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Western Balkans hydropower

Who pays, who profits?

How renewables incentives have fed the small hydropower boom and what needs to change

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The Tresonecka hydropower plant in the Mavrovo National Park, North Macedonia
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*According to the UN, Kosovo is "under the United Nations Interim Administration Mission in Kosovo (UNMIK) established pursuant to Security Council Resolution 1244." In this publication it is referred to as "Kosovo".

Executive Summary

In the last decade, a wave of hydropower construction in the Western Balkans¹ has caused ever-increasing public outcry. Large hydropower projects have long caused public resistance, but the mushrooming of smaller plants of less than 10 megawatts (MW) in remote and often ecologically sensitive areas has intruded into communities across the region, causing a wave of protests and blockades.

Rivers and streams have been dammed and put into derivation pipes, their riverbeds left dry. In some cases, local people have been left without water for irrigation and for animals to drink. Deforestation for the construction of access roads and pipelines has led to erosion and habitat destruction.

According to our research, **between 2009 and the end of 2018, at least 380 small hydropower plants were built in the region, of which virtually all receive feed-in tariffs.** This quadrupled the overall number, from 108 to at least 488.

One of the main drivers of the destructive small hydropower boom in the Western Balkans is the availability of public financial support in the form of feed-in tariffs. Originally foreseen as a means to boost all forms of renewable energy, including solar and wind, in the Western Balkans feed-in tariffs have been disproportionately directed towards small hydropower plants.

In 2018, 70 per cent of renewable energy support in the Western Balkans benefited small hydropower.

Yet small hydropower's contribution to electricity generation is extremely modest: **In 2018, only 3.6 per cent of electricity in the Western Balkans was generated by hydropower plants under 10 MW.**

As well as contributing to environmental damage, incentives for hydropower in the Western Balkans have attracted widespread criticism **for benefiting wealthy business people close to - or in - the region's governments.** Examples include:

- North Macedonia's Deputy Prime Minister for Economic Affairs, Kocho Angjushev - owns at least 27 small hydropower plants - and the president of the main opposition party, Hristijan Mickoski also holds at least 5 concessions.
- In Serbia, companies connected to Nikola

Petrović, the best man (*kum*) of President Aleksandar Vučić, are among the top beneficiaries of hydropower support.

- Montenegro's renewables incentives system has lost public credibility by mainly benefiting people close to the President, Milo Đukanović.

More and more people are asking why they should support small hydropower through their energy bills. The fact that ordinary people have had little access to incentives, e.g. for household solar, while well-connected businesses have benefitted from millions of euros, increases public resentment.

Perceived corruption and nepotism in the renewables incentives system endangers public acceptance of the whole transition to an energy efficient, renewables-based energy system.

It urgently needs to be addressed by switching to a more transparent renewables support system, in line with the EU's Guidelines on State Aid for Environmental Protection and Energy, to ensure affordable and proportionate incentives.

Montenegro and Albania have already taken some action. Montenegro is phasing out incentives altogether and Albania approved a law in early 2017 introducing an auction-based system for larger plants by 2020. North Macedonia has also taken steps towards an auction system, but left feed-in tariffs for hydropower intact, giving it an unfair advantage over solar and wind. The remaining countries - Serbia, Bosnia and Herzegovina and Kosovo - need to change their renewables incentives systems as soon as possible.

Hydropower in the Western Balkans has proven to be environmentally destructive, vulnerable to climate change and has received overly strong support so far. Governments need to end incentives for mature technologies such as hydropower. Only technologies which are still developing and whose costs are expected to fall further need support through State aid, especially solar and wind in cases where they would not be viable without incentives.

Some very large plants such as the 250 MW solar farm tendered in 2018 in Montenegro may be viable without incentives. However this does not yet apply to all renewables and we

¹ Albania, Bosnia and Herzegovina (BiH), Kosovo*, Montenegro, North Macedonia, Serbia. *According to the UN, Kosovo is "under the United Nations Interim Administration Mission in Kosovo (UNMIK) established pursuant to Security Council Resolution 1244." In this publication it is referred to as "Kosovo".

do not propose cutting incentives completely. Considering that Serbia, Bosnia and Herzegovina and Kosovo paid out more subsidies for coal than renewable energy in the period 2015-2017, renewable energy will have difficulty in competing if the playing field is not level.

Since the existing feed-in tariff contracts for small hydropower are valid for several more years, these also need to be reviewed. Any which granted incentives without all the legal conditions being fulfilled - including environmental ones - must be cancelled. Failure to tackle the integrity issues of the current renewables incentives schemes will slow down an already lagging energy transition in the region and cost us all dearly.

The European Commission and the Energy Community need to play a role in ending state financial support for destructive hydropower plants by ensuring that the EU's rules on State aid - including provisions on environmental sustainability - are applied in the Western Balkans. The countries have already committed to do this by signing the Energy Community Treaty and Stabilisation and Association Agreements with the EU, so there is no reason to delay.

Local people and Balkan River Defence join forces against the planned Bukovica small hydropower plant in Montenegro. Photo: Katja Jemec, Balkan River Defence



Introduction

In the last decade, a wave of hydropower construction in the Western Balkans² has caused ever-increasing public outcry.

Large hydropower projects³ in the region have long caused public resistance in the region - even back in the 1970s communities and experts resisted the Buk Bijela dam that would have flooded the Tara canyon in Montenegro.⁴

But the mushrooming of large numbers of smaller plants in remote areas has intruded into the lives of communities across the region to a much wider extent, causing a wave of protests and blockades.

While many people assume that small plants have small impacts, this has not been the case in the ecologically valuable rivers of the Balkans. Lack of strategic planning, lack of - or very poor quality - environmental assessments, and non-existent or inadequate legislation on the amount of water to be left running downstream of dams mean that riverbeds have been left completely dry at times.

These small plants are usually derivation-type plants, involving rivers and streams being dammed and put into pipes to increase the water velocity and therefore the efficiency of the plant. In some cases, local people have been left without water for irrigation and for animals to drink. Deforestation for the construction of access roads and pipelines has led to erosion and habitat destruction, while the laying of the pipelines has disrupted kilometre after kilometre of river banks.

The issue is gaining increasing attention internationally, including at the Energy Community Sustainability Forum in June 2019:

"(T)he contribution of small hydropower plants to energy production in the Energy Community is extremely limited, while their impacts on the environment are disproportionately high. The environment frequently falls victim to poor implementation of the rules on environmental assessment, with cumulative and transboundary impacts often not assessed at all. Therefore, the development of greenfield projects should be

*scrutinised, while full and proper implementation of Energy Community legislation on environmental assessments (at project, river basin and regional level) is a prerequisite to any project."*⁵

One of the drivers of this destructive small hydropower boom in the Western Balkans is the availability of public subsidies in the form of "feed-in tariffs". Originally foreseen as a means to boost all forms of renewable energy, including solar and wind, in the Western Balkans they have been disproportionately directed towards small hydropower plants.

As public resistance towards hydropower grows, more and more questions are arising as to why consumers should support small hydropower through their energy bills, especially given its modest contribution to the electricity supply. The fact that ordinary people have had little access to incentives, e.g. for household solar, while well-connected businesses, often close to governments, have benefitted from millions of euros per year for hydropower plants, increases public resentment towards the incentives system.

This is not in our interest. The Energy Community has recently shown that between 2015 and 2017, EUR 458 million in direct coal subsidies were distributed in the Western Balkans (see [Table 1](#)), together with more than a billion euros in hidden subsidies such as failure to impose a carbon price and failure to ensure that state-owned companies operate profitably (*not included in the table*).⁶ These subsidies are decreasing in Kosovo and North Macedonia, fluctuating in Montenegro and Serbia, and increasing in Bosnia and Herzegovina (BIH).

For as long as the climate-damaging and health-damaging coal industry enjoys millions of euros in subsidies across the region, the playing field will not be level for renewable energy. Small installations especially will need public financial support, and we cannot afford to allow the energy transition to be discredited. But at the same time, renewables subsidies are growing, and their costs cannot be allowed to increase indefinitely.

2 Albania, Bosnia and Herzegovina (BIH), Kosovo*, Montenegro, North Macedonia, Serbia. *According to the UN, Kosovo is "under the United Nations Interim Administration Mission in Kosovo (UNMIK) established pursuant to Security Council Resolution 1244." In this publication it is referred to as "Kosovo".

3 There is no single definition for large/small hydropower projects. The International Commission on Large Dams defined them as those higher than 15 metres from their foundation (see [World Commission on Dams: Dams and Development - A new framework for decision-making, November 2000](#)) but the threshold of 10 MW installed capacity is more usually used in the Western Balkans, even though such plants can have quite large dams.

4 Today, the project has been re-designed and reduced in capacity, but is still controversial. For more details see: CEE Bankwatch Network: [Buk Bijela and the Upper Drina cascade](#).

5 Energy Community [Sustainability Forum Statement](#), 27 June 2019.

6 Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

Table 1: Amount of state support to production of electricity from renewables and coal⁷

| In EUR million | | | | | | |
|------------------------|--|-------|-------|--|--------|-------|
| Contracting party | Paid incentives for production from renewables | | | Paid direct subsidies for production from coal | | |
| | 2015 | 2016 | 2017 | 2015 | 2016 | 2017 |
| Bosnia and Herzegovina | 17.6 | 20.16 | 25.04 | 26.19 | 35.55 | 48.25 |
| Kosovo | 1.63 | 7.67 | 5.56 | 30.89 | 8.77 | 7.5 |
| Montenegro | 0.96 | 3.96 | 4.1 | 0.88 | 1.16 | 0.7 |
| North Macedonia | 15.46 | 20.53 | 20.09 | 4.38 | 3.72 | 2.93 |
| Serbia | 17.17 | 24.47 | 34.8 | 90.75 | 115.75 | 80.61 |

Source: Energy Community Secretariat

Decision-makers in fact long ago committed to take action, but have not done so in reality: In 2010, world leaders⁸ committed to the Aichi Targets developed under the Convention on Biological Diversity. Target 3 states that:

“By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.”⁹

This report aims to act as a wake-up call to decision-makers, both on the national and EU levels, to recognise the urgency of changing the renewables incentive schemes in line with EU requirements. It shows how hydropower has been systematically prioritised for public financial support at the expense of newer sources such as solar and wind and how this threatens public acceptance of renewable energy altogether.

It also provides case studies from Montenegro, North Macedonia and Serbia of business

people close to the Government - and in a few cases *in* the Government - receiving significant incentives. Far from being an obscure technical matter, who gets what in the energy transition is a fundamental rule of law issue. Therefore any incentives system must be completely transparent, no matter the technology.

The report calls for a redistribution of support away from mature technologies like hydropower towards demand-side energy efficiency, appropriately-sited wind and especially solar. Not only do solar and wind offer environmental advantages, depending on their siting, but hydropower is also increasingly unreliable due to climate change and fluctuating rainfall, as shown in 2017 and early 2019. Diversification of renewables is therefore an energy security imperative in countries like Albania, Montenegro and to some extent also Bosnia and Herzegovina.

The report also examines the extent to which each country is making changes to its support system in practice. Finally, we make recommendations on how to move forward in order to ensure a sustainable support system for renewable energy in the region.

⁷ Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

⁸ All Western Balkans countries except Kosovo are parties to the UN Convention on Biological Diversity.

⁹ UN Convention on Biological Diversity: [Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets](#)

The Western Balkans' energy mix

The Western Balkan countries' energy mix traditionally consists of coal and hydropower for electricity generation, combined with wood for household heating. The proportions vary widely, with Albania generating 100 per cent of its domestic electricity from hydropower and Kosovo generating 95 per cent of its electricity from lignite.

Table 2: Western Balkans electricity mix 2018, in per cent

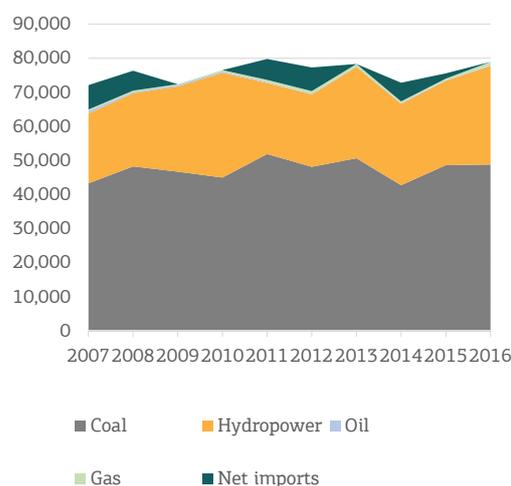
| Country | Coal | Hydropower | Gas | Wind | Solar | Biomass/ Biogas |
|------------------------|------|------------|-----------------|------|-------|-----------------|
| Albania | 0 | 100 | 0 | 0 | 0 | 0 |
| Bosnia and Herzegovina | 61.3 | 37.8 | 0 | 0.6 | 0.1 | 0 |
| Kosovo | 94.4 | 5 | 0 | 0.5 | 0 | 0 |
| North Macedonia | 49.6 | 33.7 | 13.4 | 1.8 | 0.4 | 1 |
| Montenegro | 38.6 | 57.1 | 0 | 4.3 | 0 | 0 |
| Serbia | 65.7 | 31.6 | 2 ¹⁰ | 0.4 | 0 | 0.4 |

Source: National energy regulatory authority annual reports for 2018¹¹

The region as a whole in some years generates enough electricity to cover its needs, but not always. Bosnia and Herzegovina is a net exporter and Serbia meets its own demand. Montenegro and Albania depend heavily on hydrological conditions and meet their demand only in rainy years, while North Macedonia is a net electricity importer. Kosovo in some years generates as much as it consumes, but suffers from a lack of flexibility due to its reliance on coal, a poor distribution network and the fact that a newly-built interconnection with Albania is not yet operating due to a political dispute.¹² Graphs showing the electricity mix and imports in recent years for each country can be found in Annex 1.

However, all the Western Balkan countries need new electricity generation capacity, due to the prevalence of ageing lignite-fired power plants (except in Albania). These plants will need to be closed in the next few years due to their age, low efficiency and non-compliance with EU industrial emissions legislation.

Figure 1: Western Balkans Six electricity mix and net imports



Source: IEA statistics: Electricity and heat 2007-2016

10 This is an estimate as the Serbian energy regulator's report contains categories that do not contain the exact fuel mix but are understood to consist primarily of gas.

11 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018](#), March 2019; Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019; Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

12 European Commission: Commission Staff Working Document [Kosovo* 2019 Report](#) Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2019 Communication on EU Enlargement Policy, 29.05.2019

The small hydropower boom begins

From the middle of the 2000s, some of the Western Balkans' countries - notably Albania and Bosnia and Herzegovina - started issuing concessions for small hydropower plants, presumably inspired by countries like Bulgaria, whose small hydropower boom had already started during the late 1990s.

The EU had set targets in 1997 for the share of renewable energy by 2010,¹³ so it was clear there was going to be increased interest by investors in this sector in the future, and financing was readily available from institutions like the EBRD, who wanted to support renewable energy.

Albania has been the most active. The government

has awarded at least 183 concessions for no fewer than 524 hydropower plants since 2002.¹⁴ The real number remains unknown, as there is no updated list of hydropower concessions publicly available. Not all of these have been built, but the 2018 Energy Regulator's annual report shows no fewer than 111 new plants under 10 MW having gone online since 2009, in addition to 32 pre-existing ones.¹⁵

Bosnia and Herzegovina was also an early starter, with concession issuances peaking in 2006 (92 concessions issued).¹⁶ The other countries in the region joined the boom more gradually but today it affects the whole Western Balkans - even Kosovo, which has limited water resources.

Renewable energy targets

The small hydropower boom received a boost in 2012, when the Energy Community Ministerial Council took a decision to adopt renewable energy targets for 2020, based on 2009 as the baseline year.¹⁷

The 2009 Renewable Energy Directive (299/28/

EC) stipulates an EU-wide target of 20 per cent share of renewable energy in gross final consumption of **energy - not electricity** - consumption, which is divided up into national targets depending on each country's starting point. For the Western Balkans countries the targets are as follows:

Figure 2: Western Balkans renewable energy targets and share achieved in 2017

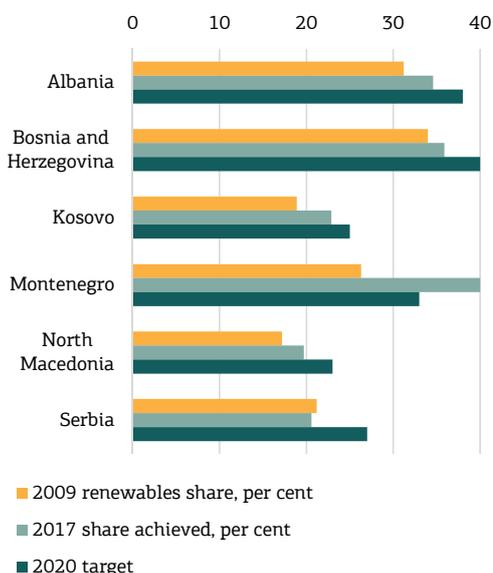


Table 3: Western Balkans renewable energy targets and share achieved in 2017

| Country | 2009 renewables share, per cent ¹⁸ | 2017 share achieved, per cent ¹⁹ | 2020 target ²⁰ |
|------------------------|---|---|---------------------------------------|
| Albania | 31.2 | 34.6 | 38 |
| Bosnia and Herzegovina | 34.0 | 35.9 ²¹ | 40 |
| Kosovo | 18.9 | 22.9 | 25 |
| Montenegro | 26.3 | 40 | 33 |
| North Macedonia | 21.9, later reduced to 17.2 ²² | 19.7 | 28, later reduced to 23 ²³ |
| Serbia | 21.2 | 20.6 | 27 |

13 European Commission: [Communication from the Commission: Energy for the future - White Paper for a Community Strategy and Action Plan COM\(97\)599 final \(26/11/1997\)](#)

14 National Agency of Natural Resources: <http://www.akbn.gov.al/situata-hidroenerjitime/>, accessed 16 June 2019.

15 Albania Energy Regulator: [Annual Report 2018, 2019](#)

16 Republika Srpska Concessions Commission: [Annual Operation and Financial Report 2018](#), April 2019
Energy Community: Decision 2012/04/MC-EnC

17 Energy Community: [Decision 2012/04/MC-EnC](#)

18 Energy Community Ministerial Council: Decision 2012/04/MC-EnC, 18.10.2012

19 Energy Community Secretariat: [Latest updates in the implementation of renewable energy acquis](#), presentation, 12 March 2019

20 Energy Community Ministerial Council: Decision 2012/04/MC-EnC, 18.10.2012

21 Bosnia and Herzegovina: [Third Progress Report on promotion and use of energy from renewable energy sources](#), 31.07.2019

22 Energy Community: Decision 2018/02/MC-EnC amending Decision 2012/04/MC-EnC

23 Energy Community: Decision 2018/02/MC-EnC amending Decision 2012/04/MC-EnC

The reason why the Western Balkans' targets seem quite high compared to the overall EU target of 20 per cent is that the Balkan countries had quite high levels of renewable energy to start with. Wood biomass use for heating is very widespread and most of the countries have high levels of hydropower in the electricity mix. Certainly the targets were not very high compared to the baseline situation.

