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GREEN INDUSTRIAL POLICY PATHWAYS FOR MONTENEGRO'S ENERGY TRANSITION



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EXECUTIVE SUMMARY

Montenegro is entering a decisive phase of its green energy transition at a time when the country faces mounting economic, regulatory and geopolitical pressures to accelerate decarbonization while safeguarding energy security, industrial competitiveness and social stability. The transition is shaped simultaneously by the obligations stemming from the European Union accession process, the Energy Community Treaty, the Paris Agreement, the Green Agenda for the Western Balkans, and the implementation of Montenegro's updated Nationally Determined Contribution (NDC 3.0), which foresees a 55% reduction in greenhouse gas emissions by 2030 compared to 1990 levels.

Despite important progress in renewable energy deployment, Montenegro's energy system remains structurally dependent on fossil fuels, particularly through the continued operation of the Thermal Power Plant "Pljevlja" (TPP Pljevlja), which accounted for nearly 39% of total electricity generation in 2024 and continues to play a critical role in system balancing and energy security. At the same time, transport remains heavily reliant on imported oil products, which represent approximately 48% of final energy consumption. This dual dependency exposes Montenegro to rising transition costs, external energy price volatility and increasing carbon-related trade risks. The start of the implementation of the EU Carbon Border Adjustment Mechanism (CBAM) as of January 1th 2026, represents one of the most significant near-term economic challenges for Montenegro's export-oriented and energy-intensive sectors. Companies operating in sectors directly or indirectly exposed to CBAM are increasingly confronted with rising compliance costs, pressure to decarbonize production processes and growing uncertainty regarding future competitiveness in the EU market. The electricity sector is particularly vulnerable due to the carbon intensity of coal-based generation and the absence of a fully operational domestic carbon pricing mechanism aligned with the EU Emissions Trading System (ETS). Early market impacts are already visible. National Electricity Company - EPCG reported a financial loss of approximately €13 million during the first quarter of 2026 linked to CBAM-related market effects and declining export competitiveness.

At the same time, Montenegro possesses significant opportunities to reposition its economy around renewable energy, green infrastructure and emerging low-carbon industries. The country has substantial untapped solar and wind potential, while recent reforms, including renewable energy auctions, contracts-for-difference (CfD) schemes and prosumer support programs — Solari programs, have accelerated investor interest and renewable deployment. By the end of 2024, Montenegro had received requests of 4,151.3 MW of solar projects and 714 MW of wind projects, indicating strong private sector appetite for green investments. However, realizing this potential will require overcoming major structural constraints, including limited grid capacity, fragmented institutional coordination, lengthy permitting procedures and insufficient access to affordable long-term finance.

The energy transition in Montenegro carries major social and economic implications as well, particularly for the Pljevlja region, where coal mining and thermal power generation remain central to employment, local revenues and energy security. The planned gradual phase-out of TPP "Pljevlja" by 2041 and the future transformation of Coal Mine "Pljevlja" require a comprehensive Just Energy Transition approach focused on workforce reskilling, economic diversification, social protection and the creation of alternative green industries and jobs. Without carefully managed transition policies,

Montenegro risks increased regional inequalities, labor displacement, outward migration and long-term dependence on carbon-intensive sectors. In this context, coherent Green Industrial Policies (GIP) are essential to support affected workers and communities while simultaneously accelerating investments in renewable energy, green infrastructure and higher-productivity low-carbon sectors.

Financing the transition remains another major bottleneck. Although Montenegro benefits from support provided by the European Union, the EBRD, the World Bank and other international financial institutions, the scale of required investments significantly exceeds current domestic financial capacities. According to the National Energy and Climate Plan (NECP) investment assessment, total cumulative investment needs for the implementation of planned energy and climate policies by 2030 are estimated at approximately €3.87 billion (€1.7 for the acceleration of RES deployment). At the same time, the country's green financing ecosystem remains fragmented, highly dependent on external donor support and insufficiently equipped to mobilize large-scale private capital toward strategic green investments.

In this environment, coherent GIP emerges as a strategic necessity, rather than a policy option. The transition cannot be managed solely through market forces or climate regulation. Instead, Montenegro requires an integrated policy framework capable of simultaneously accelerating decarbonization, protecting vulnerable industries and workers, strengthening energy security and creating new sources of sustainable economic growth. GIP can help direct investments toward productive low-carbon sectors, support technological upgrading, reduce exposure to carbon-intensive activities and foster development of new green jobs and domestic value chains linked to renewable energy, energy efficiency, digital infrastructure, battery storage and clean technologies.

Strategically designed GIP instruments, including renewable energy auctions, public financial de-risking mechanisms, grid modernization investments, green industrial financing facilities, targeted subsidies, workforce development programs, regulatory simplification, etc. can play a central role in shaping a more resilient and competitive economic structure. Importantly, such policies can help ensure that Montenegro's transition does not result in deindustrialization or long-term dependence on declining carbon-intensive sectors, but instead contributes to higher productivity, greater economic diversification and stronger integration into emerging European green value chains.

Against this backdrop, the Report "**Green Industrial Policy Pathways for Montenegro's Energy Transition**" provides a contextualized and evidence-based assessment of Montenegro's energy transition, CBAM exposure, institutional preparedness, just transition process, financing constraints, using the most recent available data and stakeholder insights. The Report combines updated statistical analysis with the interviews with the relevant stakeholders, in order to better understand the practical challenges, investment barriers, administrative gaps and workforce transition dynamics associated with the green transition process. Through this approach, the Report aims to contribute to the design of realistic, socially balanced and economically viable policy responses capable of supporting Montenegro's long-term green transformation.

*The Report "**Green Industrial Policy Pathways for Montenegro's Energy Transition**" is the result of the implementation of the project "**Empowering the Western Balkans through Green Industrial Policies**", supported by the Open Society Foundations – Western Balkans, and implemented by GAP Institute.*

INTRODUCTION

As a part of the EU accession process, Montenegro committed to binding energy and climate targets aligned with the EU goals. Consequently, the exposure to the Carbon Border Adjustment Mechanism (CBAM), rising energy security concerns and the urgent need for economic modernization, require new approach in addressing green energy transition challenges and requirements. Hence, **Green Industrial Policy (GIP) emerges as a strategic framework capable of linking decarbonization objectives with industrial development, social protection, investment mobilization and long-term economic transformation**.

The Report "**Green Industrial Policy Pathways for Montenegro's Energy Transition**" identifies a broad set of structural challenges and emerging opportunities across four interconnected thematic areas: (1) energy transition and renewable energy deployment; (2) CBAM exposure and industrial competitiveness; (3) just transition, employment and skills; and (4) financing the energy transition. Together, these chapters demonstrate that Montenegro's green transition cannot be managed exclusively through climate regulation or market forces, but requires coordinated and proactive policy intervention capable of accelerating structural transformation, while ensuring social and economic stability. Across the four chapters, several key challenges emerge, where GIP can play a transformative role, including:

- high dependence on imported fossil fuels and continued reliance on coal-based electricity generation;
- vulnerability to external energy price volatility and future carbon pricing mechanisms;
- insufficient diversification of the energy system and limited grid flexibility;
- slow permitting procedures and fragmented institutional coordination for renewable energy investments;
- inadequate transmission and distribution infrastructure for integrating large volumes of renewable energy;
- exposure of domestic industries to CBAM-related compliance costs and declining export competitiveness;
- absence of a fully operational domestic carbon pricing system aligned with the EU ETS;
- risks of regional inequality, labor displacement and economic decline in coal-region of Pljevlja;
- insufficient workforce reskilling programs and limited preparedness for emerging green jobs;
- weak integration of domestic SMEs into renewable energy and green technology value chains;
- fragmented green financing architecture and limited access to affordable long-term capital;
- heavy dependence on external donor and international financial institutions support for financing the transition; and
- increasing economic costs associated with delayed decarbonization and postponed infrastructure modernization.

- At the same time, the Report highlights major opportunities that GIP can help unlock in support of Montenegro's long-term green transformation:
- acceleration of solar and wind energy deployment through auctions, contracts-for-difference (CfDs) and public de-risking mechanisms;
- development of domestic green industrial value chains linked to renewable energy, energy efficiency, digital infrastructure and battery energy storage systems (BESS);
- strengthening of energy sovereignty through reduced dependence on imported fossil fuels;
- modernization of electricity infrastructure, including grid digitalization and battery energy storage systems (BESS);
- creation of new green jobs and economic diversification opportunities in coal-region of Pljevlja;
- stronger integration of Montenegro into emerging European green value chains and industrial ecosystems;
- increased attractiveness for private green investments and sustainable finance;
- strengthening decentralized energy generation and prosumer participation;
- improvement of industrial competitiveness through technological upgrading and decarbonization;
- enhancement of long-term energy security and system resilience; and
- alignment with the European Green Deal, the Green Agenda for the Western Balkans and EU accession priorities.

In this regard, **GIP is not presented merely as an environmental or energy policy instrument, but as a broader development strategy aimed at simultaneously accelerating decarbonization, strengthening industrial competitiveness, protecting vulnerable workers and communities, mobilizing strategic investments and supporting Montenegro's transition toward a more productive, resilient and sustainable economic model**. The Report therefore argues that the success of Montenegro's energy transition will depend not only on the pace of renewable energy deployment, but also on the country's ability to design coherent industrial, financial, social and institutional policies, capable of managing the transition in an integrated and socially balanced manner.

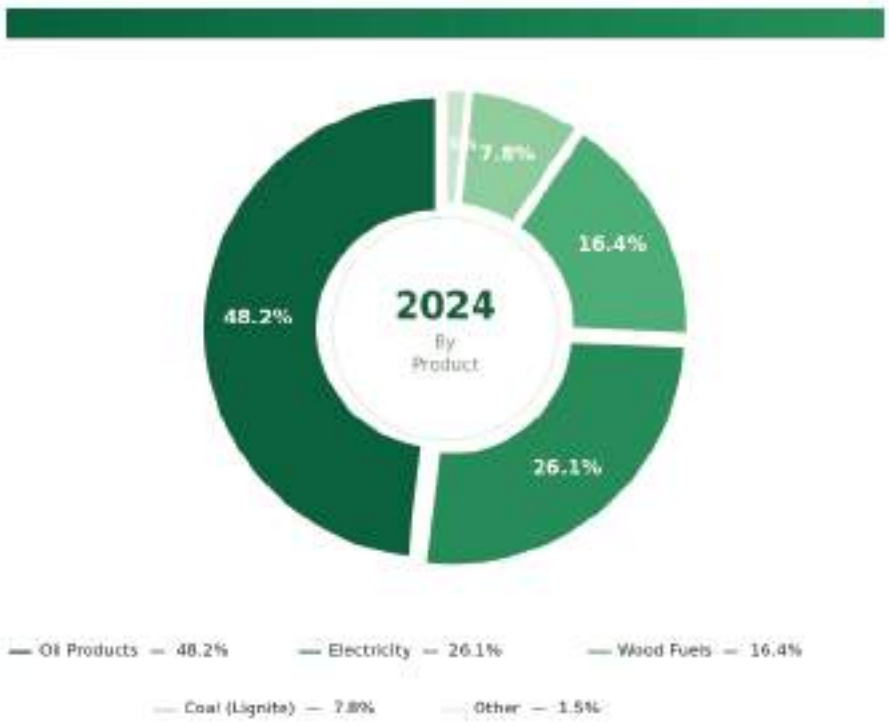
1. ENERGY TRANSITION CONTEXT AND STRATEGIC RELEVANCE[1]

1.1 Energy System Overview

Montenegro's energy system is characterized by **limited diversification of energy sources, high dependence on imported fossil fuels and a dual reliance on hydropower and coal-based electricity generation**.

Final energy consumption is composed of four main energy carriers: **oil products**, **electricity**, **coal (lignite)** and **wood fuels** *(Graph 1)*. Among these, *oil products* dominate the energy balance, accounting for approximately 48% of total final energy consumption in 2024, primarily driven by demand in the transport sector. This high share significantly shapes the country's overall energy dependency, as 100% of oil products are imported, making Montenegro structurally reliant on external energy supply. Continued reliance on imported oil products exposes the economy to international price volatility and supply risks. *Electricity* represents an increasingly important component of final energy consumption, with demand rising steadily over the period 2018–2024, reflecting broader trends of electrification and economic growth. At the same time, *wood fuels* remain relevant, particularly in the residential sector for heating purposes.

***Graph 1**: Structure of final energy consumption by product in 2024*



Source: Eurostat data (ten00122), Authors' calculations

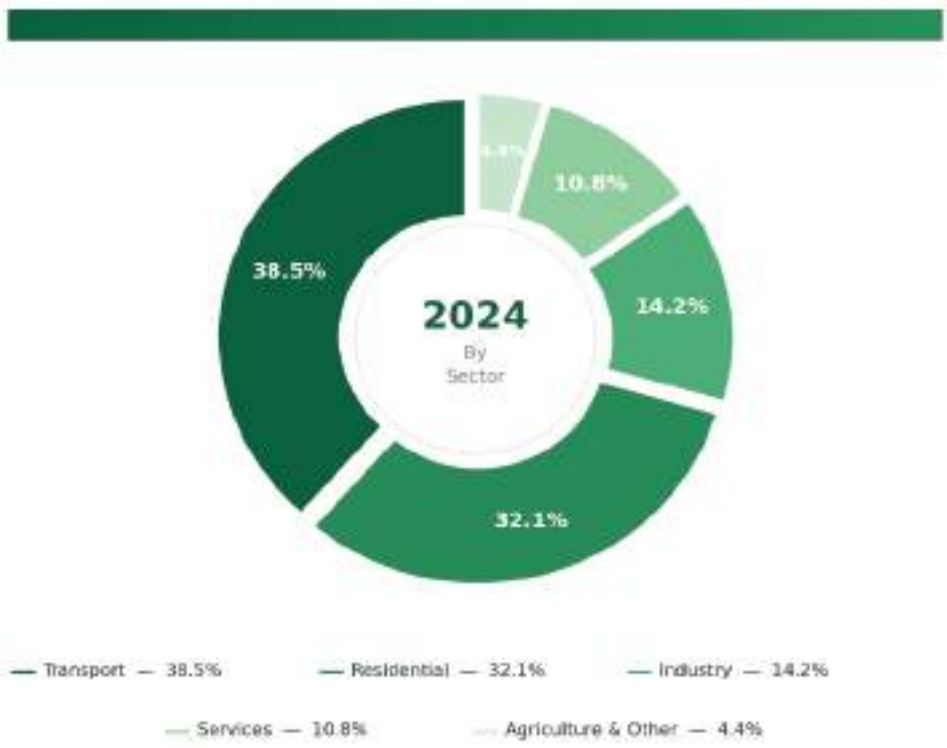
1 Sources used in this Chapter: REGAGEN, Report on the State of the Energy Sector of Montenegro for 2024 (published 2025); EPCG, Report on the Realization of Investments for 2024 (No. 10-00-23053, 27.05.2025); Coal Mine "Pljevlja" (coal production and reserves data, 2024); NECP Montenegro (2025); World Bank Country Climate and Development Report Montenegro (2024), Eurostat (ten00122), OECD Report Energy Prices and Subsidies in the Western Balkans, Energy Community: CBAM-Readiness Tracker (2025).

From a sectoral perspective, energy consumption is highly concentrated (*Graph 2*). Transport and residential sectors together account for more than 2/3 of total final energy consumption. However, their fuel structures differ significantly:

The transport sector is highly carbon-intensive, with: diesel accounting for ~80%, gasoline ~15% and minor shares of LPG and electricity;

The residential sector, by contrast, relies almost entirely on electricity and fuel wood (together ~99%).

***Graph 2**: Structure of final energy consumption by sector in 2024*



Source: Eurostat data (ten00123), Authors' calculations

Given that a large share of electricity is generated from renewable energy sources (RES) (primarily hydropower), the residential sector exhibits a comparatively lower carbon footprint, highlighting the uneven distribution of emissions across sectors.

Despite ongoing policy efforts, the **trend in final energy consumption in Montenegro is increasing rather than declining**, indicating a divergence from planned energy efficiency objectives. As shown in recent data for the period 2018–2024 (*Graph 3*), overall energy demand has grown steadily, driven primarily by rising consumption in the transport and residential sectors.

Graph 3: *Trend of the final energy consumption in the period 2018-2024*



Source: Eurostat data (ten00123), Authors' calculations

This trajectory is not aligned with the targets set in the National Energy and Climate Plan (NECP) (2025), which foresees a reduction of final energy consumption to 730 ktoe as part of the country's energy efficiency commitments. The current upward trend indicates that, without additional policy intervention, Montenegro risks missing its energy efficiency targets.

Montenegro does not produce natural gas and currently has no gas transmission or distribution infrastructure. The country is therefore not connected to any regional gas pipeline network. The Ionian-Adriatic Pipeline (IAP) project, which would connect Montenegro to natural gas supplies via Albania, Croatia and Bosnia and Herzegovina, remains under development. A new initiative under the IAP H2 project was launched in early 2025 to explore the possibility of repurposing the pipeline for green hydrogen transport alongside natural gas, and in April 2025 a Project of Mutual Interest (PMI) application was submitted to the European Commission.

1.1.1 Electricity Mix

According to the Regulatory Agency for Energy and Regulated Utilities (REGAGEN)'s data from the latest Energy Sector Report for 2024 (2025), Montenegro's electricity generation system at the end of 2024 comprised of **52 power plants** (1 coal-based thermo-power plant (TPP), 2 large hydropower plants (HPPs), 38 small hydropower plants (sHPPs), 2 wind power-plants (WPPs), as well as 9 small solar power-plants (SPPs) and 4.833 prosumers. The total **installed capacity of 1,081.454 MW** was serving **445.718 electricity customers** across **21,649.53 kilometres of transmission and distribution network**. The structure of the **total installed capacity** is the following: **hydro-power 65.18% (704.9 MW)**, **thermal-power 20.81% (225 MW)**, **wind-power 10.91% (118 MW)** and **solar-power 3.10% (33.55 MW)**.

Table 1: *Electricity mix of Montenegro*

Technology	Installed	Share of	Generation	Generation
Large Hydropower	649.000	60.01%	1,600.94	46.42%
Small Hydropower (mHE)	56.892	5.17%	155.09	4.50%
Wind Energy	118.000	10.91%	291.46	8.45%
Solar — Grid-Connected	9.499	0.88%	63.74	1.85%
Solar — Prosumer	24.051	2.22%	—	—
TPP Pljevlja	225.000	20.81%	1,337.84	38.79%
TOTAL / GRAND TOTAL	1.081.454	100%	3,449.07	100%

Hydropower (RES) Wind (RES) Solar (RES) Fossil fuel

Source: Energy Sector Report for 2024 (REGAGEN, 2025), Authors' overview

Electricity demand is largely met through domestic production. However, due to the heavy reliance on hydropower, Montenegro requires significant electricity imports during dry periods, particularly in the summer months when demand is elevated. As a result, the country's energy self-sufficiency fluctuates considerably, reflecting strong dependence on hydrological conditions.

In terms of actual generation, TPP Pljevlja remained the dominant single source at 38.79% of total production (1,337.84 GWh), while renewables and high-efficiency cogeneration accounted for 61.21% of the total 3,449.07 GWh generated in 2024.

Figure 1: *Energy Snapshot for 2024*



Source: Energy Sector Report for 2024 (REGAGEN, July 2025), Authors' overview

Fossil Fuel Dependance in Electricity Production



COAL — THERMO-POWER PLANT
One TPP "Pljevlja" - installed capacity of 225 MW
Planned Phase Out: 2041

Coal continues to play a central structural role in Montenegro's electricity system, with over 99% of domestic coal production used for electricity generation at the **Thermal Power Plant "Pljevlja" (TPP "Pljevlja")**. TPP "Pljevlja" is Montenegro's only coal-fired electricity generation facility, which remains to be a key source of baseload electricity, system stability and security of supply, representing one of the most significant pieces of energy infrastructure in the country. Commissioned in 1982, TPP "Pljevlja" has a nominal installed capacity of 225 MW. The plant's connection to the 400 kV network node at Pljevlja 2 substation also facilitates cross-border electricity exchanges with Serbia.

Table 2: *Basic facts about TPP "Pljevlja"*

TPP Pljevlja	
Installed Capacity	225 MW
Year Commissioned	1982
Owner / Operator	EPCG AD (PC Production)
Fuel	Lignite (brown coal)
Grid Connection	400 kV | 2×800 MVA
Generation 2024	1,337.84 GWh (38.79%)
10-yr Avg Generation	1,386 GWh / year
CO2 Carbon Price (ETS)	EUR 24 / tonne CO2
Share of Installed Cap.	20.81% of national total
Ecological Reconstruction	2024 — SCR, boiler, turbine
Planned Phase-out	2041 (Just Transition)
Investment 2024	~EUR 16M (30.3% of EPCG capex)

Source: Energy Sector Report for 2024 (REGAGEN, July 2025), Authors' overview

TPP "Pljevlja" plays a structurally different role in the national electricity system compared to hydropower. While hydropower provides the majority of annual generation in good hydrological years, the TPP provides stable and controllable generation throughout the year and the balancing capacity needed to compensate for the inherent variability of Montenegro's predominantly hydropower-based generation fleet. This characteristic makes it very important for system balancing, particularly during periods of low hydropower output (typically the summer months and dry years). TPP "Pljevlja" is fuelled exclusively by lignite (low-rank coal) extracted from the Pljevlja basin by Coal Mine "Pljevlja". As of December 31st 2024, total coal reserves in the Pljevlja region amounted to 177,015.328 tonnes, distributed across multiple basins and mining concession areas.

TPP "Pljevlja" operates within an increasingly constrained regulatory and market environment, shaped by EU climate obligations, carbon pricing mechanisms and Montenegro's national decarbonisation commitments. The plant has been a subject to increasing environmental obligations stemming from

Montenegro's commitments under the Energy Community Treaty and the EU accession process. It's emissions profile, particularly sulphur dioxide (SO_2), nitrogen oxides (NO_X) and particulate matter (PM), has historically been non-compliant with EU Large Combustion Plant (LCP) standards and the requirements of the EU Industrial Emissions Directive (IED, 2010/75/EU), transposed into Montenegrin Law on Industrial Emissions[2]. TPP "Pljevlja" is undergoing a major ecological reconstruction process aimed at reducing emissions and improving compliance with EU environmental standards and Energy Community obligations. The reconstruction works required the plant to be taken out of service for an extended period of approximately 8 months during 2025, significantly affecting annual generation output and the national electricity balance. The key expected outcomes of the ecological reconstruction are the following:

- Significant reduction of sulphur dioxide (SO_2) emissions, through upgraded flue gas desulphurisation (FGD) capacity and boiler adaptation;
- Reduction of nitrogen oxide (NO_X) emissions to levels required under BAT Conclusions, through SCR catalyst installation;
- Improvement in PM (dust) emission performance through upgraded heat exchange and boiler components;
- Extension of the operational life of the plant, allowing it to continue serving its system stability function through the planned transition period until 2041;
- Progress on the long-term environmental remediation of the Maljevac ash disposal site, addressing soil and groundwater protection obligations.

The ecological reconstruction, while representing a major investment in the TPP's environmental compliance, should be understood as a transitional measure, rather than a long-term commitment to coal generation. By extending the plant's operational life through 2041, while reducing its emission profile, the **reconstruction creates the operational space necessary for a managed and socially responsible transition, rather than a forced or abrupt closure. Montenegro's NECP (2025) set a 2041 phase-out target for TPP "Pljevlja"**. From a Green Industrial Policy (GIP) perspective, the transition away from TPP "Pljevlja" until 2041 requires a coordinated set of the following interventions (both demand and supply measures):

(1) the accelerated RES deployment (particularly solar and wind);

(2) the ability to replace the TPP's balancing function through alternative means (investment in grid flexibility and storage (BESS);

(3) the preparation and implementation of the Just Transition Plan for Pljevlja, which must address workforce transition, regional economic diversification and social protection;

(4) the expanded interconnection capacity;

(5) the availability of adequate financing for grid modernization, BESS deployment and RES investments; and

(6) the gradual alignment of carbon pricing with EU Emission Trading System (ETS) levels.

2 "OG of MNE", No. 17/2019, 3/2023, 34/2024

1.1.2 Electricity Pricing

Electricity pricing in Montenegro continues to be influenced by state ownership, regulated market segments and various forms of direct and indirect support mechanisms within the energy sector. According to the OECD report *Energy Prices and Subsidies in the Western Balkans* (2025), electricity pricing across the region remains strongly affected by regulated tariffs and different forms of induced support, which often keep electricity prices below full market and environmental cost levels. In Montenegro, the structure of electricity support differs somewhat from several other Western Balkan economies due to the dominant role of hydropower and relatively high share of RES generation. Nevertheless, coal-based electricity generation from TPP "Pljevlja" continues to benefit from the absence of full carbon pricing and incomplete internalization of environmental and climate-related externalities. This affects the relative competitiveness of different energy technologies and delays stronger market signals for decarbonization.

