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POLICY BRIEF

BALKA-SELTZER: HOW TO AVOID EXCESS GAS IN THE WESTERN BALKANS

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December 2024

SUMMARY

- As prospective EU members, the countries of the Western Balkans need to integrate with the bloc's internal markets and align with its climate and energy security goals.
- But the region remains largely dependent on coal for its electricity generation. Its energy markets are not fully integrated with the EU's, and its energy systems still receive significant fossil fuel subsidies.
- Despite this, there is huge potential for a transition to renewable energy in the Western Balkans; Albania has long generated almost all its electricity via hydropower. The region could also integrate with EU energy markets thanks to its interconnected grids and infrastructure, with mutually beneficial effects.
- Yet, rather than focus on decentralisation and the transition to cheaper renewables, the region seems to be sticking with subsidised coal and drifting towards greater use of gas. Russia has a foothold in the Western Balkans' nascent gas sector. China also has energy-related interests in the region.
- This all hinders the Western Balkans' alignment with the EU and integration with its markets. It is in the EU's and the Western Balkans' interest to skip gas and instead jump straight to renewables, despite the block's planned gas projects in the region.

Double trouble

Energy economics has entered a paradigm shift. The fossil-fuel based energy solutions that were once cheap are now more expensive. The renewable innovations that used to be expensive are now much cheaper. Across Europe, the centralisation of energy supplies has crumbled and is rapidly being replaced by a distributed, decentralised energy system.

But the Western Balkans remains largely dependent on coal for its energy. Of the six countries in the region – Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia – Albania is the exception, having long generated almost all its electricity from hydropower. The Western Balkans' energy markets are centrally controlled, national systems that lack proper integration with one another and with the rest of Europe. This is despite the fact that the Western Balkans sits in the middle of the wider European energy system, with its infrastructure interconnected to neighbouring countries and, through them, to the rest of the European Union.

In recent years, the energy transition has begun to pick up pace across the sun-drenched Western Balkans. But, as prospective EU member states, the countries of the region will have to accelerate their efforts to align with the ambitious climate goals the EU set out in the European Green Deal. All six Western Balkans states have also signed up to the EU's 2020 " Green Agenda for the Western Balkans", which aims to hasten their alignment with the EU by promoting climate-related reforms. As part of this, the Western Balkans will not only have to move away from coal and integrate its energy markets. It will also have to strengthen its grid infrastructure, increase its renewable installation and storage capacity, and improve its energy efficiency. This will enable it to make the most of its interconnected infrastructure and integrate with the EU's distributed energy market, with mutually beneficial effects.

But now, there are signs that the Western Balkans may be drifting towards greater use of gas rather than striving to exploit the potential of the region's renewable energy sources. Much of that gas is Russian. Russia's influence over the Western Balkans' limited gas markets brings Moscow more pull in a region where it already wields political leverage. China also has also worked to gain a foothold in the Western Balkans, particularly in the mining sector. These external players could divert the Western Balkans countries away from the EU and hinder a resilient green transition in the region.

This policy brief examines the state of the energy transition in the Western Balkans, with a focus on electricity generation. It argues that it is in both the EU's and the Western Balkans' interest to resist the 'drift to gas'. Instead, the Western Balkans should enact an ambitious

'leap to renewables', combined with efforts to improve storage capacity and energy efficiency. This would not only ease these countries' accession into the EU but also deepen their integration with the bloc and the wider European energy market. The policy brief thus proposes a suite of actions for policymakers at the EU level, in the region, and beyond to help them as they pursue this 'double transition': from coal to renewables and from centralised to distributed energy systems.

