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Position paper: Kosovo's National Energy and Climate Plan (NECP)

May 2022

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Executive summary

With the signing of the Sofia Declaration on the Green Agenda in November 2020,[1] Western Balkan leaders committed to decarbonisation by 2050, meaning a halt to the use of all fossil fuels — oil, gas and coal. One of the milestones to achieving this target is the adoption of targets on energy efficiency, renewable energy and reducing greenhouse gas emissions by 2030.[2]

Drawing up a National Energy and Climate Plan (NECP) is an essential part of this process as it will define Kosovo's actions between now and 2030. NECPs need to cover the five pillars of the EU's Energy Union policy:[3]

- Energy security, solidarity and trust
- A fully integrated internal energy market
- Energy efficiency contributing to moderation of demand
- Decarbonisation of the economy
- Research, innovation and competitiveness

Each of these represents a challenge for Kosovo, whose energy sector is at a crossroads and requires increasingly urgent decisions on how to move ahead.

This position paper aims to provide recommendations for Kosovo's NECP, which is currently being developed, from an environmental sustainability and public inclusion standpoint. It focuses primarily on the energy security, energy efficiency and decarbonisation pillars of the NECP, seeking to help Kosovo learn from others' experiences in planning for proven environmentally and socially acceptable solutions.

Our 32 recommendations focus primarily on moving Kosovo towards an energy efficient, 100 per cent renewable economy based on close market integration, flexible electricity generation and electrification of the transport and heating sectors.

One of the challenges will be to avoid getting distracted by policies that may later turn out to be counterproductive, such as fossil gas, fossil-based hydrogen, forest biomass, waste incineration or biofuels. Kosovo's energy future lies in the EU energy market, but it must find its own way to make the energy transition work for the good of the country.

For this, the inclusion of the public in debating energy policy is essential, to harvest ideas and address concerns. The energy sector has for decades affected people's health and well-being, as well as their wallets. But more than ever, opportunities and needs now exist for the public to participate actively, whether in generating electricity as prosumers, insulating their houses or fitting heat pumps. Kosovo has already begun to nurture the potential for prosumers and needs to develop all of these methods of public participation much further.

[1] Regional Cooperation Council, "Sofia Declaration on the Green Agenda for the Western Balkans, November 10, 2020

[2] In order to reach their previous targets for 2020, each country needed to produce separate National Renewable Energy Action Plans and Energy Efficiency Action Plans. They may still do so if they wish, but this is no longer obligatory. Energy Community Secretariat

[3] Policy Guidelines by the Energy Community Secretariat on the Development of National Energy and Climate Plans Under Recommendation 2018/01/MC-EnC - PG 03/2018, June 2018

Introduction

With the signing of the Sofia Declaration on the Green Agenda in November 2020,[4] Western Balkan leaders committed to decarbonisation by 2050, meaning a halt to the use of all fossil fuels — oil, gas and coal. One of the milestones to achieving this target is the adoption of targets on energy efficiency, renewable energy and reducing greenhouse gas emissions by 2030.[5]

In order to plan for these in an integrated way, the concept of National Energy and Climate Plans (NECPs) was introduced by the European Union's governance Regulation[6] as part of the Clean Energy for all Europeans package[7] adopted throughout 2018 and 2019.

In November 2018, the Energy Community's Ministerial Council adopted a Recommendation[8] that the contracting parties, including Kosovo, should also complete NECPs as soon as possible. However, there has been a serious delay in setting targets for 2030 in the Energy Community,[9] which also delayed the formal adoption of the governance Regulation by the Energy Community.

The targets have still not been set, but a first draft of the targets proposed by the consultants engaged by the European Commission was published in early April 2022[10] (see Decarbonisation section) and will form the basis of consultation with the countries in the coming months.

In November 2021, the Energy Community's Ministerial Council also adopted an adapted version of the governance Regulation, setting a binding deadline of June 2024 for the delivery of the final NECPs.[11] Drafts have to be delivered by June 2023.[12] On one hand, time is needed for transposition and incorporation of the forthcoming targets into the NECPs. But in reality, this is shockingly late, as both governments and investors urgently need to be clear about the direction the energy sector will take in the coming years and many of the countries, including Kosovo, have terribly outdated energy strategies and other policy documents.

North Macedonia and Albania have submitted their draft NECPs to the Energy Community Secretariat,[13] but in the other Energy Community countries — including Kosovo — as of mid-April 2022, the documents are not yet available to the public. Kosovo has a working group for NECP development and drafting has started, but no public consultations have yet been held. A new Energy Strategy, to replace the last one from 2017,[15] is also being developed, so it is presumed that these are being coordinated with one another.

NECPs need to follow a set format[16] and must each cover the five pillars of the EU's Energy Union policy:

- Energy security, solidarity and trust
- A fully integrated internal energy market
- Energy efficiency contributing to moderation of demand
- Decarbonisation of the economy
- Research, innovation and competitiveness

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[4] Regional Cooperation Council, Sofia Declaration on the Green Agenda for the Western Balkans, November 10, 2020
[5] In order to reach their previous targets for 2020, each country needed to produce separate National Renewable Energy Action Plans and Energy Efficiency Action Plans. They may still do so if they wish, but this is no longer obligatory.
[6] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, 2018
[7] European Commission, Clean Energy for All Europeans package, accessed April 4, 2022
[8] Energy Community Ministerial Council, Recommendation 2018/01/EnC-MC, November 2018
[9] This came about because the first study on potential targets that was commissioned by the Energy Community Secretariat was not deemed sufficiently robust by the European Commission, which then commissioned a second study.
[10] E3 Modelling, Energy Community - Project Update, April 7, 2022
[11] Energy Community Ministerial Council, Decision 2021/14/MC-EnC, November 2021
[12] Energy Community Secretariat, Transposition and Implementation of the Governance Regulation, Energy and Climate Technical Working Group, April 7, 2022
[13] Albania also adopted its NECP, at the same time pledging to update it soon to take the Energy Community Secretariat's comments into account. Energy Community Secretariat, Albania: The First Contracting Party to Adopt National Energy and Climate Plan, February 4, 2022
[14] Energy Community Secretariat, WB6 Energy Transition Tracker, June 2021
[15] Government of the Republic of Kosovo, Energy Strategy of the Republic of Kosovo 2017-2026, March 2017
[16] Energy Community Secretariat, Policy Guidelines by the Energy Community Secretariat on the Development of National Energy and Climate Plans Under Recommendation 2018/01/MC-EnC PG 03/2018, June 2018

Each of these represents a challenge for Kosovo, whose energy sector is at a crossroads and requires increasingly urgent decisions on how to move ahead.

Kosovo has the most coal-dependent power supply in the Western Balkans, with 95 per cent of electricity generated from coal in 2020.[17] Unfortunately, instead of investing in energy savings and moving decisively towards renewables, Kosovo wasted more than a decade trying to build a new 500 megawatt (MW)[18]coal power plant, Kosova e Re, which turned out to be a dead end and was cancelled in March 2020.

Previous governments also mostly tried to meet the country's 2020 renewable energy targets by building new hydropower plants.[19] Up to 280 megawatts of new 'small' hydropower plants (i.e. those less than 10 MW) were planned.[20] In reality, by the end of 2021, around 83 MW of new small hydropower plants had been built, and some old plants had also been renovated.[21] Even 83 MW of new plants caused immense controversy, so it is unclear how anyone thought 280 MW would be feasible.

This experience shows the importance of carrying out energy planning based on realistic and updated data, integrating environmental issues into the process from the beginning, and including the public to build support, make better quality decisions and avoid unpleasant surprises later.

This position paper aims to provide recommendations for Kosovo's NECP, which is currently being developed, from an environmental sustainability and public inclusion standpoint. It is positive that civil society representatives have been included in the working group to develop the plan. However, Kosovo's Law on Strategic Environmental Assessment (SEA) does not yet ensure that SEAs are carried out in parallel with the preparation of the plan or programme that is subject to an SEA, before its submission to the legislative procedure.[22]This must be done with the NECP if it is to ensure that public participation will be early and effective. This would help Kosovo plan for proven environmentally and socially acceptable solutions and avoid the distraction of policies that may later turn out to be counterproductive.