Artificially low or regulated electricity prices may reduce incentives for investments in energy efficiency, decentralized renewable generation and other clean energy technologies. According to REGAGEN (2025), electricity consumption in Montenegro increased by 3.16% in 2024 compared to 2023, reaching 2,779.529,500 kWh. Distribution customers accounted for 98.4% of total consumption (2,736.282.223 kWh). This upward demand trend indicates that electricity price signals are not yet generating sufficient incentives for energy efficiency. At the same time, these data suggest that regulated electricity pricing and incomplete internalization of environmental and carbon costs continue to shape the market structure. **Annual average day-ahead market prices in Montenegro**, similarly as in other Western Balkan countries, in 2024 remained **close to €100/MWh**. **Retail household prices, excluding taxes, rose by 5.6%** (*Source: Energy Community*). Although this suggests a gradual shift in retail pricing policies towards aligning end-user prices to underlying market-based electricity supply costs, household electricity prices in Montenegro remained significantly below the EU-27 average. This underscores the fact that most Montenegro's household consumers are still largely shielded from wholesale market dynamics and the actual costs of electricity. At the same time, this places additional financial strain on the public Electricity company of Montenegro (EPCG), which provides this price shield.

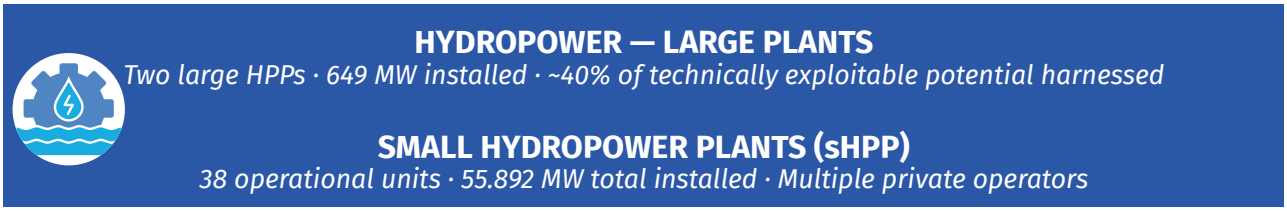
The gradual introduction of cost-reflective pricing, aligned with EU electricity market rules and carbon pricing obligations under Carbon Border Adjustment Mechanism (CBAM) and EU ETS, are expected to progressively change the economic position of fossil-fuel-based electricity generation, which can swiftly become the so called "stranded assets". Also, price convergence is one of the indicators of a well-integrated electricity market. In a more market-based pricing environment that internalizes environmental and carbon-related costs, RES technologies and energy efficiency investments are likely to become increasingly competitive relative to fossil-fuel-based generation. At the same time, the OECD analysis emphasizes that future electricity pricing reforms should be accompanied by targeted support mechanisms for energy-poor and vulnerable consumers in order to avoid negative social impacts of the transition. Finally, in the Reform Agenda 2024-2027, Montenegro committed to align with the Directive 2019/944 (article 5) related to the gradual abolishment of the public interventions in determining electricity prices.

1.2 Renewable Energy Sources (RES) Deployment

Renewable energy sources (RES), particularly hydropower, wind and increasingly solar energy, already represent a significant share of the Montenegro's electricity mix and are expected to play a central role in the country's energy transition. Country has experienced growing deployment of renewable energy technologies in recent years, particularly solar photovoltaic systems and prosumer installations, reflecting the gradual acceleration of the energy transition. Also, the steep decline in renewable technology costs globally means that solar and wind are often today the cheapest forms of energy and Montenegro's high sunshine, strong winds and abundant water make it a competitive low-cost producer in the region. However, despite relatively high shares of renewable electricity generation, the energy system remains vulnerable to climate-related factors, since seasonal fluctuations in hydropower production frequently require electricity imports during dry periods.

1.2.1 RES Potential

Montenegro possesses substantial untapped RES potential. Currently, country's **electricity generation system is dominated by RES, which account for 79.2% of total installed capacity** and 61.2% of actual electricity generation in 2024.



Hydropower constitutes the backbone of Montenegro's electricity system, accounting for 65.18% of total installed capacity (704.9 MW) and approximately 46.4% of total generation in 2024. The total theoretical hydropower potential is estimated at 10.6–10.8 TWh/year, with technically exploitable potential of 4.1–5.0 TWh/year. Of this, approximately 2 TWh/year (*nearly 40% of technically exploitable potential of main watercourses*) has already been harnessed **through two large plants — HPP Perućica (307 MW) and HPP Piva (342 MW),** which together have an installed capacity of 649 MW and an average combined annual generation of approximately 2 TWh, complemented by **38 small hydropower plants (total 55.89 MW).**

Table 3: *Basic facts about large HPPs*

Parameter	HPP Piva 342 MW	HPP Perucica 307 MW
Owner / Operator	EPCG AD (FC Production)	EPCG AD (FC Production)
Installed Capacity	342 MW	307 MW (7 units)
Expansion Planned	—	8th unit (+58.5 MW) → total 365.5 MW
Location	Pluzine municipality, Piva river	Niksic area, Zeta river system
Dam / Structure	Mratinje arch dam, 220 m — among highest in Europe	Combination dam with underground powerhouse
Grid Connection	400 kV (2x300 MVA transformers)	220 kV
Year Commissioned	1976	1960 (1st unit), fully operational 1976
Generation 2024	746.00 GWh (21.63% of national)	854.94 GWh (24.79% of national)
10-yr Avg Generation	~755 GWh/year (2015-2024)	~953 GWh/year (2015-2024)
System Role	Baseload + peak balancing; strategic water storage	Baseload + balancing; critical for system stability
Climate Sensitivity	High — reservoir dependent on Piva catchment precipitation	High — dependent on Zeta/Moraca basin hydrology

HPP Piva HPP Perucica

Source: Energy Sector Report for 2024 (REGAGEN, 2025), Authors' overview



WIND ENERGY

Two operational wind farms · 118 MW installed (291.46 GWh generated in 2024)

Wind energy exploitation in Montenegro began in 2017 with the commissioning of **WPP Krnovo (72 MW).** A second **WPP "Možura" (46 MW)** was commissioned in 2019. Together, the two operational WPPs have a combined installed capacity of 118 MW, representing 10.9% of Montenegro's total installed generation capacity and covering only a fraction of the identified potential.

Montenegro's wind energy potential has been assessed through multiple analytical studies. The CETMA study ("*Assessment of Renewable Energy Potential in Montenegro*", commissioned by the Italian Ministry

of Environment), identified two areas with significant exploitable wind potential: (1) the coastal zone, with average wind speeds of 7–8 m/s; and (2) the area around Nikšić, with average wind speeds of 5.5–6.5 m/s. Additionally, the POWERED project (2011–2015) assessed offshore wind potential in the Adriatic Sea between Montenegro and Albania, identifying the area as having substantial offshore potential. The 2014 Balkans Wind Atlas further confirmed these findings.

The **WPP "Gvozd" (54.6 MW)**, financed by a €82 million EBRD credit agreement and connected through EPCG's own infrastructure as state-owned project, was commissioned in May 2026. **WPP "Gvozd 2" (21 MW)**, for which the EPCG has secured an additional €25 million from the EBRD credit, will bring the total capacity of the wind farm to 75.6 MW. Once completed, the project is expected to generate more than 210 GWh annually and reduce CO_2 emissions by approximately 137.000 tonnes per year.



SOLAR ENERGY (PHOTOVOLTAIC)
Grid-connected: 9 plants · 9.499 MW
Prosumers: 4,833 systems · 24.051 MW | Total: 33.550 MW

Montenegro's solar resource potential is substantial. Studies indicate that more than 2.000 hours of sunshine per year are recorded across the majority of the national territory, rising to more than 2.500 hours per year in the coastal zone. Podgorica has been assessed as having greater annual solar irradiation than comparator cities in Southern Europe, including Rome and Athens.

By the end of 2024, **nine (9) photovoltaic power plants were operational with a combined installed capacity of 9.499 MW (grid-connected plants), alongside 4.833 prosumer (buyer-producer) installations with a combined capacity of 24.051 MW. By being one of the fastest-growing renewable technology over the recent years, solar energy has become an increasingly important component of the Montenegro's energy transition.**

Solar energy has historically played a limited role in Montenegro's electricity mix. Commercial solar energy exploitation in Montenegro began in 2019 with the commissioning of SPP "Invicta" (416 kW). Notably, on December 1st 2023, the SPP "Čevo" (3.25 MW) became the first ground-mounted SPP connected to the grid at the 20 kV voltage level. In 2024 alone, two new solar plants entered operation: SPP "KAP" (1.93 MW) and SPP "Voli Trade 1" (2 MW), both connected to the 10 kV voltage level.

During the period 2021–2025, **country experienced rapid growth of solar photovoltaic installations**, which emerged as **the most dynamic component of Montenegro's solar energy sector**. Growth was driven by: (1) *the 2022 amendments to the Energy Law, which introduced net metering and exemption from balancing responsibility for prosumers*; (2) *the Law on the Use of Energy from Renewable Sources (2024), which contains additional incentives for systems below 30 kW*; and (3) *EPCG's Solari programmes (Solari 3000+, Solari 500+ and Solari 5000+/70 MW)*, which actively supported prosumer installations and decentralized rooftop generation, through subsidised connection and equipment support.

Table 4: *Basic facts about Prosumer program in Montenegro*

Prosumer Segment – Key Facts	
4,833	photovoltaic systems connected to the distribution network in prosumer (buyer-producer) mode by end-2024.
24.051 MW	total installed prosumer capacity — a net increase of 10.28 MW during 2024 alone.
2.22%	share of total national installed generation capacity represented by prosumer systems.
EPCG Solari	5000+ programme (70 MW target); Solari 3000+ and Solari 500+ also active as key demand drivers.
1 prosumer mHE	Also connected: mHE "Vrelo - Manastir Moraca" (12 kW), in addition to PV installations.
Legislative support	2022 and 2024 amendments to the Energy Law (net metering, exemption from balancing responsibility) and Law on RES (2024) covering auctions, guarantees of origin and prosumer participation.
Podgorica & coast	largest concentration of prosumer installations, reflecting urban and tourism-driven demand.

Source: Energy Sector Report for 2024 (REGAGEN, 2025), Authors' overview

Through the Solari 3000+/500+ and 5000+ projects, EPCG in cooperation with the Eco Fund installed **an approximately 79.3 MW of solar power plants at 8.260 consumers** (as of August 31st 2025). As such, these projects are credited with increasing household and SME solar panel installations, driven by EU integration and rising demand for sustainable energy. The increasing deployment of solar energy is expected to improve diversification of the electricity mix and reduce seasonal vulnerability associated with hydropower dependence.

1.2.2 National Decarbonization and Energy Transition Targets

Montenegro's energy transition is shaped by a broad set of international, regional and national policy commitments that define both the direction and the level of ambition of the country's decarbonization pathway. These commitments include obligations under the **Paris Agreement**, including **Nationally Determined Contribution (NDC)**, the **Sofia Declaration on the Green Agenda for the Western Balkans (GAWB)**, **membership in the Energy Community**, and on top of that as the most important political process in Montenegro - the ongoing **European Union accession process, particularly within: Chapter 15 (Energy), 27 (Environment and Climate Change) and 20 (Enterprise and Industrial Policy)**.

Under the Paris Agreement, Montenegro submitted its first NDC, establishing a target of a **30% economy-wide reduction in Greenhouse Gases (GHG) emissions** (excluding LULUCF) by 2030 compared with 1990 levels. In 2021, Montenegro endorsed **NDC2.0**, raising its 2030 ambition to **at least a 35% reduction**, though the European Commission assessed this level of ambition as insufficient. In 2025, Montenegro submitted **NDC3.0,** significantly increasing its climate ambition. The updated target commits to a **55% reduction in economy-wide GHG emissions by 2030** (including LULUCF) and introduces a new milestone of a **60% reduction by 2035** relative to 1990 levels. NDC3.0 is presented

as the country's *highest possible ambition* in accordance with Article 4.3 of the Paris Agreement. While Montenegro's NDC 3.0 significantly raises the country's climate ambition, it lacks clear and operational implementation Roadmap for achieving the emission reduction targets (quantified pathways, timelines, sequencing of reforms and concrete sectoral transition mechanisms necessary for the implementation). Especially, there is no detailed explanation of how the 55% reduction target will be realistically achieved until 2030. Particular concern is the energy sector, which remains Montenegro's largest source of GHG emissions. NDC 3.0 does not contain policies and measures that directly address the long-term decarbonisation of the energy sector. There is no quantified data regarding the gradual phase-out of the TPP "Pljevlja", nor a sufficiently elaborated strategy for linking coal phase-out with renewable energy expansion and a just transition process for the Pljevlja region.

By signing **Sofia Declaration on the GAWB** in November 2020, Montenegro committed to align its development pathway with the European Green Deal (EGD), as a part of the EU accession process in Cluster 4 – Green Agenda and Sustainable Mobility, in all its 5 pillars (the first of the five pillars of GAWB is "climate activities, including decarbonization, energy and mobility").

In parallel, **Montenegro's obligations under the Energy Community** require progressive alignment with the EU energy and climate acquis, including implementation of renewable energy legislation, electricity market reform, energy efficiency measures and preparation of integrated climate and energy planning documents. These commitments establishing quantified targets for the: **renewable energy**, **GHG emissions** and **energy efficiency up to 2030**, are further operationalized at the national level primarily through the NECP (adopted in December 2025), the national legislative and regulatory framework, particularly the Law on the Use of Energy from Renewable Sources (2024) and supporting by-laws regulating renewable energy auctions, guarantees of origin and prosumer participation (see Chapter 1.3).

In accordance with obligations under the Energy Community Treaty and the EU Governance Regulation framework, **Montenegro committed to the following key 2030 targets for**:

- **50% share of RES** in gross final energy consumption;
- **55% reduction in GHG emissions** (to approximately 2.42 $MtCO_2eq$), compared to the 1990 level; and
- **primary energy consumption capped at 0.92 Mtoe** and **final energy consumption capped at 0.73 Mtoe**.

While baseline projections indicate that these targets cannot be achieved under existing policies alone, the introduction of additional measures is expected to close this gap, particularly through accelerated RES deployment and transport sector decarbonization. Sectoral projections highlight:

- a strong increase in renewable electricity share (up to ~79%),
- a substantial shift in transport, where RES penetration is expected to rise significantly through electrification and biofuels, and
- relatively stable contribution of renewables in heating and cooling.

This confirms that electricity (based on RES) and transport will be the key drivers of the transition, while other sectors play a more incremental role.

Table 5: *NECP's PaMs for the acceleration of RES deployment*

No.	PaM Title	PaM Description	Planed Capacity (MW)	Investment by 2030 (mil €)
1	**Development of new renewable power plants**	Projects with **high implementation readiness**: • existing HPP "Perucica" through the installation of a 8th generating unit – additional capacity 58.5 MW • new sHPP – 5,3 MW • new WPP Gvozd - 54.6 MW + 21 MW • new SPPs (Krupac, Slano and Potrlica) – 166,1 MW.	**305.5**	**€181**
2	**Large-scale expansion of renewable capacity**	More **ambitious large-scale deployment of RES**: • 145 MW of wind capacity • 746 MW of solar capacity This expansion is expected to significantly increase RES share and enable gradual substitution of coal-based generation.	**891**	**€1500**
3	**Development of decentralized renewable generation**	Promotion of distributed generation, particularly solar PV systems connected to the distribution grid (up to 5 MW per installation).	**25**	**€33**
4	**Additional support for decentralized generation (auctions and PPAs)**	Further acceleration of deployment of auction-based support schemes (PPAs) for distributed renewable projects.	**25**	**€33**
TOTAL			**1246.5**	**€1747**

Source: NECP data (2025), Authors' calculations

The **NECP defines a comprehensive set of 51 policies and measures (PaMs)**, with a strong emphasis on decarbonization. Among these, a subset of measures directly targets the acceleration of renewable energy deployment, combining utility-scale investments with decentralized generation and market-based support mechanisms. As summarized in Table 5, PaMs envisage a total planned capacity of **approximately 1.25 GW of new RES installations by 2030**, supported by **investments of around €1.7 billion**. The largest contribution is expected from large-scale solar and wind projects, while decentralized generation and prosumer-based systems play an increasingly important complementary role.

The structure of planned measures indicates a dual strategy: (i) rapid deployment of large-scale renewable projects to replace carbon-intensive generation; and (ii) gradual expansion of decentralized systems to enhance system flexibility and local energy production. However, the successful implementation of these measures will depend on overcoming key constraints, particularly related to grid capacity, project financing, permitting procedures and coordination between public institutions and private investors.

1.2.3 RES projects in the Pipeline

Montenegro's renewable energy pipeline reflects a dual investment structure, combining state-led projects with a growing portfolio of private sector initiatives. This approach is essential for achieving the country's ambitious renewable energy and decarbonization targets, while ensuring system stability and investment scalability. In the Reform Agenda 2024-2027, Montenegro committed to commission at least 200 MW of the new RES capacities (solar and wind energy) until June 2027.

A first group of projects consists of state-led investments implemented by the national utility EPCG, which accounts for more than 85% of total electricity generation in Montenegro and whose generation portfolio (particularly hydropower), provides important system balancing capacity for integrating variable renewable sources. These are projects listed in the Table 5 and represent the most advanced segment of the current RES pipeline, with relatively low implementation risk and near-term realization prospects. These projects are being developed without reliance on Government-supported Power Purchase Agreements (PPAs).

In addition to projects planned for implementation by 2030, the NECP also envisages several larger hydropower projects with longer-term realization timelines. These include HPP "Komarnica" (172 MW, 213 GWh/year projected annual production) (status: EIA submitted (project is under strict environmental constraints and the construction timeline is pending)) and HPP "Kruševo" (82 MW) (planned for commissioning after 2032, according to the NECP). These projects are also recognized within the Spatial Plan of Montenegro until 2040, adopted in 2025, as a part of the country's long-term energy infrastructure development framework. Due to their technical complexity, investment scale and environmental considerations, these projects are treated as part of Montenegro's longer-term energy transition pathway, rather than the near-term renewable deployment pipeline. Spatial Plan of Montenegro until 2040, also recognizes development of 5 WPPs and 24 SPPs.

A second group consists of RES projects led by private investors, which are essential for achieving the more ambitious targets outlined in the NECP. These projects are generally at an earlier stage of development, with remaining challenges related to technical documentation, permitting procedures, environmental assessments and financing. While investor interest is strong, the realization of these projects depends significantly on the availability of public support mechanisms, particularly in the form of market-based incentives. In this context, Montenegro has recently introduced an **auction-based support schemes for RES projects**, where investors compete for market premiums determined in relation to reference electricity prices. These mechanisms are designed to improve project bankability, reduce investment risk and ensure cost-efficient allocation of public support, while maintaining exposure of producers to market conditions, including balancing responsibilities. A key step in this direction was the launch of Montenegro's first **competitive auction for large-scale SPPs** in July 2025, under a contracts-for-difference (CfD) model, with the Government setting a ceiling price of €65 per MWh for projects awarded 12-year premium contracts aimed at reducing investor uncertainty and planning to allocate up to 250 MW of solar capacity, potentially extendable by 20% or 50 MW more. This is particularly significant considering that Montenegro currently has only around 33.55 MW of formally installed solar capacity, of which approximately 24 MW originates from prosumer systems, while utility-scale commercial solar generation remains limited. Although the initial auction did not result in any awarded projects due to non-compliant applications, the first auctions for RES, offering a competitive, transparent and predictable model that allows the market to choose the most favorable projects, is an important step towards the energy independence. The Ministry of Energy and Mining is currently preparing a revised auction call, expected to be relaunched in the near term. In parallel, the Government has adopted a *Three-year plan of the incentive system for the period 2026-2028* (December 2025), which defines technology-specific quotas, eligible renewable energy technologies and the schedule for future auctions.

According to the NECP PaM 2, large-scale auction-supported solar capacity of up to 746 MW is planned by 2030. As of the end of 2024, CGES (Montenegrin Electric Transmission System, JSC) had received 29 connection requests for solar plants (total 4,151.3 MW requested) and 5 requests for wind plants (714 MW requested), of which 8 solar agreements (2,198.5 MW) and 1 wind agreement (118.8 MW) had been concluded. These figures demonstrate strong private sector interest in solar energy development across all voltage levels.

Taken together, these developments illustrate a **complementary investment model in Montenegro's energy transition**: **state-led projects** ensure near-term capacity additions and system stability, while **private sector investments**, supported by auctions, provide the scale and acceleration necessary to meet long-term decarbonization targets.

The following table breakdowns the major energy projects (**state-led and private sector investments**), that are in the pipeline or under preparation in Montenegro.

Table 6: *RES projects in the pipeline*

RES Projects in the Pipeline

Project	Developer	Capacity	Status
HYDROPOWER PROJECTS			
HPP Perucica — 8th Unit	EPCG AD	58.5 MW	Expansion of existing plant; EPCG self-financed; no PPA required.
mHE Otilovici	EPCG AD	2.96 MW / 11 GWh	Concession June 2022; planning conditions issued; extension ongoing (Apr 2025).
HPP Komarnica	EPCG AD	172 MW / 213 GWh	Concession March 2022; EIA submitted to EPA; construction timeline pending.
HPP Krusevo	EPCG AD	82 MW	Post-2032 per NECP; geological survey completed 2024; recognized in Spatial Plan 2040.
WIND ENERGY PROJECTS			
VE Gvozd 1	DOO Green Gvozd (EPCG subsidiary)	54.6 MW	Commissioned May 2026; connects via EPCG infrastructure.
VE Gvozd 2	DOO Green Gvozd (EPCG subsidiary)	21 MW	EBRD financing secured; additional EUR 25M; total combined capacity with Gvozd 1: 75.6 MW.
VE Brajici	WPD AG + Vjetroelektrane Budva DOO	160.8 MW	Concession with Government of Montenegro; Annex 1 May 2023; Spatial Plan under preparation.
VE Bijela	Private investor	118.8 MW	Grid connection agreement concluded with CGES; EIA granted; appeal submitted to second-instance body (Ministry); this accepted it and sent the case back for retrial and decision.
SOLAR ENERGY PROJECTS			
SE Brana Vrtac, Slano, Krupac	EPCG AD	Part of ~42 MW total	Niksic area; project documentation and tender studies in preparation (2024).
SE Zeljezara + Kapino Polje L1/L2	EPCG AD	Part of ~42 MW total	Niksic steelworks site + Niksic area; under development; combined investment ~EUR 33M (NECP PaM 3).
Private solar pipeline (CGES)	Various private investors	2,196.5 MW agreed	8 connection agreements concluded from 29 requests (4,151 MW total) submitted to CGES by end-2024.

Source: Authors' overview based on the REGAGEN,
Report on the State of the Energy Sector of Montenegro for 2024 (2025); NECP (2025)

Montenegro's renewable energy transition pathway, as outlined in the NECP, is credible but very ambitious, requiring rapid scaling of renewable energy capacity, accelerated electrification and effective implementation of market-based support mechanisms.

1.2.4 Incentives to Accelerate faster RES Deployment (through GIP tools)

From a Green Industrial Policy (GIP) perspective, the structure of Montenegro's energy system demonstrates that the energy transition cannot rely solely on market dynamics, but requires active and coordinated public intervention. Montenegro's energy transition needs a gradual shift from a predominantly reactive regulatory approach toward a more strategic and developmental model of governance. From a GIP perspective, renewable energy deployment should not be viewed exclusively through the lens of climate compliance, but as a long-term strategy for economic modernization, industrial upgrading, energy sovereignty, resilience-building and integration into emerging European green industrial value chains. In this context, renewable energy policy becomes an instrument for reshaping the productive structure of the economy, reducing external vulnerabilities and creating new green growth sectors. GIP relies on strategic state intervention aimed at reducing investment risks, directing capital toward strategic sectors, accelerating technological change and strengthening domestic productive capacities. The recent expansion of renewable energy, particularly wind power and decentralized solar generation through prosumer schemes, illustrates the growing importance of state-supported transition mechanisms. Programs such as EPCG Solari, the introduction of renewable energy auctions and planned investments in grid modernization demonstrate the increasing role of public policy in accelerating deployment of clean energy technologies and reducing investment risks.

In practice, successful green transition requires a combination of demand-side and supply-side instruments. Supply-side instruments alone are insufficient if markets remain weak or uncertain, while demand-side policies may fail without adequate infrastructure, financing and institutional coordination. In Montenegro's case, the energy transition creates an opportunity not only to decarbonize electricity generation, but also to reduce structural dependence on imported fossil fuels, strengthen energy sovereignty and create new domestic value chains linked to renewable energy technologies, energy services, digital infrastructure and green construction sectors. The transition therefore requires a coordinated policy framework combining regulatory reform, public investment, financial support mechanisms and institutional capacity building in order to ensure a stable, socially balanced and economically sustainable transformation of the energy sector. The remainder of this part provides an overview of the selected GIP tools that might boost a faster deployment of RES:

1. Auctions and CfDs (Demand-side + Market-shaping GIP instruments)

A central GIP priority should be the creation of a stable and predictable investment environment, capable of mobilizing large-scale private capital toward renewable energy deployment. **The introduction of auction-based support schemes and CfDs under the 2024 Law on the Use of Energy from Renewable Sources, represents an important transition from passive subsidy-based approaches toward more sophisticated market-shaping instruments.** Unlike traditional feed-in tariffs, CfDs provide long-term revenue stability while maintaining exposure to market dynamics, thereby simultaneously improving project bankability and preserving market discipline. From a GIP perspective, CfDs are instruments for de-risking strategic investments, lowering capital costs and crowding private capital into sectors considered strategically important for long-term economic

transformation. The launch of Montenegro's first RES auction in July 2025, therefore, represents an energy market reform and an important shift toward a more proactive developmental approach to industrial transformation. According to the NECP, auction-supported deployment could mobilize approximately 891 MW of additional renewable energy capacity by 2030, including 746 MW of solar and 145 MW of wind power, with total investments exceeding €1.5 billion (Table 5).