The energy mix in the Western Balkans

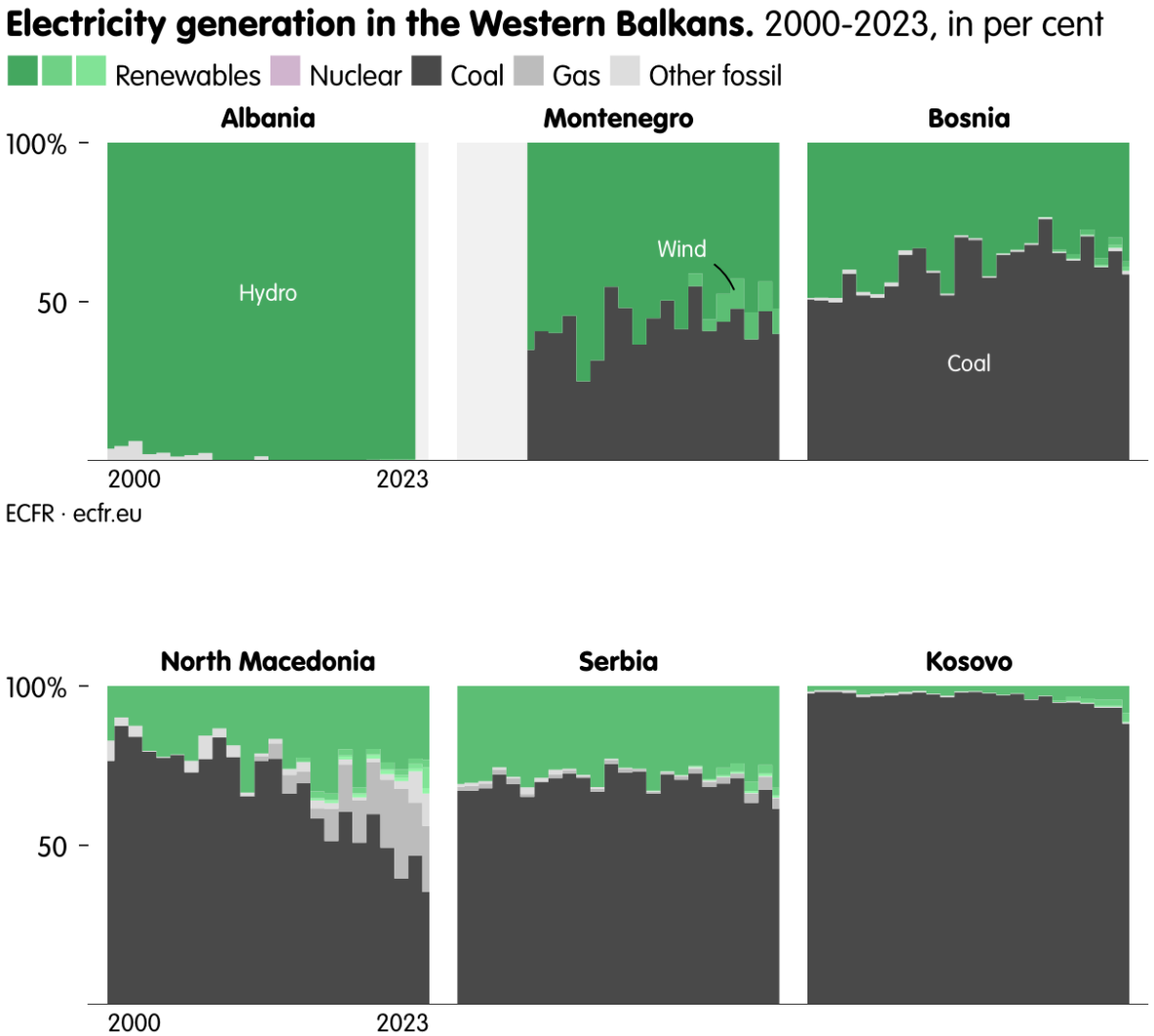
Five of the six Western Balkans states are still heavily reliant on coal for their electricity generation; their energy markets remain centrally controlled, closed systems that involve considerable subsidies for fossil fuels. The lack of market integration with the EU's decentralised system affects transparency, preventing Western Balkans states from overcoming longstanding issues with clientelism. It also makes the Western Balkans energy market less appealing to investors and limits cross-border flows of electricity, despite the relatively interconnected infrastructure. As the rest of Europe moves towards net-zero and full integration, Western Balkans countries risk falling behind – endangering both their climate commitments and their progress towards EU membership.

While they are not explicitly the same, the goals of the European Green Deal and the EU accession process overlap significantly. To achieve net-zero by 2050, the ambitious target that lies at the heart of the European Green Deal, EU member states will have to make significant changes to their energy, transport, and agriculture sectors. The EU accession process, meanwhile, includes environmental standards and energy-sector reforms as key components of the *acquis communautaire*, the body of EU laws that candidate countries must adopt. These commitments involve reducing greenhouse gas emissions, transitioning to renewable energy, and adopting circular economy practices.

The Green Agenda for the Western Balkans aims to support the region in this process. The European Commission has stressed that progress on such environmental reforms is crucial for states to advance in EU membership negotiations, as is integration with EU energy markets. Climate action not only helps countries prepare for future EU membership but also enhances their economic resilience and fosters regional stability. Aligning with the European Green Deal thus accelerates the environmental and the political integration of the Western Balkans into the EU. But all the Western Balkans countries have some way to go if they are to achieve their EU climate and integration goals.

Coal

Coal remains the dominant energy source across much of the Western Balkans, except in Albania. Serbia, Bosnia and Herzegovina, and Kosovo rely very heavily on coal for electricity generation. This has not changed much over the past decade. While North Macedonia has managed to reduce the share of coal in its electricity mix, this was largely offset by a rise in the use of natural gas. Montenegro, meanwhile, has increased its wind energy capacity and Kosovo has started to break its almost full dependency on coal.



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Yearly electricity generation, in terawatt hour (TWh). The Western Balkans include Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. The data covers the 2005-2023 period for Montenegro and 2000-2022 period for Albania.

Source: Ember

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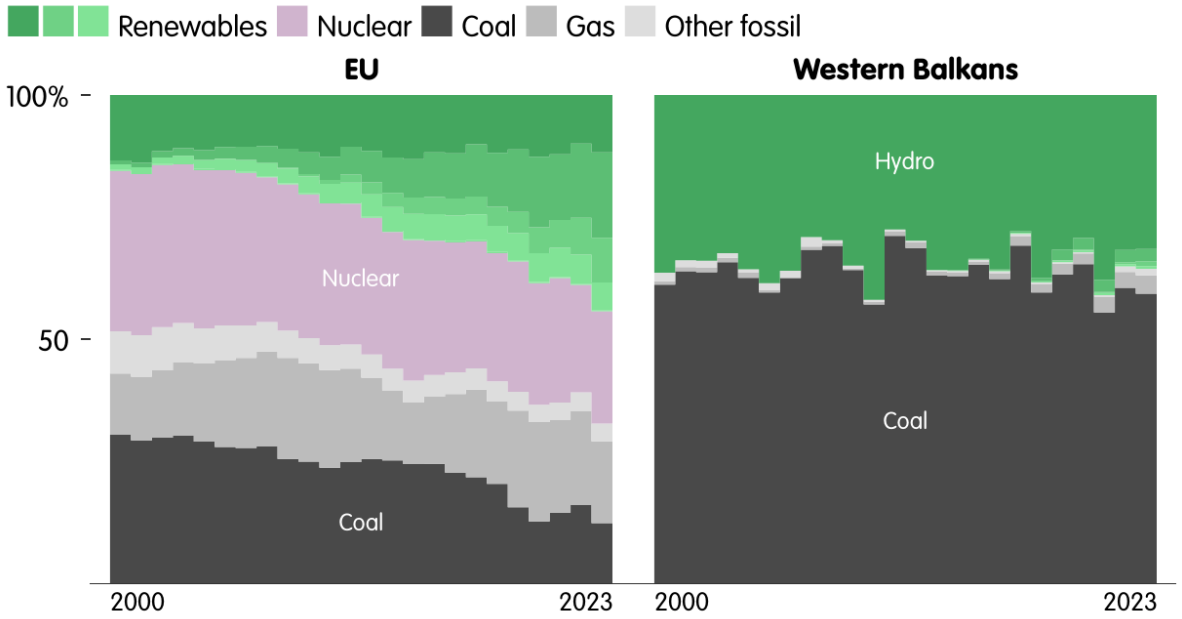
The dominance of coal in the Western Balkans has implications for both domestic policy and the region's relationship with the EU. Local governments often prioritise short-term energy security over long-term sustainability, leading to delays in adopting renewable energy policies. The heavy reliance on coal also means that these countries struggle to meet international environmental standards, particularly the EU's strict carbon emission targets. This results in potential costs and political pressure. As of 2026, for example, it will result in Western Balkans companies falling foul of the EU's Carbon Border Adjustment Mechanism (CBAM).

