

Executive summary

Luxembourg has made significant environmental progress ...

Luxembourg is a prosperous economy and financial centre, characterised by a strong international interdependence, an attractive labour market and a growing number of inhabitants and cross-border workers. Until the health crisis caused by COVID-19, its economic growth was well above that of the OECD area. In this context, the country has pursued an ambitious, cross-cutting environmental policy, with some objectives going beyond international and European commitments. The decline since 2005 in energy consumption, greenhouse gas (GHG) emissions and major air pollutants reveals a decoupling from economic growth. This goes hand in hand with a general improvement in air quality. Luxembourg has also caught up in terms of wastewater treatment and tripled the share of renewables in its electricity production.

... but it will have to redouble its efforts to meet future climate and air pollution targets

However, the Luxembourg economic model is beginning to show its limits. Progress is insufficient to alleviate ever-growing pressures and restore a natural environment conducive to biodiversity conservation. The carbon intensity of the economy remains among the highest in the OECD and energy supply remains dependent on fossil fuels. Energy consumption and GHG emissions started to rise again, showing that measures must be strengthened to achieve a 55% reduction in GHG emissions outside the European carbon market by 2030 (compared to 2005), and to achieve climate neutrality by 2050. Further efforts are also needed to eliminate remaining black spots of local pollution, to further reduce exposure to fine particulate matter that remains close to limit values, and to meet emission ceilings by 2030 for nitrogen oxides, volatile organic compounds and ammonia.

... and consolidate the results obtained in waste, materials and water management

Luxembourg encourages waste recovery and the use of secondary raw materials. The SuperdrecksKëscht system, which has made it a leader in the management of problematic waste, continues to develop. There is, however, a slowdown in progress that could jeopardize the achievement of the recycling targets for 2030 and the implementation of the "Luxembourg Zero Waste" strategy for a circular economy. In particular, an extension of extended producer responsibility and the use of synergies with the development of environmental technologies are necessary.

Luxembourg demonstrates a generally good quantitative management of water resources, but it will need to closely monitor the evolution of water demand in the coming years. Efforts to restore the ecological and hydro-morphological quality of watercourses must be pursued, and the risks of pollution from agricultural sources must be better managed.

Halting the decline in biodiversity requires accelerating the implementation of conservation policies ...

Nature conservation builds on an appropriate institutional, legislative and financial framework. However, biodiversity has been declining for more than forty years. Artificialisation of soils and landscape degradation caused by the intensification of agricultural practices, infrastructure development and urban sprawl are the main causes. Luxembourg is the most highly fragmented country in Europe. The late adoption of the second National Plan for Nature Protection (PNPN) and the delay in the implementation of concrete actions, including the completion of the Natura 2000 network and the network of ecological corridors, have hampered progress. To make up for this delay, Luxembourg has to promptly prepare the next PNPN, with specific objectives, monitoring indicators and increased resources. It will also need to complete the implementation of the management plans for Natura 2000 sites and endangered species.

...and to fully integrate biodiversity into sectoral policies

Integrating biodiversity into policies and decisions on the country's development (transport, land use planning, agriculture, etc.) will be essential. It will also be necessary to support the transition to organic farming and to set up a programme for assessing the socio-economic and cultural value of ecosystem services. This will have to go hand in hand with a review of the costs and benefits of all economic instruments used in biodiversity management or impacting biodiversity, including biodiversity contracts and agricultural and forestry subsidies. Luxembourg has recently renovated its ecological compensation system by introducing ecopoints that give a monetary value to the ecological value of biotopes, and by creating land reserves serving as "pools" for compensation measures.

Reorienting the economy towards a more sustainable model requires more coherent policies and strengthened compliance controls ...

Luxembourg has a solid legal and institutional framework for conducting and coordinating its environmental and sustainable development policies. However, as in other countries, ensuring policy coherence for green growth and sustainable development remains a challenge, particularly in fiscal policy and in the transport, housing and agriculture sectors. One measure that could help is the "sustainability check" of draft laws and regulations foreseen in the Third National Plan for Sustainable Development. Collaboration on compliance monitoring between environmental, water and nature protection administrations could also be strengthened, with increased resources and a proactive planning of inspections based on risk rather than in response to complaints and incidents.