[17] International Energy Agency statistics, Kosovo, Electricity, 2020, accessed April 4, 2020
[18] A capacity of 450 MW was often cited; however, this was the net rather than gross capacity.
[19] To meet its binding 25 per cent target, Kosovo initially planned 97 MW of new small hydropower (under 10 MW) and 305 MW of new large hydropower. But it also set a voluntary target of 29.47% involving around 240 MW in new small hydropower plants. In 2017, the government issued an Administrative Instruction containing a new voluntary target and even more new small hydropower – around 280 MW. Sources: Ministry of Economic Development, Kosovo: National Renewable Energy Action Plan 2011-2020, 2013; Ministry of Economic Development, Kosovo, Administrative Instruction (Med) No.05/2017 on Renewable Energy Source Targets, 2017
[20] Ministry of Economic Development, Kosovo, Administrative Instruction (Med) No.05/2017 on Renewable Energy Source Targets, 2017
[21] Energy Regulatory Authority, Annual Report 2021, March 2022
[22] Energy Community Secretariat, Implementation Report 2021, November 2021

Energy security, solidarity and trust

Kosovo needs to avoid gas dependence and decrease its oil import dependence

The EU has for years been trying to diversify its sources of energy, particularly oil and gas, for which it is highly import-dependent.[23] This is where Kosovo has an advantage: Although all its oil products are imported, it is not dependent on imported gas because it is not widely used and there is no transmission or distribution network. Kosovo's net energy import dependence was 29.5 per cent in 2020, compared to the EU-27 average for the same year of 57.5 per cent.[24]

In recent years, various proposals have been made for Kosovo to build fossil gas import infrastructure and use gas to replace coal for electricity generation and heating. The main pipelines proposed are ALKOGAP,[25] which would bring Azeri fossil gas from the Trans Adriatic Pipeline (TAP) in Albania, and the North Macedonia-Kosovo interconnector, which in theory would also bring gas from TAP, but only once the Greece-North Macedonia interconnector[26] is built.

This gas infrastructure would have to be built from scratch, which would be costly and take years. This would divert resources from investing in energy efficiency and sustainable renewables. The time it has taken for solar and wind development to start developing in Kosovo shows that, if gas investments are realised, it is not realistic to expect that Kosovo will make another transition from gas towards renewables by 2050.

At the moment, due to the gas price crisis and Russia's invasion of Ukraine, the EU is struggling to wean itself off gas, especially Russian gas, at an accelerated pace. The rapid gas price rises in the past few months have exposed the hazards of gas dependence,[27] irrespective of the source.

In addition, the planned pipelines to Kosovo would use Azeri gas from the Shah Deniz field, but Russian company Lukoil owns a 20 per cent share in the project,[28] meaning it would still result in support for Russia via Lukoil's taxes. Even if this changes, it makes no sense to increase dependence on imported energy, especially from autocratic and repressive regimes such as that in Azerbaijan.[29]

In light of this, as well as the global climate emergency, Kosovo's low use of gas should no longer be seen as a 'lack' but as a plus.

Even if Kosovo builds gas infrastructure, it is far from certain whether consumers will be willing or able to absorb high costs and volatile prices for gas, and connection rates may not be as high as expected, leaving the pipelines as wasted investments — so-called 'stranded assets'. Even if the gas is used, it is likely that the government would have to subsidise it during periods of high prices, putting additional strain on the state budget.

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[23] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: A Framework Strategy for a Resilient Energy Union with a Forward-Looking, 2015.
[24] Eurostat, Energy Dependence %, Table T2020_RD320, last updated February 8, 2021
[25] Energy Community, Albania-Kosovo Gas Pipeline (ALKOGAP), accessed April 4, 2022
[26] Energy Community, North Macedonia-Kosovo Interconnector, accessed April 4, 2022
[27] European Commission, REPowerEU: Joint European Action for More Affordable, Secure and Sustainable Energy, March 8, 2022
[28] Lukoil, Lukoil Completes the Deal on Acquiring Interest in Shah-Deniz Project, February 18, 2022
[29] See for example Freedom House, Azerbaijan, and Human Rights Watch, Azerbaijan, both accessed April 4, 2022.

Recommendation: Kosovo's decision not to move ahead with the pipeline from North Macedonia in 2021, at least for now,[30] was the right one, and should be cemented in its NECP. Kosovo should completely avoid becoming dependent on gas and instead leapfrog to electrification based on domestic renewable energy sources.

As for oil, as Kosovo builds its power sector based on sustainable forms of renewable energy, it should also move towards electrification of transport and improvement of public transport, in order to decrease dependence on imported oil and to promote cleaner air.

As part of its 2020 targets, the EU promoted the use of biofuels in transport, however this policy has turned out to be counterproductive.[31] Increased demand for food-based biofuels requires more agricultural land. Since most agricultural land is already being used globally, new areas have to be found, which leads to deforestation, releasing tonnes of greenhouse gases. In some cases, these emissions are so high that some biofuels lead to higher greenhouse gas emissions than the fossil fuel they replace, when taking into account the whole life cycle of the crop. This is the case for biodiesel made from vegetable oils such as rapeseed, palm oil, soy and sunflower.[32]

The EU's 2018 renewable energy Directive[33] therefore limits crop-based biofuels to the levels used by each EU member state in 2020 — a de facto freeze. The EU will also phase out high-deforestation-risk biofuels by 2030.[34] The EU's renewable energy Directive is currently again under revision, therefore the situation is also likely to further change.

Recommendation: To move away from oil dependence, Kosovo is advised to pursue electrification of transport as well as improvement of its public transport (see Decarbonisation section), which would help decrease demand from individual vehicles. Kosovo is not advised to pursue biofuels as an alternative to oil products for transport.

The situation is similar with hydrogen, which is also currently being heavily promoted by the European Commission.[35] The idea is that hydrogen produced using renewable energy can be used as a fuel, thereby helping to replace oil products. It is certainly likely that hydrogen will play a role in the future for sectors that cannot easily run on electricity — for example for aeroplanes, large trucks and some heavy industry.

However, at the moment, 96 per cent of hydrogen is made using fossil gas,[36] and the manufacturing process is energy intensive, so it is crucial for any hydrogen used to be made from renewable sources. In addition, there is likely to be heavy competition for renewable electricity in the coming years, as it will increasingly be used for heat and transport. Therefore, it is highly unlikely that very much renewable hydrogen will be available at an affordable price.

[30] Igor Todorović, Kosovo Shelves US-backed Gas Pipeline Project, Balkan Green Energy News, October 5, 2021
[31] Transport & Environment, Biofuels, accessed April 4, 2022
[32] Transport & Environment, Biofuels, accessed April 4, 2022
[33] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy From Renewable Sources, 2018
[34] Transport & Environment, Biofuels, accessed April 4, 2022
[35] See European Commission, Hydrogen, accessed April 4, 2022, for some of the EU's initiatives regarding hydrogen.
[36] See European Commission, Hydrogen, accessed April 4, 2022, for some of the EU's initiatives regarding hydrogen.

Recommendation: Kosovo is recommended to first concentrate on developing sustainable renewable electricity and electrification of heat and transport, and only to later consider the potential role of hydrogen for hard-to-decarbonise sectors, once the role of hydrogen has become clearer in the EU and once the costs of renewable hydrogen have decreased.

Coal will not be a route to energy security

Kosovo's domestic coal reserves currently contribute to the country's relatively low import dependency; however, the use of coal incurs numerous and very high costs for people's health, the environment and the climate.[37] It is also becoming increasingly uneconomic even in financial terms, and this is why coal-fired electricity generation has strongly decreased in the EU in recent years.[38] EU pollution control legislation — aimed amongst other things at preventing deaths — means that coal plant operators now have to pay for some of coal's environmental impacts, by installing pollution control equipment and by paying for greenhouse gas emissions.[39] Wind and solar do not incur such costs and can therefore produce at a more competitive price than new coal plants.

The demise of coal has temporarily slowed due to the gas price crisis in the winter of 2021-22, but this does not mean that coal has a long-term perspective. The fact that coal is now cheaper than gas does not change the fact that it is much more expensive than wind and solar in the EU, but European countries simply have not yet done enough to install renewable energy and to save energy.[40]

As Kosovo progresses towards EU accession, it will have to apply carbon pricing. This means that electricity generators and certain industrial plants will have to pay for every tonne of carbon dioxide they emit. In November 2021, the Energy Community's Ministerial Council adopted a Decarbonisation Roadmap,[41] setting out indicative timelines for introducing carbon pricing. If all goes to plan, this would lead to carbon pricing being introduced by around 2025. This will make coal-based electricity generation uncompetitive, even from existing plants.

