

Luxembourg Sustainability Bond Report



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
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September

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Foreword

The Grand Duchy of Luxembourg is determined to continue to grow its role as one of the leading international financial centers in the world, placing sustainable finance at the forefront of its activities.

The Luxembourg Government actively develops initiatives and continuously seeks out opportunities to support the UN Sustainable Development Goals. In September 2020, Luxembourg thus published Europe's first sovereign sustainability bond framework, focusing on the environment as well as on the social aspects. The framework was the first of its kind and therefore established a blueprint for further potential sovereign sustainability frameworks, by closely following the draft EU Taxonomy eligibility criteria and the draft European Green Bonds Standard at the time, while necessarily being in line with the International Capital Markets Association Principles and Guidelines where relevant and feasible. The alignment of the framework (and of each of the allocation reports) has been independently assessed by Sustainalytics.

In accordance with the framework, the Grand Duchy of Luxembourg issued its inaugural EUR 1.5 billion sovereign sustainability bond, the Luxembourg Sustainability Bond, in September 2020. By doing so, Luxembourg was the first European as well as the first AAA-rated country worldwide to issue a sovereign sustainability bond. The demand for the bond largely exceeded the initial offer, underlying strong investor interest in this type of product.

Luxembourg was the first European as well as the first AAA-rated country worldwide to issue a sovereign sustainability bond.



The Grand Duchy of Luxembourg is now pleased to publish its second Sustainability Bond Report, covering the year 2021. This report provides details on the allocation and the impact of, in total, EUR 1.5 billion worth of green and social investments, for at least 65 projects, and gives detailed information on the allocation of over 331 million EUR in 2021. The full allocation of proceeds is planned to come to term at the end of the budget year 2022.

This report covers the fourth year of the shares of the projects financed by the Sustainability Bond. I am proud of the role Luxembourg plays in driving sustainable finance forward, thanks to different pioneering initiatives. This can, of course, not be done by the public sector alone and I would like to highlight the important role of investors and other market participants who actively support, promote and help innovate in sustainable finance.

Finally, I would like to thank the members of the Sustainability Bond Committee and the numerous contributors in all of the involved ministries and institutions for their work and dedication in making this second report possible. Allocation and impact reporting is indeed fundamental to ensure the necessary transparency underlying sustainable investment.

I believe the Report will provide a broad insight into the allocation and the impact of the projects the Luxembourg Sustainability Bond is (re-)financing.

Yuriko Backes
Minister of Finance

The following report is the second annual impact report of the Luxembourg Sustainability Bond (LSB) issued under the Luxembourg Sustainability Bond Framework. This report builds on what has been developed in the previous Sustainability Bond Report¹ covering the years 2018 to 2020. The information provided in this report is based as far as possible on existing public reports on the different green and social projects, as well as on direct interactions with the different ministries, project owners and project managers.

Covering the year 2021, this impact report is the result of the commitment of the bond issuer to provide a detailed breakdown of the impact project realisations. It helps to understand the specific environmental and social impacts of the eligible projects by quantifying them where possible. Apart from specific environmental and social impact indicators accompanying the eligible projects, this sovereign bond targets eight primary and nine secondary SDGs:



Introduction

¹ Refer to [Luxembourg Sustainability Bond Report 2018-2020](#)

Allocation Report

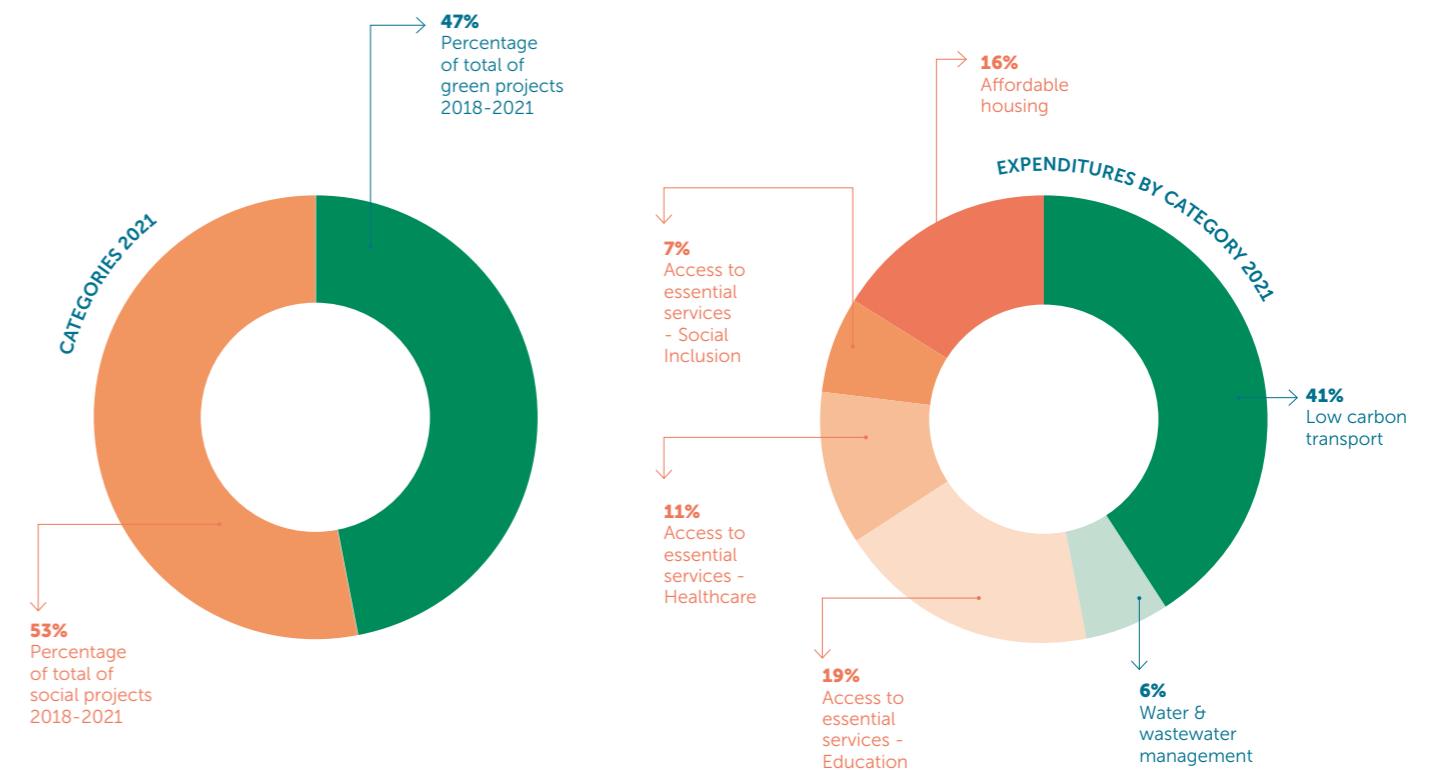
Out of the EUR 1.5 billion, a total amount of EUR 770 million have already been allocated during the years 2018 to 2020. During the year 2021, EUR 331 million have further been allocated among the 65 impact projects, covering 7 different categories (low carbon transport, water treatment, protection of the environment, education, healthcare, social inclusion, and affordable housing). For the year 2022, the unallocated amount of the Sustainability Bond adds up to around EUR 400 million.

For the sake of clarity and transparency, the Sustainability Bond Committee (SBC) decided to allocate the proceeds from the issued bond to specific projects instead of full state budget lines. On the one hand, this implies more workload for the impact definition and reporting process as well as for the allocation reporting. However, it allows a clearer identification of the allocation of the proceeds and underlines Luxembourg's aim for a maximum of transparency on the funded projects. One should bear in mind here that the Sustainability Bond does not necessarily cover entire projects, but mostly finances a share of the projects financed by the Luxembourg Government.

The COVID-19 pandemic has had significant impacts on the funded projects. Several projects have been delayed during the years 2020 and 2021 due to lockdowns, re-reduced activities or less availability of resources.

Moreover, the SBC was informed in September 2021 that the construction of a new hospital ("Südspidol") had been put on hold and that a significant delay is to be foreseen due to a new public tender that will have to be prepared. The Sustainability Bond Committee decided to stop financing the project through the Sustainability Bond and not to take into account expenses incurred after September 2021.

Overview of allocation amounts to green and social projects respectively and the expenditures per category of project.