Each country's government had to develop a National Renewable Energy Action Plan and take steps to enable the development of renewable energy sources. In theory, this should have led to greater support for all kinds of renewable energy, but in reality, governments stuck with what they were already familiar with: hydropower.

Looking at the National Renewable Energy Action Plans, hydropower predominates. For example, if the Bosnia and Herzegovina plan is implemented, in 2020, BiH's renewable electricity generation would be 89.37 per cent hydropower, 9 per cent wind, 1.36 per cent biomass and 0.27 per cent solar.

Albania until 2017 prioritised small hydropower to such an extent that no incentives were provided for other forms of renewable energy. However, this situation has started to change since the adoption of a new Law on Renewable Energy early that year (see below).

Other Western Balkan countries have also prioritised hydropower above other renewables, as shown in the table below.

Table 4: Percentage of planned renewable installed capacity in 2020 to meet the 2020 targets

| State | Per cent of installed power from renewable energy sources in 2020 planned to reach binding 2020 targets. | | | | |
|-----------------|--|-------|---------|----------|------------|
| | Hydropower | Wind | Biomass | Solar PV | Geothermal |
| Albania | 96.47 | 1.25 | 0.21 | 2.08 | 0.00 |
| BiH | 89.37 | 9.00 | 1.36 | 0.27 | 0.00 |
| Kosovo | 79.00 | 14.80 | 5.20 | 1.00 | 0.00 |
| North Macedonia | 88.82 | 6.25 | 1.75 | 3.18 | 0.00 |
| Montenegro | 81.50 | 13.80 | 4.00 | 0.70 | 0.00 |
| Serbia | 80.28 | 15.08 | 4.31 | 0.30 | 0.03 |

Source: National Renewable Energy Action Plans, [Energy Community](#)

This is also clear from the incentives schemes that the countries introduced in order to help meet their targets. Some countries like North Macedonia and Serbia allow an unlimited number of small hydropower plants to receive feed-in tariffs, but only a very limited amount of solar capacity (eg. Serbia 10 MW) is eligible for incentives.

Initially it may have been justifiable to prefer hydropower compared to wind and solar for affordability reasons, but this should never have extended to subsidising unlimited small hydropower capacity.

Any incentives scheme should have been based on a survey of environmentally acceptable potential, which was not the case in any country in the region. Moreover, the national renewable energy plans have not kept pace with the fall in wind and solar prices, and continue to privilege hydropower.

The region has high potential for solar and wind investments, as demonstrated by studies such as IRENA's 2017 survey of cost-competitive renewables potential in southeast Europe,²⁴ and by the fact that there are more investors interested in solar and wind than incentives available, e.g. in Serbia and Bosnia and Herzegovina.

24 IRENA, Joanneum Research and University of Ljubljana: [Cost-Competitive Renewable Power Generation: Potential across South East Europe](#), International Renewable Energy Agency (IRENA), Abu Dhabi, 2017

Feed-in tariffs in the Western Balkans – how do they work?

There are various benefits available to renewable energy producers in the Western Balkans, including guaranteed grid access for electricity generators, but the most attractive for producers are feed-in-tariffs. This system has been widely used in the EU but is now being phased out for plants larger than 500 kW as renewable energy becomes more established.

The basic concept is that a producer planning to produce renewable electricity applies for the status first of temporary privileged power producer and then for full status of privileged power producer in order to acquire the right to receive a feed-in tariff.

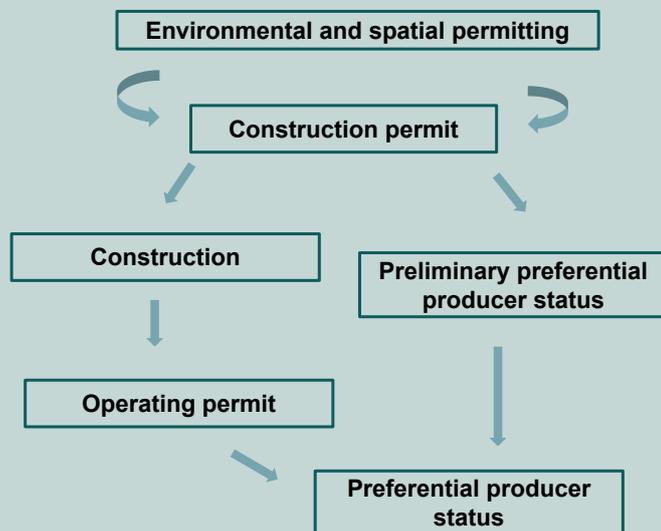
After having concluded a power purchase agreement with the plant operator, a body appointed by the Government in each country is legally obliged to buy an agreed amount of electrical energy from privileged producers at an incentive price for a fixed period (generally

12-20 years). End customers generally pay for this on their electricity bills as a specific item, but for example in Albania for many years this was not the case and the cost to the public was completely unclear.

Feed-in tariffs make it much more attractive for investors to build renewable energy plants but also incentivise banks to provide loans for their construction, as the chances of the loan being paid back are very high.

Such a system can only be applied to a limited amount of renewable energy capacity, otherwise it incurs high costs for consumers.

Therefore the countries in the region have placed limits on the amount of new capacity that can receive feed-in tariffs. However, they have not treated different sources of energy equally. Wind and solar have been subject to strict limitations while small hydropower has either had a high quota or no limits at all.



Common features of approval processes for feed-in tariffs in Western Balkan countries

Have the countries built all the hydropower they planned for 2020?

During the last few decades, hardly any large new hydropower projects have been built in the Western Balkans, except in Albania. After the turmoil of the 1990s, most of the governments and state-owned firms started pushing forward a number of projects, but hardly any of them have come to fruition. Some have remained on company or government wish-lists without being pushed forward, some were promoted by European companies who lost interest when electricity wholesale prices fell, some could not find financing, and some have been actively opposed by environmental groups and local people.

At least 380 small plants (under 10 MW) have been built since 2009. Nevertheless, up-to-date hydrological data and feasibility studies are often lacking, so in spite of the availability of incentives, many plants do not go ahead after concessions are distributed. This means there is still a chance to prevent the construction of many of the plants planned across the region.

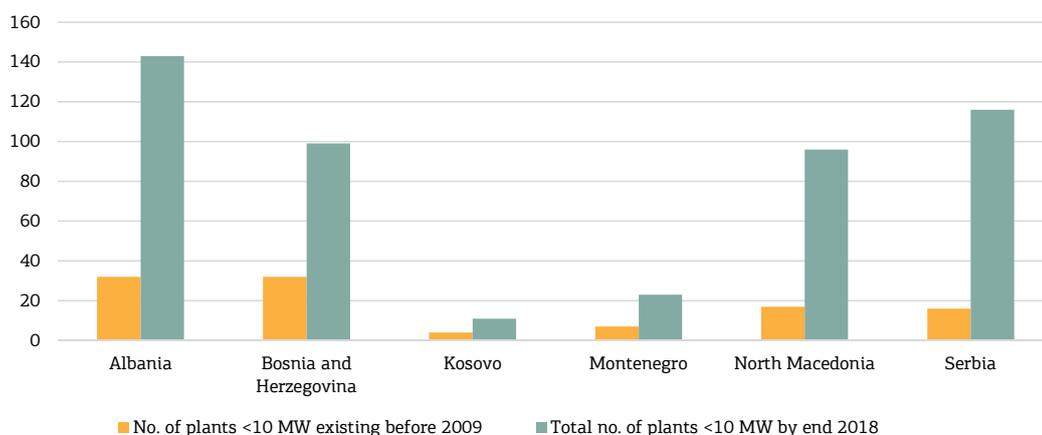
The table below shows the difference between the installed capacity in 2010, 2018 and the countries' plans for 2020 in their NREAPs.

Table 5: Number of small hydropower plants built in Western Balkans countries

| Country | No. of plants <10 MW existing before 2009 | Total no. of plants <10 MW by end 2018 |
|------------------------|---|--|
| Albania | 32 ²⁵ | 143 (153 <15 MW) ²⁶ |
| Bosnia and Herzegovina | 32 ²⁷ | >99 ²⁸ |
| Kosovo | 4 ²⁹ | 11 ³⁰ |
| Montenegro | 7 ³¹ | 23 ³² |
| North Macedonia | 17 ³³ | 96 ³⁴ |
| Serbia | 16 ³⁵ | 116 ³⁶ |
| WB6 | 108 | >488 |

Source: State energy balances and energy regulators' 2018 annual reports.

Figure 3: Number of small hydropower plants built in Western Balkans countries



Source: State energy balances and energy regulators' 2018 annual reports.

27 Državna regulatorna komisija za električnu energiju: [Izveštaj o energetsom sektoru u Bosne i Hercegovine za 2009. godinu](#)

28 This figure is combined from FBiH: Operator for Renewable Energy Sources and Efficient Cogeneration: [Report on income and spending from the fee for renewable energy to support privileged producers of electrical energy in 2018](#), March 2019; Operator for Renewable Energy Sources and Efficient Cogeneration: [Izgrađene elektrane koje električnu energiju proizvode iz OIE - prikaz po elektroenergetskom sistemu i statusu](#), March 2019, REERS website: [Proizvodna postrojenja koja su ostvarila pravo na podsticaj](#), accessed 20 July 2019. In FBiH the number of privileged producers varies by source from 41-45 and there are an additional 20 "qualified producers" who do not get a full feed-in tariff but have their electricity bought at the reference price, which in FBiH is 20% higher than the assumed market price, so still implies a subsidy. But there are most likely some older plants which do not have power purchase agreements but are still under 10 MW.

29 Kosovo government: [Office of the Prime Minister and Agency for Statistics: Annual energy balance for 2018, 2019](#).

30 Kosovo government: [Office of the Prime Minister and Agency for Statistics: Annual energy balance for 2018, 2019](#).

31 Government of Montenegro: [Odluka o energetsom bilansu za 2019](#), 6 December 2018.

32 Government of Montenegro: [Odluka o energetsom bilansu za 2019](#), 6 December 2018.

33 Calculated from Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019

34 Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019

35 Serbia Energy Regulatory Agency (AERS): [Annual Report 2018](#), May 2019. A list is available in Mott MacDonald: [Regional Strategy for Sustainable Hydropower in the Western Balkans: Background Report No. 1 Past, present and future role of hydropower](#), Final Draft 3 November 2017.

36 There were 99 new hydropower plants in the incentives system in 2018, plus three older EPS plants, according to calculations based on EPS Supply: [Report on collected and paid out funds for incentives for privileged producers of electrical energy for 2018](#). In addition to these there are 14 more small hydropower plants.

The graphs below show the difference between the installed capacity in 2010, 2018 and the countries' plans for 2020 in their NREAPs (source data is available in the tables in Annex 2).

Figure 4: Installed large hydropower in 2018 compared to 2009 and plans for 2020

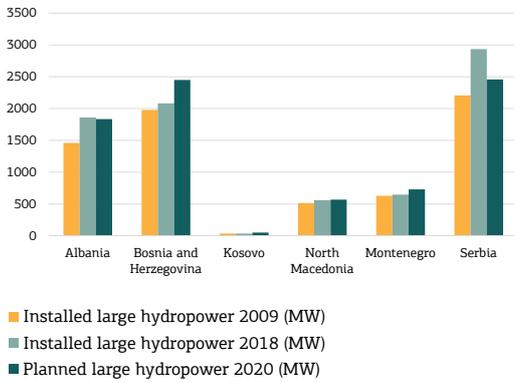


Figure 5: Installed hydropower <10 MW in 2018 compared to 2009 and plans for 2020

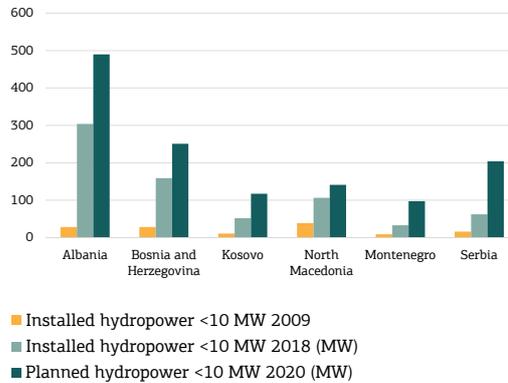


Figure 6: Installed wind capacity in 2018 compared to 2009 and plans for 2020

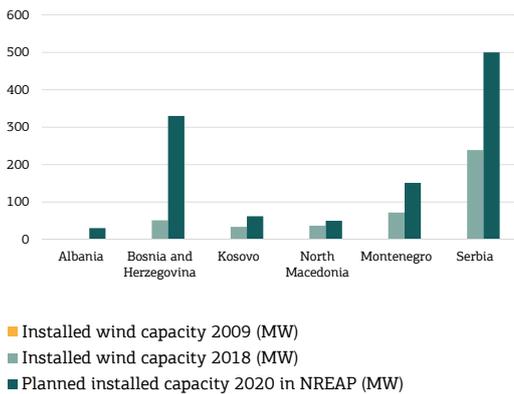
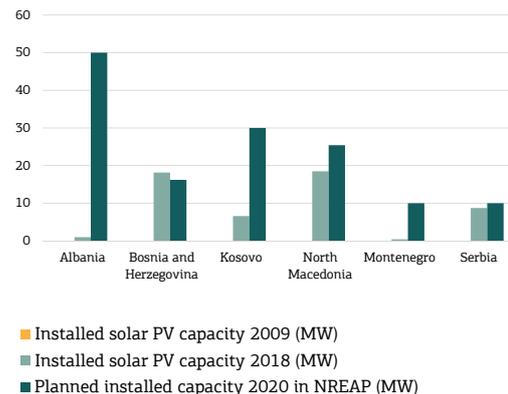


Figure 7: Installed solar PV in 2018 compared to 2009 and plans for 2020



Source: National Renewable Energy Action Plans³⁷ and energy regulators' annual reports.³⁸

North Macedonia is the nearest to realising its hydropower plans. Even though Albania, Bosnia-Herzegovina and Serbia have built numerous small hydropower plants within the last few years, they are nowhere near their plans for 2020. Montenegro and Kosovo have built fewer and are also far from achieving their plans.

However, this is for the best. Due to the large number of hydropower plants in pristine areas of the Balkans (including protected areas) and poor environmental assessment and public participation procedures, hydropower is attracting widespread grassroots opposition.

Wind and solar are making much slower

progress than hydropower, though wind farm construction is finally taking off in Montenegro, Serbia and Kosovo, and it is possible they may reach the planned capacity by the end of 2020. North Macedonia initially moved quicker than other countries on wind and solar, but then stalled. However, it looks set to build at least some new facilities in the near future, such as a solar plant at Oslomej. All the countries lacked ambition for solar PV in their national renewable energy action plans, and some have failed to realise even their modest aspirations. Attention is turning to solar in Montenegro and Albania in the form of massive PV projects, but rooftop PVs are still rare across the region.

37 Albania: [National Renewable Energy Action Plan, 2016](#); Bosnia and Herzegovina: [National Renewable Energy Action Plan, 2016](#); Kosovo: [National Renewable Energy Action Plan, 2013](#); North Macedonia: [National Renewable Energy Action Plan, 2016](#); Montenegro: [National Renewable Energy Action Plan, 2014](#); Serbia: [National Renewable Energy Action Plan, 2013](#)

38 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018](#), March 2019; Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019, Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019, EPS Snaždevanje: [Overview of contracts with privileged producers](#), 01.02.2019.

EU rules on renewable energy incentives schemes

The EU rules on renewable energy that are currently in force in the Energy Community are mainly from the 2009 Renewable Energy Directive.³⁹ It sets the 2020 targets and provides a definition of renewable energy: Article 2 defines 'energy from renewable sources' as "energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases". Not only hydropower but also some of the other sources such as biomass raise concerns in terms of environmental sustainability.

No distinction is made in the Directive between large and small hydropower plants - all count towards EU targets.⁴⁰ There is no obligation to prioritise hydropower, nor is it important whether the target is reached via exactly the planned sources or not.

Under the 2009 Renewable Energy Directive, **subsidy schemes are optional** (Art. 3). However Member States do have to provide either priority access or guaranteed access to the grid for renewable electricity, with some exceptions to ensure grid stability (Art. 16). There are not many details about subsidies in the Directive: it gives hydropower the label of renewable energy and therefore allows it to be financially supported, but there are more details in the EEAG.

It should be emphasised that the EU concept behind subsidising renewable energy is to ensure that the targets are met. No distinction is made between mature technologies like hydropower and newer technologies like solar and wind. However, each country can decide to provide incentives only to certain sources if it has a good justification - so it is possible to only support solar and wind for example.

In 2014, the EU Directorate-General for Competition issued updated rules on incentivising renewables in its Energy and Environment State Aid Guidelines 2014-2020 (EEAG),⁴¹ which brought about significant changes compared to the 2009 Renewable Energy Directive and ensure that renewables investors are exposed to at least some market risks. These changes are described below in the section entitled *The EU moves to a new, more cost-effective incentives system*. Although called "Guidelines", these are obligatory; however, Member States can challenge them at the European Court of Justice if they find them contradictory to the Treaty on the Functioning of the European Union.

In December 2018 a new Renewable Energy Directive entered into force in the EU, which continues with the definition of renewable energy set in 2009. It confirms the more market-based approach to renewables incentives introduced by the EEAG, so the two sets of rules are now more aligned.

39 Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC

40 In the Preamble the Directive also specifies that electricity produced in pumped storage plant should not be considered to be electricity produced from renewable energy sources.

41 Communication from the Commission: [Guidelines on State aid for environmental protection and energy 2014-2020](#), 28.06.2014

Is it all the EU/Energy Community's fault that our rivers are being destroyed?

The EU and the Energy Community are sometimes blamed for the Western Balkans' plans to build hydropower plants to meet their 2020 renewable energy targets. Let's take a closer look at these claims.

The overall goal of the renewable energy targets is to help Europe move away from a fossil-fuel based energy system to an energy-efficient, renewables-based one, so the intention is positive insofar as adequate criteria are in place to ensure the sustainability of renewable energy sources.

What is problematic is that indeed the EU does allow some potentially harmful forms of renewable energy to be incentivised – not only hydropower but also incineration of the organic fraction of communal waste – which is usually mixed with other waste instead of being composted/recycled – and biomass, which encourages unsustainable logging and monocultural agriculture and can also exacerbate poor air quality.

In the EU, environmental legislation helps to prevent the worst environmental impacts of hydropower, but there is a legislation gap in the Energy Community Treaty which means safeguards like the Water Framework Directive and Nature and Habitats Directives are not yet binding on the countries.

