil. RSD)	2021 (mil. EUR)	2022 (mil. RSD)	2022 (mil. EUR)	Average annual amount (million RSD)	Average annual amount (million EUR)
Loan to JP PEU Resavica (loan 1)	Development Fund of Serbia	Loan provided by state institution	2234 million RSD	no repayment	JU PEU Reasavica	no	1 145,71	9,74	1 174,15	10,00	1 159,93	9,87
Loan to JP PEU Resavica (loan 2)	Deposit insurance Agency of Serbia	Loan provided by state institution	261701 EUR	no repayment	JU PEU Reasavica	no	15,81	0,13	16,20	0,14	16,00	0,14
"Flue Gas Desulphurization Construction Project for Thermal Power Plant Nikola Tesla A." (loan 3)	Ministry of Finance	State Loan guarantee	28,252 billion Yen (cca 213 million EUR)	15 years, 0,6%	JP EPS Belgrade	JICA ODA Loan	16 020,94	136,26	17 137,69	145,90	16 579,32	141,08
Flue Gas Desulphurization Construction Project for Thermal Power Plant Kostolac B (loan 4)	Ministry of Finance	State Loan guarantee	286,6 million USD (cca 242,9 million EUR)	15 years, 3%	JP EPS Belgrade	China Exim Bank	16 720,27	142,21	14 499,68	123,44	15 609,98	132,83
Kolubara project A - design, production and installation of the BTO system for the future surface kop Field C (loan 5)	Ministry of Finance	State Loan guarantee	78,5 million EUR	8,5 years, 6M EURIBOR + 1%	JP EPS Belgrade	EBRD	1 827,04	15,54	607,67	5,17	1 217,35	10,36

EPS Restructuring project (refinancing of existing loans in commercial banks 2015) (loan 6)	Ministry of Finance	State Loan guarantee	200 million EUR	15 years, 6 M EURIBOR +1%	JP EPS Belgrade	EBRD	14 806,64	125,94	13 035,82	110,98	13 921,23	118,46
Kolubara project B and C - Interlayer stacker for Tamnava West Field and coal quality management system for Tamnava surface mine (loan 7)	Ministry of Finance	State Loan guarantee	65 million EUR	6,5 years, variable 0,86%	JP EPS Belgrade	KfW	3 527,46	30,00	2 346,44	19,98	2 936,95	24,99
Part of Emergency flood recovery project (loan 8)	Ministry of Finance	State Loan guarantee	14,96 million EUR	21 years, 6 M EURIBOR + 0,8%	JP EPS Belgrade	IBRD	1 764,09	15,00	1 762,37	15,00	1 763,23	15,00
TENT A, modernization and ash transportation system (loan 9)	Ministry of Finance	State Loan guarantee	45 million EUR	12 years, 5 years grace period, 1 %	JP EPS Belgrade	KfW	17,26	0,15	0,00	0,00	8,63	0,07
Kostolac B second Phase Drmno open pit mine and 350 MW unit at Kostolac B (loan 10)	Ministry of Finance	State Loan guarantee	608 million USD (cca 529 million EUR)	20 years, 2,5%	JP EPS Belgrade	China Exim Bank	23 830,54	202,69	41 118,39	350,07	32 474,47	276,38
Source: https://www.eps.rs/cir/SiteAssets/Pages/Finansijski-izvestaji/EPS%20konsolidovani%20izvestaj%202021-apr.pdf												
Total support							79 675,75	677,77	91 698,41	780,69	85 687,08	729,18

Subsidies calculation

Loan 1	2021	2022
Interest rate on government conditional loan	0,00	0,00
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	3,52	5,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 1

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	1 145,71	9,74	1 174,15	10,00
Interest rate differential (%)	3,52	3,1	5,34	5,34
Amount of the subsidy per year	40,33	0,30	62,70	0,53

Loan 2	2021	2022
Interest rate on government conditional loan	0,00	0,00
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	3,52	5,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 2

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	15,81	0,13	16,20	0,14
Interest rate differential (%)	3,52	3,52	5,34	5,34
Amount of the subsidy per year	0,56	0,00	0,86	0,01

Loan 3	2021	2022
Interest rate on government conditional loan	0,6	0,6
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	2,92	4,74

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 3

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	10 533,83	89,59	16 020,94	136,26
Interest rate differential (%)	2,92	2,92	4,74	4,74
Amount of the subsidy per year	307,59	2,62	759,39	6,46

Loan 4	2021	2022
Interest rate on government conditional loan	3,00	3,00
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	0,52	2,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 4

