

DRAFT

## SDG7 Technical Advisory Group

# Policy Brief on Advancing SDG7 in the UNECE Region

*Draft as of 8 May*

**NOT FOR CIRCULATION – DO NOT REFERENCE**

This draft was shared with participants of the Expert Group Meeting in Support of SDG7 review at the HLPF 2023, 11-12 May, as background information

Lead author: UN ECE

## Key Messages/Summary

*[this part will be developed at a later stage based on the findings/comments]*

In recent years, the UNECE region has been shaken by the COVID-19 pandemic, the war in Ukraine, energy crisis and surging inflation. As previous UNECE reports showed, progress towards the SDGs was already too slow in the region before these crises. The latest available data presented in this report unfortunately confirms that trend and reveals a growing gap in achieving the SDGs.

Access to electricity in the UNECE region is widespread, and most people in the region use clean fuels for cooking, heating and lighting (target 7.1). As measured before the current energy crisis, reliance on renewable energy was increasing (indicator 7.2.1) and energy efficiency was improving (indicator 7.3.1), but not quickly enough to meet 2030 targets. Most energy targets are progressing too slowly to be achieved, and acceleration of efforts is critical to ensure access to affordable, reliable, sustainable and modern energy for all.<sup>1</sup>

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<sup>1</sup> UNECE (2023). Growing Challenges for Sustainable Development: Can the UNECE Region Turn the Tide in 2023?

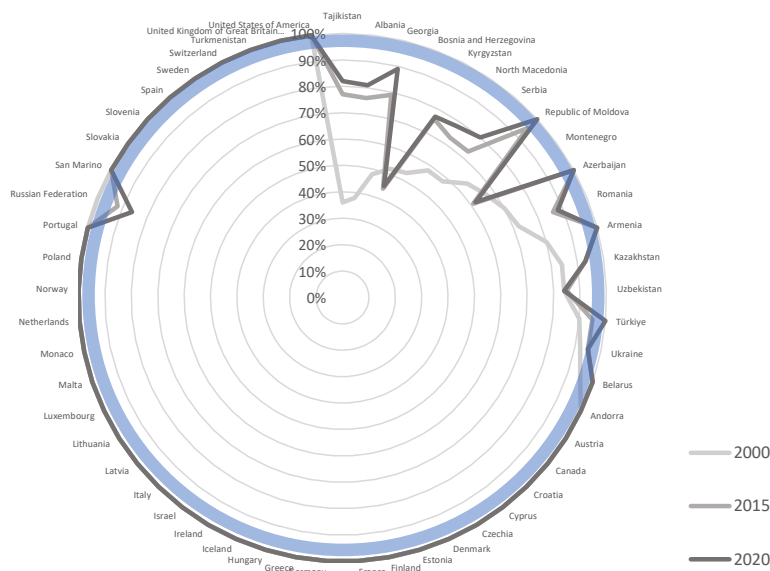
## I. SDG7 and the Sustainable Development Goals

*This section will identify the importance of energy for achieving the SDGs; present an overview of the current status; assess the rate of change needed; reveal what is needed to fill the gap; and highlight interlinkages with other SDGs.*

### Universal access to affordable, reliable and modern energy services

While both urban and rural populations in the UNECE region enjoy universal access to electricity (Indicator 7.1.1), access to clean fuels and technology in several countries remains a challenge that becomes even more complex amid the crises that the region faces (among other, the COVID-19 pandemic, ongoing geopolitical crises, supply chain disruptions, and the impact of climate change).

**Figure 1. Proportion of population with primary reliance on clean fuels and technology (Indicator 7.1.2), 2000, 2015, and 2020, per cent**



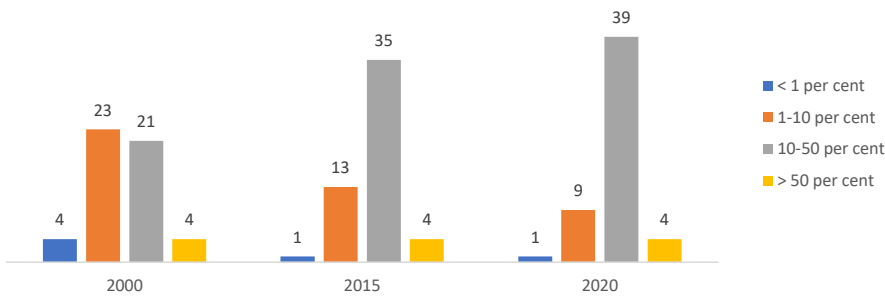
Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>  
 Note: The blue circle visualizes the level above 95 per cent.

