MISSED TARGETS:

INSIGHTS INTO THE DRAFT NECPS OF THE WESTERN BALKANS

ASSESSMENT REPORT

November 2023

CAN
CLIMATE ACTION NETWORK
Europe

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Acknowledgements
This report includes contributions from CAN Europe's member and partner organisations from the Western Balkans, namely:

Aarhus Centre, Bosnia and Herzegovina

Centre for Environment, Bosnia and Herzegovina

Belgrade Open School, Serbia

Renewables and Environmental Regulatory Institute, Serbia

CEE Bankwatch Network, regional NGO

English language editor and layout
Eleonora Allena

Title
Missed Targets: Insights into the draft NECPs of the Western Balkans

Download the publication
https://caneurope.org/western-balkans-necps-2023/

Published by CAN Europe
November 2023

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EXECUTIVE SUMMARY

This report offers a detailed assessment of the draft National Energy and Climate Plans (NECPs) submitted by Bosnia and Herzegovina, Kosovo, and Serbia to the Energy Community Secretariat in mid-2023. The Western Balkan region, heavily dependent on fossil fuels, particularly lignite, confronts significant challenges in transitioning to renewable energy sources and effective climate action. The interconnected nature of greenhouse gas emissions reduction, the share of renewable energy in gross final energy consumption, and energy efficiency is an essential aspect of this transition.

The assessment analyses the ambition levels of the three key targets, the NECPs' capability to achieve these targets, and their potential to set the countries on a course towards climate neutrality by 2050, in alignment with the shared goals of the European Union and the Western Balkans under the Green Agenda and the Paris Agreement.

While commendable efforts have been made in drafting the NECPs, there is substantial room for improvement in their final versions. Notably, while the avoidance of investments in new coal generating capacities is a positive step, the absence of a concrete coal phase-out strategy is concerning. Minimal efforts to reduce reliance on coal by 2030 are insufficient for significant greenhouse gas reduction. Persistent dependence on an outdated and inefficient coal fleet[1] hampers the much-needed transition to renewable energy sources in the region, further complicated by the potential transition to fossil gas as indicated in the NECPs. This undermines the feasibility of implementing carbon pricing policies, which are inadequately addressed in the NECPs.

The NECPs do focus considerably on renewable energy, but in some instances, such as Serbia's case, they fail to meet the agreed targets for 2030 at the Energy Community level. Plans to increase renewable energy in gross final energy consumption, particularly solar and wind, lack detailed information on capacity scale, sectoral uptake, and comprehensive grid integration strategies. Significant secondary legislation is required to support the current NECPs and national legislative frameworks. Additionally, the NECPs do not effectively tackle the administrative, technical, financial, and social barriers to deploying and integrating renewable energy sources.

Energy efficiency first principle is not prioritised as the central element of the energy transition in the NECPs. There are widespread opportunities for increasing energy efficiency measures, notably in the efficiency of buildings, heating, and cooling, which the final NECP should comprehensively address. The NECPs also lack detailed information on institutional responsibilities, implementation roadmaps, and oversight mechanisms.
While some policies and measures to achieve the 2030 energy and climate targets are thorough and meaningful, others appear generalised, vague, and lack specific objectives, clear indicators, and defined timelines.

[1] https://reri.org.rs/en/busting-the-myth-the-chronology-of-coal-use-in-serbia/

The report also reviews the extent of public consultation. Serbia conducted public consultations, but the consultation report remains unpublished to the date. Bosnia and Herzegovina organised public presentations/hearings without a formal consultation process, and Kosovo did not conduct any public consultation, indicating variations in stakeholder engagement across these countries.

The assessment provides clear recommendations for each target and country. Common recommendations for Bosnia and Herzegovina, Kosovo, and Serbia include:

- Providing a definitive strategy for phasing out coal, with specific deadlines and measures, given their heavy reliance on coal.
- Phasing out substantial subsidies in the coal sector to facilitate the transition and supporting market-based schemes for cost-effective transition.
- Establishing a credible pathway for introducing carbon pricing, addressing the impacts of the Carbon Border Adjustment Mechanism, and seeking compliance strategies.
- Advancing industrial-level emissions reduction, acknowledging that the decoupling of emissions from economic growth has already occurred.
- Delivering detailed information on renewable energy deployment, including technology breakdowns, capacity targets, and plans to address existing barriers, ensuring efficient uptake of new renewable energy capacities.
- Practically implementing the 'energy efficiency first' principle, with a specific focus on building, heating, and cooling sectors, and establishing clear institutional frameworks for implementation and oversight.
- Ensuring timely and effective public consultations on draft NECPs, providing outcome reports, and developing methods to address feedback and integrate it into the final NECP.
- Thoroughly addressing the just transition, focusing on social aspects, and providing comprehensive plans for this transition.
- Recognizing LULUCF and AFOLU as supplementary tools, rather than primary drivers, in achieving GHG emission reduction ambitions.
- Effectively designing NECPs in line with the Governance Regulation, ensuring that policies and measures have concrete, achievable objectives, with oversight mechanisms and credible timelines.
- Designing Strategic Environmental Assessments that effectively and objectively assess the impacts of the NECPs.

The report underscores the need for enhanced ambition and concrete strategies in the final NECPs to meet the region's climate and energy goals effectively, and even surpass them.

Introduction: Status of National Energy and Climate Plans[2] in the Western Balkans[3]

This report assesses the draft NECPs submitted by Bosnia and Herzegovina, Kosovo, and Serbia to the Energy Community Secretariat for review in late June and July 2023. Albania and North Macedonia, having adopted their NECPs in 2021, are now revising these in line with the Energy Community's new legislative framework. This framework, adopted in December 2022 at the Energy Community's Ministerial Council, encompasses the full transposition of the Regulation on the Governance of the Energy Union and Climate Action. It also includes the adoption of the 2030 energy and climate targets, revising the previously adopted legislation of the Clean Energy Package for All Europeans. In compliance with the Energy Community timeline, Albania and North Macedonia must revise their NECPs by June 2024.[4][5]

The remaining Western Balkans countries were required to submit their draft NECPs for revision and assessment by the Energy Community Secretariat by June 30, 2023. These submissions should have included public consultation reports and Strategic Environmental Assessments. As of June and July 2023, Bosnia and Herzegovina, Kosovo, and Serbia have submitted their NECPs. Serbia conducted public consultations on its draft NECP and SEA, but the consultation report remains unpublished. Bosnia and Herzegovina organised public presentations/hearings on its draft NECP, yet no formal consultation process was initiated. Kosovo did not conduct any public consultation on its draft NECP. Notably, Montenegro has yet to produce a draft NECP.

This assessment report focuses on the NECPs submitted by Bosnia and Herzegovina, Kosovo, and Serbia.

The draft reports are accessible at:
https://www.energy-community.org/implementation/package/NECP.html

[2] https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

[3] Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia

[4] https://www.energy-community.org/aboutus/whoweare.html

[5] The 2022 Ministerial Council of the Energy Community Treaty, after months of negotiations with Contracting Parties, has adopted 2030 energy and climate targets for each of the Contracting Party, and amending accordingly the legislation in force. The NECPs which the Contracting Parties are drafting within the Energy Community framework, should deliver on their respective, negotiated and accepted targets at the Energy Community level.

Assessment of the Submitted NECPs from Bosnia and Herzegovina, Kosovo, and Serbia

This assessment concentrates on the climate action and energy transition efforts of the three countries toward achieving the 2030 energy and climate targets. Given the region's heavy reliance on fossil fuels, particularly coal and lignite, for electricity generation, the interconnection between the three targets – greenhouse gas emissions reduction, renewable energy share in gross final energy consumption, and energy efficiency (in terms of primary and final energy consumption) – is pronounced. The region's emissions reduction largely hinges on reducing lignite use for electricity generation. This influences the integration of new renewable energy capacities, energy savings through efficiency measures, and potential energy imports, underscoring the need for regional cooperation.

This report primarily evaluates the ambition level of the three targets to assess their adequacy in supporting regional energy transition and climate action. Achieving climate neutrality by 2050, a shared goal of the European Union and the Western Balkans under the Green Agenda[6], aligns with the broader aim of continental climate neutrality in accordance with the Paris Agreement. All the Western Balkans countries, apart from Kosovo, as parties to the United Nations Framework Convention on Climate Change, are committed to this goal under the Paris Agreement.

Recognising greenhouse gas emissions reduction as the likely starting point for Western Balkans' climate and energy ambitions, CAN Europe has focused on identifying necessary 2030 targets to facilitate achieving climate neutrality by 2050. As the greenhouse gas emissions landscape changed significantly in the Western Balkans since 1990, to a large extent propelled by the geopolitical upheavals of the 1990s, CAN Europe suggests that a baseline other than 1990 might be more appropriate for setting emissions reduction ambitions. Our briefing, Western Balkans Greenhouse Gas Emissions Reduction Target[7](2021), on emissions reduction pathways provides the option of a minimum ambition of linear emissions reduction towards 2050 climate neutrality, considering current[8] emission levels as a baseline.

Identifying an optimal emissions reduction target for 2030 in the region, critical for achieving climate neutrality by 2050, is challenging. The methodology outlined in CAN Europe's 2021 briefing requires updating and reevaluation with the latest data from the NECPs.
Considering the latest data on natural sinks, the model can be reapplied to determine each country's minimal linear emissions reduction pathway to achieve climate neutrality by 2050.

Take Serbia as an example. According to Serbia's Climate Strategy and Action Plan's Scenario M2, natural sinks are projected to lower GHG emissions by 4.41 MtCO2eq by 2050. Therefore, Serbia needs to reduce its GHG emissions from 62.93 MtCO2eq in 2020 to 4.41 MtCO2eq by 2050, a total reduction of 58.82 MtCO2eq. Our analysis suggests a linear emissions reduction of 33.33% by 2030 compared to 2020 levels, resulting in a target of 39.22 MtCO2eq for Serbia in 2030. However, Serbia's current NECP projects higher emissions of 47.82 MtCO2eq by 2030, which is above our calculated minimal ambition.

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6 https://www.rcc.int/priority_areas/61/green-agenda-for-the-western-balkans

7 https://caneurope.org/content/uploads/2021/07/WB-GHG2030-policy-and-recommendations_final_July-22021-1.pdf

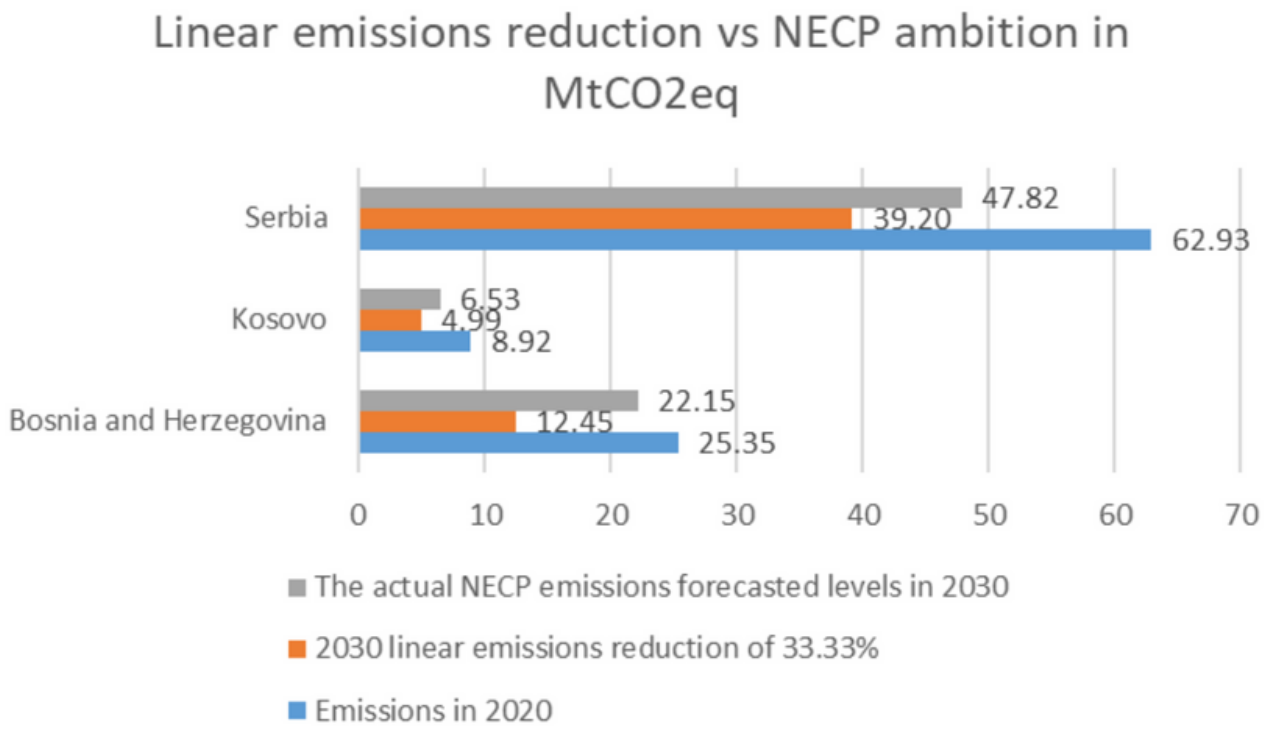
8 Most recent, and derived emissions according to CAN Europe's calculations.

9 A natural sink, or a carbon sink, refers to anything that absorbs carbon dioxide from the atmosphere more than it emits it. Forests, soil and oceans are large carbon sinks. In national inventories these are addressed through LULUCF - Land Use, Land Use Change, and Forestry, or AFOLU - Agriculture, Forestry, and Other Land Use. While both AFOLU and LULUCF deal with land use and its impact on the environment, AFOLU has a broader scope that includes agricultural activities along with land use and forestry, whereas LULUCF is specifically focused on land use changes and forestry and their role in carbon emissions and sequestration.

The following table provides the overview of the exercise applied in all three countries:

Table 1: *Minimal ambition for 2030, using the linear regression method, compared to the NECP GHG target*

Emission in MtCO2eq	Emissions in 2020	Natural sinks in 2050	Emissions to be reduced by 33.33%	2030 emissions reduction target of 33.33%	The actual NECP emissions forecasted levels in 2030
Bosnia and Herzegovina	25.35	6.67	18.68	12.45	22.15
Kosovo	8.92	1.43	7.49	4.99	6.53
Serbia	62.93	4.14	58.79	39.20	47.82



Graph 1: Table 1 visualised

Draft NECP OF Bosnia and Herzegovina (BiH)

General remarks

As per Governance Regulation, the NECP consists of two main parts:

- Section A - Current State Analysis: This part generally includes a description of the current situation regarding energy and climate, such as existing and proposed policies and measures, current energy mix, emission levels, and the state of renewable energy and energy efficiency. It provides the baseline against which future progress is measured.

- Section B - Analytical Basis: This part involves a more detailed analysis, including projections and the impact assessment of planned policies. It also includes the country's strategy for reaching its targets, incorporating aspects like energy security, research, and innovation, and provides a roadmap for future policy development.

Bosnia and Herzegovina only developed Section A of the NECP. Without Section B, Bosnia and Herzegovina lacks a detailed plan for achieving the outlined objectives. This results in inefficient allocation of resources and potential failure to meet targets. Furthermore, the Energy Community has certain requirements for the NECP. If a Contracting Party does not fully comply with these requirements will face potential financial sanctions.

The importance of Section B lies in the fact that it should include the methodologies and assumptions underpinning the plan, which are essential for understanding how the objectives are expected to be achieved. Without this, the plan's credibility is undermined.
The full NECP will be a basis for accessing certain EU and international funding streams. Incomplete plans will compromise a country's ability to secure funding for energy and climate projects.

Without a clear analytical basis, it becomes challenging to monitor progress, evaluate the effectiveness of policies, and make adjustments where necessary. The analytical part usually involves engagement with stakeholders to validate strategies and gain buy-in. Missing this component will inevitably result in less support from the public, businesses, and investors.

Importantly, Section B is crucial for coordinating policies across different sectors. Without it, there will be inconsistencies and inefficiencies in policy implementation. The Energy Community’s energy and climate targets require a concerted effort from all Contracting Parties

The following assessment relates to Section A exclusively.