3.1

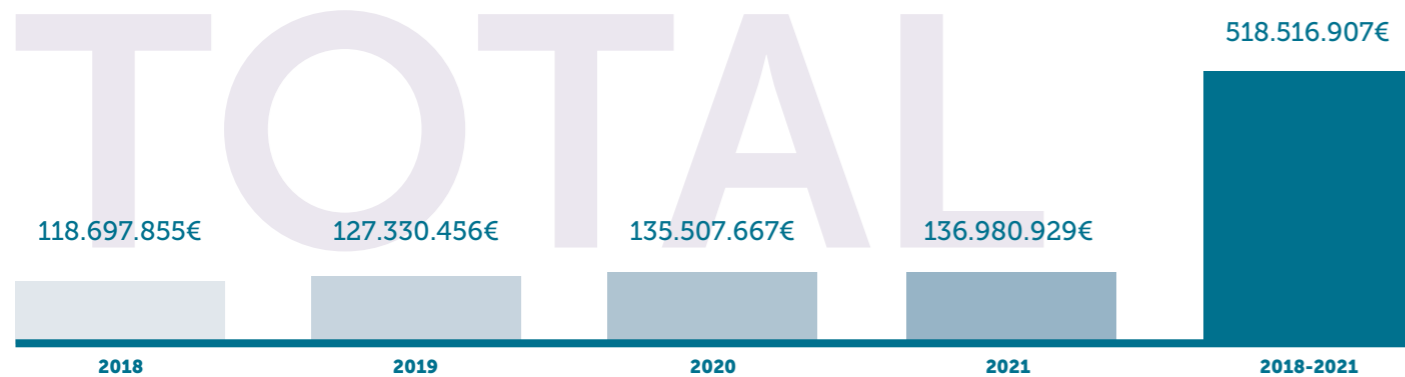
Allocation table

The following allocation tables provide an overview of how the funds of the Luxembourg Sustainability Bond have been allocated to the different relevant Government expenditures in the year 2021.

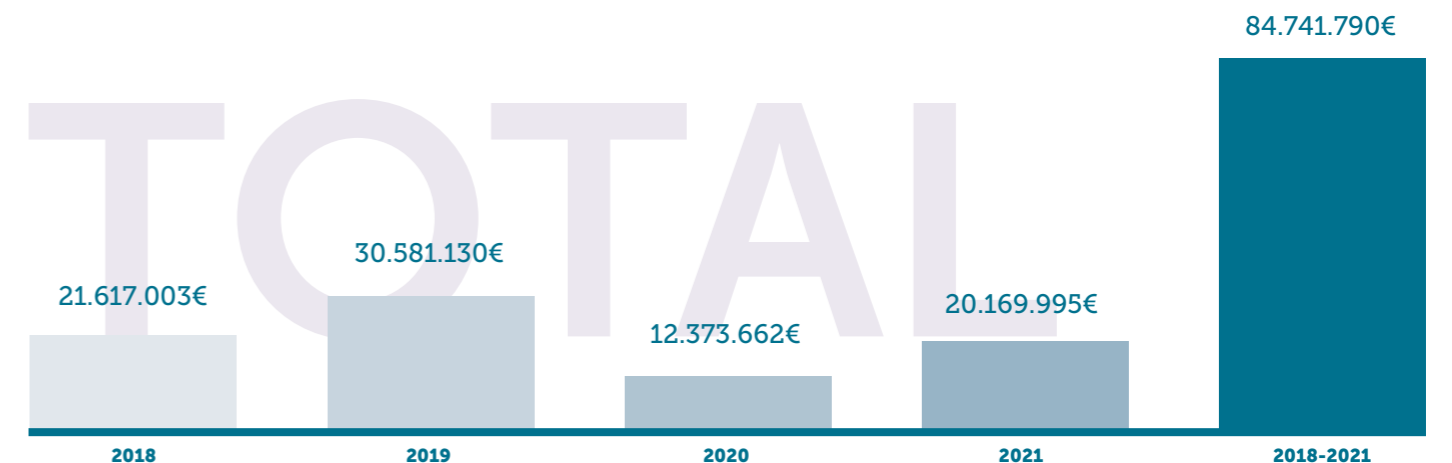


Low carbon transport						
	Project name	2018	2019	2020	2021	Total 2018-2021
Public transport	Luxembourg Tram (LuxTram) › Luxembourg City	36.262.909€	35.502.137€	63.104.052€	42.423.149€	177.292.247€

Infrastructure for low carbon transport	Construction of a new train line › Luxembourg City - Bettembourg	23.939.225€	31.673.194€	24.386.121€	21.128.273€	101.126.813€
	Adaptation of north side of the Luxembourg City train station › Luxembourg City	17.821.718€	15.524.605€	5.352.400€	2.180.834€	40.879.557€
	Construction of two new platforms at the Luxembourg City train station › Luxembourg City	3.732.512€	7.215.713€	11.351.553€	43.267.561€	65.567.339€
	Laying of second train tracks › Hamm-Sandweiler	19.415.334€	19.940.859€	5.540.480€	2.890.000€	47.786.673€
	Construction of a multimodal platform › Bettembourg	16.249.817€	8.450.377€	6.887.377€	2.623.305€	34.210.876€
	Modernisation of the train station › Rodange	1.276.340€	9.023.571€	18.885.684€	22.467.807€	51.653.402€



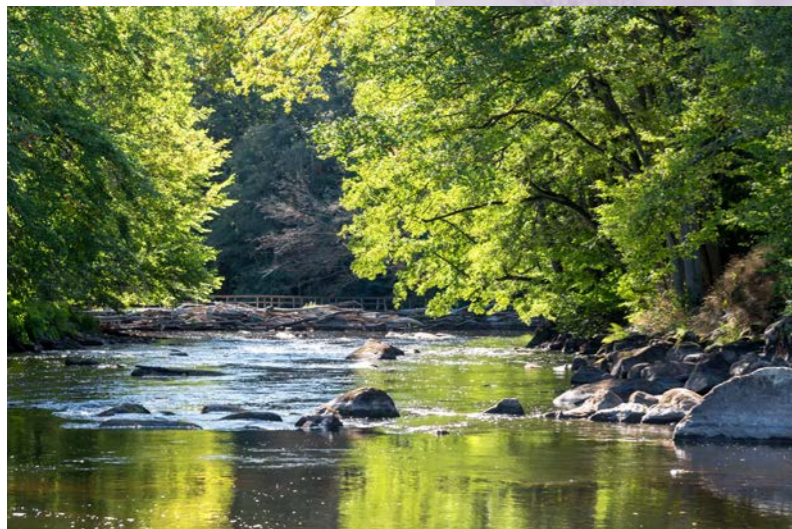
Water & wastewater management						
	Project name	2018	2019	2020	2021	Total 2018-2021
Support the development of water and wastewater management systems allowing to significantly improve water quality	Extension and modernization of the national drinking water treatment station (SEBES) › National Water Syndicate in Esch-sur-Sûre	3.500.000€	7.000.000€	7.000.000€	7.000.000€	24.500.000€
	Extension and modernization of the wastewater treatment plant › SIDEN in Blesbruck	10.895.498€	6.152.871€	- €	- €	17.048.369€
	Sanitation work in the Attert Valley › SIDERO in the Attert Valley	- €	4.851.427€	- €	2.065.135€	6.916.562€
	Evacuation and purification of wastewater generated by the municipalities of the Upper Moselle › AC Schengen in the Upper Moselle	864.094€	1.371.306€	701.433€	1.745.174€	4.682.007€
	Sanitation of the Lower Moselle with the construction of a new wastewater treatment plant › SIDEST at the Port of Mertert	5.601.954€	6.012.925€	95.550€	2.153.372€	13.863.801€
	Extension and modernization of the wastewater treatment plant › SIDEST in Uebersyren	755.457€	- €	127.764€	177.957€	1.061.178€
	Extension of the wastewater treatment plant › VdL in Beggen	- €	- €	- €	1.191.889€	1.191.889€
	Extension of the wastewater treatment plant › SIACH in Pétange	- €	5.192.601€	4.448.915€	5.836.468€	15.477.984€



