

Luxembourg

Submitted on 4 November 2021

Summary of main findings

Metric	Value	Further information																								
Overall goal of the LTS	Climate neutrality by 2050	- The goal includes all main greenhouse gases.¹ - The goal covers all domestic sectors.² It does not specify whether it includes international aviation. - Remaining emissions in 2050 will be compensated by carbon sinks. - Green hydrogen will play a key role in sectors that otherwise are difficult to decarbonise.																								
Scenarios presented in the LTS	The LTS is not supported by scenario modelling. A climate neutral scenario is mentioned, but it is not quantified in the LTS. ³																									
GHG reductions	Target: GHG emission reductions by 2050 compared to 1990 (including removals): -100% The LTS builds on 2030 and 2040 milestones included in the NECP and national climate law	Emission projections by sectors: <table> <tr> <th>Mio.tCO₂ eq</th><th>2030</th><th>2050</th></tr> <tr> <td>Power</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>Industry</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>Transport</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>Buildings</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>Agriculture</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>Waste</td><td>n.a.</td><td>n.a.</td></tr> <tr> <td>LULUCF</td><td>n.a.</td><td>n.a.</td></tr> </table> <i>Note: The LTS refers to the GHG reduction trajectories of the NECP and the targets set by the national climate law. The climate law defines the climate neutrality objective by 2050 and the -55% non-ETS GHG reduction target by 2030 and it introduces sectoral targets for 2030.</i>	Mio.tCO ₂ eq	2030	2050	Power	n.a.	n.a.	Industry	n.a.	n.a.	Transport	n.a.	n.a.	Buildings	n.a.	n.a.	Agriculture	n.a.	n.a.	Waste	n.a.	n.a.	LULUCF	n.a.	n.a.
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Renewable Energy Sources	Target: Share of renewables in gross final energy consumption in 2050: 100%	Main drivers and features: - The NECP targets a 25% share in RES by 2030. - The LTS reports that, in 2020, 81% of the domestic electricity production was from renewable sources. - Reliability of renewable energy system to be ensured by sectoral coupling and H2 technologies. - Interconnections with neighbouring countries to play a key role in renewable energy supply.																								
Energy Efficiency	n.a.	Main drivers and features: - The NECP targets a reduction of 40-44% of final energy consumption by 2030 compared to the 2007 reference scenario. - The LTS envisages full decarbonisation of the building stock by 2050.																								

¹ Although the LTS does not specify whether the goal includes all the main greenhouse gases, the [Luxembourg climate law](#) of 15 December 2020, which sets the objective of climate neutrality by 2050, provides for several definitions, including on "greenhouse gases", as the gases listed in *Annex II of Directive 2003/87/EC* establishing a greenhouse gas emission allowance trading system, and the other gaseous constituents of the atmosphere, both natural and anthropogenic, which absorb and reflect infrared radiation.

² Article 5 and Annex II of the [Luxembourg climate law](#) list the sectors covered by GHG emission target. International aviation and maritime are not mentioned.

³ The LTS specifies the main guidelines, horizontal and sectoral fields of action and strategic measures to reach climate neutrality by 2050.

Metric	Value	Further information
		The “energy efficiency first” principle to be applied horizontally in all policies related to the energy transition and in particular in infrastructure planning.
Estimated investment needs	n.a.	The LTS provides only qualitative description of investments. The LTS mentions the creation of the Luxembourg Sustainable Finance Initiative (LSFI), a public-private entity, bringing together the relevant actors in the field of sustainable finance and co-chaired.
Socio-economic impacts of transition	n.a.	The LTS does not provide a quantitative assessment. It recognises the need for a just transition and defines main guidelines to ensure a just transition for citizens and enterprises.
Adaptation Policies and Measures	Yes	The LTS refers to the 2018 national strategy for adapting to the effects of climate change⁴ but additional policies and measures are not reported.
Public consultation	Yes	A public consultation was carried out in 2021.⁵
Legal status of the LTS and targets	Yes	- The climate neutrality target for 2050 has become legally binding with the December 2020 Climate Law. - The Government approved the LTS in October 2021.

Overall completeness of the LTS

- The LTS defines a clear goal for Luxembourg, aiming to be climate neutral by 2050 at the latest.
- In general, the strategy is lacking of quantitative information. It builds on the NECP for the GHG reduction trajectories (only up to 2030/40). It refers to the December 2020 climate law which defines national targets for 2030 and 2050 and introduces sectoral targets for 2030. It specifies the main guidelines, horizontal and sectoral fields of action and strategic measures to reach climate neutrality.
- The LTS includes some mandatory contents (e.g. public consultation, national targets, historical emissions in buildings, transport, agriculture and LULUCF, decarbonisation options,). Gaps in mandatory elements are:
 - Projected emission reductions and enhancement of removals by 2050;
 - GHG and CO₂ intensity by 2050;
 - Emission reductions in 2050 for all sectors;
 - Emission reductions and removals in LULUCF;
 - Estimated investment needs;
 - Socio-economic impact assessment.
- The LTS includes some non-mandatory contents (e.g. share of renewable energy, general description of drivers and sectoral decarbonisation options and sustainable finance). However, there is no or little information on energy consumption by 2050, energy emission trajectories (beyond the information available in the NECP), expected emission reductions by industrial sectors, emissions and energy sources by transport type and Agriculture and LULUCF emissions by sources. Strategies related to research, development and innovation are somewhat included but information are very general.

⁴ https://environnement.public.lu/content/dam/environnement/documents/klima_an_energie/Strategie—Adaptation-Changement-climatique-Clean.pdf

⁵ It was open from 13.09.21 until 12.10.21, but no feedback was received.