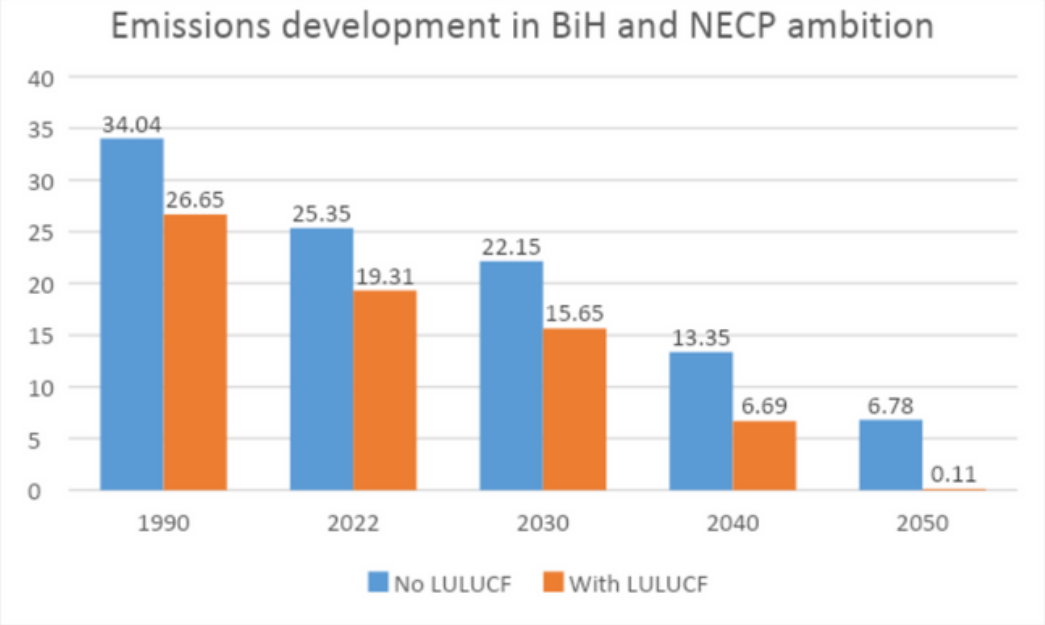
Greenhouse gas emission reduction ambition

The NECP aims to reduce 41.21 per cent of Greenhouse Gas (GHG) emissions in 2030 as compared to 1990, including the ones related to land use, land-use change and forestry (LULUCF). This is an economy wide target, and is in line with the country’s ambition at the Energy Community level.

2030 ambition and reaching the climate neutrality

Despite the absence of an analytical Section B in the NECP, Bosnia and Herzegovina aspired to reach climate neutrality by 2050. However, the text only provides predictions and data up to 2030, while no indication is provided on how the trend of emissions will be developed from 2030 to 2040, and 2050 thereafter.

Graph 2 shows the NECP goals, taking into account historical emissions. It should be noted that the NECP does not provide an extensive overview of the national inventory of BiH. While the emissions including LULUCF are noted, the gross and actual emissions are not known. For the sake of this exercise, we shall use the gross emissions of BiH in 1990, extrapolated from their Nationally Determined Contributions (NDCs).



Graph 2: Historical emissions in BiH and NECP ambition, in MtCO2eq

While the scenario which includes LULUCF aims to almost reach climate neutrality by 2050, we shall refer to the scenario which excludes natural sinks, in order to determine the real level of ambition. It should be noted that the NECP highlights a scenario - referred to as “Policy”- in the projections for the level of emissions in 2030, 2040 and 2050. It is that this, Policy, scenario reaches climate neutrality by 2050. For this exercise, we will look at the more ambitious, assuming that the “Policy Scenario” is the scenario With Additional Measures (WAM) for the assessment.

Reflecting on historical vs current level of emissions is critical to understanding the 2030 and 2050 ambition. BiH has significantly lower emissions levels in 2022, as compared to 1990, namely 25.5 per cent lower. The war in the 1990s has had a profound impact on emissions development as well, and the country never returned to that level of emissions. The level of emissions has not changed in the last 12 years, and it stayed, with small variations, around 26 MtCO2eq. It should be noted that the year 2022, a year which has passed, does not possess consistency in data, since these emissions should have been accounted for. Table 2 of the NECP for the year 2022, the emissions in baseline and policy scenarios vary, and they are 26.44 MtCO2eq in baseline, and 25.35 in policy.

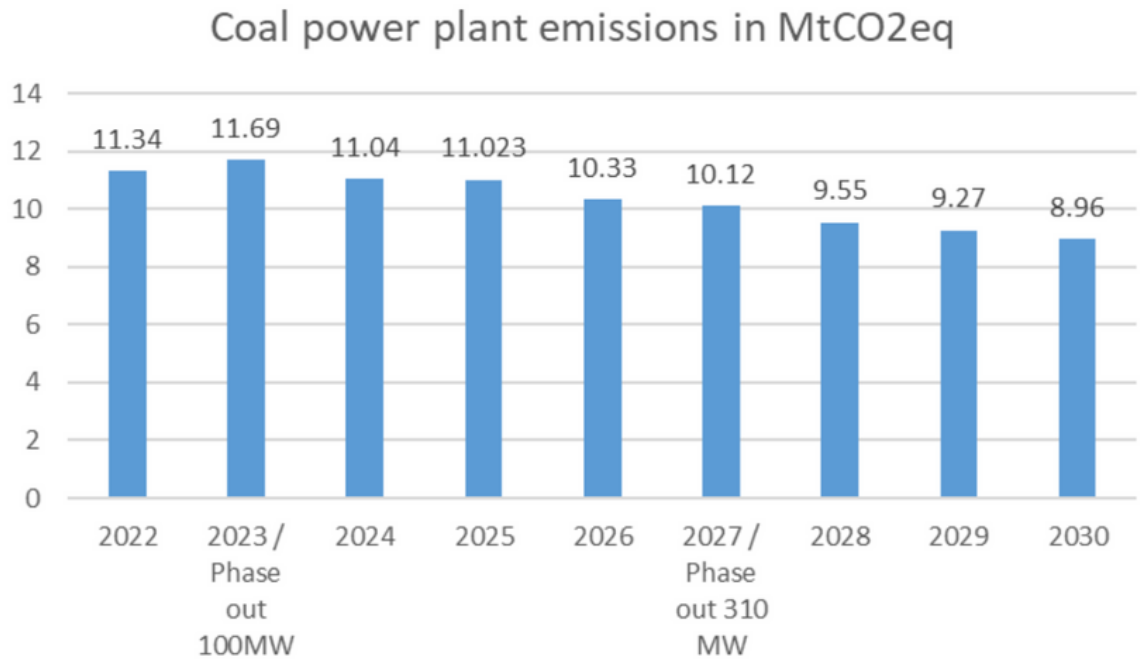
MtCO2	2022	2030	2040	2050
Total CO2 emission without LULUCF - Baseline	26.44	27.39	19.63	16.24
Total CO2 emission without LULUCF - Policy	25.35	22.15	13.35	6.78
LULUCF	-6,04	-6,5	-6.662	-6.668
Net emissions - Policy	19.31	15.65	6.69	0.11

Table 2: Values of framework indicators of greenhouse gas emissions at the transition between phases

Table 2: The Table 2 values of the Bosnia and Herzegovina's NECP (screenshot)

Staying in line with commitment to assess the ambition according to the policy scenario, the 2030 gross target for BiH represents only a 12.62 per cent of emissions reduction compared to 2022 levels, which shows a rather modest commitment in decarbonisation of its economy, especially the electricity sector. While it is commendable that the NECP does not foresee any new coal power plants-an issue persisting in BiH for a considerable period, coal fired power plants still account for the largest share of national emissions. In 2022, the emissions from coal power plants account for 44.73 per cent of all national emissions, and in 2030 they will still account for 40.4 per cent according to the NECP.

This is related to the limited coal phase out in the country. The Graph 4 shows the trend of emissions development from coal power plants from 2020 until 2030.



Graph 3: Coal power plants emissions forecast according to Bosnia and Herzegovina's NECP

One can observe that in years where there is a planned coal phase out of specific generating capacities, the amount of emissions in some cases is increased in that year, bringing the assumption that even with the planned phase out, the utilisation factor of coal power plants is expected to rise, putting incredible strain on already outdated and inefficient technology. It should be noted that the NECP plans to keep online for the following years units of Tuzla 4 and Kakanj 5, for which BiH has opted out from the application of the Large Combustion Plant Directive. These blocks have spent their 20000 working hours' threshold, and should be consequently closed.[10]

There are no projections on different economy wide sectors, with only indications[11] for insignificant changes in the emissions from the industry and transport sectors.

[10] Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants. Instead of choosing to comply with the LCPD, national authorities may ask for an opt-out, and limit the work of the specific power plant to 20,000 hours from 31 January 2018 to 31 December 2023.

[11] https://www.complyorclose.org/

GHG emission reduction related Policies and Measures (PaMs)

Policies and measures related to the lowering of the greenhouse gas emissions of Bosnia and Herzegovina remain descriptive at best. There is no quantification whatsoever of the effects of these PaMs, no cost indications, no specific timelines, which bring forth the questions on the credibility and effectiveness of the policies and measures. Planned adoption of strategies and laws without specificities on their effect, especially related to the Climate Change Strategy and the Law on Climate Change, show lack of seriousness of the plans. There is a sheer number of these PaMs, with no specific outcomes.

We would nevertheless highlight the assessment of some key PaMs like carbon pricing.
The PaM highlights the introduction of the Emissions Trading System (ETS), but it does not specify which industries will be included. This is crucial, as it determines the scale and impact of the ETS, along with the sectors that need to prepare for compliance. Furthermore, without clear goals, it is difficult to assess whether the scheme's design will be effective in reducing emissions and by how much.

The policy needs to outline the cost to the government and the affected industries, including the financial mechanisms to support the transition. Additionally, the expected quantitative outcomes in terms of emission reductions, baseline for the reductions, economic impact, and compliance costs are not provided. Details on how auctions will be conducted and how the secondary market will operate are critical for the success of an ETS, the information which is not provided in the PaM.
The effectiveness of an ETS is indeed determined by the size and liquidity of the market; Bosnia and Herzegovina's ETS foresees that the caps are put on the Entity level and in Brcko district. For a country like BiH, with a smaller economy and fewer industrial players compared to larger EU member states, there are specific challenges that come with establishing a national ETS with Entity level and Brco district caps.

These include:

- With fewer participants, the market for trading emissions allowances might not be liquid enough to ensure a fair price discovery mechanism. This will lead to price volatility and may even make the market susceptible to manipulation;

- A small number of participants would lead to market power issues where one or a few entities can influence the price of allowances to their advantage;

- There may be concerns about the impact on the competitiveness of local industries, particularly if they are competing with firms from countries without similar carbon costs.

The proposed PaM to eliminate subsidies for electricity produced from fossil fuels, especially coal, is a significant step towards reducing greenhouse gas emissions, but also for the competitive energy transition. The policy provides a clear direction, but the specific steps for phasing out subsidies and implementing market reforms need to be detailed further. The development of programmes to protect (primarily) the socially disadvantaged populations from rising electricity prices is critical to ensure the equitable distribution of costs and benefits. Given that there is only a marginal in coal use by 2030, measuring the effectiveness of this PaM is challenging, therefore establishing baseline data on current subsidy levels, energy consumption patterns, and emissions is crucial to assess progress, as well as monitoring the changes in public spending on subsidies.

This PaM should be assessed as a part of a broader approach and provide direct links with the support for renewable energy, energy efficiency measures, and economic diversification to phase out the dependency on coal.

Bosnia and Herzegovina's NECP fails to address the necessities of compliance with the Carbon Border Adjustment Mechanism, nor does it provide policies and measures to be taken and that would allow the country to be exempt in line with the exemption criteria.

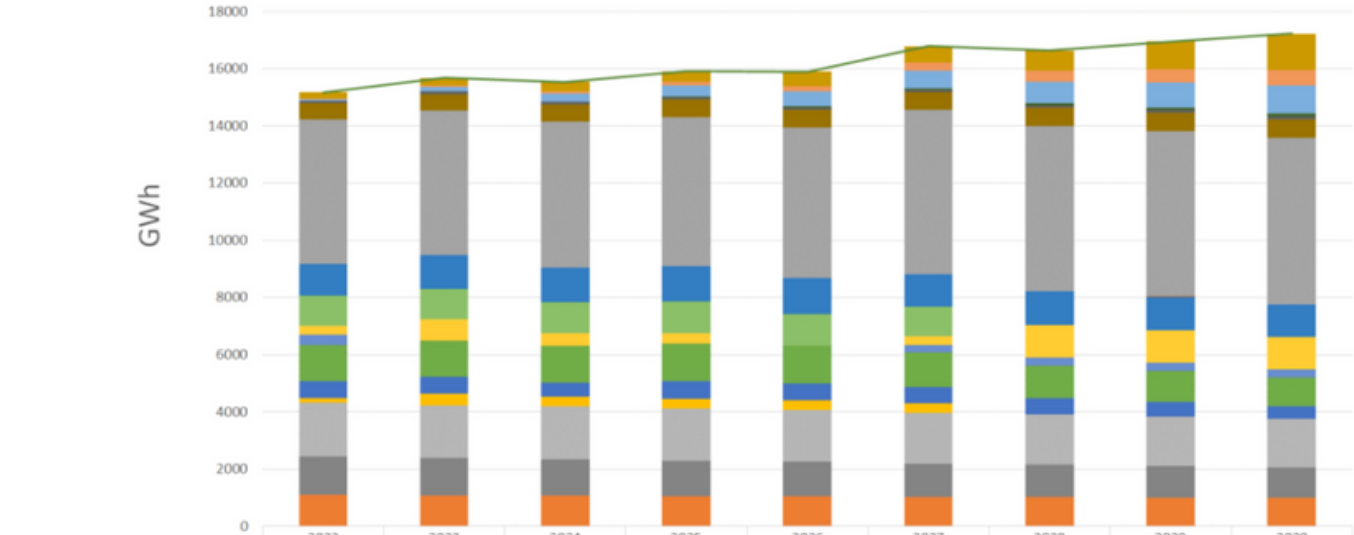
Recommendations for GHG emission reduction

- It is critical for BiH to develop and incorporate Section B, which includes detailed analysis, projections, impact assessment, and strategic planning;
- The NECP should include specific, measurable, achievable, relevant, and time-bound (SMART) targets for GHG emissions reduction. The current target of a 41.21 per cent reduction by 2030 is an indicative starting point, but it needs more detail, especially for the period 2030-2050, so it can support the goals set in the NECP to reach climate neutrality by 2050;
- The NECP should provide a detailed coal phase out date and plan;
- The NECP needs detailed emission reduction strategies for each sector, as well as provide data and emissions reduction paths for each of them. These paths should outline specific actions, timelines, and expected outcomes;
- Each PaM should have a detailed evaluation of its potential impact on emissions reduction, costs, timelines, and implementation challenges. This includes quantifying the expected reduction in emissions for measures like carbon pricing and eliminating fossil fuel subsidies;
- The PaM for implementing carbon pricing should be detailed, including which industries will be included, how the Emissions Trading System will be managed, and measures to ensure market liquidity and fairness;
- Detailed plans should be included for supporting socially disadvantaged populations and workers in transitioning industries. This is particularly important given the planned elimination of subsidies for fossil fuels. The current Just Transition PaM in the energy sector, misses to address this issue.

Renewable energy ambition

Bosnia and Herzegovina's target for the share of renewable energy in the GFEC in 2030 is 43.6 per cent. The target is in line with the country's target within the Energy Community framework. BiH's renewable energy targets must be contextualised within its current energy framework. The country fell short of its 2020 goal, achieving a 37.6 per cent share of renewables in GFEC against a target of 40 per cent. Given the sluggish pace of coal phase-out in electricity generation, the 2030 RES target of 46.30 per cent appears more symbolic, casting doubt on its effectiveness in driving a substantive energy transition.

