

Assessment Report

Adopted National Energy and Climate
Plans 2025–2030 and 2025 progress towards
energy and climate targets in the
Energy Community

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List of abbreviations

CCUS	Carbon capture, utilisation and storage
CfD	Contract for Difference
CHP	Combined heat and power
CPs	Contracting Parties
DHC	District heating and cooling
EE1st	Energy efficiency first principle
EEOS	Energy efficiency obligation schemes
GDP	Gross domestic product
GFEC	Gross final energy consumption
GHG	Greenhouse gas
GOs	Guarantees of Origin
H&C	Heating and cooling
EP	Emergency Plan
FiP	Feed-in premium
FiT	Feed-in tariff
IPPU	Industrial processes and product use
LULUCF	Land use, land-use change and forestry
NECP	National Energy and Climate Plans
NECPR	National Energy and Climate Progress Reports
NERP	National Emission Reduction Planner
NOx	Nitrogen oxides
PaMs	Policies and measures
PECI	Projects of Energy Community Interest
PMI	Project of Mutual Interest
PAP	Preventive Action Plan
RES	Share of renewables in gross final energy consumption
RES-E	Share of renewables in gross final energy consumption of electricity
RES-H&C	Share of renewables in gross final energy consumption in heating and cooling
RES-T	Share of renewables in final energy consumed for transport
RA	Risk Assessment
SO2	Sulphur dioxide
SOR	System Operation Region
TSO	Transmission System Operator
TYNDP	Ten-year network development plan
WEM	With-existing-measures scenario of the NECP
WAM	With-additional-measures scenario of the NECP

List of legal acts

Name used in this report	Description
EED	Directive 2012/27/EU on energy efficiency , as adopted and adapted by Ministerial Council Decisions 2015/08/MC-EnC, 2021/14/MC-EnC and 2022/02/MC-EnC
EPBD	Directive 2010/31/EU on the energy performance of buildings , as adopted and adapted by Ministerial Council Decisions 2010/02/MC-EnC and 2021/14/MC-EnC
Decision 2010/02/MC-EnC	Decision of the Ministerial Council of the Energy Community, 24 September 2010: Decision 2010/02/MC-EnC amending 2009/05/MC-EnC implementing certain directives on energy efficiency
Decision 2012/03/MC-EnC	Decision of the Ministerial Council of the Energy Community, 18 October 2012: Decision 2012/03/MC-EnC on implementing Directive 2009/119/EC on maintaining minimum stocks of crude oil and/or petroleum products
Decision 2015/08/MC-EnC	Decision of the Ministerial Council of the Energy Community, 16 October 2015: Decision 2015/08/MC-EnC on implementation of Directive 2012/72/(EU) on energy efficiency
Decision 2021/14/MC-EnC	Decision of the Ministerial Council of the Energy Community, 30 November 2021: Decision 2021/14/MC-EnC amending Article 20 and Annex I to the Treaty establishing the Energy Community and incorporating Directive (EU) 2018/2001, Directive (EU) 2018/2002, Regulation (EU) 2018/1999, Delegated Regulation (EU) 2020/1044, and Implementing Regulation (EU) 2020/1208 in the Energy Community <i>acquis communautaire</i>
Decision 2022/02/MC-EnC	Decision of the Ministerial Council of the Energy Community, 15 December 2022: Decision 2022/02/MC-EnC on amending Decision 2021/14/MC-EnC and incorporating Directives (EU) 2018/2001 and 2013/2002, Regulations (EU) 2018/1999, 2020/1044, and 2020/1208 in the Energy Community <i>acquis</i>
Decision 2024/01/PHLG-EnC	Decision of the Permanent High Level Group of the Energy Community, 11 December 2024: Decision 2024/01/PHLG-EnC adapting and adopting Commission Implementing Regulation (EU) 2022/2299 laying down rules for the application of Regulation (EU) 2018/1999 as regards the structure, format, technical details and process for the integrated national energy and climate progress reports
Governance Regulation	Regulation (EU) 2018/1999 of 11 December 2018 on the Governance of the Energy Union and Climate Action , as adopted and adapted by Ministerial Council Decisions 2021/14/MC-EnC and 2022/02/MC-EnC
Oil Stocks Directive	Directive 2009/119/EC imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products , as incorporated and adapted by Ministerial Council Decision 2012/03/MC-EnC
RED II	Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources , as adopted and adapted by Ministerial Council Decisions 2021/14/MC-EnC and 2022/02/MC-EnC

Name used in this report	Description
Del. Reg. 2020/1044	Commission Delegated Regulation (EU) 2020/1044 of 8 May 2020 supplementing Regulation (EU) 2018/1999 with regard to values for global warming potentials and the inventory guidelines and with regard to the Union inventory system , as incorporated and adapted by Ministerial Council Decision 2021/14/MC-EnC
Impl. Reg. 2020/1208	Commission Implementing Regulation (EU) 2020/1208 of 7 August 2020 on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) 2018/1999 , as incorporated and adapted by the Ministerial Council Decision 2021/14/MC-EnC
Impl. Reg. 2022/2299	Commission Implementing Regulation (EU) 2022/2299 of 15 November 2022 laying down rules for the application of Regulation (EU) 2018/1999 as regards the structure, format, technical details and process for the integrated national energy and climate progress reports , as adopted and adapted by the Permanent High Level Group Decision 2024/01/PHLG-EnC



01

Introduction

National Energy and Climate Plans (NECPs)

The Energy Community has adopted the EU's National Energy and Climate Plans (NECPs) as the main strategic policy planning tool for setting energy and climate targets and outlining the implementation of policies and measures to achieve them. NECPs are intended to align a range of energy and climate planning and reporting efforts,¹ thereby providing consistency and certainty for all stakeholders on future energy system and economy pathways and acting as a blueprint for investment.

Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (Governance Regulation)² outlines the content, structure, time horizon and development process for NECPs.

Content: According to Annex I of the Governance Regulation, NECPs outline national objectives and targets, together with the respective policies and measures, for all five dimensions of the Energy Union: **decarbonisation** (including **renewable energy**); **energy efficiency**; **energy security**; **internal energy market**; and **research, innovation and competitiveness**. These dimensions are closely related and reinforce one another. In their NECPs, Contracting Parties are required to compare projected developments of their energy systems and greenhouse gas (GHG) emissions under existing policies and measures with those under additional policies and measures. The underlying assessment requires robust modelling capacity and may benefit from regional coordination to ensure that national planning is aligned to the degree necessary to maintain security of supply and reveal potential for achieving objectives and targets more (cost-)effectively.

Structure: Each NECP is structured as follows:

- Overview and process for establishing the plan;
- National objectives and targets;
- Policies and measures;
- Current situation and projections based on existing policies and measures;
- Impact assessment of planned policies and measures.

Time horizon: The first NECPs were required to be adopted by 30 June 2024 and cover the period from 2025 to 2030. The next cycle of NECPs will cover ten-year periods starting from 2031 to 2040.

Development process: During the preparation of their NECPs, Contracting Parties are expected to undertake public consultations, establish multilevel climate and energy dialogues and cooperate with one another and with Member States of the European Union. In this first planning cycle, Contracting Parties were required to submit a draft NECP to the Energy Community Secretariat by 30 June 2023. The Secretariat then assessed each draft and issued tailored recommendations, focusing in particular on objectives and targets, as well as the policies and measures outlined to achieve them. When finalising their NECPs, Contracting Parties were required to take due account of these recommendations and publish any reasons for not addressing them.

2030 energy and climate targets

The Energy Community Ministerial Council adopted 2030 energy and climate targets at its meeting of 15 December 2022. The adoption of these targets is essential to place the Energy Community Contracting Parties on a transparent path towards achieving climate neutrality of their economies by 2050 and decreasing dependence on fossil fuels in the shorter term. The respective Ministerial Council Decision 2022/02/MC-EnC³ sets out binding national targets for GHG emission levels (Mt CO_{2eq}), the share of energy from renewable sources in gross final energy consumption (%), and maximum levels of primary and final energy consumption (Mtoe) in 2030.

1 NECPs can replace National Renewable Energy Action Plans and National Energy Efficiency Action Plans and inform the update of Nationally Determined Contributions (NDCs).

2 Regulation (EU) 2018/1999 of 11 December 2018 on the Governance of the Energy Union and Climate Action, as adopted and adapted by Ministerial Council Decisions 2021/14/MC-EnC and 2022/02/MC-EnC

3 Decision 2022/02/MC-EnC on amending Decision 2021/14/MC-EnC and incorporating Directives (EU) 2018/2001 and 2013/2002, Regulations (EU) 2018/1999, 2020/1044, and 2020/1208 in the Energy Community acquis, as adopted by the Ministerial Council of the Energy Community on 15 December 2022

Decarbonisation—greenhouse gas emission levels: Contracting Parties are not only deepening their electricity market integration with the EU but are also following up on climate ambition. The decarbonisation framework has already been established through the adoption of the Energy Community Decarbonisation Roadmap,⁴ the Governance Regulation and, finally, through Decision 2022/02/MC-EnC, outlining a vision for the 2030 climate and energy architecture. Article 15 of the Governance Regulation requires Contracting Parties to prepare and submit to the Secretariat their long-term strategies with a 30-year perspective, in line with the Energy Community's climate neutrality objective.

Decarbonisation—renewable energy: The legal foundation for renewable energy deployment in the Energy Community is Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (RED II).⁵ It establishes binding obligations and guiding principles for Contracting Parties to promote renewable energy, including by setting national and sectoral renewable energy targets and by establishing the policy, regulatory and market frameworks necessary for a successful energy transition. Decision 2022/02/MC-EnC amends RED II by replacing Part A of Annex I and introducing 2030 targets for each Contracting Party.

Energy efficiency: Directive 2012/27/EU on energy efficiency (EED),⁶ as adapted by Decision 2022/02/MC-EnC, establishes 2030 targets for maximum primary and final energy consumption for each Contracting Party (Annex XIV), as well as strengthened annual targets and requirements for the renovation of central government buildings and the achievement of annual final energy savings under energy efficiency obligation schemes. NECPs are required to take into account the targets and measures set out in the EED for the application of the *energy efficiency first principle* as well as the framework, the requirements and long-term planning instruments set out in Directive 2010/31/EU on the energy performance of buildings (EPBD).⁷ Together, these elements form the foundation of a credible, ambitious energy efficiency dimension within NECPs.

Integrated National Energy and Climate Progress Reports (NECPRs)

Integrated National Energy and Climate Progress Reports provide information about the status of implementation of NECPs, covering all five dimensions of the Energy Union. By 15 March 2025, Contracting Parties were required to report on progress towards achieving the objectives and targets set out in their adopted NECPs and in related national legislation, and thereafter at two-year intervals. The respective reporting obligation is set out in Article 17 of the Governance Regulation and in the 23 Annexes of Implementing Regulation (EU) 2022/2299⁸ (Impl. Reg. 2022/2299).

Contracting Parties are required to submit **climate information** via the online reporting system Reportnet 3.0 managed by the European Environment Agency (EEA). This system facilitates the collection of data and information, as required under Article 28 of the Governance Regulation. Some of the reporting templates refer to other climate-related reporting obligations, including Delegated Regulation (EU) 2020/1044 (Del. Reg. 2020/1044)⁹ and Implementing Regulation

4 Decarbonisation Roadmap for the Contracting Parties of the Energy Community—General Policy Guidelines 01/2021/MC-EnC, as adopted by the Ministerial Council of the Energy Community on 30 November 2021

5 Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, as adopted and adapted by Ministerial Council Decisions 2021/14/MC-EnC and 2022/02/MC-EnC

6 Directive 2012/27/EU on energy efficiency, as adopted and adapted by Ministerial Council Decisions 2015/08/MC-EnC, 2021/14/MC-EnC, and 2022/02/MC-EnC

7 Directive 2010/31/EU on the energy performance of buildings, as adopted and adapted by Ministerial Council Decisions 2010/02/MC-EnC and 2021/14/MC-EnC

8 Commission Implementing Regulation (EU) 2022/2299 of 15 November 2022 laying down rules for the application of Regulation (EU) 2018/1999 as regards the structure, format, technical details and process for the integrated national energy and climate progress reports, as adopted and adapted by the Permanent High Level Group Decision 2024/01/PHLG-EnC

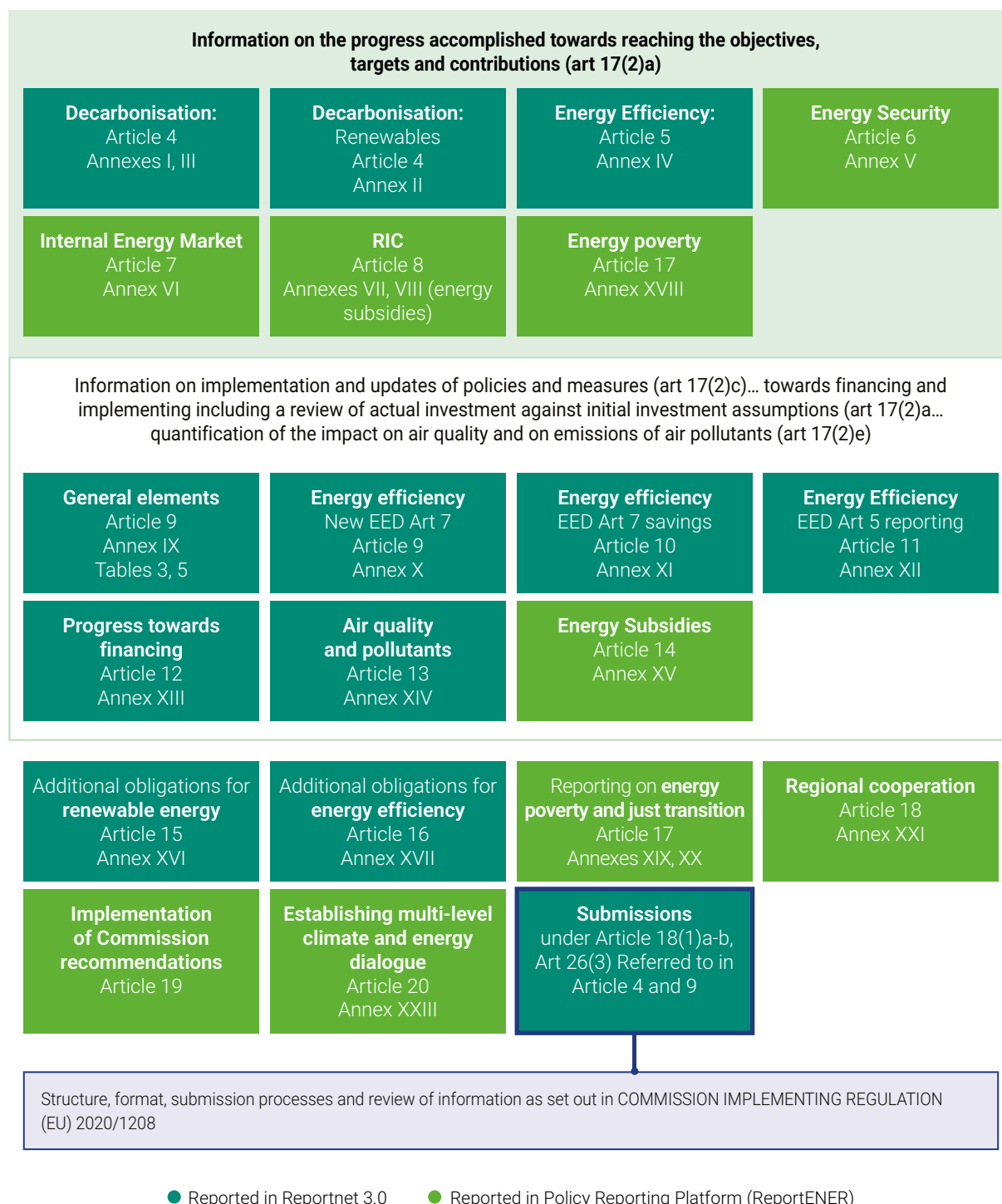
9 Commission Delegated Regulation (EU) 2020/1044 of 8 May 2020 supplementing Regulation (EU) 2018/1999 with regard to values for global warming potentials and the inventory guidelines and with regard to the Union inventory system, as incorporated and adapted by Ministerial Council Decision 2021/14/MC-EnC

(EU) 2020/1208 (Impl. Reg. 2020/1208).¹⁰ The reporting system supports the timely submission and quality control of data. The European Environment Agency assists the Energy Community Contracting Parties in their reporting.

The online reporting system Policy Reporting Platform facilitates the collection of **energy data** and information, with the Energy Community Secretariat supporting the timely submission and quality control of data.

Figure 1:

Obligations under the Governance Regulation and Imp. Reg. 2022/2299 for reporting via Reportnet 3.0 and Policy Reporting Platform



¹⁰ Commission Implementing Regulation (EU) 2020/1208 of 7 August 2020 on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) 2018/1999, as incorporated and adapted by the Ministerial Council Decision 2021/14/MC-EnC

Assessment of NECPs and progress

The Energy Community Secretariat is mandated¹¹ to assess whether adopted NECPs are in line with the 2030 energy and climate targets and comply with the requirements established by the Governance Regulation on the structure, content, time horizon and development process of NECPs. The Energy Community Secretariat is also tasked¹² with assessing progress made at Contracting Party level towards meeting the energy and climate objectives and targets.

The Energy Community Secretariat decided to account for the specifics and timelines of the first cycle of NECPs and NECPRs by combining the assessment of NECPs and the assessment of progress into a single document. Accordingly, this Assessment Report consists of two parts:

Assessment of NECPs: This evaluates the adopted NECPs, which cover the five-year period up to 2030. Given that preparation of the next cycle of NECPs will need to start no later than 2027, this assessment also prepares the ground for that cycle.

Assessment of progress: This focuses on identifying opportunities for improving the quality of submissions in the 2027 reporting cycle. It aims to reflect the status quo at the start of NECP implementation, rather than identifying progress towards achieving the NECP objectives and targets. This is due to the short interval between NECP and NECPR submissions in the Energy Community (2024 and 2025 respectively) and the time lag in the availability of energy statistics and other statistics.

This Assessment Report is based on submissions received up to the end of 2025, as summarised in Table 1 below. It is based on the data and information in the adopted NECPs and the submitted NECPRs of Albania, Georgia, Moldova, Montenegro, North Macedonia, Serbia and Ukraine. Kosovo*¹³ reported on progress towards achieving the 2030 energy and climate targets; however, it has not notified the Energy Community Secretariat of its NECP. Montenegro adopted its NECP, but did not submit progress reports under Impl. Reg. 2022/2299.

The analysis is complemented by historical data from Eurostat energy balances¹⁴ and the SHARES Tool.¹⁵



11 Article 13 of the Governance Regulation on the assessment of the integrated national energy and climate plans

12 Article 29 of the Governance Regulation on the assessment of progress

13 Throughout this report, this designation is without prejudice to positions on status and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo* declaration of independence.

14 The energy balance is the most complete statistical accounting of energy products and their flows in the economy. Energy Community Contracting Parties, like EU Member States and other reporting countries, report annual energy statistics to Eurostat under a harmonised methodology, on the basis of which energy balances are compiled.

15 The SHARES tool focuses on the harmonised calculation of the share of energy from renewable sources. The main benefit of the SHARES tool is that EU Member States and Energy Community Contracting Parties are committed to following the same method to calculate indicators for the share of energy from renewable sources.

Table 1:

Status of submissions of NECPs and reports under Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine	Dimension
Legend:  Submitted  Not yet submitted											
NECPs											
NECP	Submissions up to December 2025										
NECPRs											
Annex I	Decarbonisation: GHG emissions and removals										1 GHG
with reference to	GHG inventories under Del. Reg. 2020/1044										
with reference to	National projections of GHG emissions under Impl. Reg. 2020/1208										
Annex III	Decarbonisation: adaptation										1 Adapt.
Annex II	Decarbonisation: renewable energy										1 Renewables
Annex XVI	Additional reporting obligations in the area of renewable energy										
Annex IV	Energy efficiency										2 Energy efficiency
Annex XVII	Additional reporting obligations in the area of energy efficiency										
Annex V	Energy security										3 Energy security
Annex VI	Internal energy market										4 Int. en. market
Annex VII	Research, innovation and competitiveness										5 R&I, comp.
Annex VIII	National objectives to phase out energy subsidies, in particular for fossil fuels										
Annex XV	Policies and measures to phase out energy subsidies, in particular for fossil fuels										
Annex IX-XII	Integrated policies and measures										
Annex XIII	Progress towards financing										
Annex XIV	Impacts on air quality and emissions to air										
Annex XVIII	Energy poverty										
Annex XIX	Energy poverty										
Annex XX	Just Transition and Human Rights										
Annex XXI	Regional cooperation										
Annex XXIII	Multilevel climate and energy dialogue										

The structure of this Assessment Report corresponds to the five dimensions of the Energy Union:

- Decarbonisation: greenhouse gas emissions and removals;
- Decarbonisation: renewable energy;
- Energy efficiency;
- Energy security;
- Internal energy market;
- Research, innovation and competitiveness.

In addition, the report discusses investment needs for meeting NECP objectives, the just transition aspects of planned policies and measures, and their impact on air quality and on emissions of air pollutants.

For each dimension, the report assesses whether:

- Contracting Parties' submissions comply with the **formal/structural requirements** established by the Governance Regulation or Impl. Reg. 2022/2299;
- **national 2030 energy and climate targets** are consistent with the Energy Community framework;
- **sectoral trends** are reflected, including their impact on the energy system and GHG emissions;
- **policies and measures** are developed and described comprehensively, ensuring their contribution to achieving objectives and targets;
- submissions are **aligned with the Energy Community acquis** applicable to each dimension.

Ambition level of 2030 energy and climate targets: This report assesses the ambition gap between the targets set out in the adopted NECPs and submitted energy and climate progress reports and those established in Decision 2022/02/MC-EnC, given that Energy Community Contracting Parties—unlike EU Member States—work towards binding national targets.

Sectoral trends: This report examines sectoral level contributions to the 2030 energy and climate targets to provide a deeper understanding of the future pathway of each economy. The sectoral classification corresponds to the requirements under each dimension:

- The sectoral breakdown of **GHG emissions** follows the 2006 Guidelines for National Greenhouse Gas Inventories by the Intergovernmental Panel on Climate Change (IPCC), namely emissions from energy, industrial processes and product use (IPPU), waste, agriculture, and land use, land-use change and forestry (LULUCF). Some NECPs include a more detailed breakdown of GHG emissions by sub-sector, covering energy industries (including electricity generation), manufacturing industries and construction, transport, residential, services and agriculture.
- In line with the SHARES Tool, the **share of renewable energy in gross final energy consumption** is broken down into electricity (RES-E), heating and cooling (RES-H&C) and transport (RES-T).¹⁶
- The sectoral breakdown of **primary and final energy consumption** follows the structure of Eurostat's energy balances,¹⁷ covering industry, transport, commercial and public services ("services"), residential, agriculture and forestry, and other sectors.

¹⁶ European Commission, Eurostat, Directorate E: Sectoral and regional statistics, Unit E.5: Energy: SHARES Tool Manual, Version 2024.120925

¹⁷ European Commission, Eurostat, 31 Jan 2019: Energy balance guide -Methodology guide for the construction of energy balances

Data and information set out in the NECPs largely align with the sectoral classification described above. However, in some cases, policies and measures listed in the adopted NECPs are not classified accordingly. In these cases, the Energy Community Secretariat closed the gap to the best of its knowledge to enable assessment across the region.

Scenarios and projections: In line with the Governance Regulation, this Assessment Report refers to two types of scenarios:

- **with-existing-measures (WEM) scenario**, referring to projections of GHG emissions or energy system developments that take into account the effects of **policies and measures that have been adopted and implemented**;
- **with-additional-measures (WAM) scenario**, referring to projections of GHG emissions or energy system developments that take into account both the effects of policies and measures already adopted and implemented to mitigate climate change or meet energy objectives and **policies and measures planned for that purpose**.

The quantitative assessment in this report—in particular the discussion of targets and sectoral trends—focuses on projections under the WAM scenario.





02

Assessment of National Energy and Climate Plans

Horizontal overview

How well prepared were Contracting Parties for developing their NECPs?

Adoption of a comprehensive legal framework: Despite adoption of an NECP, many Contracting Parties still lack the full legal basis for defining the NECP structure, role, frequency and adoption procedures. In some cases, the respective laws and bylaws have not yet been adopted (at national level), while in other cases, they lack key elements. Only **Moldova** and **Serbia** have established a comprehensive legal framework in this regard.

Institutional setup for NECP development: To become fully integrative instruments, NECPs require coordinated efforts across government departments and other stakeholder groups, thereby creating a robust framework that catalyses public and private investment and supports thorough implementation of the planned policies. To this end, **all Contracting Parties** established interministerial committees or technical working groups when developing their first cycle of NECPs and involved a range of relevant authorities and stakeholders in the process, including key ministries, local authorities, the private sector and civil society. In future cycles, the development of NECPs could also benefit from multilevel climate and energy dialogues.

Multilevel climate and energy dialogue: Under the Governance Regulation “each Contracting Party shall establish a multilevel climate and energy dialogue pursuant to national rules, in which local authorities, civil society organisations, business community, investors and other relevant stakeholders and the general public are able actively to engage and discuss the different scenarios envisaged for energy and climate policies, including for the long term and review progress, unless it already has a structure which serves the same purpose. Integrated national energy and climate plans may be discussed within the framework of such a dialogue.” Some Contracting Parties (**Kosovo***, **Moldova**, **Montenegro**, **Serbia** and **Ukraine**) have already established such standalone consultative bodies by law, for example in the form of a national council for climate change.

Regional cooperation and consultations: Article 12 of the Governance Regulation calls upon Contracting Parties to “cooperate with each other and with European Member States [...] to meet the objectives, targets and contributions set out in their integrated national energy and climate plan effectively.” In addition, each Contracting Party shall consult neighbouring Contracting Parties and European Member States, including through regional cooperation fora and transboundary consultations.

- In the first cycle of NECPs, **regional and cross-border cooperation** often appears to cover only infrastructure project development with regional trading partners. Many NECPs focus on diversifying energy sources and supply from third countries but lack the consideration of regional cooperation, particularly with regard to the exchange of balancing resources and market coupling. They lack a comprehensive description of actions integral to regional cooperation, particularly in the areas of internal energy market and energy security in the gas and electricity sectors.
- All Contracting Parties presented their NECP drafts in regional consultation fora. In addition, **Moldova** and **Ukraine** consulted each other on their NECP drafts and invited comments from neighbouring European Member States. **Serbia** conducted regional public consultations.

Table 2:

Contracting Parties' level of preparedness for developing NECPs

Aspect	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend: Step completed or potential fully exploited Steps taken Yet to start									
Adoption of a comprehensive legal framework at national level									
Institutional setup for first-cycle NECP development									
Introduction of a multilevel climate and energy dialogue by law									
Regional consultations and cooperation									

Were the NECPs adopted on time?

Seven of nine Contracting Parties notified the Energy Community Secretariat of the adoption of their NECP by December 2025. These NECPs are covered in this Assessment Report. Of the seven, four adopted their NECPs by the prescribed deadline (Albania, Georgia, North Macedonia and Ukraine).

Table 3:

Status of notifying the Energy Community Secretariat of NECP adoption

Contracting Party	NECP adoption
Albania	12/21 on time
Bosnia and Herzegovina	Not yet adopted
Georgia	06/24 on time
Kosovo*	Not yet adopted
Moldova	02/25 late
Montenegro	12/25 late
North Macedonia	05/22 on time
Serbia	07/24 late
Ukraine	06/24 on time

Are the NECPs compliant with structural requirements?

The adopted NECPs follow the general structure under Article 3 and Annex I of the Governance Regulation. However, in some NECPs, certain elements do not fully satisfy the complete set of requirements regarding format and scope. Common gaps include:

- National objectives and targets are not proposed under NECP Chapter 2 or do not correspond to the format described under Decision 2022/02/MC-EnC (targets for GHG emissions in Mt CO₂eq, the share of renewables in gross final energy consumption in %, and targets for primary and final energy consumption in Mtoe).
- Assessment of the impacts of planned policies and measures does not provide sufficient level of detail (including a sectoral breakdown and annual indicative trajectories).

- A list of parameters and variables¹⁸ is not reported.
- The annex containing the notification of measures and methodologies to implement EED Article 7¹⁹ is not provided.

Are the NECPs sufficiently ambitious?

The **2030 energy and climate targets** set out in the seven adopted NECPs are consistent with the Energy Community framework, and any deviations are explained or justified. Around half the proposed targets are more ambitious than those established in Decision 2022/02/MC-EnC.

Some Contracting Parties also refer to the objective of achieving climate neutrality by 2050 in their NECPs; however, their current GHG emission projections do not support these ambitions. When accounting for LULUCF contributions, **Montenegro** is the only Contracting Party projecting **climate neutrality by 2050**.

Table 4:

Contracting Parties' NECP targets and compliance with the 2030 targets

Contracting Party	Net GHG emissions	Renewable energy share	Primary energy consumption	Final energy consumption
NECP ambition level compared to Decision 2022/02/MC-EnC				
Legend: below above in line NECP not yet adopted Information not available in the NECP				
	[Mt CO ₂ eq]		[Mtoe]	[Mtoe]
Albania	10,20	54,4%	NA	2,33
Bosnia and Herzegovina				
Georgia	20,50	27,4%	5,45	5,00
Kosovo*				
Moldova	9,10	30,0%	3,00	2,80
Montenegro	2,40	53,3%	0,90	0,72
North Macedonia	2,20	38,0%	2,30	2,00
Serbia	47,77	33,6%	14,69	9,67
Ukraine	309,00	27,1%	72,22	42,17

Notes: Albania's final energy consumption target reflects the NECP projections under Table 47. The NECP projections for primary energy supply (2,56 Mtoe) under Table 44 indicate that the country's primary energy consumption in 2030 is expected to comply with the Energy Community headline target, while the adopted NECP does not specify a respective primary energy consumption target. Moldova's GHG emission target is established for the "administratively controlled territory of the Republic of Moldova" (referred to as "right bank of the Dniester River"). Montenegro's GHG emission target excludes LULUCF emissions and removals. In accordance with Article 6 of Decision 2022/02/MC-EnC, Serbia's NECP provides a justification for the deviation of its national renewable energy target from the headline target established in Decision 2022/02/MC-EnC. While Serbia's final energy consumption target remains slightly less ambitious than the mandated level, its adopted NECP provides an explanation for this deviation.

Are the NECPs credible?

Contracting Parties are required to implement a comprehensive set of policies and measures to work towards the objectives and targets set for each dimension and sector. To ensure their successful implementation, these policies and measures need to be well planned and described, including institutional responsibilities and financing. Furthermore, NECPs need to provide evidence that existing and planned policies and measures are sufficient to achieve the proposed targets.

18 As required by the Governance Regulation Annex I, Part 2.

19 As required by the Governance Regulation Annex III.

Coverage of policies and measures: The adopted NECPs list approximately 600 policies and measures aimed at enabling achievement of the respective objectives and targets. Figure 2 and Figure 3 below indicate the number of policies and measures per dimension and sector. However, this assessment is subject to methodological limitations and only provides approximate information, as the complexity and scope of policy instruments vary significantly across NECPs. Some Contracting Parties define a comprehensive programme, including legal and technical measures, as a single policy instrument, while other Contracting Parties propose a broader set of individual policies and measures.

The assessment finds that the majority of policies and measures described in NECPs aim to foster progress in those dimensions with quantified targets, namely decarbonisation (including renewable energy) and energy efficiency. In comparison, fewer policies and measures support energy security or research, innovation and competitiveness.

Figure 2:

Dimensional coverage—number of policies and measures per dimension

	Albania	Georgia	Moldova	North Macedonia	Montenegro	Serbia	Ukraine	Average
Decarbonisation: Greenhouse gas emissions	21%	34%	21%	30%	26%	13%	10%	20%
Decarbonisation: Renewable energy	23%	11%	18%	19%	25%	17%	10%	17%
Energy efficiency	26%	24%	28%	32%	18%	25%	22%	26%
Energy security	16%	18%	11%	0%	9%	7%	13%	11%
Internal energy market	7%	1%	13%	13%	16%	25%	39%	20%
Research, innovation and competitiveness	7%	12%	9%	6%	7%	12%	6%	9%

Legend: ● > 15%

Notes: This assessment is subject to methodological limitations and only provides approximate information, as the complexity and scope of policy instruments vary significantly across adopted NECPs.

Source: Energy Community compilation of existing and newly planned policies and measures listed in adopted NECPs

The findings of this assessment also provide insight into the sectoral coverage of policies and measures. The majority of policies and measures are intended to take effect in the energy sector, with a particularly strong focus on promoting energy market integration, energy supply (including biofuels, electricity and heat generation) and infrastructure (transmission, distribution and interconnectivity). Many Contracting Parties are also implementing or plan to implement actions in the transport sector as one of the energy demand sectors of increasing future relevance. In comparison, fewer policies and measures target other sectors that are key to decarbonisation of the economy, such as industry, agriculture and LULUCF.



Figure 3:

Sectoral coverage—number of policies and measures per sector

	Albania	Georgia	Moldova	North Macedonia	Montenegro	Serbia	Ukraine	Average
Cross-cutting	4%	1%	7%	3%	4%	4%	3%	4%
Energy								
Energy market integration	4%	0%	11%	5%	15%	14%	36%	15%
Energy poverty	2%	1%	1%	0%	2%	4%	2%	2%
Energy supply (incl. electricity and heat generation)	21%	10%	20%	20%	28%	23%	30%	22%
Infrastructure	15%	24%	16%	10%	6%	18%	7%	14%
Energy demand: Residential/ services	4%	4%	7%	8%	9%	4%	5%	6%
Energy demand: Transport	17%	10%	11%	12%	9%	10%	3%	9%
Energy demand: Multiple/ others	15%	7%	8%	12%	4%	10%	7%	9%
Industry (energy demand + processes)	4%	6%	9%	5%	9%	3%	1%	5%
Agriculture (energy demand + processes)	6%	7%	7%	14%	4%	4%	2%	5%
LULUCF	4%	11%	3%	3%	4%	2%	2%	4%
Waste	6%	18%	1%	7%	6%	3%	3%	6%

Legend: ● > 15% ● > 10%

Notes: This assessment is subject to methodological limitations and only provides approximate information, as the complexity and scope of policy instruments vary significantly across adopted NECPs.

Source: Energy Community compilation of existing and newly planned policies and measures listed in adopted NECPs

Level of elaboration of policies and measures: Policies and measures are described comprehensively in terms of their objectives, timeframe, sectoral scope and responsible entities. However, with the exception of **North Macedonia**, the adopted NECPs tend to provide qualitative descriptions of policies and measures, without quantifying their expected output or contribution to (sectoral) targets. For example, policies and measures intended to support renewable energy deployment often lack a link between planned actions, expected installed capacities per technology and their contribution to the share of renewable energy in the given sector. While most NECPs elaborate on financing needs, they often lack details on financing sources or the type of costs considered (e.g. full investment costs or only public sector funding).

Expected impact of policies and measures: The analytical sections of the NECPs generally indicate that the policies and measures are sufficient to achieve the 2030 NECP objectives and targets. In some cases, projections show a higher level of potential in ambition than the actual national targets, which reflect Decision 2022/02/MC-EnC. Despite all NECPs supporting achievement of the 2030 energy and climate targets, some Contracting Parties project that GHG emissions and energy consumption will continue to increase and reach their peak at a later stage.

While all the adopted NECPs assess the impact of policies and measures on GHG emissions, renewable energy shares and energy consumption, some Contracting Parties report insufficient input data or assumptions for specific sectors (such as LULUCF and transport), which influences the coverage and certainty of projections. In addition, very few NECPs include the full set of parameters and variables to be reported in Section B of NECPs,²⁰ limiting the reliability and applicability of the analytical results.

Consistency with other strategies: The added value of an NECP lies in using the gathered multi-sectoral information to identify new policy synergies and manage conflicting sectoral priorities, rather than serving as a simple, uncritical compilation and summary of information from other sources. The first cycle of NECPs shows that their role should be further strengthened and clarified, especially in relation to sectoral policy developments in public administrations. In several cases, objectives and targets were directly copied into the NECP from sectoral documents, without sufficient critical assessment, explanation or reconciliation with broader strategic policy considerations and the integrated planning framework. As a result, quality shortcomings in sectoral documents directly translate into lower-quality NECPs. The diverging timelines for adopting domestic policy documents create a risk of lower consistency, especially in cases where only an outdated sectoral strategy is available during development of the NECP and is not updated until after adoption of the NECP. Experience has shown, however, that even where the NECP is developed in parallel with a Long-term Strategy—also prepared pursuant to Article 15 of the Governance Regulation—or other strategic documents, inconsistencies or even conflicting commitments may still emerge in targets, assumptions and timelines.

Are the NECPs affordable?

At the aggregated level, the overall investment need indicated in the seven adopted NECPs amounts to approximately EUR 151 billion for the period up to 2030. However, some policies and measures do not indicate the investment needs required for their implementation. Clear financing strategies will be required to ensure successful implementation. However, in many cases, the funding source remains “to be determined”. Based on the available data, private sector investments appear to dominate, with the public sector share typically ranging from 20% to 30% of total NECP financing. Contracting Parties often also envisage financing measures through donor support, without specifying specific institutions or programmes as potential sources of funding. Reflecting the focus of the majority of policies and measures, NECP dimensions requiring the highest investments are decarbonisation (including renewable energy deployment) and energy efficiency, together accounting for 84% or more of the total indicated financing needs across the adopted NECPs. However, these numbers only serve as a rough guide, as information on financing needs varies in sectoral coverage and scope.

Are the NECPs just?

NECPs provide the opportunity to address impacts of the energy transition, especially in the broader context of regional development, distributional impacts among the population, energy poverty and gender issues. Many Contracting Parties address the just transition in the form of a single policy. However, this discussion could be broadened and integrated more systematically into NECPs to tackle the consequences of the energy transition more effectively (for example, by incorporating just transition aspects into listed policies and measures, providing coal phase-out dates, and detailing individual impacts of the transition).

Are the NECPs inclusive and transparent?

NECPs are required to reflect a “*description of the public consultation and involvement of stakeholders and their results*”. Most of the adopted NECPs describe the public consultations conducted and the stakeholder groups involved in the preparation and finalisation of the NECP. However, very few Contracting Parties refer to the actual results of these consultations.

20 As required by the Governance Regulation Annex I, Part 2

2.1 Decarbonisation dimension: greenhouse gas emissions and removals

2030 and 2050 greenhouse gas emission targets

The 2030 climate and energy targets, adopted through Decision 2022/02/MC-EnC, are intended to serve as the reference point for the NECP framework, to be achieved by 2030. The assessment finds that all Contracting Parties complied with the Governance Regulation requirement and set a 2030 “*binding national target for greenhouse gas emissions*”²¹ in their NECPs. However, not all 2030 targets are expressed in absolute emission volumes, as Georgia²² and Serbia express their targets in relative terms only and present corresponding absolute GHG emission levels in other chapters of their NECPs.

The assessment finds that all **national 2030 GHG emission targets** set out in the seven adopted NECPs are consistent with the Energy Community framework in that they either correspond exactly to (Georgia, Moldova, North Macedonia and Ukraine) or are more ambitious (Albania, Montenegro and Serbia) than Decision 2022/02/MC-EnC.