Protection of the environment

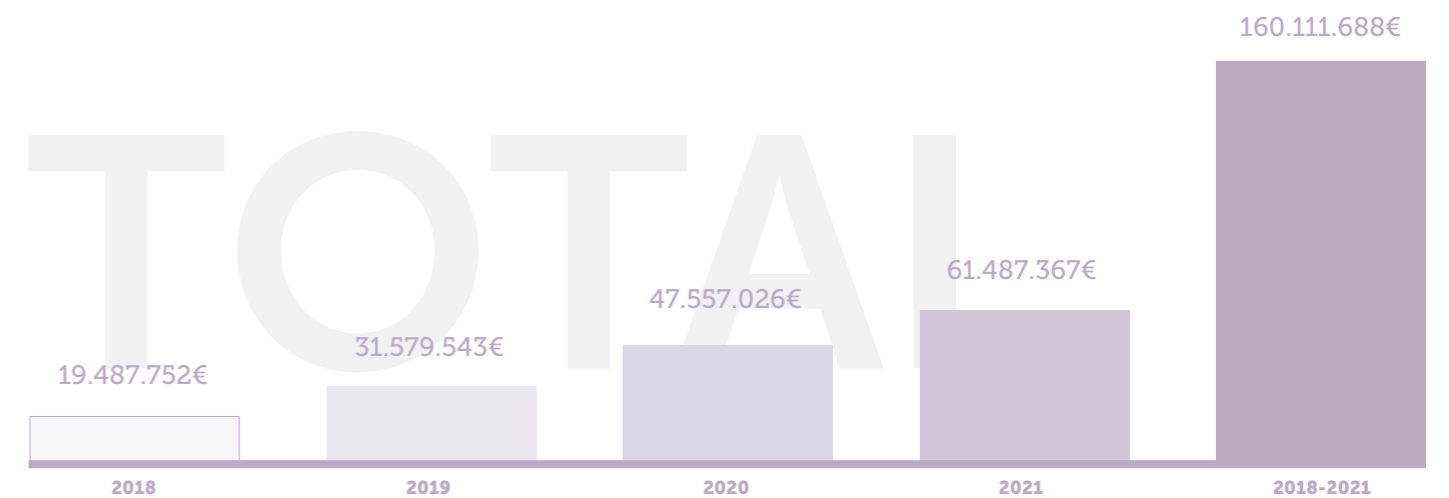
	Project name	2018	2019	2020	2021	Total 2018-2021
Protection and restoration of healthy ecosystems and their services	Ecological renaturation of the Pétrusse valley * › Luxembourg City	- €	- €	- €	- €	- €

*Expenses for this project were scheduled to be reported in the 2021 and 2022 reports, but have been reported to allocation report 2022.



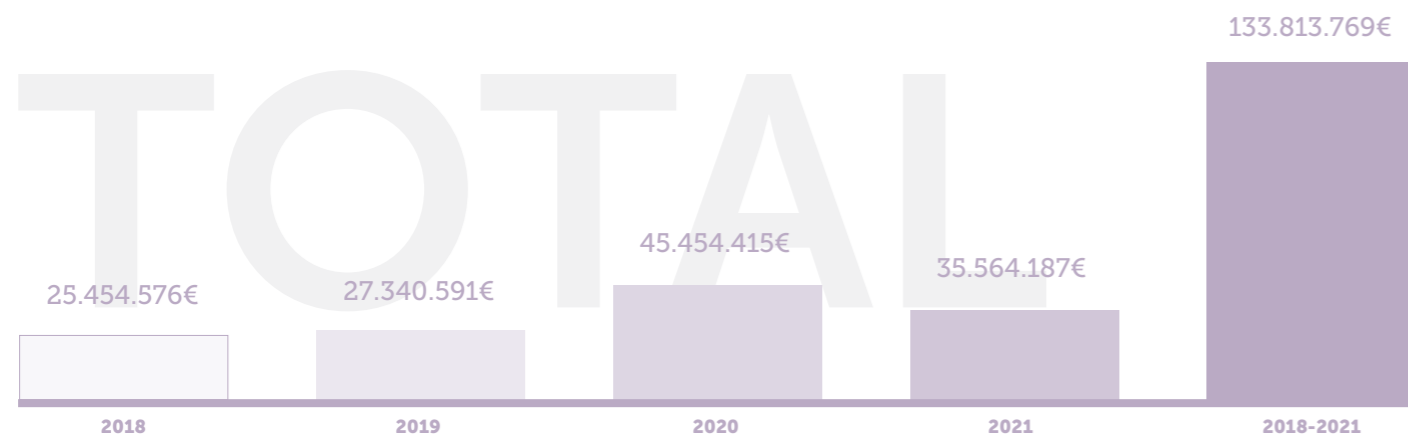
Access to essential services - Education

	Project name	2018	2019	2020	2021	Total 2018-2021
Providing access to essential educational infrastructure and services for all	Construction of a new school restaurant › Ecole privée Fieldgen	- €	190.004€	500.171€	2.128.382€	2.818.557€
	Construction of a new child care facility › Project Wobrecken in Esch-sur-Alzette	- €	- €	2.045.375€	- €	2.045.375€
	Construction of new child care facility › Bertrange	2.476.750€	- €	- €	- €	2.476.750€
	Construction of a new child care facility › Campus Berchem-Bivange	2.251.750€	- €	- €	- €	2.251.750€
	Construction of a new child care facility and elementary school › Belval-Sud	3.059.000€	- €	- €	- €	3.059.000€
	Construction of a new child care facility and elementary school › Project Helperknapp in Brouch	- €	3.066.750€	- €	- €	3.066.750€
	Construction of a new highschool › International School in Differdange (public)	5.931.320€	10.099.072€	20.003.874€	13.522.854€	49.557.120€
	Renovation of a highschool › Lycée Michel Rodange	3.032.280€	10.653.265€	13.076.187€	22.921.001€	49.682.733€
	Renovation of a highschool › Lycée Classique Diekirch, annexe Mersch	861.786€	5.253.875€	5.072.476€	7.587.010€	18.775.147€
	Construction of a new school and sports hall › Lycée Technique pour Professions de Santé	1.874.866€	2.316.577€	6.858.943€	15.328.121€	26.378.507€



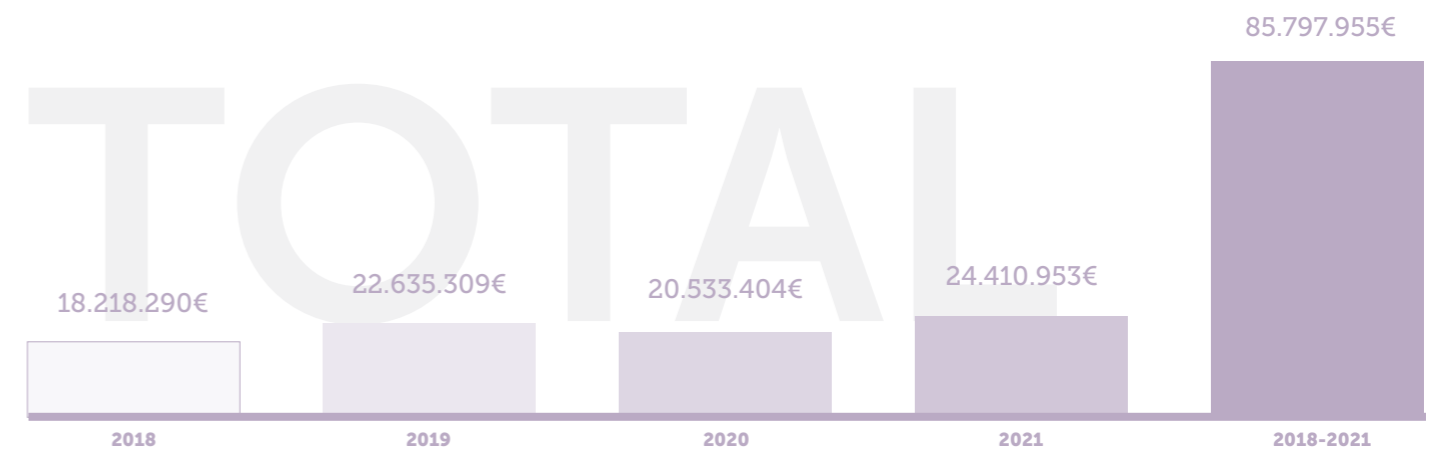
Access to essential services - Healthcare