In 2020, renewables accounted for 49.31 per cent of the final electricity consumption, yet projections reveal a discordance with the 2030 target, of 70.1 per cent. Specifically, Diagram 33 of the NECP indicates that renewables will constitute 54.93 per cent of the total electricity generation by 2030, suggesting an ambitious leap is required to meet the set target.



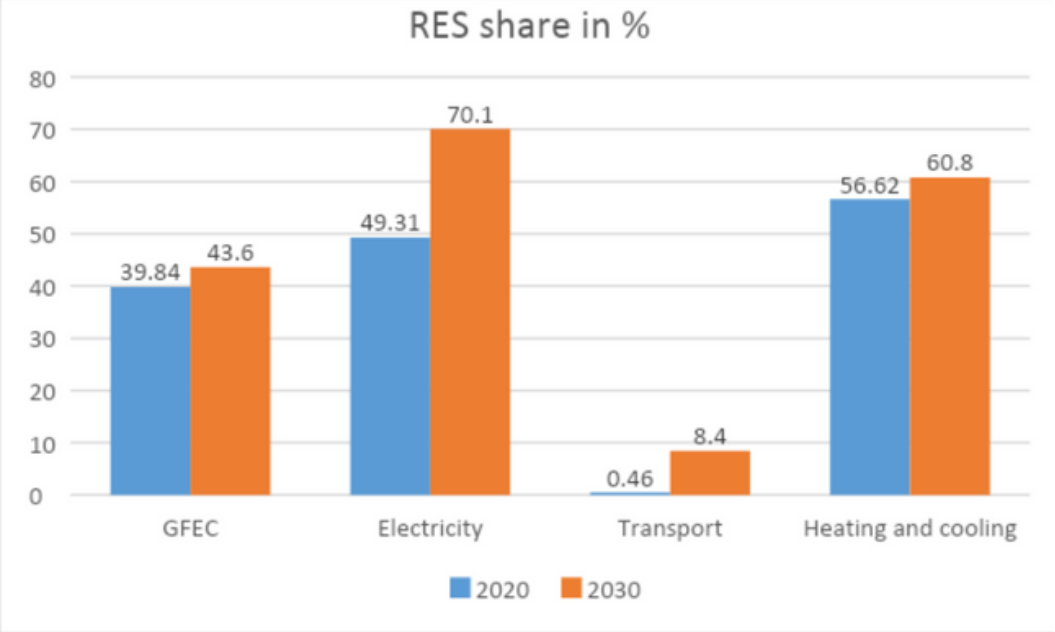
	2022	2023	2024	2025	2026	2027	2028	2029	2030
Wind power plants-market	236.0	274.1	331.4	375.0	500.4	567.4	710.9	977.4	1,261.2
Photovoltaic power plants-prosumers	26.0	52.1	78.2	108.6	196.2	281.8	371.7	460.3	549.2
Photovoltaic power plants-market	44.8	161.3	277.9	394.6	513.1	626.4	749.3	868.8	988.6
Photovoltaic power plants-industry	1.0	1.1	15.2	29.3	43.6	57.4	72.2	86.6	101.1
Pumped hydro power plants	81.4	81.3	82.3	82.5	83.1	82.8	83.5	93.8	94.1
Small hydropower plants	564.4	574.4	592.1	603.6	615.9	620.3	633.0	642.3	651.3
Large hydropower plants	5,056.8	5,052.5	5,114.8	5,227.7	5,270.4	5,728.1	5,779.3	5,799.4	5,817.9
Use of oil and oil derivatives	2.9	2.8	2.7	2.5	2.4	2.2	2.1	1.9	1.8
TE TZ6 215 MW	1,109.5	1,196.0	1,203.3	1,234.7	1,244.8	1,146.3	1,195.8	1,162.5	1,128.6
TE TZ5 200 MW	1,060.9	1,060.0	1,097.1	1,093.6	1,107.7	1,033.6	-	-	-
TE TZ 4 200 MW	294.9	734.9	445.7	372.5	-	299.8	1,136.7	1,140.7	1,144.3
TE TZ3 100 MW	366.9	-	-	-	-	273.1	275.6	276.5	277.4
TE KK7 230 MW	1,266.3	1,265.2	1,280.8	1,305.2	1,315.9	1,190.9	1,140.8	1,083.9	1,026.2
TE KK6 110 MW	588.2	587.7	493.1	629.2	605.4	586.2	578.5	535.2	433.1
TE KK5 110 MW	166.4	415.6	332.2	337.8	341.3	339.7	-	-	-
TE Stanari 300 MW	1,878.4	1,848.6	1,842.8	1,817.0	1,803.0	1,765.8	1,752.6	1,729.6	1,706.0
TE Ugljevik 300 MW	1,347.4	1,304.9	1,279.2	1,239.3	1,207.3	1,159.6	1,127.6	1,089.0	1,049.8
TE Gacko 300 MW	1,093.1	1,076.3	1,073.5	1,059.1	1,051.5	1,030.4	1,023.3	1,010.5	997.3
Gasna elektra Gas power plant	-	-	-	-	-	-	-	-	-
Total	15,185.4	15,688.7	15,542.4	15,912.1	15,902.0	16,791.8	16,632.9	16,958.5	17,227.9

Diagram 33: Trajectories of the amount of electricity produced by type of plant in Bosnia and Herzegovina 2022-2030

Graph 4: Diagram 33 of the Bosnia and Herzegovina's NECP (screenshot)

BiH employs a specific methodology to calculate its gross final consumption of electricity, which includes the gross production from all energy sources, excluding the electricity generated via pumped storage with previously pumped water, and factors in the net electricity trade (imports minus exports). To achieve the 2030 electricity target, BiH must enhance the renewable share in both domestic production and net imports. The shortfall in domestic production, projected at 54.9 per cent, must be compensated by increased renewable generation or greater reliance on renewable imports, coupled with a strategic reduction in non-renewable electricity exports.

The NECP should address these ambiguities, as they have direct implications for the coal phase-out strategy, currently assessed as overly conservative.
The comprehensive targets for renewable energy in BiH's total energy consumption are depicted in Graph 6.



Graph 5: Share of renewable energy in gross final energy consumption, electricity, transport and heating and cooling for the year 2030.

Renewable energy related PaMs

The measures provided in the Bosnian NECP are primarily strategic and regulatory in nature, focusing on establishing the necessary legal and operational frameworks to support the growth of renewable energy. While these measures are detailed in terms of actions to be taken, they lack specific, quantifiable targets that would allow for a straightforward assessment of their direct implications in reaching overall renewable energy goals.

With regards to the measure for **supporting the generation of electricity from renewables,** the measure would drive ambition to increase the share of renewables by reforming the incentive system for renewable energy generation. The creation of a new classification system would be able to facilitate tailored incentives for various plant sizes and technologies. The measure's effectiveness hinges on the successful adoption of new laws and incentive systems. Achieving it will depend on the political will and the administrative efficiency of the competent authorities.

Establishment of a system of guarantees on the origin of electricity is crucial for market transparency and has the potential to drive consumer preference towards renewables. Participation in the European Energy Certification System and alignment with EU practices lend credibility to this measure. However, the detailed practical steps and their practicality in the Bosnian context must be scrutinised.

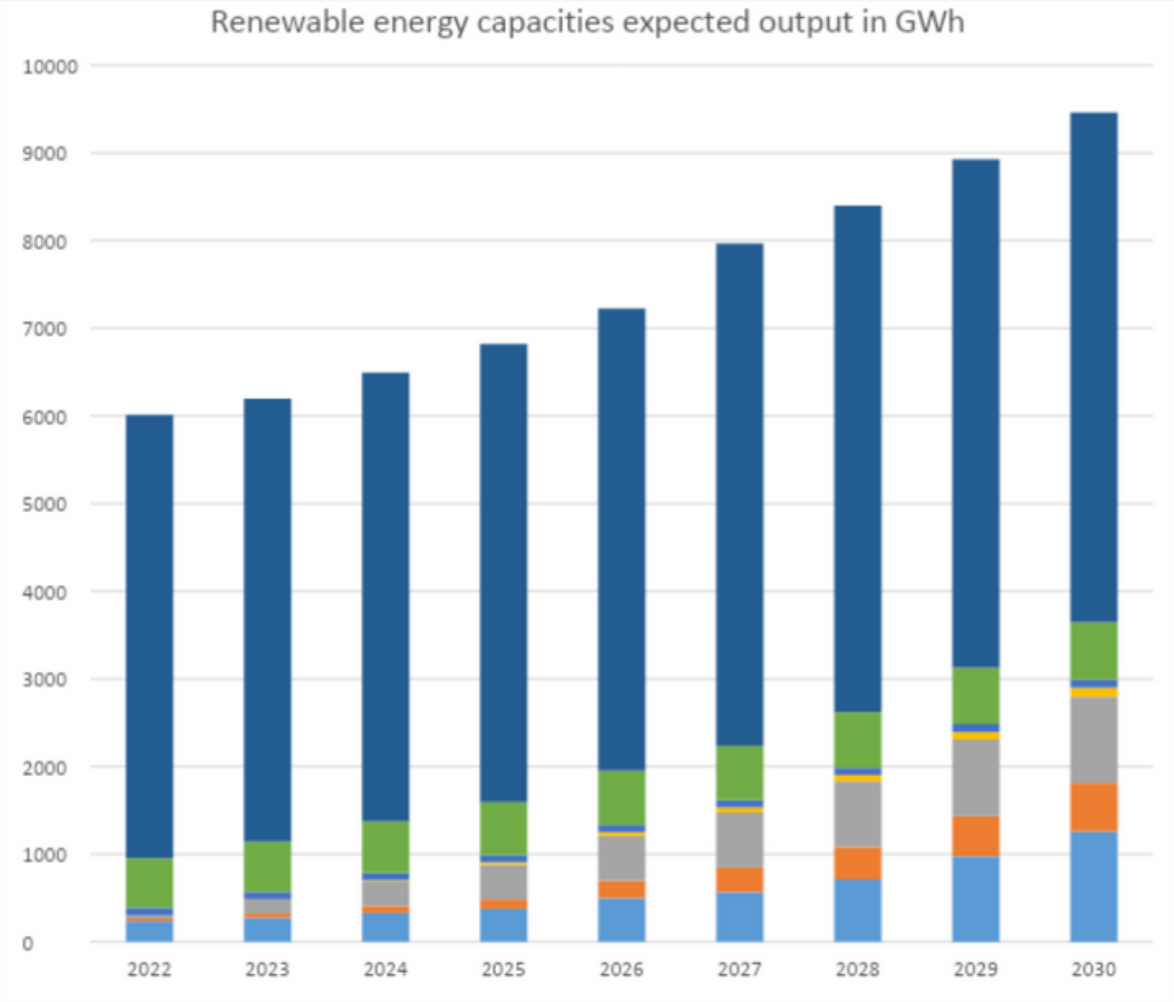
There are relatively vast successful examples that the **establishment of a system of auctions for electricity** drove down the costs of renewables and accelerated their deployment. The measure is considered a best practice internationally but requires strong regulatory oversight. If auctions are competitive and well-participated, they can significantly contribute to overachieving renewable targets. Nevertheless, the measure lacks in providing practical information on its expected effects.

Establishment of sustainable organisational models for energy communities directly supports the increase in renewable energy deployment, especially at the local and community levels. This measure, while important, requires significant social mobilisation and capacity building at the local level.
The measures' monitoring mechanisms, largely tied to the progress in transposing the EU Clean Energy Package, provide a baseline for assessment. However, more specific performance indicators related to the deployment of renewable energies in Bosnia and Herzegovina would strengthen the overall NECP.

To ensure credibility and potentially overshoot the targets, it is essential that these policies are supported by strong legal frameworks, clearly defined regulations, sufficient funding, active stakeholder participation, and a high degree of flexibility to adapt to changing technological and economic landscapes.

The timeline for these measures appears to be scattered, with deadlines ranging from 2023 to 2028, not giving a sense of urgency while also allowing for the time-consuming process of legislative and regulatory change. The true test of these policies will be their implementation and the tangible results in increasing Bosnia and Herzegovina's renewable energy capacity and usage.

The policies and measures outlined within the NECP would benefit from a more explicit connection to the planned capacity expansions in Bosnia and Herzegovina's energy sector. Nevertheless, the anticipated growth in renewable energy capacities is substantial in some cases. It is projected that wind energy capacity will increase from the 2022 figure of 136.4 MW to 600 MW by 2030. On the other hand, photovoltaic capacity is expected to surge from 66.3 MW in 2022 to 1492 MW by 2030. Additionally, large hydropower is projected to augment by 295 MW, reaching 1900 MW in 2030, while small hydropower plants are forecasted to expand from their current capacity by an additional 26.8 MW, attaining 206.8 MW. However, the expansion of small hydropower plants does raise concerns regarding sustainability and environmental impact, echoing previous issues encountered with such plants in Bosnia and Herzegovina. The new law in the Federation of Bosnia and Herzegovina forbids construction of new hydropower plants with the installed capacity up to 10 MW.



Graph 6: Forecast of renewable energy capacity expected output, based on Diagram 33 of Bosnia and Herzegovina's NECP

Recommendations for renewable energy ambition

- Reassess the renewable energy targets for 2030 in the context of current lack of progress, especially considering the shortfall in achieving the 2020 goals and the slow coal phase-out;
- Introduce oversight mechanism of the trajectory towards the 2030 goals, ensuring a gradual and measurable transition;
- Provide a clear and transparent methodology for calculating the gross final consumption of electricity and include an in-depth analysis of the net electricity trade's impact on RES targets;
- Include quantifiable targets and detailed milestones for each measure proposed to track progress effectively;
- Specify how the measures will contribute to the increased capacity in renewables, correlating these measures with the expected increases in capacity;
- Outline a more aggressive coal phase-out plan with clear timelines and replacement strategies with renewables to ensure the 2030 targets are within reach;
- Ensure the incentive system is robust, and swiftly adopt the relevant implementing legislation. Establish specific criteria for these incentives to stimulate investment in the sector effectively;
- Provide a detailed framework for auction systems, ensuring they are competitive and lead to cost reductions and increased deployment of renewable energy sources. Introduce regulations and oversight mechanisms for auctions to prevent possible market manipulations and ensure transparency.

Energy efficiency

Bosnia and Herzegovina's NECP sets forth an objective to reach a maximum share in the Primary Energy Consumption (PEC) of 6844 ktoe and 4339 ktoe in the FEC. The PEC target articulated within the NECP falls slightly short of the country's target of 6.50 Mtoe set by the Energy Community. Conversely, the Final Energy Consumption (FEC) target aligns precisely with Bosnia and Herzegovina's commitment at the Energy Community, which stands at 4.34 Mtoe.

The projected PEC indicates a modest improvement of 0.36 Mtoe by 2030, a 5.5 per cent reduction over 2022 levels as illustrated in Diagram 24 of the NECP. This enhancement is primarily linked to a conservative phase-out of coal capacities by 2030, which, as Diagram 28 suggests, results in reduced energy production in comparison to current levels. There appears to be no significant change forecasted in the energy import and export volumes.