The ECE region faces a number of crises that pose significant challenges to the current energy system, exposing its fragility and vulnerability. Clean fuels and technologies are often more expensive than traditional fuels and technologies, making them unaffordable for lower-income households. This affordability challenge is particularly acute for those living in rural areas and informal settlements, where incomes tend to be lower and access to financial resources limited. Therefore, the affordability aspect of access to clean fuels and technologies is argued to become a significant barrier for certain energy users.

### Share of renewable energy in the energy mix

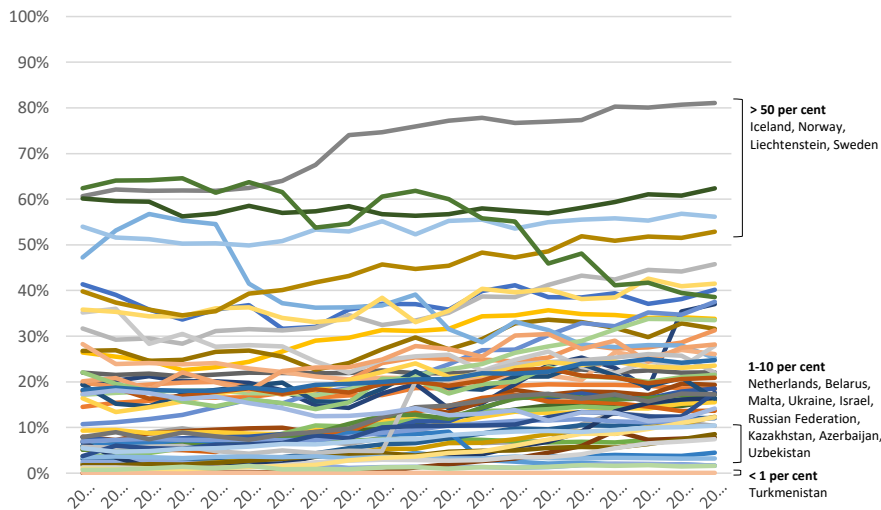
A broader deployment of renewable energy technologies in the region is observed during the monitoring period. In 2020, 44 member States increased the share of renewable energy in their energy mix to above 10 per cent, as compared to 26 countries in 2000 and 40 in 2015. Importantly, the number of countries where renewable energy share is below 1 per cent, has decreased from 4 to 1 over the period, along with similar dynamics in the group of countries with the share between 1 and 10 percent. Within the latter, most of the countries have been continuously increasing the share of renewables to be above 10 per cent.

**Figure 2. Number of UNECE member States grouped by the shares of renewable energy in their energy mix, 2000, 2015, and 2020**



Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

**Figure 3. Renewable energy share in the total final energy consumption (Indicator 7.2.1), 2000-2019, per cent**



Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

The 2022 ECE Renewable Energy Status Report on the status of renewables in 17 ECE focus countries, shows that significant progress in renewable energy has been achieved in the last years although the renewable energy potential remains largely untapped.<sup>2</sup>

The region has seen an unprecedented growth in renewable electricity, although that is not the case for transport and heating and cooling. Public and private investment in renewables across the focus countries remains modest compared to global growth trends, highlighting the need for significant investment in renewables along with the development of policy options to facilitate their uptake.

The combined public and private investments in renewables across the focus countries of the Report are insufficient, they fall far short. In 2018, renewable energy investments in the region were at 7.2 billion dollars. A similar amount had already been achieved almost ten years earlier. This figure represents only some 2.2 per cent of the global total and approximately 13% of the renewable energy investment in the European Union in 2018 (55 billion US dollars).

To achieve a higher share of renewable energy in their energy mixes, ECE member States should adopt an integrated approach and engage in a multi-stakeholder dialogue with national and international stakeholders. Their efforts should be focused on improving the understanding of the renewable energy resource characteristics and availability, as well as on strengthening policy, institutional, normative, and regulatory frameworks that enable and facilitate the uptake of renewable energy, including through the application of the United Nations Framework Classification for Resources (UNFC) to renewable energy resources and projects. Apart from policy framework and dialogue, investing in renewable energy deployment shall remain in focus.

The importance of historical data availability cannot be underestimated as well, notably for identifying trends and formulating evidence-based development pathways for sound decision-making and sector development.

