

Romania

Submitted on 14 December 2023

Summary of main findings

Metric	Value	Further information																																
Overall goal of the LTS	Climate neutrality in 2050	<ul style="list-style-type: none"> The LTS's analysis includes all the main greenhouse gases. The LTS's analysis covers all domestic sectors, including LULUCF. The LTS's analysis covers only domestic aviation and navigation. The LTS provides for a phase-out of all coal and lignite-powered capacities by 2031. Decarbonisation scenarios consider the Carbon Capture Storage and Use (CCUS) for industrial sectors and an increase of nuclear capacities. 																																
Scenarios presented in the LTS	The LTS considers 3 possible scenarios: the reference scenario, the middle scenario and Romania neutral scenario. The latter aims to achieve climate neutrality in 2050, by reducing the net emissions with 99% compared to the 1990's level. This scenario is the one selected by the Romania to be implemented by 2050.																																	
GHG reductions	<p>Modelling results: GHG emission reductions by 2050 compared to 1990 level (including removals) - 99% (or 3.1 MtCO₂-eq) (under the neutral scenario)</p> <p>Target: The LTS includes indicative targets for 2030, 2040, and 2050.¹</p>	<p>Emission projections by sectors:</p> <table border="1"> <thead> <tr> <th>MtCO₂-eq</th> <th>2030</th> <th>2040</th> <th>2050</th> </tr> </thead> <tbody> <tr> <td>Power</td> <td>12.841</td> <td>2.062</td> <td>1.122</td> </tr> <tr> <td>Transport</td> <td>17.516</td> <td>9.054</td> <td>2.251</td> </tr> <tr> <td>Buildings</td> <td>9.141</td> <td>5.491</td> <td>2.046</td> </tr> <tr> <td>Industry</td> <td>19.559</td> <td>15.189</td> <td>9.442</td> </tr> <tr> <td>Agriculture</td> <td>18.989</td> <td>18.628</td> <td>18.195</td> </tr> <tr> <td>LULUCF</td> <td>-32.412</td> <td>-31.891</td> <td>-31.478</td> </tr> <tr> <td>Waste</td> <td>3.579</td> <td>2.293</td> <td>1.386</td> </tr> </tbody> </table>	MtCO ₂ -eq	2030	2040	2050	Power	12.841	2.062	1.122	Transport	17.516	9.054	2.251	Buildings	9.141	5.491	2.046	Industry	19.559	15.189	9.442	Agriculture	18.989	18.628	18.195	LULUCF	-32.412	-31.891	-31.478	Waste	3.579	2.293	1.386
MtCO ₂ -eq	2030	2040	2050																															
Power	12.841	2.062	1.122																															
Transport	17.516	9.054	2.251																															
Buildings	9.141	5.491	2.046																															
Industry	19.559	15.189	9.442																															
Agriculture	18.989	18.628	18.195																															
LULUCF	-32.412	-31.891	-31.478																															
Waste	3.579	2.293	1.386																															
Renewable Energy Sources	<p>Modelling results: Shares of renewables in gross final energy consumption:</p> <ul style="list-style-type: none"> 2030: 36.2% 2040: 65.2% 2050: 86.1% <p>(under the neutral scenario)</p>	<p>Main drivers and features:</p> <ul style="list-style-type: none"> RES in the power sector is expected to reach around 80% due to a vast increase in solar, wind, and hydrogen capacity. RES in transport is expected to reach a 94.8% in 2050, from a 2030 milestone target of 29.8%. RES in heating and cooling will increase from a target of 36.3% in 2030 to 75.8% in 2050. In terms of technologies, by 2050, the most important role will be played hydrogen (27%), solar (23%), and wind (17%). 																																
Energy efficiency	<p>Modelling results: FEC: 17,168 Ktoe PEC: 26,568 Ktoe (under the neutral scenario)</p>	<p>Main drivers and features:</p> <ul style="list-style-type: none"> To achieve carbon neutrality by 2050, primary energy consumption must decrease by 13%, 																																

¹ 49.6 and 21.1 MtCO₂-eq by 2030 and 2040, corresponding to a reduction of 78% and 91% to 1990 level, respectively.

Metric	Value	Further information
		<p>and final energy consumption should drop by 26%, compared to 2030 targets.</p> <ul style="list-style-type: none"> Achieving this involves implementing efficient technologies, improving building energy performance, establishing high-efficiency cogeneration plants for heating and cooling.
Estimated investment needs	<p>The estimated investment need include (€ bn):</p> <p><i>Energy production</i></p> <p>2023-2030: 17,4 2031-2040: 26,6 2041-2050: 18,8</p> <p><i>Road Transport, Buildings, Industry</i></p> <p>2023-2030: 558,3 2031-2040: 724,4 2041-2050: 786,4</p>	<ul style="list-style-type: none"> The total investment needs are more than 1.5 times larger than the reference scenario. This is due to a higher rate of electrification of the demand sectors and hydrogen use. The investments concerning energy production will target mainly new PV and wind facilities. Both the neutral and middle scenarios include significant investments for the construction of new nuclear power capacities in 2026-2035. For the 3 sectors with the largest energy demand (road transport, buildings, and industry), investments are aimed, mainly, at procuring and installing new, high-efficiency machines, technologies, and equipment, as well as thermal renovation and buildings performance improvement.
Socio-economic impacts of transition	Yes	<ul style="list-style-type: none"> The socio-economic impacts of green jobs have been considered in relation to renewable energy technologies (i.e. more than 100K new green jobs by 2050 under the neutral scenario).
Adaptation Policies and Measures	Yes	<ul style="list-style-type: none"> Romania is currently revising its National Strategy on Adaptation to Climate Change for 2023-2030 and developing the National Action Plan for its implementation. Broad policies and measures on adaptation have been provided for key sectors.
Public consultation	Yes	<ul style="list-style-type: none"> A public consultation was conducted to gather feedback. A summary of the feedback has been provided as a separate document.
Legal status of the LTS and targets	Not binding	<ul style="list-style-type: none"> The LTS does not mention that the targets are legally binding and, at the time of writing this evaluation, there are no national laws that make the specific targets binding.

Overall completeness of the LTS

- According to the Romania Neutral scenario, which is the one chosen to develop the LTS strategy, Romania aims at becoming climate neutral in 2050. The removal of the remaining 1% (3 MtCO₂-eq) of GHG emissions in 2050 will be subject to further analysis. .
- In general, the strategy is developed in detail and projections have been completed up to 2050.
- The LTS covers all the mandatory elements, although the use of tables would have increased its readability by allowing to gather all the necessary information by sector and GHG gases.
- The LTS also includes most of the non-mandatory contents. Public consultations were included in the development of the LTS, but a summary of the consultation results is not provided.
- The LTS socio-economic impact assessment is limited only to new green jobs and does not consider other dimensions such as possible negative impact on energy intensive sectors, skill mismatch, energy poverty, quality of urban living, or energy security.