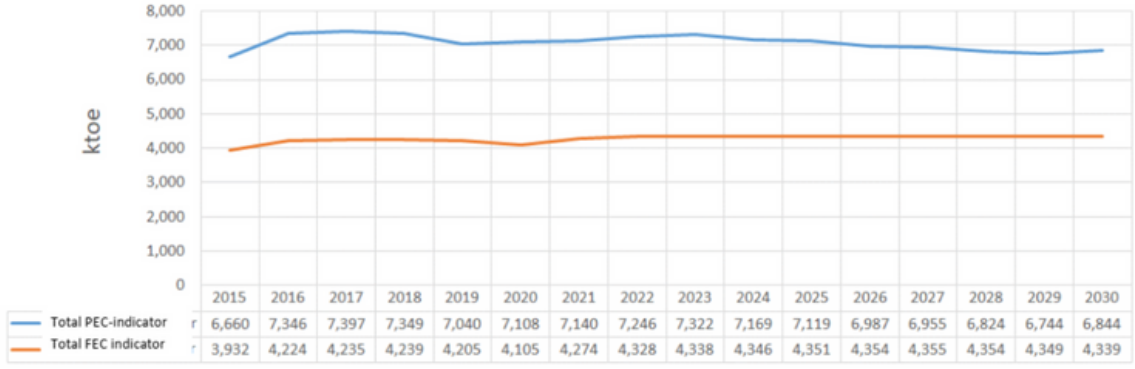


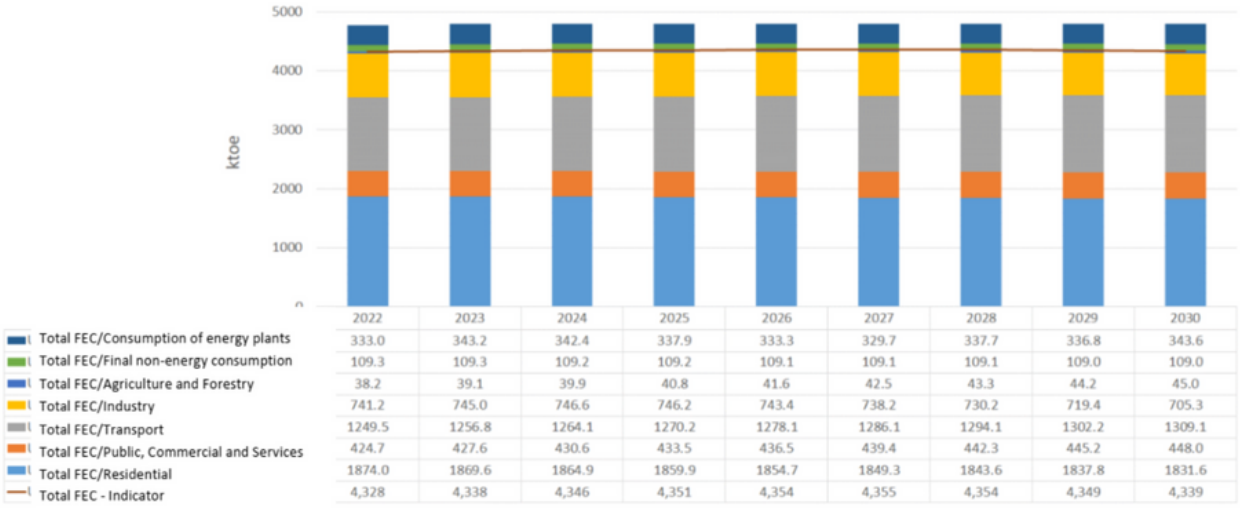
Diagram 24: Target trajectories of PEC and FEC indicators in Bosnia and Herzegovina 2022-2030

Graph 7: Diagram 24 of Bosnia and Herzegovina's NECP (screenshot)

It is important to acknowledge that the energy efficiency targets being discussed are part of the "Policy scenario" of the NECP.

The NECP aims for a 38 per cent reduction in energy obtained from fossil fuels. While the data is detailed on coal capacity reduction and its associated electricity output, as previously discussed, the plan falls short of evaluating shifts in the use of oil, diesel, and fossil gas.

FEC is anticipated to rise, yet the report implies that this will be counterbalanced by energy efficiency measures. The justification for this claim is dubious, given that Diagram 29 does not demonstrate substantial energy efficiency improvements across various sectors.



	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total FEC/Consumption of energy plants	333.0	343.2	342.4	337.9	333.3	329.7	337.7	336.8	343.6
Total FEC/Final non-energy consumption	109.3	109.3	109.2	109.2	109.1	109.1	109.1	109.0	109.0
Total FEC/Agriculture and Forestry	38.2	39.1	39.9	40.8	41.6	42.5	43.3	44.2	45.0
Total FEC/Industry	741.2	745.0	746.6	746.2	743.4	738.2	730.2	719.4	705.3
Total FEC/Transport	1249.5	1256.8	1264.1	1270.2	1278.1	1286.1	1294.1	1302.2	1309.1
Total FEC/Public, Commercial and Services	424.7	427.6	430.6	433.5	436.5	439.4	442.3	445.2	448.0
Total FEC/Residential	1874.0	1869.6	1864.9	1859.9	1854.7	1849.3	1843.6	1837.8	1831.6
Total FEC - Indicator	4,328	4,338	4,346	4,351	4,354	4,355	4,354	4,349	4,339

Diagram 29: Trajectories of final energy consumption by sector in Bosnia and Herzegovina 2022-2030

Graph 8: Diagram 29 of Bosnia and Herzegovina's NECP (screenshot)

Looking beyond 2030, Table 15 of the NECP outlines the evolution of PEC and FEC. Although improvements are projected for both PEC and FEC by 2040, the energy savings from 2040 to 2050 within the PEC are nominal, suggesting that a significant coal fleet may remain operational. This disparity between PEC and FEC in 2050 could indicate a less ambitious approach to achieving climate neutrality.

ktoe	2022	2030	2040	2050
Primary energy consumption (PEC)	7,245.9	6,843.7	5,584.6	3,583.3
Final energy consumption (FEC)	4,327.6	4,339.0	3,825.4	3,066.5

Table 15: Values of PEC and FEC framework indicators at the transition between phases

Table 3: Table 15 of Bosnia and Herzegovina's NECP (screenshot)

The NECP's overarching ambition is questioned as it theoretically projects Bosnia and Herzegovina's attainment of climate neutrality by 2050 without a robust, detailed plan.

Energy efficiency PaMs

The measures are descriptive actions to be taken or mechanisms to be established without providing explicit quantified contributions to energy savings. While many of the measures could be theoretically effective, their real-world impact would depend on detailed implementation plans, which are not provided in the summary descriptions.

The measures foresee to include **energy fees** to finance energy efficiency programmes, these fees relate to the use of oil products for electricity generation, as well as **CO2 fees** for large industrial energy consumers and vehicle registrations. While this in principle would work, a question arises as to why BiH needs another separate taxation system, when some industrial processes can actually be included in the ETS that BiH is planning to implement. The definition and the scope of carbon tax mechanisms should have one common strategic approach. Furthermore, without any quantification of the effects of these measures, they become unpersuasive.

The NECP outlines a series of energy efficiency measures and regulatory frameworks in Bosnia and Herzegovina, aiming to enhance energy management in various sectors, e.g.: Measures focusing on establishing energy audit systems for buildings, ensuring compliance with occupancy permits and existing buildings' energy efficiency; energy management in utilities, including regular audits and reporting obligations, energy management obligations on large enterprises. To support Small Medium Enterprises (SMEs), we observe measures for the development and implementation of energy management programs, providing technical support and promoting energy efficiency. Measures that emphasise the significance of accurate energy billing and professional education in energy efficiency, respectively.

A common shortcoming across these measures is the continuous deadline, implying a prolonged or indefinite implementation period, which could lead to delays or a lack of urgency. Additionally, while these measures are well-intended, they rely heavily on the public budget and international technical assistance for funding, which could become unsustainable if external funding decreases or if there are challenges in public finance management. The effectiveness of these measures will largely depend on the efficient allocation of these funds, the establishment of robust monitoring methods, and the timely and comprehensive implementation of the regulations and frameworks described. No quantification is provided whatsoever.

Regarding the residential sector, there is a strong emphasis on regulatory measures to enhance the energy services market, including the adoption of the Energy Service Company (ESCO) model for long-term energy efficiency contracts and the establishing of a legal framework that aligns with Energy Efficiency Directive (EED) requirements.

Specific measures outlined include the development of energy market frameworks, financial instruments for building renovations, the implementation of energy performance certification systems, regular inspections of heating and ventilation systems, and ensuring compliance with Energy Performance of Buildings Directive requirements. Funding comes from public budgets and international technical assistance, with effects anticipated to reduce energy consumption across residential, public, and commercial sectors. Continuous monitoring is indicated, with connections to multiple dimensions of regulatory solutions.

The plan acknowledges the necessity of methodologies for energy performance calculations, minimum requirements for building energy performance, and energy certification for buildings, alongside the introduction of regular inspections for heating and ventilation systems. The establishment of centres to support the use of software and the training of personnel in energy audits are also highlighted.

However, the documents also imply certain weaknesses, such as the need for ongoing development of regulations and systems, dissemination of information and training, and the coordination of routines and practices for documenting and verifying the energy performance of buildings. The repeated mention of the need for 'ongoing' development and the designation of 'continuous' deadlines suggest that while the frameworks are being put in place, the actual application and enforcement of these measures may significantly be delayed.

Recommendations for Energy Efficiency

- Although the NECP has set a PEC target, it should consider aligning with the target of at least 6.50 Mtoe set by the Energy Community to demonstrate a stronger commitment to energy reduction and to potentially exceed this target through robust measures;

- For the reduction in fossil fuels, particularly coal, the NECP needs to provide detailed assessments of the shifts in oil, diesel, and fossil gas usage, along with their environmental and economic impacts, in order to support the findings and the projections within the NECP;

- All described measures should be accompanied by explicitly quantified contributions to energy savings, establishing how each action will contribute to the overall targets for both PEC and FEC;

- Integrate the proposed energy and CO2 fees into the planned ETS, to streamline processes and reduce administrative burdens;

- With heavy reliance on public funds and international assistance, the NECP should outline strategies for sustainable financing, including private sector engagement, green financing (bonds), and public-private partnerships;

- Replace prolonged deadlines with specific time-bound goals and establish a rigorous monitoring and evaluation framework to track progress, with consequences for non-compliance;

- Strengthen the measures aimed at SMEs by providing detailed guidelines for energy management programs, ensuring they are actionable and tailored to the needs of small businesses.

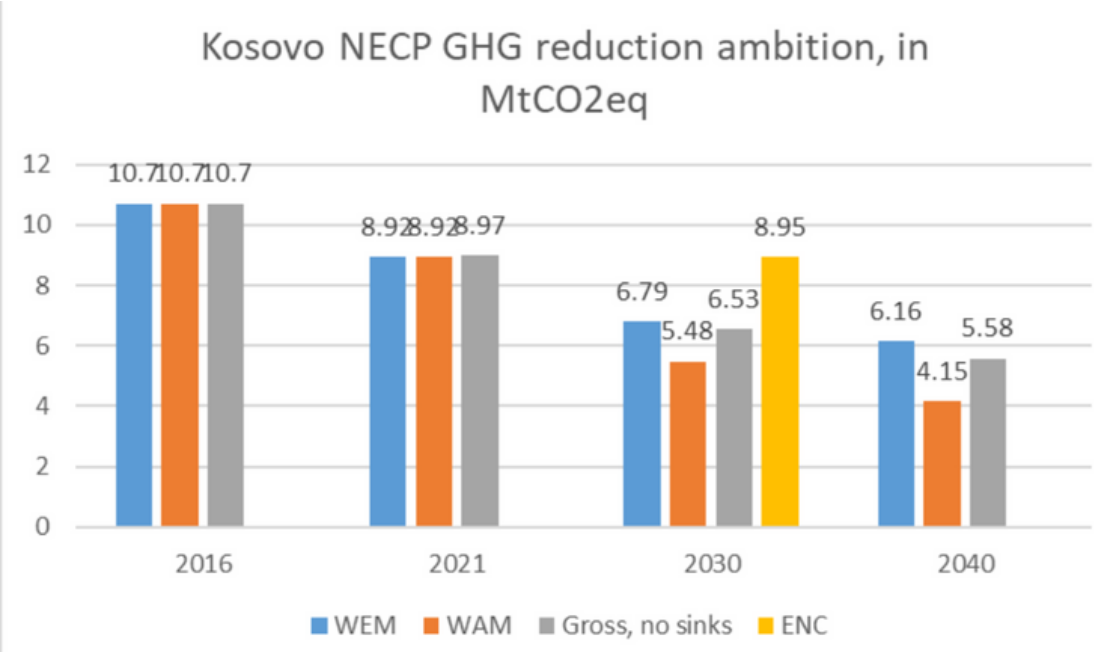
Greenhouse gas emission reduction ambition

Kosovo aims for an economy-wide greenhouse gas emissions reduction by 49 per cent relative to the levels recorded in 2016, including emissions from the Agriculture, Forestry, and Other Land Use (AFOLU) sector. Notably, Kosovo's forward-looking scenarios do not incorporate any historical emissions data preceding 2016. This base year aligns with the set benchmark for emissions reduction projections at the Energy Community level.

Kosovo's NECP sets a GHG emission reduction target that notably exceeds the benchmarks established by the Energy Community. Both utilise the year 2016 as a baseline for emissions reductions. Whereas Kosovo's adopted greenhouse gas emissions reduction target at Energy Community is 16.3 per cent reduction by 2030 for Kosovo, Kosovo's draft NECP is considerably more ambitious, aiming for a 49 per cent reduction in emissions from 2016 levels.

Kosovo's NECP projects its emissions modelling up to the year 2040, falling short of aligning with the Green Agenda for the Western Balkans' vision of achieving climate neutrality by 2050, in line with the EU Climate Law. The NECP acknowledges the GAWB yet cites the challenges presented by the uncertainties in the country's social and economic development as a barrier to establishing long-term strategic objectives. This conservative approach signifies a missed opportunity for Kosovo to solidify its developmental trajectory, which would prompt investor confidence and provide direction for the nation's economy.

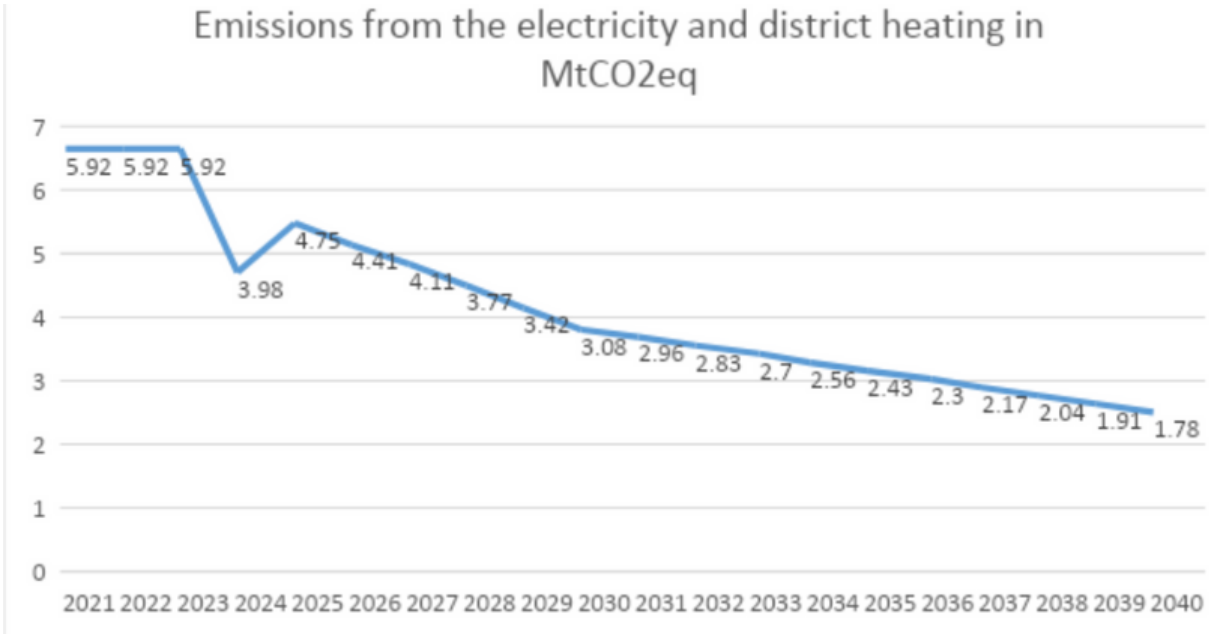
Graph 9 outlines Kosovo's emission reduction ambitions as set out in the NECP until 2040. Notably, the NECP recognises the evolving role of the AFOLU sector as a potential significant natural sink, a shift from its current, relatively insubstantial impact on emission levels. However, our assessment deliberately focuses on the gross emissions to present a factual view of the actual reductions.



Graph 9: Kosovo's historical GHG emissions and the NECP forecasted emissions reduction ambition in 2030 and 2040.

Together with electricity, only the Non Energy/Waste sector does also foresee emissions reduction, all other sectors foresee an increase in emissions, mostly industry and transport sectors.