The EU has provided financial and technical support for the energy transition in the Balkans. But coal's dominance means the region will need significant investment to modernise its infrastructure and meet EU standards. This creates a balancing act between economic development and environmental obligations. It also creates a challenge for Western Balkan leaders to avoid a political "greenlash" against their nascent plans to phase out coal, particularly given the countries' energy companies are significant public-sector employers.

Renewables

In the last two decades Western Balkans countries have seen the share of renewables in their energy mix remain relatively stable. Hydropower is responsible for almost all the region's renewable power generation. But compared to their EU neighbours, the Western Balkans have been slow to embrace wind and solar energy. Montenegro, Serbia, and North Macedonia have made some progress, but the overall growth of non-hydropower renewables has been sluggish and inconsistent. The trend towards renewables in EU member states underpinned primarily by market forces that have improved energy efficiency and incentivised renewable installation, especially solar. The EU's carbon pricing policies and strict air quality standards for its members also play a key role in pushing out coal generation.

Electricity generation in the EU and the Western Balkans. 2000-2023, in per cent



Yearly electricity generation, in terawatt hour (TWh). The Western Balkans include Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. The data for Montenegro covers the period 2005-2023.

Source: Ember
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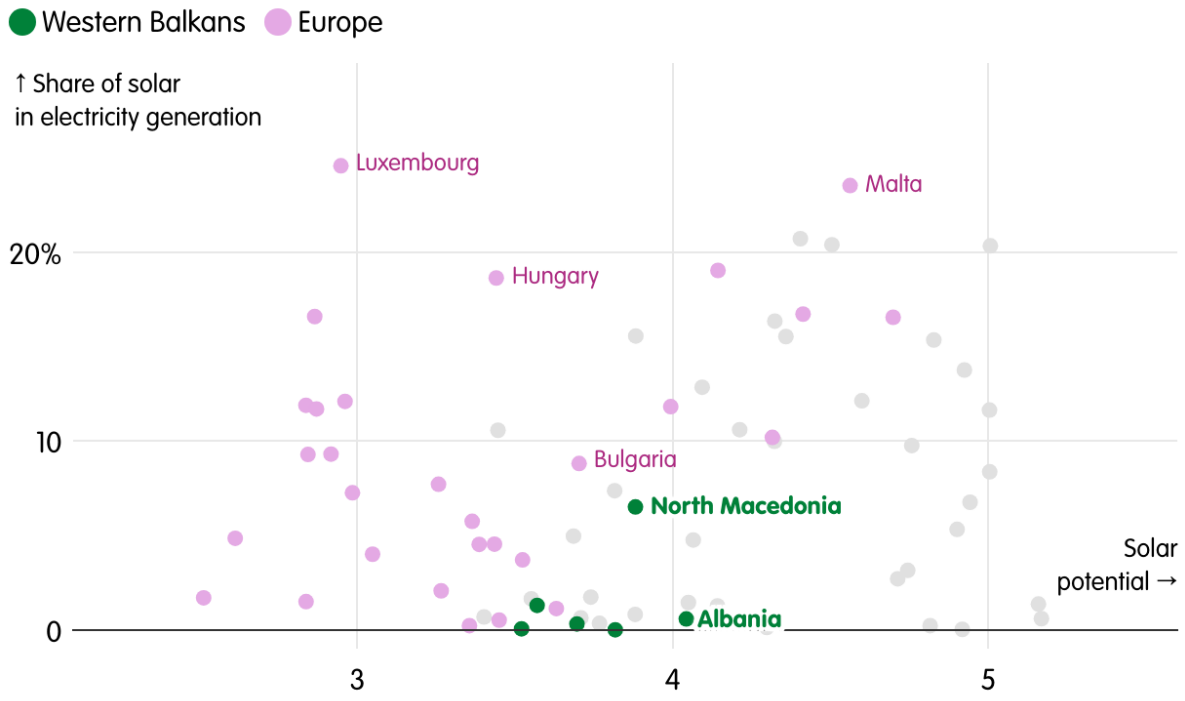
Albania generates almost all its electricity from hydropower. Montenegro relies on it for just under half of its power, and Bosnia and Herzegovina and Serbia for around a third. In North Macedonia, hydropower accounts for around a quarter of electricity generation. Many hydropower plants enjoy similar advantages to those that rely on fossil fuels in that they can be ramped up and down instantly to meet consumer demand in real time. Western Balkans hydropower sources therefore offer a key opportunity both for the region and the broader European energy system to expand their use of other renewables. This is because they can balance the intermittent nature of solar and wind energy. However, new hydropower developments are controversial and could face fierce local and activist resistance on the grounds of environmental risks to river systems.