In recent months, Kosovo has started to export lignite to North Macedonia due to coal supply problems at the Bitola coal plant.[42] But it should not count on this as a long-term source of income as North Macedonia has pledged to phase out coal by 2027.[43]

In early April 2022, statements by the Minister of Economy confirmed that Kosovo will not build new coal plants but suggested that one or more units of Kosova A will need to be upgraded.[44] The exact scope of this 'upgrade' is unclear, but if it leads to the plant operating for more than another two to three years, it should not be undertaken.

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[37] CEE Bankwatch Network, Comply or Close, September 7, 2021
[38] Charles Moore, European Electricity Review 2022, Ember, February 1, 2022
[39] Due to Directive 2010/75/EU of the European Parliament and the Council on Industrial Emissions and Directive 2003/87/EC of the European Parliament and of the Council of 13October 2003 Establishing a System for Greenhouse Gas Emission Allowance Trading Within the Union.
[40] Charles Moore, European Electricity Review 2022, Ember, February 1, 2022
[41] Energy Community Ministerial Council, General Policy Guidelines 01/2021/MC-EnC Decarbonisation Roadmap for the Contracting Parties of the Energy Community, November 2021
[42] Valentina Dimitrievska,Crisis Highlights Weaknesses of North Macedonia's Energy System, BNE Intellinews, February 1, 2022
[43] Europe Beyond Coal, Spain and North Macedonia Commit to Exit Coal by 2030, June 30, 2021
[44] Igor Todorović, 'Rizvanolli: No New Coal Plants in Kosovos Draft Energy Strategy, Balkan Green Energy News, April 4, 2022

Recommendation: Not only for health, environmental and climate reasons, but also for economic reasons, Kosovo is advised to phase out the use of coal as soon as it is technically feasible to do so, starting with Kosova A, which must be closed as a matter of urgency. No upgrades beyond regular maintenance should be undertaken in the meantime.

A fully integrated internal energy market

Kosovo's electricity generation capacity is able to almost meet domestic demand most years (see the graph in the Decarbonisation section, below), but it is difficult to quickly adapt generation to demand due to the country's reliance on coal and the fact that coal plants cannot be quickly turned on and off.

Nowadays, Kosovo is well connected with all neighbouring countries with at least one 400 kilovolt (kV) transmission each. Of particular importance is the new transmission line linking Kosovo with hydropower-dependent Albania, which helps to balance Kosovo's inflexible system.

A 2021 Energy Community study found that the Western Balkan countries should concentrate on using existing transboundary transmission capacity more efficiently, rather than building more new lines,[45] which very much applies to Kosovo as the lack of transmission capacity allocation by Serbia's grid operator also contributed to Kosovo's electricity supply difficulties during the winter of 2021-22.[46] It is difficult for Kosovo's NECP to deal with transmission capacity from Serbia on its own, as it is related to the wider issues between the countries, but attention should be paid to how to circumvent this issue.

In April 2020, Kosovo's transmission operator signed an agreement with the European Network of Transmission System Operators for Electricity (ENTSO-E) to leave the Serbia, Montenegro and North Macedonia regulatory bloc in order to join a new Kosovo-Albania energy regulatory bloc, thus paving the way for participation in the power exchange with Albania.[47]

A joint power exchange – ALPEX – was established in October 2020 by Albania's transmission system operator OST and Kosovo's KOSTT. It is currently working to set up a day-ahead and intraday market for electricity in Albania and Kosovo, with the market launch currently scheduled for the fourth quarter of 2022.[48] This is crucial for allowing integration of a high share of variable renewables, such as solar and wind, into the electricity mix of both countries.

Generation sources that do not work all the time can be accommodated in a flexible system where electricity can be quickly bought and sold and other sources, such as existing hydropower plants or batteries, can quickly increase or decrease production. But it is difficult to include large amounts of renewables in a system such as the one currently in Kosovo, with a high percentage of coal power that cannot be quickly turned on and off. Kosovo can already include much more renewable energy in its system, but for the future open markets will be essential. This will also help to achieve the most favourable possible electricity price at any given time because there would be a greater choice of potential electricity generation sources to buy from at short notice.

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[45] Energy Community Secretariat, Electricity Interconnection Targets in the Energy Community Contracting Parties, February 2021
[46] Energy Regulatory Office, Annual Report 2021, March 2022
[47] Government of Kosovo, Prime Minister's Office, 'Agreement Between KOSTT and ENTSO-E, Kosovos Electro-energetic Independence From Serbia, April 21, 2020
[48] Dragana Petrushevska, Albania-Kosovo Power Exchange ALPEX Joins Europex, SEEnews, February 2, 2022

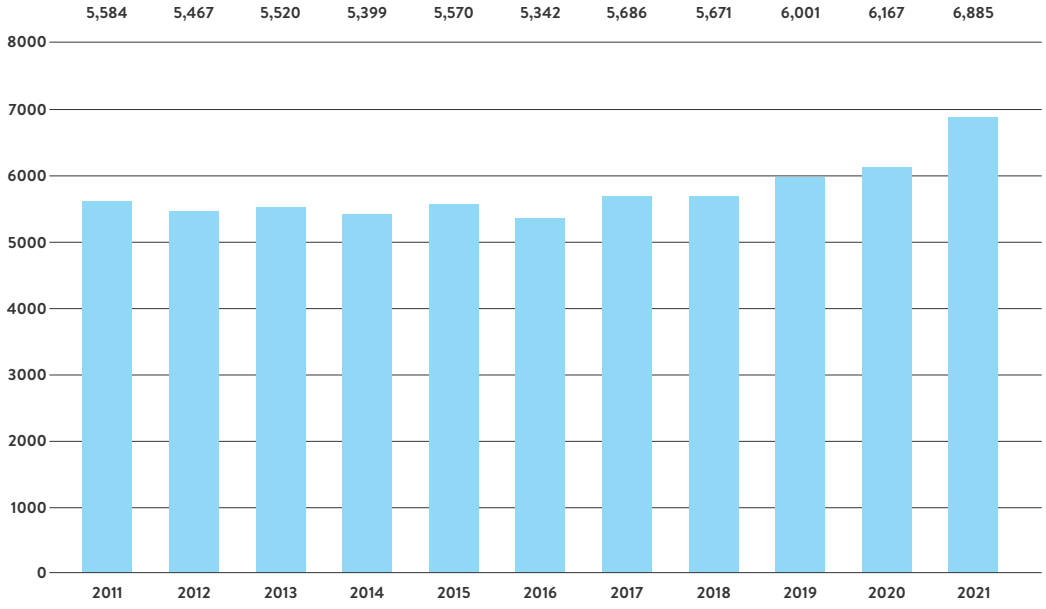
Recommendation: Kosovo and Albania have made considerable progress on developing a joint electricity market and should continue with this work as an important precondition for achieving a high share of variable renewable electricity.

Energy efficiency contributing to moderation of demand

Like its peers, Kosovo uses energy inefficiently — it is four times as energy-intensive as the EU average,[49] meaning that four times as much energy as in the EU is needed to generate one unit of Gross Domestic Product (GDP). This applies to all kinds of energy, including electricity, which is frequently used for space heating in old, inefficient heaters.

Electricity consumption remained steady in Kosovo between 2010 and 2018 — despite projections that it would grow significantly[50] — but then started to grow, particularly in 2021.[51]

Figure 1: Electricity consumption in Kosovo



Source: Energy Regulatory Office, Annual Report 2021

[49] International Energy Agency, Total Energy Supply (TES) by GDP, Kosovo, 1990-2019, and Total Energy Supply (TES) by GDP, EU-28, 1990-2019, IEA Data and Statistics, last accessed April 3, 2022
[50] Kosovo's 2009 Energy Strategy expected demand of 6,939 gigawatts (GWh) in 2018 in the medium demand scenario, whereas in reality demand amounted to 5,671 GWh. Sources: Government of Kosovo, Ministry of Energy and Mining, – Energy Strategy of the Republic of Kosovo for the Period 20092018, 2009; Energy Regulatory Office, Annual Report 2021, March 2022
[51] Energy Regulatory Office, Annual Report 2021, March 2022

Part of the reason for this rise appears to have been changes in the tariff structure in 2017 that disincentivised energy efficiency, according to the Energy Regulatory Office.[52] But the use of electricity by some customers without paying for it (see below) presumably also encourages profligate consumption. Amid the 2021-22 energy crisis in Kosovo, the scale of cryptocurrency mining started to be exposed, an activity that may have contributed to this increase as it is highly electricity-intensive.[53] In January 2022, under emergency measures to tackle the crisis, the government announced a prohibition on cryptocurrency mining.[54]

In the coming years, there will be contrasting trends in energy consumption. As explored below, there is a large scope for savings, and electrification of heating using heat pumps will save energy compared to current modes of electric heating, even if adopted by a large share of households. On the other hand, additional electricity will be needed for the electrification of transport, which will push up demand. It is therefore essential to ensure that all possible action is taken to save electricity and avoid higher than necessary consumption.