Graph 10 below visualises the projected emissions from the electricity sector within the NECP. A pronounced decline in emissions is anticipated in 2024, attributed to the temporary decommissioning of lignite units scheduled for refurbishment. The overarching reduction in emissions from electricity is linked to a slow rise in electricity demand and a swifter transition to renewable energy sources.



Graph 10: Emissions from the electricity and district heating in MtCO2eq

In line with the Kosovo Energy Strategy, there are plans to retire a 116 MW block of the Kosovo A power plant and retrofit the remaining units to ensure their operability, primarily during peak demand periods starting from 2027. Post-retrofitting, the NECP projects the increase in coal capacity to 934 MW from the current 864 MW.

The NECP does not provide a comprehensive strategy for the phase-out of lignite, with expectations for the aged coal power plants to remain operational beyond 2040. This lack of strategy highlights a critical gap in Kosovo's commitment to decarbonisation.

Additionally, there is a projected significant rise in diesel emissions, from 1.78 MtCO2eq in 2021 to 2.7 MtCO2eq by 2040. The NECP's treatment of this increase is superficial, attributing it to the transport sector but not reconciling it with Kosovo's transport strategy, which anticipates electrification of 10 per cent rate of the vehicle fleet by 2030, and 20 per cent by 2040. This inconsistency underscores another missed opportunity for transitioning to a more sustainable transport sector, inclusive of electrification and the expansion of rail and public transport services.

GHG emissions reduction PaMs

The introduction of a carbon price is a crucial step in steering economies towards decarbonisation. It signals a commitment to internalising the environmental costs of carbon emissions and creates financial incentives for industries to invest in renewable technologies. For Kosovo, the challenge seems to be balancing the immediate economic implications of such a policy with the long-term environmental and health benefits.

The transposition of the MRV regulations is a near-term objective that Kosovo is expected to fulfil soon. However, the introduction of a carbon price, while possibly imminent, should be part of a broader, well-thought-out long-term strategy.

If Kosovo's adoption of carbon pricing is primarily to avoid the impacts of the EU's Carbon Border Adjustment Mechanism (CBAM), which the PaM on the **Study on the effects of CBAM and/or a domestic carbon price** points to, it might indicate a compliance-driven approach rather than a genuine commitment to decarbonisation. True decarbonisation requires a comprehensive approach, including phasing out coal, enhancing energy efficiency, and investing in renewable energy, not just the intention of adopting carbon pricing to align with external requirements.

Kosovo's carbon pricing should be integrated with other environmental and energy policies to ensure coherence and mutual reinforcement. This includes aligning with its energy strategy and commitments to the Green Agenda for the Western Balkans, EU ETS, coal phase-out dates, and concrete timeline and effects of carbon pricing, the information which is absent in the most crucial decarbonisation measure.

Phasing out just one unit of the coal plant may not be sufficient if the overall strategy does not commit to a complete transition away from coal. Without a comprehensive coal phase-out plan, there's a risk of continued reliance on the remaining coal assets, which could undermine broader decarbonisation efforts. This should be further elaborated in the respective PAM 2.

Kosovo's failure to shut down the Kosovo A plant in 2017 as initially planned points to potential issues with follow-through on energy policy commitments. This history underscores the importance of creating realistic, enforceable plans with accountability mechanisms. The collapse of the project to build a new coal power plant, Kosova e Re, should serve as a lesson on the risks of continuing to invest in fossil fuel infrastructure in an era when their economic viability is increasingly in question due to both market forces and policy shifts.

The lack of detailed quantitative effects and specified investments raises questions about the measure's ambition and the concrete steps planned to achieve the phase-out. This PAM represents a tangible action towards decarbonisation, but it needs to be part of a more aggressive and holistic strategy to transition Kosovo's energy system away from coal.

PAMs 3 to 10 highlight various strategic initiatives across **waste management, forestry, and agriculture** aimed at environmental sustainability and emission reductions in Kosovo. However, there is concern about the lack of specific quantification of their effects on general emissions reduction. Having quantifiable targets and clear indicators is essential for measuring progress and ensuring that these PAMs contribute effectively to Kosovo's overall emission reduction goals.

While some PAMs have stated targets (like the increase in waste managed in controlled facilities), others lack specific quantitative effects, making it challenging to assess their direct impact on emission reductions. It's crucial for each PAM to establish clear progress indicators that are directly linked to greenhouse gas reduction to validate their effectiveness. Some PAMs have stated investment amounts, which is positive as it shows a commitment to resource allocation.

However, for those without stated investments, it's important to define the financial needs to ensure that plans are actionable and adequately funded. Many of the PAMs are either under implementation or planned. The success of these measures depends on the effectiveness of the implementation process, which should be monitored and evaluated regularly. These PAMs cover waste management, forestry, and agriculture, sectors that are often managed in silos.

However, sustainable management practices in one sector can significantly affect the others. There should be a cross-sectoral approach to ensure synergies and avoid counterproductive outcomes.

While forests and other land use currently have a minor effect on emissions reduction as accounted for in Kosovo, their potential impact should not be underestimated.
These sectors can play a significant role in mitigating climate change through carbon sequestration, especially as their capacity is enhanced through the measures described. The forestry PAMs (4, 5, 6), if implemented effectively, could lead to a notable increase in carbon sinks by 2030, complementing efforts in other sectors to meet emission reduction targets. Nevertheless, the sinks should not be driving the ambition of emissions reduction, but rather support the decarbonisation efforts.

In the current form, there is considerable lack of understanding how these forestry and land policies and measures help reduce gross emissions in Kosovo by 16 per cent by 2030, as opposed to less than 1 per cent in 2021.

GHG emission reduction recommendations

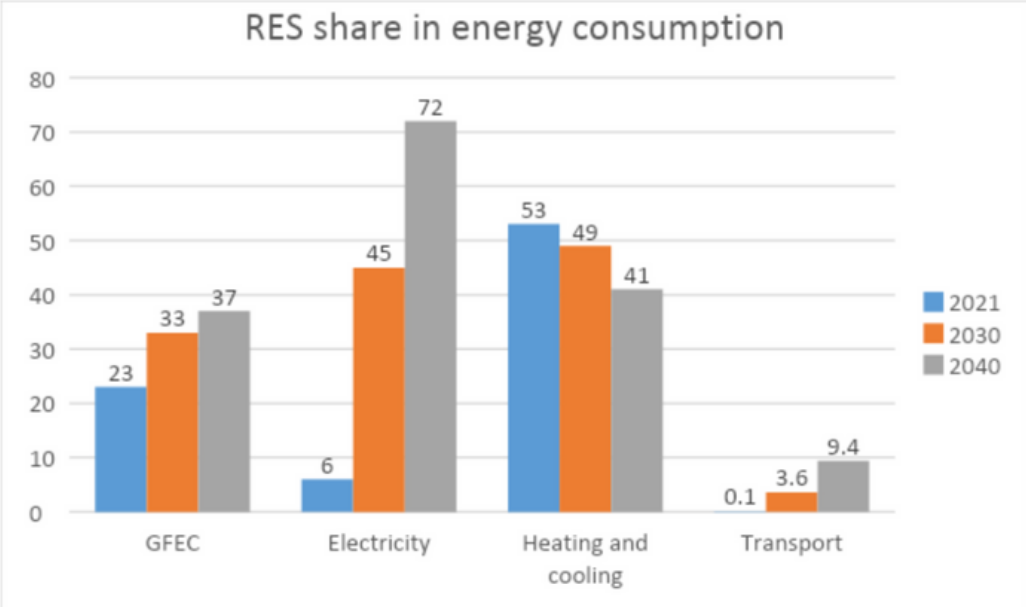
- Align with the Green Agenda for the Western Balkans and the Paris Agreement goal, by extending emissions modelling to 2050 and establishing clear, long-term decarbonisation pathways;
- Solidify the commitment to climate neutrality by 2050 to ensure progress and build investor confidence;
- In the energy sector, detail a comprehensive lignite phase-out strategy with interim targets, taking into account the increase in coal capacity post-retrofitting. Clarify how this aligns with overall decarbonisation goals;
- Address inconsistencies in the transport sector by reconciling diesel emissions projections with electrification goals and expanding strategies for public transport and rail infrastructure.ì;
- Develop a clear roadmap for the introduction of carbon pricing, integrated with other environmental and energy policies to ensure coherence and enforcement;
- For each PAM, provide a detailed implementation plan with specific, quantifiable targets and indicators for GHG reduction, ensuring they contribute effectively to the overall goals;
- Establish a robust MRV system for tracking progress and adapting strategies as needed;
- Clarify investment needs for each PAM and secure funding sources, potentially through international financing mechanisms, public-private partnerships, or green bonds;
- Develop a financial framework that supports both the transition and the sustainable growth of the economy;
- Promote integrated approaches to manage cross-sectoral impacts, ensuring that actions in one area (e.g., waste management) complement and enhance objectives in others (e.g., forestry and agriculture);
- Plan for a just transition, particularly for communities and workers reliant on the lignite industry, including retraining programs and social safety nets;
- Enhance public engagement and transparency to gain societal support for the decarbonisation process;
- Build flexibility into the NECP to allow for adjustments in response to new technologies, market changes, and policy developments.

Renewable energy ambition

Kosovo has committed to a target of 32.5 per cent share for renewable energy in its gross final energy consumption by the year 2030, marginally surpassing the Energy Community's stipulation of 32 per cent. While this alignment with international benchmarks is commendable, a critical evaluation of Kosovo's trajectory towards renewable energy integration is imperative to ensure the robustness achievement of these goals, and even explore possibilities to surpass them.

The trajectory leading up to the current state of renewable energy in Kosovo is characterised by a slight shortfall against its 2020 target, having aimed for a 25 per cent renewables share, Kosovo fell short by 0.6 percentage points, attaining a 24.4 per cent share. Recent data from the NECP suggest a marginal decline, with renewables accounting for 23 per cent of Gross Final Energy Consumption.

Kosovo's scenarios With Existing Measures (WEM) and With Additional Measures (WAM) do not exhibit substantial divergence, indicating a potential underutilisation of proactive policy measures. The main differentiation between these scenarios pivots on biomass consumption and utilisation patterns, underlining the significant role biomass currently plays in Kosovo's renewable energy mix, a result of the dominant lignite-based electricity generation and low installed capacity of wind and particularly solar energy.



Graph 11: Renewable energy share in gross final energy consumption, electricity generation, heating and cooling and transport, as a percentage.

Despite the current energy mix, Kosovo's aspirations towards renewable energy are welcomed, targeting a 45 per cent share in GFEC by 2030 and a 72 per cent by 2040. However, the pace from 2030 to 2040 suggests a conservative approach, particularly when considering the limited expected increase in electricity demand. This approach may lead to missed opportunities for significant decarbonisation and raises concerns about the continued reliance on ageing power plants beyond 2040.

A decline in the renewable share in the heating and cooling sector is noted, albeit with the introduction of heat pumps and more efficient biomass stoves. Conversely, in the transport sector, the NECP's targets fall short of the strategic electrification goals, with projections of 3.6 per cent electrified vehicles by 2030 and 9.4 per cent by 2040, in contrast to the strategic aspirations of 10 per cent and 20 per cent, respectively.

The absence of comprehensive modelling extending to 2050 restricts the ability to project the depth of renewable energy penetration effectively. Furthermore, the NECP testifies that coal reliance will extend beyond 2040, thus casting doubt on the long-term sustainability and decarbonisation agenda of Kosovo.

While Kosovo's renewable energy targets denote a step forward, there is an evident need for enhanced strategic planning and accelerated implementation measures to harness the full potential of renewable energy sources. The pace and scale of transition must be amplified to not only meet but exceed the current targets.

Renewable energy PaMs

The revision of Kosovo's legislative framework to incorporate the **Law on Renewable Energy Sources**, along with its accompanying secondary legislation, marks an essential step in setting a clear regulatory course, poised to spur investment and spur innovation within the renewable sector. This progress, however, will largely depend on the robustness of the laws enacted and the agility to adapt secondary legislation to keep pace with emerging technologies and market shifts.

Implementing support instruments like **auctions for renewable electricity** capacities represents a sound strategy, reflecting best practices that have successfully driven down costs and expedited renewable energy deployment in other regions. The efficacy of these auctions will rest on the specifics of their design, particularly the frequency, capacity, and entry qualifications they establish.

The commitment to develop RES capacities through dedicated units is a focused attempt to advance in this sector. The success of these units will be contingent upon well-defined mandates, authority, expertise, and resource availability.

The set goals for **additional renewable capacities**, 700 MW solar PV, 600 MW wind, and 20 MW biomass, indicate a move in the right direction. Ensuring these targets are backed by solid feasibility studies and comprehensive implementation plans is essential.

The target of **adding 100 MW capacity for prosumers** under the WAM scenario aligns with the increasing importance of decentralised energy systems. A prosumer-centric approach, supported by encouraging policies like net metering or feed-in tariffs, would significantly boost this effort.
While the policy framework addresses structural changes, it needs to also concentrate on overcoming prevalent barriers, be it administrative, technical, financial, or social. Therefore, a nuanced incentive framework would serve to diversify the market and attract investment.

Critical to this policy's success will be the **articulation of how the projected additional capacity will integrate into the existing grid, ensuring stability and adaptability.** Further, attention to energy access in rural and remote areas would see marked improvement through targeted renewable energy solutions.

The proposed investment figures must be itemised across different technologies and project phases to provide a clear roadmap for feasibility and monitoring of progress.
While Feed in Tariffs have traditionally been successful in incentivising early investments in renewable energy, their long-term sustainability is questionable and Kosovo has already moved to stop signing new contracts. Kosovo's move to implement Feed-in Premiums and Power Purchase Agreements should encourage competition and better market integration.

The European Union's Clean Energy for All Europeans package sets targets for the transition to renewable energy. As a contracting party of the Energy Community, Kosovo is required to transpose this package into national law, which would include updating PaMs to reflect these directives. It appears that Kosovo's current measures do not yet fully articulate this transposition.

Using studies as a basis for policy measures indicates a level of preparation and due diligence. However, if the studies do not lead to actionable strategies or are not backed by practical implementation plans, they may indeed reflect a lack of readiness to meet RES and decarbonisation objectives.

The presence of numerous studies within the PaMs without subsequent reports on their impact or practical applications suggest a potential disconnect between policy formulation and execution.

While Kosovo has outlined various policy measures aimed at enhancing renewable energy adoption and efficiency, the implementation and market integration of these measures need to be critically assessed. Whereas some PaMs are well-defined with quantitative targets, others are still in their emerging stages of implementation. The PaMs should not only align with the market dynamics and legislative mandates but also translate studies into concrete actions that contribute to achieving the set targets for renewable energy and decarbonisation.

Renewable energy recommendations

- Accelerate the implementation of the Law on Renewable Energy Sources and ensure that secondary legislation is adaptable, detailed, and supportive of rapid technological and market developments;

- Develop a diversified incentive framework to attract investment in renewable energy, considering the specific characteristics and potentials of each;

- Consider the introduction of a wide range of support mechanisms, such as auctions, to drive down costs and foster competition, while ensuring the design of these auctions is conducive to long-term market stability;

- Expand the NECP's scope to include projections and modelling up to 2050 to provide a clearer long-term vision for energy transition and decarbonisation, aligning with EU long-term goals;.

- Address the existing gap between strategic targets and practical implementation plans by developing a clear roadmap with detailed action plans, milestones, and regular progress evaluations;

- Prioritise the replacement and phasing out of ageing lignite power plants with renewable energy sources to avoid the risk of locking in outdated, high-emitting technologies;

- Articulate specific strategies for integrating the additional renewable capacities into the existing energy grid, ensuring grid stability and reliability;

- Focus on enhancing grid infrastructure and capacity to manage the variability of renewable energy sources, including the development of energy storage solutions;

- Create favourable conditions for the growth of prosumers, encouraging distributed generation through policies such as net metering, feed-in tariffs, or feed-in premiums;

- Revise upward the electrification targets for the transport sector to align with strategic electrification goals and promote the adoption of electric vehicles through incentives and infrastructure development;

- Develop comprehensive strategies to overcome administrative, technical, financial, and social barriers to renewable energy investments while upholding European Union's environmental law and ensuring adequate public participation;

- Ensure policy measures are robust enough to handle market fluctuations and provide investors with a stable and predictable environment;

- Design targeted policies to ensure energy access and renewable energy solutions in rural and remote areas, supporting social and regional inclusivity;

- Promote community-based renewable energy projects to facilitate local engagement and investment, potentially enhancing the social acceptance of renewables.