The Western Balkans boasts significant potential for solar (and wind) energy, both on a small and large scale. The region is in southern Europe and enjoys hundreds of sunny days per year. The large swathes of land currently occupied by coal mines could provide ample space for solar farms to exploit that potential, as their Balkan neighbour Greece has done in recent

years.

Solar potential in the Western Balkans v share of solar in electricity generation



Latest available share of solar electricity, in per cent, based on yearly electricity generation, in TWh.
Solar potential: average long-term practical potential, PVOUT Level 1, in kWh/kWp/day.

Source: Ember; Global Photovoltaic Power Potential Study
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This would require significant investment in the short-term, but that would be money better spent than similar investment in gas installations that may become stranded assets in the years to come.

The drift to gas

Natural gas currently plays a minor role in the Western Balkans states' energy consumption. In 2021, the region used less than 1 per cent of the gas consumed by its neighbours in the EU; North Macedonia and to a lesser degree Serbia use gas for power generation, and only there does it account for more than 10 per cent of energy consumption. There is also some limited gas consumption in Bosnia and Herzegovina, where it is used mainly for district heating and some industrial applications. Albania, Kosovo, and Montenegro consume almost no natural

gas and lack the infrastructure to import it from international markets.

Although the region's use of gas is limited, its reliance on Russian natural gas has positioned Moscow as a key player, not only in energy supply but also in wielding broader political influence. Serbia, one of Russia's closest allies in the Balkans, depends on Russian imports for the small share of gas within its energy mix; Gazprom controls the Serbian oil industry through the NIS group and a significant share of the gas market. The TurkStream pipeline, which runs from Russia to Turkey via the Balkans, strengthens this dependency, enabling Russia to bypass Ukraine and reinforce its influence in the Western Balkans region.

Now the region appears to be gravitating towards greater gas usage. New infrastructure projects are in the works, aimed at increasing the role of gas in electricity generation, heating, and exports. Several Western Balkans countries are planning significant expansions in their gas infrastructure. North Macedonia, for instance, is poised to increase its reliance on gas as it seeks to replace coal generation.

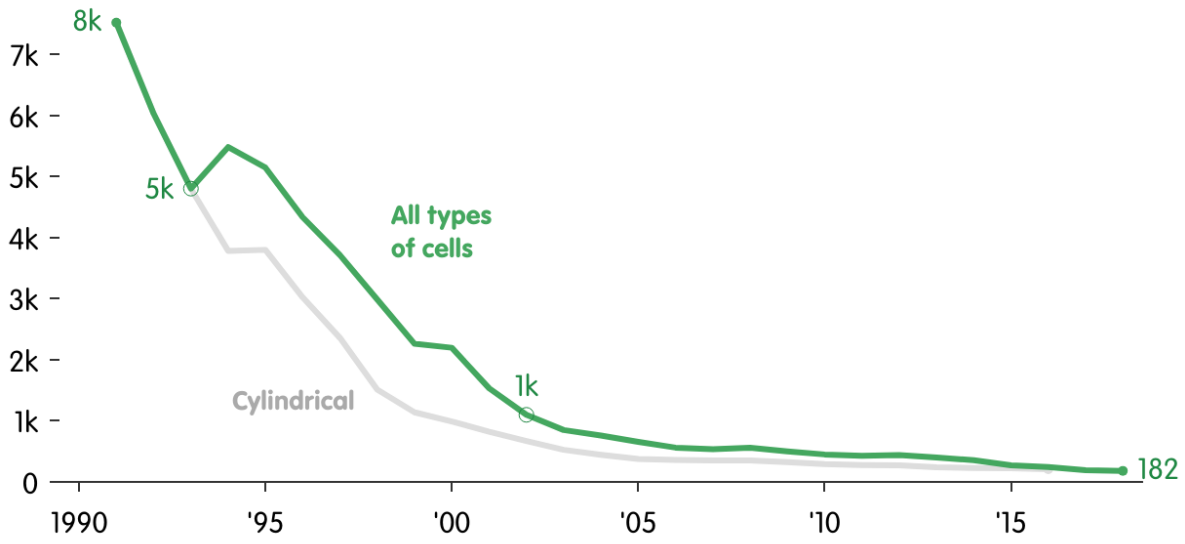
There are also plans in the region for new gas-fired power plants, pipelines, and liquefied natural gas (LNG) terminals, with a total investment of €3.5 billion, backed by the EU and the United States. Key European projects include the Ionian-Adriatic gas pipeline, which aims to diversify gas supplies to the region and Italy; and the Fier-Vlora gas pipeline in Albania, part of the Trans-Adriatic Pipeline. Additionally, new gas interconnectors are planned to link Bosnia and Herzegovina with Croatia, North Macedonia with Greece and Kosovo, and Serbia with North Macedonia.

The US Agency for International Development estimated in a 2022 report that south-eastern Europe, including the Western Balkans, would need a $50 billion investment in new gas-fired power plants by 2030. The Albanian government, for instance, has signed agreements with U.S. companies ExxonMobil and Excelerate Energy to develop an LNG import terminal in Vlora. In Kosovo, the US offered an array of support to develop gas infrastructure, including a $200m project to build a pipeline that would connect it with North Macedonia. But the Kosovo government ultimately rejected this proposal.

These gas initiatives aim to reduce the region's reliance on coal. But they risk locking the region into greater gas dependence, complicating its longer-term transition to a decarbonised future. The gas industry has long promoted gas as a "transitional fuel" between coal and renewables. This centres around the claim that the most realistic way to move from coal to renewables is via gas, which is less polluting and generates lower carbon emissions at the point of burning than coal.