It is the individual countries which agree to adopt the targets and choose how to meet them. No-one is forcing the Western Balkans countries to build hydropower plants and no-one is forcing the governments to subsidise them. In fact, most of the concessions issued in the Western Balkans were awarded before the EU 2020 targets were even set. The National Renewable Energy Action Plans can be changed at any time, and are soon to be replaced by integrated National Energy and Climate Plans (NECPs).⁴² It is up to all of us to ensure that these plans promote only sustainable forms of renewable energy.

What the EU certainly can do is press the countries to implement EU environmental legislation and move to a more cost-effective subsidies system as soon as possible. Far from being just another item on the long list of accession requirements, these are moves which would protect the Balkans' unique natural heritage and improve public health by promoting energy transition away from coal.

> The highly controversial Medna Sana hydropower plant has damaged the River Sana in Bosnia and Herzegovina just a few hundred metres from its source. Photo: Pippa Gallop

⁴² Some countries may retain National Renewable Energy Action Plans but the trend coming from the EU Governance legislation is to integrate energy and climate planning in NECPs.



Hydropower takes the lion's share

As detailed in the country profiles below, in 2018, small hydropower plants received 70 per cent of the feed-in tariffs paid out for renewable energy across the Western Balkans. Yet they generated only 3.6 per cent of total electricity.

Table 6: Contribution of small hydropower to electricity generation in the Western Balkans, 2018⁴³

| Country | Electricity generated (GWh) by hydropower <10 MW 2018 | Total electricity generated (GWh) 2018 | Percentage of electricity generated by hydropower <10 MW 2018 |
|--------------------|---|--|---|
| Albania | 1,398 ⁴⁴ (<15 MW) | 8,552 ⁴⁵ | 16.3 (<15 MW) ⁴⁶ |
| Bosnia-Herzegovina | 469.39 ⁴⁷ | 17,873 ⁴⁸ | 2.6 |
| Kosovo | 154.3 ⁴⁹ | 5,436.58 ⁵⁰ | 2.8 |
| Montenegro | 101.7 ⁵¹ | 3,743.9 ⁵² | 2.7 |
| North Macedonia | 378.9 ⁵³ | 5,447.056 ⁵⁴ | 6.9 ⁵⁵ |
| Serbia | 266 ⁵⁶ | 34,934 ⁵⁷ | 0.8 |
| WB6 | 2,768 | 75,987 | 3.6 |

Table 7: Incentives for small hydropower as a percent of total renewables incentives

| Country | Total support for hydropower in 2018 (EUR) | Total support for renewable energy, 2018 | Percentage of RES support taken by hydropower in 2018 |
|--------------------|--|--|---|
| Albania | 93.5 million ⁵⁸ | 93.5 million ⁵⁹ | 100 per cent |
| Bosnia-Herzegovina | 20.3 million ⁶⁰ | 25 million ⁶¹ | 81 per cent |
| Kosovo | 6.5 million ⁶² | 9 million ⁶³ | 72.6 per cent ⁶⁴ |
| Montenegro | 7.3 million ⁶⁵ | 22.85 million ⁶⁶ | 31.9 per cent |
| North Macedonia | 15 million ⁶⁷ | 35.8 million ⁶⁸ | 42 per cent |
| Serbia | 24.9 million ⁶⁹ | 52.7 million ⁷⁰ | 47.4 per cent |
| WB6 | 168.7 million | 239.85 million | 70.3 per cent |

43 The table includes plants existing prior to 2009 because disaggregated data is not available for all countries and because the incentives schemes vary in whether they allow rehabilitated older plants to be included.

44 Includes rehabilitated plants existing before 2009 as well as newer ones. Republic of Albania Energy Regulatory Authority: [Power Sector Situation and ERE Activity during 2018, 2019](#), p.31, 40, 41 + 156

45 Republic of Albania Energy Regulatory Authority: [Power Sector Situation and ERE Activity during 2018, 2019](#), p.31, 40, 41 + 156

46 Data for plants under 10 MW only was not available as some of the data was aggregated per concession not by plant in the Albania Energy Regulatory Authority's [2018 Annual Report](#).

47 State Energy Regulatory Commission (DERK): [2018 Annual Report](#), December 2018.

48 State Energy Regulatory Commission (DERK): [2018 Annual Report](#), December 2018.

49 Kosovo government: [Office of the Prime Minister and Agency for Statistics: Annual energy balance for 2018, 2019](#).

50 Kosovo government: [Office of the Prime Minister and Agency for Statistics: Annual energy balance for 2018, 2019](#).

51 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019

52 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019

53 214 GWh from new plants and 164.9 from plants existing prior to 2009. Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019

54 Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019

55 3.9 per cent from new plants + 3 per cent from older ones.

56 Includes all plants, pre-2009 and new: Serbia Energy Regulatory Agency (AERS): [Annual Report 2018](#), May 2019.

57 Serbia Energy Regulatory Agency (AERS): [Annual Report 2018](#), May 2019.

The EU moves to a new, more cost-effective incentives system

The Energy and Environment State Aid Guidelines 2014-2020, which the European Commission Plans to extend to 2022,⁷¹ require a more market-based approach to be taken to supporting renewable energy, thus providing some support for renewable energy while saving the public money. They are already in force in the EU and the Energy Community countries are also supposed to be introducing them. In the individual country chapters we will look at the extent to which the countries have moved forward.

Article 18 of the Energy Community Treaty states that: *“The following shall be incompatible with the proper functioning of the Treaty, insofar as they may affect trade of Network Energy between the Contracting Parties:*

... (c) any public aid which distorts or threatens to distort competition by favouring certain undertakings or certain energy resources.

2. Any practices contrary to this Article shall be assessed on the basis of criteria arising from the application of the rules of Articles 81, 82 and 87 of the Treaty establishing the European Community (attached in Annex III).”

So far, hydropower has been favoured for public aid compared to wind and solar. A few years ago, this might have been justified by the fact that wind and solar were expensive and therefore Western Balkan governments could not risk electricity prices rising by supporting significant installation of these technologies. However with wind and solar prices falling, this is no longer the case.

Any changes in the law would apply to new projects but not to agreements already signed with investors before they entered into force. The goal is that most subsidies for renewable energy will eventually be phased out as renewable sources become cost-competitive. It can be argued that hydropower is in some cases already cost-competitive, but as the logic of the EU rules

on subsidies is based on technology-neutral achievement of the targets, there is little chance that the EU will move to prevent subsidies for some sources before others (although there are some environmental sustainability criteria already in place, such as the requirement for hydropower to be in line with the Water Framework Directive).

The main new features in the EEAG are:

- Since 1 January 2017 in the EU, subsidies must be awarded on the basis of market instruments, such as auctioning or competitive bidding process open to all generators producing electricity from renewable energy sources competing on equal footing.
- Technology-specific tenders are allowed, on the basis of a technology’s longer-term potential, the need to achieve diversification; network constraints and grid stability and system integration costs. The exceptions are installations with an installed electricity capacity of less than 1 MW, or demonstration projects, except for electricity from wind energy, for installations with an installed electricity capacity of up to 6 MW or 6 generation units. For these smaller units no auctions are necessary.
- Since 1 January 2016 all new aid schemes and measures have had to grant aid as an additional premium in addition to the market price. So instead of covering the whole purchase price of the electricity with State aid, State aid could only top-up the market price by paying a premium. This should reduce costs for the final consumers. The exceptions are installations with an installed electricity capacity of less than 500 kW or demonstration projects, except for electricity from wind energy where an installed electricity capacity of 3 MW or 3 generation units applies. For these units feed-in tariffs are still allowed.

58 Albania Energy Regulatory Authority: [2018 Annual Report](#).

59 Albania Energy Regulatory Authority: [2018 Annual Report](#).

60 2017 figure. Energy Community Secretariat: Response to request for information, 21 August 2019. Data originally provided by Ministry of Foreign Trade and Economic Relations (MOFTER). Data on full feed-in tariffs for Republika Srpska for 2017 is also available in the RS Regulatory Commission for Energy’s [Annual Report for 2017](#), but shows somewhat different figures. This may be because it shows the invoiced amounts and not the amounts paid. We used the amounts paid in order to have data for FBiH and RS from one source to increase consistency.

61 2017 figure. Energy Community Secretariat: Response to request for information, 21 August 2019. Data originally provided by Ministry of Foreign Trade and Economic Relations (MOFTER). Data on full feed-in tariffs for Republika Srpska for 2017 is also available in the RS Regulatory Commission for Energy’s [Annual Report for 2017](#), but shows somewhat different figures. This may be because it shows the invoiced amounts and not the amounts paid. We used the amounts paid in order to have data for FBiH and RS from one source to increase consistency.

62 KOSTT: Response to information request, 30 August, 2019.

63 KOSTT: Response to information request, 30 August, 2019.

64 KOSTT: Response to information request, 30 August, 2019.

65 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019

66 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019

67 MEPSO: response to information request sent by Eko-Svest on 26.11.2018 (final response on 10.12.2018)

68 MEPSO: response to information request sent by Eko-Svest on 26.11.2018 (final response on 10.12.2018)

69 Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

70 Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

71 European Commission: [State aid: Commission to prolong EU State aid rules and launch evaluation](#), Brussels, 7 January 2019

Figure 8: Feed-in tariff model vs. sliding feed-in premium model⁷²



Source: Adapted from Banja M. et al: Renewables in the EU: the support framework towards a single energy market

To make things even more complicated, in order for sliding premium systems to work, a functioning day-ahead electricity market is needed in order to know what the market price is and therefore how much premium needs to be paid to top it up to the agreed amount.

Therefore the Energy Community and EBRD have issued some guidelines especially aimed at the Energy Community countries suggesting

a way forward until these markets are in place.⁷³ One suggestion is to continue with feed-in tariffs for some time, but to reduce their costs by awarding them through an auction rather than on a first-come, first served basis. Producers would therefore pledge a price of production which they consider they can achieve, and those bidding the lowest price would be awarded the right to sign a contract for feed-in tariffs if they succeed in building their plant.

These, like the current feed-in tariffs, may lead to high consumer costs if not used sparingly. But the advantage of the new systems is that investors have to analyse their investments much more seriously in advance: if they bid too high a price they will not win the auction, and if they bid too low a price, they will not be able to really produce for that price and will lose money.

Designing such auctions with appropriate rules is a complicated matter and it is not necessary to go into all the details here. What matters for public acceptance is mainly what technologies will be eligible, whether there are environmental criteria set such as no-go zones and whether the auctions will include unsustainable forms of energy. Below we will look at this issue in more detail.

Forthcoming obligations – 2030 targets and National Energy and Climate Plans

The EU has now set itself an overall renewable energy target of 32 per cent of gross final energy consumption by 2030 in the so-called Renewable Energy Directive II. Unlike for 2020, when the targets for individual countries were calculated centrally, this time Member States will come up with their own targets via National Energy and Climate Plans, which unlike the NREAPs will include all energy, not only renewables. If the countries' individual pledges do not add up to 32 per cent overall, the European Commission is empowered to take measures to close the ambition gap.

This model is more complicated to replicate in the Energy Community countries but discussions are underway to see how to set 2030 targets. Ministers have agreed to try to approve targets by November 2019,⁷⁴ although it is unclear whether this is realistic.

2030 targets and NECPs are a necessary step to make sure the transition away from fossil fuels and towards an energy-efficient, renewables-based society continues, but as with the 2020 targets, there is still a danger that hydropower and other unsustainable renewable technologies will benefit. It is up to all of us to make sure this does not happen.

72 Banja M., Jégard M., Monforti-Ferrario F., Dallemand J.-F., Taylor N., Motola V., Sikkema R., [Renewables in the EU: the support framework towards a single energy market - EU countries reporting under Article 22\(1\) b, e and f of Renewable Energy Directive](#), EUR 29100EN, Publication Office of the European Union, Luxembourg, 2017.

73 European Bank for Reconstruction and Development and the Energy Community Secretariat in collaboration with the International Renewable Energy Agency: [Competitive Selection and Support for Renewable Energy Policy Guidelines](#), March 2018.

74 [General Policy Guidelines on the 2030 targets for the Contracting Parties of the Energy Community](#), 29 November 2018



| Country profiles

The following section presents an overview for each country, showing how much small hydropower has been built, how much it contributes to the energy mix and how much money has been spent on incentives so far. The profiles also describe whether the countries have made moves towards an auction- and premium-based incentives system yet. For Montenegro, North Macedonia and Serbia, case studies demonstrate the ways in which the current incentives systems benefit politically-connected businesses, while ordinary households pay.

Albania

Not-so-small hydropower plants and their fluctuating generation

Successive governments in Albania have awarded at least 194 concessions for no fewer than 540 hydropower plants since 2002.⁷⁵ The real number remains unknown, as there is no updated list of hydropower concessions publicly available.

Not all of these have been built, but the 2018 Energy Regulator's annual report, shows no fewer than 111 new plants under 10 MW having gone online since 2009, in addition to 32 pre-existing ones.⁷⁶

In June 2019, it was announced that 27 contracts covering 80 hydropower plants would be cancelled due to overruns and contract violations,⁷⁷ but it is not clear which ones.

Albania is one of the two countries in the region - with Serbia - to have offered feed-in tariffs to

hydropower plants larger than 10 MW - in this case up to 15 MW. By the end of 2018, including the 32 plants existing before 2009, 153 plants up to 15 MW were in operation, and generated just over 16 per cent of electricity.⁷⁸

Data for plants under 10 MW only was not available, and their generation would certainly be lower. Nevertheless, even these plants have a visibly larger average capacity than in other countries in the region, so their contribution is also somewhat larger.

Nevertheless, apart from the serious environmental damage wrought by such plants,⁸⁰ Albania already has a systemic problem with over-reliance on hydropower. The graph below shows how generation from Albania's hydropower plants varies hugely depending on hydrological conditions.

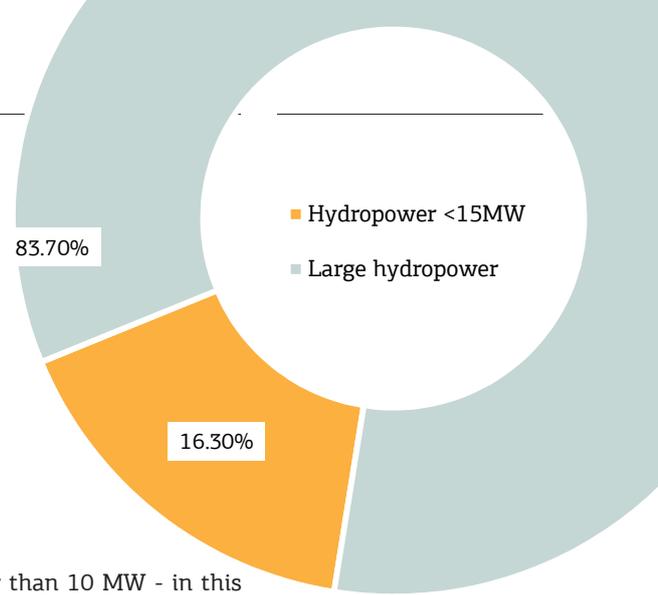
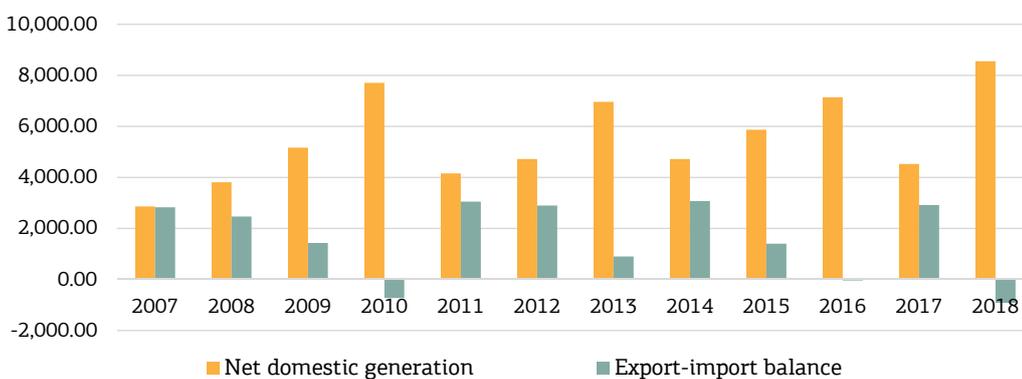


Figure 9: Albania electricity generation 2018⁷⁹

Source: Albania Energy Regulator annual report 2018

Figure 10: Net domestic generation in Albania and import dependence 2007-2018, GWh



Source: Albania Energy Regulator annual report 2018

Despite the fact that Albania has added many more hydropower plants to its fleet than any other country in the region since 2009, including larger plants, if there is low rainfall, it has to import electricity. Only 3 times in the last 10

years has it managed to meet domestic demand.

Highest total incentive costs in the region

Under these circumstances it is not easy to understand why, until 2017, Albania did not

75 National Agency of Natural Resources: [Renewable Energy](#), 2019

76 Albania Energy Regulator, [Annual Report 2018](#), 2019

77 Ministry of Infrastructure and Energy: [Përfundon procesi i skanimit. Bonati: Ndërpresim 27 kontrata për ndërtimin e 80 HEC-eve](#), 06.06.2019.

78 Albania Energy Regulator, [Annual Report 2018](#), 2019

79 Albania Energy Regulator, [Annual Report 2018](#), 2019, p.31, 40, 41 + 156

80 See for example: CEE Bankwatch Network: [Broken rivers: The impacts of European-financed small hydropower plants on pristine Balkan landscapes](#), December 2017.

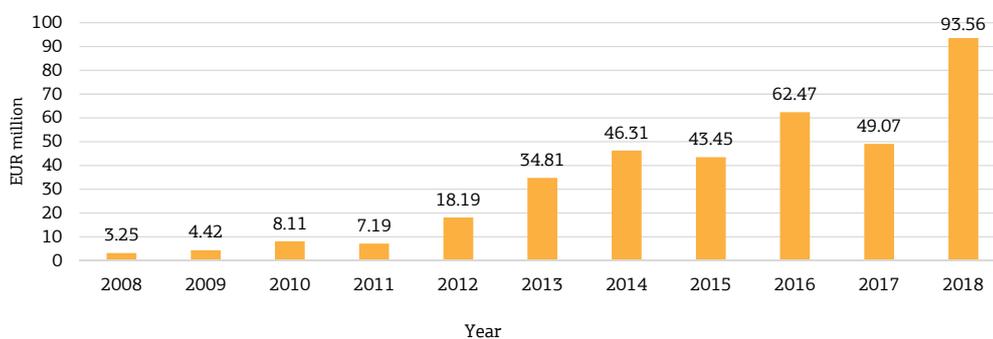
incentivise any other form of renewable energy than hydropower. Already from 2008, new and reconstructed existing plants started to receive feed-in tariffs on a first come, first-served basis, and state-owned Albania Electricity Corporation (KESH) was obliged to buy the electricity for a period of up to 15 years.

The system was not very transparent, either in terms of the concessions issued or in terms of the flow of money for the support schemes. Unlike most other countries in the region, no fee for renewable energy promotion was

included in customers' bills so it was unclear how much households were paying. Considering the artificially low price of electricity due to regulation, it is likely that the tariffs were covered from the state budget or KESH's other resources, but this is unclear.