### Rate of improvement in energy efficiency

As shown in Figure 4, energy intensity in the UNECE member States has been generally decreasing over the monitoring period, from the regional average of 7.19 MJ per constant 2017 GDP PPP in 2000, to 4.18 MJ per constant 2017 GDP PPP in 2019. However, the inconsistency of the rate of improvement trend in the countries and globally, can be observed (Figure 5).

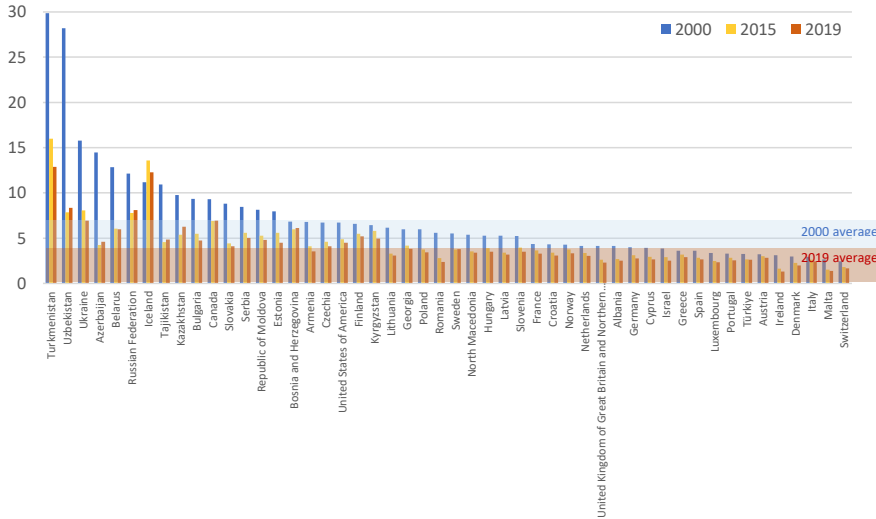
**Commented [BN1]:** The figures in these 3 sentences should be checked, particularly the comparison with the EU + 2018 figures are outdated

**Commented [BN2]:** Apart from policy framework and dialogue, focus should be on investment

**Commented [BN3]:** This part is missing in the chapter, as absolute figures are provided while SDG 7.3 is about rate of improvement

<sup>2</sup> See: <https://unece.org/sustainable-energy/publications/unece-renewable-energy-status-report-2022>

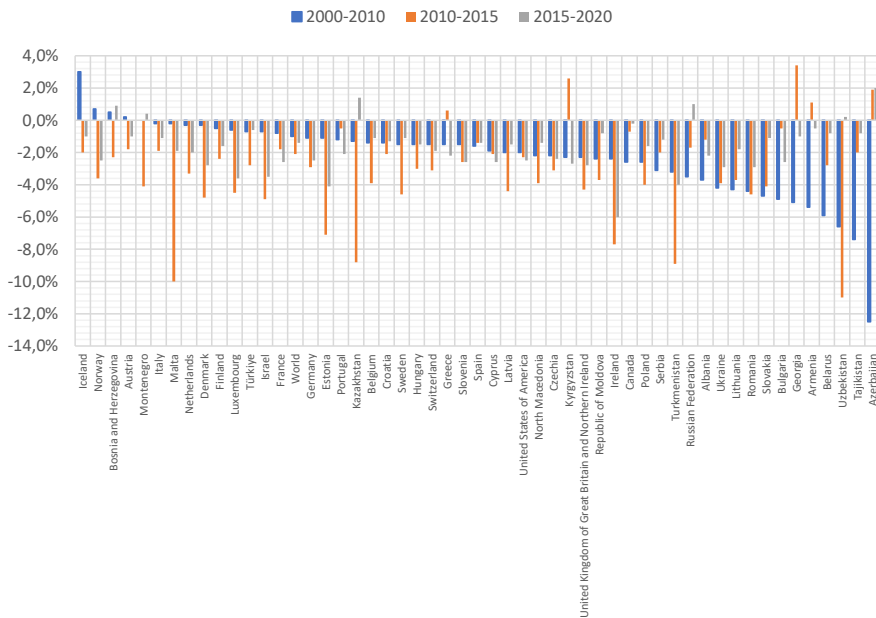
Figure 4. Energy intensity measured in terms of primary energy and GDP (Indicator 7.3.1), 2000-2019, per cent



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Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

Figure 5. Rate of improvement in energy efficiency in UNECE member States and globally, 2000-2010, 2010-2015, and 2015-2020



It is argued that a noticeable amount of energy is wasted due to energy system-wide inefficiencies. A focus shift from technology to integrated thinking, policymaking, and governance, is needed to help enable larger scale implementation of existing solutions by energy system actors, as related challenges are often more of an adoption nature.