But the arguments for gas as a transitional fuel do not hold. For example, when all the emissions associated with imported LNG – from extraction, to liquefication and transport, to burning and methane leaks – are counted, imported LNG can be as or even more polluting than local coal. Any short-term savings due to lower costs of gas and its infrastructure do not extend to the longer-term. Since the global trend is to increase investment in renewables, it merely kicks the can of yet more expenditure down the road. It is also now often cheaper to build new renewable installations than to continue burning coal. The cost of switching directly from coal to renewables has fallen by 99 per cent since 2010; the price of lithium ion batteries, a key enabler for various renewable sources thanks to their use in energy storage, has also plummeted.

Price of lithium-ion cells per kilowatt-hour. 1991-2018, in USD



Prices are given in 2018 US dollars per kilowatt-hour (kWh).

Source: Ziegler, M. S.; Trancik, J. E. Re-Examining Rates of Lithium-Ion Battery Technology Improvement and Cost Decline. Energy Environ. Sci. 2021, 14, 1635–1651. DOI: 10.1039/D0EE02681F.
Ziegler, M. S.; Trancik, J. E., 2021, "Data series for lithium-ion battery technologies", https://doi.org/10.7910/DVN/9FEJ7C, Trancik Lab Dataverse, V1, UNF:6:sVT2vBwWolbQL4BxsTSDUg== [fileUNF]
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The drift to gas also exposes the Western Balkans to some of the problems EU member states have experienced since Russia's all-out invasion of Ukraine; namely, volatile energy markets and dependence on Russian gas. Indeed, despite its current modest use of gas, the Western Balkans felt the effects of the European energy crisis from 2021-2022, which was driven

primarily by gas shortages and triggered by Russian supply reductions that started six months before the all-out invasion of Ukraine.

High European electricity prices, exacerbated by the scarcity of gas, affected even countries with limited or no direct dependency on the fuel. Bosnia and Herzegovina, for example, uses very little gas, is a net exporter of electricity, and has yet to fully integrate its market with neighbours – it still suffered from price spikes. Natural gas projects also divert Western Balkans governments' resources away from the renewable energy and energy efficiency projects. This in turn hampers their progress towards European Green Deal and EU accession targets.

Against this backdrop, Western Balkans governments will have to carefully consider the long-term role of gas in their energy mix. The success of the Western Balkans' energy transition will depend on balancing short-term gas needs with the pressing demand for renewable energy and market integration. For the EU, the successful integration of the Western Balkans into its energy markets and ultimately the bloc itself is a geopolitical imperative.

The impact of Russia and China

The Western Balkans attract geopolitical attention from external actors thanks to its abundant natural resources, as well as the region's location at the borders of the world's largest single market. Among the key players, Russia and China have asserted their influence, in the energy and mining sectors respectively. Their growing presence has been shaped by economic investment, political ties, and strategic partnerships, raising concerns among European leaders over the region's long-term stability and orientation.

Russian involvement in the Western Balkans energy sector is largely driven by its dominant position in global energy markets, particularly through state-owned companies like Gazprom and Rosneft. Russia has also shown interest in the development of hydropower plants in the Balkans, further expanding its foothold in the region's energy infrastructure. Russia and Serbia have speculatively discussed cooperation on nuclear technologies. Russia's energy influence serves as a powerful geopolitical tool and stifles the diversification of energy sources and infrastructure in the Western Balkans, undermining efforts to integrate with European energy markets.

China has also worked to gain a foothold in the Western Balkans. The Chinese approach to the region is part of Beijing's broader Belt and Road Initiative, which focuses on infrastructure, mining, and energy projects. Beijing's strategy involves substantial financial investment,

often in the form of loans and direct investment in energy and mining sectors, which are critical for both local economies and China's global supply chain ambitions.

China's interest in mining in the Balkans primarily revolves around securing access to critical raw materials such as copper, zinc, and lithium. In Serbia, for instance, Chinese companies have acquired significant stakes in copper mines, including the Bor mining complex. These investments secure resources for China and create leverage in local economies. China has also expanded its influence through renewable energy projects in the region. Chinese companies have invested in wind and solar energy infrastructure, often offering financing packages that are less attentive to matters such as corruption and human rights than Western alternatives. These projects align with China's global green energy strategy while also bolstering its presence in the Balkans' energy markets.

The leap to renewables

Clearly, the energy transition in the Western Balkans will be difficult. It in fact requires governments to navigate a double transition: moving from centrally controlled, national energy systems to regional and EU integration, while simultaneously shifting from fossil fuels to renewables. The drift to gas will be hard to resist, given many external players in the Western Balkans – including the EU – have gas-related interests in the region.

But it is in both the EU's and Western Balkan countries' interest to mitigate this trend towards greater gas use with a stronger focus on renewables and integration. Indeed, the region has the potential to play a pivotal role in the decarbonisation of Europe writ large by expanding the continent's ability to balance variable renewable sources through hydropower. By enlarging the region of the European electricity system, the Western Balkans can also help compensate its less sunny northern European neighbours. Moreover, closer integration will enable the Western Balkans states EU membership to move forward, thereby helping to counter Russian and Chinese influence in the energy sector and beyond.

There are several factors at the European, regional, and national levels that contribute to both the challenges and potential of this double transition for the Western Balkans.

European factors

As aspiring EU members and the bloc's immediate neighbours, the Western Balkans find themselves under strong pressure to reduce their carbon emissions. Five of the six Western Balkans nations are EU candidates, with Albania, North Macedonia, Serbia, and Montenegro

already in negotiations. Bosnia and Herzegovina has a tentative green light; Kosovo still waits in the wings.

The EU's goal to slash emissions over the next three decades means that the Western Balkans' energy sectors must undergo a radical transformation. The message is clear: decarbonise or be left behind. Time is too short for the EU and its Western Balkan partners to settle for the, at best, incremental reductions in emissions the expanded use of gas in the Western Balkans would bring.