What we do know is that by 2018, the total cost of feed-in tariffs had risen to EUR 93.5 million - by far the highest amount in the region, excluding the costs of the power purchase agreement for the Ashta large hydropower plant.

Figure 11: Payments to privileged producers



Source: Calculated from Albania Energy Regulator annual report 2018, p.156.

Changes in Albania's incentives system

Given the high costs of Albania's incentives scheme and the increasingly obvious need to diversify its renewable energy supply, it is not surprising that it was the first country in the region to change its legislation to introduce auctions and premiums.

In early 2017 Law no. 7/2017 *On the promotion of the use of energy from renewable sources* was approved. This law introduces new regulatory frameworks for solar PV and wind, as well as net metering for small producers, and makes amendments to the current feed-in tariff mechanism affecting all renewables (including small hydropower plants up to 15 MW).

Under the new system, only smaller producers can enter the feed-in tariff system: up to 2 MW for solar and hydropower, and up to 3 MW for wind.⁸¹ The thresholds for solar and wind are higher than those set out in the EU EEAG State aid guidelines, which could be expected for solar due to the need to further encourage investors, but given hydropower's extreme dominance in Albania, it is far from clear why it should be further incentivised at all.

In the transition period up till the end of 2020, solar and wind producers above this threshold,

and hydropower plants between 2-15 MW can obtain contracts for difference without an auction if they obtain a usage certificate before the end of 2020, leaving a window of opportunity for producers who have already started developing their projects.

A solar auction was held in Albania in 2018, and was won by India Power. The consortium is set to build 100 MW of solar power in the Akerni region near Vlora, consisting of 50 MW with support, to be purchased by the Government at EUR 59.9/mWh over 15 years, and another 50 MW, without support, to be sold at the market price.^{82, 83}

The Energy Regulator also reports that it issued 10 more licences for solar plants in 2018, with a combined capacity of 21.5 MW.⁸⁴ This raises hopes that Albania is finally working on diversification of its electricity supply, but there is still a danger of even more subsidised hydropower entering the system. The existing contracts also promise to cost Albania dearly for several years yet, so it is imperative that the Ministry of Infrastructure and Energy follows through on its promise to annul contracts whose terms have been broken, as well as publishing up to date information on which plants still have concessions and priority producer status.

81 [Law no. 7/2017 on the promotion of the use of energy from renewable sources](#)

82 Energy Community Secretariat: [Albania becomes first Energy Community Contracting Party to hold renewable energy support auction](#), 14 November 2018

83 Emiliano Bellini: [India Power wins Albania's large-scale solar tender](#), 12 November 2018

84 Albania Energy Regulator, [Annual Report 2018, 2019](#)

Bosnia and Herzegovina

Small contribution, but serious damage

Like Albania, Bosnia and Herzegovina started issuing concessions in the early 2000s, with a peak in 2006 (in early 2018, Bankwatch identified 57 contracts that were still valid, mostly in Republika Srpska). A steady stream of concessions has been issued ever since then, especially in the Federation, with the Central Bosnia Canton and the Konjic area being particular hotspots. In early 2018, Bankwatch identified a total of 188 concessions issued since 2005 across BiH.⁸⁵

Already in 2009 Bosnia and Herzegovina had a share of 43 per cent hydropower in its electricity generation mix. Most of this came from large plants like those on the lower Neretva and Drina, but even at this time there were around 32 plants with an installed capacity of less than 10 MW.⁸⁶

Like other governments in the region, when the time came to set renewable energy targets a few years later, Bosnia and Herzegovina's entity governments decided on a plan that would still see more than 89 per cent of the country's renewable installed capacity based on hydropower in 2020, with 159 MW of plants less than 10 MW.

Although it seemed that there was some openness to at least some wind power, with plans for 330 MW by 2020, solar was expected to make up only 16.2 MW.

Construction of small hydropower plants took off more gradually than in Albania, leading many to believe that there was more money in trading and speculation around concessions than in actually building the plants themselves. Yet the number of plants built has steadily climbed and by the end of 2018 there were no fewer than 99 plants under 10 MW in operation whose electricity is bought off via fixed contracts for a fixed price.

Not all of these receive the full feed-in tariff. Feed-in tariffs are available to producers in Republika Srpska for 15 years and the Federation of Bosnia and Herzegovina for 12 years, but in the Federation there is a peculiar set-up which enables producers to obtain a partial subsidy

even when their official "privileged producer" status has expired, or if for some reason they do not obtain "privileged producer" status.

This is done by allowing the purchase of electricity at the so-called "reference price", which would usually mean the market price, or a price calculated to be as near to the market price as possible. But in the Federation there is a 20 per cent mark-up on the reference price, thus allowing producers to benefit from electricity purchase with a lower subsidy almost indefinitely.⁸⁷

In 2018, small hydropower plants contributed only 2.6 per cent of electricity generated in BiH.⁸⁸

Table 8: Bosnia and Herzegovina electricity generation 2018, GWh

| | |
|----------------------|------------------|
| Coal | 10,954 |
| Large hydropower | 6,300 |
| Small hydropower | 469.39 |
| Solar | 20.65 |
| Wind | 103.52 |
| Industrial producers | 17.44 |
| Biogas/Biomass | 8.15 |
| | 17,873.00 |

Source: DERK annual report 2018

Hydropower incentives dominate support for renewables

Bosnia and Herzegovina is the only country in the region where both coal and renewable energy subsidies are clearly increasing in parallel.

Table 9: Bosnia and Herzegovina: Coal vs. renewables subsidies in EUR⁸⁹

| | 2015 | 2016 | 2017 | Total |
|-------------------|------------|------------|------------|----------------|
| Renewables | 17,595,000 | 20,160,000 | 25,040,000 | 62,795,000.00 |
| Coal | 26,189,000 | 35,550,000 | 48,245,000 | 109,984,000.00 |

Source: Energy Community Secretariat

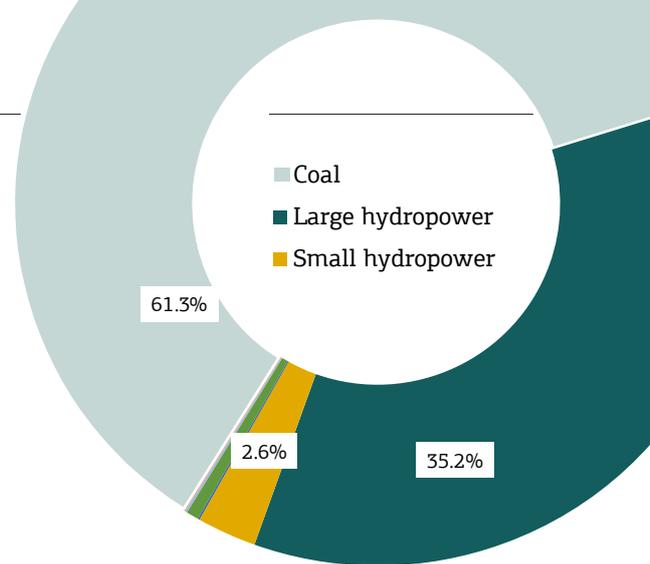


Figure 12: Bosnia and Herzegovina electricity mix 2018, per cent

Source: DERK Annual report 2018

⁸⁵ The concessions signed in Republika Srpska are more systematically documented than those in the Federation of Bosnia and Herzegovina; therefore, some may have been missed, though we were able to access additional information on the status of concessions in FBiH thanks to the Center for Environment and Eko-Gotuša.

⁸⁶ Državna regulatorna komisija za električnu energiju: [Izveštaj o energetskom sektoru u Bosne i Hercegovine za 2009. godinu](#)

⁸⁷ See Article 20, FBiH Law on Renewable Energy and Efficient Cogeneration and the Regulation on Attaining the Status of Qualified Producer.

⁸⁸ Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018

⁸⁹ Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

Between 2015 and 2017, nearly twice as much support was given for coal as renewables, but renewables support also grew by 42 per cent over the period. This indicates an unsustainable trend in both sectors, which needs to be addressed.

Consistent statistics on how much has been paid for renewables incentives in Bosnia and Herzegovina are hard to come by. Scattered information on incentives for hydropower <10 MW show a surprisingly low total of EUR 8.2

million for 2018, but in fact this only includes the premium part of the feed-in tariff that is added to the reference price (the price that the electricity would have been sold for if it hadn't been subject to incentives), and not the whole feed-in tariff.⁹⁰

In this study we use figures for the full feed-in tariff, in order to be consistent with the other countries, but only from 2017, as those from 2018 are not publicly available yet.

Table 10: Total support paid to renewable energy producers in Bosnia and Herzegovina (EUR)⁹¹

| | 2015 | 2016 | 2017 |
|------------------------------|----------------------|----------------------|----------------------|
| Hydropower (<10MW) | 15,943,339.44 | 16,238,921.36 | 20,297,403.32 |
| Wind | 1,489.30 | 1,728.92 | 1,421.15 |
| Solar | 1,620,041.45 | 3,091,343.93 | 3,727,275.92 |
| Biomass | 35,412.09 | 831,647.30 | 1,007,482.60 |
| TOTAL support | 17,600,282.27 | 20,163,641.52 | 25,033,582.99 |

Source: Energy Community Secretariat, MOFTER

Hydropower has been receiving by far the most support among renewables - **around 81 per cent in 2017**. The lack of support for wind is notable - the Federation of BiH has one wind farm operating since the beginning of 2018, while Republika Srpska has none.

Although support for renewables has been

increasing, by May 2019 it had not risen to particularly high levels for households, and constituted 6.1 per cent of monthly bills in Republika Srpska. Nevertheless, there is an increasing awareness among the general public that most of this fee is supporting the same hydropower plants which are scarring Bosnia and Herzegovina's stunning countryside.

Figure 13: Extract from electricity bill in Banja Luka, May 2019

| RAČUN ZA ELEKTRIČNU ENERGIJU | | | |
|---|-----------------|---|--------------|
| Datum očitavanja za obračun: 02.06.2019. | | Prethodni datum očitavanja: 05.05.2019. | |
| TG-1 (Domaćinstva 0,4 kV JT) | | Stanje brojila za obračun | Utrošeno |
| | | Prethodno | Novo |
| Broj brojila | 244439 | 114999.00 | 115300.00 |
| Konstanta | 1 | AMT | 6.00 |
| Obračunata snaga kW | | | 3.30 |
| Naknada po mjernom mjestu kupca za uslugu snabdijevanja bez PDV-a | | | 0.00 |
| LANACO Software - STONE 2 © 2006, 2008, 2013 | | | 3.30 |
| Obračunata utrošena električna energija bez PDV-a | | | 0.00 |
| PDV (17%) na utrošenu električnu energiju | | | 0.00 |
| Naknada za obnovljive izvore el. energije bez PDV-a | | | 0.00 |
| PDV(17%) na naknadu za obnovljive izvore el. energije | | | 0.00 |
| Kamata | | | 0.00 |
| UKUPAN IZNOS SA PDV-om | | | 43.02 |
| Cijena (KM) Iznos (KM) | | | |
| 301 0.0945 28.44 | | 0.0945 0.00 | |
| 1.0884 3.59 | | | |
| Obračun naknade za obnovljive izvore električne energije | | | |
| Osnovica (kWh) | Cijena (KM/kWh) | Iznos (KM) | |
| 301 | 0.0075 | 2.26 | |

90 Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019 <http://operatoroieiek.ba/wp-content/uploads/2019/03/Izvj%C5%A1taj-o-utri-i-prik.sredstvima-2018.pdf> and <https://www.capital.ba/vlasnici-mhe-prosle-godine-dobili-125-miliona-km-podsticaja/>

91 Energy Community Secretariat: Response to request for information, 21 August 2019. Data originally provided by Ministry of Foreign Trade and Economic Relations (MOFTER). Data on full feed-in tariffs for Republika Srpska for 2017 is also available in the RS Regulatory Commission for Energy's [Annual Report for 2017](#), but shows somewhat different figures. This may be because it shows the invoiced amounts and not the amounts paid. We used the amounts paid in order to have data for FBiH and RS from one source to increase consistency.

Changes in Bosnia and Herzegovina's incentives system

While most of the controversy around hydropower in Bosnia and Herzegovina has been around its environmental and social impacts rather than its costs, in 2018 economic analyst Damir Miljević presented an assessment showing that Bosnia and Herzegovina's current system of concession fees and incentives for small hydropower plants already produces direct social and financial losses of more than EUR 2 million annually. This figure would be doubled if subsidies are approved for all the plants that have applied.⁹²

In early 2019, it became clear that the Republika Srpska authorities were becoming worried about the costs of its incentives scheme when the entity Government suddenly cut all incentives for wind energy through amendments to the Law on Renewable Energy which were approved via an emergency procedure.⁹³

Its official excuse was *"the need to limit the fee for stimulating electricity from renewable sources and in the efficient cogeneration which final consumers of electricity are paying...Urgent parliamentary procedure was necessary because some wind farms that are under construction might claim and reserve this right in accordance with the valid law."*⁹⁴ In other words, the incentives system for wind is valid until someone tries to use it, whereas for hydropower it is valid in reality.

This hasty move is clearly discriminatory

against wind producers. And considering that only 8 MW of solar electricity was eligible for incentives in Republika Srpska anyway, this means that hydropower is now given even more preferential treatment than ever.

In July 2019, Minister for Energy and Mining for Republika Srpska, Petar Đokić, stated that the Government would approve a new system for incentivising renewable energy by the end of 2019, which could open an opportunity to instill some balance in the system.⁹⁵ However, he believes that wind is cost-effective without subsidies at all, which has yet to be proven. There is not a single wind farm operating in Republika Srpska so far, and only one in Bosnia and Herzegovina overall, so it seems rather early to make such a conclusion.

It may turn out that he is right, but this would leave the case for incentivising hydropower weaker than ever, as there would be no reason to subsidise hydropower if BIH could diversify its energy supply with un-subsidised wind.

In parallel with Republika Srpska's sudden change in policy, a proposal for reforming renewables support schemes in Bosnia and Herzegovina and introducing auctions and feed-in premiums for large scale projects has been developed during 2018 and 2019. The process is led by external consultants based on a working group made up of representatives of relevant national and entity institutions. The proposal is expected to be finished by October 2019 and implemented by governments throughout 2020.

92 Center for Environment: [Small hydropower plants cause Bosnia-Herzegovina more than EUR 2 million in losses annually](#), 30.11.2018.

93 Law on Amendments to the RS Law on Renewable Energy Sources and Efficient Co-Generation (no. 02/1-021-250/19).

94 Republika Srpska government: [The 10th Government session held](#), 27.02.2019.

95 Vladimir Spasić: [Republika Srpska će do kraja godine usvojiti novu šemu podsticaja za OIE](#), Balkan Green Energy News, 04.07.2019.

Protest as part of the successful campaign against Luke small hydropower plant near Fojnica, Bosnia and Herzegovina. Photo Marina Kelava H. Alter



Kosovo

Small potential, but serious damage

Successive governments in Kosovo have made far more effort to build a new coal power plant than to promote renewable energy, and according to the Energy Community, Kosovo provided at least three times more in direct subsidies for coal than for renewable energy in 2015-2017. From 2015-2017,⁹⁶ Kosovo provided direct subsidies of EUR 47 million for coal and 14.8 million for renewables.⁹⁷

This trend looks set to continue if the Government moves ahead with the disastrous deal it has signed for the Kosova e Re coal power plant.⁹⁸ So in financial terms, renewable energy incentives may not be households' biggest problem in the coming years.

Nevertheless, Kosovo's first attempts to diversify its energy supply have not been encouraging. Kosovo has the least hydropower potential in the region but this has not stopped attempts to build a wave of new hydropower plants.

In 2009 the country had only 45.8 MW of installed hydropower - a large plant of 35 MW, one of 8 MW and four smaller ones,⁹⁹ but its original National Renewable Energy Action Plan foresaw a totally unrealistic additional 240 MW of small hydropower by 2020.¹⁰⁰ This was later revised down to 120 MW,¹⁰¹ and by the end of 2018, it had 83 MW of small hydropower plants installed.

Several of the already built and planned plants are in sensitive locations like national parks. As a result, communities - for example in Peja and Štrpce - have stood up to the hydropower developers just as they have across the rest of the Balkans.

Yet for all the destruction, small hydropower plants in Kosovo still contributed only 2.2 per cent of electricity generation in 2018.¹⁰²

How much has it cost?

For 2017, the Energy Regulatory Office (ERO)'s annual report gives a total figure of EUR 6.34 million,¹⁰³ but does not give a breakdown of which technologies were supported. Given the generation structure, we may assume that almost all of this supported hydropower.

For 2018, figures were obtained from the Transmission, System and Market Operator (KOSTT), showing that renewables support totalled EUR 9 million - EUR 6.55 million for hydropower, 2.2 million for wind and 0.2 for solar.¹⁰⁴ The reasons for the presumed increase from the previous year are the fact that the Kitka wind farm went online in late 2018 and that 2017 was a very dry year so hydropower likely performed better in 2018.

Overall, hydropower received 72.6 per cent of incentives in 2018, wind 24.8 per cent and solar 2.7 per cent.

Changes in Kosovo's incentives system

In November 2017, Kosovo's Minister of Economic Development, Valdrin Llluka, unveiled plans to develop an auction scheme in Kosovo that would help to increase investments in solar generation.¹⁰⁵ So far there appears to be little progress on this plan.

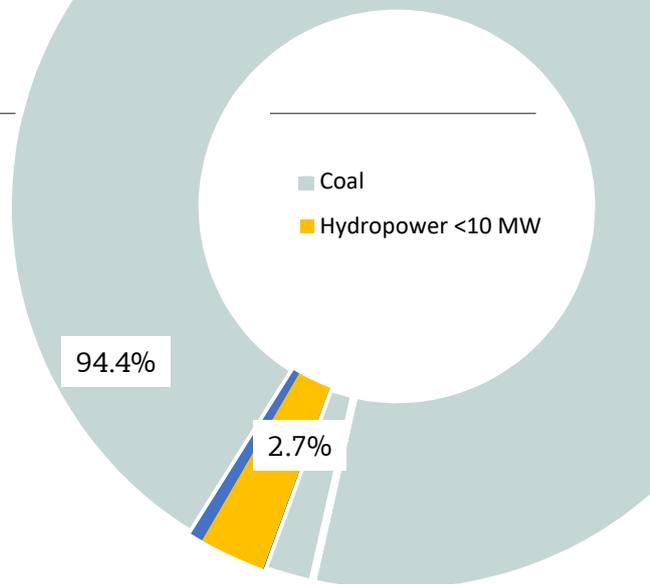


Figure 14: Kosovo electricity generation 2018

Source: Annual electricity balance for Kosovo for 2018

96 Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

97 Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

98 Balkan Green Foundation, GAP Institute, Group for Legal and Political Studies, INDEP and CEE Bankwatch Network: [Legal challenge mounted against Kosovo coal project's "absurd" contract](#), 13 May 2019.

