The Grand Duchy of Luxembourg

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Introduction

In 2020, The Grand Duchy of Luxembourg ("Luxembourg") issued a sustainability bond aimed at financing green and social expenditures to provide positive environmental and social outcomes. Sustainalytics provided a Second Party Opinion[1] on the Luxembourg Sustainability Bond Framework (the "Framework"). In July 2021, Luxembourg engaged Sustainalytics to review the projects funded through the issued sustainability bond and provide an assessment as to whether the projects met the Use of Proceeds criteria and the Reporting commitments outlined in the Framework.[2]

Evaluation Criteria

Sustainalytics evaluated the projects and assets funded between 2018 and 2020 based on whether the projects and programmes:

1. Met the Use of Proceeds and Eligibility Criteria outlined in the Grand Duchy of Luxembourg Sustainability Bond Framework; and
2. Reported on at least one of the Key Performance Indicators (KPIs) for each Use of Proceeds criteria outlined in the Grand Duchy of Luxembourg Sustainability Bond Framework.

Table 1 lists the Use of Proceeds and Eligibility Criteria while Table 2 lists the associated KPIs.

Table 1: Use of Proceeds, Eligibility Criteria,

Use of Proceeds	Eligibility Criteria
Green Buildings	• Construction and acquisition of energy efficient buildings • Renovation of existing buildings
Energy Transition	• Renewable energy: Construction and operation of electricity generation facilities supporting a transition to a net-zero emissions economy • Energy efficient appliance and lighting
Low Carbon Transport	• Low carbon transportation including: - Public transport - Infrastructure for low carbon transport
Protection of the Environment	• Waste management • Protection and restoration of healthy ecosystems and their services
Water and Waste Water Management	• Support the development of water and wastewater management systems allowing to significantly improve energy efficiency and/or water quality
Climate Finance and R&D	• Mobilise and support investment in international climate finance • Support research, development and innovation focusing on climate change mitigation and adaptation
Access to Essential	• Provide access to essential healthcare infrastructure and services for all by:

[1] Grand Duchy of Luxembourg Sustainability Bond Framework Second-Party Opinion, available at: https://www.sustainalytics.com/corporate-solutions/sustainable-finance-and-lending/published-projects/project/the-grand-duchy-of-luxembourg/grand-duchy-of-luxembourg-sustainability-bond-framework-second-party-opinion/grand-duchy-of-luxembourg-sustainability-bond-famework-second-party-opinion-pdf
[2] The Grand Duchy of Luxembourg Sustainability Bond Framework is available on the website of the Luxembourg State Treasury at: https://te.public.lu/fr/dette_publique/moyen_long_terme/Emprunt_sustainable.html.

Services - Healthcare	- Extending healthcare capacities - Improving the quality of the existing healthcare facilities
Access to Essential Services - Education	• Providing access to essential educational infrastructure and services for all by: - Extending educational capacities - Improving the quality of the existing educational infrastructure and equipment
Access to Essential Services-Social Inclusion	• Provide access to essential services for population groups at risk of social exclusion by: - Providing access to essential infrastructure and services to vulnerable population - Providing financial assistance to vulnerable population
Affordable Housing	• Provide access to affordable housing to vulnerable population by: - Extending the social and affordable housing supply - Improving the quality of the existing social and affordable housing facilities - Providing financial assistance to facilitate access to housing and ownership
Employment Generation and Socioeconomic Advancement and Empowerment	• Support employment generation and socio-economic advancement and empowerment, including but not limited to: - Employment generation and retention initiatives - Support to Social and Solidarity Economy - Support to the SMEs[3] in the event of extreme events (e.g. natural disaster, extreme weather events, public health disaster...)