Table 5 below indicates how Contracting Parties’ plans compare to the Energy Community headline targets for 2030. Assuming that Bosnia and Herzegovina’s and Kosovo’s* future adopted NECPs comply with the Ministerial Council Decision, the GHG targets set out in the adopted NECPs would amount to a maximum emission level of 425,77 Mt CO_{2eq} by 2030. That corresponds to an emission reduction of 61,0% compared to the consolidated 1990 emission level of the Energy Community as a whole.

Table 5:

2030 GHG emission targets as per Decision 2022/02/MC-EnC and NECPs

	2030 target as per Decision 2022/02/MC-EnC		2030 target as per adopted NECP
	Compared to 1990 levels [%]	Net GHG emissions [Mt CO _{2eq}]	Net GHG emissions [Mt CO _{2eq}]
Legend: NECP not yet adopted			
Albania	+53,2%	12,00	10,20
Bosnia and Herzegovina	-41,2%	15,65	
Georgia	47,0%	20,50	20,50
Kosovo*	-16,3%	8,95	
Moldova	-68,6%	9,10	9,10
Montenegro	-55,0%	2,42	2,40
North Macedonia	-82,0%	2,20	2,20
Serbia	-40,3%	47,82	47,77
Ukraine	-65,0%	309,00	309,00

Notes: Kosovo’s target is compared against 2016 GHG emission levels. The target is set for the “administratively controlled territory of the Republic of Moldova” (referred to as “right bank of the Dniester River”). Montenegro’s target excludes LULUCF emissions and removals.

21 Article 4 (a)(1) of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

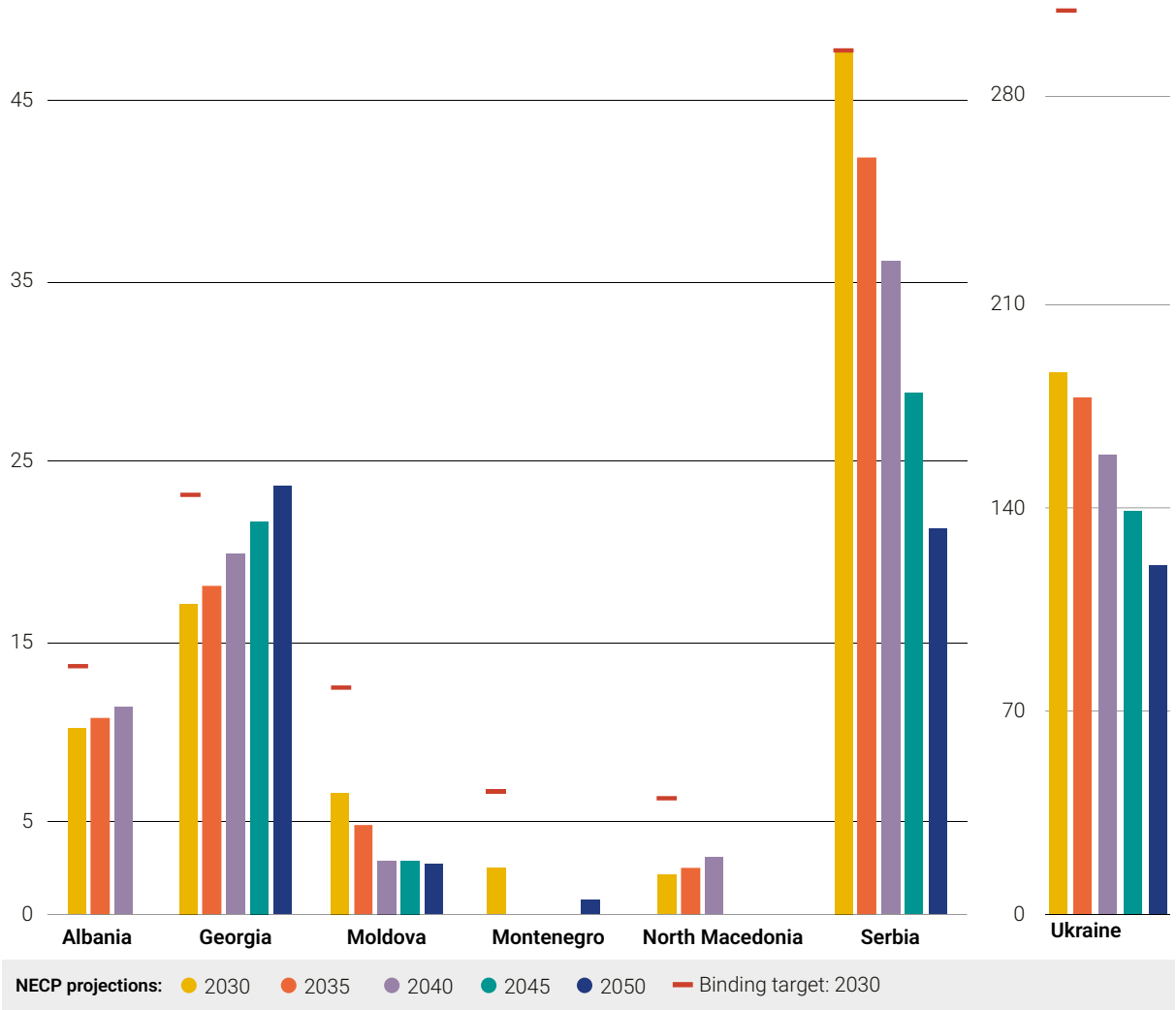
22 Georgia presents its net greenhouse gas emission target under Chapter 1.3.

The analytical sections of NECPs provide further insights into the robustness and ambition of 2030 GHG levels, especially for those Contracting Parties whose national 2030 GHG targets differ from their GHG projections (Albania, Georgia and Moldova have set more ambitious 2030 emission targets than those reflected in their projections) (Figure 4).

The Governance Regulation requires Contracting Parties to project GHG emissions up to 2040. All Contracting Parties have fulfilled this requirement. Some Contracting Parties (Georgia, Moldova, Montenegro, Serbia and Ukraine) project GHG emissions up to 2050, which allows for the assessment of longer-term trends, including achievement of climate neutrality.

Regarding post-2030 emission trends, some Contracting Parties foresee that GHG emissions will continue to decline (Moldova, Montenegro and Serbia), while some project that they will further increase and reach their peak at a later stage (Albania, Georgia and North Macedonia). An overall assessment is more challenging for Ukraine, as its projections currently exclude LULUCF contributions.

Figure 4:
NECP projections for total GHG emissions by Contracting Party, 2030–2050, with-additional-measures (WAM) scenario [Mt CO_{2e}q]



Source: Adopted NECPs—Albania (Table 36), Georgia (Annex VIII–8.2.), Moldova (Tables 32 + 33, WPM scenario), North Macedonia (Figure 100), Montenegro (Tables 2–2 to 2–7, WAM scenario), Serbia (Table ... 39, Scenario S-N), Ukraine (Table 5.1)

Notes: *Georgia's* NECP sets out a 2030 GHG target equal to Decision 2022/02/MC-EnC without analytical underpinning (Chapter 1.3.I. of the adopted NECP). Instead, the GHG projections in the analytical section of the NECP reflect a more ambitious pathway towards 2030, aligned with the country's NDCII target to be achieved "in case of international support". *Montenegro's* NECP presents GHG emissions excluding LULUCF for the years 2030 and 2050 only. *Moldova* commits to a 2030 GHG target that exactly meets the requirements of Decision 2022/02/MC-EnC (Chapter 2.1.1. of the adopted NECP), while GHG projections indicate that the country could achieve an even higher level of ambition by 2030. However, various 2030 GHG levels with the same scope are presented throughout Moldova's NECP without further explanation of the discrepancies (Tables 32 and 33 of the adopted NECP; both WPM scenario with LULUCF; right bank of the Dniester River). *Ukraine's* adopted NECP reflects a 2030 GHG target including LULUCF (page 40), while projections exclude LULUCF (Table 5.1.).

Limited information is available on the 2050 climate neutrality objective in the adopted NECPs. Only Moldova refers to its domestic legislation establishing a 2050 climate neutrality target, while Serbia refers to *the transition towards a climate-neutral economy* without specifying a date. According to its NECP, Ukraine aims to achieve climate neutrality of its energy sector by 2050.

While some Contracting Parties refer to 2050 climate neutrality objectives in their NECP, their current GHG emission projections do not underpin these ambitions. Taking into account LULUCF contributions, Montenegro is the only Contracting Party projecting climate neutrality by 2050.

In addition to economy-wide GHG emission reduction targets, only a few Contracting Parties present **other national targets**, such as sectoral targets for GHG emission reductions (Georgia, Moldova, North Macedonia and Ukraine), adaptation goals (Georgia, Moldova and Ukraine) and a reduction in methane emissions (Ukraine).

Sectoral breakdown of greenhouse gas emission projections

Some Contracting Parties present the sectoral-level contribution to the 2030 GHG emission target and beyond in their NECPs, allowing for a deeper understanding of their development pathway. This information has additional value, as NECPs are intended to serve as an investment framework, highlighting key investment needs and actions to be taken.

Detailed projections for all sectors of the economy are included in the NECPs of Albania, Georgia, Moldova, Montenegro and North Macedonia and, to a lesser extent, in Ukraine (where energy and IPPU are combined and LULUCF is excluded). Serbia provides projections for GHG emissions from energy and non-energy sectors.

Figure 5 below details the sectoral breakdown of GHG projections, allowing for identification of key contributing sectors by Contracting Party.

In all Contracting Parties, the energy sector is the largest GHG emitter, due to the legacy of coal-based electricity, fossil-fuel-dependent heating and transport systems, and untapped energy efficiency potential. For some Contracting Parties, LULUCF net removals will be key to achieving the 2030 GHG emission targets.



© AI-generated image

Figure 5:

NECP projections for sectoral GHG emissions by Contracting Party, 2020–2050, with-additional-measures (WAM) scenario [Mt CO₂eq]



Notes: Montenegro—sectoral GHG projections for IPPU, agriculture and waste are only available for the years 2030 and 2050. Serbia—non-energy related GHG projections are available for waste, IPPU, agriculture and LULUCF together. Ukraine—GHG projections are available for energy and IPPU together. Projections exclude GHG emissions from LULUCF.

Source: Adopted NECPs—Albania (Table 36), Georgia (Annex VIII—8.2.), Moldova (Table 33, WPM scenario), North Macedonia (Figure 100), Montenegro (Tables 2–2 to 2–7, WAM scenario), Serbia (Tables 26–32 + 39, Scenario S-N), Ukraine (Table 5.1)

Table 6 builds on the GHG projections, providing insight into sectoral GHG emission trends towards 2030 and beyond

Some Contracting Parties project that GHG emissions from the energy sector will continue to increase in the future (Albania and Georgia), together with GHG emissions from IPPU. Some Contracting Parties also foresee that agriculture will play a growing role in their GHG inventories (Georgia and Ukraine).

Table 6:

Sectoral GHG emission trends towards 2030 and beyond, with-additional-measures (WAM) scenario

Contracting Party	Energy	IPPU	Waste	Agriculture	LULUCF
Sectoral Greenhouse gas emissions (GHG) projected to:					
Legend: ↘ decrease → stabilise ↗ increase					
Albania	↗	↗	↘	→	↘
Georgia	↗	↗	→	↗	↘
Moldova	↘	↘	↘	→	↘
Montenegro	↘ ⁽¹⁾	↘	↘	↘	→
North Macedonia	→	↗	↘	→	→
Serbia	↘	↗ Non-energy sectors together			
Ukraine	↘ Energy + IPPU together		↘	↗	NA

Notes: (1) *Montenegro's* GHG emissions from the energy sector are projected to increase towards 2030 and to drop only after 2040.

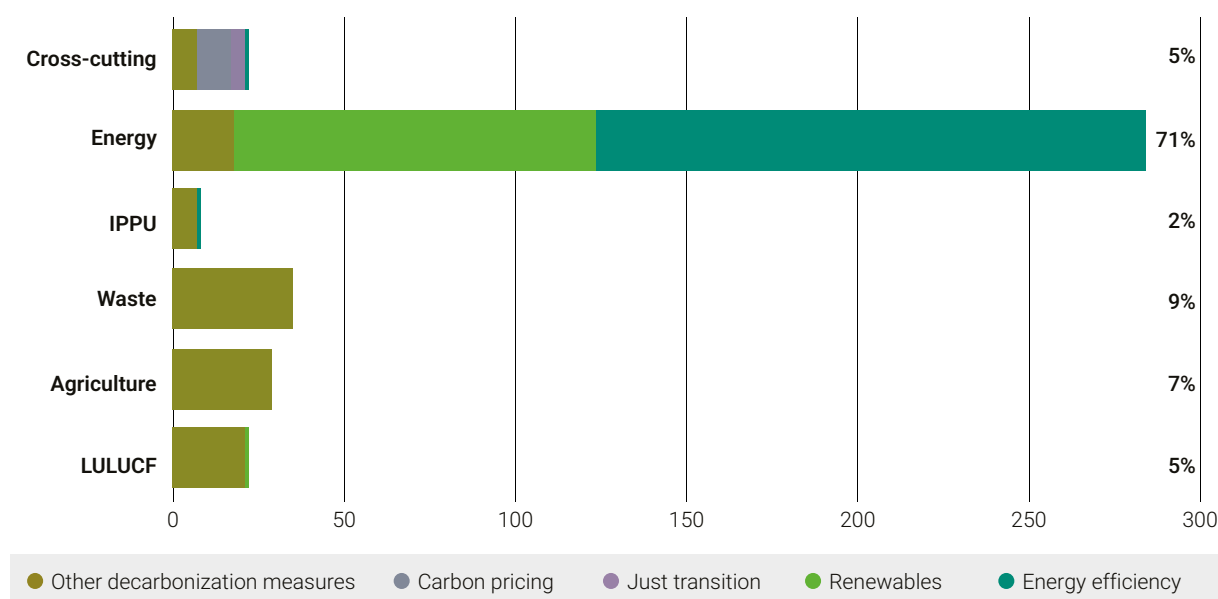
Sources: Adopted NECPs—Albania (Table 36), Georgia (Annex VIII–8.2.), Moldova (Table 33; WPM scenario), Montenegro (Tables 2–2 to 2–7; WAM scenario), North Macedonia (Figure 100), Serbia (Tables 26–32 + 39), Ukraine (Table 5.1.)

The adopted NECPs list approximately 400 policies and measures aimed at enabling achievement of the 2030 GHG emission targets. Figure 6 below shows the number and nature of policies and measures with decarbonisation relevance per sector. However, this assessment is subject to methodological limitations and only provides approximate information, as the complexity and scope of policy instruments vary significantly across NECPs. Some Contracting Parties define a comprehensive programme including legal and technical measures as one single policy instrument, while other Contracting Parties propose a broader set of individual policies and measures instead.

Detailed discussions of policies and measures can be found in the sections on the respective sectors.

Figure 6:

Number and nature of existing and planned policies and measures supporting decarbonisation, renewable energy deployment and energy efficiency by sector



Notes: This assessment is subject to methodological limitations and only provides approximate information, as the complexity or scope of policy instruments vary significantly across adopted NECPs.

Source: Energy Community compilation of existing and newly planned policies and measures listed in adopted NECPs

Energy

As Figure 5 above shows, the energy sector is and will remain the main contributor to total GHG emissions across the region. Nonetheless, GHG emissions from the energy sector are projected to steadily decrease in Moldova, Montenegro, Serbia and Ukraine after 2025, stabilise in North Macedonia and further increase in Albania and Georgia.

Energy sector GHG emissions arise from energy industries (notably electricity and heat production), as well as from fuel combustion for energy use in manufacturing industries, transport, residential, services and agriculture. Some NECPs (those of Albania, Serbia and Montenegro) identify the main sources of energy sector GHG emissions, showing that the top three contributors to GHG emissions within the energy sector are energy industries, manufacturing industries and transport. In Albania, in particular, steady growth in energy demand in manufacturing industries, transport and agriculture is projected to lead to increasing energy-related GHG emissions after 2030.

Energy industries: Many Contracting Parties are highly dependent on coal. Decarbonising their economies would first require decarbonisation of electricity and heat generation, ultimately through the **phase-out of coal**. Despite some Contracting Parties having joined the Powering Past Coal Alliance (Albania, Montenegro, North Macedonia, Ukraine and Kosovo*), very few reiterate their respective coal phase-out pledges in their NECPs. These include **Albania** remaining coal-free, the decommissioning of the thermal power plant in **Montenegro** in 2041, and phase-out of coal in electricity generation in **Ukraine** in 2035.²³ While **Georgia** does not use coal for electricity and heat production currently, it does not exclude doing so in the future.²⁴

²³ Page 41 of Ukraine's adopted NECP: "The ESU [Energy Strategy of Ukraine] confirmed the previously announced plans, in particular, it stated that the use of coal-fired generation will be reduced until it is completely decommissioned in 2035. However, the feasibility of achieving this goal by 2035 will be assessed after the end of a full-scale invasion of the Russian Federation into Ukraine, taking into account the state and available capacities that will remain operational after the end of hostilities."

²⁴ Page 125 of Georgia's adopted NECP: "According to the Energy Strategy 2020–2030, the option of rehabilitation of Tkibuli shafts and building a powerful modern thermal power plant with the help of foreign investors has been developed. Georgian local coal will be used solely for the purposes of reducing the energy security risks and addressing social and economic problems of local communities."

The absence of defined coal phase-out pathways also calls into question the achievement of some of the 2030 GHG emission targets.

Only two Contracting Parties set out a planned framework for the phase-out of coal: Ukraine in 2035 (for electricity generation) and Montenegro in 2041. Albania's and Georgia's electricity production is currently coal-free. However, Georgia sees coal as a future option for reducing energy security risks.

Policies and measures are predominantly concentrated in the energy sector. Mitigation measures in this sector are crucial to achieving overall GHG emission reductions and achieving climate neutrality, given its dominant role in current GHG emissions and its continued significance for future emission reductions. Energy sector decarbonisation is driven mainly by the high number of existing and planned policies and measures supporting **energy efficiency and renewable energy deployment** and, to a lesser extent, by other instruments such as incentives for modal shifts in transport or fuel switching (Figure 6).

The large number of policies and measures targeting the decarbonisation of **electricity and heat generation** include planned efforts to expand energy communities and prosumers (see detailed discussion under Decarbonisation: renewable energy). These measures feature prominently in the with-additional-measures scenarios. By contrast, only a limited number of measures address the just transition.

While energy demand in **manufacturing industries** is another major source of GHG emissions in the energy sector, very few NECPs quantify sectoral decarbonisation targets for industry (Georgia, Moldova, Montenegro and North Macedonia). Similarly, only a limited number of policies and measures address energy efficiency improvements and fuel switching to renewables in industrial production lines.

One of the most prevalent measures for the energy and manufacturing industries is the introduction of a **carbon pricing system**. Across the adopted NECPs, 10 measures relate to carbon pricing. Some Contracting Parties have chosen to implement an emissions trading system (Albania) and others a carbon tax (North Macedonia), while Ukraine and Moldova plan to implement both. Other Contracting Parties, such as Georgia, do not have a carbon pricing system in place and do not formulate a clear plan for its introduction. Serbia does not specify whether it will introduce an emissions trading system or other carbon pricing instruments.²⁵ Most NECPs provide little information on carbon price levels, although the price level is a key determinant of the mitigation impact. One exception is Ukraine, which reports a current carbon tax of UAH 30,0/t CO₂ (approx. EUR 0,6/t CO₂ at the time of writing). Overall, Ukraine's NECP presents the most detailed carbon pricing framework, providing a stronger basis for implementation and monitoring.

Fossil-fuel-dependent **transport systems** in the region account for the sector's major contribution to total GHG emissions. Nevertheless, some NECPs indicate declining energy consumption in the transport sector (see Sectoral breakdown of 2030 final energy consumption), pointing to potential efficiency increases. Most Contracting Parties foresee some level of modal shift or fuel switching, mainly through electrification. While electromobility and related infrastructure development is seen as an important way to increase the share of renewable energy consumed in the transport sector, the source of funding for the implementation of fiscal incentives often remains uncertain (see Promotion of renewable energy in transport (RES-T)).

The adopted NECPs do not contain any policies and measures on phasing out **fossil fuel subsidies**.

²⁵ In the meantime, in December 2025, Serbia adopted the Law on Greenhouse Gas Emissions Tax introducing carbon tax on selected sectors including electricity.

Industrial Processes and Product Use (IPPU)

Some Contracting Parties reiterate and quantify plans for reducing GHG emissions from IPPU in their adopted NECPs (Georgia, Moldova, Montenegro and North Macedonia). Despite these planned actions, GHG emissions from IPPU are projected to remain a substantial source of emissions, with further growth forecast in Albania, Georgia and North Macedonia and decreases in Moldova, Montenegro and Ukraine. Abatement of emissions from IPPU is often challenging and the number of relevant policies and measures is low compared to those in other sectors. Detailed descriptions of planned action can therefore provide useful guidance for investors seeking to support such measures.

Some NECPs reflect policies and measures addressing the reduction of process-related GHG emissions, primarily in aluminium production. This is complemented by measures targeting reductions in fluorinated substitutes for ozone-depleting substances. However, both sets of measures largely represent actions already being implemented. Given the projected increase in IPPU emissions in some Contracting Parties, the current number of policies and measures may be insufficient to achieve the 2030 GHG emission targets.

Waste

GHG emissions from waste are projected to decrease in all Contracting Parties in the post-2025 period, with the exception of fairly stable GHG trends in Georgia. This indicates that a range of policies and measures are expected to contribute to emission reductions in the waste sector, even under assumptions of economic growth.

Figure 6 above shows the indicative number of policies and measures planned in the waste sector. They primarily consist of integrated waste management, including the management of organic waste, and landfill management with methane capture. Due to the high global warming potential of methane, improved management practices can be highly effective in reducing emissions. Nonetheless, like in the IPPU sector, GHG emissions in the waste sector are mainly addressed through existing rather than newly planned policies and measures.

Agriculture

Agriculture is the second-highest emitting sector in most Contracting Parties. However, Contracting Parties show diverse post-2030 GHG emission trends for agriculture, ranging from declining (Montenegro) or fairly stable over decades (Albania, Moldova and North Macedonia) to increasing (Georgia and Ukraine). Due to the substantial contribution of this sector to aggregated emission volumes, adequate policies and measures addressing emissions are of key importance. Georgia and Ukraine, in particular, require an extensive set of actions to slow down the growth trend in GHG emissions from agriculture.

Of all the analysed sectors, agriculture accounts for the largest number of new policies and measures under the WAM scenario. Despite this relatively large set of additional policies and measures, agricultural GHG emissions are addressed equally through existing and additional policies and measures. These primarily focus on livestock and manure management, as well as fertiliser management.

Land use, land-use change and forestry (LULUCF)

With regard to the contribution of the LULUCF sector, Contracting Parties project that net carbon removals will either stabilise (Montenegro and North Macedonia) or increase (Albania, Georgia and Moldova) from 2025 onwards. For some Contracting Parties, LULUCF sinks will be key to achieving the 2030 GHG target. When accounting for LULUCF net removals, Montenegro is projected to become a net carbon sink by 2030, with net negative emissions. For other Contracting Parties, the LULUCF impact on aggregated emission volumes either negligible or cannot be assessed.

Contracting Parties envisage to address LULUCF emissions through newly planned policies and measures rather than existing ones. Policies and measures primarily focus on reforestation and sustainable forest land management. Despite the changing climate and increased risk of wildfires, only two measures address this issue directly.

Adaptation

Article 4 of the Governance Regulation requires Contracting Parties to include climate adaptation goals in their NECPs, as appropriate, to support the achievement of the Energy Union objectives.

Despite the importance of adaptation in Contracting Parties, adaptation goals in adopted NECPs still lack clarity. In addition, the number of adaptation-related policies and measures remains very limited. Outlined adaptation measures are linked to specific sectors and include water resources, forests, agriculture, energy and transport infrastructure. These measures mainly consist of assessments of the impacts of climate change on these sectors and their level of climate vulnerability. Several NECPs also note the need to carry out financial assessments of adaptation measures.

No concrete, time-bound measures are outlined in the NECPs to support adaptation. The lack of a clear framework is expected to hamper implementation and monitoring of adaptation policies and measures.



2.2 Decarbonisation dimension: renewable energy

2030 targets for the overall share of renewable energy

All Contracting Parties follow the Governance Regulation and, under Chapter 2 of their adopted NECPs, set out the overall share of energy from renewable sources in gross final energy consumption by 2030.

These 2030 renewable energy targets vary among Contracting Parties depending on the existing share of renewables in their gross final energy consumption, their 2020 renewable energy targets, as well as renewable energy potential and other relevant factors, ranging from 27,1% in Ukraine to 54,4% in Albania.

National renewable energy targets set out in the adopted NECPs are consistent with the Energy Community framework; they either correspond exactly (Georgia and North Macedonia) or are more ambitious (Albania, Moldova, Montenegro and Ukraine) than Decision 2022/02/MC-EnC. Serbia is the only Contracting Party to set a 2030 target below the mandated level, however, its adopted NECP provides a justification for this deviation in accordance with Article 6 of Decision 2022/02/MC-EnC.



In addition to 2030 target levels, the Governance Regulation requires that by “2027, the indicative trajectory shall reach a reference point of at least 65% of the total increase in the share of energy from renewable sources between that Contracting Party binding 2020 national target and its contribution to the 2030 target.” Only the NECPs of Albania, North Macedonia, Serbia and Ukraine provide sufficient information under their WAM scenarios to assess the level of compliance with this requirement. Other Contracting Parties (Moldova and Montenegro) do not detail WAM projections for 2027. Due to its late accession to the Energy Community, Georgia did not have a renewable energy target for 2020, so its NECP is exempt from this specific assessment.

Table 7 below details how national contributions compare to the Energy Community targets for 2030 and the indicative 2027 reference point.

Table 7:

2030 Renewable energy share in gross final energy consumption as per Decision 2022/02/MC-EnC and NECPs

	2030 target as per Decision 2022/02/MC-EnC	2030 Target as per adopted NECP	2027 reference point derived from 2020–2030 target increase	2027 reference point on WAM trajectory
Legend: NECP not yet adopted Information not available in the NECP				
Albania	52,0%	54,4%	48,7%	49,7%
Bosnia and Herzegovina	43,6%			
Georgia	27,4%	27,4%	Not applicable	Not applicable
Kosovo*	32,0%			
Moldova	27,0%	30,0%	25,5%	NA
Montenegro	50,0%	53,3%	46,2%	NA
North Macedonia	38,0%	38,0%	32,8%	31,0%
Serbia	40,7%	33,6%	31,3%	31,2%
Ukraine	27,0%	27,1%	21,5%	21,4%
Energy Community region	31,0%			

Notes: In accordance with Article 6 of Decision 2022/02/MC-EnC, Serbia's NECP provides a justification for the deviation of the national renewable energy target from the headline target set out in the Decision.

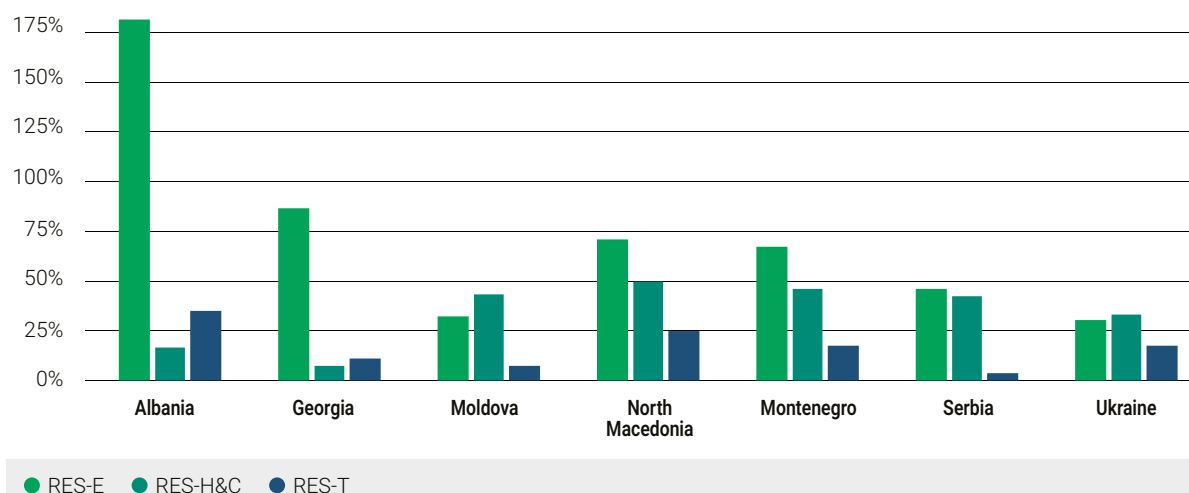
Overview—sectoral shares of renewable energy

All Contracting Parties present “estimated trajectories for the **sectoral share of renewable energy** in final energy consumption from 2025 to 2030 in the electricity, heating and cooling and transport sector” in either Chapter 2 or the analytical sections of their NECP. These efforts allow for a more nuanced understanding of each sector’s trends and contributions to the overall share of renewable energy in gross final energy consumption, while also revealing potential needs and areas requiring particularly urgent action.

Figure 7 below compares the sectoral shares of renewable energy in final energy consumption in the electricity, heating and cooling and transport sectors in 2030. The ranges between the lowest and highest renewables shares are very wide across all sectors. The figure shows that Contracting Parties may be frontrunners in one sector, while showing comparably low renewable shares in other sectors.

Figure 7:

Sector-specific 2030 renewable energy shares and targets by Contracting Party: the share of renewables in gross final energy consumption of electricity (RES-E), heating and cooling (RES-H&C) and final energy consumed in the transport sector (RES-T)



Notes: With regard to the 2030 RES-E share, Albania's NECP notes that "Values over 100% are due to electricity exports".

Sources: adopted NECPs: Albania (Chapter 2.1.2), Georgia (Table 2–2), Moldova (Table 8), Montenegro (Table 2–8), North Macedonia (Figure 40), Serbia (Table2), Ukraine (Table 2.1)

Most projections under WAM scenarios show an increase in total and sectoral renewable energy shares towards 2030 and beyond. In many cases, projections are only provided in five- or even ten-year intervals, whereas presenting annual or biennial timesteps would enable more effective tracking of progress and timely policy adjustments, supporting corrective action.

Table 8 below summarises trends in sectoral shares of renewable energy in gross final energy consumption for electricity (RES-E) and heating and cooling (RES-H&C), and in final energy consumption in the transport (RES-T) sector towards 2030, as projected under WAM scenarios of adopted NECPs. Detailed discussions can be found in the sections on the respective sectors.

Table 8:

Trends in renewable energy shares until 2030: overall (RES), electricity (RES-E), heating and cooling (RES-H&C) and transport (RES-T)

	RES	RES-E	RES-H&C	RES-T
RES share towards 2030:				
Legend: ↘ decrease ↗ stabilise ↗ increase				
Albania	↗	↗	↘	↗
Georgia	↗	↗	↘	↗
Moldova	↗	↗	↗	↗
Montenegro	↗	↗	↘	↗
North Macedonia	↗	↗	↗	↗
Serbia	↗	↗	↗	↗
Ukraine	↗	↗	↗	↗

Sources: Adopted NECPs: Albania (Chapter 2.1.2), Georgia (Table 2–2), Moldova (Table 8), Montenegro (Table 2–8), North Macedonia (Figure 40), Serbia (Table2), Ukraine (Table 2.1)

Only some NECPs comply with the requirements and provide information on “*estimated trajectories by renewable energy technology [...] including expected total gross final energy consumption per technology and sector in Mtoe and total planned installed capacity*”. These technology-level details are needed to understand how exactly targets are planned to be achieved, to identify gaps between the current situation and 2030, and to assess respective actions, especially at sectoral level. A detailed discussion can be found in the sections on the respective sectors.

Promotion of renewable energy in the electricity sector (RES-E)

RED II does not set a specific target level for renewable energy shares in the electricity sector, unlike its sectoral targets for heating and cooling and transport. Considering their 2020 starting points, many Contracting Parties have set highly ambitious targets for the share of renewables in gross final electricity consumption by 2030.

Table 9 below compares the share of renewable energy in gross final energy consumption in the electricity sector achieved in 2020 and planned for 2030. The table also indicates whether NECPs comply with the requirement to present “*total planned installed capacity (divided by new capacity and repowering) per technology and sector in MW*”.

Table 9:

Share of renewable energy in gross final electricity consumption (RES-E) achieved in 2020 and planned for 2030, and compliance with the requirement to reflect total planned installed renewable capacities for electricity production in NECPs

	2020 RES-E Share	2030 RES-E Share per adopted NECP	Trajectory of installed RES-E capacity
Legend: ■ NECP not yet adopted ■ Information not available in the NECP			
Albania	100,0%	178,1% ⁽¹⁾	NA
Bosnia and Herzegovina	49,3%		
Georgia	NA	85,0%	Reflected in adopted NECP
Kosovo*	5,3%		
Moldova	3,1%	31,2%	Reflected in adopted NECP
Montenegro	61,5%	79,4%	NA
North Macedonia	23,5%	66,0%	Reflected in adopted NECP
Serbia	30,7%	45,2%	Reflected in adopted NECP
Ukraine	11,0%	29,4%	Reflected in adopted NECP

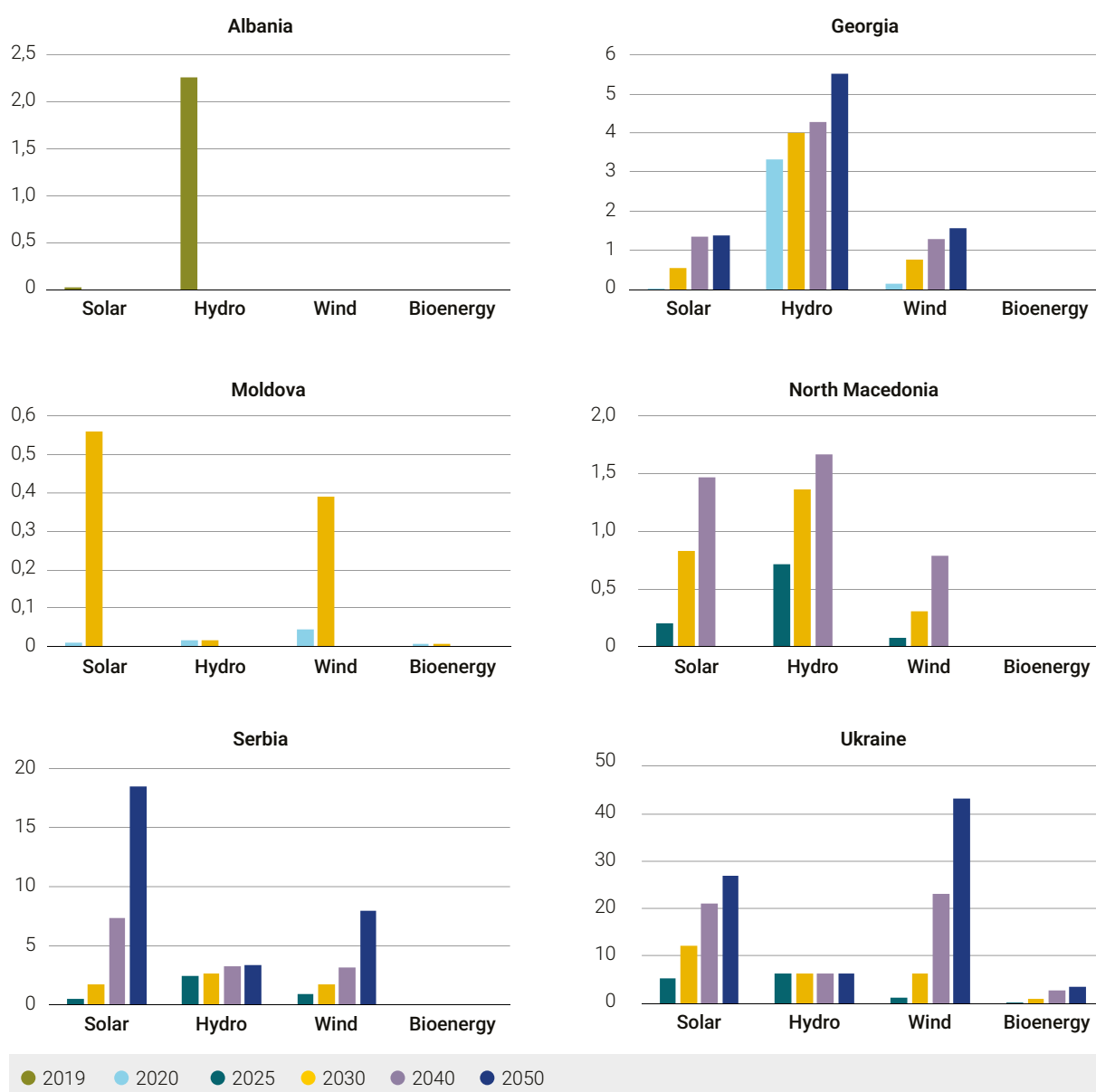
Notes: (1) With regard to the 2030 RES-E share, Albania's NECP notes that “Values over 100% are due to electricity exports”. Georgia's reporting to Eurostat started later than in other Contracting Parties, hence 2020 data are not available.

Sources: SHARES tool (Summary result SHARES up to 2023), adopted NECPs: Albania (Chapter 2.1.2), Georgia (Table 2–2), Moldova (Table 8), Montenegro (Table 2–8), North Macedonia (Figure 40), Serbia (Table ... 2), Ukraine (Table 2.1)

With regard to provision of sufficient information on planned installed capacities in the NECPs, Table 10 below summarises how RES-E targets are broken down. In many Contracting Parties, hydropower has historically been the dominant renewable source of electricity generation (such as in Albania, Georgia, Montenegro and Serbia). In those NECPs that provide relevant details, hydropower is expected to remain the main contributor to the 2030 renewable energy share in electricity generation (Georgia, North Macedonia and Serbia). However, in several Contracting Parties, onshore wind and solar PV are expected to be the primary technologies driving the increase in the share of renewables, in particular in the post-2030 period (Moldova, North Macedonia, Montenegro, Serbia and Ukraine).

Table 10:

Installed capacities of renewable energy technologies for electricity generation under with-additional-measures (WAM) scenarios [GW], 2020–2050



Source: Adopted NECPs—Albania (Table 2), Georgia (Annex VII—7.2 Table 4.), Moldova (Table 10), North Macedonia (Figure 42), Serbia (Table8), Ukraine (Table 5.6)

Tailored policies and measures will be needed to incentivise the planned expansion of capacity for each of the renewable energy technologies and to ensure achievement of the 2030 RES-E target. However, Contracting Parties present policies and measures with varying levels of detail in their NECPs, and the link to the planned capacity expansion of renewable energy technologies is not always clearly articulated.

All Contracting Parties plan to continue implementing support schemes (feed-in tariffs and feed-in premiums) primarily aimed at increasing onshore wind and solar PV capacity, as well as support schemes (net metering and net billing) for self-consumers.

At the same time, **private Power Purchase Agreements (PPAs) and Guarantees of Origin (GOs) could play a crucial role** in supporting the achievement of NECP targets by enabling the market-based deployment of renewable energy. However, despite their potential, only a limited number of policies and measures address PPAs (Serbia and Ukraine) and GOs (Serbia and Ukraine), which may limit their broader uptake and slow progress towards achieving the renewable energy targets set out in the NECPs.