Over time, Montenegro could gradually move toward more development-oriented auction models incorporating local employment criteria, technology transfer requirements, workforce development provisions and stronger participation of domestic SMEs in RES supply chains, in line with approaches promoted within the framework of the EGD Industrial Plan and the Net-Zero Industry Act.

2. Public Financial Instruments and Strategic De-Risking (Supply-side GIP instruments)
Given the relatively shallow domestic financial market and the capital-intensive nature of RES investments, public financial instruments remain essential for accelerating deployment. Financial de-risking mechanisms represent classic supply-side GIP tools, because they directly support the expansion of productive and infrastructure capacity required for the green transition. From a theoretical perspective, GIP literature emphasizes that strategic public de-risking is particularly important in smaller economies characterized by limited domestic capital markets, elevated infrastructure risks and technological transition costs, such as Montenegro.

In Montenegro, RES projects continue to face elevated financing costs, high collateral requirements and limited access to long-term project finance. In such conditions, the state plays an important catalytic role by lowering investment risks and mobilizing private capital toward strategic sectors. Montenegro's green financing architecture remains fragmented and heavily dependent on international financial institutions and donor-supported instruments. One important example is the development of WPP "Gvozd 1" (54.6 MW) and "Gvozd 2" (21 MW), that secured EBRD financing. While external mechanisms exists, including EBRD-supported GEFF credit lines, EU-backed guarantee schemes, blended finance facilities under WBIF and the emerging Credit Guarantee Fund framework, the country still lacks a fully integrated national green industrial financing system capable of strategically coordinating large-scale renewable energy, storage and grid modernization investments, smart grids, energy efficiency technologies, aligned with long-term industrial decarbonisation objectives. As a result, financing for the green transition remains strongly project-based, externally driven and institutionally fragmented, which may limit the pace, scale and strategic coordination of future investments. This represents a significant limitation considering that the NECP foresees approximately 1,246 MW of new RES capacity by 2030 (estimated investment of around €1.75 billion).

3. Grid Modernization and Battery Energy Storage Systems (BESS) (Supply-side + Coordination-oriented GIP instruments)
Transmission and distribution infrastructure currently represent one of the most critical structural bottlenecks for accelerated renewable deployment in Montenegro. However, from a GIP perspective, grid modernization represents a strategic enabling investment without which broader industrial and economic transformation cannot occur. The planned expansion of variable renewable energy sources, particularly solar and wind power, will require substantial investments in both transmission and distribution networks, as well as improvements in system balancing and flexibility.

The scale of investor interest already significantly exceeds existing grid integration capacity. According to CGES data for the end of 2024, investors submitted requests for more than 4,151 MW of

solar capacity and approximately 714 MW of wind capacity, while only a fraction of these projects currently possess signed connection agreements. This demonstrates that infrastructure limitations are becoming one of the principal constraints for the next phase of renewable energy expansion. In this context, the planned deployment of the BESS, should be viewed as a strategic GIP intervention aimed at enabling higher penetration of variable renewable energy, reducing balancing pressures and strengthening long-term energy resilience. Investments in BESS, grid modernization and balancing mechanisms are becoming increasingly important for maintaining system stability and integrating higher shares of intermittent RES generation. The strategic importance of storage deployment is further amplified by Montenegro's structural exposure to hydrological variability. BESS can provide three types of services at the grid level: reactive power, active power and the combination of both.

From a theoretical perspective, infrastructure investments of this type generate important "*crowding-in effects*", whereby public investment stimulates additional private investment by reducing systemic risks and improving long-term market expectations. Investments in smart grids and digital energy infrastructure may additionally generate spillover effects for engineering services, ICT sectors, technical education and higher-value industrial activities.

From a GIP perspective, regulatory simplification is an increasingly important competitiveness instrument. In Montenegro, renewable energy projects continue to require coordination among multiple institutions, including the Ministry of Energy and Mining, Ministry of Spatial Planning, municipalities, environmental authorities, EPCG, CGES and CEDIS. Delays in permitting increase financing costs, regulatory uncertainty and project development timelines, particularly in capital-intensive infrastructure sectors. Therefore, Montenegro could consider establishing a fully operational One-Stop-Shop mechanism for renewable energy investments, accelerated permitting procedures and digitalized approval systems, aligned with RED III requirements.

5. Building Domestic Green Value Chains (Supply-side + Capability-building GIP instruments)
One of the central principles of GIP is that decarbonisation should simultaneously generate domestic productive capacity and local economic value. Without targeted industrial policy measures, RES transitions in smaller economies often risk generating limited domestic value added, due to dependence on imported technologies, foreign contractors and externalized industrial benefits. Currently, Montenegro remains heavily dependent on imported RES technologies and equipment. However, important opportunities exist for local value creation in electrical engineering services, construction, installation and maintenance, grid modernization, digital energy systems and vocational education and training.

This is particularly important in the context of the planned phase-out of TPP Pljevlja by 2041 and the need for economic diversification in coal-dependent region of Pljevlja (elaborated in details in Chapter 3). In this regard, GIP instruments could support vocational training programs for renewable energy occupations, SME participation in renewable energy supply chains, industrial clustering initiatives and innovation ecosystems linked to energy transition technologies.

Importantly, Montenegro already possesses industrial assets that could support such diversification. The EPCG Željezara complex in Nikšić, where part of the planned BESS infrastructure is expected to be located, illustrates how existing industrial infrastructure may gradually be repurposed within the green transition framework.

6. Carbon Pricing as a Strategic Industrial Signal (Demand-side + Market-correcting GIP instruments)
The gradual introduction of carbon pricing, through CBAM exposure and future alignment with the EU ETS framework, will increasingly reshape investment incentives in Montenegro's economy (elaborated in details in Chapter 2). From a GIP perspective, besides being a climate policy instrument, carbon pricing is as a mechanism for reallocating capital, accelerating industrial restructuring and increasing the relative competitiveness of clean technologies. As carbon-related costs progressively increase, RES investments are expected to become significantly more competitive, particularly when combined with strategic public investments, infrastructure modernization and targeted industrial support measures.

1.2.5 Economic Costs of Delayed Energy Transition

Delays in the energy transition pose significant economic risks for Montenegro, affecting competitiveness, energy security and long-term development prospects. While the current energy system provides short-term stability, continued reliance on carbon-intensive and climate-sensitive energy sources increases the cost of future adjustment. Continued reliance on coal-based generation and hydropower-dominated electricity supply increases vulnerability to carbon pricing, fuel cost volatility and hydrological variability. Postponing the transition leads to higher system costs over time. Early and coordinated action, supported by targeted policy interventions, is therefore essential to ensure a smooth, cost-effective and just transition.

One of the most immediate risks relates to international competitiveness, particularly in the context of evolving European climate policies. As Montenegro moves toward closer integration with the European Union, carbon-intensive production structures may face increasing costs, including exposure to mechanisms such as the CBAM. The absence of the timely investments in renewable energy, grid modernization and industrial decarbonization could, therefore, reduce the competitiveness of export-oriented sectors, increase broader economic adjustment costs and limit access to key export markets. Slower deployment of renewable energy may discourage private investment, reduce the attractiveness of the energy sector, and limit the development of new industries and value chains associated with the green transition. These risks are locking the economy into a less competitive and less diversified structure.

Montenegro's heavy reliance on hydropower (HPP "Perućica" and HPP "Piva") means that climate-driven fluctuations such as droughts, irregular precipitation and reduced river flows directly affect electricity generation and EPCG's revenues. During the 2022 drought, EPCG was forced to import 294 GWh of electricity (~€700+/MWh), costing approximately €100 million over three months, as hydropower output collapsed. At the same time, TPP Pljevlja temporarily accounted for almost 94% of domestic electricity production, illustrating the high vulnerability of the existing electricity system and the growing importance of diversification, storage deployment and system flexibility. This vulnerability became particularly visible in 2024, when prolonged drought significantly reduced hydropower generation and increased the need for costly electricity imports (a direct illustration of climate-induced financial stress). As a result, EPCG's financial performance deteriorated sharply, with the company reporting a decline from a profit of €101.5 million in the first half of 2023 to a loss of approximately €3.4 million during the same period in 2024. In 2024, TPP generated 20.84 GWh above the plan to partially compensate for hydro shortfall (~–97 GWh below plan).

Finally, there are social and structural costs associated with postponing the transition. A delayed shift away from carbon-intensive activities may require more abrupt and disruptive adjustments in the future, increasing the burden on workers, regions, and public finances.

1.3 Regulatory Framework for Renewable Energy Deployment

Montenegro's energy framework plays a central role in supporting the country's decarbonization. The energy policy framework is shaped by several strategic documents that set priorities and guide implementation. The **Energy Policy of Montenegro until 2030** identifies 3 main priorities: security of energy supply, development of a competitive energy market and sustainable energy development. The **National Energy and Climate Change Plan (NECP)**, which was adopted in 2025, is a comprehensive framework that outlines national objectives, policies and measures across five dimensions: decarbonization, energy efficiency, energy security, internal energy market and research, innovation and competitiveness, through 2030, as required by the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (article 3). This strategic document is essential for integrating energy and climate policies, as well as setting clear decarbonization pathways.

The cornerstone of the Montenegro's energy legislation is the **Law on Energy**[3], which defines the scope of energy activities, regulates their operation and promotes high-efficiency cogeneration. The law further requires that local governments give priority, where feasible, to heating or cooling from RES, when planning urban infrastructure. This law is explicitly framed as a vehicle to deepen integration of Montenegro's electricity market into the European market, enhance consumer rights, facilitate citizen participation (e.g. via prosumer activity) and introduce concepts such as dynamic electricity pricing and energy poverty protection. As an umbrella law, it strengthens the institutional framework for a just transition. In particular, the law transposes key provisions of Directive (EU) 2019/944 on common rules for the internal electricity market, supporting further integration of RES and gradual transition toward a low-carbon energy system. Energy Law introduces important provisions related to active customers, aggregation and citizen energy communities, while also strengthening the framework for market-based integration of renewable energy and regional electricity market integration in line with the EU Clean Energy Package.

In 2024, Montenegro enacted the **Law on the Use of Energy from Renewable Sources**[4], aligning fully with Directive (EU) 2018/2001 on the promotion of renewable energy use (RED II). It introduces an auction system to support renewable energy projects and provides investment incentives such as streamlined permitting procedures, guaranteed grid access for renewable producers and financial support to attract investors. It declares the use of renewable energy to be of public interest and integrates renewable deployment into the electricity, heating/cooling and transport sectors. The law introduces market premiums (instead of feed-in tariffs) as incentive mechanisms for placing energy on the free market, with lower costs for citizens, defines the status of privileged (preferred) producers. The law also enables self-consumers (prosumers), formation of renewable energy communities, cross-border energy trade and sets up guarantees of origin to facilitate long-term PPAs. Importantly, further harmonization with the updated RED III framework is planned, reflecting Montenegro's continued progress toward EU integration and alignment with evolving climate and energy legislation. The implementation of the Law on the Use of Energy from Renewable Sources

3 Official Gazette of Montenegro, No. 5/16, 51/17, 82/20, 29/22, 152/22, 84/24
4 Official Gazette of Montenegro, No. 82/24

has been further advanced through the adoption of relevant bylaws, particularly those regulating the functioning of renewable energy auctions and the system of guarantees of origin. These secondary acts are essential for operationalizing the new support scheme and enabling the practical rollout of market-based instruments.

Montenegro passed the **Law on the Efficient Use of Energy**[5], which regulates the competences for the introduction and implementation of energy efficiency policies and measures to improve end-user energy consumption. The **Law on Cross-Border Energy Infrastructure Projects**[6] regulates planning, development and implementation of cross-border energy infrastructure projects aimed at strengthening energy connectivity, security of supply and alignment with EU energy policy.

1.3.1 Main Barriers to Renewable Energy Development

Although Montenegro possesses significant solar and wind potential, relatively high investor interest and an increasingly aligned legislative framework with the EU energy acquis, **several structural barriers continue to slow the pace of transition and increase the cost and uncertainty of renewable energy investments**.

One of the key barriers is related to the **limited institutional absorption capacity and slow administrative procedures**. Although Montenegro has improved its legislative alignment with RED II and is gradually moving toward RED III requirements, implementation capacity at the institutional level remains considerably weaker than the pace of regulatory reform. In practice, this creates a situation in which announced renewable energy targets and project pipelines substantially exceed the pace of the implementation on the ground.

A particularly important challenge relates to **institutional coordination and governance fragmentation**. Renewable energy development in Montenegro still requires interaction with a large number of institutions operating under different administrative procedures and timelines. Responsibilities related to renewable energy permitting are distributed among several institutions, including: the Ministry of Energy and Mining, Ministry of Spatial Planning, Urbanism and State Property, environmental authorities, municipalities, CGES as the transmission system operator, CEDIS as the distribution system operator and REGAGEN as the energy regulator. The absence of a centralized coordination mechanism often leads to overlapping competencies, procedural delays and legal uncertainty for investors. This problem becomes especially visible in larger infrastructure projects with high upfront capital costs and long investment horizons, involving spatial planning, environmental assessments, grid connection approvals and local-level permitting procedures.

The **structure of the electricity system itself also creates important transition constraints**. Montenegro's energy system was historically built around large hydropower facilities and baseload thermal generation from TPP "Pljevlja". As a result, the system remains less adapted to decentralized generation, variable renewable energy integration and advanced balancing requirements associated with high shares of solar and wind electricity. The growing dependence on intermittent renewable generation therefore increasingly requires investments not only in generation capacity, but also in system flexibility, storage, digitalization and balancing mechanisms.

An additional structural challenge stems from Montenegro's **high exposure to hydrological variability**. Because hydropower remains the dominant renewable energy source, electricity generation

5 Official Gazette of Montenegro, No. 57/14, 3/15, 25/19, 140/22
6 Official Gazette of Montenegro, No. 33/2026

fluctuates considerably during drought periods. This creates a paradoxical situation in which climate change simultaneously increases the need for accelerated decarbonization, while also reducing the reliability of the country's historically dominant renewable resource.

The **financing structure of the transition also remains a significant constraint**. Although investor interest exists, the domestic financial system still has limited capacity to support large-scale green infrastructure investments independently. Renewable energy financing remains heavily dependent on international financial institutions, donor-supported facilities and externally driven blended finance mechanisms. This dependence creates vulnerabilities related to financing continuity, project preparation capacity and long-term investment coordination.

Spatial and environmental conflicts are becoming increasingly relevant as renewable energy deployment accelerates. Montenegro's ecological profile, biodiversity sensitivity and strong dependence on tourism require a more sophisticated balance between renewable energy expansion and environmental protection objectives.

The transition is additionally constrained by **limited domestic industrial and technological capacity linked to renewable energy value chains**. Montenegro remains highly dependent on imported technologies, foreign contractors and external engineering expertise. As a result, a substantial share of the economic value generated through renewable energy investments risks leaking outside the domestic economy. At the same time, shortages of specialized technical skills related to renewable engineering, grid digitalization, storage systems and advanced energy management may become increasingly visible as deployment accelerates.

Land-use planning and property-related issues also remain important implementation barriers, especially in the context of strategic energy infrastructure and renewable project siting. The recent adoption of the Spatial Plan of Montenegro until 2040 represents an important step toward improving long-term planning certainty for energy infrastructure development. The next important phase involves harmonization and adoption of spatial and urban planning documents at the municipal level in accordance with the national spatial planning framework, which will be particularly important for facilitating renewable energy deployment and related grid infrastructure development.

Finally, one of the most important long-term barriers relates to **the absence of a fully integrated strategic transition model linking energy policy, industrial policy, financing policy and labor market transformation**. Although Montenegro has adopted ambitious climate and energy targets, the broader institutional architecture required for managing a deep structural transition is still evolving. In practice, this means that renewable energy policy often remains treated primarily as an energy sector issue, rather than as part of a broader strategy of industrial modernization, competitiveness and economic restructuring.

1.3.2 Permitting and Licensing Procedures

RES projects in Montenegro are subject to complex multi-stage permitting and licensing procedures involving several institutions at both national and local levels. Depending on the size, technology and location of the project, developers are typically required to obtain: spatial planning approvals, environmental impact assessment (EIA) approvals, urban-technical conditions, energy permits, construction permits, grid connection approvals and licensing approvals issued by REGAGEN.

Although the regulatory framework is broadly aligned with EU energy legislation and Energy Community obligations, implementation in practice remains administratively demanding and time-consuming. Renewable energy investors frequently face uncertainty regarding procedural timelines, sequencing of approvals and institutional coordination requirements, which may significantly affect project bankability, financing conditions and overall investment predictability. In practice, this often creates lengthy coordination procedures and administrative bottlenecks, particularly for utility-scale solar and wind projects requiring simultaneous progress across multiple approval tracks. Project realization therefore depends on the synchronization of spatial planning procedures, environmental assessments, infrastructure development and grid connection processes.

Several recent projects illustrate these implementation challenges. For example, although WPP "Gvozd" secured financing, its commissioning timeline was postponed relative to earlier energy planning projections. The Long-Term Energy Balance had originally envisaged the project entering operation during 2024, while it was commissioned in May 2026. Similarly, the development of WPP "Brajići" required additional amendments to implementation timelines and the preparation of a dedicated Detailed Spatial Plan in order to create the necessary spatial-planning conditions for project realization. These examples demonstrate how permitting and spatial-planning procedures may significantly influence implementation dynamics even for strategically important projects.[7]

Grid connection procedures are becoming another increasingly important component of renewable energy permitting. According to REGAGEN data, CGES received 29 requests for SPP connections and 5 requests for WPP connections, between August 2020 and the end of 2024. However, only 8 solar connection agreements and 1 wind connection agreement had been concluded by the end of 2024. These figures indicate both the exceptionally high level of investor interest and the growing pressure on existing grid integration and administrative processing capacities. In practice, delays in grid connection procedures may directly affect financing conditions, project sequencing and the ability of investors to participate in future auction schemes.

Licensing procedures are regulated under the Energy Law and secondary legislation adopted by REGAGEN. During 2024, REGAGEN issued 3 new licenses in the electricity sector, while also processing numerous amendments, extensions and modifications of existing licenses. At the same time, the adoption of the new Law on the Use of Energy from Renewable Sources introduced important reforms related to market premiums, guarantees of origin, renewable energy communities and auction procedures, representing a significant modernization of the renewable energy regulatory framework. Further harmonization with the revised Renewable Energy Directive (RED III) is expected

7 The case of SPP "Briska Gora" further illustrates the legal and procedural risks associated with large-scale renewable investments. Although the project had previously advanced through the concession process, in 2024 the Government annulled the earlier Decision establishing the ranking of bidders, following prior Court proceedings, effectively preventing realization of the originally planned investment framework. This case highlighted the importance of legal certainty, procedural transparency and institutional consistency for maintaining investor confidence.

to place stronger emphasis on: accelerated permitting procedures, establishment of centralized permitting coordination mechanisms, digitalization of approval processes and designation of Renewable Acceleration Areas.

While companies generally acknowledge that Montenegro has improved its regulatory alignment with EU standards and introduced more modern renewable energy legislation, they identify implementation procedures as one of the key bottlenecks slowing renewable energy deployment. In practice, companies frequently point to the absence of clear procedural timelines, overlapping institutional competencies and prolonged coordination between different authorities as major operational challenges. The lack of a centralized permitting authority means that investors must communicate separately with ministries, municipalities, environmental agencies, transmission and distribution operators, cadastral authorities and regulatory institutions, often without clearly synchronized procedures. This increases administrative uncertainty and complicates project planning, particularly for larger utility-scale investments. In smaller energy markets such as Montenegro, even moderate administrative delays may substantially affect project economics and investor appetite.

From an investor perspective, prolonged permitting procedures increase project development risk in several ways. First, delays may lead to higher financing costs, because capital remains tied to projects for longer periods before construction can begin. Second, developers face increased expenditures related to technical studies, environmental documentation, legal services and repeated administrative procedures. Third, inflationary pressures and volatility in equipment prices may significantly increase total investment costs if projects are delayed over several years. These risks are particularly relevant for solar and wind projects, where profitability is highly sensitive to financing conditions, equipment prices and construction timelines.

1.3.3 One-Stop Shop

It is recognized the importance of simplifying administrative procedures for renewable energy investments, particularly in the context of accelerating implementation of the NECP and attracting private sector investment. However, despite visible legislative progress, **Montenegro still lacks a fully operational One-Stop-Shop mechanism for renewable energy investments**. As a result, project developers continue to navigate multiple parallel administrative procedures involving different authorities and approval systems, which may increase project development timelines and transaction costs. This issue is becoming increasingly important with the growing pipeline of private renewable energy projects and the introduction of auction-based support schemes, where implementation speed and regulatory predictability are critical for project bankability, as well as in the context of accelerated renewable deployment targets under the NECP.

Further alignment of the Law on RES with the revised Renewable Energy Directive (RED III) is expected to place greater emphasis on simplification of permitting procedures, establishment of one-stop-shop mechanisms and identification of renewable acceleration areas aimed at facilitating faster deployment of renewable energy projects, as envisaged in the Reform Agenda 2024-2027.

1.4 Grid Capacity and Modernization

The expansion of renewable energy in Montenegro is increasingly constrained by grid capacity and system flexibility limitations, which are identified in the NECP among the most critical bottlenecks for the energy transition. While the existing transmission and distribution network managed by the transmission system operator (TSO - CGES) and distribution system operator (DSO - CEDIS) is sufficient for current levels of generation and consumption, integration of significantly higher shares of variable renewable energy, particularly solar and wind power, will require substantial modernization and expansion of grid infrastructure. On the positive side, distribution system losses continued their downward trend, falling from 10.83% in 2023 to 10.51% in 2024 (which is a significant improvement from the 22.76% recorded in 2007), primarily driven by the deployment of smart metering infrastructure. Transmission losses remained stable at 1.56%.

The renewable energy and decarbonization scenarios defined in the NECP are developed in accordance with the long-term (ten-year) development plans of the transmission and distribution system operators. In line with the Energy Law, both the TSO and DSO prepare ten-year power grid development plans subject to approval by the national regulator (REGAGEN). **CGES has prepared a Transmission System Development Plan covering the period 2023–2032**, focused on transmission network reinforcement, regional interconnections and integration of new renewable generation capacity. In parallel, **CEDIS adopted the Distribution System Development Plan for the period 2023–2032**, which places particular emphasis on modernization of distribution infrastructure, increased energy efficiency, digitalization and integration of decentralized RES, including prosumer-based solar generation. Accordingly, the NECP recognizes investments in transmission and distribution infrastructure, regional interconnections and system modernization as key enabling measures for the implementation of the planned RES transition, in line with the development plans of CGES and CEDIS.

Despite the existence of long-term planning documents, important implementation challenges remain. Investors are increasingly facing constraints related to grid connection capacity, particularly in areas with high RES potential and limited transmission infrastructure. Additional challenges relate to insufficient system flexibility for balancing variable renewable generation, as well as delays in development of new transmission infrastructure, often associated with spatial planning, permitting and land-use procedures. These challenges are becoming important in the context of Montenegro's growing renewable energy pipeline, including utility-scale solar and wind projects, rapid expansion of prosumer-based solar generation and planned auction-supported investments.

Beyond capacity constraints, Montenegro's grid and energy infrastructure also face direct physical climate risks. Flood risks weigh heavily on hydropower infrastructure and substations. In June 2024, a major regional blackout affected Montenegro alongside Albania, Bosnia and Herzegovina and Croatia, with excessive cooling demand during a heatwave, amplified by transmission infrastructure strain, identified as a contributing factor. Transmission lines in above-ground configurations are vulnerable to flooding, windstorms and the increasing frequency of lightning strikes.

The NECP identifies the development of BESS as an important strategic measure for increasing system flexibility and facilitating higher integration of variable renewable energy sources. The document recognizes that rapid expansion of solar and wind power significantly increases balancing require-

ments and complexity of electricity system management. In this context, EPCG is expected to play a central role in development of large-scale BESS infrastructure aimed at strengthening balancing capacity and improving integration of renewable generation. The NECP envisages deployment of approximately 240 MW/240 MWh of BESS capacity connected to the transmission network, including potential locations such as HPP Perućica, Steel Factory Nikšić and the WPP Gvozd connection point. In parallel, additional medium-scale BESS solutions at the distribution level are being considered in order to support decentralized generation and prosumer integration.

Montenegro has already initiated important investments in grid modernization and regional interconnection infrastructure, including further development of the submarine electricity interconnection with Italy and reinforcement of the national transmission network. However, the scale and pace of planned investments will need to increase significantly in order to support implementation of the NECP and integration of more than 1 GW of planned renewable energy capacity by 2030. A €35 million EBRD loan for ADMS/SCADA deployment (signed in January 2025) and a €5 million Western Balkans Investment Framework (WBIF) grant for smart digitalization represent critical first steps toward a more resilient and manageable distribution system.

Without timely grid modernization and increased system flexibility, infrastructure constraints may delay project realization, increase system costs and limit the overall effectiveness of Montenegro's energy transition. Infrastructure constraints may also affect broader industrial transition objectives by slowing electrification, reducing investment predictability and limiting the development of new industrial activities linked to renewable energy and green technologies.