... greener taxation and stronger price signals

Luxembourg has so far made little use of its tax system to achieve environmental objectives. Taxes on road fuels are the main source of environment-related tax revenue. Due to lower tax rates than in neighbouring countries, about 70% of fuel is sold for vehicles not registered in Luxembourg (heavy goods vehicles in transit, cross-border commuters and, to a lesser extent, fuel tourism). Tax advantages for fuel consumption (in agriculture, electricity production and heating) and the generally low cost of energy provide little incentive to invest in renewable energy and energy efficiency. The carbon price signal is among the weakest in OECD European countries.

In recent years, the country has tried to put things right. The introduction of specific carbon pricing announced for 2021 is welcome. It will apply to all petroleum products and natural gas, with an initial price of EUR 20 per tonne of CO₂. The gradual increase, from 2019 onwards, of the tax rates on fuels, especially

diesel, is also a step in the right direction, but may not be enough to curb fuel sales to non-residents. Taxes on road fuels should be increased further to bring them closer to those of neighbouring countries, and the excise rate on diesel should be raised to match the petrol rate. This would bring benefits in terms of GHG emissions, air pollution and road congestion. Losses in revenue due to lower fuel consumption could be compensated by increased use of environmental taxation as part of a broader tax reform. Luxembourg should also introduce a systematic screening and review of potentially environmentally damaging subsidies.

The country can capitalise on its advances in eco-innovation ...

Since 2010, Luxembourg has been a European leader in eco-innovation thanks to increased public funding for research and development, numerous subsidies for environment-related investments and flagship initiatives such as "PRIME House", "Clever akafen" (Buy Smart) and the Climate Pact with municipalities. However, it is not clear whether all financial support is achieving the desired environmental benefits; their effectiveness could be enhanced. The internal market for "green" goods and services could also be further developed, in particular by acting on the demand side with a clearer policy for green public procurement and stronger price signals for sustainable consumption patterns.

... and is very well placed to develop green and sustainable finance

The Luxembourg Green Stock Exchange, created in 2016, lists half of the world's market for green, sustainable and social bonds. The government committed to develop a national green finance strategy and is active internationally in this area. It could go further: strengthen the legal framework to account for environmental risks and impacts in investment decisions, broaden its scope beyond climate finance (e.g. biodiversity, circular economy), and better exploit synergies with financial technologies (FinTech) and foreign direct investment. In order to ensure the credibility of green financial products and avoid "greenwashing", it should also develop indicators to monitor the environmental impact of investments financed by these products. The climate framework law offers the opportunity to enshrine in legislation the commitment under the Paris Agreement to align capital flows with climate objectives.

Mobility is a major environmental and economic challenge

As a crossroads for goods traffic and a pole of attraction for employment in the Greater Region, Luxembourg attracts every day more than 200,000 cross-border commuters and a dense transit road traffic. This comes with problems of road saturation and air pollution. The vast majority of personal journeys are made by car. More than half of greenhouse gas emissions stem from transport.

To meet mobility needs while improving air quality, the Sustainable Mobility Strategy updated in 2018 (Modu 2.0) sets welcome targets. The aim is to rebalance the modal split and encourage active travel modes (walking, cycling). The country has invested heavily in public transport, rail infrastructure, low-emission buses, park-and-ride facilities, multimodal platforms and bicycle paths. In March 2020, public transport became free of charge in a bid to induce a modal shift. This will have to be accompanied by a better service quality and parking management, the main factors in the choice between private cars and public transport. With the prospect of a private car fleet consisting of almost half of electric vehicles by 2030, the purchase of such vehicles is supported financially and a network of charging stations is being deployed.

Making mobility more sustainable requires a strong collective commitment and coherent incentives

To achieve the country's sustainable mobility objectives, a strong commitment from all actors (state, municipalities, employers, citizens) and an effective cooperation with neighbouring countries and within the European Union is needed. It will also be necessary to exploit the synergies between measures concerning transport, housing, spatial planning, air quality, climate and energy efficiency. This should go hand in hand with an overhaul of the mix of economic instruments applying to transport (fuel taxes, vehicle subsidies and taxes, company car taxes, commuting allowances, road charges) to align it with the objective of sustainable mobility. Finally, the implementation of the package of measures, including free public transport, will need to be closely monitored to assess its real effects on modal split and air quality.



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