The same applies to **renewable energy communities**, where policies and measures are currently very limited (Moldova, Montenegro and Serbia) and implementation remains negligible in practice. This is particularly important as renewable energy communities, together with self-consumption schemes, could make a significant contribution not only to increasing the share of renewables, but also to greater citizen engagement, local ownership and the broader objectives of a just energy transition. It would therefore be beneficial for Contracting Parties to include concrete targets and planned capacities for both energy communities and self-consumers in their NECPs.

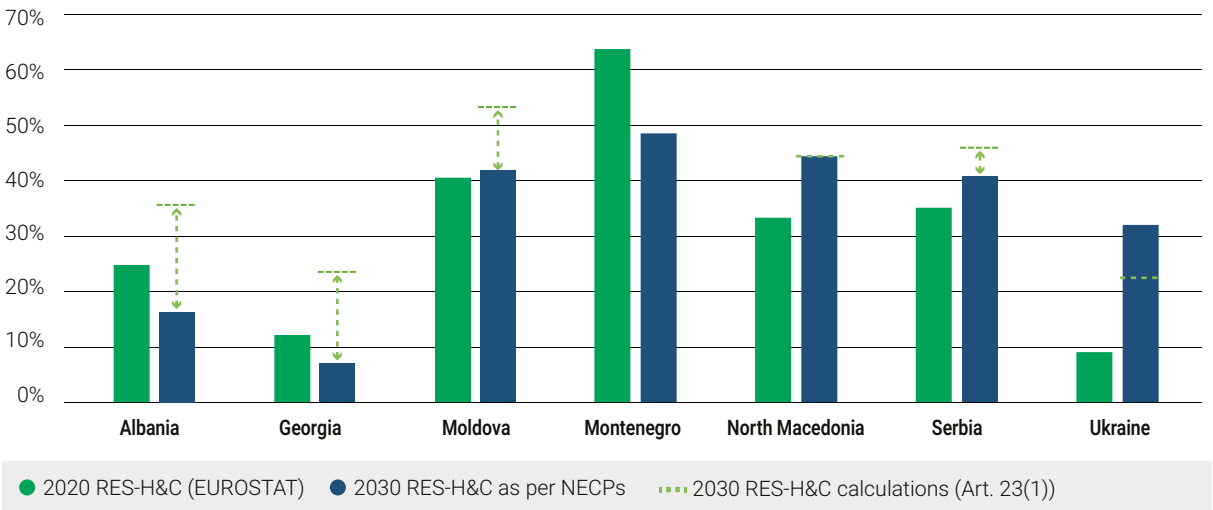
Future planning will need to strengthen the link between RES-E targets, planned installed capacities per technology and the policies and measures needed to ensure their successful implementation.

Promotion of renewable energy in heating and cooling (RES-H&C)

All Contracting Parties with adopted NECPs have established RES-H&C targets for 2030. However, only those of Montenegro, North Macedonia and Ukraine are aligned with the recommended ambition under Article 23(1) of RED II.

The figure below illustrates the extent to which these targets align with the recommended trajectory under RED II, as well as the overall level of ambition reflected in their targets.

Figure 8:
Comparison of 2030 RES H&C targets in adopted NECPs with the recommended ambition level under Article 23 of RED II



Note: Pursuant to Article 23(2) of RED II, Montenegro, as a Contracting Party whose share of renewable energy in heating and cooling exceeded 60% in the 2020 baseline, may count this level as fulfilling the average annual increase requirement and is therefore exempt from demonstrating any additional annual increase.

Sources: adopted NECPs: Albania (Chapter 2.1.2), Georgia (Table 2–2), Moldova (Table 8), Montenegro (Table 2–8), North Macedonia (Figure 40), Serbia (Table ... 2), Ukraine (Table 2.1)

For the immediate NECP implementation period (2025–2030), only North Macedonia, Serbia and Ukraine provide annual timesteps under their projections, allowing for more detailed assessment of their future trajectory and future tracking of achievements. Only the projections of Moldova, North Macedonia and Ukraine are disaggregated between final energy consumption and derived heat production from renewables. This distinction is essential for understanding the expected contribution of individual versus system-level heat supply to achieving the overall target and assessing whether the sector is evolving towards a more decentralised or centralised structure.

Several Contracting Parties also extend their RES-H&C projections beyond 2030, with outlooks up to 2040 (Albania and North Macedonia) and 2050 (Georgia, Montenegro, Serbia and Ukraine). However, the comparability and analytical value of these projections differ across Contracting Parties. For example, Ukraine provides projections only for the renewable energy share in derived heat rather than in total gross final consumption, which does not allow for direct comparison with 2030 RES-H&C targets.

Albania, Georgia and Montenegro show declining RES-H&C shares beyond 2030. This reflects a broader structural trend already observable in the 2020 baseline. Energy efficiency improvements and building renovations reduce final heat demand, leading to a decline in biomass consumption, which is currently the dominant renewable energy source. At the same time, biomass is partially replaced by heat pumps, where only the electricity input is reflected in final energy consumption, while the renewable ambient heat component is not accounted for.

By contrast, **North Macedonia and Serbia** project an initial increase in RES-H&C shares, followed by a decline in the longer term. In both cases, this pattern reflects the combined effect of early policy-driven increases in renewable deployment and subsequent growth in energy demand that is not fully met by additional renewable capacity.

Most Contracting Parties provide only descriptive information on the renewable energy technology mix, without quantified disaggregation, thereby limiting the possibility for detailed analysis of how RES-H&C targets are expected to be achieved across technologies.

Only **Ukraine** provides a quantified technology-level breakdown, underpinning the dominant role of biomass and heat pumps, followed by a more moderate contribution from biogas and solar thermal, with geothermal remaining marginal in the sector up to 2030.

Despite the lack of detailed RES-H&C technology breakdowns in most of the adopted NECPs, priority technologies and strategic directions are to some extent reflected in the relevant policies and measures.

Heat pumps emerge as the central decarbonisation pathway in those NECPs providing technology-specific projections. Moldova, North Macedonia and Ukraine include quantified projections for heat pumps, while Serbia describes expected contributions through its policies and measures (Table 11). Heat pump deployment is typically embedded within broader renovation and efficiency schemes, such as residential, public and service sector renovation programmes and financial incentives for heat pump installation in Moldova, Montenegro, North Macedonia, Serbia and Ukraine. However, a comparison between projected heat pump contributions and the scale of supporting policies and measures suggests a gap in those Contracting Parties with the highest projected deployment levels. In particular, existing measures in North Macedonia and Ukraine do not appear sufficient to support the level of deployment implied by the projections, indicating that additional or strengthened measures will be required to ensure target achievement. By contrast, Albania and Georgia do not have a single policy or measure dedicated to heat pump deployment. Given their renewable electricity profiles, electrification of heating through heat pumps represents a largely untapped decarbonisation opportunity.

Table 11:
Total contribution of heat pumps to the share of renewables in heating and cooling (RES-H&C) in 2030

Contracting Party	Heat pumps in RES-H&C	
Moldova	41,00 ktoe	2,3%
North Macedonia	NA	24,0%
Serbia	145,00 ktoe	NA
Ukraine	1.226,00 ktoe	NA

Note: NA—information is not available in the respective NECP. Ukraine provides disaggregated data by heat pump type, with aerothermal heat pumps accounting for approximately 85% of projected deployment by 2030, geothermal around 13% and hydrothermal around 2%.

Sources: Moldova (Tables 3 + 9), North Macedonia (p. 53), Serbia (p. 71)

Solar thermal is the second most prioritised individual-scale technology across Contracting Parties. Similarly to heat pumps, it is supported through renovation programmes and financial incentives in Georgia, Moldova, Montenegro, North Macedonia and Serbia. Albania does not have dedicated policies and measures to support solar thermal collectors, which, considering its high solar potential, represents a largely untapped opportunity.

Despite the significant decarbonisation potential of district heating and cooling (DHC) systems in the Contracting Parties, sub-targets or dedicated trajectories for **renewable and waste heat integration into DHC systems** are generally absent. Only Ukraine establishes a clear target for the renewable share in DHC (40,5% for 2030) and includes projections for waste heat and cold (5,9% for 2030), while Moldova commits to an indicative annual increase of 1,0% in the share of renewables and waste heat in DHC.

This limited strategic orientation is also reflected in the policies and measures. DHC-related measures across Contracting Parties predominantly focus on network modernisation, expansion and loss reduction, with such interventions particularly prominent in North Macedonia, Montenegro, Moldova and Ukraine. By contrast, measures directly supporting renewable heat integration remain more limited. Serbia includes support for biomass and solar thermal integration into district heating networks, albeit at a smaller scale compared to building renovation measures. Integration of large-scale heat pumps also remains limited, with Moldova and Serbia foreseeing only pilot or small-scale installations and no Contracting Party yet pursuing electrification of district heating as a systemic strategy. Similarly, geothermal development is explored mainly in Moldova and Georgia, largely through feasibility studies rather than clearly defined deployment pathways. A comparison between projected renewable and waste heat contributions in DHC and the supporting policies and measures suggests a misalignment between ambition and implementation. In Ukraine in particular, existing measures appear insufficient to deliver the projected outcomes, highlighting the need for additional policy support.

A common structural challenge emerges across Contracting Parties. Most NECPs prioritise demand-side measures, particularly building renovation and energy efficiency. While these measures reduce emissions and total heat consumption, they also lower biomass use. In some cases, biomass shares are also expected to decline due to increased gasification. In biomass-dominated systems, this lowers the RES-H&C share if alternative renewable heat technologies are not deployed at sufficient scale. At present, supply-side measures capable of offsetting biomass decline and structurally diversifying renewable heat generation remain limited in scale and ambition.

The imbalance between strong demand-side measures and comparatively weaker renewable heat supply expansion contributes to less ambitious RES-H&C targets in the majority of the NECPs that are not aligned with the recommended RED II trajectory.

Promotion of renewable energy in transport (RES-T)

RED II mandates a minimum share of energy from renewable sources in the transport sector (RES-T) by 2030 and sets requirements for minimum contributions and limitations for specific types of fuels along the RES-T trajectory. Additionally, RED II stipulates that only biofuels, bioliquids and biomass fuels that comply with sustainability and GHG (GHG) emissions saving criteria are eligible to count towards these targets.

All Contracting Parties with adopted NECPs establish RES-T targets for 2030 in accordance with RED II provisions. These range from 7% in Serbia and Moldova to 35% in Albania (Figure 9).

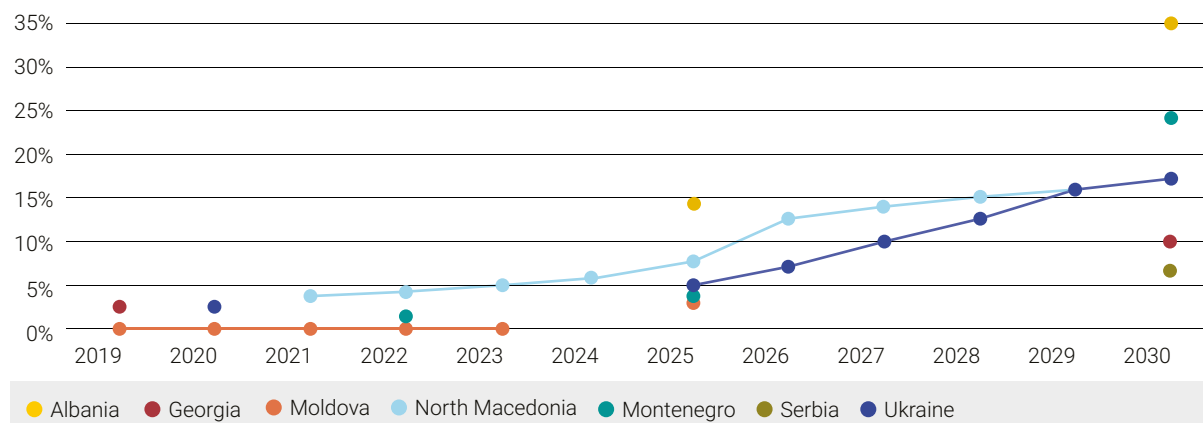
While headline RES-T targets are in place, most Contracting Parties neither define RES-T trajectories indicating the expected annual increases nor provide a detailed breakdown of the renewable fuels envisaged to achieve the targets set. This limits the transparency and enforceability of the targets and weakens the ability to monitor progress and assess policy credibility over the 2025–2030 period.

Ukraine and North Macedonia are the only Contracting Parties to define trajectories for the 2025–2030 period, specifying annual shares and the types of renewable energy consumed in the transport sector. The other Contracting Parties provide only descriptive information on the technology breakdown. Most Contracting Parties foresee a strong uptake of renewable electricity in transport. For example, North Macedonia expects renewable electricity to account for around 50% of the RES-T share by 2030.

It should also be noted that most Contracting Parties do not indicate the minimum share of advanced biofuels, biogases and renewable fuels of non-biological origin for the period under review. However, the reduced overall targets set by Serbia and Moldova suggest that they intend to rely primarily on advanced biofuels, effectively excluding the use of food- and feed-based fuels. Moldova, for example, sets sub-targets for advanced biofuels as part of its planned policies and measures.

Figure 9:

Trajectories and targeted share of renewable energy in final energy consumption in the transport sector (RES-T) by 2030 by Contracting Party (with-additional-measures (WAM) scenario)



Sources: Adopted NECPs

The limited specification of RES-T trajectories and fuel breakdowns suggests that the mainstreaming of renewables in the transport sector remains fragmented and insufficiently integrated. The lack of detailed information highlights the need for stronger cross-sectoral coordination between transport and energy authorities on the demand side and infrastructure, energy, agriculture and environment authorities on the supply side. Close alignment with climate authorities responsible for GHG emission reductions is also essential. More systematic data collection, modelling and monitoring would support more credible and robust target-setting.

When updating their NECPs, Contracting Parties should strive for full alignment with the NECP template, in particular by clearly defining annual RES-T trajectories, providing a transparent breakdown of renewable fuel types and indicating minimum shares for advanced fuels. This should be underpinned by coordinated cross-ministerial planning processes and strengthened monitoring frameworks to enhance transparency, enforceability and policy credibility.

Policies and measures planned by Contracting Parties to achieve RES-T targets can be broadly grouped into the categories of regulatory instruments, technical standards and fiscal measures in the form of taxes and subsidies.

All Contracting Parties plan to introduce obligations for fuel suppliers to ensure a minimum share of renewable energy in transport fuels as part of transposition of the relevant RED II provisions. In parallel, almost all Contracting Parties include measures to promote rail electrification and improve public transport. The introduction or strengthening of technical standards, such as fuel quality requirements and air emission limits, is also planned in most Contracting Parties.

Integrated planning measures aimed at promoting sustainable transport at national, regional and local levels are foreseen in Serbia, Ukraine, North Macedonia and Albania. These measures are also expected to increase the use of public transport and contribute to improved air quality in urban areas.

Incentives for domestic biofuel production are planned in countries with strong agricultural sectors, including Ukraine, Serbia, Georgia and Moldova. The implementation of these measures is intended to foster greater integration between the agriculture, waste management and energy sectors.

A strong focus across all Contracting Parties is placed on electromobility, including the development of charging infrastructure and financial support for the purchase of electric vehicles (notably in Moldova, Ukraine, North Macedonia,

Albania and Montenegro). These measures are often complemented by fiscal incentives and disincentives, such as tax relief for EVs and higher taxes on the import of older vehicles (such as in Georgia, Moldova, Ukraine, Serbia and North Macedonia). All Contracting Parties envisage support for the renewal of the passenger vehicle fleet and subsidies for electric vehicles in both the public and private sectors.

For the implementation of these measures, Contracting Parties foresee substantial financial resources but frequently rely on donor funding; however, the scale and financing of the necessary charging and grid infrastructure investments are not always clearly defined.

Serbia stands out for its particularly comprehensive and cross-sectoral approach, combining regulatory measures, investment support, innovation, domestic production, research and development, and standards.

The achievement of RES-T targets in Contracting Parties will be driven by the full transposition of RED II and the related policies and measures. Electromobility and the related infrastructure development are seen as an important way to increase the share of renewable energy consumed in the transport sector. However, the sources of funding for fiscal incentives often remain uncertain.

Bioenergy demand trajectories

Bioenergy currently accounts for the largest share of renewable energy in total final energy consumption in most Contracting Parties, particularly for heating in the residential, public and commercial sectors. While the use of biomass in these sectors is expected to remain important in the coming period, most countries with adopted NECPs do not provide comprehensive information on projected bioenergy demand trajectories, as required by the NECP template.

Only Moldova and North Macedonia include bioenergy demand trajectories by sector and bioenergy type. In both cases, demand for solid biomass (fuelwood and wood waste) is expected to remain stable (Moldova) or increase (North Macedonia) by 2030, and the majority of biomass is projected to be used in the residential and commercial sectors for heating, while a smaller share is expected to be used for combined heat and power generation.

Among the remaining Contracting Parties, Serbia highlights the need for more detailed analysis of the potential for sustainable biomass and biogas to assess prospects for increasing the contribution of bioenergy in the longer term. Similarly, Ukraine indicates that this section will be further developed in a future update of its NECP.

While other Contracting Parties do not include bioenergy demand trajectories in their NECPs, they indicate that biomass will be used for heating, including district heating systems and, in some cases, for electricity and heat generation in the coming period. Furthermore, through the setting of RES-T targets and the transposition of RED II, a certain level of biofuel and biogas consumption is expected.

The fact that only two countries (Moldova and North Macedonia) present demand trajectories and none of the Contracting Parties provide information on expected biomass sources, feedstock types or their provenance, nor on potential links with or impacts on LULUCF sinks, suggests that available information on bioenergy demand and biomass resources remains insufficient for short- to long-term energy modelling. This is particularly relevant for intersectoral planning across the forestry, agriculture and energy sectors.

Given the importance of current bioenergy use in energy consumption in Contracting Parties and the role it is expected to play in the coming period, there is a clear need to strengthen short- to long-term planning for the sustainable use of biomass resources for energy purposes.

All Contracting Parties foreseeing the implementation of policies and measures targeting biomass mobilisation, bioenergy production and subsequent use for heating and cooling, electricity and/or transport emphasise alignment with the sustainability and GHG emission saving criteria under RED II. Key actions include the introduction of sustainability certification for biofuels, support for domestic biofuel production and the establishment of mandatory

blending targets for biodiesel and bioethanol in transport fuels. In addition, measures are envisaged to facilitate the use of organic waste as fuel in industrial processes, such as cement production, thereby replacing fossil fuels.

Ukraine and Serbia, which are among the Contracting Parties with the highest bioenergy production potential, present the most detailed policies and measures in this area. These include support for expanding the production and use of biogas and biomethane, including measures enabling their injection into the natural gas grid. Both countries also plan to implement measures to improve solid biomass supply chains, covering feedstock production, collection and delivery to energy generation plants, as well as measures to promote transparent trade and the sustainable use of biomass. In addition to strengthening sustainable biomass supply, Contracting Parties also foresee policies and measures aimed at increasing the efficiency of biomass conversion systems. These include the installation of biomass boilers in district heating systems, the planting of fast-growing forest species for energy use and the promotion of energy crops on low-productivity land. Support programmes are also envisaged to further strengthen biomass supply chains, covering feedstock production, collection, processing, transport and storage.

Biomass originating from agriculture and forestry plays a dual role, as both sectors act as carbon sinks and key resources for bioenergy production. Policies and measures related to bioenergy production and use should therefore be designed and implemented through a cooperative, cross-sectoral approach involving relevant stakeholders from the forestry, agriculture, energy, waste management and climate sectors. In this context, appropriate monitoring indicators should be established to ensure that overall GHG emissions are effectively reduced while maintaining the sustainability of biomass use.

2.3 Energy efficiency dimension

2030 targets for primary and final energy consumption

In all the adopted NECPs, Contracting Parties comply with the Governance Regulation (with the exception of Albania)²⁶ by “expressing their contribution [...] in terms of absolute level of primary energy consumption and final energy consumption in 2030”²⁷ under Chapter 2. Table 12 below shows how these national contributions compare with the Energy Community’s headline targets for 2030.

National energy efficiency targets set out in the adopted NECPs are consistent with the Energy Community framework: they either correspond to exactly (Georgia, Moldova and North Macedonia) or are more ambitious (Albania,²⁸ Montenegro and Ukraine)²⁹ than Decision 2022/02/MC-EnC amending Directive 2012/27/EU on energy efficiency. Only Serbia’s final energy consumption target is slightly less ambitious than the mandated level; however, its adopted NECP provides a justification for this deviation.

26 Chapter 2 of the Albanian 2021 NECP presents the final energy consumption targets in relative terms (%) or at disaggregated (sectoral) level instead of total values.

27 Article 4 (b)(1) of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

28 Albania’s NECP projections for primary energy supply (2,56 Mtoe) imply that the country’s primary energy consumption in 2030 is expected to comply with the Energy Community headline target, while the adopted NECP does not include a corresponding primary energy consumption target.

29 Due to additional undertakings of several Contracting Parties and based on the Secretariat’s recommendations on draft NECPs, the 2030 ambition level has increased compared to the more conservative approach in the draft NECPs.

Table 12:

2030 primary and final energy consumption targets as per Decision 2022/02/MC-EnC and NECPs

[Mtoe]	Maximum share of primary energy consumption, 2030			Maximum share of final energy consumption, 2030		
	Decision 2022/02/MC-EnC	NECP	Ambition level	Decision 2022/02/MC-EnC	NECP	Ambition level
Legend: ■ NECP not yet adopted ■ Information not available in the NECP						
Albania ⁽¹⁾	2,60	NA		2,40	2,33	slightly above
Bosnia and Herzegovina	6,50			4,34		
Georgia	5,45	5,45	in line	5,00	5,00	in line
Kosovo*	2,70			1,80		
Moldova	3,00	3,00	in line	2,80	2,80	in line
Montenegro	0,92	0,90	slightly above	0,73	0,72	slightly above
North Macedonia	2,30	2,30	in line	2,00	2,00	in line
Serbia ⁽²⁾	14,94	14,69	slightly above	9,54	9,67	slightly below
Ukraine	91,47	72,22	significantly above	50,45	42,17	significantly above
Energy Community ⁽³⁾	129,88			79,06		

Ambition level: The deviation of Contracting Parties' primary and final energy consumption targets from the Energy Community framework targets (hereinafter "x") is categorised as significantly below ($5\% \leq x$), slightly below ($0\% < x < 5\%$), in line ($x = 0\%$), slightly above ($-5\% < x < 0\%$) or significantly above ($x \leq -5\%$). This categorisation adapts the approach applied in the European Commission's EU-wide assessment of the final updated National Energy and Climate Plans (European Commission, COM(2025) 274 final, Brussels, 27 May 2025: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions).

Note: (1) The final energy consumption target for Albania reflects the result of NECP projections under Table 47. NECP projections for primary energy supply (2,56 Mtoe) under Table 44 imply that the country's primary energy consumption in 2030 is expected to comply with the Energy Community headline target, while the adopted NECP does not include a corresponding primary energy consumption target. (2) While Serbia's final energy consumption target remains slightly less ambitious than the mandated level, its adopted NECP provides an explanation for this deviation. (3) The ambition levels of Contracting Parties, in particular of Ukraine, with regard to both primary energy consumption and final energy consumption targets allow for confidence that the indicative 2030 ambition at Energy Community level will be in line with the values set out for the region in Decision 2022/02/MC-EnC, when the remaining draft NECPs are adopted.

Sectoral breakdown of 2030 final energy consumption

In Chapter 2 of their NECPs, and where applicable, Contracting Parties are required to set out "other national objectives, including long-term targets or strategies and sectoral targets and national objectives in areas such as energy efficiency in the transport sector and with regard to heating and cooling".³⁰ Some Contracting Parties use this opportunity to reflect 2030 objectives and targets at sector level (see Table 24).

Albania's 2030 framework sets sector-specific contributions to final energy consumption across all end-use sectors, including residential, services, industry, transport, agriculture, forestry and fisheries. **Georgia** outlines intentions to reduce energy use in buildings, industry, transport, and gas and electricity infrastructure, albeit without quantifying absolute savings. **Moldova** plans to lower energy intensity in industry, construction and agriculture, alongside reducing transmission and distribution losses in electricity, district heating and gas networks. **Montenegro** emphasises energy efficiency gains across all major sectors, including residential, services, transport, industry and energy infrastructure, with measures aimed at reducing losses in electricity and gas networks and improving overall system performance. **North Macedonia** aims to cap final energy consumption in the transport sector at 0,58 Mtoe by 2030. **Ukraine** sets several heating sector objectives for 2025, including full commercial metering of thermal energy, limits on specific

fuel consumption of conventional fuels by boiler houses and reductions in heating system losses. In the buildings sector, Ukraine's NECP reiterates its long-term renovation strategy for the period up to 2050 aiming for a “decrease of final energy consumption in the building sector by 15%” and “that at least 10% of public buildings will meet the requirements of nearly zero-energy buildings in 2030 and in 2040 it is expected that at least 25% of residential buildings will also meet such requirements”.

In addition to such explicit sectoral objectives and targets, sectoral projections presented in the analytical section of NECPs provide useful insights into each sector's individual contributions to the achievement of the primary and final energy consumption targets. Detailed sectoral projections are provided in the NECPs of Albania (up to 2040), Georgia, Montenegro, Serbia and Ukraine (up to 2050) (Figure 10 below). The discussion below is limited to these five Contracting Parties.

Residential final energy consumption is projected to remain broadly stable (Georgia and Serbia) or to decline (Albania, Montenegro and Ukraine) in the coming years. The residential sector is expected to lose its position as the top energy-consuming sector, once policies and measures promoting the reduction of energy consumption of appliances and buildings take effect. Policies and measures supporting building renovation remain the most developed across NECPs, underpinned by the adoption of Long-Term Building Renovation Strategies in Contracting Parties.

The energy consumption of the **services** sector is projected to remain stable (Albania, Montenegro, Serbia and Ukraine) or even increase (Georgia). However, Contracting Parties show consistent approaches in policies and measures promoting the exemplary role of the public sector, particularly through the renovation of central government buildings as required under the EED, reinforced by set targets, inventories and approved implementation plans.

Most Contracting Parties project a steady increase of energy consumption in **industry** up to 2040/2050 (Albania, Georgia and Montenegro) or starting immediately after 2030 (Serbia and Ukraine). Currently planned policies and measures do not appear sufficient to curb this trend. Most Contracting Parties list energy audits and energy management systems among policies and measures targeting the industrial sector. Only two Contracting Parties (Moldova and Serbia) have implemented or planned financial schemes to support the industrial sector's investments in energy efficiency measures through direct financial support, low-interest loans, tax deductions, credit lines or guarantees. In addition, Serbia plans the establishment of industrial-business zones served by centralised heat generation, combined heat and power, or waste heat.

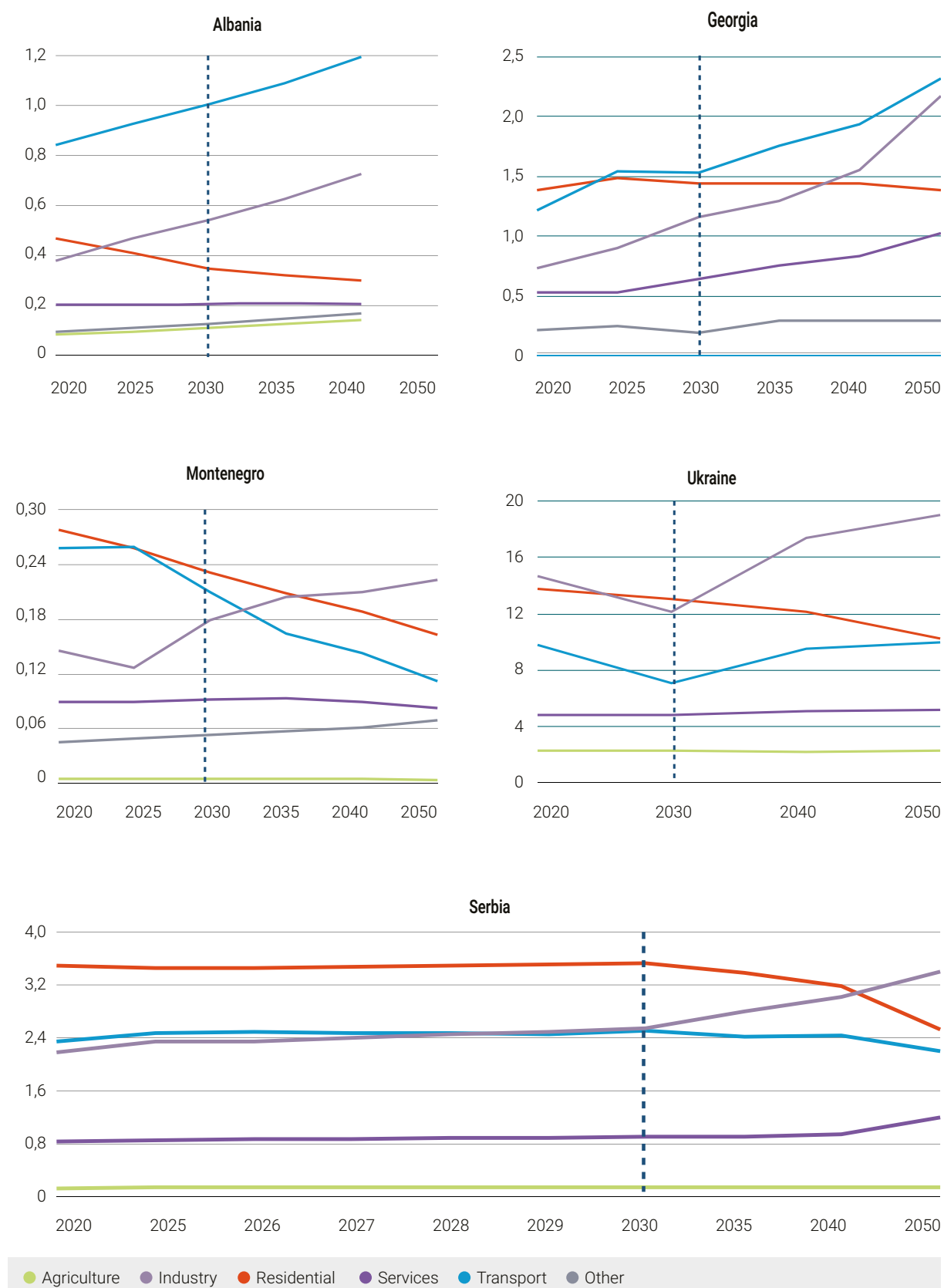
Transport sector projections vary across Contracting Parties. The growth of final energy consumption in transport is projected to continue (Albania), to plateau between 2025–2030, potentially enabling achievement of the 2030 final energy consumption target (Georgia), to remain broadly stable (Serbia), to decline (Montenegro) or to revert (Ukraine). After 2030, most Contracting Parties project a steep (Albania and Georgia) or moderate (Ukraine) increase in final energy consumption in the transport sector. Policies and measures are focused on the introduction of stricter energy or emission standards, a modal shift towards public transport and promotion of e-mobility.



Only in Albania is final energy consumption in the **agriculture** sector projected to increase in the coming years.

Figure 10:

NECP projections for sectoral final energy consumption by Contracting Party, 2020–2050, with-additional-measures (WAM) scenario [Mtoe]



Source: Adopted NECPs—Albania (Table 45), Georgia (Annex VII–7.4. Table 2.), Montenegro (Table 5–5, WAM scenario), Serbia (Annex V – Tables ... 49–53, Scenario S), Ukraine (Table 5.7)

Table 13 below summarises the trends in sectoral final energy consumption for the residential, services, industry, transport and agriculture sectors; as projected according to the WAM scenarios in the adopted NECPs.

The sectors key to achieving national final energy consumption targets vary across the region up to 2030. For the period beyond 2030, most Contracting Parties project that final energy consumption will steadily decrease in the residential sector, reflecting the long-term impact of the large number of policies and measures targeting appliances and buildings in the residential sector. By contrast, projections indicate a moderate to steep increase in final energy consumption in industry and transport after 2030, making these sectors the top two future energy consumers in many Contracting Parties. The next cycle of NECPs may need to further explore the relevant energy saving potential. While the projections for services and agriculture sectors indicate either increasing or stable consumption, their overall contribution to final energy consumption remains relatively small.

Table 13:

Sectoral final energy consumption trends up to and after 2030, with-additional-measures (WAM) scenario

Contracting Party	Residential	Services	Industry	Transport	Agriculture
Sectoral final energy consumption (FEC) projected to:					
Legend: ↘ decrease → stabilise ↗ increase					
<i>before 2030</i>					
Albania	↘	→	↗	↗	↗
Georgia	→	↗	↗	→	→
Montenegro	↘	→	↗	↘	→
Serbia	→	→	→	→	→
Ukraine	↘	→	↘	↘	→
<i>after 2030</i>					
Albania	↘	→	↗	↗	↗
Georgia	→	↗	↗	↗	→
Montenegro	↘	↘	↗	↘	→
Serbia	↘	↗	↗	↘	→
Ukraine	↘	→	↗	↗	→

Source: Adopted NECPs—Albania (Table 45), Georgia (Annex VII—7.4. Table 2), Montenegro (Table 5—5, WAM scenario), Serbia (Annex V—Tables ... 49—53, Scenario S), Ukraine (Table 5.7)

Inclusion and application of the energy efficiency first principle

The Governance Regulation urges Contracting Parties to “take into account the interlinkages between the five dimensions of the Energy Union, in particular the energy efficiency first principle” (EE1st). EE1st means taking the utmost account, in energy planning and in policy and investment decisions, of alternative cost-effective energy efficiency measures to make energy demand and energy supply more efficient, in particular through cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy, while still achieving the objectives of those decisions.

As the Governance Regulation provides no further methodological guidance, Contracting Parties vary widely in how they address EE1st in their NECPs. Some do not elaborate on it (Albania, Georgia, Montenegro and North Macedonia), while others explain EE1st, outlining interlinkages with the five dimensions of the Energy Union or referring to compliance with EE1st when proposing and describing individual policies and measures (Moldova, Serbia and Ukraine).

Moldova's NECP recognises EE1st, which is further embedded in national legislation. It demonstrates strong interlinkages with other NECP dimensions (such as energy security and the internal energy market) and operationalises EE1st across buildings, transport (modal shift) and networks (electricity, gas and district heating efficiency improvements and reduction of losses), ensuring that energy efficiency is considered ahead of investments in new infrastructure. Energy efficiency and renewable energy are also identified as key priorities under the energy security and research and innovation dimensions.

Serbia emphasises the application of and compliance with the EE1st when making investment and technology choices in the district heating or water sectors, when designing and operating electricity and gas transmission and distribution networks (reducing losses, improving load management), and when monitoring performance of policies and measures.

Ukraine provides concrete plans by integrating EE1st into cross-sector planning processes, for example by ensuring that district heating upgrades are planned together with building thermal modernisation to maximise efficiency gains, by prioritising building renovation, modernisation and restoration projects that integrate energy efficiency improvements with heat networks and equipment upgrades, and by requiring efficiency and renewable/waste heat integration before approving new centralised heat supply investments. Furthermore, electricity and gas infrastructure expansion plans will be required to consider efficiency improvements and demand-side measures before new capacity is approved. Investments in efficiency and demand reduction are to be prioritised over new infrastructure.

Many of the adopted NECPs acknowledge the EE1st principle, but application differs. Some Contracting Parties do not elaborate on EE1st, while others integrate it in a more concrete manner across sectors, investment decisions and infrastructure planning. EE1st is often referenced without systematic application or monitoring. Contracting Parties need to consistently integrate this principle into their NECPs and establish clear frameworks to ensure its systematic monitoring and implementation.

The role of energy efficiency obligation schemes in fulfilling energy savings requirements

Under the Governance Regulation, NECPs are expected to define more ambitious cumulative end-use energy savings targets for 2030 in accordance with EED Article 7. Article 7 measures defined in the adopted NECPs comprise a mix of energy efficiency obligation schemes and alternative approaches, including support for energy efficiency funds and tailored financing programmes. Dedicated energy efficiency funds and financial support schemes—often combining state budgets, donor funding and private co-financing—are central to implementation, particularly in the buildings and industrial sectors. Such funds already operate in Moldova, Montenegro, Serbia and Ukraine and are planned or under development in Albania and North Macedonia.

Energy efficiency obligation schemes or alternative measures are planned across the region. However, the level of ambition differs, and there is strong reliance on alternative measures to fulfil energy savings requirements under EED Article 7. Only a few Contracting Parties quantify these energy savings directly in their NECP (Moldova, Serbia and Ukraine) or the contributions of energy efficiency obligation schemes (EEOS) (Albania, Moldova and North Macedonia) or alternative measures (Serbia) to achievement of energy savings. Given the central role of EED Article 7 in delivering on the 2030 energy efficiency targets, stronger implementation efforts and more robust quantification of expected savings will be needed across Contracting Parties.

Table 14 summarises the information presented in the NECPs.

Table 14:

End-use energy savings to be achieved through energy efficiency obligation schemes (EEOS) and alternative measures (AM) up to 2030 under EED Article 7 on energy saving obligations

Contracting Party	Calculation of energy saving requirement	Annual savings in 2030	Cumulative savings up until 2030		Notes
		[ktoe/year]	Period	[ktoe]	
Albania	Still to be defined. ⁽¹⁾		37,00 ⁽²⁾		EEOS/AM planned
Georgia	Presented calculation outdated; average annual savings calculated for three-year periods only.				EEOS planned
Moldova	0,8% * FEC average 2019–2021 (2.700 ktoe) = 21,60 ktoe/year	151,30	2024–2030	605,00 (EEOS: 44,80, AM: 560,00)	EEOS/AM
Montenegro	NA	3,72	2021–2030	204,59	AM
North Macedonia	Presented calculation methodology outdated (pre-adoption of the Governance Regulation)	44,40			EEOS
Serbia	0,8% * FEC average 2018–2020 (9.031 ktoe) = 72,25 ktoe/year	506,75	2024–2030	2.022,99	AM only
Ukraine	0,8% * average energy supply to consumers (excl. transport) 2017–2019 (39.319 ktoe) = 314,55 ktoe/year	3.145,52	2021–2030	17.300,36	EEOS planned

Notes: EEOS—savings achieved through energy efficiency obligation schemes. AMs—savings achieved through alternative measures. (1) Albania's NECP foresees a detailed EEOS obligation scheme to be defined by a future Government Decision. (2) "From a rough calculation based on benchmark the expected savings will be 37 ktoe in 2030" for the planned PaMs on "Energy efficiency obligation scheme and alternative measures for Albania (EE-01)". It is not explicitly stated whether these savings will be annual savings in 2030 or cumulative savings up to 2030.

Source: Adopted NECPs—Albania (Chapter 2.2.1 (2), policy EE-01), Georgia (Chapter 2.2.ii.), Moldova (Chapter 3.2.i., Table 24), Montenegro (Table 2–11), North Macedonia (page 58, policy PM_EE1), Serbia (Chapter 3.2.1, Table ... 4), Ukraine (Table 2.7)



None of the Contracting Parties provide full information in line with Annex III of the Governance Regulation, which requires them to provide more detailed information and notify the Secretariat of their proposed detailed *methodology [...] for the operation of the energy efficiency obligation schemes and alternative policy measures referred to in EED Articles 7a and 7b and Article 20(6).*

Although Contracting Parties do not provide comprehensive methodologies and descriptions in accordance with Annex III of the Governance Regulation, their general approaches to EED Article 7 are set out in the adopted NECPs.