1.5 Energy Transition and EU Integration

Montenegro has made steady progress in aligning its legislative framework with EU requirements. The legislative alignment is relatively advanced compared to other Western Balkan countries. At the same time, the implementation of adopted policies and legislation remains one of the key challenges identified in successive European Commission reports, as follows:

In the field of **energy (Chapter 15)**, Montenegro has continued to align its legal and regulatory framework with the EU acquis, particularly through the adoption of legislation related to renewable energy, electricity markets and energy efficiency. Important progress has been achieved through the adoption the of the new Law on the Use of Energy from Renewable Sources, the new Energy Law and the implementation of market-based support mechanisms for renewable energy deployment, including auction schemes and CfDs. In parallel, Montenegro continues gradual integration into the regional and European electricity market in line with Energy Community obligations. As Montenegro pursues accession to the EU, compliance with Chapter 15 on is crucial. Its obligations include adopting the internal energy market acquis, separating energy entities, embedding energy efficiency measures and managing oil reserves. Laws and regulations in this area reflect Montenegro's ambition to reform its energy system, attract investment and comply with EU and Energy Community Acquis.

In the area of **environment and climate change (Chapter 27),** progress has been more gradual. Implementation challenges remain significant, particularly regarding air quality, industrial emissions, waste management, environmental infrastructure and long-term decarbonization. As far as part

on Climate change is concerned, Montenegro needs to significantly strengthen its administrative capacities in the climate change sector, as deficiencies in this area hamper progress. The Law on Climate Change[8] aiming to align with the 2050 climate neutrality target and introducing legal basis for monitoring, reporting, verification and accreditation (MRVA) of GHG emissions, was adopted in December 2025. Montenegro must fully align with the MRVA *acquis,* to cover the full EU Emissions Trading System (ETS) scope, which means to include stationary installation, aviation, shipping and ETS2 (buildings, road transport and small industry) sectors and commence its full implementation as soon as possible. Decisive steps are needed to improve current and/or establish the new carbon pricing mechanisms, to facilitate joining the EU ETS upon accession. Montenegro still needs to align with EU *acquis* on emissions from the Land Use, Land Use Change and Forestry (LULUCF) sector and emissions from vehicles, and more broadly increase its alignment with EU climate *acquis*.

With regard to **competition policy (Chapter 8)**, Montenegro has continued alignment of state aid rules with EU requirements, including in the energy sector. The transition from administratively determined support schemes toward competitive auction-based renewable energy support mechanisms represents an important shift toward market-based allocation of public support, in line with EU state aid principles and internal energy market rules.

In relation to the **Chapter 20 - enterprise and industrial policy**, which has been provisionally closed, European Commission noted that the implementation of the 2024-2028 Industrial policy, aligned with the current EU industrial policy, is ongoing.

1.5.1 Reform Agenda

In 2023, the European Commission introduced the **EU Growth Plan for the Western Balkans**, to enhance the region's socioeconomic alignment with the EU and deepen economic ties with the EU's Single Market and within the Western Balkans via a common regional market. Implementation of the plan occurs via **Reform and Growth Facility (RGF) for the Western Balkans**, with a total financial envelope of **€6 billion for 2024–2027,** consisting of *€2 billion in grants* and *€4 billion in concessional loans*, to finance sustainable and climate-relevant investments. The RGF was formally established under Regulation (EU) 2024/1449[9]. As such, since the adoption of the **Reform Agenda of Montenegro 2024–2027 for the RGF** in 2024, Montenegro's energy transition is increasingly shaped not only by the general EU accession process, but also by implementation of the Reform Agenda 2024–2027, as a new performance-based reform mechanism linked to the RGF.

The Reform Agenda of Montenegro 2024–2027 encompasses 32 reform measures grouped into broad policy areas: (1) business environment and private sector development; (2) digital and energy/green transition; (3) human capital development; (4) rule of law and fundamental rights. Within each policy area, reforms are further divided into specific reform measures, implementation steps and performance indicators associated with defined deadlines. **Disbursement of EU financial support is directly linked to successful implementation of these reform steps, creating a significantly stronger connection between reform implementation and access to EU financing compared to previous pre-accession instruments**. Under the RGF, the **allocation for Montenegro amounts to €383.5 million** (€110 million in grants and €273.5 million in concessional loans), subject to the implementation of

8 "Official Gazette of Montenegro", No. 149/25
9 Regulation (EU) 2024/1449 of the European Parliament and of the Council of 14 May 2024 on establishing the Reform and Growth Facility for the Western Balkans

these reforms. Of the total, €178.5 million is to be allocated as budget support, with the remaining €205 million directed to infrastructure through the WBIF.

In the area of **digital and energy/green transition**, Montenegro's Reform Agenda defines a comprehensive set of reform measures and implementation milestones to be achieved by the end of 2027. The reform package is organized around **several major reform areas**, including:

(1) full implementation of the electricity integration package;

(2) gradual tariff adjustments to cost-recovery levels, accompanied by measures addressing energy poverty;

(3) implementation of priority policies and measures from the NECP;

(4) improvement of the national emissions trading and monitoring framework;

(5) development of transparent and competitive procedures for renewable energy deployment;

(6) implementation of the Renewable Energy Directive (RED II), including permitting reforms, guarantees of origin and support for prosumers;

(7) increasing renewable electricity generation capacity and improving utilization of existing generation facilities;

(8) implementation of energy efficiency and air pollution legislation.

Overall, the energy/green transition component of the Reform Agenda includes **27 individual implementation steps** associated with specific deadlines and performance indicators, linked to approximately €80 million of EU financial support under the RGF. According to the Third Semi-Annual Report on the Implementation of Montenegro's Reform Agenda 2024–2027, adopted by the Government of Montenegro in January 2026, Montenegro had successfully implemented 4 out of 9 energy/green transition reform steps scheduled for completion by the end of June 2025, corresponding to approximately €8 million of potential EU financial support. Although implementation of several implementation steps experienced delays, the Government reported additional completed reforms in a subsequent Progress report submitted to the European Commission in January 2026.

Montenegro's energy transition is therefore increasingly shaped by EU-driven obligations that are becoming progressively more binding, as the accession process advances. Key near-term priorities include implementation of the NECP, further alignment with EU climate and energy legislation, acceleration of renewable energy deployment and electricity market reform, development of a carbon pricing framework and strengthening of institutional and administrative capacities for the implementation of the EU Acquis. Failure to achieve agreed reform steps within the defined implementation deadlines may delay or reduce access to EU financial support under the RGF. Conversely, successful implementation can unlock significant financial resources for infrastructure modernization, renewable energy deployment, just transition measures and broader economic transformation. The table below summarizes the key energy/green transition conditionalities, their legal basis, and their disbursement linkage.

Table 7: *Key energy/green transition conditionalities in The Reform Agenda*

REFORM	INSTRUMENT	STATUS / DEADLINE	FINANCING LINK
Energy Performance Certificates (EPBD)	EPBD transposition/ Reform Agenda — Green Transition	Completed (linked to first RGF disbursement)	€383.5 million from RGF
NECP adoption	Energy Community Governance Regulation	Adopted in December 2025	RGF pre-condition
Law on Renewable Energy Sources	Reform Agenda / Energy Community acquis alignment	Adopted in 2024	RGF milestone
Electricity market integration and market coupling	Energy Community electricity market acquis	In progress (2025–2026)	WBIF infrastructure support
ETS strengthening and carbon pricing alignment	Reform Agenda — Energy/ Green Transition	In progress	RGF milestone
CBAM compliance infrastructure	EU CBAM Regulation	Full implementation of the CBAM Regulation started as of January 1st 2026	Market-access obligation
Just Transition Plan — Pljevlja	Reform Agenda / Just Transition framework	Expected by the end-2026	RGF disbursement condition
Low-Carbon Development Strategy	Law on Climate Change	Expected in 2026	RGF milestone

Source: Authors' overview

As it can be seen from the Table 7, in Montenegro conditionality works, but implementation lags. The **EPBD conditionality** was met and triggered the first disbursement. However, the majority of substantive energy/green transition reforms remain in preparatory or legislative stages, with real infrastructure investment and carbon pricing measures deferred to 2026–2029. This creates a risk that Montenegro collects early tranches through legislative steps, while the harder structural reforms (coal phase-out, ETS alignment, CBAM readiness), are postponed.

CBAM is the most commercially urgent external driver (see more details in Chapter 2). Unlike Reform Agenda conditionalities, CBAM operates on an EU regulatory timeline, independent of Montenegro's political calendar. Companies exporting to the EU are already in the transitional reporting phase. Financial obligations crystallize from Q1 2027. This makes ETS strengthening and MRVA system development the most time-sensitive near-term obligation.

The **NECP** is the anchor document. All other energy/green transition conditionalities (renewable energy targets, energy efficiency, decarbonization), flow from the NECP. The **Just Transition — Pljevlja** nexus is a named commitment. The coal phase-out in Pljevlja is explicitly cited in the European Commission's assessment of Montenegro's Reform Agenda as a facility-linked conditionality. Progress here is not merely a domestic policy choice. It is a monitored, results-linked condition for accessing €383.5 million in EU support.

2. CARBON BORDER ADJUSTMENT MECHANISM (CBAM) AND TRADE EXPOSURE

Carbon Border Adjustment Mechanism (CBAM) is the EU's carbon border pricing instrument designed to prevent "carbon leakage"[10] and ensure that imported products entering the EU market are subject to a carbon cost equivalent to that borne by goods produced within the EU under the EU Emissions Trading System (EU ETS)[11]. CBAM represents one of the most ambitious and transformative elements of the EGD and the EU's broader climate neutrality strategy. It is intended to ensure that the decarbonization efforts undertaken by EU industries are not undermined by the relocation of carbon-intensive production to countries with less stringent climate policies or by increased imports of carbon-intensive products from third countries. CBAM was conceived as a mechanism to preserve the environmental integrity of EU climate policy, while protecting the competitiveness of European industries during the green transition.

At its core, CBAM functions as a climate-related trade mechanism that applies a carbon price to certain imported goods based on the GHG emissions embedded in their production. The mechanism seeks to equalize carbon costs between domestic EU producers, who are already subject to the EU ETS, and foreign producers exporting goods into the EU market. In practice, this means that importers of selected carbon-intensive products into the EU must report the emissions associated with those products and eventually purchase CBAM certificates corresponding to the embedded carbon emissions. The price of these certificates is linked to the prevailing price of allowances under the EU ETS.

CBAM was established through *Regulation (EU) 2023/956* as part of the *EU's "Fit for 55" package*, which aims to reduce EU GHG emissions by at least 55% by 2030 compared to 1990 levels. The mechanism entered into force on May 17th 2023, while its transitional phase began on October 1st 2023. The definitive system became fully operational on January 1st 2026. CBAM covers a limited number of highly carbon-intensive sectors considered to be at greatest risk of carbon leakage, including: 1. **cement, 2. iron and steel, 3. aluminum, 4. fertilizers, 5. electricity, 6. hydrogen**, and **7. certain downstream products linked to these sectors**. CBAM is directly linked to the gradual phase-out of free emission allowances currently allocated to EU industries under the EU ETS. Between 2026 and 2034, free allowances for sectors covered by CBAM will be gradually reduced, while CBAM obligations are simultaneously phased in.

10 Carbon leakage occurs when companies relocate production from jurisdictions with strong climate policies and higher carbon costs to jurisdictions with weaker environmental regulations and lower production costs. It can also occur when EU-made products are replaced by more carbon-intensive imports from countries without comparable climate measures.

11 The EU ETS is the EU's main policy tool for reducing GHG emissions and combating climate change, operating as of January 1st 2025. It operates on the "cap-and-trade" principle. A limit (cap) is set on the total amount of emissions that certain sectors can produce, while companies receive or buy emission allowances that they can trade with one another. The system covers sectors such as the energy production, heavy industry, aviation and maritime transport. Companies that reduce their emissions can sell unused allowances, while those that exceed their limits must buy additional permits or face penalties. Over time, the cap is gradually reduced, encouraging innovation, energy efficiency and the transition to a low-carbon economy.

2.1 CBAM Sectoral Exposure

Since no Contracting Party of the Energy Community benefited from a CBAM exemption, as of January 1st 2026 CBAM applies charges to imports of carbon-intensive products from non-EU countries, including Montenegro. As of January 1st 2026, annual monitoring and declaration of the embedded GHG emissions in CBAM goods imported into the EU, under CBAM accounting rules, kicked off. CBAM declarants (EU importers of CBAM goods) will be obliged to pay for these embedded GHG emissions by continuously purchasing and surrendering CBAM certificates at the end of each declaration period. CBAM declarants will only be able to purchase CBAM certificates starting in February 2027, covering the embedded emissions of their imports in 2026, meaning that the first CBAM compliance payments for monitored emissions for Montenegro are to be made in the first quarter of 2027. The exact CBAM price is not yet known, until all technical rules are in place. The fact that CBAM's final calculation methodology for 2026 has not been fully determined yet, puts even more pressure on the economy. The cost will be calculated retroactively, which means that the operations carried out today are executed without certainty regarding their final financial outcome. Even though all calculations are subject to changes depending on the CO_2 emission prices and on the volume of exports, it is clear that the payments will have a significant both microeconomic and macroeconomic impact. For each quarter in the 2026, the European Commission will calculate the price of CBAM certificates, as the quarterly average of the EU ETS auction clearing prices of allowances, in line with the methodology established under the CBAM. On April 7th 2026, the European Commission published the first official quarterly price for CBAM certificates for 2026, setting it at €75.36 per tonne of CO_2 equivalent. The European Commission also announced the publication schedule for subsequent quarterly CBAM certificate prices in 2026, with the Q2 price to be published on July 6th 2026, the Q3 price on October 5th 2026 and the Q4 price on January 4th 2027. As of 2027, the European Commission will calculate a weekly price for the CBAM certificates.

Montenegro is currently the only country in the Western Balkans that has formally established a national ETS. The system was introduced through the Climate Law adopted in 2019 and represents an important institutional step toward gradual alignment with the EU ETS and preparation for the implementation of the CBAM. The national ETS applies to stationary installations and requires operators covered by the system to obtain emission permits issued by the competent authority. The system establishes a cap on total GHG emissions and provides for allocation of emission allowances through a combination of free allocation and auctioning mechanisms regulated by the Regulation adopted in 2020. Under the national ETS, Montenegro applies a national carbon price, while the total annual amount of allowances is gradually reduced through a linear reduction factor. The ETS cap is reduced by 1.5% per year until 2030, contributing to the 55% 2030 target. The system also includes provisions related to carbon leakage protection and transitional free allocation of allowances for certain industrial installations and coal-based electricity generation.[12]

National ETS generates revenues, channeled through the Environmental Protection Fund (Eco-Fund), that reinvest carbon pricing proceeds to support renewable energy, innovation and environmental protection. The small base of emitters limits revenue (the EPCG as the operator of TPP "Pljevlja" is the only participant in the national ETS), but the Eco Fund structure ensures efficient reinvestment into low- carbon transition. The Eco-Fund currently generates between €10 million and €13 million

12 A particularly important element of the system relates to the TPP "Pljevlja". Under the ETS scheme, free allowances allocated to coal-fired electricity generation were envisaged to gradually decrease after 2021 with the objective of phasing out free allocation and progressively increasing exposure to carbon pricing.

annually from CO_2 emission charges paid by EPCG. Although Montenegro's national ETS remains substantially below the EU ETS price level, establishment of the system demonstrates certain degree of institutional preparedness compared to other economies in the region of the Western Balkans. At the same time, the system remains at an early stage of development and several important implementation challenges remain.

Box 1: *Description of national ETS*



Source: Author's contribution

However, exporters of carbon-intensive products to the EU will face significant financial penalties, unless Montenegro aligns its domestic carbon price or national ETS (currently €24/tCO2-eq) with the EU's ETS (approximately €80/tone). Namely, this gap creates a structural incentive misalignment that affects investment decisions in clean energy and exposes the electricity sector to CBAM costs when exporting to the EU market. In addition, Montenegro as majority of Western Balkan countries primarily acts as transit corridor for electricity flows to EU Member States, rather than exporter. Much of the electricity flowing through Montenegrin system originates in EU or non-EU Member States. The origin of electricity is assigned to the last non-EU country it transited, rather than the country where it was actually generated. This poses the risk that EU importers will face CBAM charges on electricity that may have originated from another EU Member State, simply because it passed through a non-EU country. In the absence of a robust mechanism to verify the true origin of imported electricity, flows from non-EU countries to the EU should be understood as a mix of actual exports, intra-regional exchanges and transits.[13] The Energy Community warns that "*without such systems, CBAM implementation risks misallocating costs, distorting price signals and weakening decarbonization incentives and environmental credibility*".

2.1.1 Specificities of sectors affected by the CBAM

Currently, **there is no consolidated figure identifying the exact number of Montenegrin firms that will be directly affected by CBAM**. Montenegro's institutional framework for CBAM monitoring and reporting is still developing, and public authorities have not yet released a comprehensive registry of affected companies. The absence of exact data is also linked to the fact that CBAM exposure depends not only on the sector itself, but on whether firms export CBAM-covered products to the

13 https://www.energy-community.org/dam/jcr:78740bd6-dba0-4e8b-855c-69f00c84bc73/25343_EC_CBAM_v09_AU_pages_LQ.pdf

EU. Some firms operating in energy-intensive sectors may not be directly exposed if they primarily serve the domestic or regional non-EU market. Anyhow, **Montenegro's vulnerability** to the CBAM **is concentrated in a relatively small number of strategically important industrial and energy companies, rather than in a broad manufacturing base**. This implies that targeted policy responses in a small number of sectors could significantly mitigate overall economic risks. The most relevant sectors include:

Electricity production, due to the cross-border trade with the the EU (National Electricity Company – EPCG, as the operator of TPP "Pljevlja" as well as the Coal Mine "Pljevlja")

The electricity sector represents Montenegro's single most important source of CBAM exposure. Since CBAM directly applies to the cross-border electricity trade, Montenegro is among the most exposed Western Balkan economies in this regard, since electricity is the top export item in Montenegro's external trade balance. Electricity exports have become one of the country's main export products over the last several years, largely due to the reduced domestic industrial consumption after the decline of heavy industry. In 2025, electricity exports amounted to €95.5 million, accounting for approximately 16.7% of Montenegro's total merchandise exports (*Source: MONSTAT*). Hence, the electricity sector is already facing immediate exposure, particularly in relation to exports to the EU and future alignment with EU carbon pricing requirements. Given the continued role of coal-based generation, through the TPP "Pljevlja", the carbon intensity of exported electricity leads to additional costs under CBAM, making EPCG directly exposed to carbon pricing mechanisms. Under CBAM logic, coal-based electricity effectively carries an embedded carbon cost that can approach EU ETS levels of €70-80 per tone of CO_2, compared with significantly lower domestic pricing frameworks.

From 2026, additional CO_2 fees apply to coal-based electricity generation at TPP "Pljevlja", on top of national ETS payments. Based on the OECD and Bankwatch studies, it can be calculated that the carbon intensity of electricity generated from lignite at the TPP Pljevlja is approximately 0.9–1.1 tCO_2 per MWh[14]. At recent EU ETS allowance prices of around €70–80/tCO_2, this corresponds to an implied carbon cost of roughly €60–90 per MWh of electricity generated. Such levels increasingly undermine the economic viability of coal-based exports. Hence, **Montenegro's coal-based energy exports may face diminishing competitiveness unless the country aligns its energy practices with EU ETS and transitions toward cleaner energy production**.

Aluminum and metal processing (companies linked to the former Aluminum Plant (KAP) industrial chain)

The aluminum sector represents a complex case, which is highly exposed due to its energy-intensive nature and dependence on electricity prices and carbon intensity. In May 2023, primary aluminum production in Montenegro officially ended after 52 years. Basic metals and aluminum remain part of Montenegro's manufacturing exports, although their importance has significantly declined compared to previous years due to reduced aluminum production capacities. Since 2023, KAP facilities (taken over by company "Uniprom" in 2014 after KAP's bankruptcy proceedings), have continued operating only in downstream aluminum processing, importing aluminum feedstock and producing alloys and billets, rather than smelting primary aluminum domestically. The shutdown of

14 OECD (2025), Energy Prices and Subsidies in the Western Balkans: Reforms for a Fair and Green Future, OECD Development Pathways, OECD Publishing, Paris, https://doi.org/10.1787/082ea26a-en.
https://bankwatch.org/wp-content/uploads/2017/03/briefing-Balkans-CO2-29Mar2017.pdf?

primary smelting changed Montenegro's electricity balance. According to the Energy Balance data, the facility consumed approximately 580 GWh annually before operations were scaled down. KAP's closure brought the plant's share of electricity demand to less than 1% of national consumption. This helped transform Montenegro from a structurally electricity-deficient economy into a larger electricity exporter during favorable hydrological years. However, this also increased Montenegro's CBAM exposure through electricity exports instead of aluminum smelting. Although KAP no longer operates at former capacity levels, metallurgy and metal processing remain economically relevant through aluminium processing, steel products, fabrication industries and export-oriented metalworking activities. Hence, metal processing industries remain vulnerable to rising electricity prices and carbon pricing obligations, because energy costs constitute a major share of total production costs.

For Montenegro, all this creates a structural competitiveness challenge, because electricity prices, coal dependency and incomplete alignment with EU ETS rules, altogether increase potential CBAM liabilities. **The aluminium sector is therefore doubly exposed: 1. through direct CBAM obligations on aluminium exports; and 2. through indirect exposure to rising electricity and carbon costs**. With the CBAM, carbon-intensive aluminium production outside the EU may become progressively less competitive unless producers reduce embedded emissions, switch to renewable electricity, modernize production technologies or operate under equivalent carbon pricing systems.

The case of aluminum processing in Montenegro, therefore, illustrates the broader transformation pressures created by EU climate policy. It demonstrates how CBAM, EU ETS reform, electricity market prices and decarbonization policies are reshaping industrial competitiveness and forcing carbon-intensive industries either to modernize, restructure or shut down production.

2.1.2 Difficult to decarbonize industries

The hard-to-abate sectors, such as cement, steel, glass & chemicals sectors, are almost nonexistent in Montenegro. Namely, production of chemicals and chemical products is at the level of only 0.1% of GDP, meaning that Montenegro is almost completely relying upon import of chemicals and chemical products. Montenegro has a moderate, but largely underutilized resource potential for cement production, primarily due to the availability of high-quality limestone deposits and growing domestic demand for construction materials (infrastructure investments, tourism development and real estate construction). Despite that, Montenegro remains highly dependent on cement imports from neighbouring countries, because the country lacks large-scale integrated cement production facilities. Several initiatives and feasibility studies related to a future cement plant in Pljevlja have been developed in recent years, including projects linked to the broader "Green Pljevlja" transition concept in 2023. As EU climate requirements become more stringent, producers and importers linked to construction materials will likely face increasing compliance costs and competitiveness pressures.

Since sectors that currently rely on fossil fuels must be electrified and some must seek alternatives to electrification (e.g green hydrogen) in order to use renewable energy, hydrogen is seen as a business opportunity for companies in Montenegro. The NECP examined two hydrogen development scenarios, a moderate hydrogen scenario and an ambitious hydrogen scenario, with projections extending toward 2050. Investments related to hydrogen development could range from approximately €127 million to €212 million by 2050, depending on the pace of technology and market development.

In December 2025, Montenegro adopted the **Green Hydrogen Development Programme together with an Action Plan for the period 2026–2028**, as one of the first countries in the Western Balkans that prepared a dedicated strategic document focused specifically on green hydrogen development. The Programme is aligned with Montenegro's NECP, EGD and broader EU decarbonization objectives. In this document, green hydrogen is identified as a strategic energy carrier that could support Montenegro's transition toward a climate-neutral economy, while strengthening energy independence and improving the flexibility of the national energy system. The document identifies transport, heavy industry, energy storage and electricity-system balancing as the most perspective areas for future hydrogen use. Particular emphasis is placed on heavy road transport, maritime transport and selected industrial processes, where technological alternatives remain limited. At the same time, the document openly identifies several important constraints and risks. These include high production costs of green hydrogen, limited availability of electrolyser technologies, lack of hydrogen transport and storage infrastructure, limited research and development capacity, and the still dominant role of fossil fuels in the energy system.

2.2 Export of CBAM-covered sectors to the EU (Trade Exposure)

The EU represents Montenegro's most important external trading partner, accounting for the dominant share of Montenegro's exports and underscoring country's systemic vulnerability to the EU CBAM compliance costs. According to MONSTAT data, approximately 45-55% of Montenegro's total exports are directed to the EU market. Montenegro exports to the EU in several CBAM-covered sectors. As already underscored, the most important CBAM-exposed export sector for Montenegro is **electricity** (16.7% of total goods exports). Italy represents the main EU market for electricity exports through the Montenegro–Italy submarine interconnector (500 kW), completed in 2019, and is part of the Energy Community for Southeastern Europe, which fosters regional integration in energy markets. For CBAM sectors other than electricity, the clearest exposure is **aluminum/non-ferrous metals**. MONSTAT reports total exports of non-ferrous metals of €25.12 million in 2025, while the broader CN section "*base metals and articles of base metal*" reached €52.30 million. According to UN Comtrade mirror data reported by Trading Economics[15], EU imports of aluminum from Montenegro were $31.9 million in 2025, confirming that aluminum is the main non-electricity CBAM export category to the EU. This equals around 6.6% of total EU imports from Montenegro in 2025.