The EU has several instruments at its disposal through which it, its member states, and their Western Balkan neighbours can (and will have to) propel and fund an ambitious double transition for the region. Perhaps the most disruptive of these is the looming CBAM.

The CBAM disruptor

The EU's CBAM is set to take effect in 2026. It is also poised to shake up Western Balkans energy markets. By imposing fees on carbon-intensive imports, including electricity, it will force the region's governments to rethink their dependence on high-emission power generation. For a region that lags in the green transition, CBAM is not just a tax – it is a wake-up call.

The CBAM is already acting as a catalyst for long-overdue discussions among Western Balkan policymakers and business leaders about the future of energy in the region. Already, carbon market activities have started in places like Albania and Montenegro. Carbon pricing talks among policymakers, national administrations, and with relevant EU authorities are gaining traction, driven by the need to compete with EU countries that are further along in decarbonisation. The mechanism levels the playing field, removing the cost advantage enjoyed by non-EU countries with dirtier energy mixes.

Without extending this debate towards a strategy to embrace carbon pricing, Western Balkan governments risk making outdated infrastructure choices, creating stranded assets, and delaying much-needed modernisation. Gas as a 'transitional' fuel is thus not compatible with offsetting companies' need to reduce their carbon payments over the long-term. The lesson is clear: delay the debate, and the region will pay the price – literally and figuratively

But the EU also has some carrots it could use to greater effect in supporting the Western Balkans on their journey towards net-zero and EU integration.

Decarbonisation through integration

The Berlin Process, launched in 2014, has been the key EU instrument driving regional cooperation and aligning the Western Balkans with the bloc's standards. Germany has taken the lead in supporting the green transition. The Tirana Summit in 2023 as part of the Berlin Process, cemented this commitment, establishing a €1.5 billion German-Western Balkan Climate Partnership to fund renewable energy projects through 2030 – the first of its kind for both Germany and for the Western Balkans.

Since Russia's all-out invasion of Ukraine, the EU has rediscovered the urgency of enlargement. This led it to build on the 2020 Green Agenda for the Western Balkans with a new five-pillar growth plan that aims to integrate the region with the EU in the broader sense. This €6 billion growth plan, presented in autumn 2023, aims in part to push reforms tied to the green agenda. But the money comes with strings attached. In the future, it is likely that EU financing will become a strong instrument for decarbonisation policies in the Western Balkans.

The Vienna-based energy community has so far been crucial in helping Western Balkan states align with the EU – and will likely continue to play a central role in promoting green agenda reforms. The energy community was founded in 2005 and now includes the EU, Georgia, Ukraine, and all the Western Balkan states. The organisation's principal task is to create a unified market between the EU and neighbours to the east. In 2022, the Energy Community adopted 2030 climate targets that broadly align with those of the European Green Deal, pushing its members towards climate neutrality by 2050 and away from fossil fuels. As the organisation is based on an international treaty, the commitments undertaken by the parties should, in principle, be legally binding.

The community's ministerial council also provides a mechanism through which EU regulations and directives are adopted by the organisation's non-EU members. Programmes under the Energy Community treaty aim to phase out fossil fuel subsidies, integrate renewable energy sources, and improve building efficiency. However, financial and regulatory constraints continue to hamper progress and leave the countries in the Western Balkans at the bottom of the European energy efficiency scale.

Beyond the energy community, the EU does not have a consistent approach to include the Western Balkans into the bloc's collective energy strategy. It could begin to rectify this via the Central and South-Eastern Europe Energy Connectivity (CESEC) high-level group. This

mechanism was initiated by the European Commission and the south-eastern EU member states following the cancellation of the South Stream natural gas pipeline in 2014. CESEC aims to avoid such aborted missions by facilitating cross-border and trans-European energy infrastructure projects in central-eastern and south-eastern Europe, including the Western Balkan countries. The format could be an effective instrument for governments and the European Commission to accelerate the region's energy transition.

As the Western Balkans inch towards EU membership, Brussels is offering support. But real progress will depend on regional cooperation, political will, and the ability to meet the EU's exacting standards for decarbonisation and energy market integration.

Regional factors

Energy cooperation among the Western Balkan countries will be a key driver of both increased use of renewable energy sources and EU integration. But it is fraught with political baggage. Tensions between Serbia and Kosovo are hindering progress. Political fragmentation and infighting in Bosnia and Herzegovina further undermine attempts to modernise and integrate regional energy systems.

Yet, the Western Balkan countries have made some baby steps in regional electricity market integration. Serbia's SEEPEX was the first operational electricity exchange in the Western Balkans; North Macedonia has launched its own exchange, MEMO. Albania and Kosovo, meanwhile, have their own joint power exchange, ALPEX. Beyond these, however, progress remains slow.

An essential factor for more effective regional integration is the expansion and modernisation of the transborder power grid. But cross-border energy infrastructure projects are often delayed or blocked due to the political barriers. The Kosovo-Albania interconnector is a prime example, having been held up for years by disagreements with Serbia. The Trans-Balkan Electricity Transmission Corridor is advancing, but this will not be sufficient to propel greater regional electricity market integration, nor for the Western Balkans to integrate with the EU's energy markets.

The EU is pushing the Regional Cooperation Council (RCC – a Western Balkan framework that aims to advance the European and Euro-Atlantic integration) to help overcome some of these difficulties, but its political clout remains limited. Nevertheless, there are signs of hope. In 2023, the Berlin Process resulted in agreements on freedom of movement and mutual university diploma recognition among the Western Balkans, proving that regional

cooperation is not entirely out of reach. If the EU – and especially Germany and France – can maintain pressure, meaningful collaboration on energy may just follow.