Despite the lack of such notifications, the adopted NECPs contain some aspects related to the five main elements that Annex III requires to be addressed:

1. Calculation of the level of the energy savings requirement to be achieved over the whole period from 1 January 2024 to 31 December 2030, including the key elements of the calculation (Moldova, Serbia and Ukraine);
2. Details and listed elements taken into account when calculating the required amount of energy savings through other possibilities under EED Article 7(2);
3. Description of EEOS (Albania, North Macedonia and Ukraine), alternative measures (Georgia, Moldova, Montenegro, Serbia and Ukraine) and information and taxation measures (Albania, Georgia, North Macedonia, Serbia and Ukraine), including cumulative energy saving amounts;
4. Calculation methodology for measures (Moldova, Montenegro refer to separate documents);
5. Monitoring and verification elements (Serbia and Ukraine).

Buildings sector—long-term building renovation strategies (EPBD Article 2a) and the exemplary role of public buildings (EED Article 5)

The Governance Regulation requires NECPs to set out “*indicative milestones of the long-term strategy for the renovation of the national stock of residential and non-residential buildings, both public and private, the roadmap with domestically established measurable progress indicators, an evidence-based estimate of expected energy savings and wider benefits and the contributions to the Energy Community’s energy efficiency 2030 target pursuant to Directive 2012/27/EU*”.

These targets should be aligned with the long-term building renovation strategies or plans (LTBRs) required under EPBD Article 2a, which were due by 10 March 2023. However, some Contracting Parties adopted their NECPs prior to the preparation of LTBRs (Albania, Georgia, North Macedonia and Ukraine). Their NECPs still foresee the development of LTBRs as separate policies and measures and do not yet elaborate targets in this regard.

By the time of this assessment, only Albania, Moldova, Montenegro, Serbia and Ukraine had adopted LTBRs. Nevertheless, most NECPs outline long-term renovation targets and refer to expected renovation rates, as well as overall decarbonisation of the building stock by 2050.

The level of ambition regarding renovation and decarbonisation of the building stock varies across Contracting Parties. All Contracting Parties have set a 3% annual renovation target for central government buildings or are in the process of increasing their ambition (Ukraine).

NECPs include various energy efficiency measures in the buildings sector. Common measures include renovation of public buildings and implementation of EPBD requirements (such as minimum energy performance requirements, certification, nearly zero-energy buildings and inspection of systems).

2.4 Energy security dimension

Objectives and targets

Article 4 of the Governance Regulation requires objectives and targets to be set out in the energy security dimension in at least the following areas (the figures indicate the number of occurrences in the seven adopted NECPs):



increasing the **diversification** of energy sources and supply from third countries (5), the purpose of which may be to **reduce energy import dependency** (8),



increasing the **flexibility** of the national energy system (5),



addressing **constrained or interrupted supply** of an energy source (1), for the purpose of improving the resilience of regional and national energy systems, including a timeframe for when the objectives should be met.

Energy security and related obligations under the Energy Community framework are considered at various priority levels in the NECPs adopted by Contracting Parties. This is partly because the Governance Regulation does not define uniform 2030 targets at Energy Community level in this dimension and partly because the risks and threats linked to the structure, sources, strengths and weaknesses of energy supply, demand and infrastructure also affect Contracting Parties differently. Differences also arise from the fact that two³¹ of the seven Contracting Parties with an adopted NECP have no natural gas in their energy mix.

In total, 29 objectives and targets are defined under this dimension, with 9 instances of non-categorised objectives, including protection of critical infrastructure and cybersecurity. The majority (17) of the objectives and targets are horizontal, including all energy sectors, followed by those focusing on electricity (10). One objective is set specifically for gas and one for oil.

The NECPs show that almost all Contracting Parties define targets related to reducing **energy import dependency**. By contrast, apart from **Ukraine**, none define objectives and targets addressing **constrained or interrupted supply**. For the other two categories—diversification of energy sources and supplies and increasing system flexibility—more Contracting Parties define targets than do not.

While each Contracting Party defines at least one target or objective in relation to energy security, these are mostly qualitative and lack measurable interim milestones or final outcomes. Quantification is provided only in relation to reducing import dependence on third countries, where **Montenegro, North Macedonia, Serbia** and **Ukraine** indicate concrete figures, and for increasing the diversification of energy sources and supplies, where Ukraine provides target figures.

In several cases, the NECP outlines a long list (10+ items) of objectives imported from other sources, such as energy law, the national energy strategy or the network/system development plan of the transmission system operator (TSO). Such lists provide a comprehensive view of all aspects considered important by the Contracting Party for its energy security. However, without any prioritisation or explanation of how individual objectives are linked to one another and to the policies and measures, such lists serve only to indicate the level of comprehensiveness with which energy security is addressed in the national context. As such, they do not provide a clear picture of the operational planning of energy security priorities. In several cases, extensive descriptions are provided on the background and relevant factors in the national energy system, but these are not accompanied by a defined objective, which may be considered a missed opportunity.

31 Albania and Montenegro

Table 15:

Inclusion of energy security objectives in the categories outlined by the Governance Regulation

Contracting Party	Diversify energy sources and supply	Reduce import dependency from third countries	Increase flexibility of nat. energy systems	Address interrupted and constrained supply
Legend: ✓ Objectives available ✗ Objectives not available				
Albania	✓	✓	✓	✗
Georgia	✓	✓	✓	✗
Montenegro	✗	✓	✗	✗
Moldova	✗	✗	✗	✗
North Macedonia	✗	✓	✗	✗
Serbia	✓	✓	✓	✗
Ukraine	✓	✓	✗	✓

The NECPs include 70 policies and measures under the energy security dimension. These are relatively balanced between WEM scenarios and WAM scenarios (38 vs 31 policies and measures respectively).³²

Of the 70 policies and measures, **Ukraine** and **Georgia** lay out the most (18 and 17 respectively), followed by **Serbia** (12), **Albania** and **Moldova** (nine each) and **Montenegro** (5). **North Macedonia** has no policies and measures dedicated to energy security but indicates that specific policies and measures in the renewable energy, internal energy market and energy efficiency dimensions serve the objectives of diversification of domestic energy sources, diversification of supply routes, reduction of energy import dependence and increasing system flexibility respectively.

Twelve policies and measures refer to **concrete infrastructure projects**—representing the majority of policies and measures in **Georgia's** NECP, while accounting for a lower share in the policies and measures of **Moldova, Serbia** and **Albania**—although the Governance Regulation prescribes inclusion of such projects under the internal energy market dimension of the NECP. Other policies and measures address the build-up of strategic reserves (gas, oil and oil products, and coal), the establishment of electricity storage capacities, the fulfilment of security of supply standards and criteria, including the N-1 standard, the drafting of risk assessments and risk preparedness, preventive and emergency action plans, and safety aspects of nuclear decommissioning and management of spent nuclear fuel. Only **Moldova** and **Ukraine** include policies and measures related to enhancing cybersecurity.

The Governance Regulation does not set out precise requirements for demand response, energy storage and ensuring energy system flexibility. These elements are to be included in the chapters on objectives and targets for both the energy security and internal energy market dimensions. As an additional complexity, these policies and measures are to be developed under the internal energy market dimension, while their implementation is to be reported through integrated progress reports under the energy security dimension. In addition, demand response is considered part of the EE1st principle, which also links it to the energy efficiency dimension. These considerable overlaps create uncertainty regarding the required content of NECPs and limit the scope for a clear assessment of both compliance and substance.

32 One policy is indicated for both WEM and WAM scenarios.

Gas

Increasing diversification of energy sources and supply from third countries and reducing import dependency where applicable

The NECPs indicate that natural gas plays a heterogeneous role across the Contracting Parties, reflecting differing sectoral uses and energy system structures. This also translates into varying approaches to mitigation and emergency measures. According to the projections for 2030, **Moldova** and **Georgia** expect the role of natural gas to increase, while several other Contracting Parties do not provide a clear assessment of future gas demand in their plans.

The NECPs indicate varying levels of gas **import dependency** across the assessed Contracting Parties. **Moldova**, **Georgia** and **North Macedonia** remain fully dependent on imports, while **Serbia**'s gas import dependence is at 88%. Projections for 2030 suggest that this situation is expected to broadly persist. **Ukraine** represents a distinct case: while it has historically depended on imports, the NECP scenarios foresee significantly reduced import dependence by 2030, ranging from around 8–10% under the WEM scenario to zero imports under the WAM scenario.

In their NECPs, **Albania** and **Ukraine** plan to explore and increase **domestic production** of natural gas, with Ukraine also aiming to boost biogas and hydrogen production. Other Contracting Parties foresee **diversification** of sources and suppliers through projects aimed at bringing in gas from global LNG suppliers and Azerbaijan.

Increasing the flexibility of the national energy system (including domestic sources, demand response and energy storage)

The NECPs indicate differing availability and planned development of natural gas storage across the Contracting Parties. Only two Contracting Parties, **Ukraine** (31,0 bcm) and **Serbia** (0,5 bcm), have underground storage facilities on their territories, with Serbia planning to increase its working capacity by 0,3 bcm, according to its NECP. The Secretariat is aware of earlier plans for underground gas storage developments in **Georgia** and **Albania**, but these are not included in the NECPs. While Contracting Parties in the Western Balkans and Moldova can rely on the storage capacities of neighbouring EU Member States, Georgia is in an isolated position. **Ukraine**, by contrast, can offer its own storage capacity to support other countries' security of supply, due to its vast storage capacity, exceeding total national annual consumption.

Addressing constrained or interrupted supply

Except those of **Albania** and **Ukraine**, the NECPs do not establish links to natural gas energy security documents (Risk Assessments, Preventive Action Plans and Emergency Plans), even where such documents exist.³³ This is a missed opportunity, as actions in those plans should be streamlined with the policies and measures under the energy security and other Energy Union dimensions.

Preventive measures envisage the modernisation of existing networks, including reverse flows at interconnectors, the development of storage facilities and pipelines, regulatory and commercial measures, supply diversification, the decrease of natural gas consumption and biogas production, and measures to prevent effects of natural disasters (such as floods and avalanches).

³³ Moldova and Georgia notified the Secretariat of their Risk Assessments (RAs), their Preventive Action Plans (PAP) and their Emergency Plans (EPs) but do not refer to those documents in their NECPs.

Table 16:

Key gas security of supply documents and links to NECPs

Contracting Party	Risk Assessment	Preventive Action Plan	Emergency Plan
Legend: ✓ Assessment/plan available ✗ Assessment/plan not available Assessment/plan reflected in NECP Assessment/plan not reflected in NECP			
Albania	✓	✗	✓
Georgia	✓	✓	✓
Moldova	✓	✓	✓
North Macedonia	✗	✗	✗
Serbia	✗	✗	✗
Ukraine	✗	✗	✗

Overall, for those Contracting Parties where security of supply documents are developed and available, the policies and measures on energy security in the NECPs are not fully aligned with the measures contained in the gas Preventive Action and Emergency Plans.

Electricity

Increasing diversification of energy sources and supply from third countries and reducing import dependency where applicable

All Contracting Parties recognise the need to diversify energy (electricity) sources and, where possible, reduce electricity imports, but address this issue in their NECPs in different ways. **Georgia** focuses on the development of new interconnections to all neighbouring countries across all high-voltage levels. It is worth noting that the key Georgian electricity infrastructure project (Black Sea Cable) has received Project of Mutual Interest (PMI) status at the EU level, providing the opportunity to exchange electricity in the future with EU Member States and other Energy Community Contracting Parties. A similar approach is followed by **Moldova**, which lists key electricity infrastructure investments aimed at increasing electricity security of supply and establishing stronger interconnections with Romania. Moldova also refers to realisation of its ten-year network development plan (TYNDP) for electricity. **Ukraine** is developing its own nuclear fuel production to supply its nuclear power plants without external risks, but is also focusing on distributed generation in the future, mainly recognising the risk of large power plants being targeted in the event of military attacks. In light of this, strong emphasis is placed on protecting critical infrastructure facilities in the energy sector. **Serbia** defines a range of measures to diversify its electricity sources, not only through development of new interconnections, but also by keeping existing production facilities operational while developing new ones. **Albania's** policies and measures on the electricity security of supply are limited, while **Montenegro** prioritises the realisation of TYNDPs in transmission and distribution networks, the development of new flexibility sources (battery energy storage systems—BESS) and the operationalisation of System Operation Regions (SOR).

Increasing the flexibility of the national energy system (including domestic sources, demand response and energy storage)

The NECPs provide varying levels of detail in addressing the impact of variable renewables on grid stability and in planning sufficient flexibility options. Despite the increasing share of variable renewables, only a few Contracting Parties plan to develop new energy storage, mainly in the form of pumped-storage hydro power plants (for instance in **Serbia**, although not focused on pumped storage hydro power plants (PSHPPs) only) and battery energy storage systems (**Montenegro**). The information in the NECPs indicates a very limited focus on demand-side response opportunities for enabling the integration of variable renewables into energy systems. A well-developed framework and possible actions to unlock demand-side response potential remain largely unaddressed in the NECPs.

Addressing constrained or interrupted supply

Except those of **Serbia** and **Ukraine**, the NECPs do not establish links to electricity security of supply documents (risk preparedness plans). This represents a missed opportunity, as the actions in those plans should be streamlined with the policies and measures under the NECP dimensions. It should be noted that risk preparedness plans have been prepared to date (as of early 2026) only by **Georgia** and **Moldova**.

Table 17:

Key electricity security of supply documents and links to NECPs

Contracting Party	Electricity risk preparedness plan
Legend: ✓ Assessment/plan available ✗ Assessment/plan not available Assessment/plan reflected in NECP Assessment/plan not reflected in NECP	
Albania	✗
Georgia	✓
Moldova	✓
Montenegro	✗
North Macedonia	✗
Serbia	✗
Ukraine	✗

Oil

Increasing diversification of energy sources and supply from third countries and reducing import dependency where applicable

At the level of objectives and targets, only **Albania** defines a goal for reducing import dependence on petroleum products, accompanied by a measure to increase hydrocarbon exploration and production.

Only **Ukraine** includes a measure in its NECP related to import routes for petroleum products and natural gas.

Increasing the flexibility of the national energy system (including domestic sources, demand response and energy storage) and addressing constrained or interrupted supply / Addressing constrained or interrupted supply

In the area of oil, this dimension is closely interlinked with the category of addressing constrained or interrupted supply; accordingly, both are covered in this section.

The Energy Community framework requires Contracting Parties to maintain minimum stocks of crude oil and/or petroleum products pursuant to Directive 2009/119.³⁴ **Albania**, **Moldova**, **Serbia** and **Ukraine** include policies and measures in their NECPs containing references to Directive 2009/119 and outlining actions to maintain minimum stocks of crude oil and/or petroleum products. Ukraine complements this with a measure on the restoration and construction of oil refining capacities.

³⁴ Directive 2009/119/EC imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products, as incorporated and adapted by Ministerial Council Decision 2012/03/MC-EnC

Cybersecurity

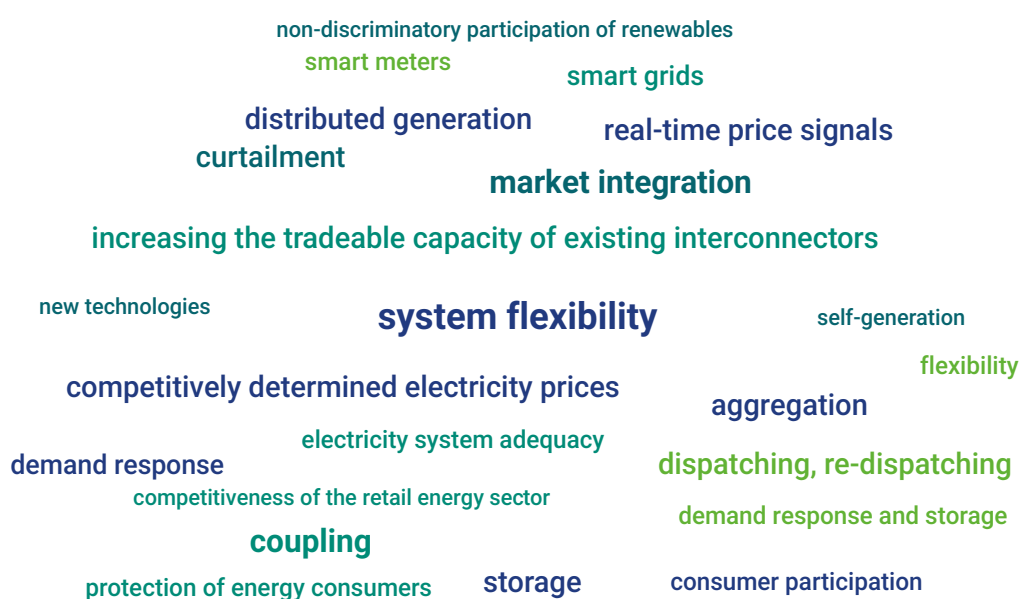
In most of the NECPs, cybersecurity planning is addressed only marginally. Only **Georgia's** NECP includes an objective on reducing cybersecurity risks, and only **Moldova** and **Ukraine** include cybersecurity among their policies and measures. It is evident that Contracting Parties exposed to higher security risks from Russian threats place considerably more emphasis on cybersecurity measures than those in the WB6 region. Nevertheless, Contracting Parties in the Western Balkans have also begun to develop cybersecurity frameworks, however these are not yet reflected in the NECPs. It is crucial that future NECPs cover all areas of public policy, including cybersecurity aspects, comprehensively.

2.5 Internal energy market dimension

This dimension—stemming from the EU focus on infrastructure—places a strong emphasis on interconnectivity and projects, while also covering a diverse range of market and regulatory topics:

Figure 11:

Aspects within the scope of the internal energy market dimension



In addition, objectives, targets and policies and measures related to energy poverty are considered under this dimension, although they also appear sporadically in other areas of the NECPs, such as under the energy efficiency dimension.

Such a broad and heterogeneous scope makes both elaboration by Contracting Parties and assessment by the Secretariat challenging.

In total, Contracting Parties define 61 objectives and targets in their NECPs under this dimension, with most focusing on market integration (32), followed by interconnectivity and transmission infrastructure (19), and energy poverty (10). Of these, only 11 have a quantified aim, reflecting the complexities of defining measurable outcomes.

A total of 131 policies and measures are described under this dimension, most of which are included in the WEM scenarios of the NECPs (75).

Interconnectivity and transmission infrastructure

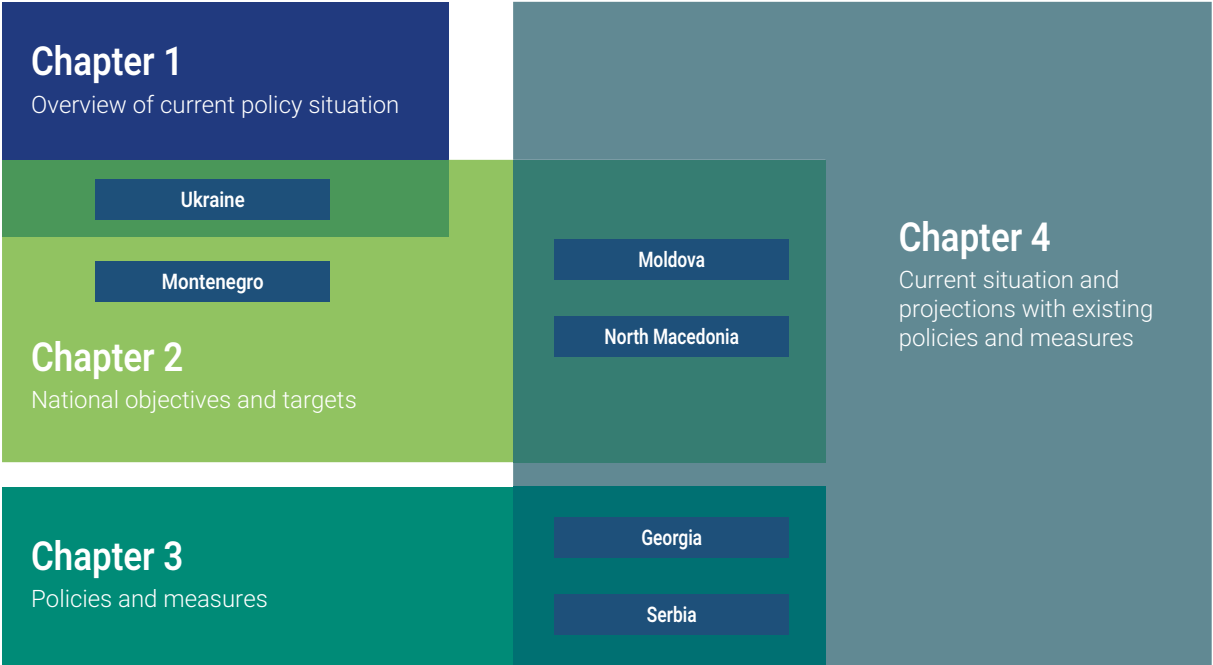
The internal energy market dimension builds on the Energy Community acquis in force in the electricity and gas sectors. Unlike in the EU, a 2030 electricity interconnectivity target is not defined for Contracting Parties, as existing cross-border capacities are considered adequate, except in Ukraine and Moldova. Furthermore, Georgia does not have direct interconnections with any EU Member State or Energy Community Contracting Party. Additionally, the EU Hydrogen and Gas Decarbonisation Package³⁵ is not mandatory for Contracting Parties to the Energy Community.

All Contracting Parties, except Moldova, define objectives and targets related to **interconnectivity and transmission infrastructure**. These include both concrete projects or general infrastructure development and improvement, as well as regional cooperation. Around half the 19 objectives and targets focus on electricity (defined by Albania, Georgia, Montenegro, North Macedonia and Ukraine), while in the gas sector only Ukraine (3) and North Macedonia (1) define objectives, albeit without quantified targets. The remaining 4 targets have cross-sectoral scope.

Although the Governance Regulation stipulates that main **infrastructure projects** are to be listed among national *objectives and targets* under the internal energy market dimension of Chapter 2, the required content in other sections of the NECP led some Contracting Parties—understandably—to include information on projects in those sections too (see Figure 12). In addition, the Governance Regulation does not provide a standardised minimum scope and format for information to be provided in the NECP on infrastructure projects.

Unlike in the EU, Contracting Parties do not formulate quantified targets for interconnectivity in their NECPs, but instead list projects and plans for general infrastructure development or improvement, primarily at national level and as part of existing measures. The information on these activities appears in various sections of the NECPs and includes diverging content, making any comparison and meaningful conclusion unfeasible.

Figure 12:
Inclusion of project-related information across NECP chapters



35 Directive (EU) 2024/1788 of the European Parliament and of the Council of 13 June 2024 on common rules for the internal markets for renewable gas, natural gas and hydrogen, amending Directive (EU) 2023/1791 and repealing Directive 2009/73/EC and Regulation (EU) 2024/1789 of the European Parliament and of the Council of 13 June 2024 on the internal markets for renewable gas, natural gas and hydrogen, amending Regulations (EU) No 1227/2011, (EU) 2017/1938, (EU) 2019/942 and (EU) 2022/869 and Decision (EU) 2017/684 and repealing Regulation (EC) No 715/2009

Contracting Parties define 29 policies and measures for **interconnectivity and transmission infrastructure**, with the majority described in Serbia's NECP (16), followed by those of North Macedonia and Ukraine (five each). Only a limited number (5) of policies and measures form part of the WAM scenarios in the NECPs, reflecting high reliance on existing measures. Apart from concrete projects, policies and measures address general activities related to infrastructure planning and development. Plans to enhance and coordinate permitting procedures with neighbouring jurisdictions are not mentioned.

Contracting Parties face difficulties in implementing policies and measures on electricity interconnectivity and infrastructure, including the modernisation and development of transmission and distribution networks. The reasons vary, but the main driver of delays is reported to be low transmission tariffs compared with those in EU Member States, due to retail price distortions and the protection of households and small enterprises from market exposure. While all NECPs properly identify infrastructure development needs within and between Contracting Parties, the regulatory and economic challenges are often not addressed.

The low level of alignment between the assumptions and measures in NECPs and the TYNDPs of transmission and distribution system operators and other planning documents and strategies also represents a missed opportunity.

Natural gas projects and overall plans in NECPs are often incorporated from other public policy documents that reflect earlier priorities, set in an entirely different economic, policy and geopolitical context, including infrastructure developments that should have been finalised several years ago. For this reason, references to natural gas projects and priorities appear outdated in some NECPs and lack a connection to decarbonisation goals.

In future NECP cycles, gas infrastructure planning should be considered and further elaborated in conjunction with the development of renewable energy, electricity storage, reduction of GHG emissions and the circular economy. These are all areas where gas infrastructure can play a significant role in the transmission, storage and distribution of biogas, hydrogen, and low-carbon and synthetic gases.

Market integration

The NECPs elaborate on different aspects of market integration, at varying levels of granularity.

Objectives and targets for market integration are defined by all Contracting Parties except Georgia³⁶ and Montenegro.³⁷ However, the majority of those objectives and targets (29 of 32) are set by only three Contracting Parties: North Macedonia (12), Ukraine (9) and Moldova (8).

Given the broad horizontal spectrum of aspects under the internal energy market dimension, the objectives and targets are further grouped and described under the following sub-categories, with the numbers indicating how often they feature in the NECPs:

- Improved domestic market functioning (increased competition, improved liquidity, market-based prices, balancing, smart grids etc.) (10);
- General objectives aimed at market integration with the EU and/or at regional level (5);
- Electricity Integration Package/market coupling with explicit reference (4);
- Active consumers—demand response, balancing, self-consumption (6);
- Other (7), beyond the categories above.³⁸

³⁶ For objective reasons, as it lacks connections to other Contracting Parties or EU Member States.

³⁷ Which, on the other hand, is progressing with transposition of the Electricity Integration Package and thus market coupling.

³⁸ Two projects are represented in this category. The reference to projects in this chapter indicates that clearer guidance on the presentation of projects (in terms of content, format and location) in the NECP is necessary.

The NECPs contain 88 **policies and measures** for market integration defined by all Contracting Parties except Georgia. The majority of policies and measures are defined by Ukraine (47) followed by Serbia (20), Moldova and Montenegro (8-8). Most of the policies and measures (50) form part of the WEM scenario.

Improved domestic market functioning: It is positive that several objectives are aimed at **improving the functioning of the domestic market**. However, only three Contracting Parties (Moldova, North Macedonia and Ukraine) define such objectives in both the gas and electricity sectors, although there is room for improvement in all Contracting Parties, especially in addressing non-cost-reflective prices, further opening the market, easing market concentration and lowering the share of state-owned incumbents by facilitating the entry of other market participants. The largest number of policies and measures listed under the internal energy market dimension aim to improve the functioning and maturity of the domestic electricity and gas markets (36) through increased competition, better regulation and implementation of Energy Community legal obligations.

Electricity and gas market integration: The envisaged policies and measures for **electricity market integration** under the integrated energy market dimension, as presented in the NECPs of Albania, Moldova, North Macedonia, Serbia and Ukraine, are broadly aligned with the **Energy Community Electricity Integration Package** and reflect the key structural elements required for market integration. They address core areas including wholesale and retail market development, strengthening of the regulatory and institutional framework, and the implementation of EU market rules. Information on implementation timelines, financing arrangements and measurable performance indicators is frequently incomplete or insufficiently detailed. This suggests that, although the strategic direction is generally appropriate, a significant share of the measures remain at the level of policy commitment rather than operational delivery.

Only two Contracting Parties—Serbia and Ukraine—outline **gas market integration** measures targeting implementation of remaining elements from the **Third Energy Package**. The policies and measures include improved integration of gas systems at national and regional levels, as well as system optimisation and the introduction of digital solutions. Ukraine outlines plans for the development of a legal framework for the development of hydrogen and carbon dioxide markets and infrastructure, as well as an increase in natural gas and biomethane production by 2030.

Overall, the policies and measures are consistent with energy market integration objectives, but further progress will depend on regulatory enforcement, institutional capacity, investment delivery and systematic monitoring of results.

Market coupling: The NECPs of Moldova and North Macedonia include objectives and targets for completing electricity **market coupling**, while other NECPs (Montenegro, Serbia and Ukraine) only include related policies and measures. This indicates that policies and measures do not always stem from the defined objectives and targets, and that the NECPs are used only to a limited extent to clearly outline priorities and a schedule of milestones for market coupling, despite this being a uniform and urgent process for all Contracting Parties. While this may not have had a tangible impact on Contracting Parties' ability to meet those milestones, it represents a missed opportunity for stakeholders who rely on the NECP as the guiding document for medium-term policy priorities.

Active consumers: While **consumer empowerment** is still at a nascent stage in Contracting Parties, there are promising initiatives, as indicated by the NECPs of North Macedonia, Serbia and Ukraine. Policies and measures promoting more active consumer participation through increased self-generation and consumption, citizen energy communities, demand response, energy storage and smart meters account for the second largest group of actions under the internal energy market dimension (25), followed by policies supporting regional market integration and market coupling with the EU (22).

Energy poverty

While all Contracting Parties address energy poverty in their adopted NECPs, approaches and level of detail vary. Clear definitions of energy poverty are provided in the NECPs of Moldova, Montenegro and Ukraine. None of the Contracting Parties provide a detailed assessment of the number of households in energy poverty, and refer instead to existing studies. Nor do any Contracting Parties explicitly indicate in their NECPs that a significant number of households is in energy poverty, as per Article 3(3) of the Governance Regulation. However, concrete targets for reducing the number of households in energy poverty are defined by Georgia, Moldova, Serbia and Ukraine.

Existing measures to support vulnerable customers are mentioned in all NECPs, mostly noting continuation of their application. These measures are in the form of subsidies for energy bills. In some cases, energy efficiency measures are also deployed. The majority of policies and measures (9 of 13) are defined by Contracting Parties under the WAM scenario, reflecting the limited level of ongoing activities.

All NECPs define policies and measures for tackling energy poverty; however Serbia stands out in terms of level of detail, elaborating six specific policies and measures and also addressing energy poverty through other sectoral policies and measures (such as the deployment of renewable energy resources and energy efficiency). The planned actions in other Contracting Parties are diverse, including basic steps for defining and identifying energy-poor groups and collecting information for support programmes, including links to energy efficiency and renewable energy. Budget estimates for implementing envisaged policies and measures are provided in only a limited number of cases, indicating the urgent need to better define the current situation (i.e. assess the number of energy-poor households and define realistic but ambitious targets) and the scope of the envisaged policies and measures.

Since the majority of NECPs are based on data from the pre-energy crisis period, it is important for the next cycle of NECPs to address this topic more robustly.



2.6 Research, innovation and competitiveness dimension

The research, innovation and competitiveness dimension in most NECPs—with the exception of those of Georgia, Montenegro and Ukraine—remains largely horizontal and framework-oriented. While the NECPs of Albania, Moldova, North Macedonia and Serbia mainly describe institutional settings and broad enabling policies, the definition of quantified objectives and concrete funding trajectories linked to the development and deployment of clean energy technologies remains limited. More structured and measurable approaches are observed in Georgia and Montenegro. Ukraine provides the most comprehensive framework, linking innovation priorities with longer-term energy transition objectives. The Governance Regulation—while defining a 10-year planning horizon for NECPs (except the first cycle between 2025 and 2030)—leaves significant leeway regarding the timeframe for meeting the objectives. The indicative timeline of 2050 for objectives on the promotion of clean energy technologies is to be provided only where available.

In order to assess the research, innovation and competitiveness dimension across the seven adopted NECPs, both the objectives and the identified policies and measures were grouped into five analytical categories.³⁹ This approach is designed to provide greater insight into the relative emphasis placed by each Contracting Party, while also helping to identify strengths and differences in policy design and implementation.



1. Strategic framework and governance: national research and innovation priorities, institutional setup, EU integration, monitoring and international cooperation.



2. Funding and financial support for research and innovation: public funding, grants, state aid, incentives and investment plans.



3. Innovation ecosystem and knowledge transfer: research infrastructure, industry collaboration, innovation hubs and regional cooperation.



4. Clean energy technology: hydrogen; carbon capture, utilisation and storage, smart grids, industrial decarbonisation, transformation for small and medium-sized enterprises and 2050 alignment.



5. Skills and human capital for the energy transition: education, training, reskilling and workforce development for the energy transition.

Objectives and targets: Contracting Parties define 40 objectives and targets under the research, innovation and competitiveness dimension, with strong variation in ambition, scope and level of quantification. All NECPs recognise the importance of research, innovation and competitiveness for the energy transition.

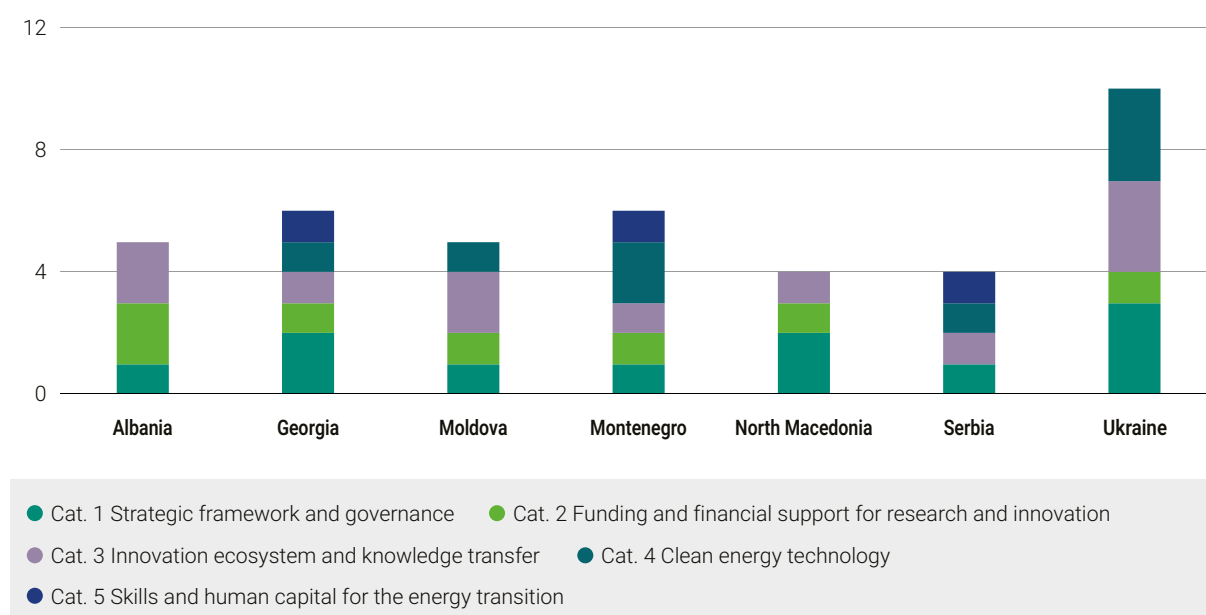
Only Georgia, Montenegro and Ukraine define measurable targets, while Albania, Moldova, North Macedonia and Serbia rely primarily on qualitative objectives focused on strengthening research systems, increasing participation in international programmes and improving cooperation between research and business.

Building on the suggested categorisation approach, Figure 13 sheds light on the emphasis placed on research, innovation and competitiveness objectives and targets in the region. All Contracting Parties propose targets promoting strategic framework and governance, as well as innovation ecosystem and knowledge transfer, while **Georgia** and **Montenegro** plan to foster development in all five categories.

³⁹ Given the broad and cross-cutting nature of the research, innovation and competitiveness dimension, this categorisation was developed by the Energy Community Secretariat on its own initiative to enable more structured and comparable assessment across Contracting Parties. It is intended to distinguish between the key functional components of an effective research and innovation system. This assessment is consistent with the broader approach set out in the Governance Regulation, the SET-Plan and Horizon Europe, which link successful energy transition policies to governance capacity, financing, innovation ecosystems, clean energy technologies and skills for the energy transition.

Figure 13:

Numbers of objectives and targets in each category under the research, innovation and competitiveness dimension



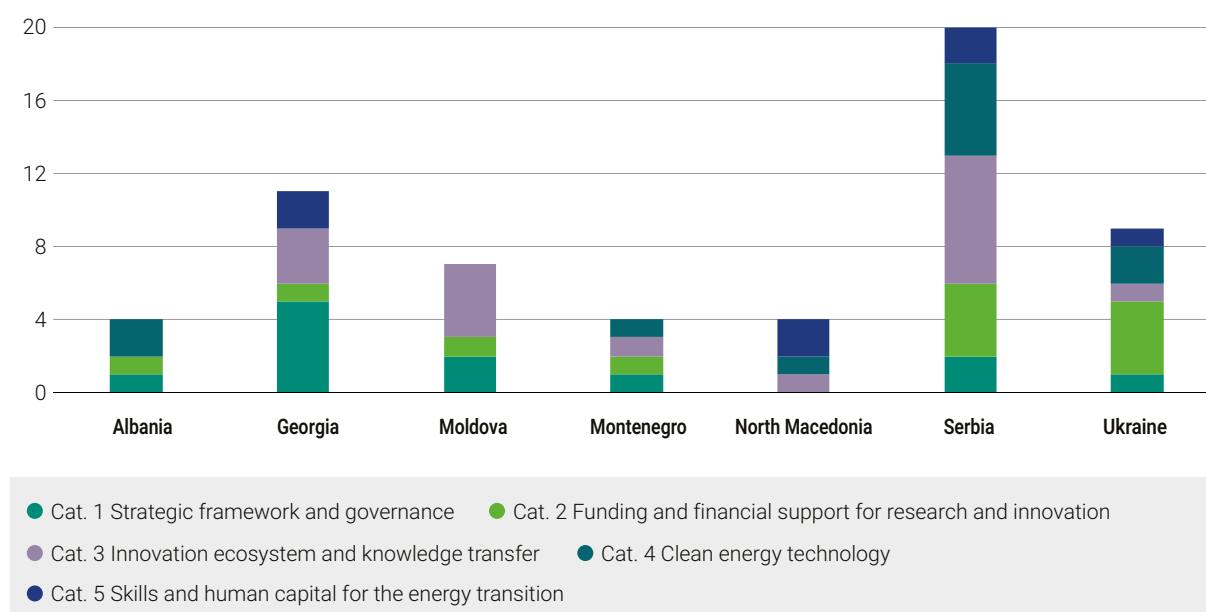
Source: Energy Community Secretariat's own assessment based on adopted NECPs

The adopted NECPs reflect 59 policies and measures under the research, innovation and competitiveness dimension, covering areas such as research funding, innovation incentives, technology transfer, support for small and medium-sized enterprises, education and skills development, and international cooperation. One third of these policies and measures originate from Serbia, which presents the most extensive portfolio in quantitative terms.

Applying the same categorisation approach to policies and measures provides a slightly different overview. In this case, most Contracting Parties envisage policies and measures promoting strategic framework and governance, while **Serbia** and **Ukraine** plan to take action in all five categories.