For example, tangible action on buildings is hampered by the absence of these elements, including aspects such as the harmonization of building codes with high-performance buildings targets and their application in construction and renovation techniques, or improving the efficiency of supply chains in the construction business, including recovery of materials; and financial mechanisms that offer incentives for building and renovation in line with best available technologies and practices.

The development of pathways for the balanced integration of electric mobility by coupling charging infrastructure with urban transport , requires a new level of coordination across historically siloed stakeholders. At the same time, it may help turning electric mobility into a grid asset, maintaining electricity system resilience, and taking advantage of distributed energy resources operated with the support of digital solutions.

Digitalization may act as a balancing force between (i) energy security, (ii) ensuring affordable, reliable, sustainable and modern energy services, and (iii) environmental sustainability of energy use. Technology compatibility issues, standardization, data privacy and cybersecurity, and contribution of digitalization to reliability of the transmission grid and energy system in general are seen of particular importance. It is also observed that digitalization in energy is complex, as it potentially impacts economies and societies and implies disruptive changes. .

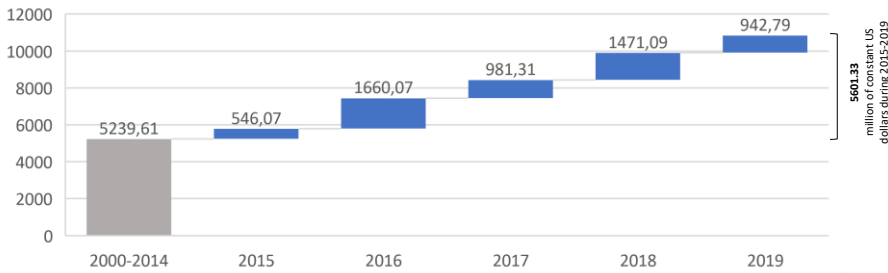
A relatively low awareness across many energy actors of the potential of energy efficiency as energy resource of its own right, and of the resource use optimization that energy efficiency offers, is the result of lack of needed skillset to implement such existing energy efficiency solutions.

#### **International cooperation to facilitate access to clean energy research and technology**

The investment in clean energy research and technology in the developing countries in the ECE region (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Türkiye, Turkmenistan, Uzbekistan) has been boosted since adoption of the 2030 Agenda, as the cumulative investments in the sector over the preceding 15 years (total 5.2 billion of constant US dollars over 2000-2014) have more than doubled in the forthcoming 5 years (total 5.6 billion of constant US dollars over 2015-2019), as shown in Figure 6.

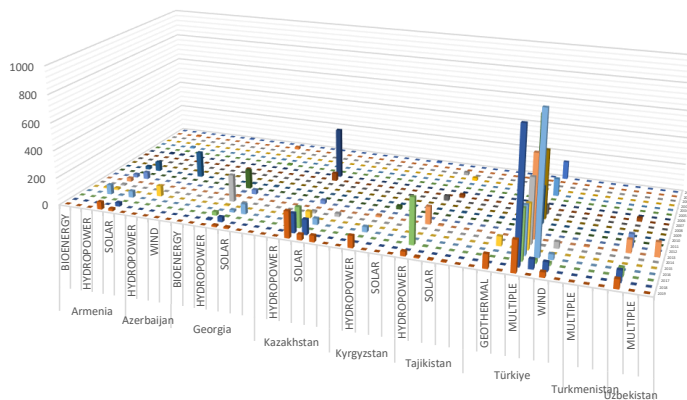
Figure 7 shows volume of international financial flows to developing countries in the ECE region in support of clean energy research and development and renewable energy production.

**Figure 6. Cumulative investments in clean energy research and technology in the period of 2000-2014 and in 2015-2019**



Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

**Figure 7. International financial flows to developing countries in the ECE region (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Türkiye, Turkmenistan, Uzbekistan) in support of clean energy research and development and renewable energy production, including in hybrid systems (Indicator 7.a.1), 2000-2019**