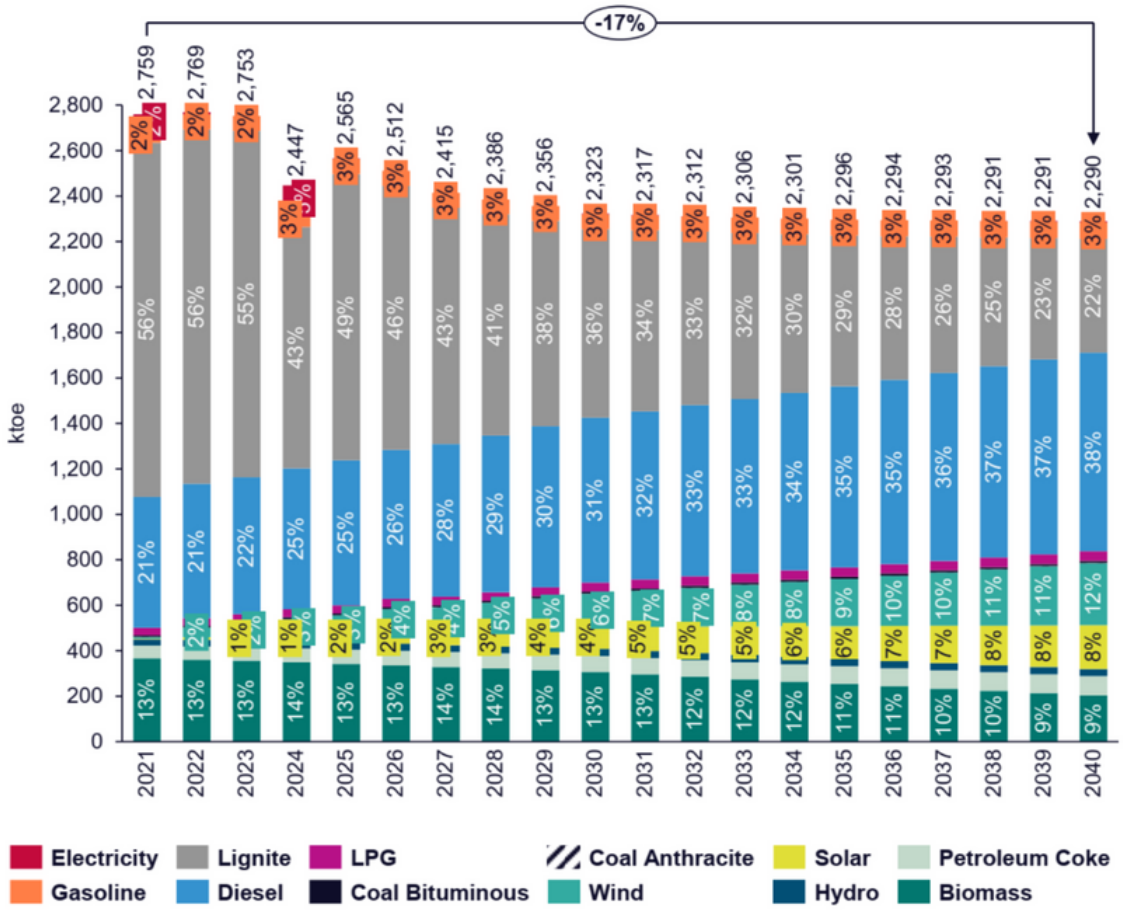
Energy efficiency

The 2030 primary energy consumption target aims for a 15% reduction relative to 2021, with a projected PEC of 2,323 ktoe by 2030. Conversely, the final energy consumption is anticipated to grow annually by 0.95 per cent from 2021 to 2030, culminating in an FEC of 1,797.5 ktoe in 2030. This represents an overall increase of 8.97% from 2021. Kosovo's NECP is set to exceed its PEC target within the Energy Community, forecasting a PEC below the prescribed 2,700 ktoe. The FEC projection is marginally under the upper threshold of 1,800 ktoe. However, the lack of modelling data beyond 2040 limits the capability for long-term strategic assessments.

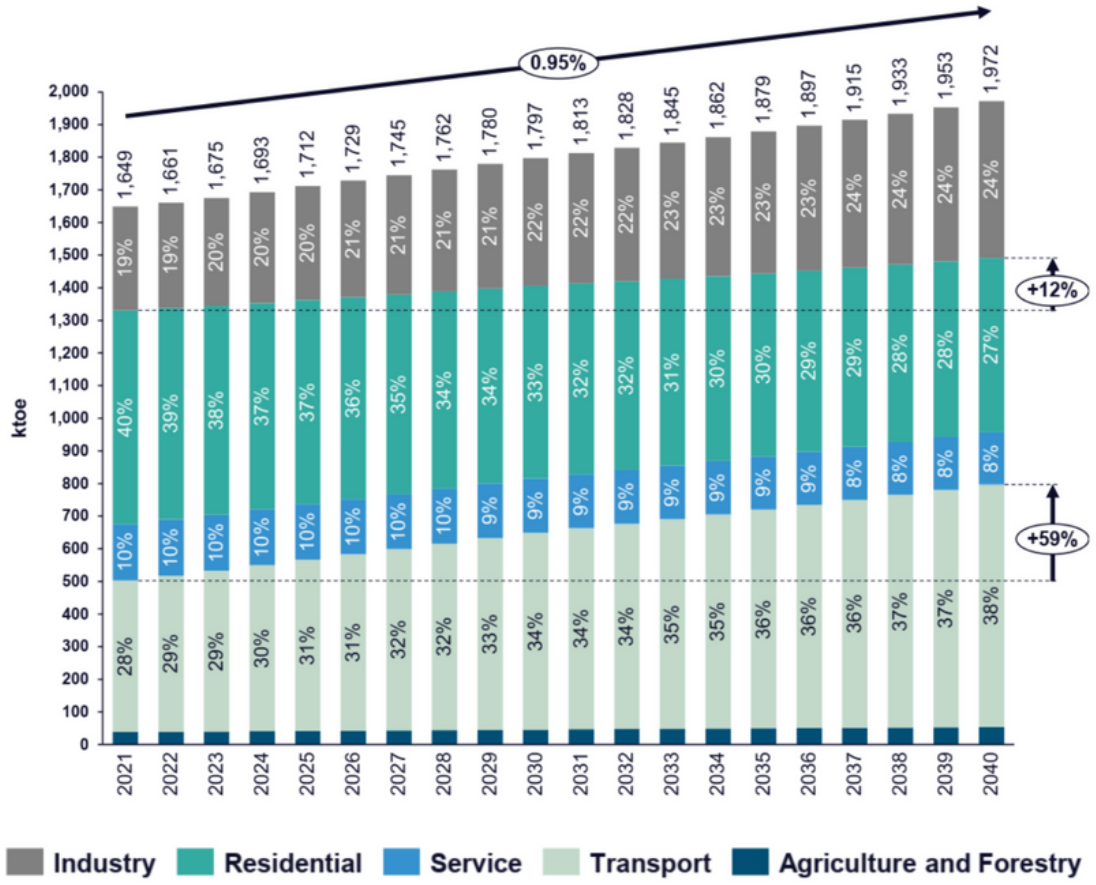
By 2030, the PEC reduction is largely attributed to the decreased electricity generation from coal and, to a lesser extent, lower biomass utilisation. Policy initiatives, including the deployment of heat pumps, the introduction of more efficient biomass stoves, comprehensive building renovations, and the shift towards nearly zero-energy buildings, are instrumental in curbing energy demand, particularly within the residential sector. In contrast, the FEC within the transport sector energy consumption is expected to rise due to growing transportation demand. While a modal shift from road to rail and advancements in sustainable passenger transportation methods are underway, the aggregate demand continues to drive FEC upwards.

The increase in FEC is also observed in residential, industrial, agricultural, and forestry sectors, indicative of growth and expansion that drive energy use. Despite the implementation of additional energy efficiency measures, they are insufficient to fully counterbalance the increased consumption in sectors such as transport and industry. This trend underscores an anticipated increase in diesel usage over time.

Between 2030 and 2040, energy savings in PEC have a slower pace, yet again proving the conservative energy transition approach. The concurrent rise in FEC underscores the imperative to re-evaluate the tempo and priorities of the energy transition, emphasising that it should not rely solely on the gradual phasing out of coal.



Graph 12: Figure 75 of the Kosovo's NECP Primary Energy Consumption (screenshot)



Graph 13: Figure 75 of the Kosovo's NECP Primary Energy Consumption (screenshot)

Energy efficiency PaMs

The NECP's current focus on specific technologies, like **efficient heating in residences**, should be expanded to incorporate a wider array of advanced technologies and smart systems. The integration of smart grids, smart metres, and energy management systems is underrepresented. These systems have the potential to revolutionise energy efficiency by enhancing the efficiency of energy distribution, allowing for demand response initiatives, and facilitating precise monitoring of energy consumption.

There is a noticeable gap in the NECP regarding the **transport sector's role in energy efficiency**. Despite its significance as an energy consumer and emissions contributor, the sector is not fully engaged in energy efficiency measures within the NECP framework, particularly in the energy efficiency obligation scheme. A more aggressive approach would involve fostering a behavioural shift towards more energy-efficient transportation means, promoting electric and low-emission vehicles, and developing infrastructure to support these modes of transport.

While the NECP addresses **building renovations and the installation of energy-efficient equipment**, there is room for a more comprehensive strategy in building energy management. The potential for including on-site renewable energy generation, advanced insulation materials, and techniques, as well as heat pumps, has not been fully tapped. This holistic management approach would not only enhance energy efficiency but also achieve a more substantial reduction in overall energy consumption.

Further technical considerations:

Extending incentive mechanisms to industry and transport would be able to drive significant energy savings. The residential focus is commendable, but similar efficiency gains would be incentivised in industrial processes and transport systems, where energy use is also intensive.

Municipal energy efficiency action plans - The lack of detailed quantitative goals and investments limits the PaM's efficacy. Precise targets and dedicated measures for energy-intensive industries at the municipal level, integrated with transport strategies, would significantly amplify energy efficiency impacts.

Modernisation of networks and reducing network losses - This PAM should also consider the electrification of the industrial and transport sectors, facilitating their integration into a modernised grid. Smart grid technologies, for example, would manage the load from a growing number of electric vehicles and industries transitioning to electric heating systems.

Energy efficiency recommendations

- Expand modelling data beyond 2040 to enable long-term strategic planning;
- Incorporate scenarios that account for technological advancements and changes in energy markets to improve future resilience and adaptability of energy systems;
- Increase the integration and incentives towards smart grids, smart metres, and energy management systems for all sectors, not just residential, to optimise energy distribution and consumption monitoring;

- Develop pilot projects and funding mechanisms to accelerate the adoption of such technologies.

- Invest in infrastructure for electric and low-emission vehicles, and promote modal shifts from road to more energy-efficient urban, non-motorised and rail transport;

- Expand the current focus on renovations to include comprehensive energy management systems in buildings, integrating on-site renewable energy and utilising advanced insulation and heat pump technologies;

- Establish minimum energy performance standards that encourage the transition to nearly zero-energy buildings;

- Extend incentive mechanisms found effective in the residential sector to industry and transport, to drive efficiency and leverage sectoral interdependencies;

- Implement a framework that supports small and medium-sized enterprises in adopting energy-efficient technologies;

- Define clear quantitative targets for energy efficiency improvements in municipal sectors;

- Specify investment details to increase transparency and facilitate tracking and accountability;

- Develop a comprehensive strategy for the electrification of the industrial and transport sectors.

Draft NECP of Serbia

The Serbian NECP outlines three scenarios: WEM, WAM (referred to as Scenario S in the NECP), and Scenario S-N. The latter is a variation of Scenario S that, from 2040 onwards, factors in the use of nuclear power plants.

Disclaimer

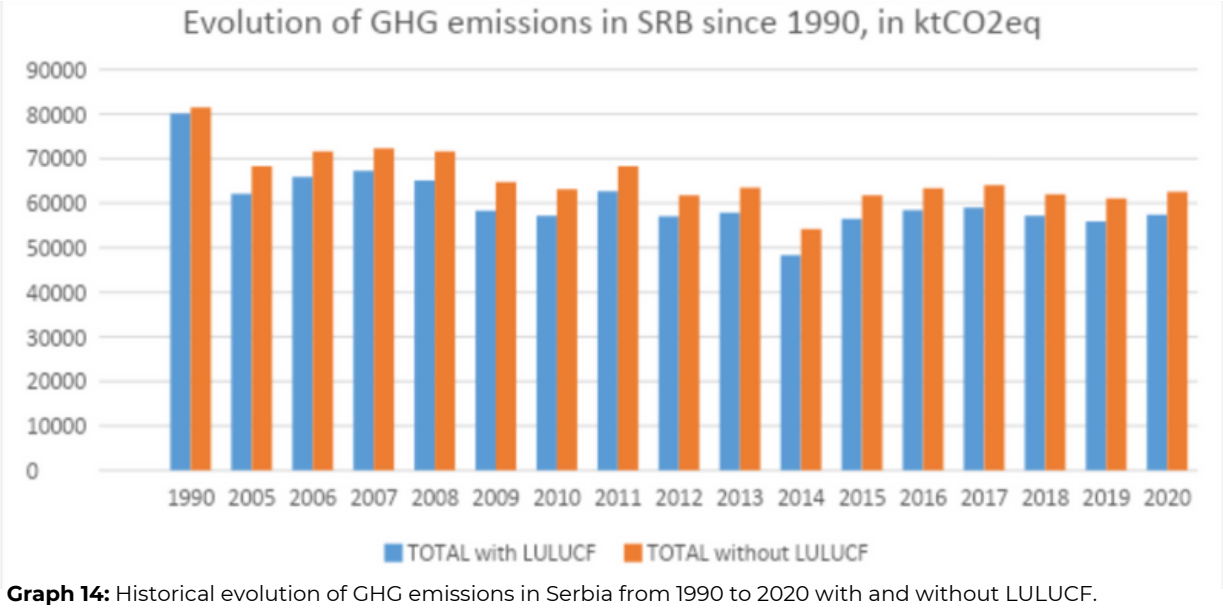
CAN Europe does not support the integration of nuclear energy capacities in the Western Balkans, and in general. It is worth noting that a pivot by Serbia towards these technologies could divert significant financial and human resources. These resources would arguably be better allocated to more dependable energy transition initiatives such as the adoption of renewable energy sources, improvement of energy efficiency, the transition to smart grids, and fostering regional cooperation. Additionally, projections indicate that energy generated from nuclear power in 2040 and 2050 would represent just 7TWh out of 67.51. The introduction of this technology carries risks (waste, imported uranium, safety, major overruns in cost and building time, cooling water issues in hot weather, etc) that outweigh the benefits. For instance, it's projected that this technology would only improve overall GHG emission reductions by an additional 2 per cent compared to Scenario S by 2050.

Greenhouse gas emissions reduction ambition

Serbia has a target of reducing its GHG emissions by 40.3 per cent in comparison to the 1990 levels. This reduction encompasses net emissions, factoring in emissions from LULUCF. The national GHG emissions reduction objective aligns with the agreed and adopted Energy Community's 2030 target for Serbia, which stipulates a reduction of 40.3 per cent compared to the 1990 levels, including the emissions from LULUCF. However, a minor discrepancy arises in the projected emissions for 2030. The Energy Community anticipates Serbia's emissions in 2030 to be 47.82 MtCO2eq, while the NECP's projection for the same year stands at 47.76 MtCO2eq.

As per the NECP, Serbia is not on track to reach climate neutrality by 2050. The envisaged Scenario S predicts Serbia's emissions to stand at 21.33 MtCO2eq by that year, including LULUCF.