Table 2: Key Performance Indicators

Use of Proceeds	Key Performance Indicators
Green Buildings	• Estimated ex-ante annual energy savings (in MWh) • Annual GHG emissions in tons of CO2 equivalent saved
Energy Transition	• Renewable Energy Capacity (in MW) • Number of efficient street lighting appliances and systems installed • Estimated ex-ante annual energy savings (in MWh) • Estimated annual GHG emissions reduced/avoided (in tons of CO2 equivalent)
Low Carbon Transport	• Number of low carbon vehicles deployed by type of transport (e.g number of trains/trams) • Number of users served • Other relevant indicators depending on the considered projects
Protection of the Environment	• Volume of waste collected and disposed or treated (tons) • Surface of protected or restored areas • Other relevant indicators depending on the considered projects
Water and Waste Water Management	• Volume of water collected and disposed or treated (m3) • Number of users served • Other relevant indicators depending on the considered projects
Climate Finance and R&D	• Number of investment funds that have been launched with the support of Climate Finance expenditures • Total Net Asset Value of the investments funds

[3] Small, medium, and micro-sized enterprises, as defined under EU recommendation 2003/361 : https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

	• Estimated annual CO_2 emissions avoided (in tons of CO_2equivalent) • Details of eligible R&D projects will be disclosed, where possible and taking into consideration intellectual property protection measures and know-how aspects
Access to Essential Services - Healthcare	• Number of healthcare infrastructures benefiting from the eligible expenditures, including a breakdown by location • Capacity/additional capacity (in number of beds and/or patients)
Access to Essential Services - Education	• Number of education infrastructures benefiting from the eligible expenditures, including a breakdown by type of infrastructures (schools, universities...) • Capacity/additional capacity (in number of students)
Access to Essential Services- Social Inclusion	• Number of social inclusion infrastructures benefiting from the eligible expenditures, including a breakdown by type of infrastructures • Capacity/additional capacity (in number of beneficiaries)
Affordable Housing	• Number of dwellings • When available, additional information may be provided regarding the energy performance of eligible buildings
Employment Generation and Socioeconomic Advancement and Empowerment	• Number of people benefitting from the eligible employment generation and retention initiatives, including a breakdown per type of initiatives/schemes considered • When available, additional information may be provided regarding the employment generation and retention initiatives beneficiaries (e.g. age, level of education) • When available, information may be provided regarding the Social and Solidarity Economy beneficiaries (e.g. number, type) • Number of SMEs impacted by the consequences of extreme events benefiting from the eligible expenditures

Issuing Entity's Responsibility

Luxembourg is responsible for providing accurate information and documentation relating to the details of the projects that have been funded, including description of projects, amounts allocated, and project impact.

Independence and Quality Control

Sustainalytics, a leading provider of ESG and corporate governance research and ratings to investors, conducted the verification of Luxembourg's Sustainability Bond Use of Proceeds. The work undertaken as part of this engagement included the collection of documentation from the Luxembourg Sustainability Bond Committee and the review of documentation to confirm the conformance with the Grand Duchy of Luxembourg Sustainability Bond Framework.

Sustainalytics has relied on the information and the facts presented by Luxembourg with respect to the Nominated Projects. Sustainalytics is not responsible nor shall it be held liable if any of the opinions, findings, or conclusions it has set forth herein are not correct due to incorrect or incomplete data provided by Luxembourg.

Sustainalytics made all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight over the assessment of the review.

Conclusion

Based on the limited assurance procedures conducted,[4] nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, the reviewed bond projects, funded through proceeds of Luxembourg's Sustainability Bond, are not in conformance with the Use of Proceeds and Reporting Criteria outlined in the Grand Duchy of Luxembourg Sustainability Bond Framework.