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	18 189,31	154,70	16 720,27	142,21
Interest rate differential (%)	0,52	0,52	2,34	2,34
Amount of the subsidy per year	94,58	0,80	391,25	3,33

Loan 5	2021	2022
Interest rate	1,00	1,00
Euribor*	-0,52	0,68
Interest rate on government guaranteed loan	0,48	1,68
Interest rate on comparable commercial loan**	3,52	5,34
Interest rate differential	3,04	3,66

* Source: <https://www.global-rates.com/en/interest-rates/euribor/2021.aspx>

**Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 5

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	3 045,13	25,90	1 827,04	15,54
Interest rate differential (%)	3,04	3,04	3,66	3,66
Amount of the subsidy per year	92,66	0,79	66,83	0,57

Loan 6	2021	2022
Interest rate	1,00	1,00
Euribor*	-0,52	0,68
Interest rate on government guaranteed loan	0,48	1,68
Interest rate on comparable commercial loan**	3,52	5,34
Interest rate differential	3,04	3,66

* Source: <https://www.global-rates.com/en/interest-rates/euribor/2021.aspx>

**Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/druzi-nivo-navigacije/statistika/ks_stat/

Loan 6

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	16 548,32	140,74	14 806,64	125,94
Interest rate differential (%)	3,04	3,04	3,66	3,66
Amount of the subsidy per year	503,57	4,28	541,63	4,61

Loan 7	2021	2022
Interest rate	0,86	0,86
Euribor*	-0,52	0,68
Interest rate on government guaranteed loan	0,34	1,54
Interest rate on comparable commercial loan**	3,52	5,34

Interest rate differential	3,18	3,80
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* Source: <https://www.global-rates.com/en/interest-rates/euribor/2021.aspx>

**Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 7

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	4 703,20	40,00	3 527,46	30,00
Interest rate differential (%)	3,18	3,18	3,80	3,80
Amount of the subsidy per year	149,70	1,27	133,97	1,14

Loan 8	2021	2022
Interest rate	0,80	0,80
Euribor*	-0,52	0,68
Interest rate on government guaranteed loan	0,28	1,48
Interest rate on comparable commercial loan**	3,52	5,34
Interest rate differential	3,24	3,86

* Source: <https://www.global-rates.com/en/interest-rates/euribor/2021.aspx>

**Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 8

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	1 756,58	14,94	1 764,09	15,00
Interest rate differential (%)	3,24	3,24	3,86	3,86
Amount of the subsidy per year	56,97	0,48	68,06	0,58

Loan 9	2021	2022
Interest rate	1,00	1,00
Interest rate on government conditional loan	1,00	1,00
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	2,52	4,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 9

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	17,26	0,15	17,26	0,15
Interest rate differential (%)	2,52	2,52	4,34	4,34
Amount of the subsidy per year	0,43	0,00	0,75	0,01

Loan 10	2021	2022
Interest rate on government guaranteed loan	2,50	2,50
Interest rate on comparable commercial loan*	3,52	5,34
Interest rate differential	1,02	2,84

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Loan 10

Subsidy calculation (outstanding balance of the loan in previous year multiplied by Interest rate difference)				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR
Outstanding balance of the loan in previous year	16 800,38	142,89	23 830,54	202,69
Interest rate differential (%)	1,02	1,02	2,84	2,84
Amount of the subsidy per year	171,36	1,46	676,79	5,76

Public finance support -summary of calculated subsidies				
Year	2021	2021	2022	2022

Currency	million RSD	million EUR	million RSD	million EUR
Loan 1	40,33	0,30	62,70	0,53
Loan 2	0,56	0,00	0,86	0,01
Loan 3	307,59	2,62	759,39	6,46
Loan 4	94,58	0,80	391,25	3,33
Loan 5	92,66	0,79	66,83	0,57
Loan 6	503,57	4,28	541,63	4,61
Loan 7	149,70	1,27	133,97	1,14
Loan 8	56,97	0,48	68,06	0,58
Loan 9	0,43	0,00	0,75	0,01
Loan 10	171,36	1,46	676,79	5,76
Amount of the subsidies per year	1 417,75	12,02	2 702,24	22,98

Serbia - SOE Investment support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million RSD)	2021 (million EUR)	2022 (million RSD)	2022 (million EUR)	Average annual amount (million RSD)	Average annual amount (million EUR)
Loan to underground coal mines	JP EPS Belgrade	Loan provided by SOE	JP PEU Resavica	1 166,91	9,92	1 166,91	9,93	1 166,91	9,93
Debt for Electricity	JP EPS Belgrade	Right not to pay	JP PEU Resavica	41,28	0,35	607,60	5,17	324,44	2,76
Total support				1 208,19	10,28	1 774,51	15,11	1 491,35	12,69