For a clearer perspective on Serbia's GHG emissions, it is imperative to analyse data that exclude LULUCF. Graph X1 illustrates a constant in Serbia's emission levels over the past decade, with gross GHG emissions hovering around 62.5 MtCO2eq. When compared to the 1990 levels, this implies that Serbia has already achieved a gross emissions reduction of approximately 23 per cent. The gross emissions projected for 2030 are 54.4 MtCO2eq, indicating a reduction of about 13 per cent compared to 2020 levels or 33.26% in relation to 1990 levels.

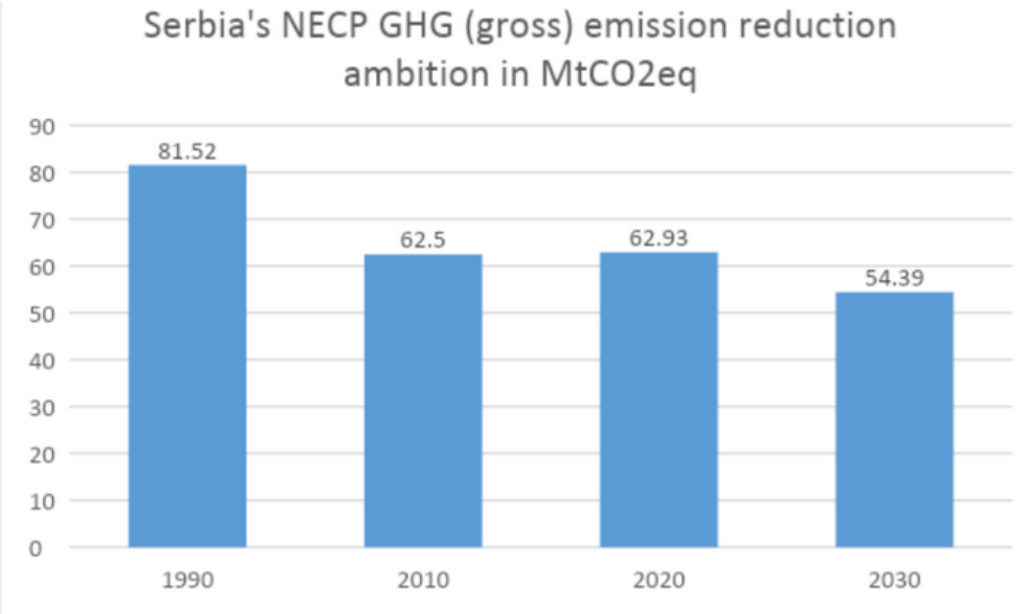


Graph 14: Historical evolution of GHG emissions in Serbia from 1990 to 2020 with and without LULUCF.
Source: National inventory of Serbia

Disclaimer

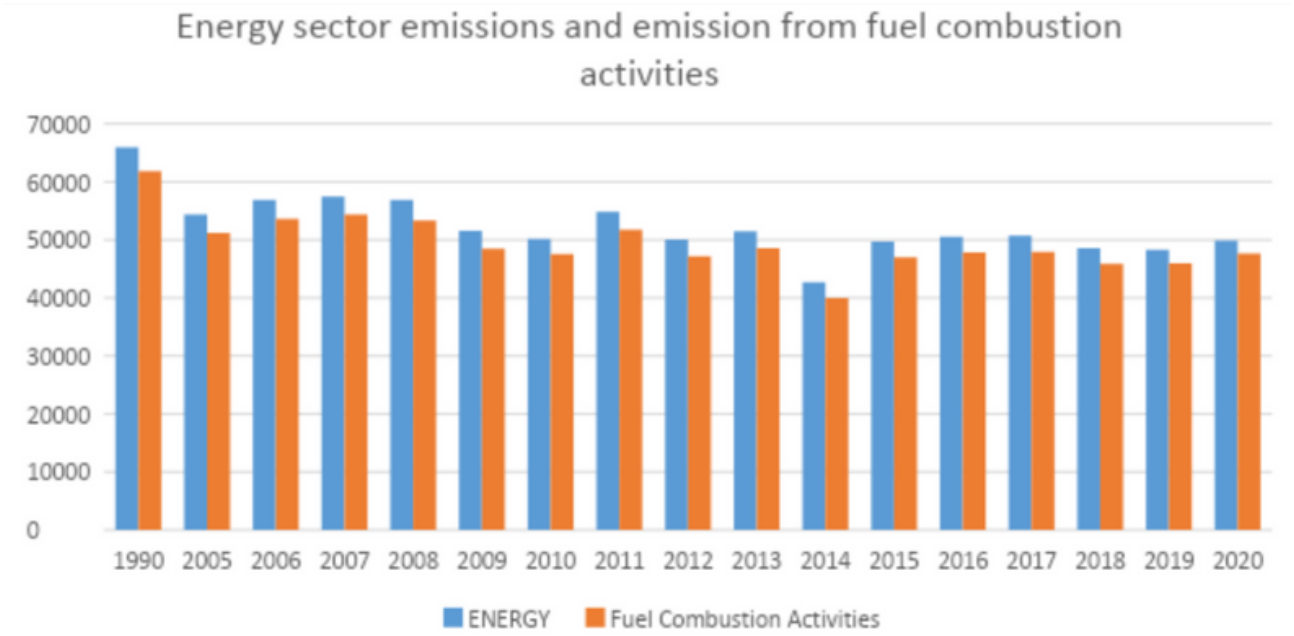
The ambition Serbia aims regarding greenhouse gas reduction by 2030, using 1990 as the reference point, appears flawed. Since 2010, Kosovo's greenhouse gas emissions are not incorporated in Serbia's records. For a precise estimation of Serbia's emissions reduction, a re-evaluation of the 1990 baseline or an analysis of the present-day emission levels is imperative.

This data highlights Serbia's comparatively modest ambitions for 2030 and sheds the light on the challenges inhibiting its reach of climate neutrality by 2050.



Graph 15: Serbia's NECP ambition of the actual (gross) greenhouse gas emissions reduction by 2030, as compared to the historical emissions.

Currently, the energy sector in Serbia accounts for a staggering 80 per cent of the country's total GHG emissions. Coal-fired power plants are responsible for half of national emissions. Thus, the decarbonisation of Serbia's energy sector emerges as the pivotal pathway to augment its climate ambitions and strive for climate neutrality by 2050. By 2030, emissions from the power and heat sector, overwhelmingly propelled by coal-fired plants, will constitute 23.86 out of the projected 54.4 MtCO2eq of total GHG emissions, or approximately 44 per cent. This is a decrease of 12 per cent from present levels.



Graph 16: Energy sector emissions and emissions from fuel combustion activities.
Source: National inventory of Serbia

This trend mirrors predictions for coal-generating capacity in 2030, expected to stand at 3.67 GW as opposed to the current 4.42 GW, a reduction of just 16 per cent. A significant point of concern is the age of these coal power plants. With an average operational duration of 47.5 years, the feasibility of these increasingly obsolete and inefficient units remaining operational post-2030 remains dubious.

The projection of emissions from agriculture, waste and LULUCF are taken from scenario M2 of the Climate Strategy and Action Plan, elaborated by the Ministry of Environmental Protection.

This project is funded by the European Union

Climate Strategy and Action Plan, Republic of Serbia
(Contract No: 2016/375-531)

GFA CONSULTING GROUP
A project implemented by a GFA Consulting Group led consortium

M2	1990	2005	2010	2015	2020	2025	2030	2050	2030/ 2010	2050/ 2010	2030/ 2005	2050/ 2005	2030/ 1990	2050/ 1990
Energy industries	44.146	35.557	33.050	34.700	34.548	31.164	27.426	7.596	-17,0%	-77,0%	-22,9%	-78,6%	-37,9%	-82,8%
Manufacturing industries and construction	6.418	6.064	4.278	3.452	3.842	4.101	3.651	2.691	-14,7%	-37,1%	-39,8%	-55,6%	-43,1%	-58,1%
Transport	4.564	6.702	6.742	5.995	7.096	7.406	7.433	4.731	10,2%	-29,8%	10,9%	-29,4%	62,9%	3,7%
Other sectors	7.048	3.029	3.477	2.711	2.393	2.267	2.089	1.035	-39,9%	-70,2%	-31,0%	-65,8%	-70,4%	-85,3%
Fugitive emissions	3.841	2.973	2.409	2.523	2.429	2.279	1.938	220	-19,6%	-90,9%	-34,8%	-92,6%	-49,5%	-94,3%
IPPU	5.455	4.729	4.660	3.883	4.736	5.178	4.994	4.539	7,2%	-2,6%	5,6%	-4,0%	-8,4%	-16,8%
Agriculture	6.186	6.238	5.305	5.259	5.132	4.813	4.493	5.432	-15,3%	2,4%	-28,0%	-12,9%	-27,4%	-12,2%
Waste	3.868	2.800	2.730	2.709	2.755	2.582	2.371	1.936	-13,1%	-29,1%	-15,3%	-30,9%	-38,7%	-49,9%
Total M2 (without LULUCF)	**81.526**	**68.091**	**62.650**	**61.233**	**62.931**	**59.790**	**54.396**	**28.180**	**-13,2%**	**-55,0%**	**-20,1%**	**-58,6%**	**-33,3%**	**-65,4%**
LULUCF	-1.432	-5.627	-5.627	-4.533	-6.766	-6.323	-6.576	-4.414	16,9%	-21,6%	16,9%	-21,6%	16,9%	-21,6%
Totals with LULUCF	80.094	62.464	57.023	56.700	56.165	53.467	47.820	23.766	-16,1%	-58,3%	-23,4%	-62,0%	-16,1%	-58,3%

Table 4: Table from Climate Strategy and Action Plan os Serbia (screenshot)

NECP states that Serbia is seeking to enhance removals and natural sinks through the LULUCF. It mentions that there have been afforestation efforts, but outcomes of such action have not been evaluated, due to limited foreseen impact. The main target is increasing the natural sinks capacity by 17 per cent compared to 2010.

According to the Climate Strategy and Action Plan scenario M2, LULUCF removed 6.76 MtCO2eq, or 11 per cent of all GHG emissions in 2020. There is a significant trend in increase of the LULUCF sinks, which has not been elaborated on how this was achieved

Greenhouse gas emissions reduction PaMs

In Serbia's NECP, **carbon pricing is prominently put as the leading Policy and Measure**, specifically referencing the preliminary stages for the integration of a carbon price. This move is defined as a reformative strategy. However, its objectives lack specificity. The overarching ambition is a 40 per cent reduction in Serbia's GHG emissions by 2030 against the 1990 benchmark, including emissions from the LULUCF sector.

Notably absent is a comprehensive impact assessment, with the only acknowledgment being that carbon pricing features in scenarios for sectors under the Effort Sharing Regulation (EU) 2018/842, and **not the EU ETS, leaving out the key high emitting industries such as electricity generation**. Puzzlingly, these scenarios neglect to evaluate the potential contributions of carbon pricing towards emission reductions.

A supplementary footnote explains a foundational assumption that Serbia will be introducing a carbon tax: the proposed implementation of a carbon tax by 2027, set at an initial rate of EUR 4/tonne (although the text does not define the exact metric being referred to, presumably carbon dioxide). This rate is projected to rise to EUR 40/tonne by 2030, with aspirations of achieving complete parity with the EU ETS price structure by 2045. Important to highlight is that this tax does not mention to which industries or fuel combustion activities would apply, nor how it relates to the EU ETS. Furthermore, the presented trajectory signifies a lost opportunity for Serbia, failing to leverage carbon pricing as a potent tool to expedite its energy transition, assuming it would apply to the relevant energy sectors, e.g. electricity sector.

Moreover, the NECP exhibits a **glaring oversight concerning the ramifications of the Carbon Border Adjustment Mechanism.** The document neither delves into the potential implications of CBAM for Serbia nor defines any proactive policies or measures aimed at ensuring Serbia's alignment with the exemption criteria inherent to the CBAM.

Further Serbian NECP decarbonisation policies have elicited notable concerns, particularly regarding their precision and alignment with existing data and strategies. The policy PM_D2, referring to the **Low-carbon Development Strategy,** stands out due to its ambiguity. Specific and measurable objectives are noticeably absent, making monitoring of the NECP's implementation challenging. Additionally, the given implementation timeframe from 2024 to 2030 raises eyebrows since the strategy in question has already been adopted. Furthermore, there is an essential need to validate the funding sources, especially considering the EU's previous allocations for this measure.

On the topic of waste management, PM_D3 **on promoting circular economy** lacks a clear foundation in sector analysis. The objective to achieve 60 per cent of communal waste recycling by 2030 is commendable, but the measure doesn't establish a clear connection to GHG emissions from the waste sector, despite available data.

Moreover, the relevance of the Roadmap for circular economy in Serbia within the public policy framework remains unclear, especially with the existence of the Circular Economy Development Programme. The rationale behind the EUR 4.5 million allocation to achieve the recycling target is also questionable due to lack of clarity on how these costs were determined.

PM_D5 on **Establishment and operation of the National Climate Change Council, a Carbon Footprint Observatory for all sectors, and a National GHG inventory** system further amplifies these concerns. This policy should be re-evaluated and maybe even removed from the NECP due to the ambiguity surrounding the role of the National Climate Change Council, which, despite being established in 2021, has held minimal meetings. Doubts also arise regarding the relevance of the proposed Observatory and the existing National GHG Inventory System. PM_D14 regarding **Improvement of wastewater treatment and discharge** and PM_D15 **on improvement of waste management practices, including a decrease of biodegradable components of waste disposed in landfills and increased recycling** show recurring issues of imprecision in objectives and indicators, notably in relation to wastewater treatment plants and GHG emissions in the waste sector.

While the just transition can be seen both as a socio-economic and decarbonisation tool, its primary function is socio economic, and the effects as a decarbonisation measure in the Serbian NECP are not addressed. The measure focuses on drafting of the Just Transition Plan, but does not address which policies and measures would be applicable to Just Transition, their effects in the affected communities, which should have been the main focus.

As for the LULUCF the main policies and measures leading to the ambition target are sustainable **forest management, land conversion to cropland, and increasing tree-planted areas.** These measures are descriptive at best, with little tangible actions leading to the desired outcome.

Greenhouse gas emissions reduction ambition recommendations

- Ensure consistency and accuracy in emissions forecasting to enhance the effectiveness of the reduction target. Review the baseline year, with strong emphasis on the current level of emissions;

- Develop a comprehensive roadmap, with specific policies and timelines, for the phase-out of coal power plants in line with the Paris Agreement and the Green Agenda for the Western Balkans. Focus on decarbonisation of the energy sector to increase ambition and work towards climate neutrality;

- The trajectory of carbon pricing, as outlined, signifies a missed opportunity for Serbia. By optimising the carbon pricing structure in the final NECP, Serbia should be able to expedite its energy transition and generate revenue that can be reinvested to enable energy transition;

- The NECP should delve into the potential implications of CBAM for Serbia. Proactive policies ensuring Serbia's alignment with CBAM's exemption criteria are vital, especially with the first deadline of market coupling by mid-2025;

- Clear foundations in sector analysis for waste management policies, like PM_D3 on circular economy, are essential. It's also necessary to clarify the relevance of different initiatives, such as the Roadmap for the circular economy in Serbia, within the public policy framework;

- Consider alternatives to nuclear energy and focus on additional measures that promote renewable energy, energy efficiency, and smart grid technologies to ensure that the target is met without resorting to high risk technologies;

- Enhance the transparency of LULUCF policies and provide a detailed evaluation of afforestation and natural sinks' effectiveness. Develop concrete, actionable policies and measures to ensure the desired outcomes are achieved. Strengthen policies and measures to ensure that they are more than just descriptive. Clearly outline actions, deadlines, and review mechanisms to drive the intended outcomes.