Figure 14:

Number of policies and measures in each category under the research, innovation and competitiveness dimension



Source: Energy Community Secretariat's own assessment based on adopted NECPs

Strategic framework and governance

Across the Energy Community, most Contracting Parties refer to national strategies and programmes to support research, innovation and competitiveness, including Smart Specialisation Strategies (Montenegro, North Macedonia, Moldova and Serbia), national innovation strategies (Albania, Georgia, Serbia and Ukraine) and participation in international programmes (Horizon 2020/Europe, COST and NATO SPS).

Objectives in this category (11 in total) are provided across all relevant Contracting Parties and primarily focus on developing national research and innovation systems, strengthening institutional frameworks and enhancing participation in EU and international research programmes. **Ukraine** stands out with three objectives that go beyond traditional research and innovation policy and include broader transformation priorities, such as Industry 4.0, the circular economy and digital and green transition pathways. **Georgia** and **North Macedonia** each define two objectives, mainly linked to increasing participation in international programmes and strengthening institutional capacities. **Albania**, **Moldova**, **Montenegro** and **Serbia** include one overarching objective each, generally focused on improving overall effectiveness of the research and innovation system.

Regional and international cooperation is addressed by all Contracting Parties, mainly through participation in EU research and innovation programmes and alignment with EU priorities. While this demonstrates strong regional integration, measurable objectives for joint projects and shared innovation outcomes are largely absent.

Policies and measures in this category illustrate how these strategic orientations are translated into concrete governance structures, coordination mechanisms and international cooperation activities. A total of 12 policies and measures support this category, reflecting the extent to which these strategic objectives are operationalised. **Georgia** demonstrates the most comprehensive approach, with five measures addressing the definition of national research and innovation priorities, the development of monitoring systems and the strengthening of international cooperation, including participation in EU programmes. **Moldova** and **Serbia** include two measures each related to smart specialisation, legal and institutional reforms, and integration into the European Research Area. **Albania**, **Montenegro** and **Ukraine** each include one measure, mainly focusing on international cooperation and strategic alignment. **North Macedonia** does not include a clearly defined measure in this category.

While Contracting Parties recognise the importance of strategic framework and governance, the level of operationalisation and policy maturity differs significantly.

Funding and financial support for research and innovation

Objectives in this category capture the level of financial ambition and the extent to which Contracting Parties commit to supporting research and innovation through public and private funding. Funding-related objectives (7 in total) are less frequently defined and show significant variation across Contracting Parties compared with the other categories in the assessment. Some countries include quantified targets for research and innovation expenditure, such as **Albania** (2% of GDP), **Georgia** (1% of GDP, including a share for energy-related research and innovation), **Montenegro** (allocation of research and development investment to energy and climate projects) and **Ukraine** (3% of GDP). **Moldova** and **North Macedonia** include more general objectives aimed at increasing funding for research and innovation, without specifying clear benchmarks. **Serbia** does not define a dedicated objective for research and innovation funding.

The importance of financial support is acknowledged, but explicit and measurable funding commitments remain limited and unevenly distributed.

Policies and measures in this category include concrete financial instruments, support schemes and investment mechanisms put in place to implement these objectives. A total of 12 policies and measures address funding and financial support for their implementation. Serbia and Ukraine each present 4 funding-related measures. **Ukraine**'s measures include expanded public funding, grant schemes, venture capital mobilisation and support for corporate investment in climate technologies. **Serbia** presents a detailed financial framework, including state aid mechanisms, investment plans and dedicated funds. By contrast, **Albania, Georgia, Moldova** and **Montenegro** each include only one funding-related measure, while North Macedonia does not specify financial instruments dedicated to research, innovation and competitiveness.

Innovation ecosystem and knowledge transfer

This category includes a total of 11 objectives related to development of the innovation ecosystem and knowledge transfer, focusing on strengthening cooperation between research institutions and businesses, improving the commercialisation of research results and increasing private sector involvement in research and innovation activities. **Ukraine** defines 3 objectives in this area, including increasing the share of innovative enterprises and improving the commercialisation of research. **Albania** and **Moldova** each include 2 objectives focusing on strengthening linkages between research and business and encouraging private sector participation. **Georgia, Montenegro, North Macedonia** and **Serbia** include 1 objective each, generally addressing cooperation and innovation capacity.

Policies and measures in this category demonstrate how Contracting Parties support the development of innovation ecosystems, including infrastructure, networks and cooperation mechanisms. In total, 17 policies and measures highlight its importance in implementation. **Serbia** presents the most comprehensive framework, with seven measures covering innovation hubs, clusters, competence centres, technology transfer offices and entrepreneurship support. **Moldova** also places strong emphasis on ecosystem development through science parks, innovation incubators and technology transfer networks. **Georgia** includes several measures aimed at strengthening cooperation between research and business. By contrast, **Albania, Montenegro, North Macedonia** and **Ukraine** include only limited ecosystem-oriented measures.

Clean energy technology

Objectives in clean energy technology show strong variation across Contracting Parties. **Ukraine** stands out with 3 objectives, addressing structural and transformational areas such as reducing GDP energy intensity, hydrogen development and deploying smart grids nationwide. **Montenegro** presents 2 objectives, including a quantified target to deliver at least 15 innovative clean energy solutions by 2030, alongside efforts to improve energy efficiency and renewable energy uptake in industry, particularly among micro, small and medium-sized enterprises. Georgia, Moldova and Serbia include 1 objective each related to clean energy technologies. **Georgia** takes a broad approach without specifying concrete targets. **Moldova** links its objective to longer-term climate neutrality and renewable energy goals, while **Serbia** covers a wide range of technologies, including renewable energy, energy storage, mobility and carbon capture, utilisation and storage, but without a clear indicative implementation timeline and targets for future development. **Albania** and **North Macedonia** do not define objectives in this category, indicating a lack of direct linkage between research, innovation and competitiveness and energy transition priorities at the strategic level.

A total of 11 policies and measures fall under this category, reflecting diverse initiatives across the region. **Serbia** has the most comprehensive portfolio, with 5 measures covering a wide range of technologies, including renewable energy, hydrogen, carbon capture, utilisation and storage, smart grids, energy storage and transport innovation. **Albania** and **Ukraine** include 2 measures each targeting the green transformation of industry and the climate technology development. **Montenegro** and **North Macedonia** include one broader measure each related to innovation and competitiveness in industry, with indirect links to energy efficiency. **Georgia** and **Moldova** do not include a dedicated measure targeting clean energy technologies.

Skills and human capital for the energy transition

Three Contracting Parties (Georgia, Montenegro and Serbia) define objectives in this category. **Georgia** and **Montenegro** focus on capacity building and support for young researchers, with Montenegro placing particular emphasis on doctoral and postdoctoral research in clean energy and sustainable development. **Serbia** addresses skills development within a broader objective, linking workforce capabilities to innovation, competitiveness and just transition objectives. The focus is on enhancing the commercial viability of innovations, supporting job creation and facilitating economic transition in carbon-intensive regions. By contrast, the other Contracting Parties (**Albania**, **Moldova**, **North Macedonia** and **Ukraine**) do not define explicit objectives or targets related to skills development or human capital for the energy transition under the research, innovation and competitiveness dimension.

Several Contracting Parties (Georgia, North Macedonia, Serbia and Ukraine) include dedicated actions addressing skills and human capital for the energy transition, with Georgia, North Macedonia and Serbia each defining 2 policies and measures and Ukraine 1 policy and measure in this category. **Georgia** plans to review and improve sustainable energy education programmes and provide international scholarships to develop a qualified pool of young researchers. **North Macedonia** focuses on integrating sustainable energy topics across all education levels and promoting the inter-sectoral and geographical mobility of researchers. **Serbia** includes measures to support researcher mobility between academia and industry and to enhance education and training systems for the transition to a climate-neutral and circular economy. **Ukraine** defines a measure aimed at modernising education programmes to address skills gaps related to renewable energy and the green transition.



2.7 Energy subsidies

Where applicable, Contracting Parties are required to include information about energy subsidies, in particular for fossil fuels, in their NECPs in:

- Chapter 3, including policies and measures under the decarbonisation dimension,
- Chapter 4, in the section on research, innovation and competitiveness as part of the analytical basis explaining the current situation and projections under the WEM scenario.

In the absence of a legal obligation to address the topic in NECP Chapter 2, energy subsidies and their phase-out are not covered in any NECP—neither among the strategic objectives or targets nor through dedicated policies and measures. It is important to note that, while the Governance Regulation does require the description of energy subsidies (NECP Chapter 4.6), including for fossil fuels, the relevant tables in the integrated progress reports capture only targets, objectives and policies and measures related to the *phase-out* of energy subsidies. After adoption of the NECP, monitoring does not cover the full scope of energy subsidies in place, but only their phase-out plans.

Albania, Georgia, Montenegro, North Macedonia, Moldova and **Ukraine** address energy subsidies in Chapter 4.6, under the research, innovation and competitiveness dimension, with Ukraine providing the most detailed and comprehensive overview of the various types of existing subsidies. In most Contracting Parties, energy subsidies serve social, affordability and market deployment objectives. Support schemes mainly focus on renewable energy deployment, including the installation of residential rooftop solar panels, energy efficiency improvements (such as replacement of windows, insulation projects and the installation of solar collectors) and the protection of vulnerable consumers through direct subsidies and preferential prices. Fossil fuel-related subsidies persist in some Contracting Parties (Georgia, Moldova and Ukraine), particularly in the form of price regulation, tax exemptions and crisis-response measures. Subsidies for renewable projects in the forms of feed-in tariffs and premiums are also described. Overall, the role of energy subsidy schemes and their impact on the competitiveness of Contracting Parties are not recognised and detailed in the NECPs.

2.8 Investment needed to meet NECP objectives and targets

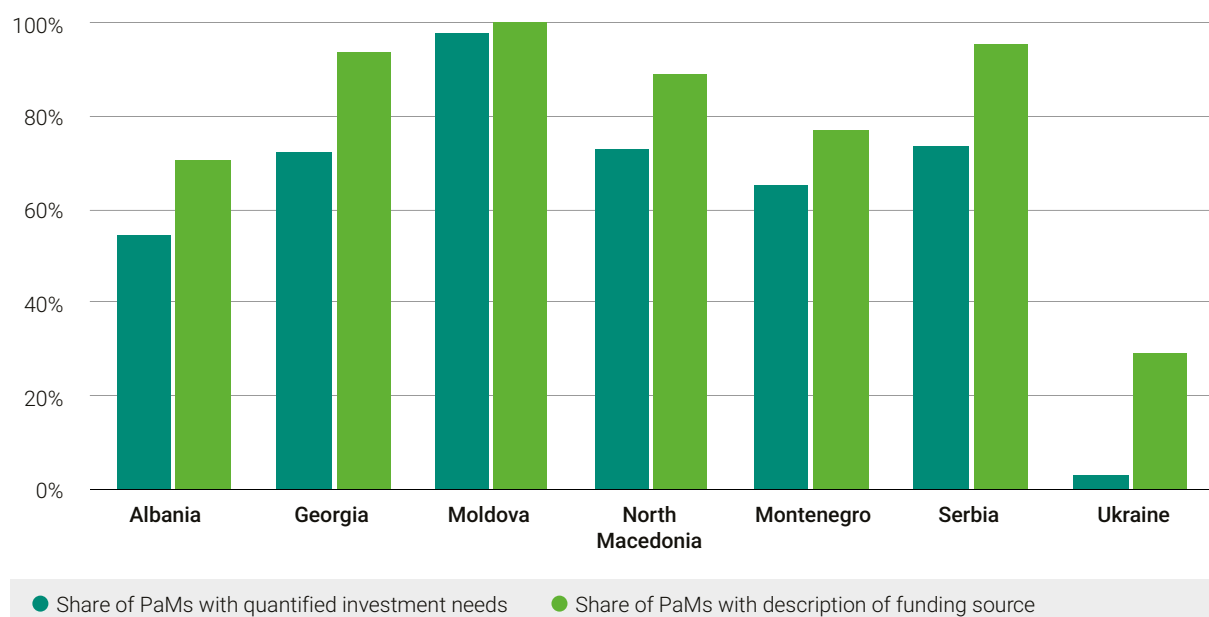
NECPs are required to describe *“the planned policies and measures in relation to the corresponding objectives [...] as well as a general overview of the investment needed to meet”* these objectives and targets.

Investment data and plans set out in the adopted NECPs show considerable improvement compared to the draft NECPs reviewed by the Energy Community Secretariat, both in terms of quality and completeness. However, gaps remain regarding detailed identification of investment needs for implementing individual policies and measures, as well as the intended funding source (private sector, public budget or international donors). In this respect, **Moldova** is to be commended for achieving the highest level of data granularity among the Contracting Parties (Figure 15).

None of the Contracting Parties provide complete information on the investment needs for implementing their NECP.

Figure 15:

Share of policies and measures (PaMs) with quantified investment needs and description of funding sources [%]



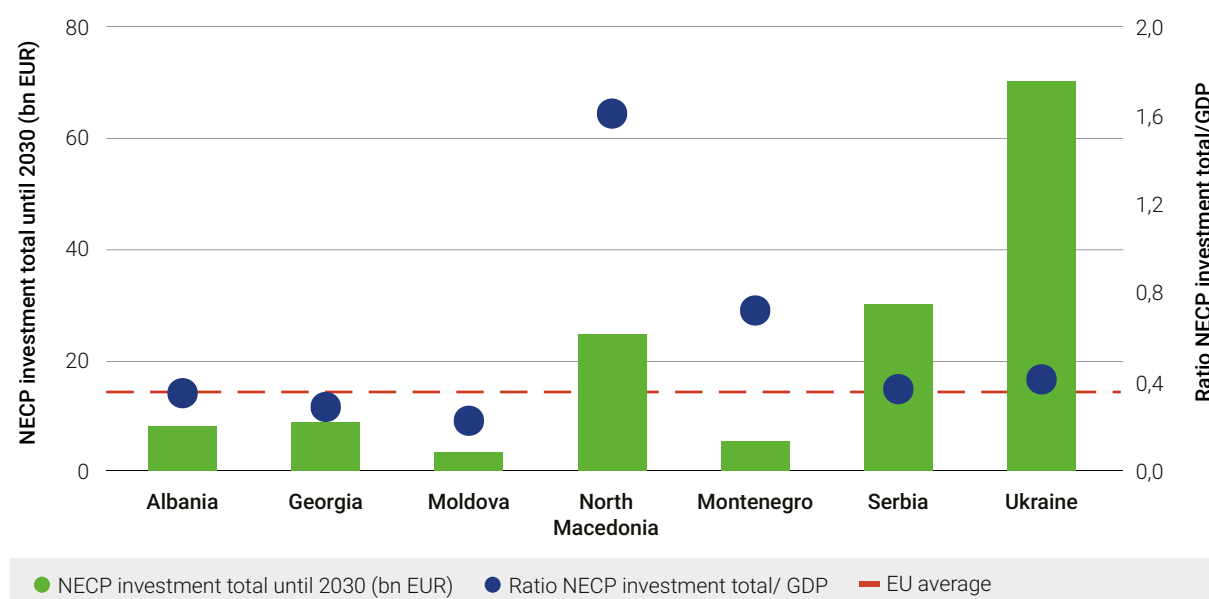
Note: Shares are calculated based on the number of policies and measures listed in adopted NECPs

Total cost of NECP implementation: At the aggregated level, the overall investment need indicated amounts to approximately EUR 151 billion for the period up to 2030. This breaks down by Contracting Party as shown in Figure 16.

When relating total NECP investment needs to the annual GDP of Contracting Parties for benchmarking purposes, the Energy Community GDP-weighted average is 0,4, compared to an EU average of 0,3. This can be explained—among other reasons—by the high carbon intensity of the power sector in the Energy Community, which requires higher ambition for the energy transition. It also reflects the challenge of catching up on the investment progress already made by EU Member States in earlier years. Depending on the Contracting Party's specific energy sector and decarbonisation path, the individual values range from 0,2 (Moldova) to 1,6 (North Macedonia).

Figure 16:

Total NECP investment needs as per adopted NECPs [EUR billions] and related to GDP



Note: Numbers are based on consolidated initial investment assumptions described under policies and measures in adopted NECPs and additional information where available. GDP data reflect the year 2023 for Ukraine and 2024 for all other Contracting Parties.

Financing need per dimension: The NECP dimensions requiring the highest investments are decarbonisation, including renewable energy deployment and energy efficiency, together accounting for 84% or more of the total indicated financing need across the adopted NECPs (see Figure 17). However, these numbers serve as a rough indication only, as information on financing needs differs in sectoral coverage and scope.

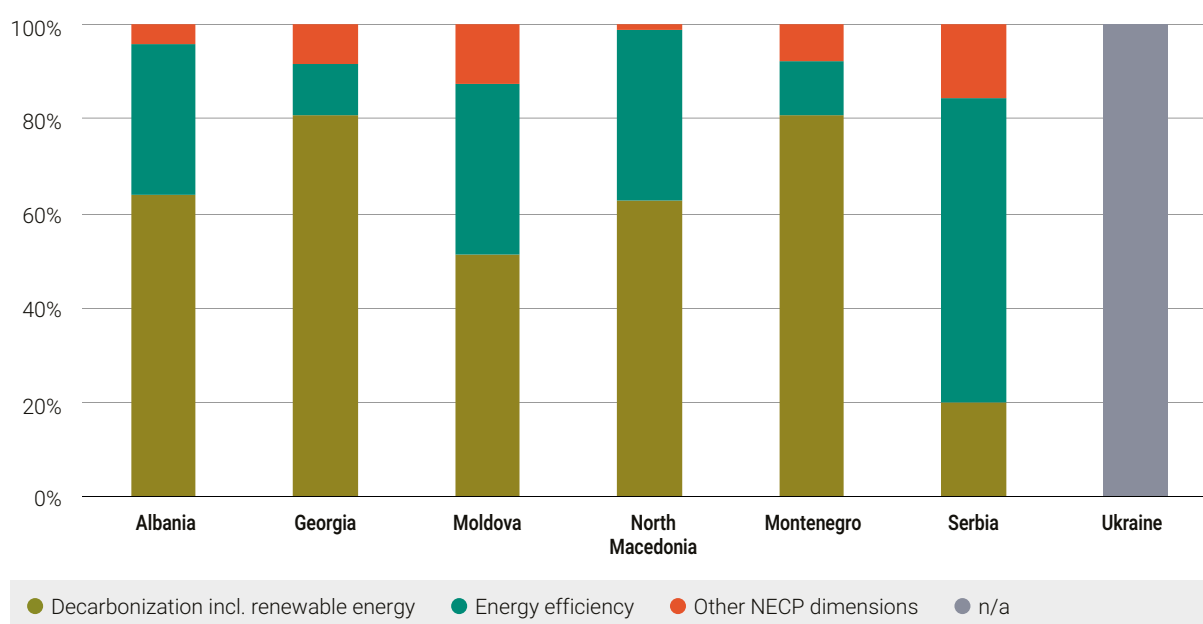
While RES-E and energy efficiency investments are typically well covered and the underlying initiatives clearly explained, measures promoting transport sector decarbonisation, the Just Transition and coal phase-out are often listed without the same level of detail and quantification of the relevant investment needs.

Investment information for implementing energy efficiency policies and measures varies considerably across Contracting Parties. For instance, Serbia shows a significantly higher share of energy efficiency investment needs compared to other Contracting Parties because its investment estimates include the construction cost of all new housing, while other NECPs include refurbishment costs only.

Within and across NECPs, there is an opportunity to improve consistency in how comprehensively the financing of policies and measures is described and which costs are taken into account (such as full investment costs or only funding from the public sector).

Figure 17:

Shares of main NECP dimensions in total investment needs, as indicated in adopted Energy Community NECPs



The source of NECP financing: The level of detail regarding specific funding sources varies widely. While clear financing strategies will be needed to ensure successful implementation of policies and measures, in many cases, the funding source is frequently left “to be determined”, especially with regard to expected support from donors or international financial institutions.

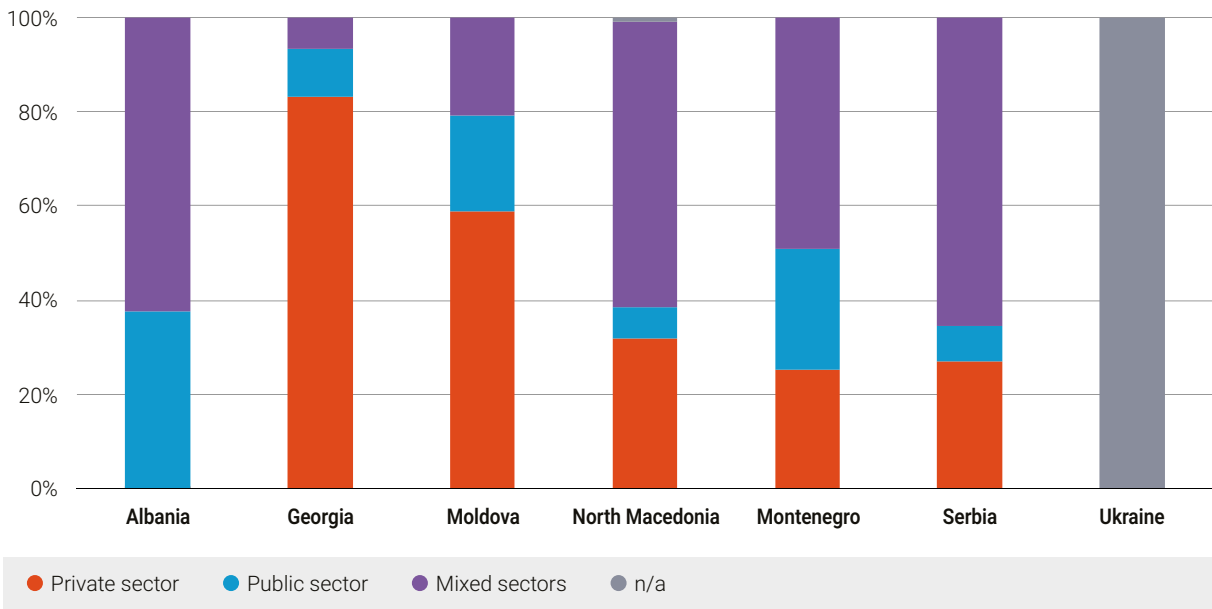
Based on the available data, private sector investments appear to dominate. The public sector share is generally between 20% to 30% of total NECP financing, which is in the expected range. Only in the case of Georgia it is at 3%. As shown in Figure 18, a large share of policies and measures rely on mixed funding from public and private sources, for example where a government incentive scheme mobilises private sector finance. Georgia provides the most detailed information in this respect.

In many cases, Contracting Parties also envisage financing actions through donor support, without specifying specific institutions or programmes as potential sources of funding. One notable exception is Moldova's NECP, which lists policies and measures for which support has already been secured. Examples of relevant mechanisms include the EU Western Balkans Investment Framework (WBIF), EU Reform Agendas and the Programme for Energy Efficiency in Buildings (PEEB) of the Agence Française de Développement (AFD) and the German investment and development bank KfW.

Regarding funding type, it is advisable to distinguish clearly between financing needed for technical assistance and capacity building activities and the actual investments. In most cases, interdependencies exist, with policy or regulatory frameworks enabling private sector investments (such as public auctions for new renewable energy generation).

Since current data are frequently insufficient for planning and budgeting purposes, the next cycle of NECPs should define financing strategies more clearly. For policies and measures requiring interaction of private investments and public budget funding (such as for incentives), NECPs should indicate the respective share of each funding source. Expected donor funding should already be linked to ongoing or planned financing programmes and be pre-aligned with respective donors.

Figure 18:
Sources of finance set out in NECPs



Source: Energy Community Secretariat's own assessment based on the description of policies and measures in adopted NECPs

Note: In a few NECPs, RES generation investments are categorised by Contracting Parties as "mixed" due to the interaction of private investment with public subsidies. However, the majority of funding is expected to come from the private sector.



Challenges and opportunities ahead: NECPs to become investment blueprints for implementation, enabling financing and development of effective funding instruments

NECPs provide an opportunity to improve the regulatory environment, attract private investment and optimise the use of public funds (national and potentially also international donor funding) by leveraging private investments.

Examples of cases with regional reach in the Energy Community include:

- The Green Economy Financing Facility (GEFF) programme of the European Bank for Reconstruction and Development (EBRD) for intermediary finance to local private sector banks to support residential energy efficiency and decarbonisation projects, thereby also leveraging EU grants as additional incentives;
- Guarantees provided by international financial institutions to national development banks or energy efficiency funds to expand SME lending for green investments;
- The EU Western Balkans Investment Framework's proven blended finance instruments, which combine loans with investment grants, as well as upfront technical assistance, for project preparation of large infrastructure projects (such as electric transmission lines) or government building renovation.

While the EU continues to prioritise the energy transition in its new Multiannual Financial Framework, thereby supporting Member States, Contracting Parties face an even greater **challenge in financing NECP implementation**. Relevant EU mechanisms include the Innovation Fund, the planned Competitiveness Fund, the EU Emissions Trading System (EU ETS), cross-border instruments such as the EU renewable energy financing mechanism, the new Industrial Decarbonisation Bank, and the Energy Efficiency Financing Coalition. The absence of comparable financing mechanisms underscores the need to establish similar instruments within the Energy Community or at Contracting Party level.

Furthermore, changes in the donor and financing landscape (such as tightened public funding for overseas development assistance and the withdrawal of the United States Agency for International Development (USAID)) will require more efficient and optimised funding mechanisms, for instance through increased use of de-risking instruments.

At the same time, there are high-impact opportunities to be pursued. The **private banking sector** has started to embed sustainability in lending practices. This avenue can be strengthened, including preferential terms for applicable "green" financing. **Large-scale EU financing** programmes such as the Western Balkans Investment Framework (WBIF) and the Reform and Growth Facility will continue to provide critical support, with an increased focus on the energy transition. In addition, the EU is expanding access to **guarantees from its European Fund for Sustainable Development Plus (ESFD+)** through international financial institutions to de-risk and mobilise investments at a larger scale. Furthermore, the EU LIFE Clean Energy Transition sub-programme has become a potential source of support for some Contracting Parties, enabling interventions in areas such as technology roll-out, mobilisation of private finance for sustainable energy, and supporting the development of local and regional investment projects.

For complex NECP investments, such as in waste management, public–private partnerships (PPP) can unlock effective long-term financing (such as the Belgrade Energy-from-Waste project supported by the World Bank Group's International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA), as well as bilateral donors).

Lastly, Contracting Parties can draw on EU models of beneficial **collaboration platforms among national hubs** (such as the European Energy Efficiency Financing Coalition). Carbon pricing and/or trading are critical funding sources for NECP implementation. Contracting Parties are encouraged to pursue the implementation of suitable models in growing alignment with the EU ETS.

The **Energy Community Secretariat will continue to support** collaboration and best-practice sharing on financing among Contracting Parties. It stands ready to assist donors and international financial institutions in the development of (regional) mechanisms that support and expand NECP financing, including policy development and de-risking approaches.

The Energy Community Secretariat commends Contracting Parties for their extensive work on NECP investments and financing. More comprehensive financing data in future NECP cycles will be an important step to facilitate the implementation of policies and measures and timely progress across the NECP dimensions.

2.9 Just transition aspects of the planned policies and measures

The Governance Regulation requires an analysis of “*just transition aspects (in terms of costs and benefits as well as cost-effectiveness) of the planned policies and measures at least until the last year of the period covered by the plan*” as part of the NECPs, underlining the holistic and cross-cutting nature of the just transition.

Just transition aspects are not sufficiently integrated into the NECPs at the level of objectives and policies and measures. For many Contracting Parties, just transition is limited to a single policy. Ukraine, Serbia and North Macedonia have Just Transition Programs or Action Plans in place, while Montenegro plans to adopt one.

Of the seven analysed NECPs, four (Serbia, Ukraine, Montenegro and North Macedonia) plan one policy or measure directly related to just transition. Only Serbia provides a cost estimate for the measure (EUR 2 million for monitoring and revision of its Just Transition Action Plan). Serbia also refers to just transition in other policies and measures (related to energy efficiency).

All four policies and measures directly related to just transition are based on drafting and adoption of a just transition planning document (a plan or programme). These just transition planning documents focus on the alternative utilisation of mining lands, improvement of infrastructure, tax incentives and subsidies to attract investments, reskilling programmes, and identifying investments for future regional development. All documents share the objective of addressing the socio-economic impacts of just transition.

In addition, some Contracting Parties, such as Montenegro, have set up governance bodies for just transition, which are described in their NECP.⁴⁰

Although five of the nine Contracting Parties are members of the Powering Past Coal Alliance (PPCA),⁴¹ their coal phase-out commitments are, in most cases, not included in their NECPs. Nevertheless, some Contracting Parties outline decommissioning dates for their coal power plants: Montenegro by 2041, North Macedonia by 2027 and Ukraine by 2035. A just energy transition should be accompanied by a clear, time-bound commitment to phase-out coal.

Some Contracting Parties, such as Montenegro, Ukraine, North Macedonia and Serbia, take a more detailed quantitative approach to employment-related impacts in their adopted NECPs, while others, such as Albania, adopt a broader approach extending to household incomes and public budgets. Two Contracting Parties also explore impacts on air pollution (Ukraine and North Macedonia). Other impacts, such as those on the population, regions and energy poverty, are largely omitted. Qualitative descriptions are often lacking.

It is unclear how the outlined planned policies and measures in the NECPs would address the impacts of the energy transition, especially in the broader context of regional development, distributional impacts across the population, energy poverty and gender issues. The channelling of actions related to just transition into a single measure on just transition may not be sufficiently broad and mainstreamed to tackle the consequences of the energy transition effectively. It is therefore recommended that updated or new NECPs include more targeted policies and measures to address the broad range of impacts of the energy transition.

Due to the insufficient integration of just transition into NECPs and the decision by many Contracting Parties to establish separate policies and measures in the form of Just Transition Roadmaps or Action Plans, it is recommended that Contracting Parties develop Just Transition Plans replicating the Territorial Just Transition Plan structure and content and base them on lessons learnt from EU Member States. Alignment with the EU model will facilitate greater

⁴⁰ Montenegro has established the National Council for Just Transition.

⁴¹ <https://poweringpastcoal.org/members>

consistency and facilitate the accession process. For this reason, the use of the Energy Community Secretariat's Policy Guidelines on just transition planning is recommended.

Moreover, during the update or development of new NECPs, it is recommended that just transition aspects be addressed in a more holistic and cross-cutting manner across all five dimensions of the NECP.

In future NECPs, further information should be provided on just transition, including coal phase-out dates, and just transition aspects should be incorporated into the listed policies and measures to ensure that just transition is an integral part of NECPs.



2.10 NECP impact on air quality and on emission of air pollutants

As the energy sector is one of the most significant sources of emissions into the air, it is highly important that strategic documents in this domain—such as NECPs—address air quality issues and assess possible interlinkages. The Governance Regulation requires Contracting Parties to report on the impacts of industrial, agricultural, transport and energy policies and measures on air pollution, in line with relevant environmental legislation. NECPs should, “as far as possible” quantify *“the impact of the policies and measures in the integrated national energy and climate plan on air quality and on emissions of air pollutants”*.

This is particularly relevant, as by signing the Energy Community Treaty, Contracting Parties agreed to limit air pollutant emissions originating from large combustion plants. The Large Combustion Plants Directive 2001/80/EC determines the types of combustion plants covered, measures to reduce the emissions and the respective deadlines. The implementation of these measures is closely linked to the NECPs, particularly with regard to the decarbonisation and energy efficiency chapters. National Emission Reduction Plans (NERPs), where applicable, are intended to reduce the level of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and dust emissions to acceptable levels. Most Contracting Parties only briefly mention information related to the Large Combustion Plants Directive, without providing detailed information or substantiation.

Despite some efforts, insufficient reporting on the projected impacts of the planned policies and measures on air pollutant emissions in the adopted NECPs remains a gap across all Contracting Parties implementing National Emission Reduction Plans.



03

Assessment of progress

Horizontal overview

How prepared were Contracting Parties for reporting on progress?

Adoption of a comprehensive legal framework: Many Contracting Parties still lack a full legal basis for preparing and submitting integrated NECPRs. Only **Moldova** and **Serbia** have completed the adoption of a comprehensive legal framework.

Institutional setup for integrated progress reporting: Most Contracting Parties nominated lead reporters for all Annexes of Impl. Reg. 2022/2299. However, some nominations were delayed, and some of the nominated reporters have not yet activated their accounts on the reporting platforms. In some cases, lead reporters changed during the reporting process.

Aspect	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend: ✓ Completed ↗ Steps taken ✗ Yet to start									
Adoption of a comprehensive legal framework at national level	↗	✗	✗	✗	✓	✗	✗	✓	✗

Are integrated energy and climate reports complete?

Contracting Parties do not provide the full set of reports or information outlined under Impl. Reg. 2022/2299. However, some of the information listed in the reporting templates is classified as “mandatory if applicable” or “voluntary”. Among the information necessary to assess progress, the following gaps are identified:

- **Annex I**, intended to detail progress towards GHG emission targets: gaps remain, in particular, in those fields to be post-filled with information from submissions under Delegated Regulation 2020/1044 (GHG inventories) and Impl. Reg. 2020/1208 (national projections of GHG emissions);
- **Annex III**, intended to report on adaptation;
- **Annexes IX–XIV**, intended to elaborate on the planning and implementation of policies and measures: quantitative information, including assessment of progress and contributions, in particular, is absent.

What is the quality of data?

Despite the significant gaps, the progress reports provide a wealth of information and data on the current state of the energy system and economy. Throughout the 2025 reporting period, lead reporters cooperated closely with the European Environmental Agency (EEA) and DG ENER, receiving technical guidance, training and recommendations for improvement during the quality assessment and quality control of their submissions. Following these recommendations, many Contracting Parties prepared responses and resubmitted the respective annexes. However, in some cases, information is not provided in the expected fields or tables, but elsewhere in the submission. Furthermore, reported information is not always aligned with NECPs, for example regarding the description and contribution of policies and measures or targets.

Are Contracting Parties progressing towards their 2030 energy and climate targets?

In their first integrated energy and climate progress reports, Contracting Parties report on a period (2022–2023) when NECPs were still under development. Accordingly, the reported figures can only reflect the starting point of NECP implementation. The impact of planned policies and measures or structural changes cannot yet be observed. Nevertheless, some Contracting Parties already appear to be on good track to achieve (some of) their 2030 targets.

3.1 Decarbonisation dimension: greenhouse gas emissions and removals

Reporting status

Only Kosovo*, Serbia and Ukraine report GHG emissions and removals under Annex I of Del. Reg. 2020/1044. Albania, Georgia, Serbia and Ukraine report policies and measures under the decarbonisation dimension (and beyond) as part of their Annex IX submissions.

Annex I also includes fields to be completed using information from submissions under Del. Reg. 2020/1044 and Impl. Reg. 2020/1208 (national projections of GHG emissions). The majority of Contracting Parties have made progress in climate reporting, with recent submission of their GHG inventories (Albania, Georgia, Moldova, Montenegro, Serbia and Ukraine). By contrast, the obligation to submit national GHG emission projections remains unfulfilled, although several Contracting Parties provide relevant information in their NECPs.

Table 18:

Status of submissions under Annex I of Impl. Reg. 2022/2299 and other GHG-related reporting obligations

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex I	Decarbonisation: GHG emissions and removals									
with reference to	GHG Inventories under Del. Reg. 2020/1044									
with reference to	National projections of GHG emissions under Impl. Reg. 2020/1208									
Annex IX	Integrated policies and measures									

National GHG-related objectives and targets

Under Annex I, Contracting Parties are required to reiterate their national GHG targets for 2030 and beyond, as well as their historical GHG emissions and projections.

National GHG emission target for 2030 and beyond (Annex I, Table 1): Two Contracting Parties report their national GHG emission targets for 2030. **Ukraine's** submission deviates from the obligation under Decision 2022/02/MC-EnC, reporting a 2030 GHG emission target (including LULUCF) of 320,42 Mt CO_{2eq} instead of 309,00 Mt CO_{2eq}. Accordingly, Ukraine's reported target is neither consistent with the national target set out in its adopted NECP nor compliant with the legally binding GHG emission level. **Kosovo*** reiterates the 2030 target in line with Decision 2022/02/MC-EnC (8,95 Mt CO_{2eq}) and also specifies a milestone for 2040 (7,00 Mt CO_{2eq}). This indicates that major efforts towards climate neutrality will be postponed until after 2040. **Serbia** reiterates GHG emission-related targets for 2030, 2035 and 2040 under Table 4 of Annex I instead of Table 1—all in line with binding obligations and current NECP projections under Scenario S.

Projections under WEM and WAM scenarios: Annex I is also intended to include detailed projections under the WEM and WAM scenarios. For this purpose, Annex I builds on previous submissions of projections required under Article 18 under the Governance Regulation and Impl. Reg. 2020/1208. To date, none of the Contracting Parties has submitted projections in line with this reporting requirement under Article 18, although relevant projections are presented in their NECPs. Consequently, this information is absent from Annex I submissions.

Target year for climate neutrality: Of the three Contracting Parties that submitted input, Ukraine and Kosovo* specify a target year for reaching climate neutrality: Kosovo* by 2050, Ukraine by 2060 for the economy as a whole and 2050 for the energy sector. Serbia does not provide a target year. The designation of 2050 as a target year for climate neutrality is consistent with the Energy Community's climate neutrality objective.

LULUCF commitments stated in the current NECP (Annex I, Table 3): Kosovo* and Serbia indicate a relevant impact of LULUCF removals in their 2030 and 2040 commitments, as shown in Table 19 below, while Ukraine does not "set separate targets for the LULUCF sector".

Other national GHG-related objectives and targets, including sectoral targets (Annex I, Table 4): Ukraine reiterates a national target for a 30% reduction in methane emissions by 2030 compared with 2020 levels. In a supplementary attachment to its NECP submission, Ukraine furthermore proposes to increase the share of alternative energy sources used in thermal energy production by heat supply facilities from 30% in 2025 to 40% in 2035. While other national GHG-relevant targets are not reported under Annex I, Georgia, Moldova, Montenegro and North Macedonia present sectoral targets and contributions in their adopted NECPs, which could be expected to be included in their future NECP submissions.

Only Kosovo*, Serbia and Ukraine have submitted Annex I reports. While Kosovo's* and Serbia's submissions reiterate their NECP 2030 GHG emission targets, Ukraine's submission deviates from the target set out in its adopted NECP and the obligation under Decision 2022/02/MC-EnC by reporting a less ambitious 2030 GHG emission target. Only Ukraine and Kosovo* specify a target year for reaching climate neutrality, by 2050 and 2060 respectively.

Table 19 below summarises the national GHG emission targets for 2030 and indicative milestones for 2040 and 2050 reported under Annex I of Impl. Reg. 2022/2299 and compares them against binding Energy Community headline targets.

Table 19:

National GHG emission targets for 2030 and indicative milestones for 2040 and 2050 reported under Annex I of Impl. Reg. 2022/2299, including LULUCF [Mt CO₂eq]

[Mtoe CO ₂ eq]	Targets per Decision 2022/02/MC-EnC	Targets and Milestones reported under Annex I		
	2030	2030	2040	2050
Legend: ■ No report submitted ■ Information not available in submission				
Albania	12,00			
Bosnia and Herzegovina	15,65			
Georgia	20,50			
Kosovo* (LULUCF only)	8,95	8,95 (-0,32)	7,00 (-0,96)	Climate-neutral economy
Moldova	9,10			
Montenegro	2,42			
North Macedonia	2,20			
Serbia (LULUCF only)	47,82	47,77 (6,58)	36,10 (5,50)	NA
Ukraine	309,00	320,42		Climate-neutral energy sector

Source: Submissions under Impl. Reg. 2022/2299 Annex I, Tables 1–4

Progress towards the national GHG emission reduction targets

Under the adapted Governance Regulation, Contracting Parties are required to report on progress in meeting the 2030 targets. Various circumstances in recent years, including the COVID-19 pandemic, Russia's full-scale invasion of Ukraine, the electricity price crisis and local events such as wildfires, have expedited or hampered efforts to achieve GHG emission reductions. This makes careful monitoring all the more important.