99 Energy Regulatory Office: [Energy Balance 2018](#)

100 Kosovo [National Renewable Energy Action Plan 2011-2020](#), 2013

101 Kosovo [National Renewable Energy Action Plan update 2018-2020](#)

102 Kosovo government: [Office of the Prime Minister and Agency for Statistics: Annual energy balance for 2018](#), 2019.

103 Energy Regulatory Office: [Annual Report 2017](#), March 2018.

104 KOSTT: Response to information request, 30 August, 2019.

105 Balkan Green Energy News: [Kosovo is looking for investments in solar energy through auction scheme](#), November 28, 2017

Montenegro

Small contribution, but serious damage

In 2009, Montenegro already had seven hydropower plants under 10 MW, totalling 8.7 MW¹⁰⁶ and operated by Zeta Energy¹⁰⁷ and EPCG.¹⁰⁸ Since 2010 the Government has granted 36 concessions that are still valid, for 55 plants, along with a small number which have been cancelled.¹⁰⁹

The first new generation plant obtained privileged producer status in 2014. By late 2018, 15 new small hydropower plants were operational, in addition to the older plants, with 8 more expected online in 2019.¹¹⁰

This might not sound like a huge number but they have caused serious problems for local people, since roads and forests are being destroyed by machinery and entire rivers run dry downstream from the intakes. They are diverted into pipes to increase the water velocity and generate more electricity. In 2017, there was an upsurge in local citizen protests, urging the Government to suspend further construction of small hydropower plants.¹¹¹

Moreover, the share of electricity generated by the small hydropower plants is very modest indeed, at 2.7 per cent in 2018.

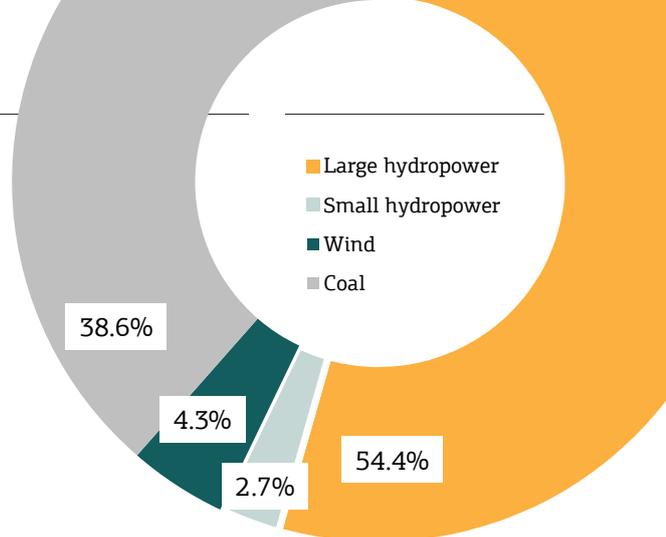


Figure 15: Montenegro electricity generation, 2018

Source: Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

106 [National Renewable Energy Action Plan to 2020](#), Montenegro, 2015

107 A joint venture between state-owned Elektroprivreda Crne Gore (EPCG) and Norway's Nord - Trondelag Elektrisitetsverk Holding AS (NTE), with partial ownership of NTE's Montenegrin subsidiary by businessman Blagota Radović via his companies Promocija plus d.o.o. and Zetogradnja d.o.o. Source: [Montenegro Central Register of Business Subjects](#).

108 Zeta Energy: Glava Zete and Slap Zete; EPCG: Rijeka Cmojevića, Rijeka Mušovića, Lijeva rijeka, Podgor, and Šavnik. For more information, see: <https://www.epcg.com/o-nama/istorija>

109 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019.

110 Government of Montenegro: [Odluka o energetskom bilansu za 2019](#), 6 December 2018.

111 Dan: [Nema gradnje prije razgovora](#), 6 July 2017; Dan: [Tajkuni opustošili šumu. Murinjani će braniti vodu](#), 16 June, 2017; Monitor: [Gradnja mini hidroelektrana nekad i sad: Pionire elektrifikacije zamijenili tajkuni](#), 24 March, 2017.

112 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019.

113 Elektroprivreda Crne Gore: [U maju potrošnja veća 5.3 odsto](#), 17 June 2019.

114 Elektroprivreda Crne Gore: [U januaru potrošnja veća 10.5 odsto](#), 12 February 2019.

Table 11: Generation share from hydropower plants <10 MW, Montenegro¹¹²

| Year | Total domestic generation (GWh) | Hydropower plants - privileged producers | | | Older smaller hydropower plants | | | Total small hydropower |
|------|---------------------------------|--|------------------|--------------------------|---------------------------------|------------------|--------------------------|--------------------------|
| | | No. of plants | Generation (GWh) | % of domestic generation | No. of plants | Generation (GWh) | % of domestic generation | % of domestic generation |
| 2018 | 3787 | 15 | 87 | 2.3 | 7 | 17 | 0.4 | 2.7 |

Source: Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

How much has it cost?

Electricity prices are a highly sensitive issue in Montenegro. It is one of the only countries in the region to be gradually increasing tariff levels to market prices, and as many people use electricity for heating, overall costs per household can be very high. Average monthly bills in May 2019 were EUR 30.89,¹¹³ and in January, during the heating season, EUR 47.62¹¹⁴ - quite a burden for those on low incomes. Although the overall costs for supporting small hydropower - and renewable energy generally - have not been as high as originally forecast, there has been a significant public backlash.

If a producer fulfils the legal criteria to obtain feed-in tariffs, for 12 years the electricity generated is bought at the rate that is valid at the time of being awarded the status of *temporary privileged producer*.¹¹⁵ These levels are determined by the Government on the basis of

a Decree which changes regularly. The most recent version introduced a sliding scale that gradually reduces feed-in tariffs every year.¹¹⁶ The incentives for the price of electricity are paid for by consumers through electricity bills (though the system is changing - see below). These have been gradually increasing as more renewable energy capacity has come online - first hydropower, but since 2017, also wind.

In January 2019 the Government took a decision that the fee for renewables support for households would be 0.9439 eurocents per kWh but that the increase would not apply to customers using less than 300 kWh of electricity.¹¹⁷ Their fee would stay almost unchanged, at 0.47320 eurocents/kWh compared to 0.47316 eurocents/kWh which was the fee in 2018.¹¹⁸

Then in May the Minister of Economy took a step further and announced that from 1 June 2019 the fee for renewable energy incentives added

to electricity bills for customers using less than 300 kWh would be abolished, but instead the income from tax on coal would be used for the purpose.¹¹⁹ This tax was originally introduced several years ago but has been re-launched as a tool for financing renewables. There is little difference for households between the two methodologies as they will anyway pay through their electricity bills in the end, but it is in principle positive that the principle of “polluter pays” is applied.

Montenegro’s National Renewable Energy Action Plan estimated that the annual cost of incentives for small hydropower plants would

reach EUR 26.7 million by 2020.¹²⁰ Solar would receive only EUR 2.9 million while wind would receive EUR 39.9 million. The total annual cost by 2020, together with other sources like biomass, would be EUR 86.4 million.

Until recently, the costs were nowhere near that high, reaching EUR 7.7 million in 2017,¹²¹ but they still caused a public outcry. In 2018, the incentives costs leapt up to EUR 22.85 million, mostly because of the Krnovo wind farm coming online, but also because of higher hydropower production than in 2017, when rainfall was particularly low.¹²²

115 Or privileged producer status if the producer skipped the temporary stage - Article 107, Law on Energy.

116 Decree on the means of accessing and the level of feed-in tariffs for electrical energy produced from renewable energy and highly efficient cogeneration, Official Gazette no. 3/2019, Decree on tariff system for determining the incentive prices for electricity produced from renewable energy sources and highly efficient cogeneration, Official Gazette no. 33/16; Decree on amendments to the Decree on tariff system for determining the incentive prices for electricity produced from renewable energy sources and highly efficient cogeneration, Official Gazette no. 03/17. Previous versions were: Official Gazette 52/11, 28/14, and 79/15.

117 Montenegro Ministry of Economy: Rješenje o jediničnoj naknadi za podsticanje proizvodnje električne energije iz obnovljivih izvora energije i visokoefikasne kogeneracije u 2019. godini, 25.02.2019.

118 CDM: Ko troši više od 300 kilovata platiće dodatnu naknadu, 09/02/2019

119 Government of Montenegro: Od 1. juna se ukida naknada za OIE1, 23.05.2019. The Decree introducing the change was approved on 23 May: Uredba o naknadi za podsticanje proizvodnje električne energije iz obnovljivih izvora i visokoefikasne kogeneracije.

120 National Action Plan for the Use of Energy from Renewable Sources by 2020, 11 December 2014, p-95

121 Crna Gora Regulatorna agencija za energetiku: Izvještaj o stanju energetskeg sektora Crne Gore u 2017. godini, July 2018

122 Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

123 Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

Table 12: Montenegro: electricity produced by privileged producers 2014-2018¹²³

| Privileged producer | Name of plant | "2014 [kWh]" | "2015 [kWh]" | "2016 [kWh]" | "2017 [kWh]" | "2018 [kWh]" | "2014 - 2018 [kWh]" |
|---------------------------------|----------------------------|------------------|-------------------|-------------------|-------------------|--------------------|---------------------|
| Hidroenergija Montenegro | Jezerštica SHPP | "2014 [kWh]" | 1,183,155 | 1,481,655 | 406,823 | 1,314,798 | 5,557,886 |
| | Rmuš SHPP | 1,171,455 | 710,104 | 1,928,763 | 1,512,085 | 1,972,140 | 6,123,092 |
| | Spaljevići SHPP | | 825,058 | 2,478,097 | 1,649,795 | 2,070,570 | 7,023,520 |
| | Bistrica SHPP | | 5,003,532 | 22,184,991 | 14,693,235 | 19,385,605 | 61,267,363 |
| | Orah SHPP | | 1,577,266 | 4,672,624 | 3,557,363 | 4,325,914 | 14,133,167 |
| | Šekular SHPP | | | 3,536,326 | 4,683,643 | 6,204,054 | 14,424,023 |
| Igma Energy | Bradavec SHPP | | 336,435 | 3,209,475 | 2,896,788 | 4,063,703 | 10,506,401 |
| | Piševska rijeka SHPP | | | | 732,057 | 3,150,376 | 3,882,433 |
| Synergy | Vrelo SHPP | | 847,722 | 3,117,450 | 2,479,354 | 2,626,908 | 9,071,434 |
| Kronor | Jara SHPP | | | 1,076,180 | 12,693,625 | 19,252,522 | 33,022,327 |
| | Babino polje SHPP | | | | 1,188,712 | 8,541,095 | 9,729,807 |
| Hydro Bistrica | Bistrica Majstorovina SHPP | | | | | 9,524,544 | 9,524,544 |
| Nord Energy | Šeremet potok SHPP | | | | | 570,527 | 570,527 |
| Krnovo Green Energy | Krnovo wind farm | | | | 37,981,318 | 161,625,588 | 199,606,906 |
| Total | | 1,171,455 | 10,483,272 | 43,685,561 | 84,474,798 | 244,628,344 | 384,443,430 |

Source: Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

Table 13: Montenegro: incentives paid to privileged producers 2014-2018¹²⁴

| Privileged producer | Name of plant | 2014 | 2015 | 2016 | 2017 | 2018 | "2014 - 2018" |
|--------------------------|----------------------------|----------------|------------------|------------------|------------------|-------------------|-------------------|
| | | [€] | [€] | [€] | [€] | [€] | [€] |
| Hidroenergija Montenegro | Jezerštica SHPP | 122,300 | 122,658 | 155,915 | 42,720 | 138,212 | 581,804 |
| | Rmuš SHPP | | 74,135 | 204,391 | 159,903 | 208,771 | 647,200 |
| | Spaljevići SHPP | | 86,136 | 262,604 | 174,466 | 219,191 | 742,396 |
| | Bistrica SHPP | | 447,291 | 1,748,843 | 1,155,917 | 1,526,616 | 4,878,667 |
| | Orah SHPP | | 164,667 | 495,158 | 376,191 | 457,941 | 1,493,957 |
| | Šekular SHPP | | | 333,865 | 441,293 | 585,104 | 1,360,262 |
| Igma Energy | Bradavec SHPP | | 35,124 | 340,108 | 306,335 | 430,184 | 1,111,751 |
| | Piševska rijeka SHPP | | | | 76,427 | 329,214 | 405,641 |
| Synergy | Vrelo SHPP | | 88,502 | 330,356 | 262,192 | 278,084 | 959,134 |
| Kronor | Jara SHPP | | | 84,717 | 997,338 | 1,514,211 | 2,596,266 |
| | Babino polje SHPP | | | | 108,030 | 776,983 | 885,014 |
| Hydro Bistrica | Bistrica Majstorovina SHPP | | | | | 795,204 | 795,204 |
| Nord Energy | Šeremet potok SHPP | | | | | 59,563 | 59,563 |
| Krnovo Green Energy | Krnovo wind farm | | | | 3,646,207 | 15,532,219 | 19,178,426 |
| Total | | 122,300 | 1,018,512 | 3,955,956 | 7,747,019 | 22,851,498 | 35,695,284 |

124 Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019

125 Tax Administration's response to a freedom of information request, 9 November, 2017; MANS number 17/115002-115005

Source: Regagen: Report on the state of the Montenegrin energy sector in 2018, July 2019

One of the reasons, as we will see below, is that they have benefitted a small group of companies close to the Government. Of the seven companies receiving incentives in 2017, six were hydropower plant owners, some of whom have concessions for several plants. The remaining company, Krnovo Green Energy, is the owner of Montenegro's first wind farm.

Concessionaires for small hydropower plants are obliged to pay a concession fee of 5-6 per cent of the annual electricity production, but this is peanuts compared to the incentives. Data from the Tax Administration show that in 2014-2017, the state received a total of EUR 433,487 in concession fees for the use of water for electricity production in small hydropower plants.¹²⁵

Table 14: Montenegro - concession fees paid for hydropower

| Year | Fee in EUR |
|--------------|----------------|
| 2014 | 5,803 |
| 2015 | 29,840 |
| 2016 | 195,217 |
| 2017 | 202,627 |
| TOTAL | 433,487 |

Table: Concession fees paid for hydropower. Source: Tax Administration

Case study: Montenegro incentives system lost credibility due to nepotism¹²⁶

Incentives for the construction of small hydropower plants have benefitted various people close to the President Milo Đukanović or to his party, the ruling Democratic Party of Socialists (DPS).

Most of the feed-in tariffs for small hydropower plants - EUR 9.7 million between 2014 and 2018 - have gone to Hidroenergija Montenegro from Berane, which owns six plants that already receive incentives and three more which already have temporary privileged producer status.¹²⁷ Its owners are Ranko Radović and the company Hemera Capital from Podgorica,¹²⁸ founded by Oleg Obradović,¹²⁹ known for the Telecom affair,¹⁵⁰ one of the country's largest corruption scandals.

Obradović was also Chair of the Board of Directors at Prva Banka, where the largest shareholder is Aco Đukanović,¹⁵¹ brother of President Milo Đukanović. Hidroenergija was formerly part-owned by Ranko Ubović,¹⁵² who has been convicted of tax evasion.¹³³

The second largest recipient of feed-in tariffs for hydropower has been Kronor, which owns two plants. Kronor is owned by the companies Kroling, Mont Hidro and Gama Montenegro.¹⁵⁴ Mont Hidro is owned by Montenegrin construction businessman Predrag Bajović,¹⁵⁵ who is brother-in-law of the former Montenegrin Prime Minister, Igor Lukšić.¹⁵⁶

Two plants receiving incentives are owned by Igma Energy from Andrijevića,¹⁵⁷ owned by Igma Grand, whose founder is Igor Mašović, brother of the Mayor of Andrijevića Srđan Mašović, member of the ruling DPS.¹⁵⁸

Another subsidised plant is owned by Synergy from Podgorica, owned by several natural persons, but also the KIA Montenegro company¹⁵⁹ whose legal representative is Vuk Rajković,¹⁴⁰ "best man" (*kum*) of the former Prime Minister of Montenegro and DPS leader Milo Đukanović.¹⁴¹

All these companies have concessions to build new plants on other rivers as well, both

individually and in consortia, but it is unclear whether they will all receive subsidies, as some of them have not yet gained temporary privileged producer status.^{142, 143}

Another construction businessman and business partner of Milo Đukanović,¹⁴⁴ Tomislav Čelebić, is in the small hydropower plant construction business as well. He is part of a consortium with Synergy and football player Stefan Savić for the construction of Bjelojevička rijeka hydropower plant in Mojkovac.¹⁴⁵

Milo Đukanović's relatives are also involved - the company Hydra from Podgorica appears in the Hydra MNE consortium with Igma Energy¹⁴⁶ for the construction of the two controversial plants Bukovica 1 and 2, whose construction was halted by local people in Šavnik earlier this year.¹⁴⁷ Hydra is half owned by Milovan Maksimović, Đukanović's cousin.¹⁴⁸

In addition, Blažo Đukanović, Đukanović's son, has the right to build two plants via his company BB Hidro, where he has half of the ownership.¹⁴⁹

| Persons | Connection |
|--------------------|---|
| Oleg Obradović | Former chair of Board of Directors at Prva banka owned by Aco Đukanović |
| Blažo Đukanović | Son of Milo Đukanović |
| Milovan Maksimović | Cousin |
| Vuk Rajković | "Best man" (<i>kum</i>) of Milo Đukanović |
| Tomislav Čelebić | Business with Milo Đukanović |
| Igor Mašović | Brother of a DPS member |
| Predrag Bajović | Brother-in-law of former Prime Minister Igor Lukšić |

Some of the owners and founders of the companies building small hydropower plants in Montenegro and their connection to the Government

The system of feed-in-tariffs has proven to provide a boost to some renewable energy sources - hydropower and wind, but not solar - but the cost has been very high in terms of boosting nepotism and corruption, as well as in terms of the environmental destruction wrought by small hydropower plants.

126 This section draws heavily on analyses by MANS Investigation Centre in from November 2017 and January 2018: Case study: [Small hydropower plants or business for the privileged ones](#), November 2017; Vanja Čalović Marković, Dejan Milovac, Ines Mrdović: [State Capture in the Energy Sector in Montenegro: Small hydropower plants bring large profits](#), 30.01.2018

127 [Register of privileged producers](#), viewed 14 July 2019

128 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019.

129 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019.

130 The Telecom Affair refers to the sale of Montenegrin Telecom in 2005, in which the U.S. Securities and Exchange Commission found that fictitious consulting contracts, which included Oleg Obradović, served for the alleged bribery of Ana Kolarević on behalf of her brother, Milo Đukanović: [Vijesti Portal](#), March 27, 2014: "Afera Telekom: Oleg Obradović ključni igrač da se za posao angažuje Kolarević".