Renewable energy ambition

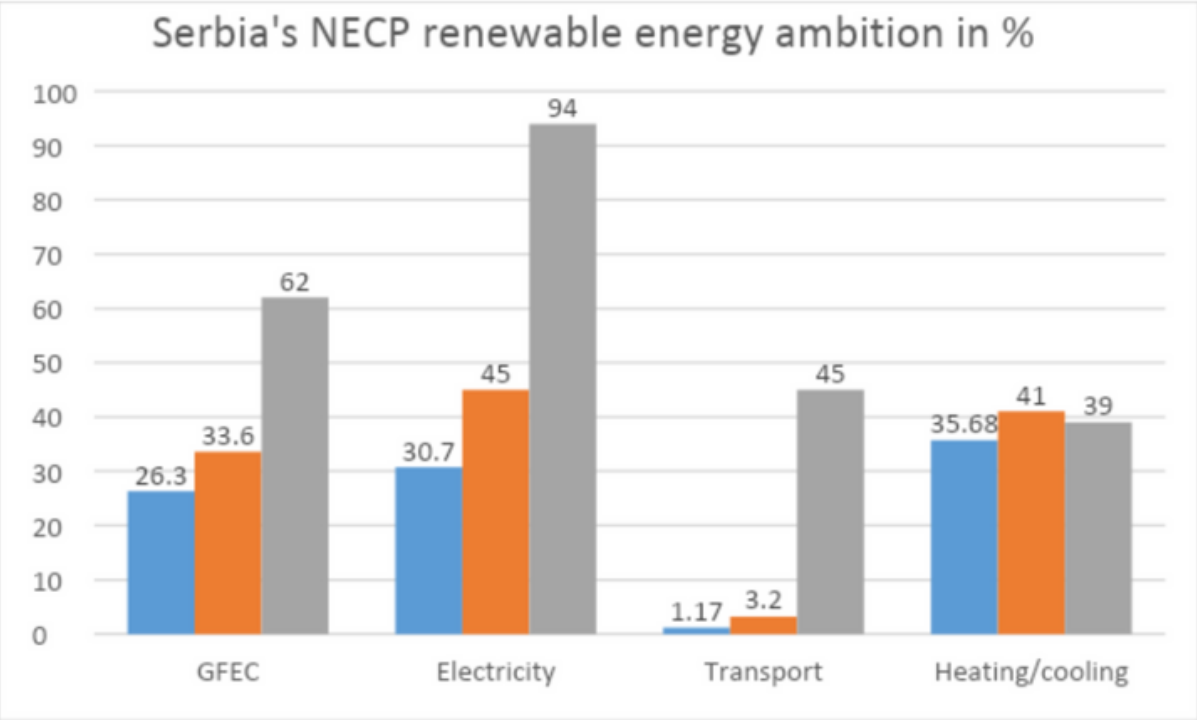
In the projected outlook for 2030, the anticipated share of renewable energy sources in the gross final energy consumption stands at 33.6 per cent. This figure is notably lower than the target agreed and adopted by the Energy Community, which is set at 40.7 per cent.

Serbia's NECP establishes a direct correlation between the proportion of renewables in the GFEC and its decarbonisation objectives. However, there is a lack of clarity on how Serbia intends to achieve its emission reduction target of -40.3 per cent (relative to 1990 levels) with a diminished share of renewables in the GFEC for 2030.

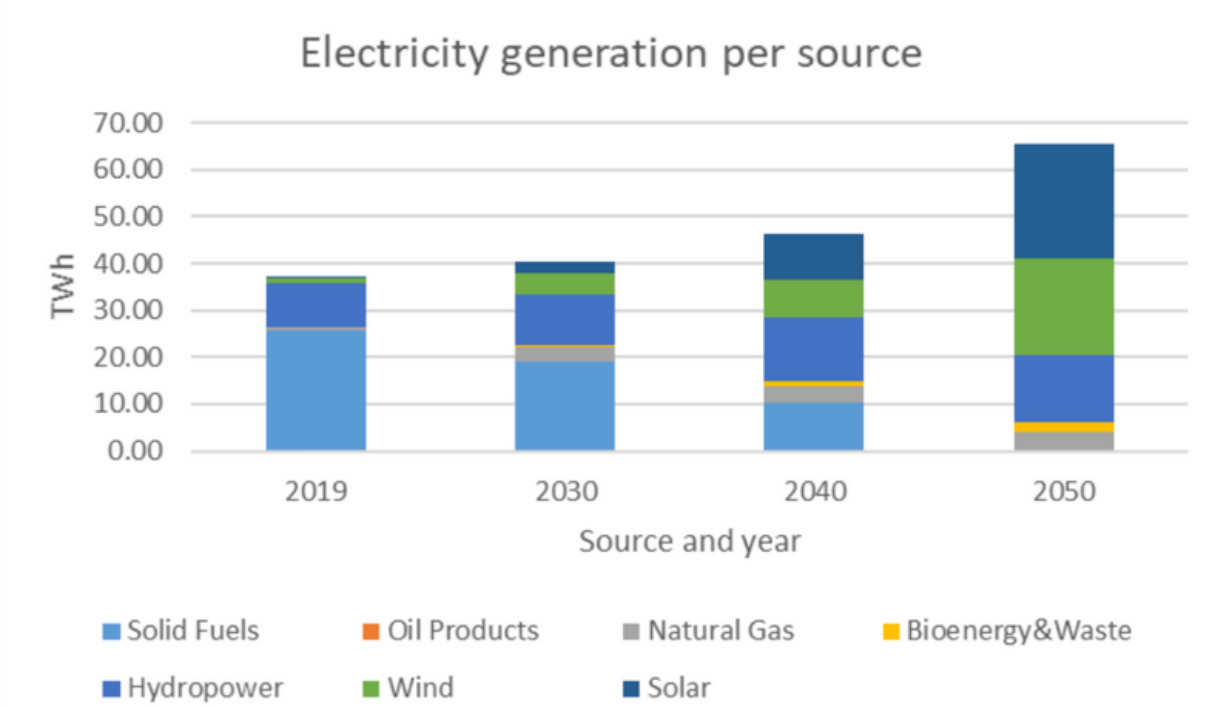
In 2020, Serbia fell short of its target for renewable energy in the GFEC, achieving only 26.3 per cent against the 27 per cent target. As a start, Serbia should have aligned its aspirations at least with the renewable targets stipulated in the Energy Community Treaty for 2030. Meeting this threshold alone, however, does not assure reaching the climate neutrality target by 2050. Thus, it is imperative for the final NECP to address and revise the renewables ambition for 2030.

The modelling approach relies on 2019 data concerning renewable energy and the overall energy mix, details of which are conspicuously absent in the NECP. Additionally, neither visual nor quantitative data for the years 2019/2020 are incorporated within the modelling results, making it challenging for readers to evaluate the ambition adequately. For the purposes of this analysis, we have consulted data from Eurostat.

Graph 18 outlines the renewable energy objectives delineated in Serbia's NECP and compares them with the current circumstances. These findings underscore that Serbia's trajectory is not consistent with the climate neutrality goals of the Paris Agreement. The current pace of renewable energy integration at both the economic and sectoral levels is suboptimal. It is essential to devise specific strategies to reduce and gradually eliminate the nation's reliance on coal and other fossil fuels, particularly within the electricity sector.



Graph 17: renewable energy in gross final energy consumption, electricity, transport, and heating and cooling as a percentage.



Graph 18: Electricity generation per source in TWh.
Source: Serbian NECP

Renewable energy PaMs

The existing approach to decarbonisation policies and measures concerning renewable energy sources appears to be generalised, vague, and devoid of tangible objectives, lucid indicators, and defined timelines. Such an approach might not cultivate an environment encouraging investments, potentially undermining trust in the prospective engagements.

The Law on the Use of Renewable Energy Sources in Serbia has instituted an incentive system for electricity generation from RES. Notably, this encompasses a restricted feed-in tariff facilitated through specific quotas and auctions. While these incentives seem promising for smaller ventures, particularly those below 3 MW for wind and 0.5 MW for other RES, the NECP measure D_19 on **support scheme based on tendering procedures (auction scheme) for commercially cost-effective RES technologies** appears to be predominantly in favour of larger-scale investments, which presents a need for specific auction rules and ring fenced auctions for energy communities as well to effectively bolster the democratisation of energy production within Serbia.

Moreover, a multitude of policies and measures remains nebulous, possessing goals that are neither quantifiable nor accompanied by instruments for effective assessment.

The NECP is seemingly committed to amplifying the introduction of new solar capacities, with a particular emphasis on household and commercial sectors (as referenced in D_21 **Support RES technologies that will not participate into the tendering procedures).** However, a palpable omission is its failure to address the extant constraints laid down by the Serbian government. This ties into the provisions **regarding network expansion** (D_29), which also fall short in providing quantifiable objectives, a clear elucidation of the measure type, and crucially, the costs implicated in the network expansion.

The Guarantees of Origin (noted as D_23) are presently confined to the electricity sector, neglecting other modalities of power generation. It would be prudent for the final draft to consider broadening the scope of the Guarantees of Origin to envelop the heating and cooling sector, ensuring alignment with the present Clean Energy Package framework under the Energy Community.

To highlight, there's a distinct void in clarity, quantification, and explication concerning how the drafted policies and measures will actualise the set targets. Key areas of concern include:

1. The necessity for coherent quantification complemented by pertinent indicators to strengthen the predictability of outcomes;

2. A justification for the postponement of the implementation of certain policies and measures until 2025, given that the legislative milieu permits Serbia to expedite the deployment of renewable energy.

Renewable energy recommendations

- Serbia should reconsider its 2030 renewable target to ensure alignment at least with its target at the Energy Community, thus striving for a balance between realistic and ambitious objectives;

- An explicit strategy explaining how Serbia plans to meet its decarbonisation target with its renewable energy ambitions should be integral to the NECP, as to clarify the decarbonisation link it presented;

- Comprehensive data from relevant years, especially 2019/2020, should be incorporated into the NECP, providing stakeholders a clearer picture of Serbia's energy related trajectories;

- Serbia must expedite the deployment and integration of key renewable sources, especially wind and solar while respecting EU environmental law and ensuring maximum public participation, to ensure a consistent energy transition;

- Policies related to RES in the NECP should be more specific, accompanied by quantifiable objectives, clear indicators, and defined timelines, thereby fostering an investment-friendly environment;

- The incentive system should be inclusive, supporting projects of varying scales, ensuring local stakeholders can participate actively in the renewable energy transition;

- Serbia should ensure its renewable energy and decarbonisation measures align with international commitments, particularly the Energy Community treaty and Paris Agreement, ensuring a robust, sustainable energy transition.

Energy efficiency

In Serbia’s NECP, the projected ambition for primary energy consumption stands at 14.7 Mtoe, whereas the anticipated final energy consumption (FEC) is set at 9.7 Mtoe. The ambitions for PEC and FEC in Serbia’s NECP are not precisely aligned with the energy efficiency targets prescribed by the Energy Community. Specifically, the Energy Community's targets are 14.94 Mtoe for PEC and 9.54 Mtoe for FEC.

Energy efficiency measures and targets ought to be prioritised as the primary catalysts for transition. However, the ambition expressed in Serbia’s NECP regarding energy efficiency targets and initiatives exhibits a minimal transformative impact on the nation's energy transition. The primary energy consumption in Serbia for 2020 stood at 15.18 Mtoe. With a 2030 target of 14.7 Mtoe, this translates to a modest saving of just 1.58 per cent. This low saving rate elucidates Serbia's limited ambition in phasing out coal by 2030 and its challenges in aiming for climate neutrality by 2050. As for the final energy consumption, a target of 9.7 Mtoe represents a 6.39 per cent improvement from the 2020 level of 9.08 Mtoe.

The impact evaluation of policies and measures concerning energy efficiency targets has been exclusively benchmarked against the WEM scenario. Nevertheless, the modelling fails to compare the results as related to the current primary and final energy consumption levels in Serbia.

Moreover, the alleged improvements in both primary and final energy consumption are predominantly ascribed to the promotion of energy efficiency and the gradual integration of renewable energy sources, which as we have witnessed, are relatively modest.

Energy efficiency PaMs

Our assessment highlights concerns regarding transparency, effectiveness, data inconsistencies, and budget allocation discrepancies in the Serbian NECP related to energy efficiency.

Serbia's final NECP should provide guidelines and mechanisms that will guarantee the implementation and credibility of policies and measures.

There are considerable inconsistencies in data, eg. related to Tables 3.1 and 3.2 presented new and cumulative energy savings for the period 2024-2030, where the discrepancies between the sums in the tables and the accompanying text are present. Also, the policies and measures do not provide the information on the methodology or criteria used to estimate annual energy savings of 72 ktoe.

It's essential to factor in the rising trend of energy use, particularly electric energy, the increase in the number of electrical devices, the shift towards hybrid and electric vehicles, and other factors. Measures such as thermal envelope insulation and the installation of heat pumps were previously implemented, raising questions about their "alternative" status presented in the NECP.

Previous experiences pointed to various issues in implementing similar programs, including uneven distribution of existing funds, insufficient subsidies for poorer citizens, and reliance on the financial capability of local authorities participating in the grant distribution. There should be a realistic evaluation of past impacts and a more detailed development of proposed measures for the coming period, considering identified shortcomings.

In the Serbian NECP assessment, several concerns arise regarding building renovations and energy efficiency measures. Uncertainty stems from the average area of buildings targeted for renovation and the associated funding, as well as the basis for estimated energy savings of 35 ktoe. For the proposed heat pump installations in 131,000 residences, there should be clear distinctions on dwellings which have district heating and those where the heat pumps will be installed.

On the funding side, while there are funds allocated to policies and measures, there are no indicators as to how the calculation was achieved, or even number or the size of the buildings. Additionally, the budget for renovating public buildings seemed disproportionate, with the allocation for public spaces being 40 times less than that for non-public structures. Furthermore, while regulations permit the issuance of a passport for renovated buildings, there was no clarity on the status of passports for buildings left untouched.

Energy efficiency recommendations

- Serbia should consider setting more ambitious energy efficiency targets in line with its commitments to become climate neutral by 2050. The targets should be significantly higher than the historical trends and reflect a true step change in energy efficiency;

- Develop and implement robust policy instruments, including energy efficiency standards, building codes, and incentives for retrofitting existing buildings and infrastructure. These should be backed by effective enforcement mechanisms;

- Establish clear, transparent, and accessible funding and financing mechanisms to support energy efficiency investments, particularly for low-income households and public buildings;

- Serbia's NECP should include policies and measures for a detailed and transparent methodology for estimating energy savings from each measure, allowing for easier monitoring and verification;

- Ensure that energy efficiency is integrated with renewable energy development and the phasing out of fossil fuels within an overall strategy for the energy transition.

CONCLUSIONS

The draft NECPs from Bosnia and Herzegovina, Kosovo, and Serbia show progress, but there is a critical need for enhanced ambition and concrete strategies. These are necessary to effectively meet, and potentially surpass, the region's climate and energy targets for 2030 and lead countries towards climate neutrality. Therefore, the final NECPs need to ensure that policies and measures have concrete, achievable objectives with credible timelines and oversight mechanisms.

The NECPs avoid new coal investments but lack a concrete strategy for phasing out existing coal capacities. A definitive coal phase-out plan with specific deadlines and measures is imperative, considering the heavy reliance on coal in these countries. This transition should also address the shift from coal to renewable energy sources without intermediate dependence on fossil gas. For this the final NECP must adequately address the introduction and implementation of carbon pricing policies.

While the focus on renewable energy is evident, there is a lack of detailed information on capacity scale, sectoral uptake, and comprehensive grid integration strategies. The final NECPs must deliver detailed plans for deploying renewable energy technologies, addressing existing barriers, and ensuring efficient uptake.

Furthermore, the principle of 'energy efficiency first' is not sufficiently prioritised in the NECPs. There is a need for comprehensive strategies focusing on the efficiency of buildings, heating, and cooling systems, and establishing clear institutional frameworks for implementation and oversight.

Variations in stakeholder engagement practices across these countries highlight the need for more effective and inclusive public consultations. This includes timely consultations, publishing outcomes, and integrating feedback into the final NECPs.

To further The NECPs should thoroughly address the just transition, focusing on social aspects and providing comprehensive plans for this transition. This includes acknowledging the impacts on communities and workers affected by the energy transition.

The NECPs should include Strategic Environmental Assessments that effectively and objectively assess the impacts of the plans, ensuring that environmental considerations are integrated into the decision-making process.

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