	Project name	2018	2019	2020	2021	Total 2018-2021
Provide access to essential healthcare infrastructure and services for all	Obstetrics Maternity and Gynecology Center › Centre Hospitalier de Luxembourg (CHL)	767.383€	498.663€	103.192€	5.284€	1.374.522€
	Construction of a modular building with specialized pediatric beds * › Centre Hospitalier de Luxembourg (CHL)	- €	- €	- €	- €	- €
	Extension of the National Institute of Cardiac Surgery and Interventional Cardiology (INCCI)	398.001€	398.882€	498.327€	912.620€	2.207.830€
	New construction for the CHL Hospital and the National Institute of Cardiac Surgery and Interventional Cardiology (INCCI) › Centre Hospitalier de Luxembourg & INCCI	- €	8.420.435€	2.107.828€	5.529.567€	16.057.830€
	Construction of a floor tower for geriatric rehabilitation beds, an integrated dialysis center, the National Center for Specialized Ophthalmology and an elective orthopedic service › Hôpitaux Robert Schuman - Kirchberg	- €	- €	- €	1.780.901€	1.780.901€
	Extension of the national service of juvenile psychiatry › Hôpitaux Robert Schuman - Kirchberg	2.263.331€	3.498.997€	3.770.332€	5.941.912€	15.474.572€
	Construction of a medical center with 10 single maternity rooms, 1 endoscopy room and 1 outpatient medical-technical unit › Hôpitaux Robert Schuman - Kirchberg & Clinique Bohler	4.064.091€	323.300€	51.045€	70.044€	4.508.480€
	New construction with 4 care units, a day hospital and radiology › Hôpitaux Robert Schuman - Zithaklinik	12.605.664€	8.420.005€	9.151.774€	7.227.336€	37.404.779€
	Construction of a therapeutic center for adolescents in Putscheid › Centre Hospitalier Neuro-Psychiatrique	793.012€	1.353.085€	2.340.871€	624.376€	5.111.344€
	Construction of a new extension for geriatric reeducation and care › Hôpital Steinfort	- €	- €	75.856€	109.135€	184.991€
	Construction of the new hospital "Südspidol" › Centre Hospitalier Emile Mayrisch (CHEM) - Südspidol	- €	- €	20.458.049€	7.338.010€	27.796.059€
	Extension of the CHEM "Altbau 2" › Centre Hospitalier Emile Mayrisch (CHEM)	- €	- €	- €	2.320.414€	2.320.414€
	Extension of the hemodialysis service › Centre Hospitalier du Nord (CHdN)	4.563.094€	896.757€	221.145€	307.352€	5.988.348€
	Architectural measures to accommodate & installation of additional IRMs › all 4 hospital centers of the country	- €	2.734.900€	4.618.880€	1.172.424€	8.526.204€
	Increase in emergency rooms and daycare centers in the hospitals › all 4 hospital centers of the country	- €	795.567€	2.057.116€	2.224.812€	5.077.495€



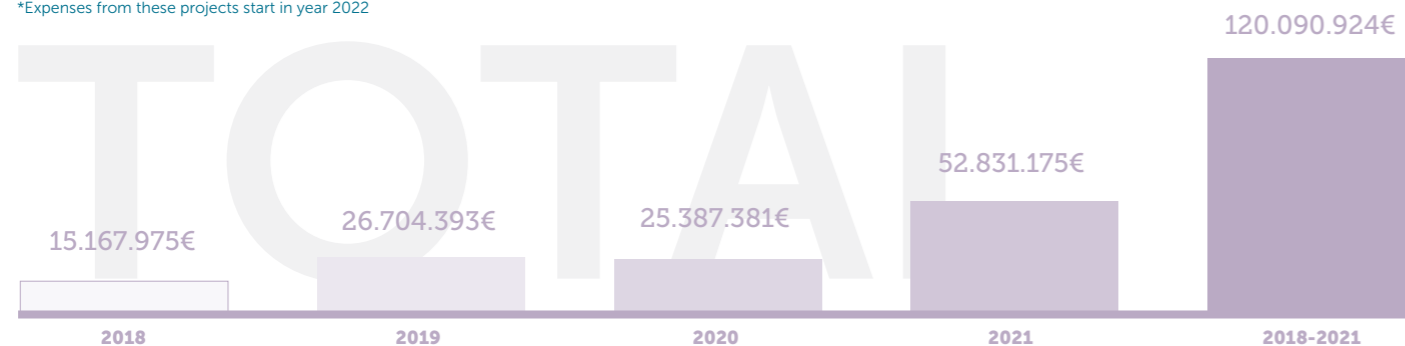
Access to essential services - Social inclusion

	Project name	2018	2019	2020	2021	Total 2018-2021
Provide access to essential services for population groups at risk of social exclusion	Reception centers for people having applied for or benefiting from international protection › Sanem / Mühlenbach / Bettembourg / Bridel / Capellen / Rodange / Luxembourg City	157.095€	3.357.988€	63.903€	49.320€	3.628.306€
	Reception center for homeless people & multifunctional emergency structure for people in need › Sandweiler, Building A + B	6.642.997€	4.538.043€	864.037€	51.072€	12.096.149€
	Construction, renovation and transformation of different properties to create a new residential home and day center for persons with disabilities › Ettelbrück	9.247.479€	6.933.983€	3.238.886€	829.864€	20.250.212€
	Construction of a care home for the elderly › Differdange	- €	3.934.371€	8.984.276€	11.809.470€	24.728.117€
	Construction of a care home for the elderly › Bascharage	696.751€	1.324.841€	4.143.928€	8.515.084€	14.680.604€
	Construction of a reception center › Project "Jongenheem" Maison Porte Ouverte	1.139.664€	1.432.875€	1.088.950€	955.820€	4.617.309€
	Construction of a reception center › Project "Tandel-Fouhren" (Municipality & Arcus ASBL)	334.304€	1.113.208€	2.149.424€	2.200.322€	5.797.258€

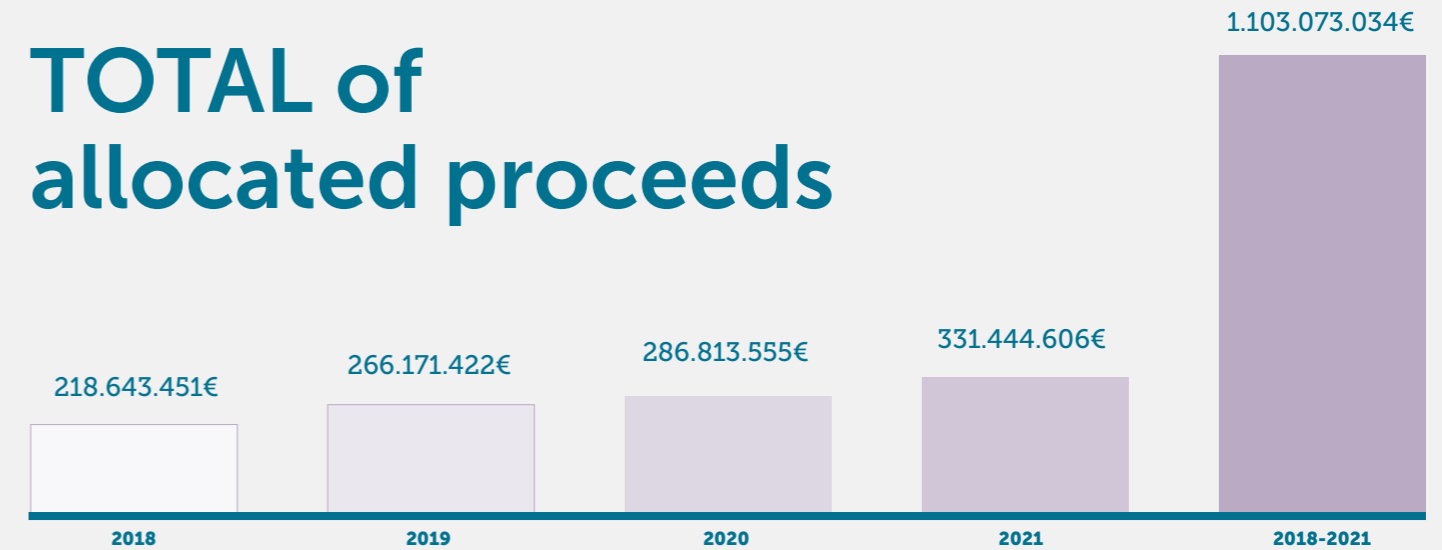


Affordable housing						
	Project name	2018	2019	2020	2021	Total 2018-2021
Provide access to affordable housing to vulnerable population	Construction of an innovative and sustainable village "Elmen": 292 rental units and 96 properties in Kehlen/Olm › Société Nationale des Habitations à Bon Marché - 030	- €	- €	3.758.377€	581.965€	4.340.342€
	Construction of a building with 28 rental units (subsidized) in Differdange › Luxembourg Housing Fund - 011	1.036.429€	798.113€	1.653.103€	2.776.010€	6.263.655€
	Construction of a building with 23 rental units (subsidized) in Kopstal, Bridel › Luxembourg Housing Fund - 045	- €	515.534€	1.359.942€	281.204€	2.156.680€
	Construction of a building with 28 units in Junglinster › Luxembourg Housing Fund - 039	- €	- €	- €	437.571€	437.571€
	Construction of new properties with 117 rental units and 32 units dedicated for beneficiaries of individual housing allowances in Mamer * › Luxembourg Housing Fund - 067	- €	- €	- €	- €	- €
	Construction of a neighbourhood of 281 rental units and 120 properties for beneficiaries of individual housing allowances in Wiltz › Luxembourg Housing Fund - 099	- €	1.605.087€	- €	1.634.402€	3.239.489€
	Construction of a residence with 29 rental units and 3 properties in Grevenmacher › Société Nationale des Habitations à Bon Marché - 099	- €	5.618.184€	1.234.059€	4.193.964€	11.046.207€
	Construction of 31 rental units and 65 properties in Contern › Société Nationale des Habitations à Bon Marché - 014	- €	- €	2.561.202€	3.052.468€	5.613.670€
	Construction of 34 rental units in Luxembourg-City, Reimerwee I › Société Nationale des Habitations à Bon Marché - 021	4.196.556€	2.786.486€	243.353€	12.114€	7.238.509€
	Construction of 60 properties in Luxembourg-City, Reimerwee II › Société Nationale des Habitations à Bon Marché - 021	1.590.227€	- €	- €	57.931€	1.648.158€
	Construction of 39 rental units in Dudelange › Kierchefong - 003	- €	4.707.740€	3.010.606€	- €	7.718.346€
	Construction of 52 rental units in Vianden › Croix Rouge - 001	- €	- €	2.566.694€	6.588.180€	9.154.874€
	Construction of 28 units in Oberkorn › Oeuvres Paroissiales Oberkorn - 001	- €	- €	- €	577.051€	577.051€
	Construction of 37 rental units in Differdange › AC Differdange	- €	4.217.999€	- €	- €	4.217.999€
	Construction of 35 rental units in Luxembourg-City › Ville de Luxembourg - 007	8.344.763€	- €	- €	2.751.237€	11.096.000€
	Construction of 48 rental units in Differdange › AC Differdange	- €	- €	- €	12.221.926€	12.221.926€
	Governmental acquisition of land for the construction of affordable housing targeting low income persons › Luxembourg Housing Fund & Société Nationale des Habitations à Bon Marché	- €	6.455.250€	9.000.045€	17.665.152€	33.120.447€