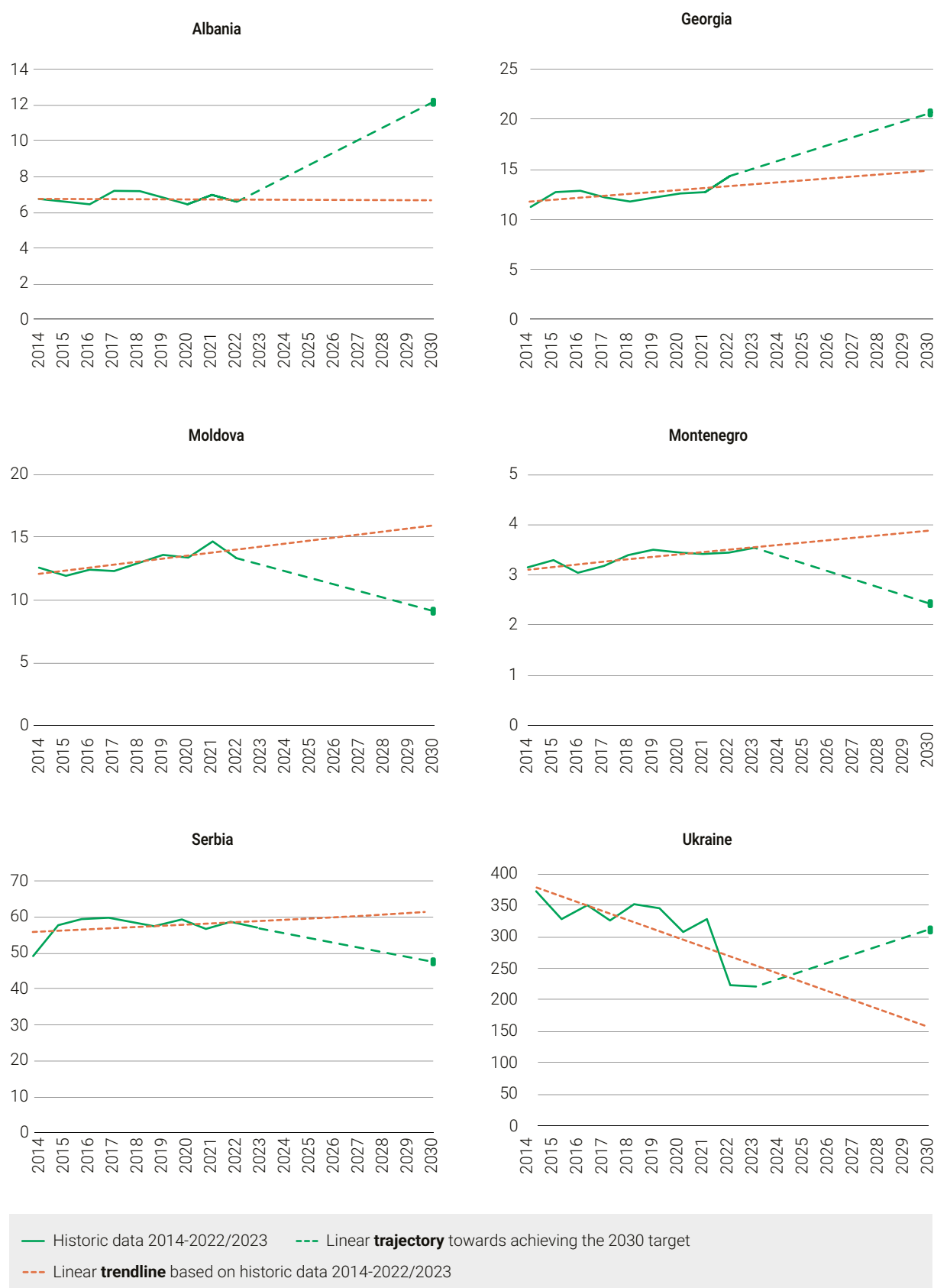
In their first integrated energy and climate progress reports, Contracting Parties report on a period when NECPs were still under development. Accordingly, the reported figures can only reflect the starting point of NECP implementation.

Figure 19 below shows actual GHG emissions from 2014–2022/2023, linear trends based on this historical 10-year period, and the linear trajectories that Contracting Parties should not exceed in order to achieve their 2030 GHG targets. For historical data up to the years 2022 or 2023, Annex I draws on Contracting Parties' submissions of GHG inventories under Article 26 of the Governance Regulation and Delegated Regulation 2020/1044.

However, the figure below only illustrates the general direction based on historical data. It does not account for future structural changes, trends and planned actions. This underlines the importance of submitting GHG emission projections under Article 18 of the Governance Regulation and Impl. Reg. 2020/1208.

Figure 19:

Actual GHG emissions 2014–2022/2023, linear trends based on 2014–2022/2023, and linear trajectories towards achieving the 2030 GHG targets, [Mt CO₂eq]



Note: Total GHG emissions include LULUCF, with the exception of Montenegro.

Sources: Data on actual GHG emissions are based on Contracting Parties' GHG inventory submissions under Del. Reg. 2020/1044. Linear trends are based on GHG inventory data showing the general direction of emissions in the past 10 years. Linear trajectories are for illustrative purposes and reflect linear pathways from the last historical year available (2022 or 2023) to 2030 targets. 2030 GHG targets are based on Decision 2022/02/MC-EnC.

Current and projected progress towards other national greenhouse-gas related objectives and targets, including sectoral targets

It is highly challenging to summarise current and projected progress towards sectoral greenhouse-gas related targets, as none of the Contracting Parties (with the exception of Kosovo*) submitted respective information under Annex I, Table 4.

Only Kosovo* reports on current and projected sectoral contributions to GHG emission reductions, highlighting the prominent role of electricity generation in the national GHG inventory, as well as of transport, industry and waste.

Kosovo*'s projections show that emissions from electricity generation are expected to drop by over half by 2040. However, emissions from industry and transport are forecast to continue increasing until 2040, making targeted mitigation activities in these two sectors more urgent. In the waste sector, GHG emissions are expected to grow until 2030, when they are projected to stabilise. Until 2040, removals are projected to increase by almost by 30%. While acknowledging this detailed submission, there is still room for improvement: sectoral data points for 2022 and 2023 are identical and total target values may be assigned to the wrong years (total GHG emissions decrease to 8,95 Mt CO₂eq by 2035 instead of 2030).

Ukraine's submission reiterates the target set out in its adopted NECP to "reduce methane emissions by 30% by 2030 from 2020 levels" and reports progress towards this target of 20,22% in 2022. In addition, projected progress under the with-additional measures scenario is quantified, but without any further description of sectors or units.

Assessments of the effects of policies and measures targeting greenhouse gas emission reduction

Albania, Georgia, Serbia and Ukraine report on policies and measures under the decarbonisation dimension in Annex IX of Impl. Reg. 2022/2299. These partly differ from the policies and measures set out in their NECPs in terms of number, description or scenario. Across submissions, quantitative information on ex-ante/ex-post emission reductions, costs and benefits is missing.

As these first submissions set the baseline for future monitoring of progress, including the implementation of policies and measures, Contracting Parties will need to align and complement information on policies and measures in future submissions.

Those Contracting Parties that reported on policies and measures also reiterated their plans for introducing **carbon pricing schemes**, including ETS (Albania and Ukraine) and respective taxes (Serbia and Ukraine).

3.2 Decarbonisation dimension: adaptation

Reporting status

Article 4 of the adapted Governance Regulation requires Contracting Parties to include climate adaptation goals in their NECPs as appropriate to support achievement of the Energy Union objectives. Four Contracting Parties submitted reports on adaptation under Annex III of Impl. Reg. 2022/2299, namely Georgia, North Macedonia, Serbia and Ukraine.

Table 20:

Status of submissions under Annex III of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex III	Decarbonisation: adaptation									

Adaptation goals in NECPs

Half the Contracting Parties that submitted information under Annex III, Table 1 report on the adaptation goals of their adopted NECP (North Macedonia and Ukraine), while half do not yet address adaptation goals in their NECPs (Georgia and Serbia). Serbia intends to include adaptation goals in its next NECP submission.

The listed adaptation goals are not quantitative and include enhancing climate resilience in key sectors, strengthening institutional and policy frameworks, promoting climate-resilient infrastructure, just transition and socioeconomic resilience, and strengthening natural carbon sinks. Adaptation goals in the adopted NECPs still lack clarity and it remains unclear how they will be monitored and evaluated, as no information has been provided in this regard.

Information on adaptation

Annex III, Table 2 requests information on adaptation that may affect the delivery of Contracting Parties' targets or long-term GHG emission reduction commitments under the Paris Agreement.

National circumstances, including vulnerabilities and risks of future impacts: Concerning the vulnerabilities and adaptative capacities listed, while no energy-specific dimension is identified, Contracting Parties—except Serbia, which reports on energy security—highlight droughts, extreme heat and flooding as risks and future impacts. Agriculture, water resources, forests, urban areas and public health/socio-economic sectors are listed as those areas most affected by climate change. In addition, Serbia and Ukraine point to changes in parameters affecting the stability of the energy sector due to climate change, while North Macedonia singles out hydropower.

Ways to address these challenges include integrated water resource management, climate-resilient agricultural practices and enhanced early warning systems. For energy, these include improving energy efficiency, accelerating the transition to renewable energy sources, phasing out coal-based electricity generation, enhancing carbon sequestration through afforestation and sustainable land management practices, and strengthening monitoring, reporting and verification (MRV) systems for emissions and removals.

Strategies and plans, including proposed goals, challenges and action: Although no strategic plans are reported by Contracting Parties, the proposed goals and actions centre on overall adaptation goals and general energy targets. Actions include raising awareness, building capacity for adaptation implementation and providing implementation financing.

Monitoring and evaluation of progress: Overall, a comprehensive, trackable framework for establishing and monitoring adaptation measures relevant to the Energy Union dimension is still lacking. Nonetheless, some Contracting Parties, such as Serbia, have set up an institutional framework for adaptation monitoring, including the preparation of action plan implementation progress reports based on adaptation measure implementation reports.

3.3 Decarbonisation dimension: renewable energy

Reporting status

All Contracting Parties, except Bosnia and Herzegovina and Montenegro, submitted reports on progress towards the achievement of their renewable energy targets under Annex II and on additional reporting obligations in the area of renewable energy under Annex XVI of Impl. Reg. 2022/2299.

The analysis focuses on those Contracting Parties that have submitted reports. However, for a number of reporting tables, Contracting Parties were not required to report actively, as the respective datapoints for the years 2022 and 2023 are prefilled from Eurostat energy balances,⁴² which Contracting Parties submit annually. For those tables, the status of Contracting Parties that did not submit reports will also be discussed, while data for Ukraine show gaps. For some aspects, reported data were complemented by the SHARES Tool.⁴³

Table 21:

Status of submissions under Annexes II and XVI of Impl. Reg. 2022/2299 and other renewable energy-related reporting obligations

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex II	Decarbonisation: renewable energy	✓	✗	✓	✓	✓	✗	✓	✓	✓
Annex XVI	Additional reporting obligations in the area of renewable energy	✓	✗	✓	✓	✓	✗	✓	✓	✓
Annex IX	Integrated policies and measures	✓	✗	✓	✗	✗	✗	✗	✓	✓

Overall shares of energy from renewable sources

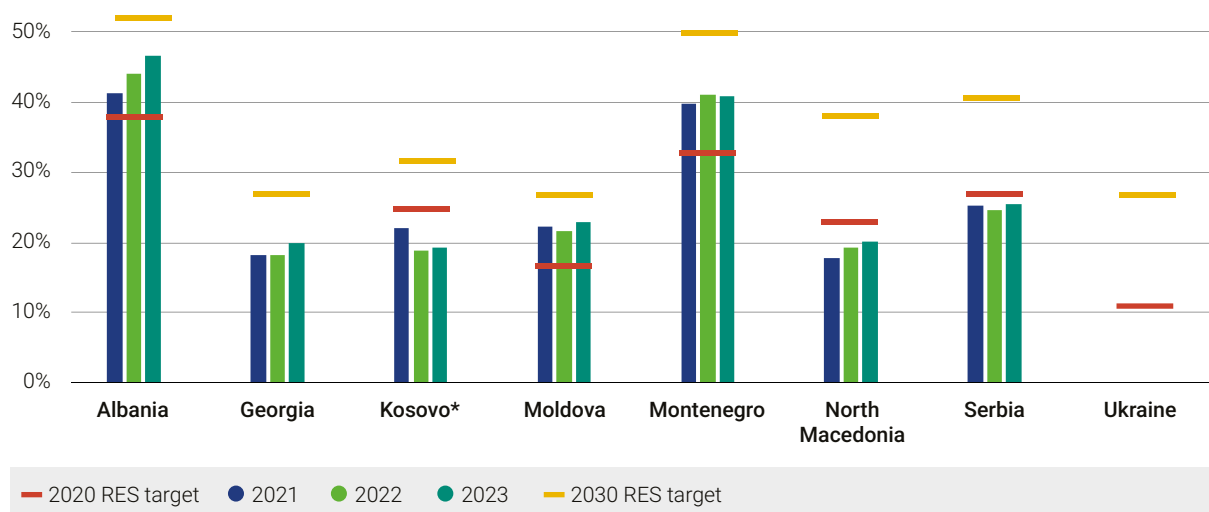
Overall shares of energy from renewable sources (Annex II, Table 1): While many Contracting Parties are increasing the share of renewable energy in gross final energy consumption, only Albania, Moldova and Montenegro have surpassed their 2020 target levels. Between 2022 and 2023, Montenegro was the only Contracting Party that reported a slight decrease in the share of renewables. Figure 20 below visualises recent trends in the overall renewable energy share and compares them against the 2030 RES targets (as per Decision 2022/02/MC-EnC).

42 The energy balance is the most complete statistical accounting of energy products and their flows in the economy. Energy Community Contracting Parties, like EU Member States and other reporting countries, report annual energy statistics to Eurostat according to a harmonised methodology, on the basis of which energy balances are compiled.

43 The SHARES tool focuses on the harmonised calculation of the share of energy from renewable sources. The main benefit of the SHARES tool is that EU Member States and Energy Community Contracting Parties are committed to following the same method to calculate the indicators for the share of energy from renewable sources.

Figure 20:

Share of renewable energy in gross final energy consumption by Energy Community Contracting Party [%], 2021–2023 compared with 2020 and 2030 targets



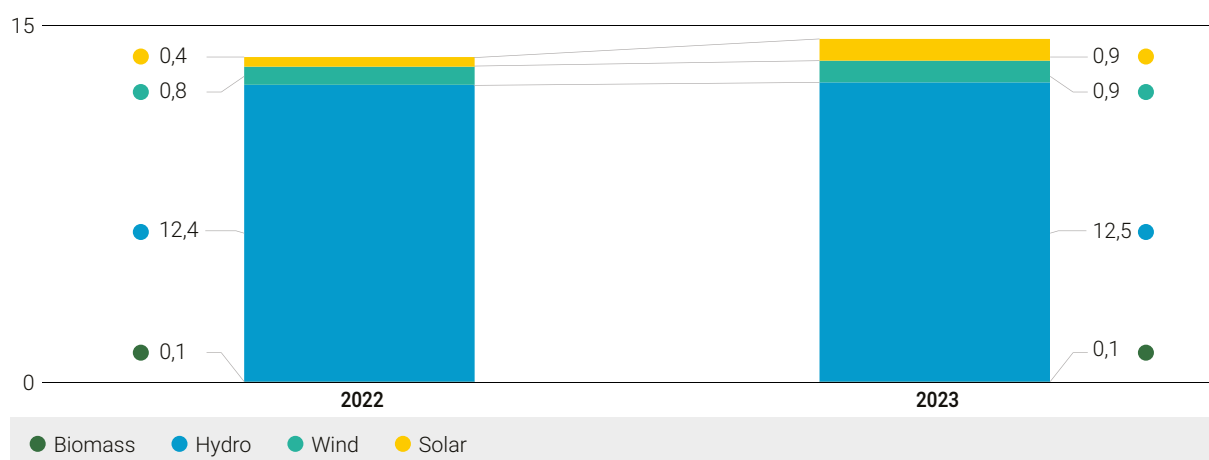
Source: SHARES tool (2021), submissions under Impl. Reg. 2022/2299 Annex II, Table 1 (2022–2023). Targets are based on Decision 2022/02/MC-EnC, incorporating Directive (EU) 2018/2001.

Total installed capacity from each renewable energy technology (Annex II, Table 2): The energy crisis and the war in Ukraine exposed the vulnerability of traditional energy supply chains and highlighted the urgency of accelerating the clean energy transition across the Energy Community Contracting Parties. In most jurisdictions, this has led to a notable expansion of wind and solar PV capacities, supported by governmental incentives such as feed-in tariffs, premiums and self-consumption schemes, including net metering and net billing. In the Western Balkans, Serbia has seen the strongest growth in wind energy capacity, while Albania and North Macedonia are leading in solar PV development.

Among those Contracting Parties that submitted respective reports, hydropower remains a dominant renewable source for renewable energy generation (Albania, Bosnia and Herzegovina, Georgia, Kosovo*, Montenegro and Serbia). Figure 21 below illustrates this by consolidating total installed capacities from each renewable energy technology in the Energy Community region.

Figure 21:

Total installed capacity from renewable energy technologies in the Energy Community region, excluding Moldova and Ukraine, [GW], 2022–2023

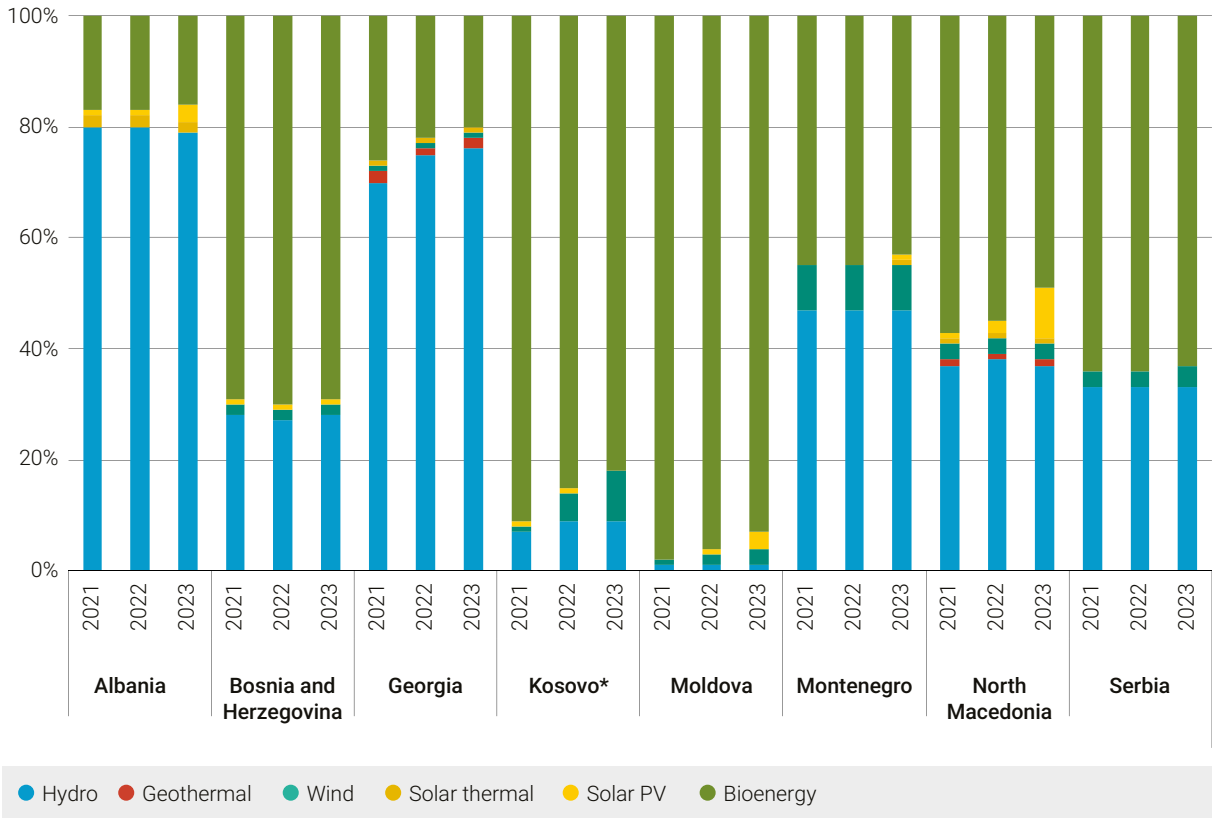


Source: Submissions under Impl. Reg. 2022/2299 Annex II, Table 2

Note: As only data for 2022 were available for Bosnia and Herzegovina and Kosovo*, the 2023 figure does not reflect any potential capacity increase that may have taken place in these two Contracting Parties. This figure excludes capacity for the production of liquid biofuels reported by Albania, Georgia and North Macedonia, as well as the surface area of solar collectors reported by Albania, Georgia, Kosovo* and Montenegro.

The historical Eurostat data on the breakdown of total energy supply from renewable sources by renewable energy technology further support the findings in Figure 21. Figure 22 below further highlights the importance of hydro, as well as biomass, in the current consumption patterns of Contracting Parties.

Figure 22:
Breakdown of total renewable energy supply by technology [%], 2021–2023



Source: Based on Eurostat historical data “Share of renewable fuels in total gross final consumption of energy”

Estimated excess production of energy from renewable sources compared to the national trajectory towards the 2030 target (Annex XVI, Table 3): Unfortunately, despite the significant potential for regional cooperation, none of the Contracting Parties have yet made use of cross-border collaboration or the cooperation mechanisms available under RED II, including statistical transfers. No Contracting Party reports its estimated excess production of energy from renewable sources under Annex XVI, Table 3.

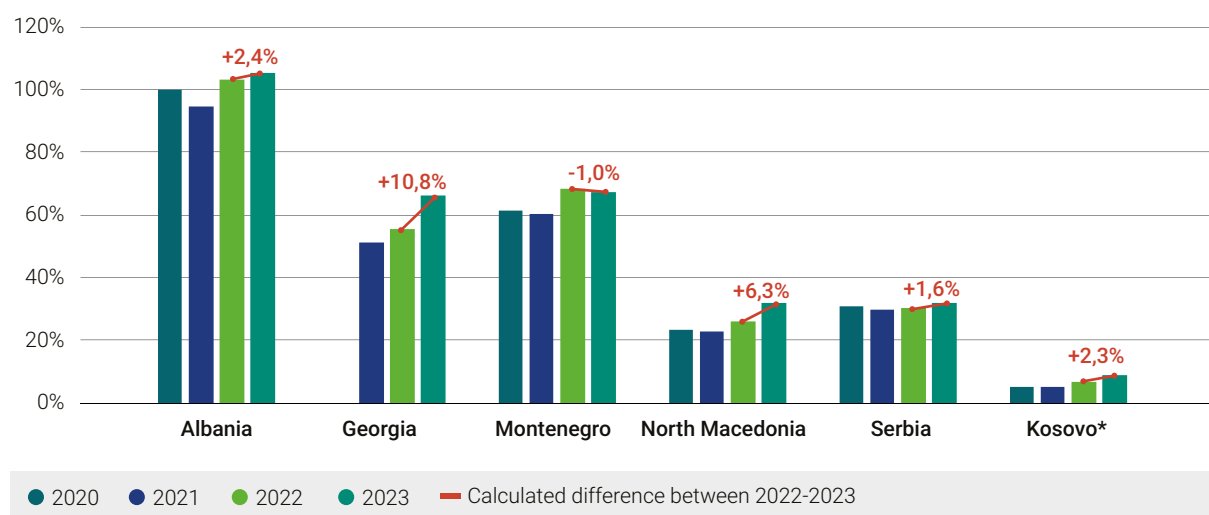


Progress in promoting renewables in electricity generation

Sectoral shares of energy from renewable sources (Annex II, Table 1): The available data on renewable energy shares in electricity generation indicate an increasing trend across Contracting Parties. Progress has been particularly strong in the electricity sector, especially in Georgia, where the share increased from 55,5% in 2022 to 66,3% in 2023, and in North Macedonia, where it rose from 25,9% in 2022 to 32,2% in 2023, mainly due to the expansion of hydro and solar PV installations respectively.

Figure 23:

Share of renewable energy in electricity generation, [%], 2020–2023

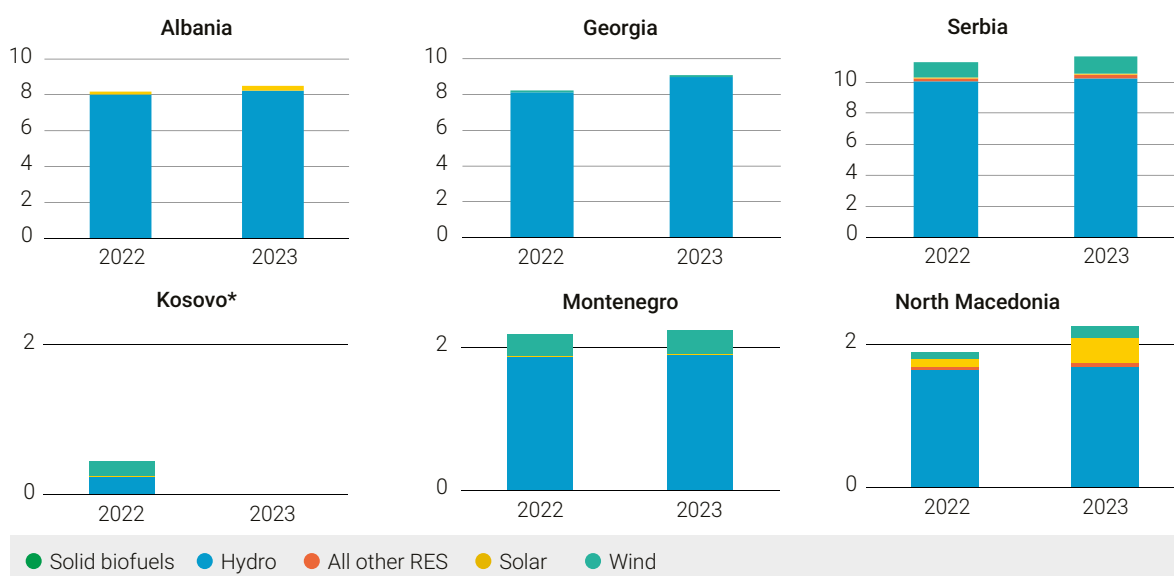


Source: SHARES tool (2020–2021), submissions under Impl. Reg. 2022/2299 Annex II, Table 1 (2022–2023)

Total actual contribution (gross electricity generation) from each renewable energy technology in electricity (Annex II, Table 3): Renewable energy shares in electricity generation reflect Contracting Parties' reliance on both large and small hydropower. However, in some cases, a noticeable increase in the deployment of other technologies, such as wind and solar PV, has also contributed to this growth, such as in North Macedonia and Serbia.

Table 22:

Total actual contribution (gross electricity generation) from each RES-E technology by Contracting Party, [GWh] 2022–2023



Source: Submissions under Impl. Reg. 2022/2299 Annex II, Table 3

Assessment of support for electricity from renewable sources pursuant to Article 6(4) of Directive (EU) 2018/2001 (Annex II, Table 8): Contracting Parties use a range of support schemes, from feed-in tariffs for small-scale installations to various types of feed-in premiums, such as fixed premiums or Contracts for Difference. Initially, feed-in-tariffs were also applied to larger projects to stimulate renewable energy deployment across the region, but these have largely been replaced by market-based support schemes.

Contracting Parties do not report details such as allocated capacities under support schemes (with the exception of Georgia, which refers to allocations under its first and second auctions in 2023, allocating 300MW and 800 MW respectively), achieved prices or the amount of electricity produced under such support. They also do not report on the assessment of support for electricity from renewable sources, but rather express their intent to do so (North Macedonia, Serbia and Ukraine).

Progress in promoting renewables in heating and cooling (RES H&C)

Total actual contribution (gross final energy consumption) from each renewable energy technology in heating and cooling (Annex II, Table 4): Between 2022 and 2023, at Energy Community level,⁴⁴ the share of renewable energy in the heating and cooling (H&C) sector stagnated at around 36–37%. In 2023, renewable energy consumption in H&C reached approximately 4,4 Mtoe.

When comparing 2023 against the 2020 baseline, renewable energy shares show a generally declining or stagnant trend across most Contracting Parties. Only Serbia and Montenegro record actual growth in renewable heat shares, supported by increases in renewable heat consumption (+1,8% and 0,2% respectively) (see Figure 24 below). Bosnia and Herzegovina⁴⁵ and North Macedonia also show increases in RES-H&C shares. However, these were not driven by actual renewable growth. Instead, renewables consumption declined by 16 ktoe and 29 ktoe respectively, while gross final energy consumption (GFEC) in H&C fell even further, by around 141 ktoe in both Contracting Parties. Hence, higher renewable shares reflect reduced demand rather than structural renewable growth.

Kosovo* records the most pronounced decline in its RES-H&C share (-11,4%) and consumption (-112 ktoe) between 2020 and 2023. Albania's share declined by 2,2%, with renewable volumes decreasing by around 20 ktoe. Moldova⁴⁶ shows only a marginal decrease in percentage terms (-0,5%), but renewable heat consumption dropped by approximately 118 ktoe. As GFEC in H&C also declined across these Contracting Parties, the reduction in renewable heat consumption appears to be largely linked to declining biomass use in the residential sector, reflecting lower heating demand due to energy efficiency improvements.



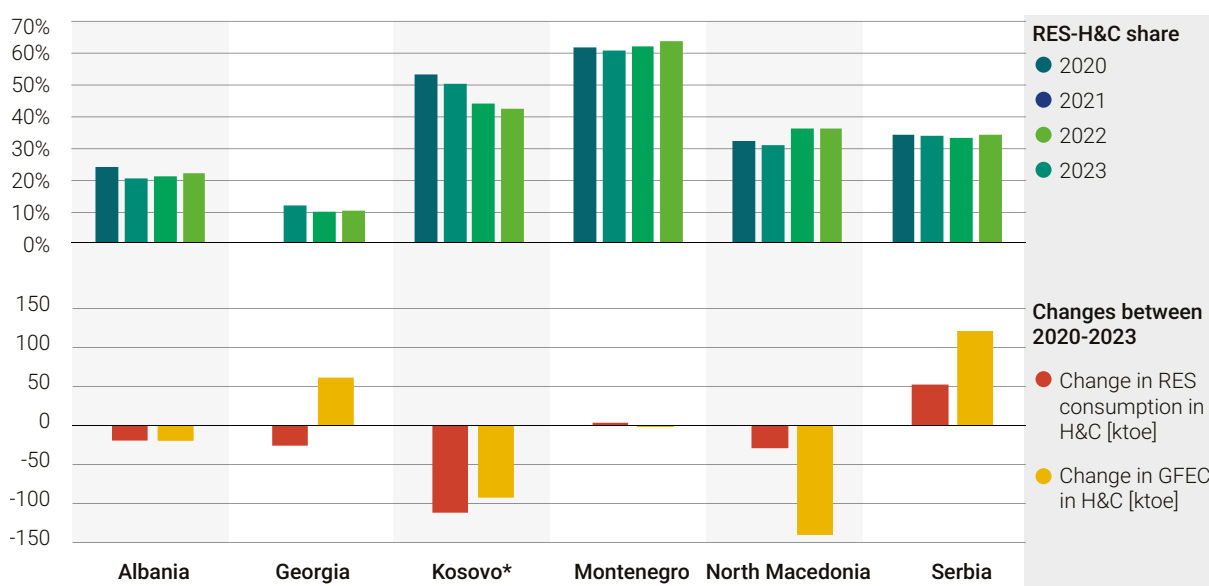
44 Ukraine is excluded from calculations at Energy Community level, due to data limitations since 2020.

45 Bosnia and Herzegovina does not report these data in the NECPR. The values used are based on data available in the Eurostat SHARES tool.

46 Moldova does not report these data in its NECPR. The values used are based on data available in the Eurostat SHARES tool.

Figure 24:

Share of renewable energy (RES-H&C), as well as changes in renewable energy consumption and gross final energy consumption in heating and cooling (H&C), 2020–2023



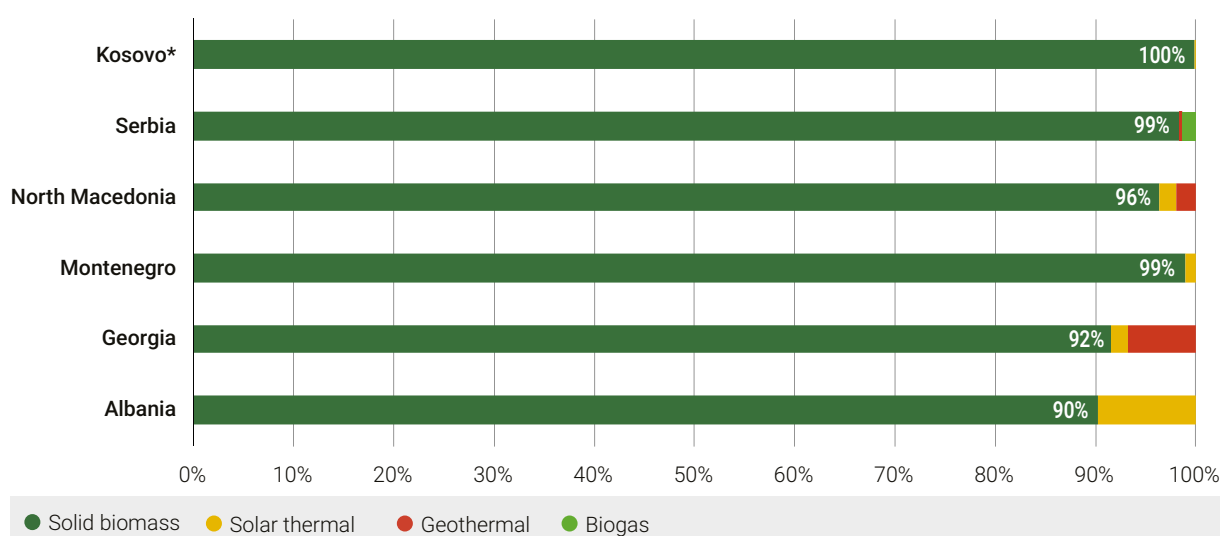
Note: Georgia's reporting to Eurostat started later than in other Contracting Parties. The resulting absence of 2020 baseline data does not allow for a direct comparison over the period.

Source: SHARES tool (2020–2021), submissions under Impl. Reg. 2022/2299 Annex II, Table 1 (2022–2023)

Total actual contribution from each renewable energy technology in heating and cooling (Annex II, Table 4): Beyond biomass, which accounts for 90–100% of renewable heat across Contracting Parties, only a few technologies have a noticeable presence. Solar thermal represents 9,8% in Albania, geothermal 6,7% in Georgia and biogas roughly 1,4% in Serbia, making them the second most important RES technologies in the H&C sector in the respective Contracting Parties. Solar thermal shows the most visible progress, with growth also observed in Georgia, Montenegro and North Macedonia. Geothermal is additionally reported in North Macedonia and Serbia but remains stagnant. Other renewable technologies, renewable cooling and waste heat integration are absent. Heat pumps are not reported despite evidence of their deployment, reflecting statistical gaps, as methodologies for accounting energy from heat pumps are either lacking or not effectively implemented.

Figure 25:

Breakdown of total supply of renewable energy for heating and cooling by technology by Contracting Party in 2023 (%)



Source: Based on submissions under Impl. Reg. 2022/2299 Annex II, Table 4 (2022–2023)

Electricity and heat generation from renewables in buildings

Electricity and heat generation from renewable energy in buildings, including, where available, disaggregated data on energy produced, consumed and injected into the grid (Annex XVI, Table 8): Under the reporting categories of renewable electricity produced and consumed in buildings, information is provided by Albania, Moldova and North Macedonia. While the data reported by Moldova are very limited and do not allow for any meaningful analysis, the information from Albania and North Macedonia allows several noteworthy observations to be made. In Albania, renewable electricity in buildings is reported exclusively from solar PV. Total production amounts to approximately 0,5 ktoe, of which around 94,0% is consumed on-site, while the remaining 6,0% is fed into the grid. By contrast, North Macedonia reports only the share of renewable electricity fed into the grid, without providing data on total production or on-site consumption in buildings. This suggests potential limitations in data collection systems, where only grid-connected flows are systematically recorded by grid operators, while self-production and consumption remain largely unaccounted for. From the perspective of electricity fed into the grid in North Macedonia, notable shifts in the technology mix can be observed. Between 2022 and 2023, the share of biomass decreased by 22,5%, while solar PV increased significantly by 71,6%. The marginal share of geothermal energy remained unchanged over the same period.

Under the reporting categories of renewable energy produced and consumed in buildings for heating purposes, information is provided by only one Contracting Party, Albania. As such, this limited reporting does not allow for a broader assessment or comparative analysis across Contracting Parties. Nevertheless, the data reported by Albania highlight several important issues.

First, the inclusion of heat pumps in this reporting stream provides evidence of their practical deployment in the buildings sector. This is consistent with the findings of the above analysis of renewable energy consumption in the H&C sector, which identified statistical gaps in the accounting of heat pumps: while deployment exists, methodologies for accounting renewable energy from heat pumps under the SHARES tool are either lacking or not effectively implemented. As a result, their renewable contribution is not captured and remains absent from official statistics.

Second, renewable heat consumed in buildings and final energy consumption (FEC) from renewables in buildings for heating purposes do not align. Given the absence of district heating in Albania and the fact that no data are reported under *“renewable heat produced and fed into the grid (district heating)”*—as expected—FEC from renewables in buildings would be expected to correspond to renewable heat consumed in buildings, reflecting exclusively decentralised renewable heat use. However, while biomass values are consistent across both categories, a discrepancy of approximately 40,0 ktoe appears in the reporting of heat pumps. This suggests an inconsistency in the applied methodology. Most likely, electricity input to heat pumps is reported under FEC, while under renewable heat consumed, either only the renewable (ambient) component is considered, or efficiency (COP) adjustments are applied inconsistently. This is a further indication that methodologies for accounting for renewable energy from heat pumps require clarification and more consistent application in practice.

Third, solar thermal is not reported under this category, despite its visible contribution to renewable energy in the H&C sector, where it accounts for around 10,0% of overall renewable heat, as shown in Figure 25 above. This omission further points to statistical inconsistencies and gaps in the reporting of renewable heating technologies.