131 [Blic: U Podgorici ranjen bivši direktor Crnogorskog telekoma i Prve banke](#), 27.05.2015, Dan: [Za biznis od 21 milion dozvole dobili ekspresno](#), 08.01.2018

132 Government of Montenegro: [Informacija o realizaciji ugovora o koncesiji zaključenih sa koncesionarom „Hidroenergija Montenegro“ doo](#), 3 May 2016.

133 Dan: [Ubović kažnjen 60.000 eura](#), 4 April, 2017

134 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019.

135 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019.

136 Dan: [Lukšićev šura gradi mini-elektranu](#), 15 August 2015

137 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

138 Dan: [Mašoviću dozvola za drugu elektranu](#), 10 May 2017.

139 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

Montenegro phasing out renewable energy incentives

Montenegro was perhaps the first of the Western Balkan countries to see a sustained backlash against incentives for small hydropower plants. Resistance against small hydropower plants by local communities and environmental groups has been combined with continuous media exposés of the links between the incentive recipients and the ruling party.

The Law on Energy contains a provision that the Government will cease to incentivise the construction of new renewable energy generation facilities, and the Regulatory Agency will cease to grant new *privileged producer* status for new plants, if Montenegro meets its renewables target. In case of serious negative socio-economic impacts on end users, they can temporarily decrease incentives even before meeting the targets.¹⁵⁰

Considering that Montenegro has already fulfilled its 2020 target, largely by adjusting its biomass data,¹⁵¹ the government in 2017 decided not to accept any new requests for energy permits for renewables except for reconstruction of two existing hydropower plants,¹⁵² and in 2018 repeated the decision, except for very small hydropower plants (up to 328 kW), reconstruction of hydropower plants up to 7.1 MW and solar up to 5.3 MW.¹⁵³

Local people and Balkan River Defence join forces against the planned Bukovica small hydropower plant in Montenegro. Photo Katja Jemec, Balkan River Defence

Since then the Government has continued to take steps to reduce the impact of renewable energy incentives on people's bills. On 23.01.2019 a new Decree on incentive levels entered into force,¹⁵⁴ which foresees a gradual decrease in feed-in tariffs after 2020, and the Government announced that it would continue to promote renewable energy without guaranteed buy-off of electricity.¹⁵⁵

However the new rules will only apply to new contracts, leaving DPS's friends and family to enjoy several more years of guaranteed income until their contracts end.

In 2018 Montenegro launched a tender for a solar plant at Briška Gora. It was won by a consortium of EPCG and Fortum and signed in December. The 250 MW plant is expected to go ahead without feed-in tariffs or premiums.¹⁵⁶

It is unclear whether Montenegro is phasing out renewables incentives for good or just until new targets for 2030 are agreed. While it seems that larger plants may now be viable without incentives, it is unlikely to be the case for smaller plants, especially for households and energy co-operatives, for some time yet. But for any new system, the Government will have to do a lot to convince the people of Montenegro that it is not just a scheme intended to enrich selected business people.

140 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

141 Dan: I rođak i kum dobili koncesije, 8 October, 2016. For more on Rajković's privileges, see also OCCRP/CIN: [Best Man, Best loan terms](#), 2 June, 2012.

142 Government of Montenegro: [Informacija o realizaciji ugovora o koncesiji zaključenih sa koncesionarom „Hydroenergija Montenegro“ doo](#), Berane, 03.05.2016

143 [Montenegro concessions register](#), accessed 14 July 2019

144 He is a business partner of Milo Đukanović in the private university University of Donja Gorica Podgorica. Source: [Univerzitet Donja Gorica website](#), accessed 14 July 2019.

145 Goran Kapor: [Brača i kumovi u redu za mHE](#), Vijesti, 3 August 2016; [Izveštaj o sprovedenom postupku javnog nadmetanja za davanje koncesija za korišćenje vodotok za izgradnju malih hidroelektrana u Crnoj Gori sa predlozima odluka o davanju koncesija i predlogom ugovora o koncesiji za izgradnju malih hidroelektrana na vodotocima: Lještanica, Bistrica, Bjelojevička i Bukovica](#), 28.09.2016

146 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

147 Energetski portal RS: [Obustavljeni radovi na izgradnji malih hidroelektrana na Bukovici](#), 15.06. 2019

148 Dan: I rođak i kum dobili koncesije, 8 October, 2016; [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

149 [Central Registry of Commercial Entities of the Tax Administration website](#), search done on 14 July 2019

150 Article 98, [Zakon o energetici](#) (Službeni list CG, br. 5/2016 i 51/2017)

151 Energy Community Secretariat: [Annual Implementation Report 2018](#), October 2018.

152 Government of Montenegro: [Izveštaj o realizaciji Nacionalnog akcionog plana korišćenja energije iz obnovljivih izvora do 2020. godine, za period 2014 - 2015. godine](#), 02.02.2017.

153 Government of Montenegro: [Plan izdavanja energetskih dozvola za 2018. godinu](#)



North Macedonia

Small contribution, but serious damage

By 2009, North Macedonia already had 38.6 MW of hydropower plants under 10 MW.¹⁵⁷ By 31 December 2018 there were 79 new plants, bringing the overall total to 96 plants with 106.3 MW. No fewer than 30 more small hydropower plants are under construction, with a total of 34.06 MW installed capacity, and are expected to come online by 2021.¹⁵⁸

In 2018, incentivised small hydropower plants generated 3.9 per cent of North Macedonia's electricity, with another 3 per cent from older small plants owned by EVN.¹⁵⁹

North Macedonia was a relatively early starter in building a wind plant at Bogdanci, which went online in 2015, but its further wind and

solar development then stagnated for several years. While there are some promising signs that the Government plans to increase the use of wind and solar via auctions,¹⁶⁰ its persistent preference for hydropower (see below) raises questions about the sustainability and integrity of its plans.

How much has it cost?

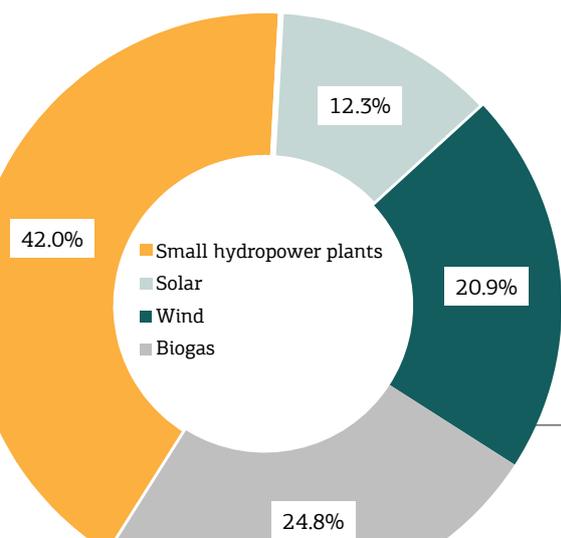
According to the Electricity Transmission System Operator of Macedonia (MEPSO), preferential producers have received subsidies of **altogether EUR 152,753,984 for the period 2010-2018**¹⁶¹ (see Table 15 below). In 2018, 42 per cent of incentives went to small hydropower.

Table 15: Feed-in tariff paid to RES producers - 1.1.2010-26.11.2018 (in EUR excluding VAT)

| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------|----------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| SHPPs | 216 076 | 808 623 | 1 453 676 | 2 691 404 | 5 797 122 | 9 059 822 | 14 632 221 | 11 728 438 | 15 052 041 |
| Solar | 10 743 | 455 310 | 1 049 066 | 2 583 018 | 3 382 700 | 4 535 590 | 4 793 974 | 4 825 445 | 4 402 574 |
| Wind | | | | | | 10 295 121 | 9 756 972 | 9 849 250 | 7 500 006 |
| Biogas | | | | | | 3 194 131 | 6 494 992 | 9 294 457 | 8 891 211 |
| Total | 226 819 | 1 263 934 | 2 502 742 | 5 274 422 | 9 179 822 | 27 084 664 | 35 678 159 | 35 697 590 | 35 845 833 |

Source: MEPSO - response to information request sent 26.11.2018 (final response on 10.12.2018)

Figure 17: North Macedonia renewables incentives 2018
Source: MEPSO



A list of producers receiving incentives is available in theory,¹⁶² but it is not listed who gets how much and it is not regularly updated.

EUR 134,306,246 have been added directly to the energy bills of final consumers since 2015. For a typical household in Skopje, this amounted to around 6.2 per cent of the bill in 2018.

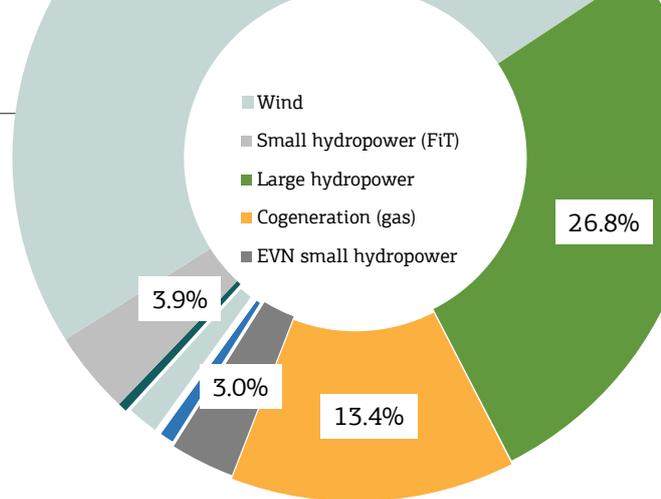


Figure 16: North Macedonia electricity generation 2018

Source: North Macedonia Regulatory Commission for Energy and Water Services Annual Report for 2018

154 Government of Montenegro: Uredba o načinu ostvarivanja i visini podsticajnih cijena za električnu energiju proizvedenu iz obnovljivih izvora i visokoeffikasne kogeneracije, approved 20.12.2019.

155 Vladimir Spasić: Od 2020. počinje postepeno ukidanje fid-in tarifa za OIE u Crnoj Gori, Balkan Green Energy News, 25.12.2018.

156 Svetlana Jovanović: Contract signed to build 250 MW solar power plant, Balkan Green Energy News, 31 December, 2018
North Macedonia: National Renewable Energy Action Plan, 2016.

157 North Macedonia: National Renewable Energy Action Plan, 2016.

158 Republic of North Macedonia Regulatory Commission for Energy and Water Services, Annual Report for 2018, April 2019

159 Republic of North Macedonia Regulatory Commission for Energy and Water Services, Annual Report for 2018, April 2019

160 See eg. Emiliano Bellini: North Macedonia launches solar tenders for 35 MW of capacity, PV Magazine, 11 June 11, 2019

161 The feed-in tariff was introduced in the legislation in February 2007 but reportedly the first preferential producers started producing energy on 1st January 2010.

162 See <http://www.erc.org.mk/pages.aspx?id=57#>

North Macedonia: Hydropower plant owners in high places

The small hydropower boom in North Macedonia is closely associated with the current Deputy Prime Minister for Economic Affairs - Kocho Angjushev.

He is a major shareholder in FeroInvest - an umbrella company that owns at least 27 small hydropower plants, a hydropower plant design company, turbine production and sales company and small hydropower plant maintenance company. The company's plants include Brajchinska reka 1 - a scandalous project in the Pelister National Park that has damaged the habitat of the endemic and endangered Prespa Trout¹⁶³ and the planned cascade on the Zirovnichka river in the Mavrovo National Park. This project threatens the drinking water source of the village located downstream, which is situated between the planned water intake and the powerhouse.¹⁶⁴

For those of its plants that are already operational, based on annual electricity production as stated on the company's website, FeroInvest is receiving an estimated EUR 3.5 million from feed-in tariffs annually (see Annex 3).

At the same time, Angjushev and his cabinet are closely involved in the drafting and preparation of implementing legislation regarding the utilisation of renewable energy sources and energy in general. In spring 2019, the State Commission for the Prevention of Corruption opened a case to investigate how FeroInvest obtained the rights to use the land to build the Topolki small hydropower plants based on allegations that a direct contract was signed instead of carrying out a tender process.

The case is still open and the investigation is underway, but on 11 June 2019 the Government approved the contested contract¹⁶⁵ for land use. If the three Topolka small hydropower plants are constructed, the feed-in tariffs that the company receives will increase by an estimated EUR 850,000 - 1,000,000 annually.

The current president of the biggest opposition party - Hristijan Mickoski - through his company Energotek won at least 5 concessions for small hydropower plants and 33,000 square metres of state-owned land to build them. This happened during the period when he was a director at the state-owned electricity production company ELEM (now ESM) and an energy advisor to the then Prime Minister Nikola Gruevski.¹⁶⁶

The other notable owner of the same company is Dimitar Dimeski - a member of the cabinet of the then Minister of Transport and Connections (the Ministry responsible for issuing construction permits).¹⁶⁷

Hristijan Mickovski is also under investigation by the State Commission for the Prevention of Corruption for the procedure under which he gained the hydropower concessions and the construction sites.¹⁶⁸

Other well established businessmen involved in the small hydropower business are the brothers Gjoko and Zoran Sterjoski - owners of the biggest sports betting company in Macedonia, Sport Life.

They also have three other companies: JES Global¹⁶⁹ - registered as a transportation company; DzS Aktuel Gjoko¹⁷⁰ - registered as a company for trade with food, beverages and tobacco and DzSP Aktuel¹⁷¹ - registered as a company for trade with grains, tobacco and animal feed.

Through these three companies, and with little to no experience in the construction and energy sector, the Sterjoski brothers won the concessions for at least 12 small hydropower plants.^{172, 173, 174, 175} Some of them are quite controversial, like Tresonecka and Ribnicka in the Mavrovo National Park and Krapaska in the Jakupica Emerald Area and have already attracted a lot of negative attention about bad construction and operation practices. Construction works on Ribnicka were supposed to start during summer 2019 but their current status is unclear.

Of the 79 operational small hydropower plants receiving feed-in tariffs,¹⁷⁶ as can be seen from above, at least one third of them are owned by these three entities. Several plants are under construction and some of the companies are still getting new concessions.

163 CEE Bankwatch Network: [Broken Rivers: the impacts of European-financed small hydropower plants on pristine Balkan landscapes](#), December 2017

164 Evidence of his majority ownership can be found at: https://drive.google.com/file/d/1A4zbvPA0MvFby-MhVitiL_FJ_bkbv7g7s/view

165 Government of North Macedonia: [Minutes of the 139th Government session](#), 11.06.2019

166 Ile Petrevski: [Mickoski under Anti-Corruption scrutiny](#), Alsat-M, 03.05.2019

167 Ile Petrevski: [Mickoski under Anti-Corruption scrutiny](#), Alsat-M, 03.05.2019

168 Ile Petrevski: [Mickoski under Anti-Corruption scrutiny](#), Alsat-M, 03.05.2019

169 Ministry of Finance Public Revenue Office: [website profile for JES Global](#), last accessed 26 August 2019

170 Ministry of Finance Public Revenue Office: [website profile for DzS Aktuel Gjoko](#), last accessed 26 August 2019.

171 Ministry of Finance Public Revenue Office: [website profile for DzS Aktuel](#), last accessed 26 August 2019

172 Republic of Macedonia [Official Gazette, no. 125](#), 13 October 2009

173 Republic of Macedonia [Official Gazette, no. 118](#), 6 August 2014

174 Republic of Macedonia [Official Gazette, no. 119](#), 7 August 2014

175 Republic of Macedonia [Official Gazette, no. 192](#), 17 October 2016

176 Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019

A change in the wrong direction for North Macedonia's incentives system

In 2018 the Macedonian government adopted a new Law on Energy, opening the way for the introduction of renewable energy auctions. Later in the autumn, however, when drafts of the implementing acts on renewables incentives were published, it became clear that not all renewables are created equal.

The draft *Decree on support measures for production of electrical energy from renewable sources of energy*¹⁷⁷ still allowed first-come, first-served feed-in tariffs for hydropower, biogas and biomass, but only feed-in premiums for wind and solar.¹⁷⁸

Moreover, in the accompanying *Decision on the total installed capacity of preferential electricity producers*,¹⁷⁹ there is no cap for the total amount of hydropower plants that can receive feed-in tariffs, whereas the quotas for biogas and

biomass are almost full and the cap for solar premiums is 200 MW. There is no support at all for solar installations that are too small to compete in auctions. Wind premiums are capped only by the requirements of individual auctions.

To make things even worse, the level of support for hydropower has not changed since 2007,¹⁸⁰ so the incentives do not appear to be aimed at establishing a new market but rather at supporting the sector indefinitely.

Environmental group Eko-Svest raised its concerns with the North Macedonia government and the Energy Community, but in February 2019, the Government adopted the Decree with hardly any changes. After unsuccessful attempts to resolve the issue with the national Commission for the Protection of Competition, which is supposed to approve all State aid measures, Eko-Svest, together with Bankwatch, filed a complaint to the Energy Community Secretariat on 1 July 2019.¹⁸¹

177 Government of the Republic of North Macedonia: [Decree on support measures for production of electrical energy from renewable sources of energy](#), Official Gazette no. 29/19.

178 Some wind capacity was still included in the feed-in tariff system but this constitutes only the existing Bogdanci plant, its extension and one more plant - Bogoslovec - that already has preliminary privileged producer status, so in reality there are no new feed-in tariffs available for wind.

179 Government of the Republic of North Macedonia: [Decision on the total installed capacity of preferential electricity producers](#), Official Gazette no. 29/19

180 Government of the Republic of North Macedonia: [Decree on support measures for production of electrical energy from renewable sources of energy](#), Official Gazette no. 29/19; [Decision establishing the privileged tariff for buying and selling electrical energy produced and supplied by small hydropower plants which have achieved privileged producer status](#), Official Gazette no. 16/07; [Decree on privileged tariff for electrical energy](#), Official Gazette no. 176/11; [Decree on privileged tariff for electrical energy](#), Official Gazette no. 56/13.

181 CEE Bankwatch Network and Eko-Svest: [North Macedonia: Complaint challenges unfair subsidy advantages for hydropower](#), 1 July 2019.

The Tresonecka hydropower plant in the Mavrovo National Park, North Macedonia
Photo Katja Jemec, Balkan River Defence



Serbia

Small hydropower plants generated just 0.8 per cent of electricity in 2018

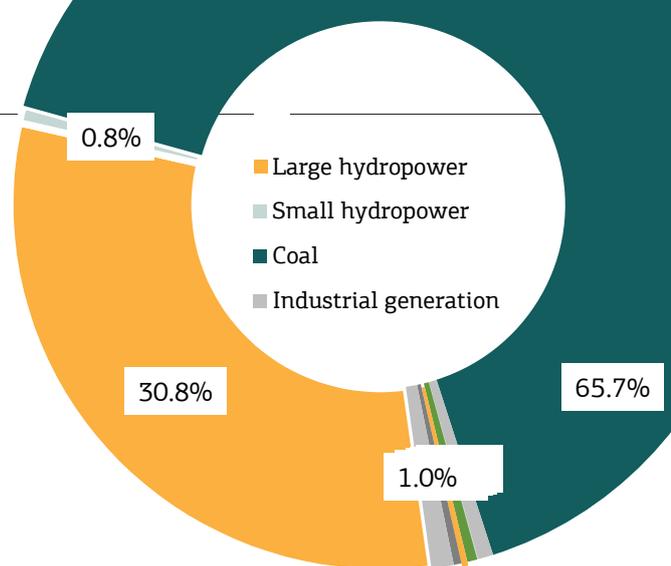


Figure 18: Serbia electricity generation 2018

Source: AERS Annual Report 2018 and Government of Serbia: Decision on Energy Balance for 2019

182 Serbia Energy Regulatory Agency (AERS): Annual Report 2018, May 2019.

183 There were 99 new hydropower plants in the incentives system in 2018, plus three older EPS plants, according to calculations based on EPS Supply: [Report on collected and paid out funds for incentives for privileged producers of electrical energy for 2018](#). In addition to these there are 14 more EPS small hydropower plants that do not appear to receive incentives.