*Expenses from these projects start in year 2022



TOTAL of allocated proceeds



Amount of unallocated proceeds (to be invested in 2022):

396.926.966 €



Impact Report

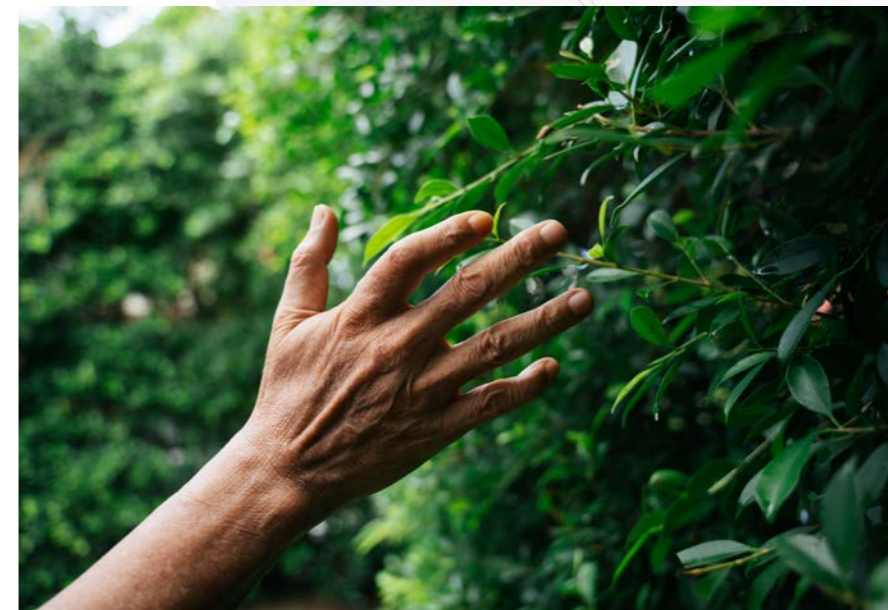
Under the Sustainability Bond Framework, the SBC committed to publishing an Impact Report covering all the years in which the proceeds are allocated to the relevant projects and specific impact indicators, until full allocation of the Sustainability Bond proceeds. This report is based as far as possible, on existing public reports on the different projects as well as direct interactions with the competent ministries, project owners and project managers.

The purpose of the impact report is to provide investors with a better understanding of the possible environmental and social impacts of the eligible projects. The analysis in this report uses a number of key impact indicators in an effort to measure the impact of the projects.

The SBC has worked with a team of experts in order to identify the different impact indicators as well as to draft an impact methodology. The methodology used in this report is identical to the one employed in the first Impact Report of the Sustainability Bond.

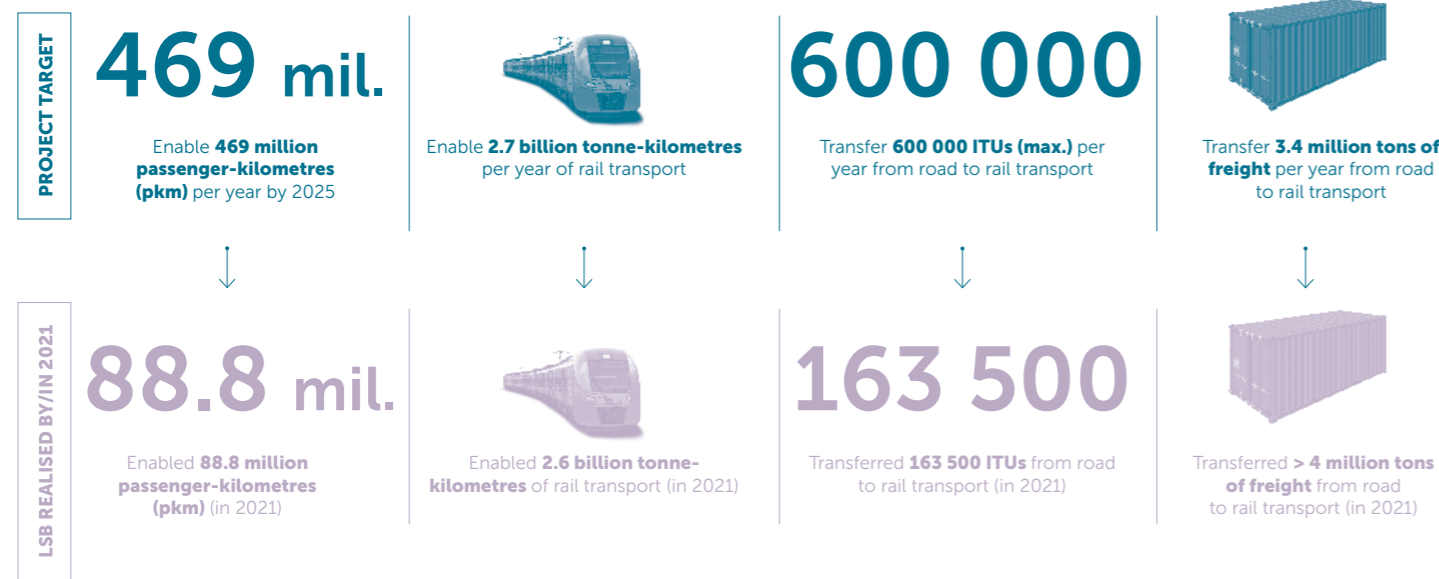
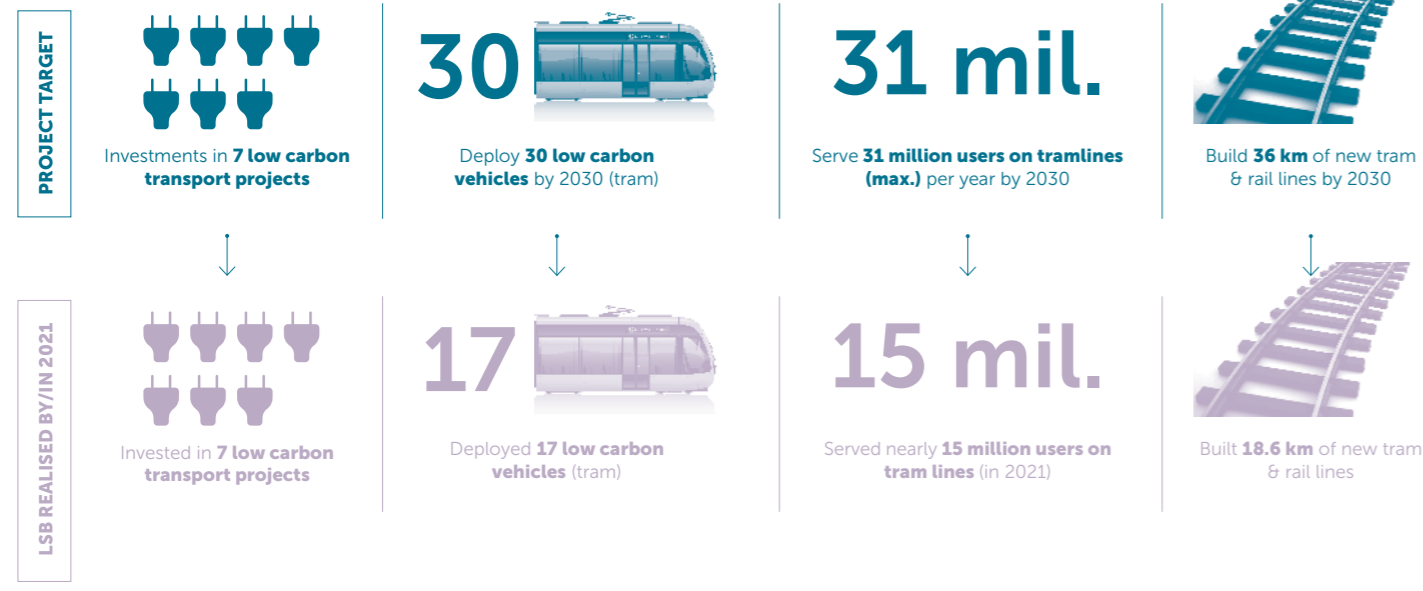
The impact share of the Luxembourg Sustainability Bond is a share of each impact indicator, corresponding to the Luxembourg Sustainability Bond financing contribution to the total project financing covering the total costs of each project. This share is listed, for each project, in the Impact Table published on the website of the Luxembourg State Treasury.