Tackling electricity network and commercial losses

Losses in the transmission network are at 1.75 per cent, but distribution network losses in 2021 still amounted to almost 25 per cent, around half of which were technical losses and half were commercial losses — i.e. the use of electricity without paying for it.[55] Almost half of electricity supplied to the north of Kosovo is counted as commercial losses, but this region counts for just under half of such losses,[56] meaning the problem is country-wide.

For years, the losses in the north were billed to customers in the rest of Kosovo, but a court ruling put a stop to this practice in late 2017, and until the issue of supply in the north is resolved, KOSTT is covering the costs, which amounted to over €41 million in 2021.[57] The licensing of a new entity to carry out electricity supply in the north was ongoing as of March 2022.[58]

Recommendations: Set more ambitious targets in the NECP to speed up the work of Kosovo Energy Distribution Services (KEDS) on modernising the distribution network to reduce technical losses, and define a potential financing structure and sources.
Set ambitious targets for a rapid rollout of smart meters. Montenegro's experience with its European Bank for Reconstruction and Development (EBRD)-funded smart meters project may be of use — outside of north Kosovo at least — as it helped tackle non-payment for electricity consumption.[59]

[52] Energy Regulatory Office, Press release, Publication of the Consultation Report on Extraordinary Review of Electricity Tariffs, January 17, 2022
[53] Alice Taylor, Kosovo Bans Crypto-mining Amid Energy Crisis, Exit.al/Euractiv, January 5, 2022
[54] Alice Taylor, Kosovo Bans Crypto-mining Amid Energy Crisis, Exit.al/Euractiv, January 5, 2022
[55] Energy Regulatory Office, Annual Report 2021, March 2022
[56] Energy Regulatory Office, Annual Report 2021, March 2022
[57] Energy Regulatory Office, Annual Report 2021, March 2022
[58] Energy Regulatory Office, Annual Report 2021, March 2022
[59] EBRD, EPCG Metering and Distribution Project, December 22, 2021

Household insulation, heat pumps and solar thermal 3 water heating for energy efficiency

Energy prices are kept artificially low for end consumers in Kosovo — i.e. they are regulated and do not necessarily cover the costs of generation, import, maintenance or other investments made by the energy producers. There is therefore little incentive to use energy sparingly or to invest in insulation. Even if the per-unit price is low, people may still have difficulty paying their bills due to high use of electricity — especially if they use it for heating. In 2018, the latest year for which data is available, 56.7 per cent of people were considered at risk of poverty or social exclusion.[60] These people have difficulty paying their bills, but they are the least able to invest in further reducing their consumption.[61]

The residential sector is responsible for the highest share of total final energy consumption and has massive potential for improvements.[62] The most common form of heating for individual houses is wood, followed by electricity. There is little information available about household heating per se, but overall energy consumption in households in 2020 was dominated by wood, at 58 per cent, followed by electricity, at 38 per cent.[63] Given that electricity is used for a number of purposes other than heating, this likely means that the real percentage of wood use for heating is higher and the use of electricity is lower. In addition, anecdotally it is clear that some households use coal for heating and that illegal coal mining is also taking place in Kosovo.

Wood is classified as renewable energy under the EU's renewable energy Directive[64] because trees can replace the burnt wood. However, renewable is not the same as environmentally sustainable, as Kosovo has already discovered. According to satellite data, between 2000 and 2019 the country lost around 7,618 hectares of forest, equivalent to around 1.5 football fields per day.[65] Although no accurate breakdown of the end use of the wood is available, given the widespread usage of firewood for heating, it is reasonable to assume that much of this was burnt in households.

It is therefore essential to find more efficient means of heating, in order to use less wood and electricity. Thermal insulation of houses is the most important measure, in order to bring down demand in the first place.

It is often said that energy efficiency must be the first fuel. But in reality, this has not been the case either in the EU or in the Western Balkans, and this has to change. Kosovo has been working on energy efficiency, adopting implementing legislation on the energy performance of buildings in 2020 and strengthening its expertise in building certification. A plan to boost nearly zero-energy buildings and a Building Renovation Strategy have also been drafted,[66] but not yet adopted to the best of the author's knowledge.
In 2019, an Energy Efficiency Fund was established with around €20 million and secured financing until 2022. So far, it has only financed energy efficiency in public buildings, but there are plans to extend financing to the residential sector,[67] which is essential to spread the benefits more widely.

Using wood more efficiently can make a difference — i.e. using more efficient stoves and using seasoned, dry wood. Many people in Kosovo are not aware of the need to, or cannot afford to, buy wood sufficiently in advance to ensure it is properly dried.[68] However, the more efficient use of wood will not be enough on its own. Kosovo will need to take steps to incentivise a change in heating practices in individual households.

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60 Eurostat, People at Risk of Poverty or Social Exclusion (ILC_PEPS01), accessed April 3, 2022
61 Very little information is available about energy poverty in Kosovo, as the concept of 'consumers in need' has been defined by law but there are no detailed statistics available. See Energy Institute Hrvoje Požar and DOOR, Study on Addressing Energy Poverty in the Energy Community Contracting Parties, Energy Community Secretariat, December 2021
62 International Energy Agency, Share of Total Final Consumption (TFC) by Sector, Kosovo, 2000-2019, IEA Data and Statistics, last accessed April 3, 2022
63 Kosovo Agency of Statistics, Energy Balance 2020, June 2021. This was also confirmed by a survey commissioned by the RES Foundation, which however did not quantify electricity use: RES Foundation, Summary of the Research on Heating Practices in the Residential Sector of Kosovo, November 2021
64 Article 2, Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy From Renewable Sources, 2018
65 Sustainability Leadership Kosova, #MoseMerrMalin, accessed April 4, 2022
66 Energy Community Secretariat, Implementation Report 2021, November 2021
67 Energy Community Secretariat, Implementation Report 2021, November 2021
68 RES Foundation, Summary of the Research on Heating Practices in the Residential Sector of Kosovo, November 2021

Wood pellets have become popular in Kosovo in recent years,[69] and when burned in a specially-designed stove, they are quite efficient for the end user. The idea is that they are made from residues from the wood industry; however, in reality, there is a limited supply of such wood waste, so it is almost impossible to ensure that whole trees are not used. In many cases, the wood pellet industry is most likely driving deforestation and it is questionable whether it is even reducing greenhouse gas emissions compared to burning fossil fuels.[70]

For this reason, and due to the need to reduce the amount of electricity used for heating, it makes more sense for the NECP to promote the use of heat pumps for residential buildings as they use four to five times less energy than other heating systems,[71] as well as solar water heating, which can reduce the need for electricity or wood heating and is highly cost-effective. Even now, while electricity is predominantly supplied by coal, it still makes sense to promote heat pumps due to their large efficiency gains, especially in those households already using electricity for heating. Albania's NECP[72] has not made maximum use of this opportunity and Kosovo should avoid repeating this mistake.

Recommendations: Continue with the adoption of the Building Renovation Strategy, even before the NECP is adopted.

Identify current barriers to heat pump use in households and small businesses, and prescribe measures to overcome them in the NECP, including tax incentives.

Ensure the Energy Efficiency Fund is sufficiently resourced to fund deep renovations and the installation of heat pumps and solar thermal in the residential sector. Grant funding needs to take into account the results and recommendations of the study commissioned for the Subsidies for Energy Efficiency in Kosovo (SEEK) project.[73]

Carry out public education on the need to properly dry wood before use.
Ensure municipalities are sufficiently empowered, trained and have the resources to drive forward energy efficiency measures in households.

Like other countries in the region, Kosovo needs to balance opening its markets — which will result in higher electricity prices — with protecting vulnerable consumers. The issue is certainly sensitive, and Kosovo has seen protests when the energy regulator has tried to raise prices.[74] However, this is inevitable and needs to be done step by step, hand in hand with measures to help those who cannot pay their bills.