Domestic factors

The region's governments will have to undertake the double transition in a challenging domestic political and economic environment. They will have to carefully manage the costs of the net-zero transition – a challenge made harder by local political resistance, with some leaders insisting, often without sound arguments, that such changes could strain household budgets and undermine voter support. Moreover, this all takes place in a political landscape where fossil-fuel based energy systems are heavily subsidised and closely tied to clientelism and public sector employment. Overcoming these challenges will be crucial for the region's integration into EU energy markets, but also its alignment with the EU *aquis* more broadly.

In doing so, a key challenge is the Western Balkan states' high "energy intensity", which is the amount of energy a country uses to produce its GDP. This reflects the countries' outdated infrastructure, coal dependency, and limited improvements in energy efficiency. National efforts to reduce energy intensity will therefore be critical to promote the region's economic growth and environmental sustainability.

Heat pumps, for instance, efficiently convert electricity into heating or cooling, drastically cutting energy consumption compared to conventional systems. Heat pumps also help to improve a nation's air quality, which is a significant domestic driving force behind the increase in renewables in the Western Balkans. Currently, the region has some of the worst air quality in Europe, an inevitable side effect of their dependence on coal. This increases premature deaths, contributes to chronic illness and burdens states' health systems, and thus their national budgets. It also obstructs their progress towards EU membership and the bloc's air-quality standards.

Here again, gas will not solve the Western Balkan countries' problems as it remains a polluting fuel. Moreover, the gasification of heating is more likely to happen in commercial buildings and richer households; the use of solid fuels remains the choice of poorer households. This contributes to energy poverty and energy inequality, thereby providing fertile ground for anti-EU political actors to exploit. But a leap to renewables could be a popular move among the public in the Western Balkans: one 2023 study found that, across all six states, an average of 71 per cent of the population believed their country should obtain almost all their energy from renewable sources by 2050.

Recommendations

The Western Balkans need not drift to gas; nor does the region have to remain trapped by its ageing, centralised energy systems. The double transition that is required for the region to integrate with the EU's energy markets and meet its climate goals is ambitious. But this ambition is necessary for governments and policymakers in both the Western Balkans and in the EU for the region to overcome the delay in its modern energy-system development. It is also crucial to ensure that Russia and China do not fill the gaps that the EU could leave if it fails to support the Western Balkans on this journey.

The (geo)political barriers are significant. But the recommendations in this paper should enable all interested parties to identify practical points of agreement. This should then allow Western Balkans governments, the EU, member states, and indeed financial institutions and the private sector, to approach these challenges from the angle that their expertise and political space best permits.

How to secure the leap to renewables

Remove all fossil fuel subsidies.A good place to start for Western Balkans leaders would be to take the politically courageous decision of phasing out fossil fuel subsidies. Instead, governments should introduce a clear support programme aimed at strategically important technologies that have not yet fully matured commercially (such as heat pumps, grid connected batteries, and more). This should feature a transparent framework for gradually reducing and phasing out support as cost declines and commercial viability improves. This approach will foster market predictability, mitigate legislative risks, and ultimately lower capital costs, setting the stage for a more sustainable energy future.

Western Balkan governments should combine the removal of fossil fuel subsidies with a targeted approach to address energy poverty. This would help them move away from blanket subsidies that predominantly benefit wealthier consumers. Instead, they should introduce a nuanced support scheme that accounts for factors such as income, building efficiency, and commitment to energy-saving practices. This shift would cultivate a market environment conducive to energy efficiency while at the same time providing a fair approach to the transition.

Create "coal to net zero" clusters. Coal regions such as south-eastern Europe possess untapped potential, particularly for low-cost industrial photovoltaic installations and wind

energy generation. Western Balkans and EU policymakers should advocate for institutional backing to transition these areas into "net zero CO2 clusters". These clusters should, for example, make use of the space created by decommissioning coal mines to enable large-scale renewable energy projects. The clusters should combine these wind and solar projects with battery storage, green hydrogen production, and new generation industries. This would help coal regions transform into hubs of innovation and clean technology investment.

Accelerate rooftop solar installation. Each Western Balkans government needs to establish decentralised solar photovoltaic and solar collector networks. Rooftop solar installations could alleviate energy poverty and bolster energy security, thereby stabilising the power grid and facilitating the integration of larger renewable projects with minimal infrastructural demands. Governments should introduce legal requirements for solar installations on new buildings. Rooftop solar development should be combined with a "green-roof standard" incorporating soil and vegetation, tailored to local conditions.

Simplify wind power development. Wind energy potential remains largely untapped in the region, in part thanks to the complex and burdensome permit process for new developments. But wind generation is essential to balance overall renewable generation. Western Balkan governments should simplify the procedures for wind development by creating priority zones, introducing a transparent competitive investment process, and involving local communities. They should aim to combine these efforts with collaboration in grid planning and joint projects, particularly with coastal countries such as Croatia and Greece that could unlock significant offshore wind opportunities. Governments should also prioritise assessing wind potential in coal regions.

Create an energy-efficiency 'masterplan' platform. The EU, member state governments, and financial institutions should create a dedicated platform to support energy efficiency in the Western Balkans. This should not merely act as a bureaucratic layer but should be a catalyst for both financial and technical support. By creating a mechanism to blend diverse financial sources, this platform can unlock commercial investments crucial for energy efficiency initiatives. Projects should adhere to high technical standards and should integrate renewable energy sources and heat pumps into building renovations, thus elevating the region's sustainability profile.

Such a platform would ideally be governed by a financial institution or a newly established entity that is fortified with technical expertise. Potential partners could include the European Bank for Reconstruction and Development or the European Investment Bank. The platform should aim to mobilise investment for tangible energy-efficiency projects through innovative

financial instruments that convert projected energy savings into immediate capital. The focus would predominantly lie in the buildings sector. But this should remain an agile platform that is ready to address broader energy challenges.