Progress in promoting renewables in transport (RES-T)

Total actual contribution (gross electricity generation) from each renewable energy technology in the transport sector (Annex II, Table 1): Among the Contracting Parties reporting data, only Georgia records a RES-T share in final energy consumption in the transport sector above 1,0% in 2022 and 2023 (1,1% in both 2022 and 2023). In the other Contracting Parties, the respective share ranges between 0,1% (in North Macedonia in 2022) and 0,6% (in Serbia in 2022 and 2023). These shares mainly reflect the share of renewable electricity used for transport purposes and are directly related to the amount of electricity used in transport and the share of electricity from renewable sources in electricity generation two years prior to the reporting year.

Since none of the Contracting Parties imposed an obligation on fuel suppliers to place renewable energy for transport on the market and since the RED II sustainability and GHG emission-saving criteria for biofuels, bioliquids and biomass fuels were not transposed before 2025, the consumption of biofuels and biogases in transport and their GHG emission-saving performance were neither monitored nor reported. None of the respective reporting tables, such as Annex II, Table 5, have been completed.

The RES-T share remains limited to the share of renewable electricity consumed in (predominantly) rail transport. Full transposition and implementation of RED II provisions governing the use of renewable energy in the transport sector are crucial to increase the share of renewable energy in final energy consumed in the transport sector across Contracting Parties.

Technological development and deployment of biofuels made from feedstocks listed in Annex IX to Directive 2018/2001 (Annex XVI, Table 4): Given that production of biofuels made from feedstock listed in Annex IX of RED II in Contracting Parties in the observed period was negligible, no reports were submitted on their deployment. The only country reporting on the production of biofuel from waste cooking oil was Georgia, where annual production is 100–200 tonnes, but the consumption of these volumes was not recorded. In terms of technological development and planned production, Ukraine reports that, in 2023, three companies began producing biomethane from livestock waste and that the biogas plants plan to expand their production capacities in 2025 to a total of 17 million m³/year (two facilities of 3 million m³/year and one of 11 m³/year).

Bioenergy

Biomass supply for energy use (Annex II, Table 6): None of the Contracting Parties report on this section.

Most NECPs were adopted later than 2023. Accordingly, reports for the years 2022 and 2023 describe the status before or at the beginning of NECP implementation. Hence, the effects of policies and measures set out in NECPs to foster the use of bioenergy could not yet take effect.

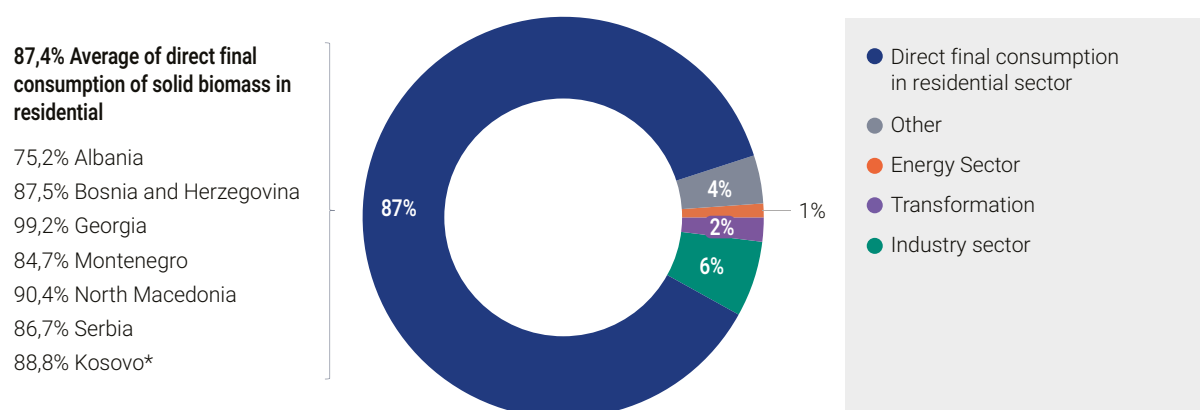
Biomass supply for energy use (Annex II, Table 6): None of the Contracting Parties report on this section.

Other national trajectories and objectives related to bioenergy (Annex II, Table 7): Only Serbia reports installation of biomass boilers in heating plants in 2022, with a capacity of 17,8 MW.

The amount of solid biomass used for energy production (Annex XVI, Table 9): In 2022, Contracting Parties utilised 167,1 PJ of solid biomass for energy production, ranging from 6,3 PJ in Albania and Montenegro to 69,0 PJ in Serbia. More than 75% of biomass used for energy production is consumed in the residential sector for heating purposes. In 2022, shares of residential consumption ranged from 75,2% in Albania to 99,2% in Georgia. Woody biomass dominates this sector.

Figure 26:

The use of solid biomass for energy production in the Energy Community region (excluding Moldova and Ukraine) in 2022 [%]



Notes: Energy sector includes electricity, heat, combined heat and power; Industry includes internally consumed and auto-produced electricity, heat and combined heat and power; Transformation excludes electricity, heat and combined heat and power

Source: Submissions under Impl. Reg. 2022/2299 Annex XVI, Table 9

Changes in commodity prices and land use associated with use of biomass and other forms of energy from renewable sources (Annex XVI, Table 2): No Contracting Party reports on commodity prices and land use associated with use of biomass. Some Contracting Parties provide information about changes in commodity prices, but these could not be directly related to the use of biomass for energy purposes.

Share of biodegradable waste in waste-to-energy plants used for producing energy (Annex VI, Table 7): Only Serbia reports on the share of biodegradable waste in waste-to-energy plants, where the share was a mere 0,1%.

Estimated impact of the production or use of biofuels, bioliquids and biomass fuels on biodiversity, water resources, water availability and quality, soils and air quality (Annex XVI, Table 5): None of the Contracting Parties report on this section.

Observed cases of fraud in the chain of custody of biofuels, bioliquids and biomass fuels (Annex XVI, Table 6): None of the Contracting Parties have yet established a biofuels and biogases sustainability tracing system (national biofuel databases), hence the chain of custody of biofuels, bioliquids and biomass fuels is not being monitored yet.

Assessments of the effects of policies and measures on renewable energy

Available results of ex-ante and ex-post assessments of the effects of individual or groups of policies and measures on renewable energy production and available projected and realised costs (Annex IX, Tables 2 and 4): While voluntary, this reporting stream reveals significant limitations regarding policies and measures promoting the use of renewable energy. Contracting Parties report only a very limited number of relevant policies and measures and those reported are only descriptive in nature. Quantitative information on expected (ex-ante) or realised (ex-post) renewable energy production, as well as associated costs and benefits, is absent. As this reporting stream is designed to assess the measurable impact and effectiveness of policies in terms of renewable energy output, the lack of quantified data does not allow for an evaluation of policy performance, comparison across Contracting Parties or assessment of whether current measures are sufficient to achieve renewable energy targets.

Guarantees of Origin

Functioning of the system of Guarantees of Origin for electricity, gas and heating & cooling from RES (Annex XVI, Table 1): Only Albania, Georgia, Moldova and Serbia report the number of Guarantees of Origin for electricity issued, while only Serbia reports the number of Guarantees of Origin cancelled (less than one quarter of those issued). No submitted reports provide evidence of a functioning system for Guarantees of Origin for gas or for heating and cooling from renewable energy sources.



3.4 Energy efficiency dimension

Reporting status

All Contracting Parties, with the exception of Bosnia and Herzegovina and Montenegro, submitted reports on progress towards the achievement of their energy efficiency targets under Annex IV and on additional energy efficiency reporting under Annex XVII of Impl. Reg. 2022/2299. However, the level of completeness or consistency with NECPs varies across Contracting Parties.

Table 23:

Status of submissions under Annexes IV and XVII of Impl. Reg. 2022/2299 and other energy efficiency-related reporting obligations

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex IV	Energy efficiency									
Annex XVII	Additional reporting obligations in the area of energy efficiency									
Annex IX-XII	Integrated policies and measures									

Progress towards 2030 targets for primary and final energy consumption

Indicative trajectory for primary and final energy consumption: Absolute levels of 2030 energy consumption reported under Annex IV, Table 1 reflect the primary and final energy consumption targets proposed by Contracting Parties in their adopted NECPs, in compliance with the EED,⁴⁷ as amended by Decision 2022/02/MC-EnC.⁴⁸ There are two exceptions, where Contracting Parties report target levels deviating from those presented in their NECPs:

- **Moldova:** reports significantly less ambitious 2030 targets, which might be the result of a confusion of units (TJ instead of Mtoe)
- **Ukraine:** reports more ambitious 2030 targets, presumably derived from updated projections.

Progress towards the indicative trajectory for primary and final energy consumption: Contracting Parties did not need to actively report here, as respective data points for the years 2022 and 2023 are prefilled from Eurostat energy balances, which Contracting Parties submit annually. Figure 27 and Figure 28 below visualise recent trends and targets. They show that Energy Community Contracting Parties met the 2020 energy efficiency targets set by

47 Directive 2012/27/EU on energy efficiency, as adopted and adapted by Ministerial Council Decisions 2015/08/MC-EnC, 2021/14/MC-EnC and 2022/02/MC-EnC

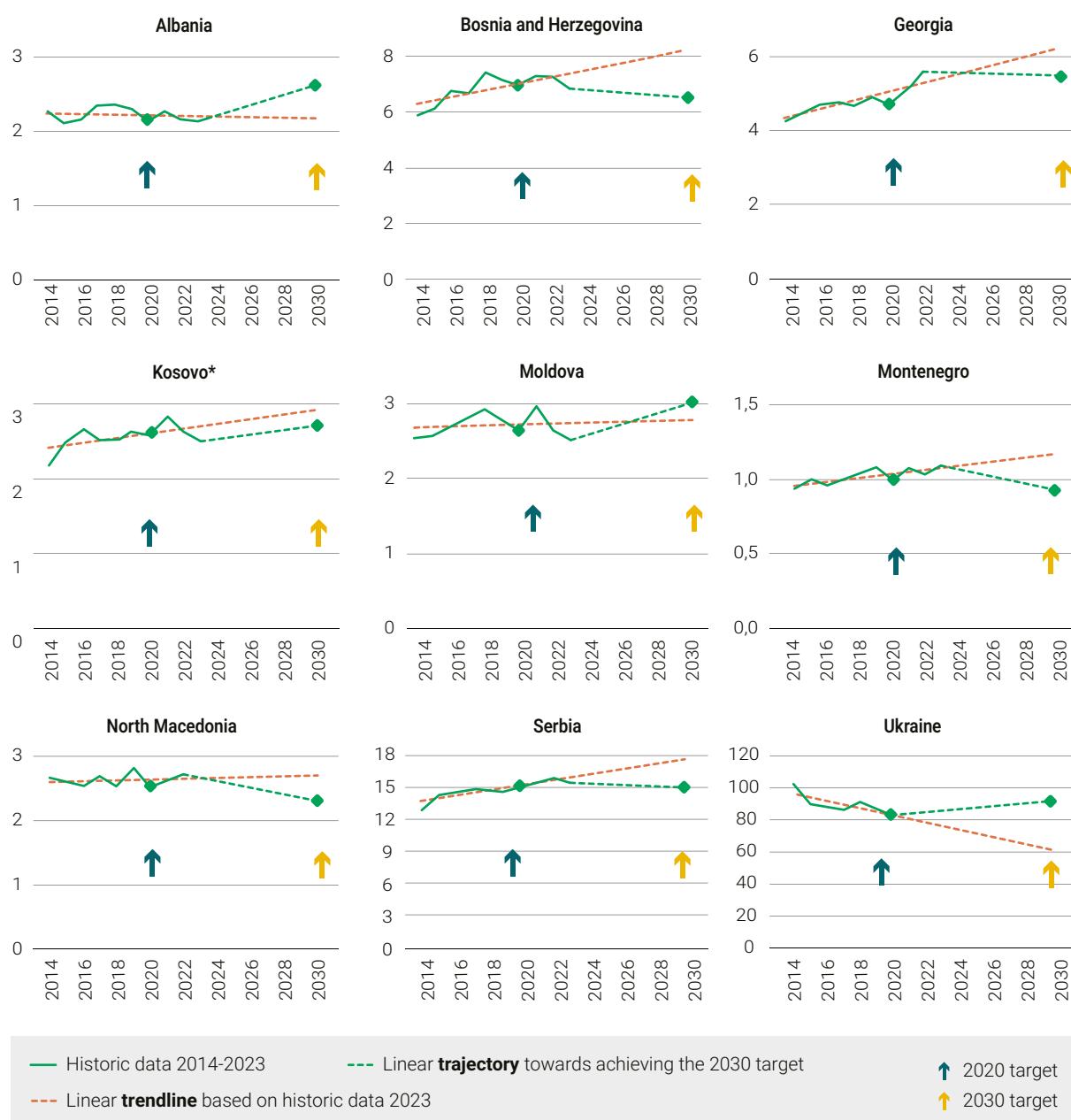
48 Decision of the Ministerial Council of the Energy Community, 15 December 2022: Decision 2022/02/MC-EnC on amending Decision 2021/14/MC-EnC and incorporating Directives (EU) 2018/2001 and 2013/2002, Regulations (EU) 2018/1999, 2020/1044 and 2020/1208 in the Energy Community acquis

the 2012 EED in terms of primary energy consumption (PEC) and final energy consumption (FEC). For illustrative purposes, the figures also reflect the linear pathways from the last historical year available (2022 or 2023) onwards to 2030 primary and final energy consumption targets.

Many Contracting Parties recorded an increase in primary energy consumption (PEC) over the last decade. In most cases, this trend will need to be decisively reversed in order to achieve their 2030 PEC targets. By contrast, Contracting Parties that have kept PEC broadly stable (Albania) or achieved a steady decline (Ukraine) appear to be on track to meet their binding 2030 targets. In Moldova, recent crises continue to shape energy consumption patterns, bringing current trends broadly into line with the indicative trajectory towards 2030.

Figure 27:

Primary energy consumption per Energy Community Contracting Party [Mtoe], historical data (2014–2023) and indicative trajectories towards achieving 2030 targets (2024–2030)

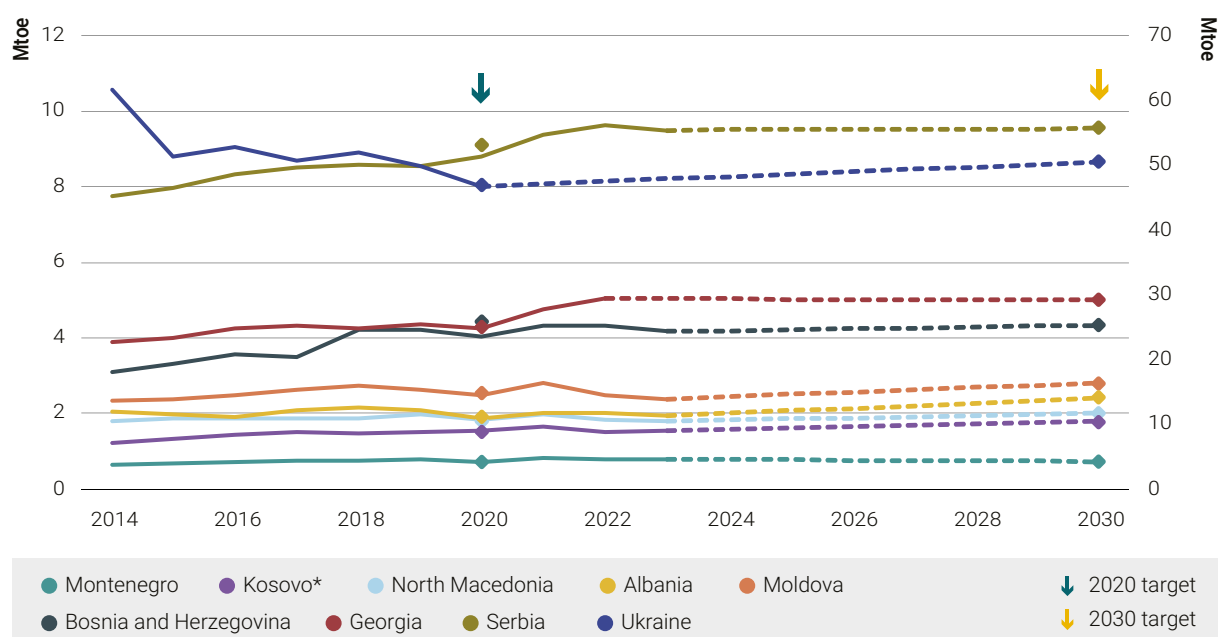


Source: Data on primary energy consumption are based on Eurostat energy balances (for the years up to 2021) and submissions under Impl. Reg. 2022/2299 Annex IV, Table 1 (for the years 2022–2023). Linear trendlines are based on historical data for primary energy consumption in the past 10 years, aiming to indicate the general direction. Linear trajectories are for illustrative purposes and reflect the linear pathways from the last historical year available (2022 or 2023) onwards to 2030 primary energy consumption targets (as per Directive 2012/27/EU, as amended by Decision 2022/02/MC-EnC).

Similarly to primary energy consumption trends, most Contracting Parties recorded an increase in final energy consumption (FEC) over the last decade. Again, Albania and Ukraine appear to be on track towards achieving their binding 2030 FEC targets. Kosovo*, Moldova and North Macedonia could also remain within the required consumption limits, provided current efforts are sustained. By contrast, the remaining Contracting Parties will need to step up their current efforts in order to align with their 2030 targets.

Figure 28:

Final energy consumption per Energy Community Contracting Party [Mtoe], historical data (2014–2023) and indicative trajectories towards achieving 2030 targets (2024–2030)



Note: The figure uses two Y-axes to enable the display of all Contracting Parties, with the right Y-axis reflecting Ukraine and the left Y-axis reflecting all other Contracting Parties.

Source: Data on final energy consumption are based on Eurostat energy balances (for the years up to 2021) and submissions under Impl. Reg. 2022/2299 Annex IV, Table 1 (for the years 2022–2023). Linear trajectories are for illustrative purposes and reflect the linear pathways from the last historical year available (2022 or 2023) onwards to 2030 final energy consumption targets (as per Directive 2012/27/EU, as amended by Decision 2022/02/MC-EnC).

Progress in each sector and reasons why energy consumption remained stable or grew in final energy consumption sectors in 2023 (Annex XVII, Table 1):

In this context, Georgia and Kosovo*, both of which recorded steep increases in total final energy consumption in recent years, give the most differentiated explanations. Georgia attributes the failure to reduce final energy consumption in the industry, residential, services and transport sectors to economic growth, rising disposable household income and the associated increase in passenger/freight transport. In agriculture, final energy consumption was driven by the worsening of summer climate conditions and increased sectoral value added. Kosovo* explains final energy consumption trends in services and transport sectors by an increase in electricity consumption, driven by a growing number of consumers, as well as by the growing number of transport vehicles in urban areas. Contracting Parties that recorded recent declines (Albania and Serbia) or continuous decline (Ukraine) in total final energy consumption do not provide further explanation of the underlying sectoral trends. North Macedonia points to the impact of economic growth across all energy demand sectors, while Moldova focuses on final energy consumption in agriculture, which was affected by a “decline in fuel prices”.

Update of other national objectives on energy efficiency as reported in NECPs

North Macedonia and Ukraine report other national objectives on energy efficiency—both in their NECPs and as part of their integrated progress reports under Annex IV, Table 6. In its report submission, Kosovo* reiterates the relevance of the future National Building Renovation Strategy, but does not quantify any other national objectives for energy efficiency. Most Contracting Parties do not report any of the sectoral objectives they envisaged in their NECPs such as intended energy savings in final energy consumption sectors and/or in gas, heat and electricity transmission and distribution systems (see Table 24 below).

Table 24:

Update of other national objectives on energy efficiency as reported in adopted NECPs and integrated progress reports

Contracting Party	NECP	Integrated Progress Report
Legend: ■ NECP not yet adopted or NECP not submitted ■ Not applicable or information not available in submission		
Albania	Sectoral contributions to FEC in 2030 [ktoe]: 348,9 residential, 195,2 services, 542,4 industry, 1.003,4 transport, 110,5 agriculture/forestry, 56,0 fisheries, 70,6 others	NA
Bosnia and Herzegovina		
Georgia	Intended energy saving in buildings, industry, transport, gas/electricity infrastructure (not quantified)	NA
Kosovo*		Submission does not include other quantified objectives
Moldova	Decrease of energy intensity in industry, construction, agriculture and of transmission and distribution losses in gas, electricity, district heating (not quantified)	NA
Montenegro	NA	
North Macedonia	Reduce PEC by 34,5% and FEC by 20,8% in 2030 (compared to BAU)	
	2030 sectoral FEC target [Mtoe]: 0,58 transport	NA
Serbia	NA	NA
Ukraine	By 2025: 100% commercial metering of consumed thermal energy; specific consumption of conventional fuel during the production of thermal energy by boiler houses (155 kg/Gcal in first stage of implementation); share of losses in heating systems (12% in first and 10% in third stage of implementation).	

Source: Submissions under Impl. Reg. 2022/2299 Annex IV, Table 6

New policies and measures on energy efficiency obligation schemes, alternative measures and taxation (EED Article 7)

Contracting Parties were required to transpose increased ambition under the revised EED, Articles 7a and 7b by December 2022. Not all Contracting Parties were yet in a position to monitor and report in this first NECPR reporting cycle. Here, Contracting Parties might leverage previous reporting experience. Montenegro and Serbia, for example, introduced alternative measures at an earlier stage and have past experience in reporting their achieved energy savings under EED Article 7.

Energy efficiency obligation schemes (EEOS) (Annex X, Table 1): Of all Contracting Parties planning EEOS according to their NECPs, only **Albania** and **Georgia** provide respective information. As in their NECPs, the submissions do not include quantified annual or cumulative energy savings.

Alternative policy measures (Annex X, Table 2): Submissions on alternative policy measures differ with regard to their granularity and alignment with the adopted NECPs. **Albania** again lists its plans on EEOS and alternative measures, without providing additional information or quantifying energy savings. **Georgia** reiterates the alternative measures already listed in its adopted NECP to achieve EED Article 7 targets. At the time of finalising their NECP, respective energy savings were not yet quantified. Annex X addresses this gap by providing information on annual and cumulative end-use energy savings, as well as the budget planned for implementation. In its submission, **Serbia** lists the alternative measures, their annual end-use energy savings and estimated budget for implementation already included in the adopted NECP—with some negligible differences in total estimates. **Ukraine** reports cumulative and annual end-use energy savings for the Energy Efficiency Fund, which differ from the numbers presented in its adopted NECP.

Information on taxation measures (Annex X, Table 3): Similarly to Annex X, Table 1, only **Albania** and **Georgia** submit information on taxation measures, but again without quantifying annual or cumulative energy savings to be achieved.

Milestones and progress indicators of the long-term strategy for renovation of the national building stock

Annex IV, Tables 2–5 provides information about “*milestones and progress indicators of the long-term strategy for the renovation of the national stock of residential and non-residential buildings*”. Except Table 5, all tables are only mandatory, if available or applicable. Accordingly, Albania, Georgia, Moldova and Ukraine report information on building stock, renovation rates or other indicators. All Contracting Parties, with the exception of Bosnia and Herzegovina and Montenegro, report information under Table 5.

Building stock: None of the submissions include information on worst-performing buildings. **Moldova** provides the most comprehensive dataset, covering non-residential, residential and public buildings in 2020, 2022 and 2023, detailing their number and total floor area and—for residential/non-residential buildings—also their final energy use and direct and indirect GHG emissions. The number of non-residential buildings and residential buildings increased between 2020 and 2023 (+0,9% and 1,6% respectively), while the number of public buildings decreased in the same period (–1,2%). **Albania** shares data on the number, total floor area and primary/final energy use of public and residential buildings in 2020, 2022 and 2023. Similarly to the trends in Moldova, the number of public buildings decreased between 2020 and 2023 (–2,1%). By contrast, the trend in the reported number of residential buildings appears inconsistent over the reporting period. **Georgia** and **Ukraine** report the number, total floor area and final energy use for only a single building type in one specific year, namely for public buildings in 2022 (Georgia) and the number of residential buildings in 2020 (Ukraine). Neither submission allows for an assessment of trends. The final energy use of buildings decreased in Albania and Moldova between 2020 to 2023. However, the magnitude of these values differs so significantly across all Contracting Parties that reports should be checked for correctness of units (TJ).

Renovation rates: No Contracting Party reports on deep renovation rates. **Moldova** reports that 62 public buildings (or 0,4% of public building stock) underwent medium renovations in the 2022–2023 period. **Ukraine** reports 149 light and 148 medium renovations in residential buildings in the 2022–2023 period, which equals 0,003% of the residential building stock

Other indicators: Information provided by Albania, Moldova and Ukraine on other indicators is diverse in its scope and granularity. All three Contracting Parties reiterate targets set out in their NECPs. However, none provide information on progress achieved in 2022/2023 towards these targets. **Albania** reports only the planned annual renovation rate for residential buildings (2,3%), which should lead to the renovation of 15,6% of residential building stock in total by 2030. **Moldova** quantifies the planned cumulative energy savings effect for 11 individual measures, (totalling 156,3 ktOE by 2030) and formulates qualitative targets for an additional 7 measures. **Ukraine** reports plans to reduce final energy consumption in buildings by 15%, to qualify personnel in the area of energy efficiency (at least 100.000 experts/year), to ensure the operation of energy management systems in 90% of communities, to attract investments of UAH 3,4 trillion for energy efficiency in buildings, and to achieve cumulative energy savings of 192,4 ktOE in government buildings by 2030 (EED Article 5). In addition, Ukraine envisages that 35% of residential and public buildings will meet the minimum energy efficiency requirements by 2030 and that 10% of public buildings will reach nearly zero-energy consumption levels.

Contribution of Long-term Building Renovation Strategies to energy efficiency targets: None of the Contracting Parties could yet report on how progress towards the milestones in the Long-term Renovation Strategy contributed to achieving their energy efficiency targets. This is largely explained by the timing of adoption and implementation of these strategies. In several Contracting Parties, Long-term Renovation Strategies had either not yet been adopted at the time of submitting energy and climate progress reports (Georgia, Kosovo*, Moldova and North Macedonia), had only been adopted in the reporting year 2023 (Ukraine) or the implementation period had only started in 2023 (Albania). Hence, these Contracting Parties were just about to start monitoring. In other cases, relevant data were not yet available (Serbia).

Reporting on the exemplary role of public bodies' buildings (EED Article 5)

Central government buildings not meeting energy performance requirements (Annex XVII, Table 2): Only two Contracting Parties (Moldova and Serbia) quantify the *"total building floor area of the buildings with a total useful floor area over 250 m² owned and occupied by [...] central government [...], which did not meet the energy performance requirements referred to in Article 5(1) of Directive 2012/27/EU"* in 2023 and 2024. In **Serbia**, this applies to 100% of relevant government owned buildings. Since **Moldova** does not report the respective total floor area, the share of government owned buildings not meeting energy performance requirements cannot be calculated. **Georgia** only quantifies the total building floor area owned and occupied by central government, without detailing compliance with energy performance requirements. **North Macedonia** merely notes that the *"plan for renovation of central governmental buildings is still not adopted"*. **Ukraine** notes that respective data *"will be available after the implementation of the national database of energy and technical characteristics of buildings"*. As all adopted NECPs reflect annual renovation targets for central government buildings, closer monitoring and more comprehensive reporting of progress might be anticipated in future reporting years.

Total renovated building floor area of heated and/or cooled buildings owned and occupied by central government (Annex XII, Table 1): **Albania** and **Georgia** report on this aspect. Albania's submission confirms that the total floor area of public buildings reported for 2022 under Annex IV, Table 2 was actually renovated. Serbia notes that renovations started after the reporting period, in 2024.

The amount of energy savings in eligible buildings owned and occupied by central government (Annex XII, Table 2): **Albania**, **Georgia**, **Serbia** and **Ukraine** submitted reports, but without any quantified information. While Ukraine explains that *"the policy was introduced in 2022, but not all the necessary secondary legislation has been adopted for the full implementation"*, Serbia reiterates the start of renovation in 2024 only.

Assessments of the effects of policies and measures on energy efficiency

Available results of ex-ante and ex-post assessments of the effects of individual or groups of policies and measures on energy efficiency and their available projected and realised costs and benefits (Annex IX, Tables 3 and 5): While voluntary, this reporting stream reveals significant limitations regarding policies and measures promoting energy efficiency. Albania, Georgia, Serbia and Ukraine elaborate on respective policies and measures, but the reported information is largely descriptive in nature. Quantitative information on expected (ex-ante) or realised (ex-post) energy efficiency gains, as well as associated costs and benefits, is absent. As this reporting stream is designed to assess the measurable impact and effectiveness of policies and measures in terms of energy efficiency, the lack of quantified data does not allow for an evaluation of policy performance, comparison across Contracting Parties or assessment of whether current measures are sufficient to achieve energy efficiency targets.

Other additional reporting elements on energy efficiency

Progress on energy audits—EED Article 8 (Annex XVII, Table 3): Most NECPs list energy audits among policies and measures targeting the industry sector. In their first reporting, four Contracting Parties report on energy audits carried out in 2022 and 2023, with Albania being the frontrunner in terms of total number of energy audits across sectors with 141.770 conducted in both years, followed by Kosovo* (3.744), Moldova (256) and Serbia (53). Albania and Serbia also quantify the estimated number of large companies in their territory to which EED Article 8(4) is applicable,⁴⁹ while only Albania complements this by reporting on the number of energy audits actually carried out in large companies in the reporting years.

Applied national primary energy factor for electricity (Annex XVII, Table 4): Kosovo*, Moldova, North Macedonia, Serbia and Ukraine report on the applied national primary energy factor for electricity, together with a justification where it differs from the default coefficient referred to in footnote (3) of EED Annex IV.

Number and floor area of new and renovated nearly zero-energy buildings (Annex XVII, Table 5): While Albania, Moldova and Kosovo* also refer to their definition of nearly zero-energy buildings, only Kosovo* and North Macedonia report on public and private nearly zero-energy buildings (zero for all categories).

Energy service providers (Annex XVII, Table 6): Albania, Kosovo*, Moldova, Serbia and Ukraine provide links to the website where the list or the interface of energy services providers referred to in EED Article 18(1), point (c) is available.⁵⁰

49 Directive 2012/27/EU Article 8(4): *Contracting Parties shall ensure that enterprises that are not SMEs are subject to an energy audit carried out in an independent and cost-effective manner by qualified and/or accredited experts or implemented and supervised by independent authorities under national legislation by 5 November 2018 and at least every four years from the date of the previous energy audit.*

50 Directive 2012/27/EU Article 18(1): *Contracting Parties shall promote the energy services market and access for SMEs to this market by: [...] (c) making publicly available and regularly updating a list of available energy service providers who are qualified and/or certified and their qualifications and/or certifications in accordance with Article 16 or providing an interface where energy service providers can provide information [...]*

3.5 Energy security dimension

Reporting status

All Contracting Parties, except Bosnia and Herzegovina and Montenegro, submitted reports on progress towards implementation of their energy security-related objectives and targets under Annex V of Impl. Reg. 2022/2299. This includes Kosovo*, which did not notify the Secretariat of an NECP. However, only 4 Contracting Parties (Albania, Georgia, Serbia and Ukraine) submitted reports on policies and measures regarding energy security. This prevents any comprehensive assessment at Energy Community level.

Table 25:

Status of submissions under Annexes V and IX of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex V	Energy Security									
Annex IX	Integrated policies and measures									

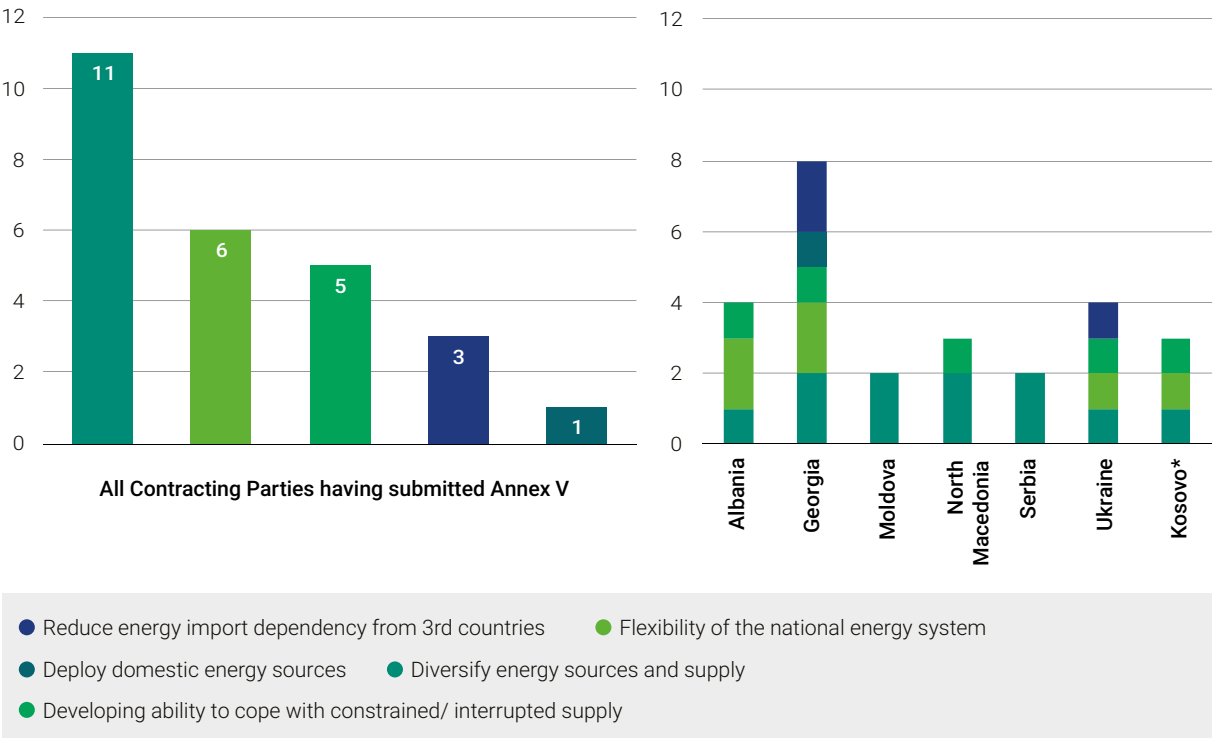
Details about objectives and targets

In their submissions under Annex V, Table 1, Contracting Parties select **objectives and targets** from a pre-defined list of areas. Most are reported in the area of diversification of energy sources and supply, whereas reducing energy import dependency from third countries and deploying domestic energy sources are indicated only in a few cases.

Georgia reports the largest (8) and the most comprehensive list of objectives and targets under this dimension. Diversification is the only common objective that is mentioned by all Contracting Parties providing a report.

Although Contracting Parties had the opportunity to indicate objectives and targets for deploying domestic energy sources—including not just fossil fuels but also renewable energy—only Georgia indicates such an objective in one instance. The Secretariat therefore has not assessed this category in depth; however, it notes that links to new sources of energy are not explicitly reflected in the form of energy security objectives.

Figure 29:
 Number and categories of objectives and targets in energy security in total and by Contracting Party



Source: Submissions under Impl. Reg. 2022/2299 Annex V, Table 1

Note: Article 4 of the Governance Regulation categorises energy security objectives and targets into three main categories serving various purposes, as discussed earlier in this Assessment Report (Assessment of NECPs), while Annex V of Impl. Reg. 2022/2299 allows Contracting Parties to select from the five different categories above.



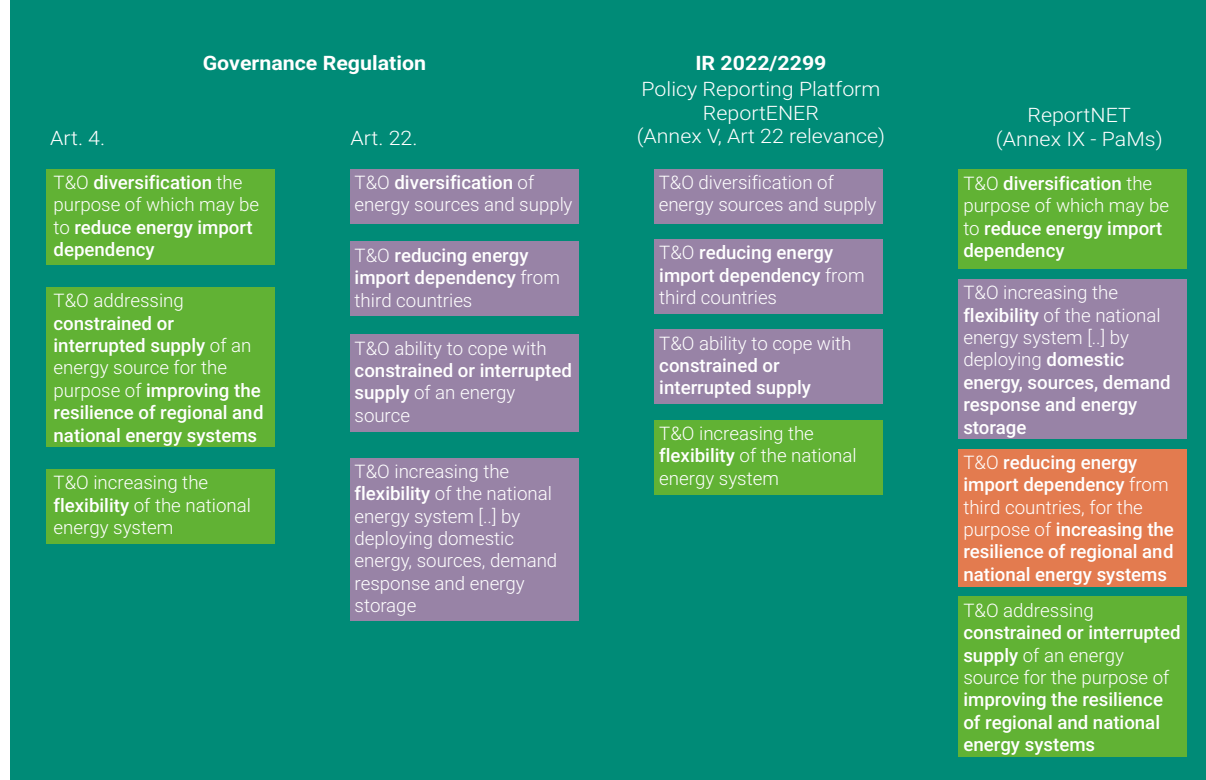
Box 1:

Guidance provided by different regulations for categorising objectives and targets

There are several different legal and regulatory provisions defining the categorisation of objectives and targets for energy security:

- Article 4, paragraph c of the Governance Regulation;
- Article 22 of the Governance Regulation;
- Drop-down menu in Policy Reporting Platform—Annex V of Impl. Reg. 2022/2299 concerning Article 22 relevance;
- Drop-down menu in Reportnet 3.0 —Annex IX information on policies and measures.

Unfortunately, the categories for objectives and targets are not consistent across these four sources. This makes it challenging for Contracting Parties to correctly and consistently identify and report on the linkage of policies and measures to objectives and targets and therefore also for the Energy Community Secretariat to evaluate the overall state of play. The diagram below shows the definitions of the categories of objectives and targets for energy security.



Contracting Parties reporting under Annex IX on progress accomplished towards implementing policies and measures, namely Albania, Georgia, Serbia and Ukraine, report more policies and measures in energy security, but fewer linkages of these policies and measures across different dimensions than in their NECPs. In total, they report 67 policies and measures under the energy security dimension, compared to 56 in their NECPs. In the NECPs, those policies and measures are linked to both the internal energy market and the decarbonisation dimension (GHG emission reduction and renewable energy), whereas in the NECPRs they are linked to the internal energy market only.