Kosovo's efforts to tackle energy poverty to date have consisted of short-term aid for electricity bills to households in need but have not helped them to decrease their consumption by increasing their energy efficiency.[75] Such efforts are undoubtedly more complicated and, depending on electricity prices, also potentially more expensive than paying people's bills, but they bring important co-benefits in terms of ensuring public support for energy transition.

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[69] In 2016, pellet stoves made up 75 per cent of all new boilers sold, according to Thes-Ari Recycling Industry Sh.P.K, Wood Biomass for a Sustainable Future, January 2017. We have not been able to locate more recent data.
[70] Roger Drouin, Wood Pellets: Green Energy or New Source of CO2 Emissions?, Yale Environment 360, January 2015; WWF, 500+ Scientists Tell EU to End Tree Burning for Energy, February 11, 2021
[71] EBRD, –Heat Pumps Enjoy a Comfortable Living Environment While Spending 4 to 5 Times Less Energy, accessed April 5, 2022
[72] Energy Community Secretariat, Energy Community and National Energy and Climate Plans, accessed April 5, 2022
[73] GFA Consulting Group & HPC International, Residential Buildings Efficiency Retrofits Baseline Study (Final Draft), SEEK, March 2020; GFA Consulting Group & HPC International, Market Study (Final Draft), SEEK, April 2020
[74] Eraldin Fazliu, Protests Against an Increase in Energy Prices, Kosovo 2.0, December 20, 2017
[75] Energy Institute Hrvoje Požar and DOOR, Study on Addressing Energy Poverty in the Energy Community Contracting Parties, Energy Community Secretariat, December 2021

Recommendations: Draft and adopt a formal plan to address energy poverty, based on a participatory approach to defining people's needs. This should include:

- Energy efficiency audits and advice for households on measures that can be taken without professional assistance (draught-proofing, LED lighting, etc.);

- Going beyond income support to involve energy efficiency improvements for vulnerable households, including insulation, more efficient heating (preferably heat pumps, or potentially wood heating where more appropriate) and the installation of solar water heating and/or solar photovoltaics to reduce costs.[76]

Between 3 and 5 per cent of Kosovo's heat demand is also covered by district heating.[77] This offers significant scope for energy efficiency and is covered below under Decarbonisation of the Heating Sector.

[76] More details are provided in Energy Institute Hrvoje Požar and DOOR, Study on Addressing Energy Poverty in the Energy Community Contracting Parties, Energy Community Secretariat, December 2021
[77] Energy Regulatory Office, Annual Report 2021, March 2022

Decarbonisation of the economy

As Kosovo plans to join the EU, it needs to achieve full decarbonisation by 2050. It confirmed this intention by signing the Sofia Declaration in November 2020.[78] Kosovo's first NECP is therefore a stepping stone in a much longer process, and its targets for 2030 must put it on the right path for 2050.

It is up to Kosovo to set its own targets, guided by a study currently being carried out for the European Commission. The first draft options for targets proposed by the Commission's consultants were published in early April 2022 and will now be subject to discussions with the Western Balkan governments.

	2020 achieved	Low ambition 2030	Mid-ambition 2030	High ambition 2030
Renewable energy (share in final consumption)	24.4 per cent (compared to 18.9 per cent in 2009)	28.8 per cent	30.2 per cent	32.1 per cent
Energy efficiency (compared to business-as-usual projection)[79]	Not comparable	<-5 per cent final energy consumption (FEC) -2 per cent primary energy consumption (PEC)	<-5 per cent FEC -4 per cent PEC	<-5 per cent FEC -22 per cent PEC
Greenhouse gas emissions reduction (compared to 1990)	Not known[80]	-12 per cent	-16.3 per cent	-40.3 per cent

Table 1: First draft options for 2030 targets. Source: E3 Modelling[81] and Energy Community Secretariat[82]

Without seeing the calculations behind these, it is difficult to assess how ambitious they are. Nevertheless, it is clear that if Kosovo achieves only around 30 per cent of renewable energy by 2030, it will still have an extremely long way to go by 2050. Although a target of around 30 per cent is in line with what was achieved between 2009 and 2020, this is not enough, especially given the price decreases of solar and wind in the meantime, as well as the rapid development of heat pump technology.

Climate Action Network (CAN) Europe has calculated that Kosovo's greenhouse gas emissions need to go down from 9.74 Million Tonnes of carbon dioxide equivalent (MtCO2eq) in 2018 to 4.7 MtCO2eq by 2030 in order to be in line with the Paris Agreement's ambition to limit climate change to 1.5°C by mid-century compared with the pre-industrial era.[83] But since the targets proposed by the European Commission's consultants are only presented in percentage terms compared to 1990, it is not possible to assess whether they meet this goal.

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[78] Regional Cooperation Council, Sofia Declaration on the Green Agenda for the Western Balkans, November 10, 2020
[79] Approximate values based on graph – percentages are not shown.
[80] 1990 data for Kosovo is not publicly available, however E3 appear to have calculated it as they have compared the new targets to it.
[81] E3 Modelling, Energy Community - Project Update, April 7, 2022
[82] Energy Community Secretariat, Energy Community Meets 2020 Headline Target for Energy Efficiency, Makes Progress on Renewables, February 16, 2022
[83] Climate Action Network Europe, –Western Balkans Greenhouse Gas Emission Reduction Targets 2030 The Path to Achieving Carbon Neutrality by 2050, June 2021

Recommendations: Kosovo's greenhouse gas emissions reductions target and energy efficiency targets need to be calculated in a way that does not delay significant action on achieving decarbonisation until after 2030, in particular as many of the easier options for action are available already this decade.

Its renewable energy target for 2030 needs to be compatible with achieving 100 per cent renewables by 2050. This needs to be calculated in detail, but anything less than around 50 per cent means that after 2030, efforts would need to be accelerated even further to reach 100 per cent by 2050. This depends on the rate of consumption: The more that energy can be saved, the easier it is to increase the renewable percentage. Conversely, if consumption increases further, reaching a higher percentage becomes correspondingly more difficult.

In any case, given the major role played by Kosovo's electricity sector in its greenhouse gas emissions, and the sector's underperformance in contributing to the 2020 renewables target,[84] Kosovo's ability to meet the renewables and greenhouse gas emissions targets directly depends on its ability to ramp up renewable energy and start phasing out fossil fuels, while increasing energy efficiency will also make it easier to achieve these targets.

[84] Most progress was due to the revision of biomass data, not due to actual new investments. Energy Community Secretariat, Kosovo, Annual Implementation Report, November 1, 2021

Phase out of all fossil fuels and interim action on coal plants' pollution

The single most important question for Kosovo's energy sector trajectory until 2030 is when Kosova A's three operating units and Kosova B's two units[85] will close, because they made up 95 per cent of domestic electricity generation in 2020.[86]

Kosova A's units are between 47 and 52 years old, and Kosova B's are 38 and 39 years old.[87] It is unclear how much longer they will be able to operate, as historically around the globe coal plants have been retired at an average age of 46 years.[88]

The cancellation of the Kosova e Re coal project in 2020 has finally opened the space for Kosovo to talk more realistically about the end of coal, however the outages at both Kosova A and Kosova B in December 2021[89] show that this may happen much sooner than anyone expects.