184 Energy Community Secretariat: [Analysis of Direct and Selected Hidden Subsidies to Coal Electricity Production](#), June 2019

185 Government of Serbia: [Regulation on Privileged Producers](#), Official Gazette No. 8/13

186 Balkan Green Energy News: [Serbia reaches 500 MW quota for wind power](#), 27 April 2016

187 IRENA, Joanneum Research and University of Ljubljana: [Cost-Competitive Renewable Power Generation: Potential across South East Europe](#), International Renewable Energy Agency (IRENA), Abu Dhabi, 2017

188 Republic of Serbia: Zakon o energetici (Službeni Glasnik RS broj 145/2014), [English version](#), [Serbian version](#), Article 70

189 Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

Around 70 per cent of Serbia's energy is generated by coal and most of the remainder by hydropower plants. Serbia's state-owned utility Elektroprivreda Srbije (EPS) has 16 older small hydropower plants and one newer plant with total installed capacity of 40 MW¹⁸² while by the end of 2018, other producers had 99 small hydropower plants.¹⁸³ New forms of renewable energy have been slow to get off the ground, although this year and next, wind capacity should increase to 500 MW as several plants come online.

Despite the relatively large number of small hydropower plants, in 2018 they contributed only 0.8 per cent of Serbia's electricity supply.

How much has it cost?

Overall in Serbia, coal has received significantly more in direct subsidies than all renewable energy together in recent years. From 2015-2017, renewables received EUR 76.4 million while coal received EUR 287.1 million.¹⁸⁴ While

it is unclear whether coal subsidies are declining or not, renewable energy subsidies are clearly growing.

Among renewables, hydropower is one of the more privileged technologies in Serbia's support scheme. A 500 MW cap was set for wind projects to receive incentives until 2020,¹⁸⁵ and this quota was reserved already in early 2016, so no new projects have been able to enter the pipeline since then.¹⁸⁶ Solar PV is even more disadvantaged, with a cap of 10 MW on incentivised installed capacity.

Hydropower, geothermal, biomass and biogas, on the other hand, have no such caps, giving them a clear privilege, even though solar and wind have higher potential for additional capacity.¹⁸⁷ Serbia is also the only country in the region to offer incentives for plants up to 30 MW.¹⁸⁸

In 2018, small hydropower received almost half of renewable energy incentives in Serbia - just under EUR 25 million out of EUR 52.7 million.¹⁸⁹

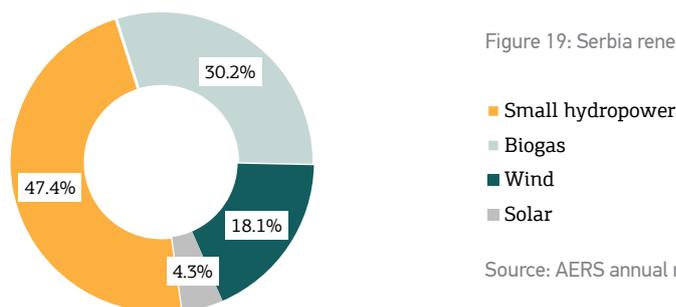
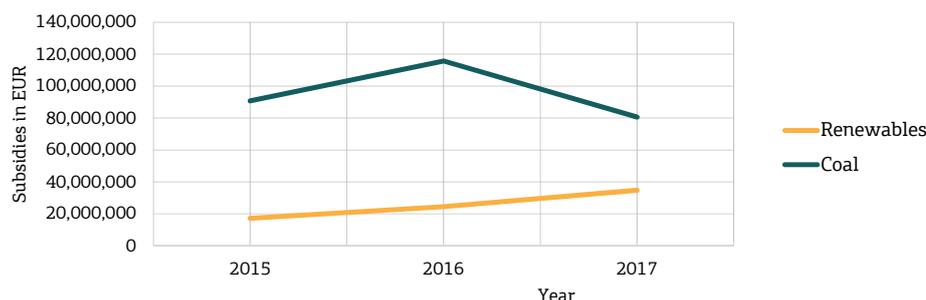


Figure 19: Serbia renewables incentives 2018

Source: AERS annual report 2018

Figure 20: Serbia renewables support vs. coal subsidies



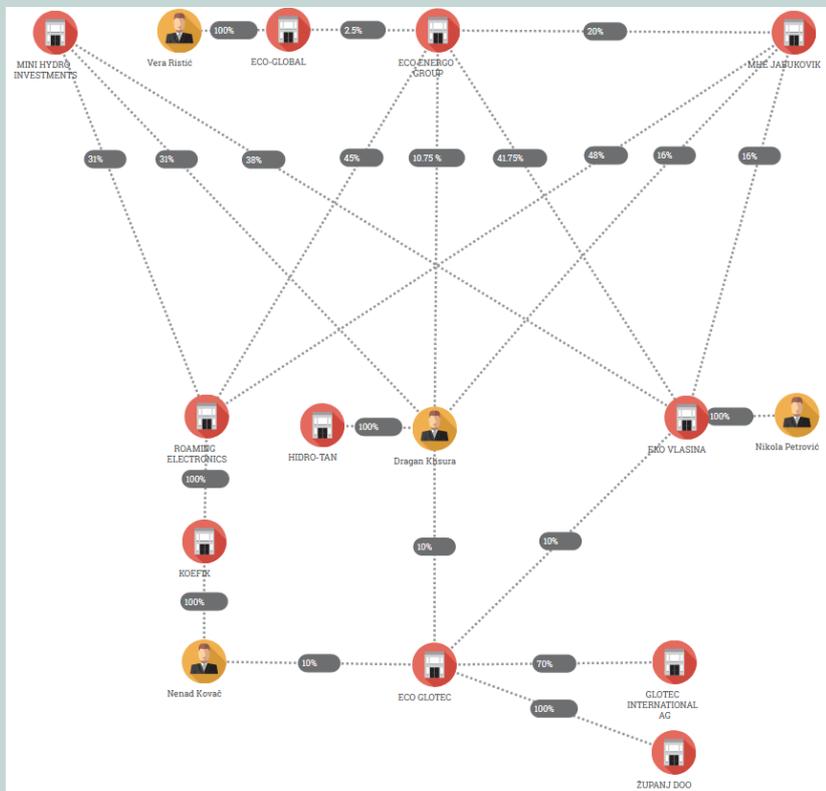
Source: Energy Community

Case study: Political connections go right to the top

As in other Western Balkan countries, promoters of small hydropower projects in Serbia are often individuals and companies closely connected to the Government. According to an investigation by the award-winning¹⁹⁰ Serbian investigative outlet CINS, the largest share of subsidies for hydropower, apart from those paid to the state-owned Elektroprivreda Srbije (EPS), is flowing to companies¹⁹¹ connected to Nikola Petrović,¹⁹² the best man (*kum*) of Aleksandar Vučić, the current President of Serbia.

In the 2013-2018 period, Eco Energo Group and related companies received EUR 13 million in feed-in tariffs, which is 15.8 per cent of the total amount of money paid to small hydropower plant producers, according to CINS. Eco Energo Group alone received EUR 9.8 million.¹⁹³ Nikola Petrović sold his shares in Eco Energo Group during his tenure in EMS, the national transmission system operator, but returned after he left EMS.

Figure 21: Schematic presentation of ownership in Eco Energo Group and related companies.



Schematic presentation of ownership in Eco Energo Group and related companies. Source: Serbian Business Registry (apr.gov.rs). Created with VIS - Visual Investigative Scenarios

Some of the companies and owners in the consortium are also connected to the previous government, so the sector shows continuity in being highly politicised. For instance, Roaming Electronics, one of the owners of Eco Energo Group, is a company that was connected to the much-contested BusPlus public-private partnership, the ticketing service for Belgrade public transport system, in which the tender appears to have been set up to limit the amount of eligible companies.¹⁹⁴ The deal was done during the mandate of Dragan Đilas, the then-mayor of Belgrade and the current

leader of the opposition.

The sister company of Roaming Electronics, Roaming Networks,¹⁹⁵ won 11 contracts with the EMS, the public company that is the national transmission system operator, while Nikola Petrović was a director. According to CINS, only one of the corresponding public calls had another bidder, raising red flags about potential corruption. Nikola Petrović has denied those allegations, citing that the EMS director does not take part in public procurement procedures.¹⁹⁶

190 CINS: [CINS won European Press Prize for investigative journalism](#), 20 April 2017

191 CINS: [Most money for EPS and companies connected to Nikola Petrović again](#), 19 April 2018

192 Vreme: [Prvi direktor Srbije](#), 8 October 2015

193 CINS: [Male hidroelektrane: Biznis protiv prirode](#), 3 Jul 2019 (in Serbian)

194 Balkan Insight: [Ticket Deal May Leave Belgrade Short-Changed](#), 13 July 2012 (in Serbian)

195 Both are wholly owned by Koefik doo.

196 CINS: [Company belonging to Nenad Kovač thrown out of business in Denmark](#), 26 October 2018

Preparations for positioning to take advantage of renewables incentives happened already in 2007 when the first moves to establish the schemes were made. Some employees and managers from Energoprojekt, a well-known construction company from Socialist times, organised well in advance before the actual feed-in tariffs were introduced.

This group was the seed of the future Eco Energo Group. The very beginnings of the company were marked with questionable transactions, including a company established in a tax haven. This raised concerns that some of Energoprojekt's assets might have been syphoned into the capital of the company, and was subject to criminal charges submitted by Energoprojekt. However the prosecutor's office later dismissed them.¹⁹⁷

Shady deals in the Bosilegrad region

In the Bosilegrad area, in southeast Serbia, four hydropower plants have been built while four more are under construction.¹⁹⁸ As CINS investigated, the Ministry of Environment's inspectorate found that six of these plants, including three that are already built, have not obtained any *Decision on the requirements and conditions regarding nature conservation* issued by the Serbian Institute for Nature Conservation. Such Decisions are mandatory according to Article 8 and 9 of the Serbian Law on Nature Protection for use of natural resources for energy projects.¹⁹⁹ Consequently, the Ministry of Environment reported these hydropower plants to the Ministry of Construction, Transport and Infrastructure, the line ministry competent for issuing the construction permits.²⁰⁰

But apart from irregularities in issuing permits, the project promoters' firms are connected to persons with links to organised crime.

Miloš Pandrc, convicted of drug smuggling as a member of Darko Šarić's gang, was appointed – while in prison – as a representative of the company that built the Virovci hydropower plant close to Bosilegrad. The owner of the company at the time was his father, Slavko Pandrc. The company received its feed-in tariff approval in the period that Miloš was still a representative of the firm, and according to an interview with Slavko Pandrc published in January 2019, Miloš still seems to run the company unofficially.²⁰¹

Darko Šarić's gang has been subject to the highest-level trial for organised crime in the last decade in Serbia. Šarić was convicted for 15 years in the first instance for smuggling almost 6 tonnes of cocaine from South America. Šarić and his group are also on trial for money

laundering, investing EUR 22 million in illicit income into businesses in Serbia.²⁰² Before and during the trial, links between the gang and high-level officials in the Serbian government were revealed.²⁰³

The Virovci project company received the location and certain permits for the plant from a firm linked to another ex-gang leader, Ljubiša Buha Čume. This was done so as compensation for Slavko Pandrc's firm constructing the Gradište hydropower plant, also built in the area of Bosilegrad, without obtaining any decision stipulating conditions regarding nature conservation.²⁰⁴ The company allegedly connected to Ljubiša Buha Čume no longer owns the Gradište hydropower plant. Still, a partial owner via his Cyprus-based company is Slaven Moravčević,²⁰⁵ a Belgrade-based lawyer whose company is advising the Montenegrin government in high-level privatisation deals.²⁰⁶

Conclusion: Privileged producers allowed to cut corners

The promoters of small hydropower plants, attracted by feed-in tariffs, are using legal loopholes to proceed with construction. Some of the plants, such as those around Bosilegrad, have been built without the relevant institutions stipulating any nature protection conditions. In at least one instance construction started without a construction permit – at the Jovanovići hydropower plant in Western Serbia.²⁰⁷

Some of the owners are connected with either high-level politics such as Eco Energo Group while some of them are from the “middle echelons” such as Vladan Skadrić, the former director of the public company Skloništa Srbije, who was suspected by the Anti-Corruption Agency of money laundering connected to the hydropower companies he owns.²⁰⁸ There is no outright proof of corruption or illicit financial flows, but there are several indicators of questionable deals: companies based in tax havens – which can be a sign of attempting to hide ownership or minimise tax payments, as well as links with organised crime.

Some of the players used their advantage of early access to information about feed-in tariff schemes to position themselves as leaders, as in the case of Eco Energo Group, as well as eg. Vladan Karamarković, assistant to the Minister of Energy from June 2005 to April 2010, who later became an owner and subsequently a director of Energo Ras, a hydropower company.²⁰⁹ All this points to the fact that the country needs a transparent system of awarding subsidies that will promote rather than curb competition.

197 CINS: [From Nigerian scheme to clandestine EPS procurement worth millions](#), 18 July 2018.

198 CINS: [Šarić's Aide Involved in Small Hydropower Plants Business](#), 26 February 2019

199 Unofficial translation: http://www.pregovarakcagrupa27.gov.rs/?wpfb_dl=107

200 CINS: [Šarić's Aide Involved in Small Hydropower Plants Business](#), 26 February 2019

201 CINS: [Šarić's Aide Involved in Small Hydropower Plants Business](#), 26 February 2019

202 B92: [Darko Saric and his associates sentenced to 300 yrs in jail](#), 10 December 2018

203 Balkan Insight, [No Snap Polls Over Serbia PM 'Drug Gang Links'](#), 4 February 2013

204 CINS: [Šarić's Aide Involved in Small Hydropower Plants Business](#), 26 February 2019

205 Data retrieved from the Serbian Business registry in August 2019 and Cyprus Business Registry in January 2019.

206 DAN: [Savjetniku Vlade licenca za trgovinu strujom](#), 17 April 2019 (in Montenegrin)

207 Insajder: [Investitor mesecima gradi malu hidroelektranu bez građevinske dozvole, inspekcija "blagonaklona"](#), 12 November 2019 (in Serbian)

208 Radio 021: [Nijedno tužilaštvo nije ispitalo navode protiv direktora Skloništa](#), 22 November 2017 (in Serbian)

209 CINS: [Small hydroelectric power plants: the state and companies connected to Vučić's best man profit most](#), 27 February 2018. Mr Karamarkovic has not been the director of Energo Ras since 2014, according to the Serbian Business registry.

Changes in Serbia's renewables incentives system

Serbia has been delaying the inevitable switch to a new incentives system. In 2018, the old Regulation on Incentive Measures that was about to expire was extended until the end of 2019.²¹⁰ The Ministry of Mining and Energy announced that its first auction for solar and wind would happen in the second half of the year.²¹¹ This does not look likely to happen as the needed regulations are still not in place.

This delay may provide an opportunity for officials, experts, civil society organizations and renewable energy producers a chance to agree on which system would yield the most benefits at the least economic and environmental cost. In July 2019 a group of civil society organisations provided a set of proposals to the Ministry in order to open up a dialogue about this issue, and nudge the renewables incentives scheme in a more economically and environmentally sustainable direction.²¹²

210 Vladimir Spasić: [Serbia pushes back introduction of renewables auctions by a year, extends existing support decree](#), Balkan Green Energy News, 27 November 2018.

211 Vladimir Spasić: [Serbia to launch wind, solar auctions in H2 2019](#), Balkan Green Energy News, 11 December 2018

212 Balkan Green Energy News: [Let the sunshine in, say civil society groups](#), 10 July 2019

Vladici 1 near Josanicka Banja in Serbia_Hardly any water remains downstream of the intake, even in February
Photo: Pippa Gallop



Conclusions and recommendations

In the Western Balkans, renewable energy incentives have disproportionately supported small hydropower projects: In 2018, 70 per cent of support for renewable energy benefitted hydropower.

Between 2009 and the end of 2018, at least 380 small hydropower plants were built in the region, of which virtually all receive feed-in tariffs. This quadrupled the overall number, from 108 to at least 488.

Many of these are in protected areas or areas which would be protected if the countries were in the EU, and the plants, individually and cumulatively, have caused serious environmental damage.

Yet small hydropower's contribution to electricity generation is extremely modest: In 2018, only 3.6 per cent of electricity in the Western Balkans was generated by hydropower plants under 10 MW.

Incentives for hydropower in the Western Balkans have also attracted widespread criticism for benefiting wealthy business people close to the region's governments - or in the case of North Macedonia, in the Government - while ordinary households cannot access support.

In Montenegro the whole incentives system has lost public credibility due to the fact that most support for small hydropower plants has benefited people close to the former Prime Minister Milo Đukanović or his party, the ruling Democratic Party of Socialists.

This has led Montenegro to halt new incentives for renewable energy, a process which may be justified for very large plants such as the 250 MW Briška Gora solar plant, but which seems likely to further slow the development of small-scale renewables like rooftop solar.

Other countries have not gone this far yet, but it is clear that perceived corruption and nepotism in the renewables incentives system endangers public acceptance of the whole transition to an energy efficient, renewables-based energy system. It urgently needs to be addressed.

Albania started to make changes to its hydropower-only support scheme in early 2017 when it approved a law phasing in an auction-based system for larger plants by 2020.

North Macedonia has also taken partial steps towards an auctions-based system, but left feed-in tariffs for hydropower intact, giving it an unwarranted advantage over solar and wind.

The remaining countries - Serbia, Bosnia and Herzegovina and Kosovo - need to change their renewables incentives systems as soon as possible, in line with the EU's Guidelines on State Aid for Environmental Protection and Energy, to ensure affordable and proportionate renewable energy support.

Given the destruction caused by hydropower, its climate change vulnerability and the overly strong support provided by governments so far, we also argue that governments need to stop supporting this kind of mature technology. Solar and wind need to be supported to address the existing imbalance and diversify the countries' renewable energy.