Iron and steel exposure is much smaller. MONSTAT reports Montenegro's total exports of iron and steel at only €697,000 in 2025. UN Comtrade mirror data show EU imports of iron and steel from Montenegro of $321,280 in 2025, which represents only about 0.07% of total EU imports from Montenegro. **Fertilizers** are negligible. MONSTAT reports total fertilizer exports of only €17,000 in 2025, while EU mirror data show EU imports of fertilizers from Montenegro of only $3,250. This is statistically insignificant, about 0.001% of EU imports from Montenegro. **Cement and construction materials** exist as a trade category, but Montenegro is not an exporter of CBAM-relevant cement to the EU. MONSTAT reports exports of the broader CN section "*articles of stone, plaster, cement, ceramic products and glassware*" at €5.04 million in 2025, but this is not equivalent to CBAM-covered cement and clinker.

15 UN Comtrade is the official United Nations international trade database managed by the United Nations Statistics Division (UNSD). It is the primary global source of data on merchandise trade between countries.

According to the Paper prepared in 2026 by *Carbon Balance Initiative* and *Oxford Sustainable Finance Group*, **electricity exports dominate CBAM-relevant trade for Montenegro (82%), while the rest is aluminum (17%)**[16]. The same Paper calculates **the share of the CBAM products to the EU export of 15% of the overall Montenegro's export**.

Over the last years, **total employment in the industrial sector was stable, with the share of 7-8% in total registered employment in Montenegro**. Majority of employed in the industrial sector is in manufacturing (70%), followed by the electricity sector (19%) and mining and quiring (10%). The **share of the industrial sector (manufacturing + energy + mining) in the country's GDP in 2025 was around 8%**. Although the overall contribution of CBAM-covered sectors to Montenegro's GDP and employment remains relatively limited compared to more industrialized economies in the region, their strategic importance is considerably higher due to their role in export generation, electricity market integration, stable employment in economically vulnerable regions and regional industrial value chains.

At this stage, most Montenegrin MSMEs are not directly exposed to CBAM, since exposure is concentrated in a small number of bigger energy and industrial companies. However, EU ETS 2[17] is much more relevant for MSMEs, because it covers fossil fuels used in buildings, road transport and small industry. Unlike CBAM, ETS 2 is not limited to heavy exporters. It is an upstream system, meaning the legal obligation falls mainly on fuel suppliers, but the cost is likely to be passed through to end-users, including small businesses. For Montenegro, this means that future alignment with ETS 2 could affect MSMEs through higher prices of diesel, petrol, LPG, heating oil and possibly other fossil fuels used for business operations. The most exposed MSMEs would be: road transport operators, delivery companies, taxi operators, logistics firms, construction companies using diesel machinery, small manufacturers, bakeries, hotels, restaurants, retail shops, repair services and any business heating premises with fossil fuels. In other words, **while CBAM affects mostly a narrow industrial/export base, ETS 2 could affect a much broader part of the economy through operating costs**. This is particularly important because Montenegro's economy is dominated by services and micro and small enterprises. Many of them do not export CBAM-covered goods, but they depend on transport, heating, cooling and energy-intensive daily operations. Therefore, **ETS 2 could become a more socially and economically sensitive issue than CBAM for the private sector as a whole**. This makes ETS 2 highly relevant for MSMEs competitiveness, especially in transport, tourism, trade, construction and small manufacturing.

For Montenegro, the key point is that ETS 2 is not yet fully implemented, but the country is expected to align with the EU ETS framework as a part of EU accession and Energy Community obligations. The *European Commission's 2025 Montenegro Report* explicitly "*encourages Montenegro to align with the full EU ETS scope, including stationary installations, aviation, shipping and ETS 2 sectors: buildings, road transport and small industry*". Hence, **Montenegro's transition to a low-carbon,**

16 Carbon Balance Initiative, Oxford Sustainable Finance Group: CBAM and Carbon Pricing in the Western Balkans: One Region, Many Transitions (2026). https://static1.squarespace.com/static/6356ae7301c557236d624c7f/t/695bbf4d28bb286a51651a27/1767620429365/One+Region%2C+Many+Transitions+-+CBAM+and+Carbon+Pricing+in+the+Western+Balkans.pdf

17 The EU ETS 2 is a new emissions trading system established by the EU as part of the "Fit for 55" package and the broader EGD framework. Unlike the existing EU ETS, which mainly covers large industrial installations, power plants and aviation, ETS 2 is designed to regulate GHG emissions from fuel use in sectors that were previously not directly covered by carbon pricing mechanisms, primarily buildings, road transport and parts of small industry. The system is expected to become fully operational in 2027, although implementation could be postponed to 2028, if exceptionally high energy prices persist. The European Commission has already adopted the initial emissions cap for ETS 2 of 1,036,288,784 allowances and established the legal and technical framework for its implementation. The system is linked with the Social Climate Fund, which is intended to support vulnerable households, transport users and micro-enterprises affected by higher fuel and heating costs.

resilient economy is now shaped by an increasingly clear policy trajectory, but its success will ultimately hinge on the speed and scale of private-sector adaptation. From compliance with emerging EU-level standards to innovation, investment and operational transformation, businesses will play a decisive role in turning regulatory ambition into concrete actions.

2.3 CBAM impact on affected companies

Exporters from Montenegro to the EU market increasingly need to measure, monitor and reduce the carbon intensity of their products. As the operator of Montenegro's only coal-fired power plant and the dominant source of carbon-intensive electricity generation, EPCG is directly exposed to both Montenegro's national ETS and the CBAM. EPCG estimates that Montenegro's annual CBAM-related costs could reach approximately €191 million, an amount equivalent to several percentage points of national GDP. Similarly, in 2025 Energy Community approximated possible financial exposure of EU importers to the CBAM-related products from Montenegro in the amount of €190 million. The immediate constraint for EPCG is that passing costs onto consumers is not an option. As a result, the financial impacts of CBAM-driven changes in cross-border trade are unlikely to be felt directly by Montenegrin households. Since electricity price increases are not being considered, CBAM effectively forces the company to absorb the financial impact internally. This creates a compression effect on margins. On one side, CBAM reduces achievable export prices, while on the other, regulated domestic tariffs limit revenue recovery. The result is a narrowing financial corridor in which profitability depends increasingly on external variables, such as hydrology and market spreads. Under current market and regulatory conditions, **every megawatt-hour of electricity generated from coal and exported increasingly bears a significant carbon-related cost burden that cannot easily be transferred to domestic consumers or fully compensated through regional electricity trade**. As a result, assets that were once highly profitable are gradually becoming economically constrained and less competitive under the emerging low-carbon market framework.

At the end of 2025, Ministry of Energy and Mining has been engaged in discussions with the European Commission on finding a more flexible model for CBAM implementation, including the possibility of postponement or exemption mechanisms for the electricity sector. The Government has warned that, without an adequate solution, CBAM could reduce the competitiveness of Montenegro's electricity exports, create additional financial burdens for the energy sector and negatively affect investments. At the same time, Montenegro has intensified legislative alignment with the EU energy acquis in order to accelerate integration into the European electricity market. In February 2026, the Parliament adopted the Law on Cross-Border Energy Infrastructure Projects[18], making Montenegro the first Energy Community Contracting Party to transpose the EU TEN-E Regulation into the national legislation. This reform is considered as an important step toward electricity market coupling with the EU, improved regional interconnectivity and deeper integration into the European energy market. The Energy Community also launched a compliance verification process related to Montenegro's implementation of the Electricity Integration Package, which is a prerequisite for future market coupling with the EU prior to accession.

Although Montenegro is not directly exporting the EU customs system in all cases, the mechanism operates indirectly through price formation across interconnected regional markets. Electricity prices in EU-linked markets are adjusted to reflect carbon costs, which in turn lowers the achievable selling price for exporters, like the EPCG. In practical terms, the company sells electricity at a discount relative to what it would have achieved in a non-CBAM environment. This means that the absence of a

18 "OG of MNE", No. 33/2026

full carbon cost internalization currently continues to distort electricity market signals in favor of fossil-fuel-based generation. EPCG informed that CBAM-related market effects resulted in a €13 million loss during the first quarter of 2026 (Source: EPCG). According to the company statements, the mechanism reduced the competitiveness and market value of electricity generated from coal-based source, TPP "Pljevlja", further illustrating the growing economic exposure of carbon-intensive electricity generation in the regional and European market context.

So far, the EPCG's immediate strategy has been primarily market-oriented, focusing on shifting a portion of electricity exports toward regional non-EU markets, where CBAM obligations do not yet apply, thereby reducing exposure to carbon-related costs and EU market penalties. These alternative regional markets are generally characterized by lower electricity prices and greater price instability, which means that redirecting exports alone cannot fully compensate for the financial pressures created by CBAM. Montenegro's mixed electricity sources (hydro, coal, wind and solar) will influence the price of CBAM certificates for EPCG differently: coal-based generation will be charged at a higher rate, while electricity from hydro, solar and wind will be priced lower or exempt. However, the renewable origin of exported electricity will need to be demonstrated in order for CBAM not to apply. By 2034 (when CBAM fees will be fully aligned with the EU ETS), Montenegro is expected to have limited exports of carbon-intensive products to the EU, as electricity exports are expected to be predominantly renewable.

At the same time, the EPCG is pursuing a longer-term structural transition toward cleaner energy production (described in details under 1.2.3). These initiatives indicate a gradual, but clear shift toward RES and lower-carbon generation capacity, motivated not only by alignment with EU climate and energy policies, but also by the growing economic imperative to reduce future carbon-related costs and maintain competitiveness. Montenegro's energy sector is, thus, moving into a fundamentally different development stage in which long-term economic sustainability will increasingly depend on the pace of decarbonization. As EPCG accelerates the transition from coal-based generation toward RES and more flexible energy capacities, its ability to maintain and strengthen competitiveness in a progressively carbon-regulated European electricity market, is expected to improve. In simplified terms, **electricity produced from coal in Montenegro is increasingly more expensive on a carbon-adjusted basis, than renewable or low-emission generation within the EU**. The main implications for Montenegrin companies related to carbon pricing are summarized in Table below.

Table 8: *The main implications for Montenegrin companies related to CBAM*

Requirements	Opportunities
Montenegro's coal-based energy exports must be gradually aligned with the EU ETS to avoid facing declining competitiveness	Renewable electricity reduces CBAM-related costs and strengthens competitiveness.
To be exempt from CBAM, goods exported from Montenegro to the EU must be subject to a carbon price equivalent to the EU ETS.	The shift toward exporting renewable-based electricity by 2034 will open new business and market opportunities.
The carbon price applied to Montenegro's electricity mix (hydro, wind, coal) will differ depending on the source and must be properly accounted for in CBAM calculations.	There is growing investment potential in renewable energy, grid modernization and energy services.
By 2034, CBAM charges must be fully aligned with the EU ETS price.	Companies can benefit from regional electricity trading and emerging green markets.

Source: Private Sector Transition to a Low-Carbon Economy in Montenegro, International Labor Organization (2025)

Aligning Montenegro's ETS with the EU ETS would support future market linkage and integration, as well as help mitigate potential CBAM-related trade impacts by demonstrating equivalent carbon-pricing measures. In practical terms, for goods produced in Montenegro and exported to the EU to be exempt from CBAM, they will need to be subject to an effective carbon price equal to the EU ETS price. Similarly, CBAM certification costs could be lowered through **electricity market coupling with the EU**, which would exempt electricity from the CBAM. Such market coupling is also envisaged under the 2022 Electricity Integration Package. Namely, **article 2(7) of the CBAM Regulation** provides that if a third country or territory has an electricity market that is integrated with the Union internal market for electricity through **market coupling** and there is no technical solution for the application of CBAM to the electricity imports into the EU from that third country or territory, such imports shall be exempt from application of CBAM. This exemption is possible only if a set of conditions is met (transposition of the Acquis relevant for coupling – Electricity Integration Package[19]) and the Commission's verification confirms compliance. In line with the Market Coupling Steering Committee's decision, once the Electricity Integration Package is fully transposed and its compliance verified and the Market Coupling Operation Integration Plan (MCO IP) is approved by ACER, an 18-month period must follow, during which contractual and technical readiness for market coupling must be ensured by Contracting Parties' NEMOs and TSOs. Article 2(7c) of the CBAM Regulation also requires the submission of a **Roadmap**, in which the third country must outline the main milestones and schedule for complying with the following obligations: a) developing a long-term Strategy and, where applicable, communicating it to the United Nations Framework Convention on Climate Change (UNFCCC), b) including the 2050 climate neutrality objective in both the Strategy and domestic legislation, and c) aligning domestic legislation with the EU climate acquis, including carbon pricing at a level equivalent to that in the EU, in particular for electricity generation, and implementing an ETS for electricity, with a price equivalent to the EU ETS, by January 1st 2030. The final condition for an exemption is establishment in the third country of an **effective system to prevent indirect import of electricity into the EU** from other third countries or territories that do not meet the exemption criteria.

The **process of Montenegro's electricity market coupling with the EU is underway through a collaboration with Italy**, and the construction of the Montenegrin section of the Trans-Balkan Electricity Corridor has been substantially completed. All this, along with aligning legislation with the EU, has paved the way for an agreement with the Italian company "Terna" on a second submarine power cable to Italy (up to 1.2 GW), designed to double the interconnector's existing capacity and position Montenegro as an energy bridge between the Western Balkans and the EU and the Energy Community member states electricity networks, enabling clean energy exports to one of Europe's largest markets. The second submarine power cable to Italy is a strategic Project of Common Interest under the EU TENT/Energy networks framework, envisaged to improve energy supply security, reduce transmission losses and enable deeper integration of RES across borders. The project is crucial for Montenegro's day-ahead market coupling with Italy and connection to the EU single electricity market, with digital integration expected by late 2026 or early 2027 and full integration by 2036–2037.

19 The Electricity Integration package encompasses nine legal acts adopted by the Ministerial Council Decisions No 2021/13/MC-EnC and No 2022/03/MC-EnC: Regulation (EU) 2019/941, Regulation (EU) 2019/942, Regulation (EU) 2019/943, Directive (EU) 2019/944, Commission Regulation (EU) 2015/1222, Commission Regulation (EU) 2016/1719, Commission Regulation (EU) 2017/2195, Commission Regulation (EU) 2017/2196 and Commission Regulation (EU) 2017/1485, adapted for the Energy Community Contracting Parties.

2.4 CBAM Readiness and Administrative Capacity

CBAM also has institutional implications for Montenegro. Its operation is technically complex and relies heavily on emissions **monitoring, reporting, verification and accreditation (MRVA) system.** The establishment of domestic MRVA system is a legal obligation requiring the transposition of core provisions of the EU ETS Directive[20] and specific Commission Implementing Regulations, the Monitoring and Reporting Regulation (MRR)[21] and the Accreditation and Verification Regulation (AVR)[22]. Since **MRVA system represents one of the key institutional preconditions for effective implementation of carbon pricing and future alignment with the EU ETS and CBAM requirements**, its launch in Montenegro is the obligation from the Reform Agenda 2024-2027. That means that the progress in this area is also a condition for EU support programmes. Without such alignment, Montenegrin exporters may continue facing significant CBAM-related financial burdens in EU markets.

The MRVA system is expected to strengthen monitoring and reporting of GHG emissions, improve transparency and verification procedures, as well as create basis for more effective implementation of carbon pricing mechanisms in line with the EU standards. For Montenegro that means obligation of the calculation of the direct GHG emissions embedded in exported products, and in some cases indirect emissions associated with electricity consumption. The data collected by operators throughout the year, compiled in Annual emission reports and verified by independent verifiers, must be complete, reliable and consistent over time. The methodology for calculating embedded emissions follows detailed EU rules intended to ensure consistency, transparency and comparability across countries and sectors. The number of CBAM certificates required to be purchased and surrendered from 2026 onward depends on: the quantity of emissions embedded in imported goods, the applicable EU ETS carbon price, as well as any carbon price already paid in the exporting country. Since Montenegro already applies a carbon price equivalent to €24 per ton, this amount will be deducted from the CBAM obligation.

Although the original due date for establishing MRVA system (end of 2025) is missed, the Government must urgently develop sophisticated MRVA systems, emissions inventories, accreditation procedures, carbon accounting methodologies and administrative capacities. This is especially due to the fact that Montenegro as a country hit by CBAM obligation, needs to provide detailed emissions data to EU importers and regulators. In Montenegro, as a country with limited administrative and technical capacity, this represents a major governance and compliance challenge in this area.

Figure 2: *CBAM compliance steps*



Source: Author's contribution, based on the EU CBAM Regulation

20 Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading as adapted and adopted by Ministerial Council Decision 2022/05/MC-EnC

21 Commission Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC as adapted and adopted by Ministerial Council Decision 2022/05/MC-EnC

22 Commission Implementing Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC as adapted and adopted by Ministerial Council Decision 2022/05/MC-EnC

As depicted in Figure 2, companies exporting to the EU are obliged to begin measuring product-level emissions, establishing internal carbon accounting systems, requesting emissions data from suppliers, shifting toward renewable electricity, investing in cleaner technologies, as well as reconsidering sourcing and supply chain structures. These developments signal a structural shift in how businesses in Montenegro approach decarbonization, driven by market necessity and regulatory compliance requirements embedded in the EU's trade architecture. Since these are new obligations, companies must be provided with the technical targeted trainings and EU twinning programs.

Having in mind that company-level exposure to CBAM in Montenegro is concentrated in a limited number of sectors and companies, preparedness for CBAM obligations is uneven and largely depends on the institutional, technical and financial capacities of a relatively small number of economically significant actors. Key challenges include:

- limited experience with carbon accounting and emissions verification;
- evolving monitoring, reporting and verification requirements;
- need for investments in energy efficiency and low-carbon technologies;
- uncertainty regarding future carbon pricing obligations and compliance costs; and
- limited access to financing for decarbonization investments.

Institutional capacities for MRVA system and carbon accounting are still underdeveloped. Although with the limited administrative capacities, Montenegro should opt for implementing domestic MRVA system to track and verify GHG emissions in line with EU methodologies, rather than outsourcing to EU authorities at a higher cost. This should encompass the designation of the national accreditation body.

2.5 Policy Implications of CBAM

For Montenegro, CBAM presents both economic risks and strategic opportunities linked to future competitiveness within the European market. It is obvious that the country, as dependent on coal-based electricity generation, already faces substantial export costs and competitiveness pressures. At the same time, CBAM should accelerate investments in renewable energy, energy efficiency, electrification, green hydrogen, industrial modernization and carbon pricing reforms. **From a GIP perspective, CBAM should not be viewed only as an external trade and compliance obligation, but also as a structural signal accelerating industrial modernization, decarbonization and transformation of the energy sector**.

CBAM creates strong incentives for regulatory alignment with the EU climate and energy legislation. Montenegro has committed to gradually align carbon pricing in the electricity sector with the EU ETS framework by 2030. This includes gradual increase of the national ETS price and progressive phase-out of free allowances in order to move toward a carbon pricing level equivalent to that applied within the EU. That said, one of the key strategic challenges for Montenegro is determining the pace and dynamics of further alignment with the EU ETS and gradual increase of national carbon pricing levels. **Faster alignment with EU carbon pricing could accelerate decarbonization and reduce exposure to CBAM-related costs on exports to the EU, but could also generate significant financial and competitiveness pressures** for the domestic energy sector and carbon-intensive

industries, particularly in the short and medium term. On the other hand, **slower alignment may reduce immediate domestic adjustment costs, but could increase indirect economic exposure** through CBAM-related costs, reduced export competitiveness and growing pressure on electricity exports from coal-based generation. Should Montenegro join the EU before 2030, which is a political commitment (2028), further alignment and integration into the EU ETS framework would be addressed through the accession process.

In this context, in December 2025 Montenegro adopted a new Law on Climate Change, aimed at further alignment with EU climate acquis and strengthening the institutional framework for climate governance and carbon pricing. In parallel, implementing legislation related to establishment of a MRVA system has been adopted in February 2026, while the operational establishment of the MRVA framework is currently ongoing. Despite this progress, several important challenges remain, including:

- further strengthening of administrative and institutional capacities;
- development of accredited verification infrastructure;
- gradual increase of the national carbon price toward EU-equivalent levels;
- completion of the transition away from free allocation mechanisms; and
- improvement of technical capacities of operators subject to emissions monitoring and reporting obligations.

Overall, Montenegro's existing ETS framework and ongoing development of the MRVA system, position the country relatively advanced within the regional context regarding preparedness for future carbon pricing obligations and CBAM implementation. However, substantial additional efforts will be required to achieve full operational alignment with the EU ETS and ensure effective implementation in practice. Continued alignment with EU climate acquis and effective implementation of planned reforms will remain essential for reducing Montenegro's exposure to CBAM-related economic risks and supporting long-term competitiveness of the economy.

3. JUST TRANSITION, EMPLOYMENT AND SKILLS

While the global shift toward environmentally sustainable and low-carbon economies offers immense opportunities, it also poses serious challenges, particularly for the workers, communities and regions that depend on carbon-intensive industries and are at risk. Hence, the concept of a "**just transition**" emerged to address these uncertainties, ensuring that climate action supports the following: a) **decent work**, b) **social inclusion**, and c) **poverty eradication**, rather than exacerbating inequality or dislocation[23]. According to the **International Labour Organisation (ILO)**, a **just transition** is defined as greening the economy "**in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind**"[24]. A core principle of the ILO's approach is a **social dialogue**. This ensures legitimacy, transparency and fairness in designing transition policies, as well as builds trust among affected communities. The ILO has estimated that, while the shift toward sustainable sectors may displace 78 million jobs by 2030, it could create 103 million new ones, yielding net employment growth.

The **Paris Agreement** (2015) represents the first international treaty that explicitly mentions a "just transition," with its preamble stating that it will "*take into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities*", anchoring just-transition language in global climate policy.

3.1 Regional and Social Impacts

3.1.1 Regional Impact of the Energy Transition

The regional impact of Montenegro's energy transition is highly uneven, with the most significant implications concentrated in the **municipality of Pljevlja, the country's only coal region**. Pljevlja is one of the most heavily coal-dependent regions in the Western Balkans and as such is included in the "*Initiative for Coal Regions in Transition in the Western Balkans and Ukraine*". Pljevlja hosts both the TPP "Pljevlja" and the Coal Mine "Pljevlja", making coal central to the local economy and the employment. Together, the TPP "Pljevlja" and the Coal Mine "Pljevlja" represent the core of Montenegro's coal-based energy system and remain among the most important economic actors in the northern region of the country. This fact **puts the Pljevlja region in the focus of the just energy transition process in Montenegro**. As the country advances towards decarbonization and alignment with EU environmental standards, Pljevlja faces the profound challenge of implementing a just transition, that is the transition that balances environmental sustainability with economic security and social justice.

Recognizing numerous challenges and opportunities, the **NECP identifies preparation of a dedicated Just Transition Plan for the Pljevlja coal region**, as a key policy priority. The objective is to ensure that decarbonization is implemented in a socially balanced manner, combining environmental objectives with economic diversification, workforce transition and long-term regional development.

23 https://www.ilo.org/resource/news/ilo-welcomes-cop26-just-transition-declaration
24 https://www.ilo.org/publications/guidelines-just-transition-towards-environmentally-sustainable-economies

3.1.2 Social Impact of the Energy Transition

Although coal-related employment represents a relatively modest share of total national employment, its regional concentration creates significant socio-economic vulnerability. Thus, the phase-out of TPP "Pljevlja" introduces a parallel socio-economic risk, since the municipality of Pljevlja faces potential setbacks, including job losses and decreased local revenues. According to the data of the **Coal Mine "Pljevlja", in 2025 this company alone employed more than 1200 workers, while the TPP "Pljevlja" employed 182 people**. Individually, Coal Mine "Pljevlja" is the largest employer in the municipality of Pljevlja. As far as the structure of employees is concerned, 934 men (83.1%) and 190 women (16.9%) are employed in company (Source: UNDP, 2023), with the 10% of workforce being engineers with many years of professional experience in the fields of mechanical, electrical, civil and mining engineering (Source: Coal Mine "Pljevlja", 2026). **Approximately 20% of the total employment in the municipality Pljevlja** is the direct employment in the coal-energy sector. This is an important figure in a municipality with a relatively small population (24.542 according to the Census from 2023) and limited alternative employment opportunities. The economic importance of the coal value chain extends significantly beyond direct employment in the TPP "Pljevlja" and the Coal Mine "Pljevlja". According to the UNDP-supported *Diagnostics of Socio-Economic Situation of the Coal Region Pljevlja* (2023)[25], around 55 private and public companies in Montenegro are directly or indirectly dependent on the operations of the TPP "Pljevlja" and the Coal Mine "Pljevlja", including 14 companies headquartered in Pljevlja. The broader coal value chain supports approximately 7.100 jobs, of which around 2.100 employees reside in Pljevlja. By taking into account this "indirect employment", **coal-energy sector contributes to the 40% of the employment in the municipality of Pljevlja**. Although the decommissioning year of TPP "Pljevlja" is currently set for 2041, this timeframe primarily depends on the success of the just transition process, the timely delivery of renewable projects and the preservation of a secure electricity supply.

Box 2: *Facts about Coal Mine "Pljevlja"*

Coal Mine "Pljevlja"

Coal Mine "Pljevlja" has served as Montenegro's primary coal producer since its founding in **1952**. As part of the EPCG Group, the Coal Mine "Pljevlja" supplies over 40% of Montenegro's stable electricity, generating more than 840 million euros in market value over the past five years alone. With more than **1,200 employees**, including over **120 engineers** from mechanical, electrical, civil, and mining disciplines, Coal Mine "Pljevlja" carries deep institutional expertise, infrastructure and human capital.