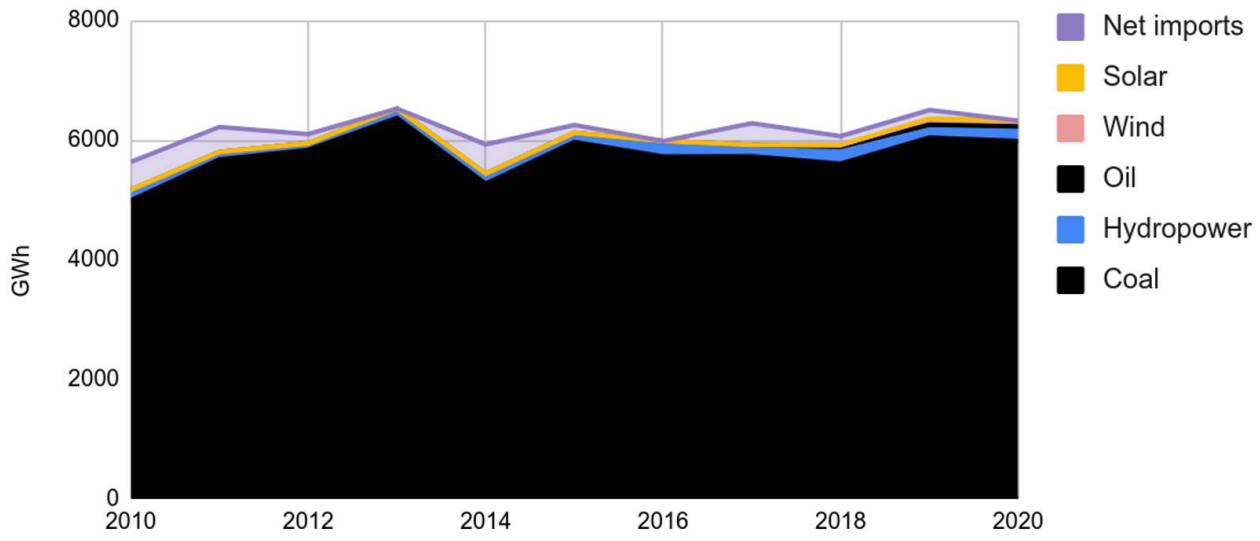

Figure 1: Electricity generation in Kosovo, 2010-2020
Source: IEA Statistics

[85] Energy Regulatory Authority, Annual Report 2021, March 2022
[86] International Energy Agency, Kosovo, Electricity, 2020, accessed April 5, 2022
[87] Energy Regulatory Authority, Annual Report 2021, March 2022
[88] Global Energy Monitor, Global Coal Plant Tracker, July 2018, cited in Ryna Yiyun Cui et al., Quantifying Operational Lifetimes for Coal Power Plants Under the Paris Goals, Nature Communications 10(1):4759, October 2019
[89] Energy Regulatory Authority, Annual Report 2021, March 2022

Moreover, the EU plans to introduce the so-called Carbon Border Adjustment Mechanism[90] in the next few years — the exact timeline is still being discussed, but it could happen as early as 2025. Among other things, this means that fossil-fuel-based electricity imported into the EU will be subject to a fee, making it less attractive to buy. This may not hit Kosovo as hard as Bosnia and Herzegovina, for example, as Kosovo is not a large-scale electricity exporter, but it will still have impacts on Kosovo's electricity trading with neighbouring and EU countries.

Countries that apply their own carbon pricing schemes may be exempt from the mechanism, so the Energy Community is encouraging the Western Balkan companies to do so. In November 2021, the Energy Community's Ministerial Council approved a Decarbonisation Roadmap,[91] setting out indicative timelines for introducing carbon pricing. Applying domestic carbon pricing would have the advantage that the revenues would go into Kosovo's budget rather than the EU budget, so they could be used for investments in decarbonisation.

Recommendations: In the NECP, clear and realistic dates for the closure of Kosova A and Kosova B need to be set, or at least options for closure dates.
Introduce carbon pricing as soon as possible and at the latest by 2025. Pricing should reach the level of the EU Emissions Trading Scheme by 2030 at the latest in order to avoid the Carbon Border Adjustment Mechanism. Use the proceeds for decarbonisation rather than for the state budget in general.

Once the closure dates are set, it is crucial to adjust investment plans accordingly and to ensure pollution reduction takes place, even if the plants will close within a few years. Kosovo has already been in breach of the Energy Community's pollution control legislation since 2018 — a fact that is costing people's lives.[92] For units where it is deemed unfeasible to invest in pollution control equipment because they will soon close, the plants need to reduce their operating hours to keep overall pollution levels low.

Recommendation: Clear investment plans and/or reductions in operation need to be built into the NECP to decrease the health impacts of the coal plants for the remainder of their lifetimes.

In particular, the installation of dust and Nitrogen Oxides (NOx) control at Kosova B needs to be speeded up.[93]

[90] CEE Bankwatch Network, The EU Carbon Border Adjustment Mechanism: How to Make it Work for Decarbonisation in the Western Balkans, February 4, 2022
[91] Energy Community Ministerial Council, General Policy Guidelines 01/2021/MC-EnC Decarbonisation Roadmap for the Contracting Parties of the Energy Community, November 2021
[92] CEE Bankwatch Network, Comply or Close, September 2021
[93] Kosovoprojects.eu, Dust and NOx Reduction Measures at TPP Kosovo B, Units B1 and B2, accessed May 4, 2022

The need for a just transition

So far, the concept of just transition appears to be mainly mentioned by NGOs and has not really taken off in Kosovo. However, this cannot wait for much longer. The fact that real opposition to the energy transition has not yet started may simply be because the coal workers do not yet believe it is happening. That means that it is exactly the time to start the conversation, before the issue has become confrontational. While it may be NGOs who initially press the relevant authorities to start just transition planning, ultimately ownership needs to be taken at the local level by the local authorities and community.

It is crucial not to see just transition as a centrally planned economic engineering exercise. What is needed is a conversation with the affected people and other locals about their needs, wishes and ideas. The involvement of experienced facilitators in this process is therefore crucial.

Funding will also be crucial. Within the EU, a Just Transition Fund has been set up, but this is not yet the case within the Western Balkans. By demonstrating its plans and concrete needs for funding, Kosovo can help to build the case for such a fund.

Recommendation: Develop a participatory plan to gradually close Kosovo's lignite mines and secure a socially just transition of the affected regions, following the Eight Steps for a Just Transition in the Western Balkans.[94] Ensure this is done in thorough consultation with affected communities by people experienced in the facilitation of such discussions.

Utilise the opportunities offered by the Platform Initiative in Support of Coal Regions in Transition in the Western Balkans and Ukraine, such as exchange visits and experience sharing.

Ensure that the NECP provides a breakdown of likely costs for redevelopment of coal mining areas and potential funding sources.

[94] CEE Bankwatch Network, Eight Steps for a Just Transition in the Western Balkans, April 2021

Decarbonisation in the power sector, including prosumers

The renewable power sector has been gaining more attention in recent years,[95] both for positive and negative reasons. On one hand, despite Kosovo's relative lack of water resources, it has suffered from the same controversies over small hydropower plants as its neighbours in recent years, and solar energy has grown only very slowly, reaching only 10 MW by the end of 2021.[96] But new wind capacity has come online recently, at the 105 MW Bajgora wind farm.[97] More solar plans exist as well,[98] and the country has a solar manufacturer capable of manufacturing 200 MW per year.[99]

With strong political will to increase the share of renewable energy, one of the main steps that now needs to be taken is to get the new incentives system in place via a new law on renewable energy, as well as continuing with moves to create a functioning market. Neither of these need to wait for the NECP but what the NECP does need to do is to identify the potential for renewable energy by 2030, undertake an examination of environmental and spatial limitations, and identify alternative plans in case the main scenario does not work out.

For example, Kosovo's plans to meet the 2020 targets relied heavily on small hydropower and the construction of the 250 MW Zhur hydropower plants. However, after some time it became clear that the original plans for the Zhur hydropower plants were not likely to happen.[100] In 2018, Kosovo updated its National Renewable Energy Action Plan to remove the Zhur plants and slightly increase its wind ambitions to 173.8 MW,[101] but this was too late to seriously influence the plans for 2020.

Now, the Energy Regulatory Office is again examining an application to build a 250 MW hydropower plant — this time by Eurokos, for the Drini pumped storage plant.[102] It is not clear whether this will be part of the NECP, but if it is, there will need to be a back-up plan in case it is not built.

One aspect that needs to be given specific attention is prosumers, who produce and consume electricity and feed their surplus into the grid. Any electricity customer connected to the low voltage distribution network with an installed capacity not higher than 100 kilowatts (kW) can apply to their supplier to obtain the status of a self-consumer using a net billing scheme. This had led to 56 self-consumers being connected in Kosovo as of June 2021.[103] Kosovo has thus achieved the highest number of self-consumers in the Western Balkans.[104] By the end of 2021, over 100 self-consumers had been approved by the Energy Regulatory Office.[105]

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[95] For example, see Fatos Bytyci, Divided Kosovo Mountain Village Unites to Fight Hydropower Plant, Reuters, October 11, 2019; and 'Prishtina Insights coverage of the topic, last accessed April 1, 2021.
[96] Energy Regulatory Authority, Annual Report 2021, March 2022
[97] Government of Kosovo, An Energy Park Inaugurated in Selac and Bajgora, March 11, 2022
[98] Igor Todorović, Solar Energy Group to Build 150 MW Photovoltaic Plant in Kosovo, Balkan Green Energy News, March 1, 2021
[99] Jaha Solar website, accessed April 5, 2022
[100] Mott MacDonald/IPF3, Regional Strategy for Sustainable Hydropower in the Western Balkans - Background Report no. 7: Inventory of Planned Hydropower Plant Projects, Final Draft 3, Western Balkans Investment Framework, November 2017
[101] Government of Kosovo, National Renewable Energy Action Plan of the Republic Of Kosovo 2011-2020 - Update for 2018-2020, October 2018. (It says May 2020 on the document, but from other sources it is clear it was adopted in October 2018.)
[102] Energy Regulatory Office, Annual Report 2021, March 2022
[103] Energy Community Secretariat, 'Secretariats WB6 Energy Transition Tracker, June 2021
[104] Energy Community Secretariat, 'Secretariats WB6 Energy Transition Tracker, June 2021
[105] Energy Regulatory Office, Annual Reports 2018-2021

USAID has estimated that Kosovar households and businesses could install 250 MW of solar for self-consumption by 2030, either as prosumers or as producers for all or part of their own needs. These could make up nearly one third of all installed solar by then.[106] As well as a significant contribution to the power supply, supporting the development of prosumers is an important way of ensuring public support for energy transition, as they can directly benefit from it.