Heat pumps, already prevalent as air conditioning systems, offer a dual benefit: they can significantly curtail energy consumption while enhancing energy security and air quality. The EU should therefore also back a regional heat pump initiative that encompasses financial aid for the energy poor, vocational training, robust public communication strategies, and investment in local manufacturing capabilities.

Set up a regional clean energy de-risking fund.International financial institutions and the European Commission should establish a regional energy investment de-risking fund. The international financial institutions should administer this fund. This would help mitigate investment risks in renewables and energy efficiency projects. Complementing this, the introduction of OECD governance standards for state-owned energy companies would enhance transparency, reduce corruption and, consequently, lower investment risk. These steps are also crucial for the full integration of the Western Balkans in EU energy markets.

How to accelerate EU-Western Balkans energy market integration

Upgrade national and transborder grid Infrastructure. To accommodate a surge in industrial-scale and decentralised renewable energy, the governments and transmission system operators in the Western Balkans and in the EU must enhance European grid capacity. These upgrades should aim to link large renewable energy sites with urban consumption centres, particularly in regions transitioning from coal.

The Western Balkans and neighbouring EU states should pursue ambitious cross-border interconnections. This would bolster the existing grid in the Western Balkans. Regional governments should consider new high-voltage direct current links with Italy, paving the way for the establishment of an Adriatic market zone. Such connections could better balance the growing variable power generation in the Western Balkans and the rest of Europe. This grid expansion must align with broader European electricity transmission initiatives – including connections to Turkey, the Gulf, and North Africa – so that the Western Balkans could become a strategic contributor to the EU's expanding "supergrid".

Develop a hydropower storage plan. The Western Balkans can position itself as Europe's power battery by investing in hydropower storage plants, thereby enhancing the renewable deployment capacity of the entire continent. Western Balkans states should upgrade existing

hydropower facilities to dual generation and storage units, inviting EU nations to be partners in this ambitious hydro-storage initiative. They should ensure that developments under such a plan are environmentally sound and heed science-based concerns and solutions for future developments.

Develop a battery storage strategy. The Western Balkans would also greatly benefit from the installation of local and grid-connected battery storage. However, such progress will be possible only with an adequate regional market and infrastructure strategy, possibly led by CESEC or the Energy Community, that incentivises battery installations and rewards the system service they provide. A regional battery storage strategy, developed at government level in the region, would facilitate this process.

Strive for full power market integration. Despite its historical significance, power market integration in the Western Balkans has languished under a cloud of political and incumbent industry interests. Accelerating this integration is essential for the region's energy security and operational efficiency. The Energy Community should spearhead efforts to align current market integration activities and facilitate compatibility with the EU market.

The Western Balkans EU partners must set clear expectations for rapid electricity market integration, linking development grants and other integration initiatives directly to progress in this domain. This oft-overlooked technical task is vital to foster transparent energy governance. An Adriatic electricity market initiative, supported by governments and implemented by national power exchanges could enhance this integration strategy, promoting projects that link the Western Balkans with Italy across the Adriatic Sea.

Include the region in the European Green Deal process. Lastly, integrating the Western Balkans more comprehensively into EU energy frameworks – through the Berlin Process, CESEC, and the energy community – will ensure these prospective EU members actively participate in the European Green Deal and other initiatives, bolstering their energy transition efforts. The EU should establish an innovation fund specifically for the region to further address the technological gap. With these measures, the Western Balkans can not only enhance its energy landscape but also contribute meaningfully to the broader European energy goals.

Green light

The Western Balkans, long beset by legacy issues, finds itself at a pivotal moment in addressing the intertwined challenges of energy security and environmental sustainability. Its

dependence on an ageing coal fleet has led to massive energy waste, as has its inefficient building stock. It has also contributed to severe environmental and public health damage.

Paradoxically, however, the region enjoys a degree of insulation from external energy shocks, largely due to its minimal exposure to natural gas markets and reliance on domestic energy production. This protection is precarious, as coal and biomass-based energy production is unsustainable. To secure its future, the Western Balkans and their EU partners must take urgent steps to improve energy efficiency and transition away from coal. Rising reliance on imported natural gas only adds to the geopolitical risks that could undermine stability.

The Western Balkans lies at the heart of Europe's energy landscape. This means that the full integration of the Western Balkans into the EU's energy framework is not just beneficial – it is essential. European governments, institutions, and businesses must intensify their efforts to modernise the region's energy infrastructure, reduce its reliance on imported fuels, and chart a path toward carbon neutrality. Failure to align the Western Balkans with Europe's carbon reduction targets would not only hinder the continent's climate objectives but also stifle industrial progress, which increasingly depends on decarbonisation.

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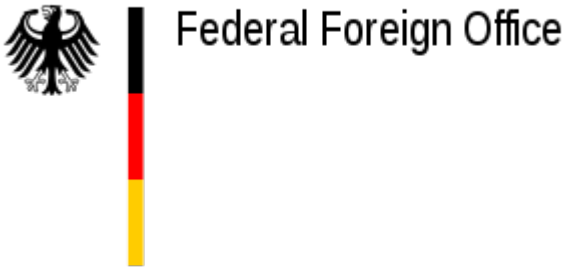
Acknowledgments

The authors wish to express their gratitude to the many people who made this work possible. Thanks are in particular due to Nastassia Zenovich's graphic design talent. This paper would not have seen the light of the day without the perseverance, rigour, and excellent editorial work that Adam Harrison and Kim Butson brought as its editors.

This paper was made possible with support from the German Federal Foreign Ministry.



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 ISBN: 978-1-916682-65-8. Published by the European Council on Foreign Relations (ECFR), 4th Floor, Tennyson House, 159-165 Great Portland Street, London W1W 5PA, United Kingdom.