Subsidies calculation

	2021	2022
Interest rate on comparable commercial loan*	3,52	5,34

* Source: National Bank of Serbia: https://www.nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/ks_stat/

Subsidy calculation ((outstanding balance of the loan and debt for electricity * interest rate on comparable commercial loan))				
Year	2021	2021	2022	2022
Currency	million RSD	million EUR	million RSD	million EUR

Outstanding balance of the loan in previous year	1 208,19	10,28	1 774,51	15,11
Interest rate on comparable commercial loan (%)	3,52	3,52	5,34	5,34
Amount of the subsidy per year	42,53	0,36	94,76	0,81

Annex 6. Ukraine – Detailed list of subsidy measures

Ukraine - Fiscal support direct subsidies

Measure or project (written description)	Source of subsidy (entity / institution name)	Subsidy type	Beneficiary	2021 (million UAH)	2021 (million EUR)	2022 (million UAH)	2022 (million EUR)	Average annual amount (million UAH)	Average annual amount (million EUR)
Restructuring of coal and peat industry	Ministry of Energy of Ukraine	Direct budget transfer	state coal mines	4615,04	142,84	3224,99	94,91	3920,02	118,87
Sources: 2021: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%20350%20%D0%B2%D1%96%D0%B4%2024.12.2021.pdf 2022: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%20100%20%D0%B2%D1%96%D0%B4%2003.03.2022.pdf									
Rescue measures at coal mining enterprises	Ministry of Energy of Ukraine	Direct budget transfer	state coal mines	340,00	10,52	340,00	10,01	340,00	10,26
Sources: 2021: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%202%20%D0%B2%D1%96%D0%B4%2009.03.2021.pdf 2022: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%2039%20%D0%B2%D1%96%D0%B4%2004.02.2022.pdf									
Decommissioning of unprofitable coal and peat mining enterprises	Ministry of Energy of Ukraine	Direct budget transfer	state coal mine	560,65	17,35	1032,46	30,38	796,55	23,87
Sources: 2021: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%20354%20%D0%B2%D1%96%D0%B4%2024.12.2021.pdf 2022: https://mev.gov.ua/sites/default/files/field/file/order/%D0%9D%D0%B0%D0%BA%D0%B0%D0%B7%20%E2%84%96%2066%20%D0%B2%D1%96%D0%B4%2016.02.2022.pdf									
Taxes and contributions in arrears - state coal mines	Government/Tax administration	Taxes and contributions	state coal mines	10 238,49	316,88	14 026,73	412,79	12 132,61	364,84
Source 2021, 2022: https://cabinet.tax.gov.ua/registers									
Taxes and contributions in arrears - Centrengo	Government / Tax administration	Taxes and contributions	Centrengo	12,62	0,39	17,29	0,51	14,96	0,45
Source 2021, 2022: https://cabinet.tax.gov.ua/registers									
State support for remount of TPP	Ministry of Energy of Ukraine	Direct budget transfer	Centrengo	39,11	1,21	na	na	39,11	1,21
Source 2021: https://www.centrengo.com/en/reg-info/ information for III quarter 2021 2022: report is not available for 2022									
Total support				15 805,91	489,20	18 641,47	548,60	17 223,69	518,90

Note: VAT exemption for operations on supplying coal and/or products of its enrichment on the customs territory of Ukraine, are not available from Ministry of finance. This kind of support is not presented.

2021: 1 EUR = 32.31 UAH, 2022: 33.98 UAH - Source: National Bank of Ukraine: www.bank.gov.ua/files/Exchange_r.xls

Subsidies calculation

	2021	2022
Yield on government bonds* (%)	11,34	18,26

* Source: National Bank of Ukraine <https://bank.gov.ua/en/statistic/sector-financial>

Subsidy calculation for taxes and contributions in arrears (amount of debt) x Interest rate on government bonds)				
Year	2021	2021	2022	2022
Currency	million UAH	million EUR	million UAH	million EUR
Outstanding balance of tax and con. in arrears	10 251,11	317,27	14 044,02	413,30
Interest rate on government bonds yield (%)	11,34	11,34	18,26	18,26
Amount of the subsidy per year	1 162,48	35,98	2 564,44	75,47

Summary of calculated subsidies				
Year	2021	2021	2022	2022
Currency	million UAH	million EUR	million UAH	million EUR
Taxes and contrib. in arrears	1 162,48	35,98	2 564,44	75,47
Direct budget transfer	5 554,80	171,92	4 597,45	135,30
Total	6 717,27	207,90	7 161,89	210,77