Recommendations: In the power sector, concentrate mostly on solar and wind development until 2030, carefully assessing the potential for sustainably sited renewables development. The work already undertaken by The Nature Conservancy in Zadar County, Croatia, may be of use for this.[107] Using brownfield sites should be the highest priority.

Avoid over-reliance on specific large projects such as the Drini pumped storage plant and carefully assess their real likelihood of going ahead. Develop back-up plans in case they do not materialise.

Take further steps to support prosumers in order to maximise their potential, including via simplification of procedures and tax reductions, taking into account the recommendations from the USAID-commissioned study on the topic.[108]

Decarbonisation of the heating sector – district heating

Decarbonisation of the heating sector goes hand in hand with energy efficiency, and we have provided recommendations above with regard to individual households. However, district heating deserves specific examination as it can represent either an opportunity for decarbonisation, or a serious barrier. Overall, the goal should be electrification of the heating sector where possible, as well as making use of geothermal sources where suitable.

Prishtina, Gjakova, Mitrovica and Zvečan have district heating systems, but these only cover about 3-5 per cent of heat demand.[109] In Prishtina, the heating plant was based on heavy fuel oil[110] until cogeneration started at unit B1 of the Kosova B power plant, while a new plant in Gjakova that runs on wood waste and vine prunings started operating in October 2021 also replacing the city's use of heavy oil. In North Mitrovica and Zvečan, the systems no longer appear to be operational.[111] The Gjakova plant appears to run on sustainable sources, but close monitoring will be needed to ensure that it remains within air pollution limit values and only uses wood waste, not primary forest biomass.

[106] Vladimir Spasić, – Kosovo Could Add 900 MW of Solar by 2030, 250 MW for Self-Consumption USAID, Balkan Green Energy News, July 27, 2021
[107] Mark Lambrides and Igor Vejnovic, Smarter Energy Siting Helps Achieve Climate & Biodiversity Goals, The Nature Conservancy, April 9, 2021
[108] DT Global, Summary Report: Kosovo Energy Security of Supply - JO 27, Assessment of PV Generators in Kosovo, Annex 3, January 2021
[109] Energy Regulatory Office, Annual Report 2021, March 2022
[110] Energy Community Secretariat, Secretariat Welcomes New Biomass-based Cogeneration Plant in Gjakova, Kosovo, October 25, 2021
[111] Western Balkans Investment Framework, EU Allocates Additional Grant to Introduce District Heating in Eight Municipalities in Kosovo, November 12, 2021

However, a project funded by the Western Balkans Investment Framework is currently ongoing to assess the feasibility of new systems in Gjilan, Ferizaj, Prizren, Peja, Drenas, Obiliq and Zvečan, and an upgrade of the existing system in Mitrovica.[112] In most cases, it is not clear what energy sources they would use.

Plans are also underway to add 70 MW of solar thermal capacity to Prishtina's district heating system, funded by Germany's KfW development bank and possibly also the European Bank for Reconstruction and Development (EBRD).[113] The solar collectors will be used to heat water in an underground reservoir with a capacity of 410,000 cubic metres, and should be enough to heat 12,000 households.[114]

Recommendations: Prioritise the Prishtina solar thermal project to decrease reliance on Kosova B for district heating.

Further inform and consult the public regarding the options being considered for the new district heating systems in Kosovo and their costs and benefits.

Prioritise solar thermal and, where suitable, geothermal district heating. Use biomass only where sufficient wood waste is sure to be available, in order to avoid driving further deforestation, greenhouse gas emissions and air pollution, and do not plan biomass facilities using primary forest biomass.

Under no circumstances build fossil gas heating plants or waste-to-energy plants using municipal waste as they crowd out recycling and waste prevention measures, increase air pollution, and create hazardous ash and filter residues.[115]

[112] Western Balkans Investment Framework, EU Allocates Additional Grant to Introduce District Heating in Eight Municipalities in Kosovo, November 12, 2021
[113] Igor Todorović, 'Prishtinas District Heating Company to Build 70 MW Solar Thermal Plant, Balkan Green Energy News, March 26, 2022
[114] Igor Todorović, 'Prishtinas District Heating Company to Build 70 MW Solar Thermal Plant, Balkan Green Energy News, March 26, 2022
[115] See for example CEE Bankwatch Network, New Analysis: Belgrade Incinerator Public-private Partnership a Textbook Case of Corporate Capture, December 2019.

Decarbonisation in transport

Electrification of transport should be the main way to achieve decarbonisation, as stated above, because biofuels present so far insurmountable unsustainability problems, while hydrogen is so far too expensive and is almost exclusively made using fossil fuels.

However, this must not mean merely promoting electric cars. Current data on transport in Kosovo is scarce,[116] but private road transport predominates for both passenger and goods transport. This is energy-inefficient and creates unnecessary congestion and pollution. Therefore, greater attention needs to be given in Kosovo's NECP to the development of public transport — both in cities and between cities — and to non-motorised transport such as walking, cycling and e-mobility. This is one of the weak points of Albania's NECP, and Kosovo should learn from this to devote more attention to the issue.[117]

Urban public transport and non-motorised transport can be difficult to promote via national policies such as the NECP because of their need for appropriate local spatial planning. The NECP therefore needs to make sure that sufficient resources are allocated not only for hardware such as electric buses or trams but also for the urban renovation required to make it easier for people to walk and cycle in larger cities.

Recommendations: Concentrate on electrification and avoid distractions such as gas, biofuels or hydrogen. Hydrogen may become relevant later but should not be an immediate priority.

Ensure infrastructure for electric vehicles, but public funds should not subsidise the purchase of electric individual cars as this tends to benefit the well-off.

Public money should rather be invested in electrified public transport, including rail, buses and perhaps trams, and the transformation of cities for the benefit of non-motorised transport.

[116] The Kosovo Office of Statistics provides some data, but it does not identify modal shares.
[117] Energy Community Secretariat, Energy Community and National Energy and Climate Plans, accessed April 5, 2022

Research, innovation and competitiveness

It is most likely not cost-effective for Kosovo to invest millions in primary research for new technologies, but the country needs to find ways of making the energy transition work for it, using the skills its people already have and developing new ones. The opening of the Jaha solar factory is a good example of ensuring that some of the profits from the transition stay within the country.

The transition certainly requires a high degree of digitalisation of the energy sector, offering opportunities for the development of IT in the country. New skills are needed for trained energy efficiency auditors and energy efficiency experts in national and local authorities. Construction workers need to be trained to undertake good quality building retrofits and to build highly efficient buildings. Skills training for installation of rooftop solar and heat pumps is also needed.

Recommendation: Ensure Kosovo's educational system and vocational training opportunities are aligned with energy transition, and include appropriate budget allocations for such training. This may be connected with just transition planning but should also go beyond it to engage entrepreneurs, youth and the diaspora.

Conclusions and recommendations

Many of the ingredients for the success of Kosovo's energy transition go far beyond the energy and transport sectors and are rather connected to societal functioning as a whole. Public participation in decision-making has not been a strong point in the Western Balkans but every household is affected by the energy sector in different ways and everyone must have the right to have their say.

Every household consumes energy and many are affected by pollution or other environmental damage from the sector. Those who will directly lose their jobs as a result of changes in the sector are particularly hard hit, while on the other hand there are opportunities for ordinary people to produce electricity in their homes and to live more comfortably as a result of better insulation.