The annual volume of coal extraction at Coal Mine "Pljevlja" is approximately 1.65 million tonnes, of which about 1.4 **million tonnes** are delivered to TPP "Pljevlja", while roughly 250,000 tonnes are supplied to the regional commercial market.

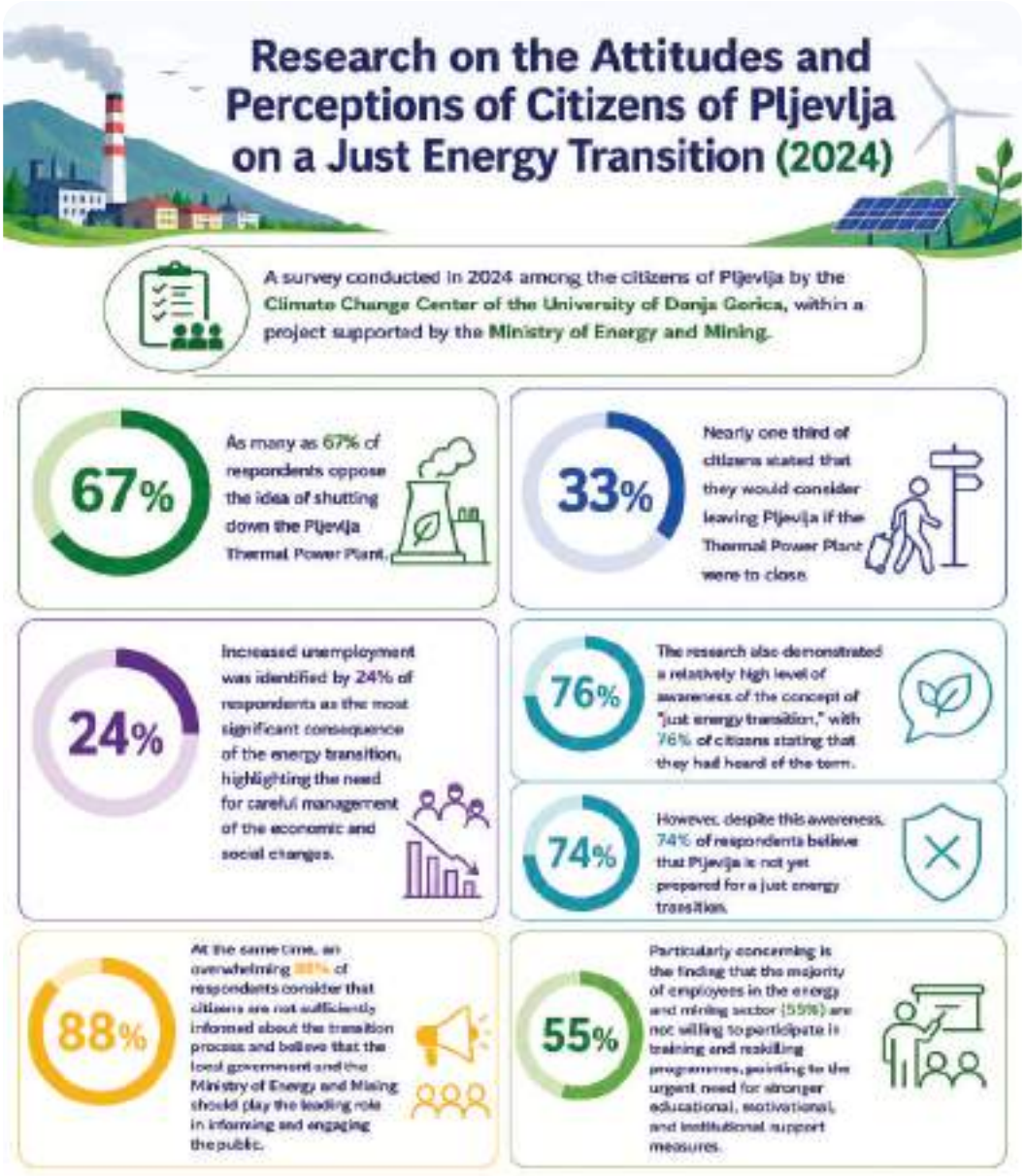
Founded	Employees	Annual extraction	Share stable elec.
1952	1,200+	1.65M tonnes	40%+

Source: Coal Mine "Pljevlja"

25 https://www.undp.org/montenegro/publications/diagnostics-socio-economic-situation-coal-region-pljevlja

The social dimension of transition is particularly important, given the profile of the affected workforce. Many workers employed in coal-related sectors possess specialized skills linked to mining and thermal power generation, while employment opportunities outside the coal value chain remain relatively limited. The transition therefore carries risks not only of direct job losses, but also of long-term labor market exclusion, especially for older workers and lower-qualified employees. Many jobs at the Coal Mine "Pljevlja" and TPP "Pljevlja" are above-average wages and their closure risks economic strain in the region, if energy transition is not socially just. This could exacerbate regional disparities and weaken livelihoods. The results of the **Survey on citizens' attitudes and perceptions of a just energy transition in Pljevlja (2024), conducted by the Centre for Climate Change of the University of Donja Gorica, within a project supported by the Ministry of Energy and Mining** (presented in Figure No. 3), clearly indicate the need for inclusive dialogue, timely information and the design of targeted support measures in order to ensure a just and sustainable energy transition for Pljevlja.

Figure 3: *Survey on citizens' attitudes and perceptions of a just energy transition in Pljevlja (2024)*



Source: Centre for Climate Change of UDG

The coal value chain remains deeply embedded in the local economy and municipal finances. Revenues generated through concession fees, taxes and other payments from coal-related activities represent an important source of municipal financing for Pljevlja. For example, more than €2 million is transferred annually to the Municipality of Pljevlja only through environmental fees paid by the EPCG and the Coal Mine "Pljevlja", highlighting the municipality's strong economic dependence on the coal sector. The coal sector also contributes to financing local infrastructure, sports, culture and social support programs. As a result, a **rapid or poorly managed transition away from coal could have broader economic and demographic implications for the region, including loss of employment, reduction of municipal revenues, outward migration and further depopulation trends that already affect northern Montenegro**. On the social front, the transition raises additional pressing concerns. Youth migration from Pljevlja has intensified in recent years, driven by high unemployment and limited future prospects, as well as environmental pressures. According to UNDP, as many as 86% of young people in Pljevlja are considering leaving the municipality.[26]

In this context, the issue of energy poverty also becomes increasingly relevant. **Montenegro's new Energy Law introduces the concept of "energy poverty"**, in line with evolving EU energy legislation. According to the Law, the concept of **energy poverty** is introduced as part of the consumer protection framework and the obligation of the State to protect vulnerable consumers during the energy transition. The provision essentially states that: "*Energy poverty refers to a situation in which households are unable to secure essential energy services necessary for a decent standard of living due to low income, high energy costs and poor energy efficiency of buildings*". The Law further provides that the Government shall adopt measures aimed at: protecting vulnerable and energy-poor consumers, improving energy efficiency, preventing disconnections and ensuring socially just access to energy services. This is particularly important in regions such as Pljevlja, where household dependence on coal and solid fuels for heating remains significant and where social vulnerability may increase during the transition process. Montenegro has additionally recognized energy poverty within its strategic energy and climate policy documents, particularly through the NECP, which emphasize improving household energy efficiency and reducing the number of energy-poor households through targeted measures and investments in residential energy performance. However, up to date Montenegro did not develop an Energy Poverty Program. Since **mining and energy represents a decades-old, traditional branch of the economy in Pljevlja, with the active participation of the local population, care should be taken to ensure that the energy transition does not lead to an increase in energy poverty and job losses** that would negatively affect the sustainability and living standards of the local community.

3.1.3 International experience

The international experience from coal regions demonstrates that retraining programs, although important, are often insufficient unless accompanied by broader regional development policies, creation of alternative local employment opportunities and long-term public investment in affected communities. The ILO stresses that just transition policies should combine skills development with social protection, employment-centered economic policies, social dialogue and support for affected communities[27]. This is particularly relevant for Pljevlja, where the local economy is strongly dependent on coal mining and the TPP. In coal-dependent region of Pljevlja, many workers may not be able to adapt easily, especially if new jobs are located far from their communities, offer lower wages or require skills that are too different from their previous work. Therefore, a just transition must be designed as a "**territorial development policy**", not only as a labor-market policy. Developed countries have generally used several complementary measures, including the following[28]:

26 https://www.undp.org/montenegro/press-releases/continuous-dialogue-concrete-projects-and-encouraging-legislative-regulations-key-successful-just-transition

27 https://www.ilo.org/publications/guidelines-just-transition-towards-environmentally-sustainable-economies

28 Source: "The Path to a Just Energy Transition of the Municipality of Pljevlja", Center for Climate Change, Natural Resources and Energy of University of Donja Gorica (2023)

First, they created jobs locally, instead of expecting workers to move. The OECD emphasizes that labor markets are local. Displaced workers usually search for jobs near where they live, so transition policies work only if suitable employment exists in the affected region itself[29]. For Pljevlja, this means that **new economic activities should be developed in Pljevlja, not in Podgorica, the coast or other more dynamic areas**.

Second, they used direct public investment and economic diversification. Germany's Ruhr region is often cited as an example. The transition was not limited to retraining miners, but included long-term investment in universities, research, environmental technologies, renewable energy, culture, tourism and infrastructure. **Germany combined economic diversification, workforce support, social welfare, quality of life measures and environmental remediation**.

Third, they provided income protection and social measures for workers who could not realistically transition. In Germany, measures included **early retirement, compensation payments, wage subsidies, retraining and regional development programs**. This is important for older workers in Pljevlja, for whom retraining may be unrealistic or socially unfair.

Fourth, they negotiated binding agreements with workers and communities. Spain **developed Just Transition Agreements, based on cooperation between national, regional and local authorities, trade unions and communities**. These agreements supported business projects, circular economy, food production, rural tourism, renewable energy value chains, environmental restoration and local infrastructure. This model is highly relevant for Pljevlja, since it gives affected communities a formal role in deciding what replaces coal.

Fifth, they protected the wider community, not only direct workers. Canada's approach is especially relevant since it recognized that **coal closure affects municipal revenues, public services, migration and the entire local economy**.

The above-presented international experiences for Pljevlja suggest that **local jobs must be created before the closure of existing ones**, **early retirement schemes, wage and income support must be prepared**; **investments in SMEs, rehabilitation of mining land, and renewable energy and energy-efficiency projects must be developed**; as well as **support for vulnerable groups, protection against energy poverty** and the **establishment of a dedicated local transition fund**.

3.1.4 Green Jobs Opportunities in Pljevlja

The economic repercussions of this transition are complex. A sharp and unplanned phase-out of coal would eliminate thousands of jobs and destabilize the local economy. For that reason, it is important to diversify Pljevlja's industrial base, through development of new industries, such as low-CO_2 cement, brick, styrofoam and gypsum manufacturing, renewable energy, construction and engineering services, IT, craftwork, green technologies, environmental rehabilitation projects, tourism in rural areas and sustainable agriculture (including organic agriculture - animal husbandry such as the "Pljevlja cheese" brand, vegetable and fruit growing), as well as by fostering entrepreneurship and small business development. These initiatives will require strong public-private partnerships, access to financing and a coordinated policy framework with clear objectives, timelines and institutional responsibilities. Business zones are of strategic interest for attracting investors vital for the transformed economic development of Pljevlja.

29 https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/place-based-policies-for-displaced-workers_2ae61406/69b86784-en.pdf

The Coal Mine “Pljevlja” has taken early steps to adapt. In the recognition of a global and European energy transition imperatives, Coal Mine “Pljevlja” has initiated internal restructuring and developed a comprehensive “**Just Transition Plan for the Coal Mine “Pljevlja”**” that identifies **(12) strategic business segments** capable of absorbing the existing workforce and skills as coal operations evolve, with the aim of minimising workforce disruption and improving retention. Four companies have already been launched.

Figure 4: *Just Transition Plan for the Coal Mine “Pljevlja”*





Source: Coal Mine "Pljevlja"

The Just Transition Plan of Coal Mine "Pljevlja" represents a multi-sector strategy for business diversification that is grounded in the company's existing workforce, expertise and assets. Across the 12 segments, the intention is to build a resilient, diversified commercial enterprises capable of sustaining employment and economic activity in the Pljevlja region through and beyond the energy transition. Several segments are already commercially active (Construction, Transport, Asphalt, Mechanical and Electrical Services). Others are in advanced preparation (Laboratory accreditation, PPE production launch, Solar plant documentation). The renewable energy investments, 81.1 MW solar and 2.2 MW hydro, represent the most transformative long-term opportunity, directly repositioning Coal Mine "Pljevlja" from a coal producer to a clean energy contributor.

Figure 5: *Requirements and Opportunities of the Just Transition Process in Pljevlja*



Source: Adjusted from the Private Sector Transition to a Low-Carbon Economy in Montenegro, International Labor Organization (2025)

Ultimately, the analysis presented in part 3.1 demonstrates that the transition challenges in Pljevlja extend beyond the energy sector itself. Successful transition requires broader regional economic transformation rather than only gradual coal phase-out and workforce reskilling measures. In this context, GIP instruments can play a particularly important role in linking decarbonization objectives with local economic development and social inclusion. Targeted support for RES investments, energy services, sustainable industry, circular economy activities and green entrepreneurship may help create alternative employment opportunities and strengthen long-term economic resilience of affected regions.

The just transition in Pljevlja presents both a risk and an opportunity. If poorly managed, it could deepen inequality and depopulation, but if approached strategically, it could create long-term economic revitalization, environmental recovery and social inclusion. The effectiveness of Montenegro's just transition process will therefore depend on the ability to combine social protection measures with proactive industrial and regional development policies capable of generating new economic activity and attracting investment. This requires strong coordination between energy policy, labor market policy, education and training systems, industrial policy and local development planning. Overall, ensuring that the transition is both economically viable and socially equitable will require long-term institutional commitment, stable financing mechanisms and active participation of local communities throughout the implementation process.

3.2 Reskilling and Workforce Development

The transition toward a low-carbon economy requires significant changes in Montenegro's labor market, particularly for workers employed in coal-related industries and associated support activities in the Pljevlja region. In addition to the gradual reduction of coal-based electricity generation, the broader transformation of the energy sector, driven by digitalization, automation and increasing deployment of renewable energy technologies, is expected to substantially change the structure of skills and competencies required in the energy sector.

This transition creates important challenges related to workforce adaptation and availability of adequately skilled labor. Emerging sectors linked to renewable energy, energy efficiency, digital energy systems and modern industrial technologies increasingly require new technical, digital and interdisciplinary competencies that are still insufficiently represented in the domestic labor market, particularly regarding skilled workers for solar and wind energy deployment, energy management systems, electrical infrastructure, automation and advanced maintenance services.

At the same time, the socio-economic profile of workers employed in coal-related industries creates additional transition risks. Many workers possess highly specialized competencies linked to mining and thermal power generation, while current opportunities for alternative employment within the Pljevlja region remain relatively limited. As stated in part 3.1.3, international experience from coal transition regions shows that successful just transition processes require long-term coordination between industrial policy, labor market policy, education systems and regional development planning.

Nevertheless, important challenges remain regarding long-term effectiveness of workforce transition measures. The success of reskilling programs will depend not only on training availability, but also on the pace of economic diversification, creation of new local employment opportunities and the capacity of the labor market to absorb workers transitioning from coal-related sectors. Ensuring that the transition is socially just will therefore require a broader policy approach combining education and training reforms, industrial diversification, targeted regional investment and long-term social protection measures.

3.2.1 Skills for the Green Transition

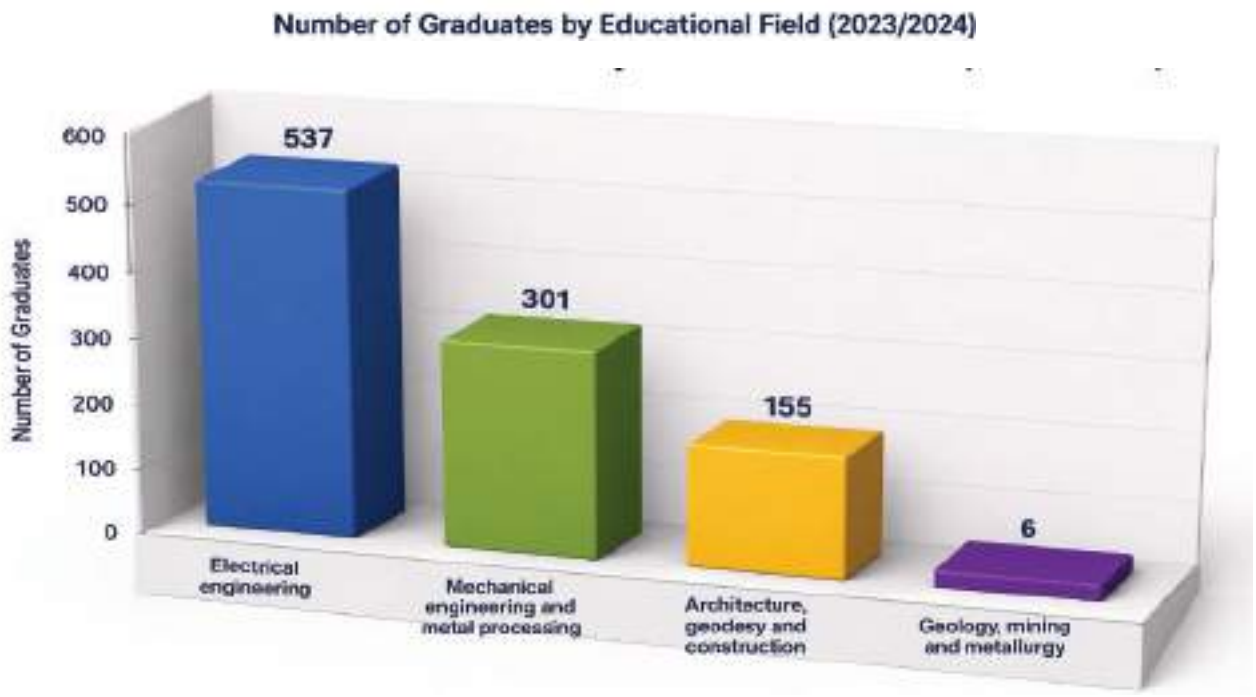
Skills shortages are increasingly recognized as one of the major structural challenges for Montenegro's green transition, particularly in sectors such as renewable energy, construction, energy efficiency, electrical engineering and sustainable infrastructure. The transition towards decarbonisation and renewable energy deployment requires a workforce capable of installing and maintaining solar photovoltaic systems, wind-energy infrastructure, heat pumps, energy-efficient buildings, smart grids and low-carbon industrial technologies. However, Montenegro still faces limitations in both the quantity and quality of workers trained in these fields.

The European Training Foundation (ETF) notes that the energy transition in Montenegro is creating growing demand for specialised technical skills that are "not evenly available across the labour market", while existing education and training systems still struggle to provide sufficient practical and work-based learning opportunities. The same analysis emphasizes that the country remains dependent on a relatively narrow technical workforce base and that stronger alignment between education providers and employers is necessary.

In response to these challenges, Montenegro has recently started adapting its vocational education and training (VET) system to the requirements of the green transition, particularly in the field of solar photovoltaic installation and renewable energy systems, while the education system "has not fully started to train a specialised workforce in this subsector". Hence, more specialised renewable-energy qualifications remain limited. According to the ETF, the country has developed and modularised several energy-related VET programmes and qualifications linked to renewable energy technologies, including training related to solar energy systems, wind energy infrastructure and renewable energy installation and maintenance. These programmes represent an important step toward aligning education with labour-market needs in the context of the green transition.

While Montenegro has started aligning vocational education with green-transition needs, official statistics still do not systematically track graduates in specifically "green" occupations such as solar photovoltaic installation, wind-energy technologies, heat-pump systems or energy-efficiency services. Existing labour-market and education statistics are generally classified within broader technical sectors such as electrical engineering, construction and mechanical engineering. As a result, it is still difficult to accurately assess whether the education system produces sufficient numbers of workers for emerging sectors such as solar photovoltaic installation, wind-energy infrastructure, heat-pump systems, energy-efficient construction and smart energy management. According to MONSTAT data for the 2023/2024 school year, Montenegro recorded 537 graduates in electrical engineering, 301 in mechanical engineering and metal processing, 155 in architecture, geodesy and construction, and 6 in geology, mining and metallurgy (Graph 3), all of which represent educational profiles potentially relevant for renewable energy deployment, energy efficiency and sustainable infrastructure development. These figures include both regular and vocational secondary education profiles relevant for renewable energy, construction and technical infrastructure.

Graph 3: *Number of graduates by educational field in the period 2023-2024*



Source: MONSTAT

These fields represent the core educational base potentially relevant for renewable energy deployment, energy efficiency, sustainable construction and other green-transition sectors. A useful concrete example from the renewable-energy training field is the MONTESOL program from 2011, under which training for solar thermal installers was mandatory for companies qualified to install solar water-heating systems. This shows that Montenegro has previous experience with RES installer training, although it was not a coal-worker reskilling program.

Despite recent curriculum reforms and the fact that the Employment Agency of Montenegro has introduced programmes supporting green entrepreneurship and active labour-market measures in sectors linked to sustainability and renewable energy, several structural weaknesses remain, such as: insufficient practical training and work-based learning, limited cooperation between employers and educational institutions, lack of specialised instructors for emerging green technologies, limited opportunities for adult retraining and lifelong learning, and uneven regional access to continuing vocational education (particularly in northern municipalities, such as Pljevlja).

Montenegro's Reform Agenda 2024–2027 also acknowledges that vocational education programmes still lack sufficient focus on practical education and employer-based learning, and that mechanisms for monitoring labour-market relevance remain underdeveloped. Existing reforms represent a positive development, but the **country will likely need significantly greater investment in vocational education, reskilling, apprenticeship systems, technical faculties, and regional training centres, in order to ensure that the workforce can support the pace of decarbonisation and renewable-energy expansion envisaged under the NECP and EU integration process**. Therefore, although Montenegro has started adapting its educational system to the requirements of the green transition, **current programmes are only partially aligned with future labour-market needs**.

The reform should respond to the challenges in the field of vocational education related to adapting the educational offer to the needs of the labor market, primarily bearing in mind green transformation. This could be implemented by ensuring the quality of practical education to make it easier and faster for secondary school graduates to join the labor market, promote enrolment in the programs offering the qualifications in demand in the labor market and that include "green" qualifications for green jobs (e.g heat pump fitters, builders for wind/solar plants, etc.) and upgrade the competencies of the staff providing and delivering teaching in vocational schools, so they can respond to the requirements of modern-day teaching. For example, the opportunity for energy efficiency retrofits in Montenegro, particularly in building renovation, holds tangible employment potential. This sector encompasses: envelope improvements, HVAC upgrades, lighting and appliances, with envelope retrofits (such as insulation and window upgrades which currently represent the largest share of revenue). Based on the EU "Strategy: Renovation Wave", in the Reform Agenda 2024-2027, Montenegro committed to renovate 3% of the building stock annually.

What is relevant for Montenegro is the fact that **transition to RES requires investing in adult learning**. The links between education and training providers and employers is key, as many of the new cutting-edge technologies (green hydrogen, BESS, offshore platforms, etc.) are not taught in VET schools and universities. Without a commitment to upskilling and reskilling, energy-mining companies (TPP "Pljevlja" and Coal Mine "Pljevlja"), will face deepening skills shortages, and workers will miss out on the jobs of the future.

All this requires realization of specific activities for the development of occupational standards and standards of qualifications in accordance with the needs of the labor market in the fields of various industrial areas, modernization of professional education levels III and IV in the field of industry, practical teaching in certain industrial areas, realization of education and training programs for job seekers in accordance with the needs of industry development as well as modernization and promotion of study programs in accordance with labor market needs, with special emphasis on natural and technical sciences. Continuous well-designed training and retraining programs designed for the just transition process must be put into place, so that employees most affected by the just (energy) transition get the necessary knowledge and skills. Here, the role of the Employment Agency of Montenegro and Local Self-Government is crucial.

Box 3: *Green Jobs Opportunities*

GREEN JOBS OPPORTUNITIES

Combining just the residential program (€15 million), the public buildings initiative (€60 million), the World Bank decarbonization loan (€31 million) and the hospital retrofit (€12 million) (see more details in part 4. Financing the Energy Transition), yields a potential market-size for energy-efficiency building retrofits in Montenegro in the range of **€118 million**, which is a substantial stimulus for job creation (direct jobs in construction, installation and allied services), making retrofit projects both **climate-smart and socio-economically transformative**.

Public-building and hospital projects likely involve architects, engineers, construction laborers, heating and insulation specialists, as well as related service providers. These projects not only improve energy performance, but also foster **specialization, project management and technical capacities** within local firms and professionals. As new projects emerge, the scale and impact of the retrofit economy could expand further.

Montenegro benefits from a **well-developed human capital base**, particularly in technical and engineering fields, that directly supports the execution of energy-efficiency projects. Montenegro hosts reputable technical education institutions: the University of Montenegro's Faculty of Civil Engineering, which trains professionals in construction, spatial planning and engineering management, and the Faculty of Electrical Engineering, which offers programs in energy systems, industrial electrical engineering, automatics and applied electronics, as well as University of Donja Gorica (Faculty of Politechnics). These faculties contribute a continuous stream of graduates capable of handling complex roles in building renovation, HVAC systems, smart energy networks and energy monitoring technologies.