The following pages will provide an overview of the investment projects and the relevant impact indicators for the year 2021, for each of the 7 categories of green and social projects. For each category, the pertinent indicators are provided, with their target over the years 2018-2022 and the realization of these indicators until the end of 2021. For detailed explanations of the project descriptions and impacts, please refer to the 2018-2020 Impact Report (pages 20-39).



4.1

Low Carbon Transport



SDGs targeted (Primary and secondary)



NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

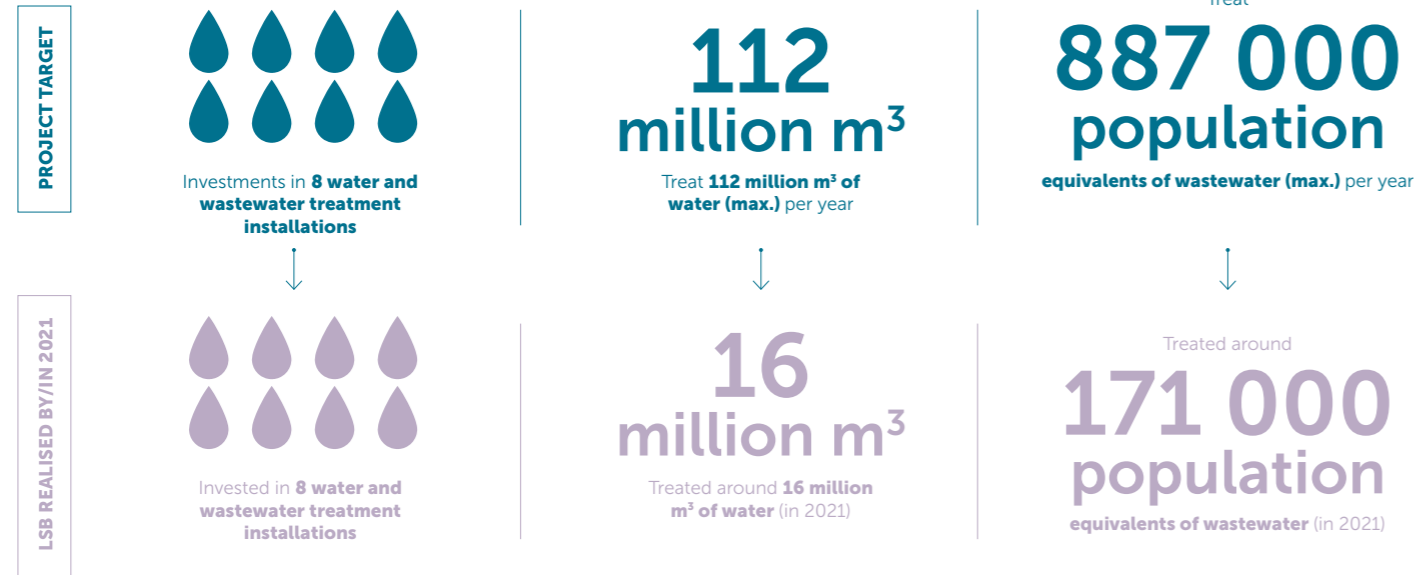
Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	Deployed low carbon vehicles ¹ (#)	Users on tramline ² (#)	km of new tram lines / rail lines (km)	passenger-kilometres in 2021 ³ (pkm)	tonne-kilometres per year of rail transport ⁴ (tkm)	Transfer of Intermodal Transport Units (ITU) in 2021 ⁵ (#)	Freight transfer per year from road to rail transport ⁶ (t)	CO ₂ e avoided ⁷ (t CO ₂ e)
Luxembourg Tram (LuxTram) › Luxembourg City	42 423 149	8%	17	14 900 793	7.6	84 962 500	-	-	-	194 490
Construction of a new train line › Luxembourg City - Bettembourg	21 128 273	7%	-	-	7.5	32 853 600	62 202 816	-	-	93 425
Adaptation of north side of the Luxembourg City train station › Luxembourg City	2 180 834	1%	-	-	1.5	-	-	-	-	-
Construction of two new platforms at the Luxembourg City train station › Luxembourg City	43 267 561	25%	-	-	0.563	-	-	-	-	-
Laying of second train tracks › Hamm-Sandweiler	2 890 000	1%	-	-	6.2	3 065 968	-	-	-	-
Construction of a multimodal platform › Bettembourg	2 623 305	1%	-	-	4.2	-	-	163 471	4 007 180	-
Modernisation of the train station › Rodange	22 467 807	21%	-	-	-	-	-	-	-	-

1. Number of low carbon vehicles (trams) deployed
2. Number of users served on new tram line
3. Passenger-kilometers on additional low carbon transport infrastructure
4. Number of tonne - kilometers enabled for rail transport due to modal freight shift from road to rail

5. Number of freight containers and semi-trailers (ITU) and tons transferred from road to rail transport
6. Tons of freight transferred from road to rail transport
7. Avoided CO₂e emissions due to modal shift in passenger transport

4.2

Water and Wastewater Treatment



SDGs targeted (Primary and secondary)



NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	Annual water treatment (m ³)	Drinking water treatment for users (# of users)	Wastewater treatment in person equivalents (p.e.)	Additional users served at enlarged existing and new plants (# of users)	Newly equipped water and wastewater treatment plants ¹ (# of plants)	Treatment of dry solids of sewage sludge in anaerobic digestion (t/year)	Production of biogas for energy generation (m ³ /year)
Extension and modernization of the national drinking water treatment station (SEBES) > National Water Syndicate in Esch-sur-Sûre	7 000 000	3%	16 210 000	577 604	-	New plant	1	-	-
Extension and modernization of the wastewater treatment plant > SIDEN in Blesbruck	-	0%	6 665 130	-	56 000	50 000	1	1 041	287 731
Sanitation work in the Attert Valley > SIDERO in the Attert Valley	2 065 135	3%	-	-	-	-	-	-	-
Evacuation and purification of wastewater generated by the municipalities of the Upper Moselle > AC Schengen in the Upper Moselle	1 745 174	3%	1 762 246	-	14 861	New plant	0	-	-
Sanitation of the Lower Moselle with the construction of a new wastewater treatment plant > SIDEST at the Port of Mertert	2 153 372	2%	1 050 000	-	22 086	New plant	1	450	175
Extension and modernization of the wastewater treatment plant > SIDEST in Uebersyren	177 957	0.1%	17 628 624	-	122 000	96 000	1	1 400	697 320
Extension of the wastewater treatment plant > VdL in Beggen	1 191 889	0.4%	16 060 000	-	270 000	190 000	1	8 450	3 832 500
Extension of the wastewater treatment plant > SIACH in Pétange	5 836 468	8%	6 450 000	-	78 000	65 000	0	939	680 000

1. Water and wastewater with micro-pollutant treatment and other advanced treatment, above EU requirements

4.3

Protection of the Environment

Primary environmental objective: Protection and restoration of biodiversity and ecosystem restoration EO_6

Secondary environmental objectives: Climate change adaptation EO_2 (flood control), pollution prevention and control EO_5 & sustainable use and protection of water EO_3 (river water quality)

SDGs targeted (Primary and secondary)