Detailed Findings

Table 3: Detailed Findings

Eligibility Criteria	Procedure Performed	Factual Findings	Error or Exceptions Identified
Use of Proceeds Criteria	Verification of the projects funded by the sustainability bond between 2018 and 2020 to determine if projects aligned with the Use of Proceeds Criteria outlined in the Grand Duchy of Luxembourg Sustainability Bond Framework and above in Table 1.	All projects reviewed complied with the Use of Proceeds criteria.	None
Reporting Criteria	Verification of the projects funded by the sustainability bond between 2018 and 2020 to determine if impact of projects was reported in line with the KPIs outlined in the Grand Duchy of Luxembourg Sustainability Bond Framework and above in Table 1. For a list of KPIs reported please refer to Appendix 2.	At least one KPI per Use of Proceeds criteria was reported.	None

[4] Sustainalytics limited assurance process includes reviewing the documentation relating to the details of the projects that have been funded, including description of projects, estimated and realized costs of projects, and project impact, which were provided by the Issuer. The Issuer is responsible for providing accurate information. Sustainalytics has not conducted on-site visits to projects.

Appendices

Appendix 1: Allocation Reporting by Eligibility Criteria

Between 2018 and 2020, Luxembourg raised €1.5 billion and invested €769 million in 65 projects across 3 green and 4 social categories. See below a summary of the reported allocated amount at category level.

Use of Proceeds Category	Sub-category	Allocated amount		
		2018	2019	2020
Low Carbon Transport	Public transport	€ 36,262,909	€ 35,502,137	€ 63,104,052
	Infrastructure for low carbon transport	€ 82,434,946	€ 91,828,319	€ 72,403,615
Water and Waste Water Management	Support the development of water and wastewater management systems allowing to significantly improve water quality	€ 21,617,003	€ 30,581,130	€ 12,373,662
Protection of the Environment	Protection and restoration of healthy ecosystems and their services	-	-	-
Access to Essential Services - Healthcare	Provide access to essential healthcare infrastructure and services for all	€ 25,454,576	€ 27,340,591	€ 45,454,415
Access to Essential Services - Education	Providing access to essential educational infrastructure and services for all	€ 19,487,752	€ 31,579,543	€ 45,511,651
Access to Essential Services- Social Inclusion	Provide access to essential services for population groups at risk of social exclusion	€ 18,218,290	€ 22,635,308	€ 20,533,404
Affordable Housing	Provide access to affordable housing to vulnerable population	€ 15,167,975	€ 26,704,393	€ 25,387,381
Total Allocated		**€ 218,643,451**	**€ 266,171,421**	**€ 284,768,181**
Unallocated Proceeds				**€ 769,583,053**
Total Proceeds Raised				**€ 730,416,947**

Appendix 2: Impact Reporting by Eligibility Criteria

Use of Proceeds Category	Indicators	Impact Reported		
		2018	2019	2020
Low Carbon Transport	Number of low carbon vehicles deployed by type of transport	8 trams	9 trams	11 trams
	Number of users served on new tram and train lines	5,752,704 users	7,230,837 users	5,180,667 users
	Length of new tram lines / new rail lines built	15.8 km	15.8 km	18.56 km
	Passenger-kilometers (pkm) on additional low carbon transport infrastructure	25,680,312 pkm	38,567,788 pkm	22,639,071 pkm
	Number of freight containers and semi-trailers (ITU) and tonnes transferred from road to rail transport	600,000 containers 127,448 ITU 3,186,200 tonnes transferred	600,000 containers, 133,863 ITU 3,346,575 tonnes transferred	600,000 containers 135,207 ITU 3,380,175 tonnes transferred
Water and Waste Water Management	Volume of water treated	-	-	15,584,926 m^3/year
	Total number of users served	15,346 population equivalent	16,551 population equivalent	169,951 population equivalent
	Sewage sludge anaerobic digestion and use of biogas for energy generation			3,850 tonnes of sewage sludge per year
Access to Essential Services - Healthcare	Number of institutions benefiting from these investments	18 institutions	18 institutions	18 institutions
Access to Essential Services - Education	Number of institutions benefiting from these investments	9 institutions	9 institutions	9 institutions
Access to Essential Services- Social Inclusion	Number of beneficiaries	237 people	1,012 people	2,786 people

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