Strong representation of **core engineering knowledge** (electricity, engineering principles, integrated circuits, mechanical systems) confirms that foundational technical competences remain essential for operating and integrating new energy technologies in Montenegro. Specialised areas including battery management, energy storage, advanced materials and offshore technologies, point to future needs connected to grid flexibility, storage capacity and next-generation renewables.

Finally, the **persistence of skills related to traditional infrastructures and regulation**, such as dam constructions, hydroelectricity, indicate that the **sector requires a mix of legacy and emerging competences**.

Source: Author's overview

3.2.2 Reskilling and training programs related to coal workers

Montenegro does not yet have a fully operational reskilling system specifically designed for coal workers in Pljevlja. This means that the country is **still in the phase of designing the framework, rather than implementing a mature large-scale reskilling program for coal workers, with transparent data on the number of workers trained, the type of skills acquired, certification outcomes or employment results**. Recognizing these challenges, **EPCG, the Coal Mine "Pljevlja" and the United Nations Development Program (UNDP) initiated activities related to establishment of a Green Jobs Training Centre**, intended to support workforce transition and development of skills required for the green economy. The Agreement among these stakeholders was signed in March 2026. The Centre should develop new knowledge and skills in line with just transition principles, with the Coal Mine "Pljevlja" expected to be one of the main beneficiaries. At the time of preparation of this Report, an international tender procedure for consultancy services for development of a Feasibility Study for establishment of the Green Jobs Training Centre was ongoing. According to the scope of the work for the consultant, the Centre is envisaged not as a standalone educational institution, but as an integrated and implementation-oriented mechanism for workforce transformation and long-term strengthening of human capital in the energy sector.

The planned Feasibility Study foresees a comprehensive workforce diagnostic and transition analysis covering EPCG and the Coal Mine "Pljevlja", including assessment of workforce profiles, identification of jobs at risk, analysis of future labor market needs and mapping of transition pathways for affected employees. Particular emphasis is placed on development of practical reskilling and upskilling programs linked to renewable energy technologies, digitalization of energy systems, automation, data management and emerging green economy activities.

The initiative also recognizes that the transition will affect not only technical and operational workers, but also administrative and support staff whose roles may significantly change due to restructuring of business models and technological transformation. In this context, the proposed Green Jobs Training Centre is expected to support: 1. workforce reskilling and redeployment; 2. development of green and digital skills; 3. internal training and talent development systems; 4. cooperation with educational and vocational training institutions; and 5. attraction of younger workforce profiles into emerging green sectors.

An important aspect of the initiative is its practical implementation approach. The Feasibility Study explicitly focuses on utilization of existing infrastructure, facilities and internal expertise within EPCG and the Coal Mine "Pljevlja", while also developing operational models, accreditation pathways, financing mechanisms and implementation roadmaps for future training programs. This approach aims to ensure that workforce transition measures move beyond strategic declarations and become operationally applicable within the Montenegrin context.

In part 3.1.4 Green Jobs Opportunities in Pljevlja, "**Just Transition Plan for the Coal Mine "Pljevlja"**" is described in details. Here, it should be emphasized that the company so far has trained staff for geological drilling and blasting. But, this is not the same as RES-specific training for solar, wind, heat pumps or grid technologies. For EPCG, the creation of "EPCG Solar Gradnja" in 2022 has been important since it performs the full process of photovoltaic system installation, from documentation to commissioning. The Feasibility Study for Solari 5000+ states that EPCG expected to acquire knowledge on solar technologies through these projects an. In parallel, Montenegro's NECP foresees the **development of a Just Transition Plan for the Pljevlja Coal Region**, with a strategic and operational framework for investment and support during 2027–2035. The planning process is being implemented with technical assistance from the World Bank,

which launched an international consultancy process for the preparation of the Plan in accordance with European Commission and Energy Community Secretariat guidance and the methodology used for EU Territorial Just Transition Plans. The completion and adoption of the Just Transition Plan is expected by the end of 2026. The objective of the plan is to support the gradual transition of the Pljevlja region from a coal-dependent economy toward a more diversified, sustainable and low-carbon development model, while mitigating negative social and economic impacts of the transition. The goal is to ensure that "no one is left behind" in the shift to a post-coal economy. The planned Just Transition Plan is expected to include: economic diversification measures; workforce transition and reskilling programs; support for SMEs and entrepreneurship; environmental remediation and repurposing of mining areas; social protection and inclusion measures; and governance, monitoring and financing mechanisms. The preparation process places strong emphasis on stakeholder participation and multi-level governance. According to the scope of work defined for the consultant, the process includes extensive consultations with ministries, local authorities, businesses, trade unions, civil society organizations and affected communities in Pljevlja. It will be crucial for the Government and local authorities to secure financing from EU to demonstrate readiness, through inclusive governance and project-based planning.

Reform Agenda of Montenegro 2024–2027 for the Reform and Growth Facility, in Policy Area 2: Digital and Energy/Green Transition, introduces measurable targets, implementation deadlines, responsible institutions and monitoring mechanisms related to retraining, re-employment and socio-economic transformation in the context of decarbonization. As such, it represents the most operational and concrete framework adopted so far for implementing a just transition in the Pljevlja coal region. The document recognizes that the gradual reduction of coal-based electricity production will require labor-market support measures through investment in training, specialization and retraining of employees, as well as the development of entrepreneurship in Pljevlja coal region. The Reform Agenda links the transition with decarbonization, renewable energy deployment, energy efficiency, industrial diversification and regional socio-economic restructuring. One of the most important aspects of the Reform Agenda is the **establishment of specific statistical and operational targets**, that integrate labor-market policy with climate and energy policy objectives, as follows:

- **By June 2025, Montenegro should establish an operational governance structure for just transition and adopt an Action Plan for training and job creation in the Pljevlja coal region**. In June 2025, the Government of Montenegro established the Council for Just Transition, chaired by the Minister of Energy and Mining, in order to coordinate policies related to the gradual transition from fossil fuels to sustainable energy sources, support labor-market adaptation, foster new economic activities and align the education system with the needs of the green economy, particularly in the Pljevlja coal region. The Just Transition Council adopted a framework roadmap and an action plan with training and retraining programs for 2025–2027, focused particularly on Pljevlja.
- **By December 2026, the Government plans to complete short-term retraining and re-employment measures and implement a pilot retraining program for at least 100 persons, with a minimum target of 15% women participants.**
- **By December 2026, Montenegro should establish a dedicated training Centre intended to support retraining, re-employment and long-term workforce adaptation in the region**. The Centre should support retraining and re-employment, facilitate implementation of building-renovation programs, strengthen industrial and service-sector diversification and contribute to long-term human capital development in the Pljevlja region.

- **By December 2027, Montenegro should provide retraining and re-employment support for at least 400 persons affected by the transition process, again with a minimum target of 15% women beneficiaries.**[30]

These measures clearly demonstrate that the envisaged retraining and employment programs are closely connected to the development of green-transition skills and green employment opportunities. The planned activities are strongly associated with renewable energy deployment, energy efficiency, sustainable construction, heating system replacement, environmental remediation and diversification of local economic activities. In practical terms, this suggests a gradual shift from coal-dependent employment towards occupations linked to low-carbon development and sustainable infrastructure.

3.3 Social Safeguards and Public Engagement

Ensuring a just transition requires economic restructuring, but also effective social protection mechanisms, inclusive governance and meaningful stakeholder participation throughout the transition process. This is particularly important in regions such as Pljevlja, where the energy transition may significantly affect employment, local economic activity and broader social conditions.

3.3.1 Public participation and local-level engagement

Montenegro's legal and regulatory framework formally provides for public consultation and stakeholder participation in environmental decision-making and permitting procedures for major energy and infrastructure projects, including renewable energy developments. This framework is largely aligned with the Aarhus Convention and relevant EU environmental acquis. Public consultation mechanisms formally exist through procedures related to Environmental Impact Assessments (EIA), Strategic Environmental Assessments (SEA), spatial planning processes and environmental permitting. The legal basis for public participation is primarily embedded in: Law on Environment[31], Law on Strategic Environmental Assessment[32], Law on Environmental Impact Assessment[33], Law on Spatial Planning[34] and the Aarhus Convention, ratified by Montenegro in 2009. These laws formally require: public disclosure of project documentation, public hearings, access to environmental information, and opportunities for citizens, NGOs and local communities to submit comments before environmental approvals and permits are issued. In principle, communities affected by renewable-energy projects such as hydropower plants, wind farms and solar parks should therefore be consulted during the permitting process. The legislation also requires competent authorities to consider public comments when issuing approvals. However, as stated in the *Climate and Environmental Justice and Public Participation Assessment Report for Montenegro (CEJ Convergence Project, AFD, 2025)*, in practice, the effectiveness of these mechanisms in ensuring meaningful and continuous participation of affected local communities remains uneven and often limited to formal consultation requirements.

Several renewable-energy projects in Montenegro, particularly small hydropower plants (SHPPs),

30 Simultaneously, the document envisages the implementation of a comprehensive program for renovation of public and private buildings in the Pljevlja coal region, as well as the transition of 90% of individual heating systems in public buildings and 70% in private buildings from coal to cleaner energy sources.
31 "OG of Montenegro", No. 52/2016, 84/2024
32 "OG of RoM", No. 80/2005; "OG of Montenegro", No. 59/2011, 52/2016
33 "OG of Montenegro", No. 75/2018
34 "OG of RoM" No. 19/2025, 28/2025

generated strong public opposition over the past decade. Local communities frequently argued that consultations were conducted only formally, after key decisions had already been made, limiting the real influence of citizens on project outcomes. The issue is especially sensitive in rural and environmentally vulnerable areas, where local populations may perceive renewable-energy projects as externally imposed developments with limited direct economic benefits for local communities. This has sometimes contributed to social tensions and declining trust in institutions.[35] Strengthening transparency, early-stage consultations, local benefit-sharing mechanisms and institutional trust, therefore, remains essential for ensuring socially acceptable renewable-energy deployment and a credible just transition process.

Similarly, local-level engagement in Montenegro's energy transition and just transition processes is formally ensured through a combination of legal public-participation mechanisms, institutional coordination bodies, local-government involvement and stakeholder consultation procedures. In recent years, particular emphasis has been placed on involving the Municipality of Pljevlja and local stakeholders in the planning of Montenegro's just transition agenda, given the region's strong dependence on coal mining and coal-based electricity generation. However, despite the existence of formal participatory structures, the practical effectiveness of local engagement still faces important challenges related to the institutional capacity and the actual influence of local actors on final policy decisions. In the context of just transition, the preparation of the Just Transition Plan for the Pljevlja coal region places stronger emphasis on participatory and locally driven approaches. able groups, workers directly affected by transition measures, youth and local development priorities.

3.3.2 Protection of affected workers and communities

Social safeguards measures are highly relevant, because the transition process must ensure protection of vulnerable groups and maintain social cohesion during decarbonization. This includes developing retraining programs, encouraging youth entrepreneurship and creating targeted employment schemes, particularly for women and vulnerable groups who may be disproportionately affected. Namely, the risks for that groups are energy poverty, social exclusion and worsening regional disparities if climate policies are implemented without accompanying social-support measures. Protection of affected workers and communities is expected to rely on a combination of social, economic and labor-market measures, including workforce reskilling and upskilling, support for entrepreneurship and SMEs, gradual workforce transition planning and development of alternative employment opportunities within the region. In this context, the planned Green Jobs Training Centre represents an important supporting mechanism intended to facilitate workforce adaptation and strengthen local human capital for emerging green economy sectors. Transition must not be equated with the abrupt dismantling of the coal sector and workers should be provided with realistic and dignified alternatives.

However, the protection system of workers is still at an early stage of implementation, and many measures remain in the planning phase, rather than fully operational. The central policy objective of Montenegro's just transition approach is to ensure that decarbonization does not lead to abrupt

35 When in May 2019, several excavators were delivered to the village of Bukovica between Šavnik and Žabljak in order to start the construction of a sHPP on the river Bukovica, the population of that village immediately joined the defence of the river. Citizens, young activists, representatives of NGOs, guarded the river day and night in order to protect its importance, the surrounding nature, but also the endemic fish species that live in Bukovica (Campaign known as "No River into a Pipe"). Although the investors attempted to continue the construction, the citizens' protests also continued for the next five months, when the minister of economy visited Bukovica with a notice that the Contract with the investor would be terminated. This case demonstrates the sacrifice of the population to defend the source of water and life and thereby ensure the long-term benefits of this river.

job losses, social exclusion or regional economic decline. The above listed measures (in part 3.2.2) envisaged in the Reform Agenda 2024–2027 are specifically linked to workers employed in mining and coal-based electricity production, with a focus on facilitating labor-market adaptation and supporting transition toward alternative sectors associated with the green economy and sustainable regional development. Protection measures are also linked to the business transformation strategy of Coal Mine "Pljevlja" (explained in details in part 3.1.4).

In parallel, the "Recovery Plan of Pljevlja", prepared by the municipality of Pljevlja, seeks to mitigate the broader socio-economic consequences of future coal phase-out policies through regional investment and economic diversification measures. The "Recovery Plan of Pljevlja" is aimed at reducing the region's long-standing dependence on coal production and coal-based electricity generation, while simultaneously promoting economic revitalization, environmental remediation and diversification of local economic activities. This document attempts to integrate employment preservation, economic diversification and social stability into Montenegro's decarbonization agenda. The Plan includes projects related to district heating, infrastructure development, environmental remediation, renewable energy, tourism, healthcare and business development. The intention is not only to protect existing employment, but also to create new long-term economic opportunities in the region.

As far as the stakeholder participation is concerned, Montenegro established the Council for Just Transition in 2025 as a inter-institutional coordination body involving state institutions, local authorities and other stakeholders responsible for managing the transition process. The framework aims to ensure consultation with affected communities, workers, trade unions and local actors during the planning and implementation of transition policies.

In addition, Montenegro's labor and social protection systems formally provide general safeguards applicable to affected workers, including: labor rights protection, unemployment benefits, pension rights, severance mechanisms, occupational health protection and access to active labor-market measures through the Employment Agency of Montenegro.

However, despite these developing frameworks, important challenges remain. Montenegro is **still missing the evidence on: the exact number of workers already retrained, long-term employment outcomes, the sustainability of newly planned jobs, compensation mechanisms for affected workers or the level of financing available for transition measures**. Until Montenegro adopts operational and comprehensive Just Transition Plan, many protection measures will remain strategic commitments, rather than fully implemented programs.

At the same time, the effective just transition requires: continuous dialogue, stronger local-level engagement, transparency, long-term institutional coordination and inclusive participation of all relevant stakeholders. The following actors should be engaged as essential participants in the transition process: workers, trade unions, local government, businesses, citizens, NGOs, employer associations, academic institutions and media. International experience from coal transition regions demonstrates that consultation processes are the most effective when local communities participate not only during formal public hearings, but also in defining development priorities, investment needs and transition pathways. In Montenegro, additional efforts will likely be needed to strengthen transparency, improve access to information, ensure continuity of stakeholder dialogue and enhance the implementation capacity of local institutions involved in the transition process.

Overall, the effectiveness of Montenegro's just transition process will depend not only on adoption of strategic documents, but also on the ability to translate consultation processes and social safeguards into concrete and visible socio-economic benefits for affected workers and communities. Put it differently, **Montenegro's transition process should not focus exclusively on the shutdown of the TPP "Pljevlja", but rather on broader structural transformation of the local economy**. The long-term success of the transition will depend on whether Montenegro succeeds in combining decarbonization policies with regional-development measures, workforce adaptation, social protection and active participation of local communities in decision-making processes.

3.3.3 Strengthening Social Safeguards and Public Engagement

Although Montenegro has established the initial institutional and legal foundations for a just transition, **significant improvements are still needed to ensure that social safeguards and public engagement mechanisms become more effective, inclusive and credible**. Current policies increasingly recognize the importance of protecting affected workers and communities and involving stakeholders in decision-making processes. However, the implementation remains uneven, while many participation mechanisms continue to function more as formal administrative procedures rather than as genuinely participatory processes. One of the key priorities should be strengthening social-protection mechanisms for workers and communities affected by the gradual phase-out of coal production and coal-based electricity generation. Existing policy frameworks, including the Reform Agenda 2024–2027, Just Transition Plan for the Coal Mine "Pljevlja" and Recovery Plan of Pljevlja, envisage retraining, re-employment and regional-development measures, but many of these commitments remain at the planning stage. More concrete implementation mechanisms are needed, including: **1. clearly defined compensation measures, 2. long-term employment guarantees (where possible), 3. targeted support for vulnerable workers,** and **4. stronger social-security measures for households dependent on coal-related activities**.

Particular attention should be devoted to workers who may find it more difficult to adapt to new labor-market conditions, especially older workers and employees with highly specialized experience linked exclusively to coal mining and thermal power generation. International experience demonstrates that retraining programs alone are often insufficient unless accompanied by the creation of alternative local employment opportunities. Therefore, social safeguards should also include stronger regional-development measures aimed at creating sustainable jobs in sectors such as renewable energy, sustainable construction, environmental remediation, tourism, services and small business development.

Public participation and stakeholder engagement mechanisms also require substantial improvement. In many cases, local communities, civil society organizations and other stakeholders are consulted only after key strategic decisions have already been made, limiting their actual influence on outcomes. To strengthen the public trust and social acceptance of the transition process, consultations should become: earlier, more continuous, more transparent and more inclusive. This would require ensuring timely public access to information, transparent disclosure of project documentation, adequate consultation periods and meaningful consideration of comments submitted by affected communities and stakeholders.

In addition, participation mechanisms should move beyond formal environmental permitting procedures and include broader involvement of local actors in discussions related to: regional

development priorities, employment policies and social-protection measures. Trade unions, local businesses, NGOs, academic institutions, youth organizations and women's groups should be systematically included in transition-related governance structures and decision-making processes. Another important challenge concerns institutional trust. Public confidence in transition policies may remain limited if communities perceive that decisions are being imposed from the central level without genuine local ownership. Strengthening the role of the Municipality of Pljevlja and improving the operational capacities of the Council for Just Transition could therefore significantly improve the legitimacy and effectiveness of the transition process. Social safeguards should also address broader quality-of-life issues in affected communities, including: healthcare, air quality, access to public services, housing conditions and energy poverty. The Pljevlja Recovery Plan already recognizes many of these dimensions.

Ultimately, the effectiveness of Montenegro's just transition process will depend not only on the adoption of strategic documents and action plans, but on the extent to which affected workers and communities perceive the transition as fair, participatory and capable of delivering tangible improvements in living conditions, employment opportunities and long-term regional development.

4. FINANCING THE ENERGY TRANSITION

As a candidate for the EU membership, Montenegro has the access to pre-accession funding (IPA III), Growth Plan funds and Economic and Investment Plan - EIP (adopted with the GAWB)[36], as well as favorable loans of international financial institutions (IFIs) and development banks. By pairing loans with grant support and consultancy, Montenegrin companies might experience cost savings, enhanced competitiveness and a stronger public image as adopters of sustainable practices. Besides, the Eco Fund, Innovation Fund, Montenegro's private banks and the Investment and Development Fund of Montenegro (IFD) could play a role in leveraging EU funds.

4.1 Investment Needs and Financing Framework

Achieving Montenegro's energy transition objectives, as outlined in the NECP (2025), will require substantial financial resources across multiple sectors of the economy and energy system. According to the NECP investment assessment, total **cumulative investment needs for the implementation of planned energy and climate policies by 2030 are estimated at approximately €3.87 billion**, including:

- approximately €2.93 billion, primarily associated with renewable energy deployment, electrification and modernization of the energy system (decarbonization measures);
- approximately €658 million related to energy security and infrastructure development;
- around €264 million for energy efficiency measures;
- investments related to research, innovation and competitiveness; and
- modernization of the internal energy market and regulatory infrastructure.

These figures illustrate that in addition to renewable energy deployment, substantial financing will also be required for: transmission and distribution network modernization; BESS and system flexibility measures; electrification of transport; energy efficiency improvements in buildings and public infrastructure; and implementation of just transition measures in the Pljevlja coal region. The scale of required investment significantly exceeds the capacity of domestic public financing alone, making **mobilization of: public investment, EU funding instruments, IFIs support and private-sector capital, essential for successful implementation of the transition**.

As described in details in part 1.5.1, Montenegro's Reform Agenda, within the Policy Area 2: Digital and Energy/Green Transition, defines a comprehensive set of reform measures and implementation milestones related to the: 1. *reform of the energy market*, 2. *decarbonization and preparation for CBAM*, 3. *renewable energy deployment, energy efficiency and reduction of the air pollution*. Overall, the Energy/Green Transition component of the Reform Agenda includes 27 individual implementation steps associated with specific deadlines and performance indicators, linked to **approximately €80 million of EU financial support under the RGF**.

36 Economic and Investment Plan (EIP) for the Western Balkans (2021–2027) includes up to €9 billion in targeted regional EU funds (e.g, the European Fund for Southeast Europe and the Green for Growth Fund) for a range of sectors (such as transport, energy and buildings), with the potential to attract an additional €20 billion investment in climate actions with the crowding in of private investors.

Credit lines, guarantees and green financing instruments in Montenegro are expanding, but they are not yet sufficient for the scale of investments required by the green transition. Recent data show that lending activity has strengthened. In the first ten months of 2025, newly approved bank loans increased by 27.1% year-on-year, while deposits increased by 6.9%. The average effective interest rate on new loans to the corporate sector was reported at 5.21%, indicating some improvement, but financing conditions remain demanding for smaller firms. The financial system is liquid, but access to affordable long-term finance remains a constraint for MSMEs, especially for investments in energy efficiency, renewable energy, digitalization and cleaner technologies. For example, the EU-funded energy efficiency grants in Montenegro often require upfront payment by building owners, with reimbursement afterward, which imposes financial strain and limits uptake.

Central Bank of Montenegro's (CBCG's) Bank Lending Survey for Q4 2025 shows that demand for corporate loans increased, particularly among MSMEs. The net percentage for demand for total corporate loans was 46.21%, for long-term corporate loans 41.17% and for loans to MSMEs 52.28%. At the same time, the net indicator for rejected loan applications for MSMEs was 6.49%, suggesting that access constraints persist, despite rising demand. Montenegro has also strengthened its guarantee framework. The Law on the Credit Guarantee Fund[37], adopted in 2025, defines eligible lenders as credit institutions, leasing companies, factoring companies and microcredit financial institutions, while eligible users include entrepreneurs and MSMEs. The law covers short-term and long-term loans, credit lines, financial leasing and factoring.

Delays in mobilization and implementation of investments in renewable energy, grid modernization and energy efficiency, may significantly increase long-term economic adjustment costs for Montenegro, reduce competitiveness and limit Montenegro's ability to align with evolving European climate and energy policies. Increasing exposure to carbon-related costs, operationalization of the CBAM, climate-related variability of hydropower production and dependence on electricity imports during dry periods are already creating additional financial pressure on Montenegro's energy sector. In addition, delayed investment could: slow economic modernization, reduce investor confidence, postpone access to EU financing and RGF disbursements and increase long-term transition costs due to stranded carbon-intensive infrastructure. The NECP also implies that postponing action would make the achievement of 2030 targets considerably more expensive, since later interventions would require faster and more capital-intensive adjustment measures.

4.1.1 The Role of Development Banks and IFIs

Development banks and IFIs continue to play a critical role in Montenegro's energy transition and implementation of the NECP, by financing renewable energy deployment, electricity infrastructure modernization, energy efficiency programs and regulatory reforms. In addition to providing long-term and concessional financing, these institutions also support project preparation, technical assistance, regulatory reform support, mobilization of private capital, grant co-financing and development of regulatory and institutional frameworks necessary for the implementation of Montenegro's energy transition objectives.

The **European Bank for Reconstruction and Development (EBRD)** has been particularly active in renewable energy development and electricity infrastructure modernization. Out of the record investment of €215 million in Montenegro across 18 projects in 2025, the EBRD directed 47% to-

37 "OG of MNE", No. 77/25

ward green transition activities, including renewable energy, electricity distribution digitalization, and green financing for households and MSMEs through "SME Go Green", "GEFF" (Green Economy Financing Facilities) and "REPower" credit lines. In 2025, the EBRD supported Montenegro's first renewable energy auction for 250 MW of solar capacity and assisted in developing the new Law on Renewable Energy Sources. The Bank also financed the expansion of the WPP "Gvozd" through an additional €26 million loan, following the original €82 million financing package. In parallel, the EBRD approved up to €15 million for upgrading Montenegro's electricity transmission corridor with Albania and Bosnia and Herzegovina, doubling transmission capacity to around 600 MW. The **European Investment Bank (EIB)** has also become a major transition financier. In 2026 alone, the EIB launched more than €250 million in new investments in Montenegro, including a €50 million facility for renewable energy and energy-efficiency investments by SMEs. The **World Bank** has supported Montenegro under the *Partnership for Market Implementation program* ($2 million Readiness Support Plan), to refine its carbon pricing framework and align with EU ETS requirements by 2029. The **Western Balkans Investment Framework (WBIF)** plays a critical blending role by combining EU grants with loans from IFIs. WBIF currently supports energy connectivity, electricity interconnections, regional energy-efficiency programs and transport decarbonization projects across Montenegro.