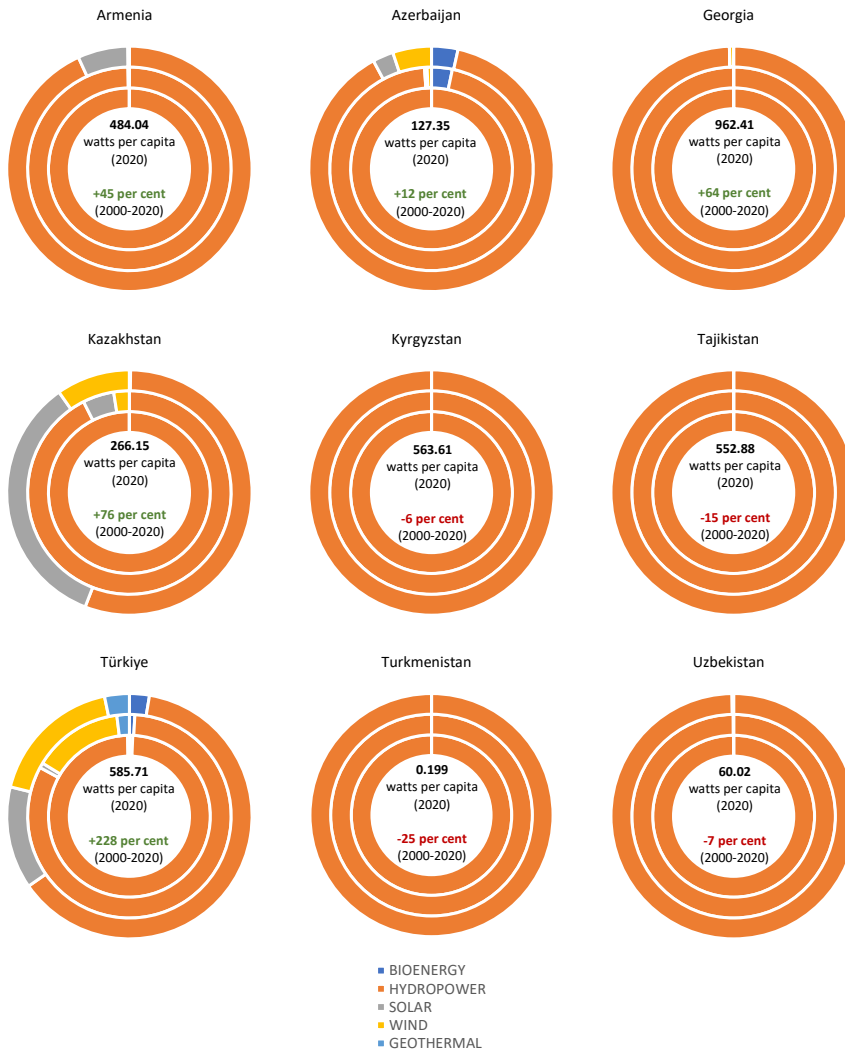
Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

**Expanding infrastructure and upgrading technology for supplying modern and sustainable energy services for all in developing countries**

As shown in Figures 2 and 3, the UNECE region has seen an increase of renewable energy technologies deployment in 2000-2015, though the dynamics are uneven across member States. In all cases, the renewable energy mix per capita in 2020 was dominated by hydropower (89 per cent of total installed renewable energy-generating capacity in developing countries per capita), followed by a substantial margin by solar (5.7 per cent, of which almost half of the capacity was located in Kazakhstan), wind (4.0 per cent, of which more than three-quarters were installed in Türkiye) bioenergy (0.6 per cent, where three-quarters were installed in Türkiye), and geothermal (0.5 per cent, in Türkiye) (Figure 8).



**Figure 8. Installed renewable energy-generating capacity in developing countries (watts per capita) (Indicator 7.b.1)**



Source: based on SDG Indicators Database, see : <https://unstats.un.org/sdgs/dataportal/database>

**Particularly important interlinkages with other SDGs in the region**

UNECE, as a platform for governments to cooperate and engage with all stakeholders on norms, standards and conventions, takes a multisectoral approach to tackle the interconnected challenges of sustainable development in an integrated manner with a transboundary focus, thus helping devise solutions to shared challenges. It therefore supports and maintains partnerships (SDG 17)

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between stakeholders including governments, international and regional organizations, businesses, academia and civil society as driving force for its work. This covers three main strategic areas:

1. Improving connectivity within the region (SDGs, 7, 8, 9, 11, 13)
2. Reducing environmental pressures and using resources more sustainably (SDGs 3, 6, 7, 12, 13, 15)
3. Contributing to creating more dynamic and resilient economies (SDGs 7, 8, 9, 11, 13)

UNECE promotes women’s economic empowerment and mainstreaming of gender equality in all its activities (SDG 5).

Key areas of UNECE support to countries to achieve SDGs is shown in Figure 9.