Although some larger renewable energy projects are starting to be developed without incentives in the Western Balkan region, some projects, especially smaller ones, are still likely to require support schemes in the years to come. Considering that Serbia, Bosnia and Herzegovina and Kosovo paid out more subsidies for coal than renewable energy in the period 2015-2017, renewable energy will have difficulty in competing if the playing field is not level.

A transition towards an energy-efficient energy sector, based on sustainable forms of renewable energy, especially requires support for households and communities to get involved in producing energy, in order to ensure public support for the transition and to ensure that electricity is generated as close as possible to where it is consumed.

Such support must be transparent, economically sustainable, and must only support environmentally acceptable sources of energy in appropriate locations.

We therefore recommend the Western Balkan countries to:

- End incentives for mature technologies such as hydropower. Only technologies which are still developing and whose costs are expected to fall further need support through State aid, especially solar and wind in cases where they would not be viable without incentives.
- In strategic documents such as the forthcoming *National Energy and Climate Plans*, pay more attention to using the considerable - yet highly under-used - potential of solar energy for electricity generation and heating. This should help to redress the imbalance shown towards hydropower so far and help to mitigate the climate vulnerability of hydropower.
- As soon as possible, implement renewables support schemes that are fully in line with the European Commission's *Guidelines on State aid for environmental protection and energy 2014-2020 (2014/C 2001)(EEAG)*.²¹³
- Introduce technology-specific auctions for incentives for all solar plants larger than 1 MW, and wind power plants larger than 6 MW, in line with the EEAG;²¹⁴ To end feed-in tariffs for all new plants larger than 500 kW, in line with the EEAG, except for wind power plants, which would have a threshold of 3 MW.²¹⁵ Auctions should include the following features:
 - So-called secondary criteria, to ensure the environmental and social sustainability of the projects, primarily through the choice of appropriate locations for energy infrastructure. They must not be in protected areas or other sensitive areas that should be protected eg. under the EU Nature and Habitats Directives, and must not have negative impacts on the economic activities carried out by the local population, eg. tourism, agriculture.
 - Eligibility criteria that ensure projects promoted by energy co-operatives or local communities are able to qualify for incentives.
 - Auctions should be so-called late auctions, after relevant permits and approvals including environmental assessments, construction permits, and grid connection approvals have been obtained and property issues have been fully resolved.
- Introduce a tax on CO₂. The income to the State budget from such a system can

be used to incentivise energy efficiency in households and the development of sustainable forms of renewable energy.

- Review existing feed-in tariff contracts for small hydropower. Any which granted incentives without all the legal conditions being fulfilled - including environmental ones - must be cancelled.

We also recommend the European Commission to:

- Step up its assistance to the countries to update their renewable energy incentive mechanisms, to exclude hydropower plants that are not in line with the Water Framework Directive and other EU Directives, in line with the EU Energy and Environment State Aid Guidelines.
- Ensure that any new support mechanisms address the current extreme imbalance between the support given to hydropower and that given to solar and wind.
- Step up its efforts to enforce the State aid provisions of the Stabilisation and Association Agreements signed with the Western Balkans countries.
- Support enhanced State aid provisions in the Energy Community, including notification of proposed aid to the Secretariat and financial penalties for breaches of the Energy Community Treaty rules.
- Encourage the countries to introduce a tax on CO₂ in order to help level the playing field for renewable energy generation and energy efficiency.

In line with these efforts, **we recommend the Energy Community Secretariat to:**

- Step up its assistance to the countries to update their renewable energy incentive mechanisms, to exclude hydropower plants that are not in line with EU environmental acquis, in line with the EU Energy and Environment State Aid Guidelines.
- Ensure that any new support mechanisms address the current extreme imbalance between the support given to hydropower and that given to solar and wind.
- Ensure that draft National Energy and Climate Plans take into account the environmental and economic sustainability constraints of renewable energy sources.

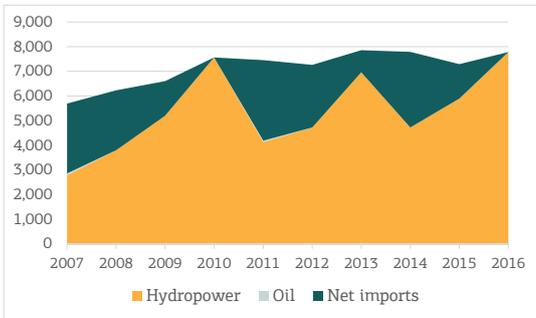
213 The European Commission has proposed to extend the Guidelines until 2022 and some parts have been incorporated into the new Renewable Energy Directive II. They will therefore remain relevant far beyond 2020.

214 The EEAG allows 6 MW or 6 turbines to be the threshold. Since one wind turbine may have several MW capacity, in reality this means the threshold may be much higher than 6 MW. Since affordability, transparency and public acceptance is a serious issue in the Western Balkans, we recommend keeping the threshold for auctions low.

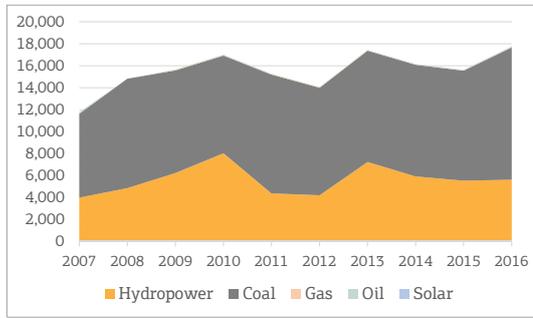
215 The EEAG allows 3 MW or 3 turbines to be the threshold. Given the need to keep costs low and transparent, we recommend 3 MW or lower as the threshold.

Annex 1: Western Balkans country electricity mix and net imports 2007-2016

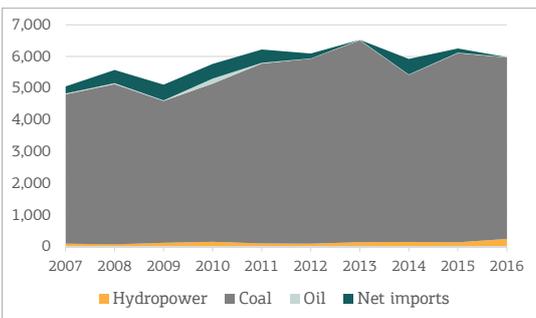
Albania electricity mix



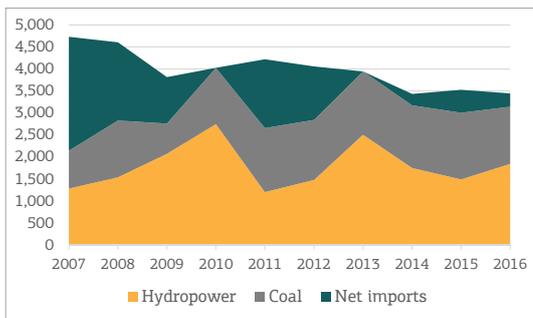
Bosnia and Herzegovina electricity mix



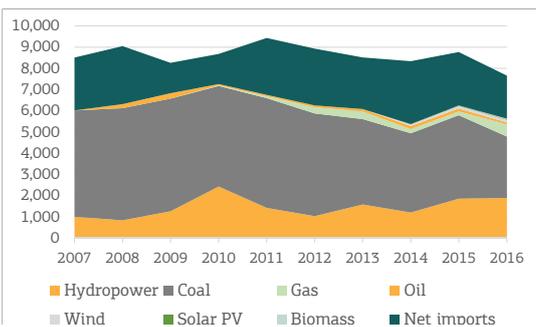
Kosovo electricity mix



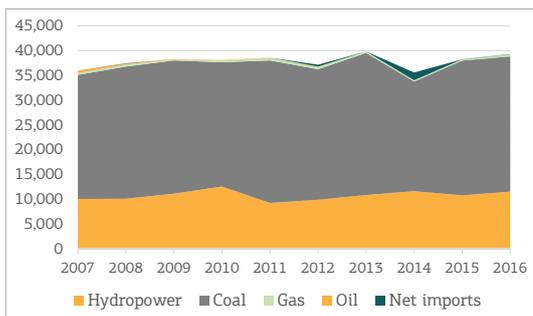
Montenegro electricity mix



North Macedonia electricity mix



Serbia electricity mix



Source: [International Energy Agency](http://www.iea.org)

Annex 2: Installed renewable energy capacity compared to plans

Table 16: Installed large hydropower in 2018 compared to 2009 and plans for 2020

| Country | Installed large hydropower 2009 (MW) | Installed large hydropower 2018 (MW) | Planned large hydropower 2020 (MW) |
|------------------------|--------------------------------------|--------------------------------------|------------------------------------|
| Albania | 1,460 | 1,801 | 1,834 |
| Bosnia and Herzegovina | 1,978 | 2,076.6 | 2,449 |
| Kosovo | 35 | 35.00 | 49.8 |
| North Macedonia | 514.7 | 586.65 | 569 |
| Montenegro | 627 | 649.00 | 728.5 |
| Serbia | 2,208 | 2,936 ²¹⁶ | 2,458 |

Large hydropower plant figures include pumped storage plants

Source: National Renewable Energy Action Plans²¹⁷ and energy regulators' annual reports.²¹⁸

Table 17: Installed hydropower <10 MW in 2018 compared to 2009 and plans for 2020

| Country | Installed hydropower <10 MW 2009 | Installed hydropower <10 MW 2018 (MW) | Planned hydropower <10 MW 2020 (MW) |
|------------------------|----------------------------------|---------------------------------------|-------------------------------------|
| Albania | 28 ²¹⁹ | 304.00 | 490 |
| Bosnia and Herzegovina | 28.22 | 159.00 | 251 |
| Kosovo | 10.84 | 51.80 | 117.3 |
| North Macedonia | 38.6 | 106.32 | 141 |
| Montenegro | 8.7 | 33.00 | 97.5 |
| Serbia | 16 | 62.20 | 204 |

Source: National Renewable Energy Action Plans²²⁰ and energy regulators' annual reports.²²¹

216 It is not clear why this figure is so much higher than the 2009 figure because in reality there has not been development of large hydropower plants during this period.

217 Albania: [National Renewable Energy Action Plan, 2016](#); Bosnia and Herzegovina: [National Renewable Energy Action Plan, 2016](#); Kosovo: [National Renewable Energy Action Plan, 2013](#); North Macedonia: [National Renewable Energy Action Plan, 2016](#); Montenegro: [National Renewable Energy Action Plan, 2014](#); Serbia: [National Renewable Energy Action Plan, 2013](#)

218 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018, March 2019](#); Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019, Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019, EPS Snaabdevanje: [Overview of contracts with privileged producers](#), 01.02.2019.

219 The [2009 Albanian Energy Regulator's annual report](#) shows more installed capacity than this - 23.8 MW under concession and 21.5 MW owned by public operator KESH. The reason for the difference is not clear.

220 Albania: [National Renewable Energy Action Plan, 2016](#); Bosnia and Herzegovina: [National Renewable Energy Action Plan, 2016](#); Kosovo: [National Renewable Energy Action Plan, 2013](#); North Macedonia: [National Renewable Energy Action Plan, 2016](#); Montenegro: [National Renewable Energy Action Plan, 2014](#); Serbia: [National Renewable Energy Action Plan, 2013](#)

221 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018, March 2019](#); Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019, Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019, EPS Snaabdevanje: [Overview of contracts with privileged producers](#), 01.02.2019.

Table 18: Installed wind power in 2018 compared to 2009 and plans for 2020

| Country | Installed wind capacity 2009 (MW) | Installed wind capacity 2018 (MW) | Planned installed capacity 2020 in NREAP (MW) |
|------------------------|-----------------------------------|-----------------------------------|---|
| Albania | 0 | 0 | 30 |
| Bosnia and Herzegovina | 0 | 51 | 330 |
| Kosovo | 0 | 33.75 | 62 |
| North Macedonia | 0 | 36.8 | 50 |
| Montenegro | 0 | 72 | 151.2 |
| Serbia | 0 | 239 | 500 |

Source: National Renewable Energy Action Plans²²² and energy regulators' annual reports.²²³

Table 19: Installed solar PV in 2018 compared to 2009 and plans for 2020

| Country | Installed solar PV capacity 2009 (MW) | Installed solar PV capacity 2018 (MW) | Planned installed capacity 2020 in NREAP (MW) |
|------------------------|---------------------------------------|---------------------------------------|---|
| Albania | 0 | 1 | 50 |
| Bosnia and Herzegovina | 0 | 18.15 | 16.2 |
| Kosovo | 0 | 6.6 | 30 |
| North Macedonia | 0 | 18.49 | 25.4 |
| Montenegro | 0 | 0.4 | 10 |
| Serbia | 0 | 8.7 | 10 |

Source: National Renewable Energy Action Plans²²⁴ and energy regulators' annual reports.²²⁵

222 Albania: [National Renewable Energy Action Plan, 2016](#); Bosnia and Herzegovina: [National Renewable Energy Action Plan, 2016](#); Kosovo: [National Renewable Energy Action Plan, 2013](#); North Macedonia: [National Renewable Energy Action Plan, 2016](#); Montenegro: [National Renewable Energy Action Plan, 2014](#); Serbia: [National Renewable Energy Action Plan, 2013](#)

223 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018](#), March 2019; Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019, Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

224 Albania: [National Renewable Energy Action Plan, 2016](#); Bosnia and Herzegovina: [National Renewable Energy Action Plan, 2016](#); Kosovo: [National Renewable Energy Action Plan, 2013](#); North Macedonia: [National Renewable Energy Action Plan, 2016](#); Montenegro: [National Renewable Energy Action Plan, 2014](#); Serbia: [National Renewable Energy Action Plan, 2013](#)

225 Albania Energy Regulatory Authority: [2018 Annual Report](#); Bosnia and Herzegovina State Energy Regulatory Commission (DERK): [Annual report for 2018](#), December 2018; Kosovo Energy Regulatory Office: [Annual Report 2018](#), March 2019; Regagen: [Report on the state of the Montenegrin energy sector in 2018](#), July 2019, Republic of North Macedonia Regulatory Commission for Energy and Water Services, [Annual Report for 2018](#), April 2019; Republic of Serbia Energy Agency (AERS), [Annual Report for 2018](#), May 2019.

Annex 3 - FerolInvest - estimated feed-in tariffs

Table 20: Estimated feed-in tariffs paid to FerolInvest per year

| No. | Small hydropower plant | Installed capacity (kW) | Validity of preferential producer status | Energy generation – annual (MWh) estimate | Energy generation – monthly (kWh) estimate | Feed-in tariff – monthly (€cents/ kWh) | Total feed-in tariff per year (EUR) |
|-----|------------------------|-------------------------|---|---|--|--|-------------------------------------|
| 1 | MHE Krljanska | 384 | 09.04.2012 - 09.04.3032 | 1,423 | 118,583 | 8 | 113,840 |
| 1 | MHE Krljanska | 384 | 09.04.2012 - 09.04.3032 | 1,423 | 118,583 | 8 | 113,840 |
| 2 | MHE Kriva reka 1 | 540 | 24.07.2015 - 24.07.2035 | 2,386 | 198,833 | 6 | 143,160 |
| 3 | MHE Kamenichka | 1200 | 16.04.2013 - 16.04.2033 | 4,683 | 390,250 | 5 | 234,150 |
| 4 | MHE Brbushica | 576 | 09.04.2012 - 09.04.2032 | 2,420 | 201,667 | 6 | 145,200 |
| 5 | MHE Kranska | 584 | 10.05.2012 - 10.05.2032 | 2,245 | 187,083 | 6 | 134,700 |
| 6 | MHE Brajchino 1 | 704 | 01.02.2013 - 01.02.2023 | 2,708 | 225,667 | 6 | 162,480 |
| 7 | MHE Selechka | 1720 | 12.06.2013 - 12.06.2023 | 635 | 511,250 | 5 | 306,750 |
| 8 | MHE Slatino | 560 | 09.04.2012 - 09.04.2032 | 2,145 | 178,750 | 6 | 128,700 |
| 9 | MHE Drugovo | 600 | 19.05.2011 - 19.05.2031 | 3,299 | 274,917 | 6 | 197,940 |
| 10 | MHE Bachiska 2 | 1170 | 17.04.2015 - 17.04.2035 | 2,353 | 196,083 | 6 | 141,180 |
| 11 | MHE Stanechka 1 | 84 | 29.05.2017 - 29.05.2037 | 632 | 52,667 | 12 | 75,840 |
| 12 | MHE Stanechka 2 | 136 | 17.09.2015 - 17.09.2035 | 943 | 78,583 | 12 | 113,160 |
| 13 | MHE Kalin Kamen 1 | 248 | 18.08.2015 - 18.08.2035 | 1,045 | 87,083 | 8 | 83,600 |
| 14 | MHE Kalin Kamen 2 | 320 | 18.08.2015 - 18.08.2035 | 1,306 | 108,833 | 8 | 104,480 |
| 15 | MHE Vranovska | 792 | 10.04.2018 - 10.04.2038 | 2,353 | 196,083 | 6 | 141,180 |
| 16 | MHE Ohrid 1 | 117 | 10.12.2010 - 10.12.2030 | 472 | 39,333 | 12 | 56,640 |
| 17 | MHE Ohrid 2 | 320 | 08.01.2010 - 08.01.2030 | 1,442 | 120,167 | 8 | 115,360 |
| 18 | MHE Ohrid 3 | 229 | 20.08.2010 - 20.08.2030 | 639 | 53,250 | 12 | 76,680 |
| 19 | MHE Belica 1 | 995 | 01.11.2010 - 01.11.2031 | 4,705 | 392,083 | 5 | 235,250 |
| 20 | MHE Belica 2 | 996 | 01.11.2010 - 01.11.2031 | 2,267 | 188,917 | 6 | 136,020 |
| 21 | MHE Jablanica | 3280 | 24.12.2015 - 24.12.2035 | 11,656 | 971,333 | 4.5 | 524,520 |
| 22 | MHE Padalishka 2 | 480 | 03.04.2019 - 03.04.2039 | 1,423 | 118,583 | 8 | 113,840 |
| 23 | MHE Topolka 315 | 2133 | N/A | 5,083 | 423,583 | 5 | 254,150 |
| 24 | MHE Topolka 316 | 2841 | N/A | 7,983 | 665,250 | 4.5 | 359,235 |
| 25 | MHE Topolka 317 | 1989 | N/A | 4,924 | 410,333 | 5 | 246,200 |
| | | | Total per year (EUR) estimate - without Topolki | | | | 3,484,670 |
| | | | Total per year (EUR) estimate - with Topolki | | | | 4,344,255 |

Sources: FerolInvest website, Government Decrees on feed-in tariff levels

Hydropower in the Western Balkans has proven to be environmentally destructive, vulnerable to climate change and has received overly strong support so far. Governments need to end incentives for mature technologies such as hydropower. Only technologies which are still developing and whose costs are expected to fall further need support through State aid, especially solar and wind in cases where they would not be viable without incentives.

CEE Bankwatch Network
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Save The Blue Heart of Europe

*Western Balkans hydropower
Who pays, who profits?*

September 2019