This means that increased public dialogue on energy transition is needed, and there must be wide consultation during the development of the NECP. This will include the Strategic Environmental Assessment process, which is a legal requirement, but should not be restricted to this channel.

Our concrete recommendations for Kosovo's NECP, laid out in the text above, are reiterated here for convenience. They focus primarily on moving Kosovo towards an EU-compatible, energy-efficient, 100 per cent renewable economy based on close market integration, flexible electricity generation and electrification of the transport and heating sectors.

Nevertheless, not every EU energy policy turns out for the best, as many gas-dependent countries have found to their cost during the last winter and spring due to very high prices and Russia's invasion of Ukraine. One of the challenges for Kosovo will be to understand which EU-compatible policies are really worth pursuing and which may later turn out to be counterproductive. It is here that we hope our experience, summarised in this paper, will be valuable. Kosovo's energy future lies in the EU energy market, but it must not follow every idea from EU energy policy blindly. Rather, Kosovo must find its own way to make the energy transition work for the good of the country.

Energy security, solidarity and trust

Kosovo is advised to:

1. Cement its decision not to move ahead with the gas pipeline from North Macedonia[118] in its NECP and completely avoid becoming dependent on gas. Instead, it should leapfrog to electrification based on domestic renewable energy sources.

2. Pursue electrification of transport as well as improvement of its public transport, to help decrease demand from individual vehicles and reduce oil dependence. Pursuing biofuels as an alternative to oil products for transport is not recommended.

3. First concentrate on developing sustainable renewable electricity and electrification of heat and transport, and only later consider the potential role of hydrogen for hard-to-decarbonise sectors, once the role of hydrogen has become clearer in the EU and once the costs of renewable hydrogen have decreased.

4. Phase out the use of coal as soon as technically feasible to do so, starting with Kosova A, which must be closed as a matter of urgency.

A fully integrated energy market

5. Kosovo and Albania have made considerable progress on developing a joint electricity market and should continue with this work as an important precondition for achieving a high share of variable renewable electricity.

Energy efficiency contributing to moderation of demand

Kosovo is advised to:

6. Set more ambitious targets to speed up KEDS' work on modernising the distribution network to reduce technical losses, and define a potential financing structure and sources.

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[118] Igor Todorović, Kosovo Shelves US-backed Gas Pipeline Project, Balkan Green Energy News, October 5, 2021

7. Set ambitious targets for a rapid rollout of smart meters. Montenegro's experience with its EBRD-funded smart meters project may be of use.[119]

8. Continue with the adoption of the Building Renovation Strategy even before the NECP is adopted.

9. Identify current barriers to heat pump use in households and small businesses, and prescribe measures to overcome them in the NECP, including tax incentives.

10. Ensure the Energy Efficiency Fund is sufficiently resourced to fund deep renovations and the installation of heat pumps and solar thermal in the residential sector. Grant funding needs to take into account the results and recommendations of the study commissioned for the SEEK project.[120]

11. Carry out public education on the need to properly dry wood before use.

12. Ensure municipalities are sufficiently empowered, trained and have the resources to drive forward energy efficiency measures in households.

13. Draft and adopt a formal plan to address energy poverty, based on a participatory approach to defining people's needs. This should include:

- Energy efficiency audits and advice for households on measures that can be taken without professional assistance (draught-proofing, LED lighting, etc.);

- Going beyond income support to involve energy efficiency improvements for vulnerable households, including insulation, more efficient heating (preferably heat pumps, or potentially wood heating where more appropriate) and the installation of solar water heating and/or solar photovoltaics to reduce costs.

[119] EBRD, EPCG Metering and Distribution Project, December 22, 2021
[120] GFA Consulting Group & HPC International, Residential Buildings Efficiency Retrofits Baseline Study (Final Draft), SEEK, March 2020; and GFA Consulting Group & HPC International, Market Study (Final Draft), SEEK, April 2020
[121] More details are provided in Energy Institute Hrvoje Požar and DOOR, Study on Addressing Energy Poverty in the Energy Community Contracting Parties, Energy Community Secretariat, December 2021.

Decarbonisation of the economy

Kosovo is advised to:

14. Calculate its greenhouse gas emissions reductions target and energy efficiency targets in a way that does not delay significant action on achieving decarbonisation until after 2030, in particular as many of the easier options for action are already available this decade.

15. Set a renewable energy target for 2030 that is compatible with achieving 100 per cent renewables by 2050. This needs to be calculated in detail, but anything less than around 50 per cent means that after 2030, efforts would need to be accelerated even further to reach 100 per cent by 2050. This depends on the rate of consumption: The more energy can be saved, the easier it is to increase the renewable percentage. Conversely, if consumption increases further, reaching a higher percentage becomes correspondingly more difficult.

16. In the NECP, set clear and realistic dates for the closure of Kosova A and Kosova B, or at least options for closure dates.

17. Introduce carbon pricing as soon as possible and at the latest by 2025. Pricing should reach the level of the EU Emissions Trading Scheme by 2030 at the latest in order to avoid the Carbon Border Adjustment Mechanism. Use the proceeds for decarbonisation rather than for the state budget in general.

18. Build clear pollution control investment plans and/or reductions in operation of coal plants into the NECP to decrease their health impacts for the remainder of their lifetimes.

19. Develop a participatory plan to gradually close Kosovo's lignite mines and secure a socially just transition of the affected regions, following the Eight Steps for a Just Transition in the Western Balkans.[122] Ensure this is done in thorough consultation with affected communities by people experienced in the facilitation of such discussions.

20. Utilise the opportunities offered by the Platform Initiative in Support of Coal Regions in Transition in the Western Balkans and Ukraine, such as exchange visits and experience sharing.

21. Ensure that the NECP provides a breakdown of likely costs for redevelopment of coal mining areas and potential funding sources.

[122] CEE Bankwatch Network, Eight Steps for a Just Transition in the Western Balkans, April 2021

22. In the power sector, concentrate mostly on solar and wind development until 2030, carefully assessing the potential for sustainability sited renewables development. The work already undertaken by The Nature Conservancy in Zadar County, Croatia, may be of use for this.[123] Using brownfield sites should be the highest priority.

23. Avoid over-reliance on specific large projects such as the Drini pumped storage plant and carefully assess their real likelihood of going ahead. Develop back-up plans in case they do not materialise.

24. Take further steps to support prosumers in order to maximise their potential, including via simplification of procedures and tax reductions, taking into account the recommendations from the USAID-commissioned study on the topic.[124]

25. Prioritise the Prishtina solar thermal project to decrease reliance on Kosova B for district heating.

26. Further inform and consult the public regarding the options being considered for the new district heating systems in Kosovo and their costs and benefits.

27. Prioritise solar thermal and, where suitable, geothermal district heating. Use biomass only where sufficient wood waste is sure to be available, in order to avoid driving further deforestation, greenhouse gas emissions and air pollution, and do not plan biomass facilities using primary forest biomass.

28. Under no circumstances build fossil gas heating plants or waste-to-energy plants using municipal waste as they crowd out recycling and waste prevention measures, increase air pollution, and create hazardous ash and filter residues.[125]

29. Concentrate on electrification and avoid distractions such as gas, biofuels or hydrogen. Hydrogen may become relevant later but should not be an immediate priority.

30. Ensure infrastructure for electric vehicles, but do not use public funds to subsidise the purchase of electric individual cars as this tends to benefit the well-off.

31. Invest public money in electrified public transport, including rail, buses and perhaps trams, and the transformation of cities for the benefit of non-motorised transport.

Research, innovation and competitiveness

32. Ensure Kosovo's educational system and vocational training opportunities are aligned with energy transition and include appropriate budget allocations for such training. This may be connected with just transition planning but should also go beyond it to engage entrepreneurs, youth and the diaspora

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[123] Mark Lambrides and Igor Vejnovic, Smarter Energy Siting Helps Achieve Climate & Biodiversity Goals, The Nature Conservancy, April 9, 2021
[124] DT Global, Summary Report: Kosovo Energy Security of Supply - JO 27, Assessment of PV Generators in Kosovo, Annex 3, January 2021
[125] See for example CEE Bankwatch Network, New Analysis: Belgrade Incinerator Public-private Partnership a Textbook Case of Corporate Capture, December 2019.

Funded by the European Union

"This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of BIRN Kosovo, CEE Bankwatch, ERA Group and TV Mreža and do not necessarily reflect the views of the European Union."