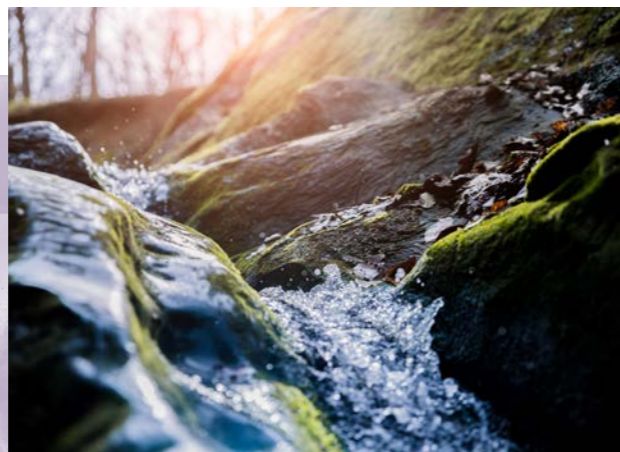
NUMBERS:
LIGHT = Expected
BOLD = Realised

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs
Ecological renaturation of the Pétrusse valley * › Luxembourg City	-	0%

1. National and EU Natura 2000
2. for 100 year river flows events HQ100 of 55m3/s
*Expenses from these projects start in year 2022

Impact data by/in 2021

Expected area of protected and restored habitats (hectares) ¹	Expected increase on protected habitats – National (m2)	Expected increase on protected habitats - EU Natura 2000 (m2)	Hedges planted (expected) (m2)	Fish passages constructed (expected) (#)	Expected capacity increase for water retention of the river after rehabilitation ² (m2)
8.6	8 097	4 664	673	1	859



4.4

Education



SDGs targeted (Primary and secondary)



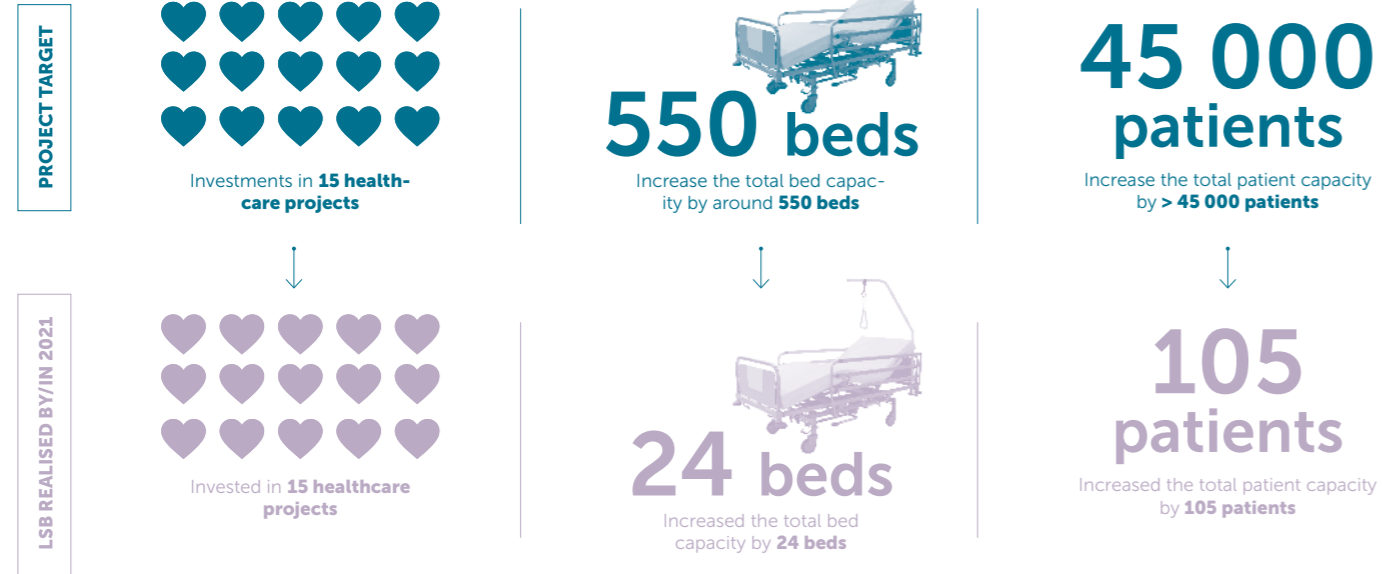
NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	Expected increase of total student capacity (# of students)
Construction of a new school restaurant › Ecole privée Fieldgen	2 128 382	12%	80
Construction of a new child care facility › Project Wobrecken in Esch-sur-Alzette	-	0%	381
Construction of new child care facility › Bertrange	-	0%	482
Construction of a new child care facility › Campus Berchem-Bivange	-	0%	437
Construction of a new child care facility and elementary school › Belval-Sud	-	0%	593
Construction of a new child care facility and elementary school › Project Helperknapp in Brouch	-	0%	600
Construction of a new highschool › International School in Differdange (public)	13 522 854	18%	1 050
Renovation of a highschool › Lycée Michel Rodange	22 921 001	36%	0
Renovation of a highschool › Lycée Classique Diekirch, annexe Mersch	7 587 010	15%	750
Construction of a new school and sports hall › Lycée Technique pour Professions de Santé	15 328 121	14%	1 200

4.5

Healthcare



SDGs targeted (Primary)



NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	Increase of bed capacity (# of beds)	Increase of total patient capacity (# of patients)	Increase of the maternity ward capacity (# of births)
Obstetrics Maternity and Gynecology Center › Centre Hospitalier de Luxembourg (CHL)	5 284	0.01%	0	-	655
Construction of a modular building with specialized pediatric beds * › Centre Hospitalier de Luxembourg (CHL)	-	0%	2	150	-
Extension of the National Institute of Cardiac Surgery and Interventional Cardiology (INCCI) › Centre Hospitalier de Luxembourg & INCCI	912 620	8%	2	520	-
New construction for the CHL Hospital and the National Institute of Cardiac Surgery and Interventional Cardiology (INCCI) › Centre Hospitalier de Luxembourg & INCCI	5 529 567	2%	470	5 000	-
Construction of a floor tower for geriatric rehabilitation beds, an integrated dialysis center, the National Center for Specialized Ophthalmology and an elective orthopedic service › Hôpitaux Robert Schuman - Kirchberg	1 780 901	1%	20	80	-
Extension of the national service of juvenile psychiatry › Hôpitaux Robert Schuman - Kirchberg	5 941 912	31%	7	125	-
Construction of a medical center with 10 single maternity rooms, 1 endoscopy room and 1 outpatient medical-technical unit › Hôpitaux Robert Schuman - Kirchberg & Clinique Bohler	70 044	1%	10	0	-
New construction with 4 care units, a day hospital and radiology › Hôpitaux Robert Schuman - Kirchberg & Clinique Bohler	7 227 336	12%	0	0	-
Construction of a therapeutic center for adolescents in Putscheid › Centre Hospitalier Neuro-Psychiatrique	624 376	9%	16	29	-
Construction of a new extension for geriatric reeducation and care › Hôpital Steinfort	109 135	0.5%	10	110	-
Construction of the new hospital "Südspidol" › Centre Hospitalier Emile Mayrisch (CHEM) - Südspidol	7 338 010	2%	16	20 000	370
Extension of the CHEM "Altbau 2" › Centre Hospitalier Emile Mayrisch (CHEM)	2 320 414	26%	-	-	-
Extension of the hemodialysis service › Centre Hospitalier du Nord (CHdN)	307 352	5%	6	76	-
Architectural measures to accommodate & installation of additional IRMs › all 4 hospital centers of the country	1 172 424	13%	-	20 000	-
Increase in emergency rooms and daycare centers in the hospitals › all 4 hospital centers of the country	2 224 812	7%	-	-	-

*Expenses from these projects start in year 2022

4.6

Social Inclusion

SDGs targeted (Primary and secondary)



NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	Increase of housing capacity for people having applied for or benefiting from international protection (#)	Increase of the housing capacity for troubled adolescents (#)	Increase of accommodation capacity for homeless people and rescued people in case of emergency (#)	Provision of additional care home capacity for elderly people (#)	Provision of a residential care home for persons with disabilities (#)
Reception centers for people having applied for or benefiting from international protection › Sanem / Mühlenbach / Bettembourg / Bridel / Capellen / Rodange / Luxembourg City	49 320	0.3%	611	-	-	-	-
Reception center for homeless people and multifunctional emergency structure for people in need - Sandweiler, Building A + B › Sandweiler	51 072	0.4%	-	-	106	-	-
Construction, renovation and transformation of different properties to create a new residential home and day center for persons with disabilities › Ettelbrück	829 864	3%	-	-	-	-	100
Construction of a care home for the elderly › Differdange	11 809 470	19%	-	-	-	114	-
Construction of a care home for the elderly › Bascharage	8 515 084	13%	-	-	-	201	-
Construction of a reception center › Project "Jongenheim" Maison Porte Ouverte	955 820	15%	-	32	-	-	-
Construction of a reception center › Project "Tandel-Fouhren" (Municipality & Arcus ASBL)	2 200 322	14%	-	33	-	-	-