IFIs, development banks and private investors increasingly favor projects aligned with ESG criteria, especially in sectors like renewable energy, sustainable construction and transport. This means that Montenegro's green transition is shaped by the evolving preferences of investors and financiers. IFIs also act as catalysts for private investment. EBRD and EU-backed initiatives helped establish the Montenegro Renewable Energy Association in 2026, aiming to attract new investors and support at least 400 MW of renewable energy auctions by 2027. Considering the scale of required investments and the limited capacity of domestic public financing, implementation of large renewable energy projects, transmission infrastructure modernization and system flexibility measures would be significantly more difficult, and in some cases not financially feasible, without support from IFIs and development banks.

4.1.2 Investments in Energy Efficiency

Annual spending on energy transition and energy-efficiency programs in Montenegro has increased significantly in recent years, but available resources are still below the level required for full implementation of the NECP and EU climate obligations. The Reform Agenda explicitly foresees annual support programs for: building renovation, replacement of inefficient heating systems and support schemes for low-income households and residential energy efficiency. In the household and MSME sector, support programs are implemented mainly through the Eco Fund, the Ministry of Energy, IFIs and EU blending instruments.

So far, energy efficiency investments have primarily focused on the improvement of the energy performance of buildings through thermal insulation of facades and roofs, replacement of windows and doors, installation of high-efficiency heating and cooling systems, modernization of lighting systems and deployment of rooftop photovoltaic systems. The financing framework for energy efficiency improvements in buildings can broadly be divided into two categories:

- dedicated public-sector energy efficiency investment projects; and
- incentive programs targeting households, tourism facilities, SMEs and final energy consumers.

Energy Efficiency Investments in Public Buildings

Since 2009, the Government of Montenegro has implemented several large-scale public building renovation programs in cooperation with IFIs and development banks, particularly the World Bank, the German Development Bank (KfW) and the EBRD. These programs have primarily focused on educational and healthcare infrastructure, including primary and secondary schools, student dormitories, health centers, hospitals and social care institutions. Given the large number of users benefiting from these investments and the visible reduction of energy consumption and improvement of indoor comfort conditions, public building renovation programs have also played an important role in increasing public awareness regarding the benefits of energy efficiency measures. The largest ongoing public-sector energy-efficiency programs include the following (data as of August 2025):

- **"Energy Efficiency in Public Buildings"**, financed through a €45 million KfW loan combined with a €4.7 million EU grant (WBIF- Regional Energy Efficiency Program (REEP)) and a €10 million contribution from the Government of Montenegro for energy-efficiency renovation of 20 public buildings, including schools, a student dormitory and a home for the elderly. Completed retrofits include schools and educational facilities in: Tuzi, Kotor, Nikšić, Cetinje and Bar.
- **"Decarbonization of the Energy Sector of Montenegro (DESCG)"**, financed through a €31 million World Bank loan and €2.8 million national co-financing. Within the DESCG project, approximately €10.8 million is allocated specifically for the improvement of the energy efficiency in public buildings, including facilities of the University of Montenegro and other public institutions. This project also extends to integrating renewables into the energy grid.
- "**Hospitals Energy Efficiency Project in Montenegro**", financed through a €12 million EBRD loan, a €2 million EU grant under the REEP program and around €1 million in technical assistance for project preparation and implementation. Funds are allocated for energy-efficiency upgrades in hospitals in Podgorica, Cetinje and Bijelo Polje, covering a total of approximately 37.655 m^2 of building space. The estimated specific cost of these renovations is around €358 per m^2, with expected annual energy cost savings of €52 per m^2.
- "**Public Buildings Energy Efficiency Project in Montenegro**", financed through a €20 million EBRD loan, a €4 million EU grant for the renovation and energy-efficiency upgrades of educational buildings and student accommodation.

Incentive Programs for Households, Tourism and Industry

Financial support for energy efficiency improvements in the residential sector was initially implemented mainly through interest-free loan schemes developed in cooperation with commercial banks. During the period 2010–2022, several programs (MONTESOL, ENERGY WOOD and Energy Efficient Home) supported implementation of household energy efficiency measures, benefiting more than 2.000 households. A significant institutional improvement occurred through the establishment of dedicated national financing institutions, particularly: the Eco Fund and the Innovation Fund of Montenegro. These institutions created the basis for broader and more diversified support mechanisms targeting households, tourism facilities, SMEs and industrial innovation.

As a part of interinstitutional cooperation between the Ministry of Energy and Mining, Eco Fund, Innovation Fund and other national institutions, four (4) major support programs were launched

during 2023–2024 with **financial support from the European Commission's "Energy Support Package for the Western Balkans"**. The programmes primarily targeted households, tourism facilities and SMEs, through grant-based and co-financing support mechanisms. As of early 2025, this "**Energy Efficiency Incentive Program for Households"** has mobilized over €15 million in investment toward retrofit activities, such as window replacement, thermal insulation, solar panels and energy-efficient heating systems, for over 4.500 households. These interventions have already involved 27 local companies in implementation, strengthening local businesses and generating employment in energy-efficient construction and associated services.[38] An important complementary initiative relates to the **support for prosumers through the "Solari" program** (Solari 3000+, Solari 500+ and Solari 5000+ programs) (explained in more details in part 1.2.1). These programmes represent some of the most visible examples of direct financial support for decentralized renewable energy deployment and active participation of households and SMEs in the energy transition. **Support for energy efficiency and e-mobility** continued in 2025 through cooperation between the Eco Fund and the Government of Slovenia, including support for household energy efficiency measures and promotion of electric mobility. A short overview of the key support programmes, implemented by the domestic players, is provided in the Table 9.

Support to MSMEs has expanded through the EBRD and EU green financing instruments. The **"SME Go Green" program** (offers blended finance (loans + grants) for MSMEs investing in renewable and efficient technologies), launched in Montenegro in 2025 forms a part of a broader €145 million regional EU-supported initiative and initially provides around €120 million in targeted SME financing across the Western Balkans, with plans to expand to €400 million regionally in subsequent years. For Montenegro, financing lines currently amount to at least €10 million in direct green SME lending, complemented by guarantee schemes capable of mobilizing up to €50 million in additional MSME financing.

Overall, energy efficiency and industrial modernization measures also represent an important component of the response to climate commitments, including CBAM-related pressures. Through these programs, Montenegro has expanded support for energy efficiency improvements in buildings, renewable energy deployment and innovation-oriented investments. Particular importance is attached to financing mechanisms targeting households, SMEs and industrial energy consumers. Despite this progress, Montenegro still lacks sufficiently scaled domestic financing instruments for the transition. Current programs remain highly dependent on: EU grants, concessional IFIs loans, WBIF blending mechanisms and donor-supported technical assistance.

38 https://www.undp.org/montenegro/press-releases/more-4500-households-montenegro-already-path-energy-efficiency

Table 8: *Overview of the recent support programs for the improvement of energy efficiency in Montenegro (Eco Fund, Innovation Fund and EPCG)*

Program Name	Financial Support Envelope	Implementing Institution	Level of Support	Achieved Results
Program for Promotion of Energy Efficiency in Households	€8.8 million	Eco Fund	Support for implementation of energy efficiency measures with subsidy levels ranging 20–70% depending on the type of measure and level of municipal development.	4.527 households applied for support
Program for Promotion of Energy Efficiency in the Hotel Industry	€3 million	Eco Fund	Support for implementation of energy efficiency measures in hotel facilities with subsidy levels of up to 60%, depending on the level of municipal development and annual operating period of the hotel.	Subsidy agreements signed with 15 hotels (total amount of €2.5 million)
Program for Promotion of Energy Efficiency in Rural Tourism and Household Hospitality Facilities	€0.5 million	Eco Fund	Support for implementation of energy efficiency measures with subsidy levels of up to 70%, depending on municipal development level and local air pollution conditions.	45 beneficiaries applied for support
Program for Supporting Innovation for Energy Efficiency in Industry	Phase 1 – €1.29 million Phase 2 – €2.3 million	Innovation Fund	Grants ranging €50.000 to €200.000 per project with subsidy intensity of up to 80%.	Phase 1: 7 projects financed; Phase 2: contracting phase ongoing for 14 projects
Program for Promotion of Energy Efficiency and E-Mobility (2025–2026)	€1.65 million	Eco Fund	Support for implementation of energy efficiency measures with subsidy levels of up to 50%, depending on municipal development level and local air pollution conditions.	329 applications approved in 2025
"Solari 3000+" and "Solari 500+" Program	€6 million	EPCG/Eco Fund	Support for purchase and installation of rooftop photovoltaic systems of up to 10 kW for households and up to 30 kW for legal entities, with subsidy intensity of 20% of system value.	3.300 photovoltaic systems installed
"Solari 5000+" Program	€7 million	EPCG/Eco Fund	Support for purchase and installation of rooftop photovoltaic systems for households and legal entities with subsidy intensity of 10% of the system value.	4.650 photovoltaic systems installed

Source: Study on Improvement of Energy Efficiency in Buildings (2025), Authors' calculations

4.2 Solutions for improvements of financing framework

Improving the financing framework for Montenegro's energy transition requires a combination of regulatory reform, stronger public financial instruments, private-sector mobilization and targeted support for MSMEs and vulnerable households. Current financing mechanisms remain fragmented and heavily dependent on international support, while long-term affordable capital for green investments is still limited. Several priority measures could significantly improve the situation, including:

1. Montenegro should strengthen **domestic green financing mechanisms** through the operationalization of the Credit Guarantee Fund of Montenegro and the expansion of state-backed guarantees for energy-efficiency and renewable-energy investments. This is particularly important for MSMEs, which continue to face high collateral requirements and limited access to long-term credit.

2. **Montenegro should accelerate reforms linked to: ETS development, CBAM preparedness and electricity market integration**. A predictable carbon-pricing framework would improve investment certainty and create additional fiscal space for transition support measures, including just transition programs and energy-poverty mitigation.

3. Montenegro should establish a **dedicated national green financing platform or green investment facility** that would combine: public funding, EU grants, IFI credit lines and private capital. Such a mechanism could accelerate investments in rooftop solar, building renovation, industrial decarbonization, heat pumps, sustainable transport and storage technologies.

4. Montenegro should further **incentivize commercial banks to expand green lending portfolios** through: preferential risk-sharing schemes, regulatory incentives, green taxonomy alignment and improved ESG reporting standards. The development of sustainable finance instruments, including green bonds and blended-finance models, would also help diversify available financing sources. In January 2026, Montenegro adopted the Law on Green Bonds and Sustainable Bonds[39], as a part of its EU alignment package. The law regulates the issuance of European Green Bonds (EuGB), introduces transparency and sustainability disclosure obligations, defines environmental sustainability criteria for investments and establishes supervision of external reviewers. A particularly important feature is the requirement that proceeds from green bonds must be fully aligned with EU taxonomy rules, aiming to prevent "greenwashing" and ensure that financed projects genuinely contribute to environmental and climate objectives. The law is expected to create the regulatory foundation for mobilizing capital for Montenegro's green transition, including investments in renewable energy, transport decarbonization, waste management and climate adaptation.

5. **Stronger technical assistance is needed for MSMEs and municipalities**. Many potential beneficiaries lack the administrative and technical capacity to prepare bankable green projects or meet EU financing requirements. Expanding advisory programs and project-preparation facilities would improve absorption capacity.

6. **Improving investment climate** remains essential. Faster permitting procedures, regulatory stability, digitalization of administrative processes and greater transparency in energy planning would help mobilize private investment at the scale required by the NECP.

39 "OG of MNE", No. 14/2026

While dedicated institutions such as the Eco Fund (and Innovation Fund) have significantly expanded support mechanisms in recent years, the **overall green finance ecosystem in Montenegro remains at a relatively early stage of development**. The existing programs are increasingly important, but **their scale remains limited compared to the overall investment needs identified under the NECP**. Therefore, further development of green financing instruments will be necessary, including: dedicated green credit lines and guarantee schemes; blended finance mechanisms combining grants and concessional loans; support for project preparation and technical assistance; financing instruments tailored to MSMEs and industrial decarbonization; and expanded support for municipalities, prosumers and energy communities. Overall, successful financing of Montenegro's renewable energy transition depends on the ability to combine public investment, private capital, market-based support mechanisms and international financial support within a stable and predictable regulatory environment.

Strengthening domestic institutional capacities for preparation, coordination and absorption of international climate and energy financing will also be essential. Particular importance should be given to investments that simultaneously contribute to decarbonization, competitiveness and local economic development. This includes support for domestic renewable energy supply chains, energy-efficient industrial modernization, digitalization of energy infrastructure, battery storage systems, prosumer models and development of new skills linked to the green economy.

At the same time, experiences of companies exposed to CBAM-related pressures demonstrate that the transition is increasingly becoming an issue of industrial competitiveness and market access, rather than only environmental policy. In this regard, timely access to financing for technological modernization and decarbonization may become a decisive factor for maintaining competitiveness of parts of Montenegro's economy within the evolving European market framework.

Overall, Montenegro's energy transition is no longer primarily constrained by the absence of strategic objectives or policy commitments, but increasingly by the ability to mobilize, coordinate and implement investments at the scale and speed required by the transition process. **A coherent GIP approach, combining financial support, infrastructure investment, institutional strengthening and industrial modernization, will therefore be essential to ensure that the transition contributes to the decarbonization, long-term economic resilience, competitiveness and social inclusion**.

5. POLICY RECOMMENDATIONS

Montenegro's energy transition has become a strategic economic challenge directly linked to industrial competitiveness, energy security and integration into the European low-carbon economy. The country now faces increasing pressure to modernize its energy system, reduce carbon intensity, prepare domestic industries for CBAM obligations and gradually reposition its economy toward greener and more resilient development pathways. At the same time, the transition creates opportunities for infrastructure modernization, RES deployment, technological upgrading and the creation of new green industries and jobs.

Box 4: *Connection to the Regional Green Industrial Policy Framework*

Regional GIP Pillar	Montenegro's Priority Actions
Clean Energy Transition	Accelerate renewable energy deployment through competitive auctions and Contracts for Difference (CfDs); modernize transmission and distribution infrastructure; expand Battery Energy Storage Systems (BESS); strengthen energy efficiency and decentralized energy production.
CBAM Readiness	Strengthen institutional and company-level preparedness through improved MRV systems, carbon accounting, exporter support and gradual alignment with the EU ETS, while advancing electricity market coupling with the EU.
Industrial Competitiveness	Support industrial decarbonization, technological upgrading, innovation, resource efficiency and stronger integration of domestic enterprises into European green value chains.
Green Finance	Expand access to green finance through blended finance instruments, public guarantees, concessional lending, IFI-supported investment programmes and stronger private capital mobilisation.
Skills and Workforce	Develop green skills, modernize vocational education and higher education programmes, and implement workforce reskilling aligned with labour market needs and emerging green industries.
Just Transition	Diversify the economy of Pljevlja, create alternative employment opportunities, strengthen social protection and ensure inclusive stakeholder participation throughout the transition process.
EU Integration	Align industrial, energy and climate policies with the European Green Deal, the Green Agenda for the Western Balkans, the Energy Community acquis and Montenegro's EU accession commitments.

Source: Author's overview

Without faster implementation of reforms, Montenegro risks entering the next phase of transition with outdated infrastructure, insufficient administrative readiness and growing exposure to carbon-related trade costs. However, if strategically managed, the transition can become a driver of long-term modernization and structural transformation.

5.1 Short-Term Priorities

1. Accelerate Renewable Energy Deployment

Montenegro should urgently accelerate renewable energy deployment in order to reduce long-term dependence on coal-based electricity generation and imported fossil fuels, while simultaneously improving energy security and compliance with EU climate obligations. Although investor interest in solar and wind projects has increased considerably in recent years, implementation remains slowed by lengthy permitting procedures, fragmented institutional responsibilities and limited administrative efficiency. In the short term, the Government should therefore **prioritize faster and more predictable licensing procedures, improved coordination between institutions involved in project approvals, transparent renewable energy auctions and the operationalization of CfDs**. Accelerating projects that are already in the development pipeline is particularly important for strengthening investor confidence and demonstrating the credibility of Montenegro's transition agenda. The renewable energy transition should no longer remain primarily a strategic objective on paper, but should increasingly translate into visible infrastructure development and operational energy projects.

Lead institutions: Ministry of Energy and Mining, EPCG CGES, CEDIS, private investors and municipalities. Priority actions should be implemented during 2026–2028, including the operationalization of the One-Stop Shop, regular renewable energy auctions and full implementation of the Contracts for Difference (CfD) scheme.

2. Modernize the Electricity System

The modernization of Montenegro's electricity system should become one of the country's most urgent transition priorities. **Existing transmission and distribution infrastructure was developed around a centralized and relatively inflexible generation model dominated by hydropower and coal. Such a system is not sufficiently prepared for large-scale integration of intermittent renewable energy sources, such as solar and wind power**. As renewable deployment accelerates, infrastructure limitations risk becoming one of the main barriers to further decarbonization. Montenegro should therefore immediately increase investments in smart grids, digital electricity management systems, transmission reinforcement and BESS. Strengthening system flexibility and balancing capacity will be essential for maintaining energy stability and reducing future dependence on the TPP "Pljevlja", as a balancing source. Energy infrastructure should be treated as strategic economic infrastructure necessary for future industrial competitiveness and integration into the European electricity market.

Priority investments should focus on the implementation of CGES and CEDIS grid development plans, deployment of battery energy storage systems (BESS) and digital grid management, supported through EBRD, EIB, WBIF and other EU financial instruments.

3. Establish Full CBAM Preparedness

The introduction of the EU CBAM represents one of the most immediate economic and trade-related challenges for Montenegro, particularly for electricity exports and energy-intensive industries. Many domestic companies still lack sufficient administrative, technical and financial capacity to comply with future carbon-reporting and verification obligations. In the short term, the **immediate priority should be strengthening capacities related to MRVA, carbon accounting methodologies, guarantees of origin and future carbon-pricing obligations**. Without timely preparation, Montenegrin exporters may face declining competitiveness in the EU market and increasing transition-related costs. CBAM preparedness should be therefore viewed both as a compliance issue and an important instrument for preserving industrial competitiveness and facilitating gradual integration into the EU low-carbon market framework.

The Ministry of Energy and Mining, Ministry of Finance and Ministry of Ecology, Sustainable Development and Northern Region Development, in cooperation with the Environmental Protection Agency, Chamber of Economy and Union of Employers, should establish a national CBAM Helpdesk for exporters, prepare practical guidance documents, strengthen MRV capacity and organize regular training for companies during the transition period.

4. Strengthen Governance and Institutional Coordination

One of Montenegro's most significant structural weaknesses in managing the green transition remains fragmented governance. Responsibilities related to energy transition, climate policy, industrial modernization and EU integration remain dispersed across multiple institutions that often operate with limited strategic coordination and insufficient implementation capacity. Montenegro therefore requires a stronger and more centralized governance framework capable of coordinating implementation of the NECP, CBAM preparedness, RES deployment and just transition measures. Establishing an integrated monitoring and coordination mechanism would improve policy coherence, accelerate decision-making and reduce uncertainty for investors and international partners. **Strengthening administrative capacities within public institutions is equally important, particularly regarding project preparation, implementation monitoring and absorption of EU and international financing instruments**. Without stronger governance structures, many transition measures risk remaining delayed or only partially implemented.

A permanent inter-institutional coordination mechanism, chaired by the Government, should oversee implementation of the NECP, CBAM preparedness and Green Industrial Policy priorities through annual implementation reports and measurable performance indicators.

5. Protect the Coal Region of Pljevlja

The transition away from coal will have significant economic and social implications for the coal region of Pljevlja, where employment and local economic activity remain strongly connected to coal mining and thermal power generation. Montenegro should, therefore, **ensure that the transition process remains socially sustainable and regionally balanced. In the short term, the Government should operationalize the just transition framework through retraining and reskilling programs, support for local SMEs, entrepreneurship incentives and targeted social protection measures**. The transition strategy should aim to mitigate the negative impacts of decarbonization and at the same time to create new economic opportunities capable of gradually replacing coal-related activities. Investments in renewable energy, environmental remediation, sustainable tourism, digital services and local infrastructure could help diversify the regional

economy over time. A successful transition in Pljevlja will largely determine the broader social and political credibility of Montenegro's decarbonization process.

Priority should be given to the timely preparation and implementation of the Just Transition Plan for Pljevlja, supported by EU Just Transition Facility-type instruments, IPA III and IFI financing, with clearly defined implementation milestones up to 2030.

5.2. Medium-Term Actions

1. Build Strategic Green Infrastructure

Over the medium term, Montenegro should gradually transition from isolated renewable projects toward a fully modernized and integrated low-carbon energy system. This will require substantial investment in strategic infrastructure capable of supporting higher shares of renewable electricity, increasing system flexibility and strengthening regional electricity integration. **Grid reinforcement, digitalization, interconnections and storage systems will become essential preconditions for further decarbonization and industrial electrification**. Infrastructure investments should also be aligned with the EU electricity market integration requirements and long-term industrial development objectives. The modernization of energy infrastructure should, therefore, become one of the central pillars of Montenegro's future economic development strategy.

The financing architecture should combine public guarantees, green credit lines, blended finance instruments, concessional lending and risk-sharing facilities, while strengthening the role of the Eco Fund and commercial banks in financing green investments.

2. Create a National Green Financing Ecosystem

Montenegro's green energy transition remains heavily dependent on IFIs and fragmented external financing mechanisms. Although international support has played an important role in financing RES and energy-efficiency projects, the country still lacks a coherent domestic green financing architecture capable of strategically coordinating investments. **Montenegro should, therefore, gradually establish a national green financing ecosystem that combines EU funds, IFI financing, public guarantees, concessional loans and commercial bank participation, into a more integrated framework**. The objective should be to reduce investment risks, improve access to finance for renewable energy and industrial decarbonization projects and create more predictable long-term financing conditions. Developing domestic green financing mechanisms will also be important for strengthening private sector participation and reducing excessive dependence on externally driven projects.

3. Support Industrial Decarbonization

Montenegro's industrial sector will increasingly operate within a carbon-constrained European market environment shaped by CBAM, EU ETS alignment and growing decarbonization requirements across supply chains. Medium-term industrial policy should, therefore, support gradual technological upgrading and decarbonization of domestic industry. This includes investments in industrial energy efficiency, electrification of industrial processes, renewable self-generation and access to low-carbon electricity. **Montenegro should use decarbonization as an opportunity to modernize industrial production, improve productivity and strengthen long-term export competitiveness**.

Priority support instruments could include investment grants, tax incentives, energy-efficiency schemes and technical assistance for SMEs preparing for CBAM compliance and supply-chain decarbonization.

4. Build a Green Workforce

The transition toward a low-carbon economy will significantly reshape labor-market structures and create demand for new technical and digital skills. Montenegro's education and VET systems are insufficiently aligned with future labor-market needs related to RES, energy efficiency, digital infrastructure and green technologies. The country should, therefore, **gradually establish specialized training programs, renewable energy education centers and stronger cooperation between the industry and educational institutions. Particular attention should be devoted to reskilling workers from coal-related sectors and supporting vulnerable groups that may face greater difficulty adapting to labor-market changes**. Building a qualified workforce capable of supporting the green transition will become one of the key conditions for long-term economic modernization and investment attraction in the country.

Lead institutions should include the Ministry of Education, Science and Innovation, the Ministry of Labour and Employment, universities and vocational education providers, with updated curricula and retraining programmes introduced progressively by 2027.

5.3. Long-Term Structural Reforms

1. Move Toward a GIP Framework

In the long term, **Montenegro's transition should evolve from fragmented climate and energy measures toward a coherent GIP framework, capable of linking decarbonization with industrial modernization, innovation and competitiveness**. The transition should not be treated solely as an environmental obligation imposed through EU integration, but as a strategic opportunity to reshape the country's productive structure and strengthen economic resilience. This requires a role for the state in directing investment, supporting technological upgrading and creating conditions for the development of new green industries. Public policies related to energy, infrastructure, industrial development, innovation and education should operate within one integrated strategic framework.

This process should culminate in the preparation of a dedicated National Green Industrial Policy Strategy aligned with the next NECP update, Montenegro's Industrial Policy and EU accession priorities.

2. Develop New Green Economic Sectors

Montenegro possesses significant long-term development potential in renewable energy, battery storage, green construction, environmental services, circular economy activities and sustainable tourism. Strategic public support should therefore focus on strengthening domestic value chains and increasing the technological sophistication of the economy. The objective should be to **move gradually away from dependence on carbon-intensive and low-value activities toward sectors capable of generating higher productivity, innovation and green employment**. Developing new green sectors will also be important for improving regional economic diversification and increasing Montenegro's resilience to future climate and market-related risks.

3. Deepen Integration with EU Climate and Energy Frameworks

Montenegro's future economic competitiveness will increasingly depend on successful integration into the EU's low-carbon regulatory and market framework. **Full alignment with EU ETS rules, CBAM obligations, Energy Community commitments and EU electricity market regulations will**

become essential for maintaining export competitiveness and attracting investment. However, these obligations should not be perceived exclusively as external pressures or compliance burdens. If strategically managed, they can function as modernization drivers that encourage infrastructure upgrades, industrial decarbonization and institutional strengthening. The transition should, therefore, be viewed as a part of Montenegro's broader European economic integration process.

4. Build a New Development Paradigm

Ultimately, Montenegro's green energy transition is not simply about replacing coal with renewable energy. It represents a much broader transformation of the country's economic structure, infrastructure systems, industrial model and labor market. A successful transition will require **simultaneous progress in energy security, industrial modernization, workforce development, regional diversification and institutional strengthening**. If properly managed, the transition can become Montenegro's most important modernization project in decades, which is capable of creating a more resilient, competitive and sustainable economic model aligned with the long-term direction of the European economy.