Diversifying energy sources and supply

The electricity sector is the main focus of Contracting Parties' diversification efforts (7 of the 11 related objectives and targets), followed by gas (6 out of 11 targets) and petroleum products (3 out of 11 targets).⁵¹ Around half the objectives and targets are aimed at reinforcing the transmission network and facilitating cross-border interconnections, while the development of renewable energy and the renovation of thermal power plants are also mentioned.

The European Commission's guidance on NECPRs foresees the inclusion of planned compliance with the N-1 criterion⁵² in security of gas supply in this category (indicated by North Macedonia and Serbia). However, this infrastructure standard and compliance with it are referred to among the policies and measures of only two Contracting Parties (Georgia and Ukraine). Considering that the N-1 standard focuses on infrastructure capacity rather than supply sources, it could be reconsidered whether compliance with the N-1 would not be better placed under another category, such as *"addressing constrained or interrupted supply [...] for the purpose of improving the resilience of regional and national energy systems"* or *"increasing the flexibility of the national energy system"*.

Under Annex V, Table 2, **Albania, Georgia, Kosovo*, Moldova, North Macedonia** and **Serbia** also report on progress towards implementation of quantifiable national objectives and targets for the diversification of energy sources and supply, in particular progress and targets for imports, exports and primary production. Most Contracting Parties providing relevant information plan to reduce imports and primary production of fossil fuels and to increase primary production of renewable energy towards 2030.

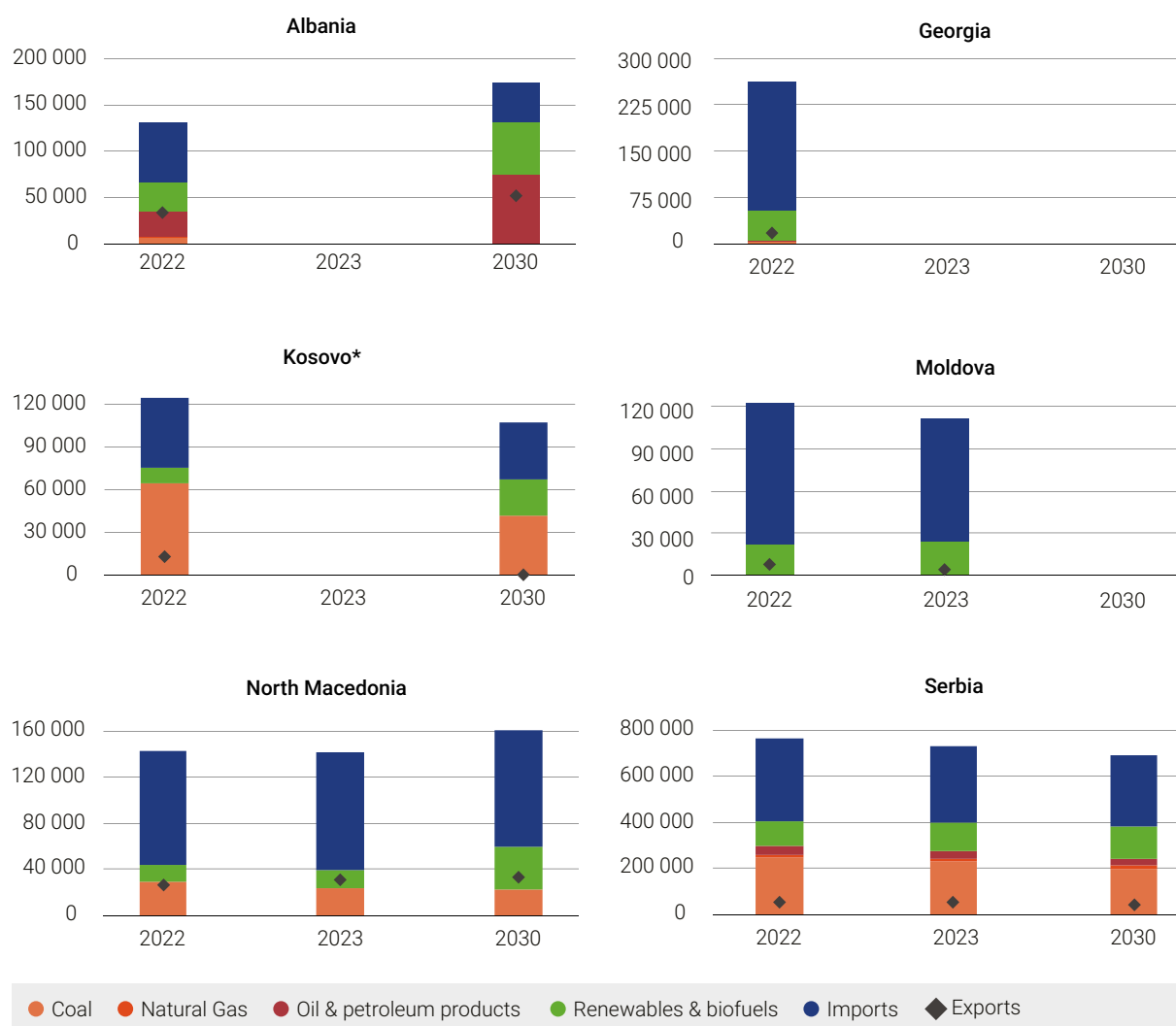


51 In some instances, several policy areas appear together in cross-sectoral objectives and targets.

52 The N-1 rule calculates the technical capacity of the remaining infrastructure in case of disruption of the single largest gas infrastructure element, estimating whether this is able to satisfy gas needs equal to a day of exceptionally high demand occurring with a probability of once in 20 years. See "Reporting Guidelines—Dataflow 5: Energy Security; under Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action Implementing Regulation 2022/2299 Annex 5".

Figure 30:

Diversification of energy sources and supply—primary production, imports and exports by Contracting Party [TJ], historical data 2022–2023 and 2030 targets



Source: Submissions under Impl. Reg. 2022/2299 Annex V, Table 2

13 out of the 67 policies and measures under the energy security dimension are marked as relevant for diversification of energy sources and supply, with all except one focusing exclusively on gas. Almost all those policies and measures represent infrastructure projects, with only 1 focusing on the implementation of the N-1 standard. The overall relevance of the N-1 standard remains low, similarly to the two instances in which it appears among the objectives and targets.

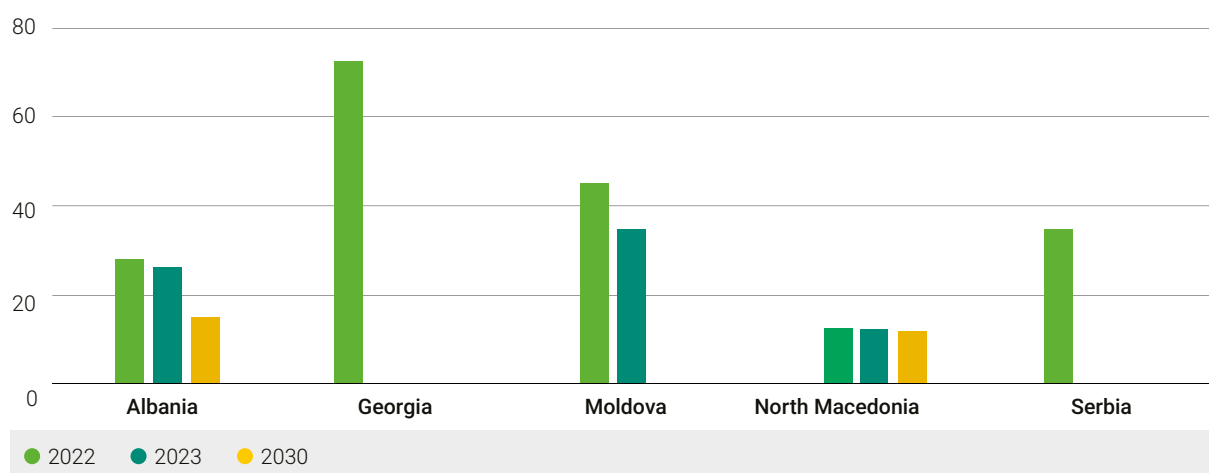
Reducing import dependency

In their reporting under Annex V, Table 1, only **Georgia** and **Ukraine** provide details about 3 national objectives and targets for reducing import dependency. These cover electricity and gas, with Ukraine also including petroleum products and nuclear fuel.

Other Contracting Parties (Albania and North Macedonia) chose to include details on objectives and targets under their reporting on progress towards implementation of quantifiable national objectives and targets (Annex V, Table 2). In addition, **Albania, Georgia, Moldova, North Macedonia** and **Serbia** submitted information on energy dependence from third countries overall and by fuel type in 2022 and 2023.

Figure 31:

Energy dependence from third countries by Contracting Party [%], historical data 2022–2023 and 2030 targets



Source: Submissions under Impl. Reg. 2022/2299 Annex V, Table 2

6 out of the 67 policies and measures can be associated with reducing import dependency, covering all sectors—electricity, gas, nuclear and petroleum products. Planned actions mainly focus on increasing domestic production capabilities.

Developing the ability to cope with constrained or interrupted supply of an energy source

Although only Ukraine outlines a target in the category of addressing constrained or interrupted supply of an energy source in its NECP, in the progress reports, **Albania, Georgia, Kosovo***, **North Macedonia** and **Ukraine** report on objectives and targets in this category.

Pursuant to the Commission's guidance⁵³ on reporting in this category, information on the objectives of risk preparedness plans⁵⁴ ought to be included here by Contracting Parties; however, none include any references to such plans. Other obligations—including objectives related to the NIS2 Directive,⁵⁵ indicators on structural congestion and other major physical congestions between and within bidding zones from the ENTSO-E report, and indicators on the

⁵³ Reporting Guidelines Dataflow 5: Energy Security under Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action Implementing Regulation 2022/2299 Annex 5—<https://circabc.europa.eu/ui/group/da8e36ea-9d6e-47fd-bc85-a485cf354922/library/02596b79-ca15-4214-b1e6-0ce3f53bd10e/details>

⁵⁴ Regulation (EU) 2019/941: Risk-preparedness in the electricity sector and Regulation (EU) 2017/1938: Security of gas supply regulation

⁵⁵ The Commission's 2025 guidelines refer to Directive (EU) 2016/1148, although it was repealed by Directive (EU) 2022/2555 in 2022.

implementation of network codes and guidelines adopted by the Commission from the ENTSOG report⁵⁶—which are referred to in the Commission's guidance, are not applicable to Contracting Parties.

The majority of policies and measures—29 of 67—are indicated in this category, focusing predominantly on electricity. 25 policies and measures in this category are provided by only 2 Contracting Parties—**Georgia** and **Ukraine**. While **Georgia** indicates concrete projects as policies and measures, others refer to the creation of coal, gas, oil and petroleum product reserves, measures to protect critical infrastructure, the general implementation of EU acquis on energy security, and the development of an emergency plan for gas in particular.

Flexibility of the national energy system

Albania, **Georgia** and **Kosovo*** define a total of 5 objectives and targets regarding the flexibility of the national energy system in their NECPRs. These all relate to the electricity sector, with one exception: Albania indicates plans to introduce new technologies to stabilise security of supply by reducing the quantity of oil and petrol imports. Around half the objectives refer to strengthening the transmission system, including increased interconnection capacities and improved ability of the system to integrate new renewable energy.

Georgia indicates a link between this dimension and demand response.

10 out of the 67 policies and measures focus on increasing the flexibility of the national energy system, which is recommended to include boosting domestic energy sources, demand response and energy storage. As per the Governance Regulation, “demand response” is also widely included in the objectives and targets under the internal energy market dimension, leading to inconsistencies, duplications and distortions in reporting and assessment. Policies and measures in this category include infrastructure projects, efforts to boost domestic energy (hydrocarbon) production, deploying energy storage solutions (gas and electricity) and the implementation of minimum criteria for electricity security of supply. The diversity of these policies and measures, together with overlaps with other categories, shows the significant challenges in grouping policies and measures across the various categories under this dimension.



⁵⁶ According to the Commission's 2025 guidelines, information from ENTSO-E and ENTSOG's reports must be updated every 1 and 3 years respectively; it is unclear, however, how this would align with the biennial schedule of NECPRs.

3.6 Internal energy market dimension

Reporting status

All Contracting Parties, except Bosnia and Herzegovina and Montenegro, submitted reports on progress towards implementing objectives and targets related to the internal energy market and energy poverty under Annexes VI, XVIII and XIX of Impl. Reg. 2022/2299. For reporting under Annex VI, this includes Kosovo*, which did not notify the Secretariat of an NECP.

Table 26:

Status of submissions under Annexes VI, XVIII and XIX of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex VI	Internal energy market									
Annex IX	Integrated policies and measures									
Annex XVIII	Energy poverty									
Annex XIX	Energy poverty									

The policy areas for reporting on progress in the internal energy market are structured differently from those in the NECPs. For this reason, no direct comparison is possible between the information included in the NECPs and that submitted via the progress reports. The categories in this section follow the NECPR reporting structure.

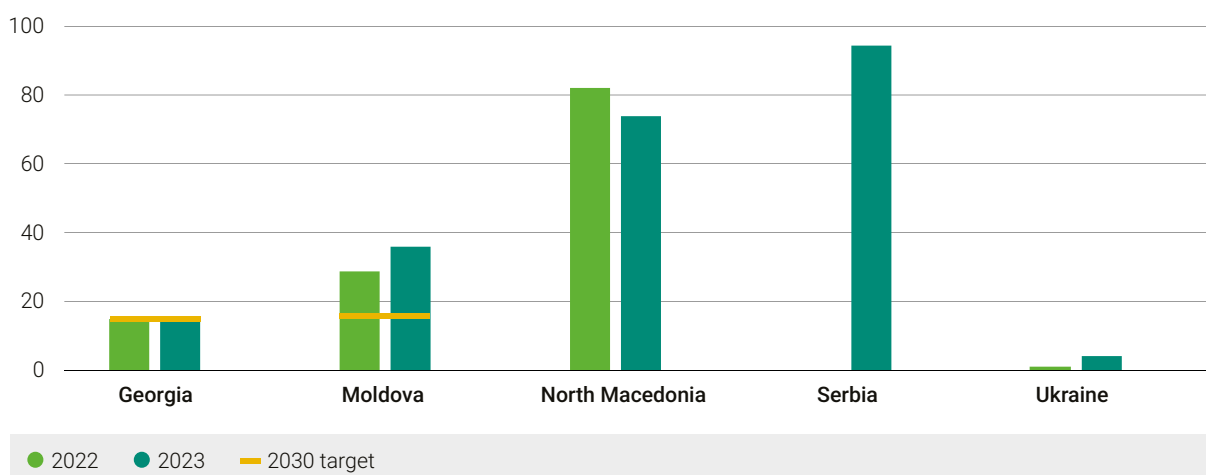
In the submissions under Annex IX, 63 policies and measures are reported as relevant for the internal energy market dimension by Albania (3), Serbia (4) and Ukraine (56).

Interconnectivity and transmission infrastructure

Progress towards national objectives relating to electricity interconnectivity (Annex VI, Table 1): The majority of Contracting Parties, including Georgia, Moldova, North Macedonia, Serbia and Ukraine, provide data on nominal transmission capacities ratios to installed generation capacities or to peak load or to installed renewable generation capacities, including average wholesale market price differences across borders, but mostly without target values for 2030 in these categories. Albania and Kosovo* do not provide data on progress towards national objectives relating to electricity interconnectivity.

Figure 32:

Reporting on nominal transmission capacity to installed generation capacity in 2022 and 2023 and target value for 2030 [%]



Source: Submissions under Impl. Reg. 2022/2299 Annex VI, Table 1

Information on transmission Projects of Energy Community Interest (PECI) or Projects of Mutual Interest (PMIs) (Annex VI, Table 2): Kosovo*, Moldova, North Macedonia, Serbia and Ukraine report information in this category. Georgia does not have PECI projects, while PMI status for the Black Sea Cable Project was granted after the submission deadline for NECPRs (November 2025). Albania does not provide any data.

Information on other main infrastructure projects (Annex VI, Table 3): Georgia, Kosovo*, Moldova, Serbia and Ukraine provide information about 55 electricity projects without PECI or PMI status. In addition, two gas projects are listed, both reported by Ukraine, one aiming to increase security of natural gas supply in the Transcarpathian and Balkan regions and another defined as a hydrogen corridor connecting Ukraine and Germany.

All submissions include the project type, description, transmission capacity and project status. Planned commissioning dates range from 2024 to 2034. Although concise, the information provided is informative and clear.

Energy system flexibility

Three Contracting Parties report on **progress towards national objectives relating to energy system flexibility, including with regard to renewable energy production (Annex VI, Table 4)**. A total of 10 objectives and targets are reported in this category, by Ukraine (6), Moldova (3) and Kosovo* (1). The majority of objectives address electricity (7), while the rest relate to gas (3). The identified objectives cover a broad scope, including market integration with the EU internal energy market, boosting diversification, strengthening regional cooperation, increasing the share of renewable energy and improving infrastructure.

In this context, the reported content only partially captures “flexibility” in an operational sense. While market integration, diversification, infrastructure development and RES scale-up are relevant enablers, they are frequently framed as broad system transformation objectives rather than specific flexibility deliverables. As a result, a substantial share of entries read as strategic alignment with EU integration and energy transition priorities, rather than as a targeted flexibility agenda tied to balancing needs, short-term system operation and flexibility resources.

Moreover, the reporting remains descriptive and qualitative, with limited comparability between targets and indicators across the three reporting Contracting Parties. Several objectives are articulated as institutional or integration milestones, making it difficult to assess whether system flexibility has improved in reality or whether progress largely reflects governance and infrastructure changes.

Indicators are mostly absent, incomplete or not clearly linked to the objectives and targets. This prevents the tracking of actual progress in flexibility over time and against the objectives, including the contributions of storage, demand response and balancing improvements.

Non-discriminatory participation

Two Contracting Parties report on **progress towards national objectives relating to non-discriminatory participation in energy markets (Annex VI, Table 5)**. Ukraine (6) and Kosovo*(1) identify seven objectives and targets in this category, focusing on electricity (4) and natural gas (3). These include integration with the EU internal energy market (which overlaps with the previous category, as some objectives are reported in several categories), improving competitiveness and removing barriers to effective market functioning, as well as formation of free prices for all categories of consumers.

The submissions focus heavily on regulatory alignment and formal market liberalisation but provide limited evidence that non-discriminatory participation is being realised in practice. The definition of objectives on competitiveness, removal of barriers to market entry and free price formation is relevant; however, based on the submitted NECPRs, it is not possible to determine to what extent these objectives helped to facilitate effective entrance to the markets, equal access to trading and network services, or improved competition.

The description of progress often remains at the level of legal or institutional steps. Where barriers are mentioned, the reports do not consistently demonstrate whether they have been removed in operational terms, such as through improved market access, increased liquidity or measurable reductions in the positions of dominant market players. Indicators that would demonstrate non-discrimination in practice—including market concentration, switching rates, participation of new entrants, transparency of access rules or organised market liquidity—are largely absent.

Consumer participation

Only Ukraine reports on **progress towards national objectives relating to consumer participation in the energy system and benefits from self-generation and new technologies, including smart meters (Annex VI, Table 6)**. With one exception, all 5 reported objectives and targets focus on electricity. The topics include support for active consumers through self-generation, implementation of smart grids and meters, development of aggregation and demand management, simplification of permitting procedures, and ensuring 100% metering.

The submitted information in this category is more concrete and assessable, owing to its clearer focus and, in some instances, quantifiable elements, including the coverage or intended deployment of smart meters. The identified topics are also directly relevant to enabling active consumers and demand-side participation and reflect a coherent policy logic, from enabling infrastructure to new market roles such as aggregation.

Nevertheless, the submissions concentrate primarily on enabling conditions, infrastructure rollout and regulatory adoption rather than on demonstrated changes in consumer behaviour or measurable participation outcomes. There is limited evidence of actual uptake of self-generation and active consumer schemes, functioning aggregation markets, demand response activation, or measurable system-level benefits resulting from these measures.

Baseline values and progress trajectories are not consistently provided. Where indicators exist, they tend to track deployment, such as metering or grid modernisation, rather than effective use, such as participation rates, load shifting volumes or verified demand response performance. This limits the ability to assess whether consumer participation is moving from policy design to operational reality.

Electricity system adequacy

Submissions on progress towards national objectives relating to electricity system adequacy (Annex VI, Table 7) include seven objectives and targets reported by Ukraine (6) and Albania (1). The policy areas covered by the reported objectives and targets largely overlap with other Energy Union dimensions, leading to possible duplication arising from the provisions of the Governance Regulation and Impl. Reg. 2022/2299. These include: full integration with the EU internal energy market, sufficient balance and flexibility of the electricity system, and implementing smart meters and smart grids.

In this context, adequacy reporting appears conceptually broad and substantially affected by duplication with other categories. Objectives such as EU market integration, system flexibility and smart metering are relevant for system performance, but do not in themselves constitute adequacy measures unless explicitly linked to adequacy risk assessment results, reliability standards and resource sufficiency metrics. This overlap reduces clarity regarding which measures are pursued specifically to mitigate adequacy risks and ensure security of supply, which is a separate Energy Union dimension.

The reported progress frequently relates to system modernisation or integration rather than adequacy improvements in the strict sense. Where reliability or adequacy-related indicators are included, they are limited and not consistently anchored in adequacy planning methodologies, such as assessment of reserve margins, loss-of-load expectations or availability of dispatchable and flexible capacity.

Targets are often long-term and structural, while progress descriptions remain focused on institutional reforms or infrastructure upgrades, without clearly quantifying their impact on adequacy performance. Consequently, the reporting does not provide a coherent picture of whether adequacy risks are being mitigated and whether adequacy gaps persist or whether the measures are sufficient in light of evolving demand, the increasing share of RES in the electricity mix and regional interconnection constraints.

Energy poverty

Progress towards national indicative objectives to reduce the number of households in energy poverty (Annex XVIII, Table 1): Little information on actual progress is provided in the submissions. The reasons may be twofold. First, only four Contracting Parties precisely define objectives and targets for reducing energy poverty in their NECPs (Georgia, Moldova, Serbia and Ukraine). Second, in the 2025 reporting cycle, due to the timing of NECP adoption in mid-2024, Contracting Parties could reasonably report only on the status quo. In their reporting, Moldova and Ukraine link certain energy efficiency-related targets to objectives tackling energy poverty; however, these linkages remained unquantified. It is expected that, in future reporting periods, the Contracting Parties will be able to systematically monitor and assess the progress achieved.

Quantitative information on the number of households in energy poverty (Annex XIX, Table 1): Information is provided by Albania, Georgia, Moldova, North Macedonia and Serbia, mostly for the years 2023 or 2024, and exceptionally for 2017 in Georgia. In the next NECP reporting cycle, it will be crucial to link these data—updated in a timely manner—to targets for reducing the number of households in energy poverty.

Reporting on (national) indicators in relation to energy poverty (Annex XIX, Tables 2 and 3): Impl. Reg. 2022/2299 recommends the use of six indicators for assessing the level of energy poverty,⁵⁷ the majority of which are stipulated in the EED. While most Contracting Parties participate in the relevant Eurostat surveys, voluntary numerical data were not provided by any of them in 2025. Alternatively, Moldova submitted assessments based on nationally used indicators for estimating the number of households in energy poverty.

57 Share of population at risk of poverty unable to keep their home adequately warm; share of total population not able to keep their home adequately warm; share of population at risk of poverty with arrears on utility bills; share of total population with arrears on utility bills; share of population at risk of poverty with leak, damp or rot in dwelling; and share of total population with leak, damp or rot in dwelling.

Information on the national definition of energy poverty (Annex XIX, Table 4): Where provided for the purpose of progress monitoring (Georgia, Moldova, North Macedonia and Serbia), updated national definitions of energy poverty reflect revisions to those set out in the adopted NECPs. This indicates an improving legislative framework for addressing energy poverty in Contracting Parties. It is expected that the remaining Contracting Parties will also be able to report on the enhanced regulatory frameworks in the following reporting cycle.

3.7 Research, innovation and competitiveness dimension

Reporting status

With the exception of Albania, Bosnia and Herzegovina and Montenegro, all Contracting Parties submitted reports on research, innovation and competitiveness under Annex VII of Impl. Reg. 2022/2299. However, the level of completeness or consistency with NECPs varies across Contracting Parties, with Moldova and Serbia submitting the relevant forms without content.

Table 27:

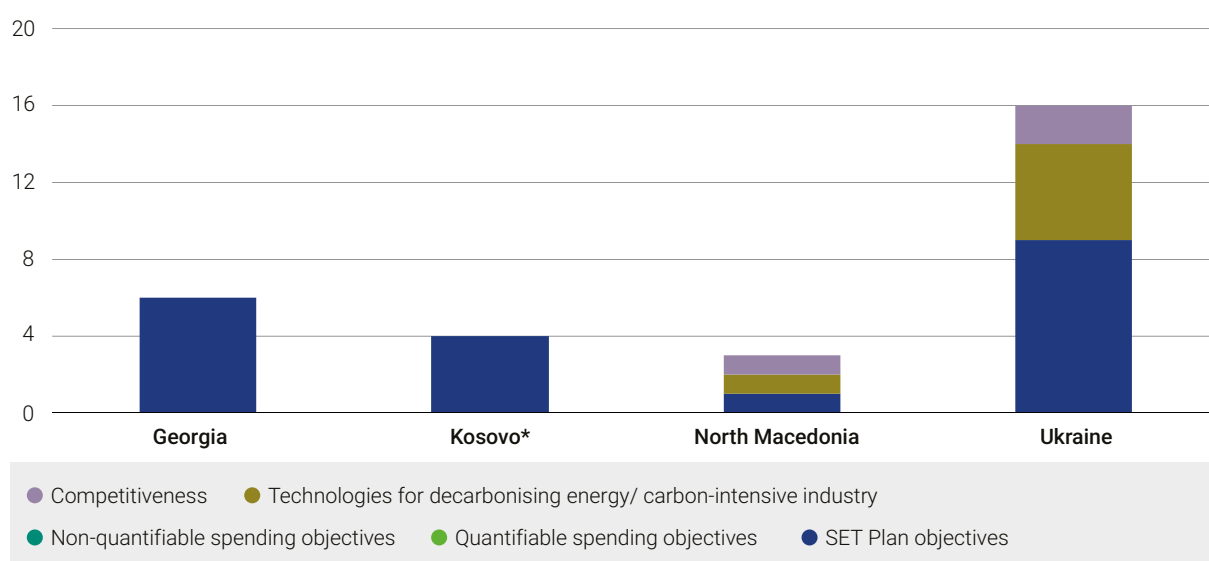
Status of submissions under Annex VII of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex VII	Research, innovation and competitiveness									
Annex IX	Integrated policies and measures									

In their reports under Annex VII, Contracting Parties describe a total of 30 research, innovation and competitiveness objectives and targets, of which Ukraine alone accounts for 16. The targets relate to Strategic Energy Technology Plan (SET Plan) objectives, quantifiable and non-quantifiable national objectives for spending in research and innovation relating to clean energy technologies, as well as to technology cost, deployment of technologies for decarbonising energy- and carbon-intensive industrial sectors and competitiveness. Annex IX submissions list a total of 24 policies and measures relevant to this dimension, reported by three Contracting Parties (Albania (4), Georgia (11) and Ukraine (9)).

Figure 33:

Targets reported for research, innovation and competitiveness



Source: Submissions under Impl. Reg. 2022/2299 Annex VII, Tables 1–4

Progress towards national objectives translating the SET Plan objectives and policies to a national context (Annex VII, Table 1): The SET Plan is the EU's framework for coordinating research and innovation in clean energy. It aligns national efforts with EU climate goals, supports the development and deployment of low-carbon technologies and fosters collaboration between governments, industry and research institutions. By setting common priorities and roadmaps, it helps to reduce costs, boost competitiveness and accelerate the transition to a climate-neutral energy system.

Although Contracting Parties do not participate in the SET Plan, **Georgia** (6), **Kosovo*** (4), **North Macedonia** (1) and **Ukraine** (9) report a total of 20 national objectives and targets for translating SET Plan objectives and policies into the national context. These are presented at a very general level, without specifying target years, measurable indicators or progress achieved. Ukraine is a notable exception, providing more detailed information, including clearly defined targets and progress indicators.

The SET Plan serves as a bridge between the scientific community and decision-makers, through coordination and collaboration in clean energy research and innovation, bringing together European industry, academia and governments. It is important that Contracting Parties develop a similar mindset in planning and implementing their research and innovation activities.

9 of the reported 24 policies and measures focus on SET Plan priority areas related to strengthening research and innovation capacities and supporting innovation in clean energy technologies. Of these, 7 measures are reported by **Georgia** and 2 by **Ukraine**. The measures address research and skills development, innovation support and collaboration between research institutions, industry and international programmes.

Progress towards quantifiable and non-quantifiable national objectives for total public and, where available, private spending in research and innovation relating to clean energy technologies as well as for technology cost and performance development (Annex VII, Tables 2 and 3): Only **Ukraine** reports on progress towards **quantifiable national objectives** (Table 2), reporting total public spending in research and innovation relating to clean energy and low carbon technologies of EUR 6,2 million in 2022 and EUR 7,2 million in 2023. These amounts accounted for 3% of the overall public research and innovation expenditure and equalled roughly 0,005% of annual GDP. None of the Contracting Parties submitted data on respective private expenditure.

Progress towards **non-quantifiable national objectives for total public and private spending in the field (Table 3)** is not reported. While the reporting framework does not distinguish between “data not available or not applicable” and “not reported”, the reporting gap most likely reflects the absence of data in Contracting Parties. Tracking systems for non-quantifiable research and innovation objectives and technology performance need to be systematically developed and should be subject to further follow-up to assess how such information could be collected in future reporting cycles.

Albania (1), **Georgia** (2) and **Ukraine** (3) report a total of six funding-related policies and measures. These include public funding schemes for research and development, innovation support programmes and the mobilisation of private capital for renewable energy and climate technology innovation.

Progress towards national objectives, including long-term targets for 2050 for the deployment of technologies for decarbonising energy- and carbon-intensive industrial sectors, and, where applicable, for related carbon transport, use and storage infrastructure (Annex VII, Table 4): Only Ukraine (5) and North Macedonia (1) report national objectives and targets in this category, amounting to six in total. The targets reported by **Ukraine** mainly focus on strengthening research, innovation and investment in clean technologies, renewable energy and low-carbon production. The reported progress is largely linked to increasing funding for research and innovation, the development of investment programmes and initiatives aimed at supporting the uptake of climate technologies and the production of energy-related equipment. The objective set by **North Macedonia** relates to the promotion of clean energy technologies and the long-term deployment of low-carbon solutions to support the decarbonisation of the energy system and final energy consumption. Reported progress focuses on the growing share of renewable energy sources in the national energy mix contributing to broader decarbonisation efforts. The reported information is qualitative and does not provide a comprehensive set of measurable indicators to track progress.

Only **Albania** reports policies and measures (three in total) directly supporting carbon capture, utilisation and storage or related technologies.

Progress towards national objectives with regard to competitiveness (Annex VII, Table 5): Only Ukraine and North Macedonia submitted information, reporting on the adoption or development of strategic frameworks and relevant policy measures to strengthen economic competitiveness in the context of the energy transition. **Ukraine** reports initiatives related to innovation priorities, industrial development and support for SMEs, including measures promoting the green transformation and access to new markets. **North Macedonia** refers to broader strategic documents, such as the Energy Strategy and the Smart Specialisation Strategy, which highlight the role of renewable energy deployment and energy efficiency improvements in supporting the involvement of domestic small and medium-sized enterprises and enhancing overall competitiveness. However, in both cases, progress is largely reported qualitatively and is not accompanied by clear quantitative indicators, making it difficult to systematically assess advancements in this area.

9 policies and measures supporting competitiveness are reported by Albania (2), Georgia (3) and Ukraine (4). They focus on strengthening the link between research and industry, promoting investments in clean and innovative energy technologies, supporting small and medium-sized enterprises, and facilitating the commercialisation and export of low-carbon technologies. **Albania** reports measures aimed at strengthening the investment environment and promoting innovation-driven business development. In **Georgia**, competitiveness-related measures are oriented towards improving technology transfer and cooperation between research institutions and the private sector. **Ukraine's** measures are aimed at attracting corporate and venture capital investments in climate technologies, supporting small and medium-sized enterprises in the green transition, and promoting the development and export of renewable energy technologies.

Submitted reports suggest that Contracting Parties aim to synchronise and align their domestic agenda and priorities in research and innovation with the European framework. At the same time, they demonstrate a less developed level of planning in other areas, such as defining goals for funding, deployment of clean energy and decarbonisation technologies, and competitiveness in general.

3.8 Energy subsidies

Reporting status

Contracting Parties are required to submit information on progress related to the achievement of national objectives and policies and measures to phase out energy subsidies, in particular for fossil fuels.

Table 28:

Status of submissions under Annexes VIII and XV of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex VIII	National objectives to phase out energy subsidies, in particular for fossil fuels									
Annex XV	Policies and measures to phase out energy subsidies, in particular for fossil fuels									

National objectives to phase out energy subsidies, in particular for fossil fuels (Annex VIII):

Ukraine plans to completely eliminate fossil fuel subsidies and energy price regulations, while simultaneously introducing a comprehensive system of targeted subsidies until 2030. None of the other Contracting Parties elaborate on, or set out plans for, the phase-out of fossil fuel subsidies.

Albania reports on targets to support the penetration of renewable energy, while acknowledging that “there are some subsidies in particular for fossil fuels, in the field of agriculture and fishing”. **Kosovo*** reports that it has no objective to phase out energy subsidies, whereas **Georgia** reports on indirect subsidies for natural gas. **Serbia** states that subsidies in the area of energy efficiency are not planned to be phased out. **Moldova** submitted Annex VIII, but does not provide any information.

Policies and measures to phase out energy subsidies, in particular for fossil fuels (Annex XV): Georgia, Kosovo*, Moldova, North Macedonia, Serbia and Ukraine list subsidies for fossil fuels or other energy subsidies. However, only Georgia, Moldova and Serbia report on actual subsidy volumes in 2022 and 2023. **Moldova** quantifies fossil fuel subsidies provided through the Energy Vulnerability Reduction Fund and the National Fund for the Development of Agriculture and Rural Environment. **Georgia** outlines volumes of natural gas subsidies. **Serbia** lists subsidies promoting energy efficiency, including subsidies for decarbonisation and restructuring of industry, the introduction of renewables in district heating systems, and energy efficiency in households and buildings.

3.9 Progress towards financing

Reporting status

Only Georgia and Ukraine submitted reports on progress towards financing under Annex XIII of Impl. Reg. 2022/2299.

Table 29:

Status of submissions under Annex XIII of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Legend:  Submitted  Not yet submitted										
Annex XIII	Progress towards financing									

Progress towards financing: Annex XIII reports are intended to provide information about actual investments related to policies and measures, in comparison with the financing planned in the NECP. Furthermore, they allow for the monitoring of actual funds from the private sector, public budget and the EU as a major funding source.

Apart from Georgia and Ukraine, no other Contracting Party reports on progress towards financing. These gaps in submissions prevent a comprehensive assessment of progress towards financing.

As a notable exception, **Georgia** submitted data for the majority of policies and measures listed in its NECP. For policies and measures for which all data are available, the dataset reveals that initial investment assumptions are usually significantly smaller than actual investments up to 2024, implying systematic underestimation of investment needs. The largest share of actual investment comes from the private sector, followed by EU funding, while national public funding appears to play a minor role.

Ukraine reports data under Annex XIII for a limited number of policies and measures, including significant actual investments from national public and EU funding supporting the insulation of building envelope structures and modernisation of the heating system.

3.10 Just transition, promotion of human rights and gender equality, and addressing inequalities in energy poverty

Reporting status

Annex XX aims to provide information on the impact of implementing the NECP on jobs, workers and regions in the Contracting Parties (Annex XX, Table 1), as well as on the promotion of human rights and gender equality and addressing inequalities in energy poverty (Annex XX, Table 2). Both tables are labelled “voluntary”, with only limited guidance on what elements may be reported. To date, four (**Moldova, Serbia, North Macedonia and Ukraine**) of the nine Contracting Parties have submitted information, while Georgia’s submission does not include any data.

Table 30:

Status of submissions under Annex XX of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Annex XX	Just Transition and Human Rights	x	x	✓	x	✓	x	✓	✓	✓

Impact of the implementation of the NECP on jobs, workers and regions (Annex XX, Table 1): Regarding employment changes, submissions highlight the growth of job opportunities in the renewable energy sector, especially during the initial transition period, and the decrease in the number of jobs related to coal extraction and use. Concerning the expected distributional impacts among the population, Contracting Parties primarily focus on measures addressing these, ranging from energy efficiency measures to actions targeting vulnerable consumers and reducing energy poverty. The expected impacts are not quantified.

Several Contracting Parties report measures to address the expected impacts on the most affected regions, such as developing green jobs and industrial zones, while other Contracting Parties note that this issue still requires further examination.

Concerning expected incomes on quality of life and well-being, several Contracting Parties underline the positive impacts of decreased air pollution and enhanced energy efficiency measures on life quality.

Taking into account the expected impacts on costs, all submissions highlight long-term energy cost savings due to implemented energy efficiency measures. One Contracting Party also underlines the impacts of Carbon Border Adjustment Mechanism (CBAM) implementation.

Regarding expected measures to ensure inclusiveness of policies, numerous Contracting Parties highlight the NECP consultation and design process as a means of addressing this.

Impact of the implementation of the national energy and climate plan on the promotion of human rights and gender equality and addressing inequalities in energy poverty (Annex XX, Table 2): All submissions highlight the positive impact of NECP implementation on human rights. Nonetheless, the impact of NECP implementation on gender equality is not sufficiently described. For half the submissions, gender impacts are not explicitly outlined.

Concerning addressing inequalities in energy poverty, all the submissions refer to vulnerable groups and planned measures to support them.

Due to the lack of quantification for many of the submissions, tracking of progress in implementation remains highly challenging. It is therefore recommended that future reporting provide more quantified information to enable adequate evaluation of progress.

3.11 Impacts on air quality and emissions to air

Reporting status

Information on policies and measures on air quality and emissions of air pollutants is reported in Annex XIV. This includes, as required under Article 17(2)(e) of the Governance Regulation, the quantified impact—where possible—of policies and measures on five key pollutants: sulphur dioxide (SO2), nitrogen oxides (NOx), non-methane volatile organic compounds (NMVOC), ammonia (NH3) and particulate matter with a diameter of 2,5 micrometres or less (PM2.5). Other pollutants may also be indicated under the “other” category where relevant.

Although some Contracting Parties submitted reports under this Annex (Georgia, Serbia and Ukraine), this does not include any information on quantified or qualitative expected emission impacts, leaving considerable gaps in the assessment and hindering a more robust analysis of the impact of NECPs on air quality.

Table 31:
Status of submissions under Annex XIV of Impl. Reg. 2022/2299

Submission	Description	Albania	Bosnia and Herzegovina	Georgia	Kosovo*	Moldova	Montenegro	North Macedonia	Serbia	Ukraine
Annex XIV	Impacts on air quality and emissions to air	x	x	✓	x	x	x	x	✓	✓



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