**Figure 9. UNECE and the SDGs**



Source: <https://unece.org/unece-and-sdgs-4>

Clearly, energy is fundamental to achieving many goals of the 2030 Agenda, though it is argued that it might negatively impact some of them, especially if the complexity of certain interactions and interlinkages, such as food-energy-water nexus, is not taken into due account.

## II. Policy Implications/Recommendations

Commented [BN6]: Achievement of universal access to clean cooking should also be included

UNECE acknowledges that the achievement of SDG7 is fundamental for the implementation of all other SDGs. To build energy systems that are more secure, affordable, and environmentally sustainable, the following high-level policy recommendations are proposed:

- Implement energy efficiency solutions immediately – Energy efficiency solutions should be implemented to the greatest possible extent across both supply and demand sides. Solutions that will enhance energy efficiencies across industry, buildings, and transport sectors, energy generation and transmission, as well as agrifood systems<sup>3</sup> should be scaled and deployed widely;
- Digitalize the energy systems – Capitalize on opportunities arising from improved digital literacy and deployment of digital solutions throughout the transition process and across all layers and stakeholders of the energy systems. Digitalization has the potential to make energy systems more efficient, more resilient, and more capable of meeting the trajectory needed to limit global warming;
- Diversify the energy supply – Energy supply sources of both the ECE region and the individual member States should be diversified to enhance energy security and avert future supply and price shocks. In particular, countries should promote investment in strengthening the power grid for greater efficiency and in enabling increased penetration of variable renewable energy, as well as in cross-border interconnections;
- Build a workforce to deliver on energy transition – Address the skills and labour shortage to create the next generation of qualified experts that can deploy and maintain clean energy technologies;
- Implement a shared principles-based, integrated, sustainable resource management framework - Tools such as the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) should be applied to minerals, energy sources, injection projects including carbon and hydrogen storage, anthropogenic resources (residues and wastes, including from agriculture and agrifood systems), and groundwater;
- Integrate circular economy considerations into decision-making – The transition towards a greener energy system must encourage increased circularity of materials and resources and reparability of goods. In that context, it further must be assured that the production and use of fossil fuels that are impossible to replace in the short- and medium-term, take place efficiently and with the application of technologies that reduce their carbon footprint;
- Adopt the principles of just transition – The transition process must be just and inclusive, aiming at finding the right balance between member States' on:
  - (i) Goals and Targets of the 2030 Agenda for Sustainable Development;
  - (ii) National energy security concerns;
  - (iii) Quality of life and other social ambitions;
  - (iv) A rights-based approach that protects minorities, Indigenous Peoples, and local communities from the violation of their rights in the pursuit of industrial activities that are part of the energy transition;
  - (v) Environmental, social, and economic objectives.
- Recognize that there is not a “one-size-fits-all” approach – It is recommended to align the transition with the capabilities and needs of individual member States, taking into account their endowment of natural resources, their technological and industrial base, their

Commented [BN7]: +Countries should promote investment in strengthening the grid for greater efficiency and increased penetration of variable renewable power and promote cross-border interconnections

<sup>3</sup> Agriculture is both energy consumer and can be energy feedstock supplier. It is argued that there is a lot of room for increasing energy efficiency through well-set resource management.

aspirational socio-economic model, cultural heritage, as well as their legal and regulatory structures;

- Enhance the linkages between energy and agrifood systems – Promoting investment in renewable energy solutions and adopting new holistic approaches such as integrated food-energy systems and water-energy-food-land nexus, which minimize competition and leverage synergies in water and land use, can directly advance energy and food security, while also contributing to job creation, gender equality, and climate resilience and adaptation.
- Acknowledge that all technologies play a role – To progress with the transition across the ECE region simultaneously recognizing that each member State chooses own technological pathway, ECE countries need to cooperate and develop technically non-discriminatory regulatory frameworks and financing mechanisms providing resources for the necessary investments region-wide;
- Address behavioural barriers – Although the technologies and capabilities are in place to achieve more resilient energy systems, this process does not happen fast enough. One of the crucial factors, and the missing link, is human psychology. To apply skills and use the full potential of technology, psychological aspects need to be taken into account, and individual mental roadblocks that hinder the successful implementation and also harnessing organizational and behavioural optimization potentials should be recognized and overcome.

### III. References (if relevant)

\*If applicable, examples of best practices, lessons learned, policy solutions, and innovative ways to engage and mobilise stakeholders and leadership commitments, may be included throughout the document.