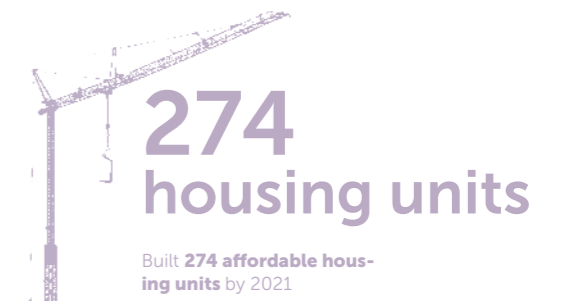
4.7

Affordable Housing

PROJECT TARGET



LSB REALISED BY/IN 2021



SDGs targeted (Primary and secondary)



NUMBERS:
LIGHT = Expected
BOLD = Realised

Impact data by/in 2021

Projects	LSB allocated amount in 2021 (€)	Share of LSB allocated amount of total project costs	# of finished housing units built	# of eligible affordable housing beneficiaries	Energy performance certificate (EPC) classes
Construction of an innovative and sustainable village "Elmen": 292 rental units and 96 properties in Kehlen/Olm ¹ › Société Nationale des Habitations à Bon Marché - 030	581 965	0.2%	0	892	AAA - BBB
Construction of a building with 28 rental units (subsidized) in Differdange › Luxembourg Housing Fund - 011	2 776 010	43%	28	64	BBA
Construction of a building with 23 rental units (subsidized) in Kopstal, Bridel › Luxembourg Housing Fund - 045	281 204	2%	0	52	AAA - BBA
Construction of a building with 28 units in Junglinster › Luxembourg Housing Fund - 039	437 571	2%	0	64	AAA - BBA
Construction of new properties with 117 rental units and 32 units dedicated for beneficiaries of individual housing allowances in Mamer * › Luxembourg Housing Fund - 067	-	0%	0	373	-
Construction of a neighbourhood of 281 rental units and 120 properties for beneficiaries of individual housing allowances in Wiltz › Luxembourg Housing Fund - 099	1 634 402	0.2%	0	922	-
Construction of a residence with 29 rental units and 3 properties in Grevenmacher › Société Nationale des Habitations à Bon Marché - 099	4 193 964	30%	32	73	AAA
Construction of 31 rental units and 65 properties in Contern › Société Nationale des Habitations à Bon Marché - 014	3 052 468	4%	48	299	AAA - BBA
Construction of 34 rental units in Luxembourg City, Réimerwee I › Société Nationale des Habitations à Bon Marché - 021	12 114	0.1%	34	78	AAA
Construction of 60 properties in Luxembourg City, Réimerwee II › Société Nationale des Habitations à Bon Marché - 021	57 931	0.3%	60	138	AAA
Construction of 39 rental units in Dudelange › Kierchefong - 003	-	0%	0	89	-
Construction of 52 rental units in Vianden › Croix Rouge - 001	6 588 180	37%	0	119	AAA
Construction of 28 units in Oberkorn › Oeuvres Paroissiales Oberkorn - 001	577 051	9%	0	69	-
Construction of 37 rental units in Differdange › AC Differdange	-	0%	37	85	BBA
Construction of 35 rental units in Luxembourg City › Ville de Luxembourg - 007	2 751 237	19%	35	80	AAA
Construction of 48 rental units in Differdange › AC Differdange	12 221 926	51%	0	110	ACA
Governmental acquisition of land for the construction of affordable housing targeting low income persons › Luxembourg Housing Fund & Société Nationale des Habitations à Bon Marché	17 665 152	-	-	-	-

*Expenses for these projects start in year 2022

1. The LSB co-finances the first partial development plan (PAP), which includes 292 rental units and 96 properties (as opposed to 375 houses and 375 apartments for the complete project).

Case Studies

Extension of the national service of juvenile psychiatry

The Robert Schuman Hospitals have ongoing work on new constructions and extensions of existing buildings. One of the projects is the extension of the National Service for Juvenile Psychiatry (SNPJ). This extension is based on an additional need of at least 40% of capacity for the year 2021¹³, allowing the inpatient unit to increase its capacity from 23 to 30 places¹⁴.

The SNPJ, located in the Robert Schuman Hospitals, takes in charge young people with psychiatric disorders between the ages 13 and 18, has been housed in a new building within the Kirchberg Hospital since September 2021. One of its particularities is that one of the floors encompasses a school managed by the Ministry of Education, which recreates the school environment while allowing the young people to follow their therapeutic treatment.

A multidisciplinary team supports adolescents suffering from all types of disorders including anxiety, depression, eating disorders, psychosis, suicidal crises, adjustment disorders, post-traumatic syndromes, substance dependency, acute aggression syndromes, and personality disorders¹⁵.

The extension of the SNPJ is an essential step to easing the current situation, both for workers and for patients, to face an increase in mental health disorders and of their severity among younger people. Over the past years, and since the green paper of the EU in 2005 underlining the importance to improve the population's mental health, and especially that of underage people, more weight has been put on this aspect of society's wellbeing.



¹³ Rapport d'analyse prévisionnel de l'enveloppe budgétaire globale des dépenses du secteur hospitalier 2020 (gouvernement.lu)

¹⁴ Les ados atteints de troubles psychiatriques ont un nouveau refuge (lequotidien.lu)

¹⁵ Service national de psychiatrie juvénile | Hôpitaux Robert Schuman (hopitauxschuman.lu)

Construction of a care home for the elderly

In Oberkorn (Differdange), a new care center for the elderly, "Woiwer", is being constructed by SERVIOR, the largest accommodation manager for seniors in Luxembourg, to relieve the old building "Thilleberg". The "Woiwer" care center is being built on a one-hectare site in the lower part of the new "Woiwer" residential eco-district. Its ecological scope can be seen in every part of its composition. It is planned to open its doors in the third trimester of 2022¹⁶.

Besides an "ABA" energy class, which implies a very efficient energy balance, the building will be equipped with triple glazing, will benefit from district heating, will be covered with green roofs and integral solar protection, and the thermal insulation is planned to cover every part of the building, including the foundations. The house will benefit from a wastewater network, dedicated to medicated water, and will incorporate retention basins. The new care center is a cornerstone in the modernization of SERVIOR's accommodation capacity in the southwest of the country, encompassing 200 rooms. Its role is essential, especially in a country where the demand for accommodation for the elderly is growing. The architecture of the new four-story home focuses on the needs of the elderly generation; it will offer adapted, modern and innovative spaces for the residents and their families as well as for the care and support staff who accompany them. Its structures and services (grocery store, cafeteria, hairdressing salon, multi-purpose room, community hall, etc.) will promote social life and the diversity of living.



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¹⁶Woiwer (en construction) - Servior

¹⁷A Differdange, SERVIOR construit un avenir durable - Servior

¹⁸« Woiwer » à Differdange : plus qu'une maison moderne, une réflexion globale de prise en charge - Servior

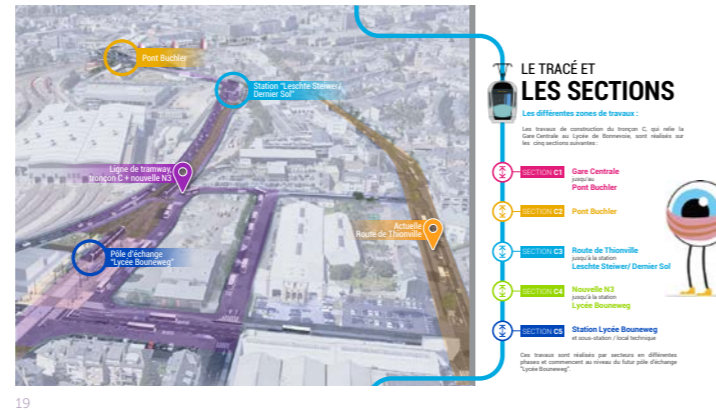
UPDATES ON PREVIOUS CASE STUDIES

The new Tram in Luxembourg City

Construction works for the new tram in Luxembourg, which is built in stages, began in 2015. The first section of the tramline was inaugurated in December 2017. Since December 2020, it serves 15 stations of which 5 multimodal hubs.

Beginning in April 2021, the works on section “C” of the tram line, which will link the Central station to the Lycée de Bonnevoie, will finish in September 2022 and Section C will finally be put into service. The tram will run on this new 1.2 km section and serve 2 new stations, including a new multimodal hub (*):

- LESCHTE STEIWER / DERNIER SOL
- LYCÉE BOUNEWEG (*)



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UPDATES ON PREVIOUS CASE STUDIES

“Südspidol”

The “Südspidol” is a merger of three hospitals in the south of Luxembourg. It will be the second largest hospital in the country and is meant to support the whole south of Luxembourg.

In 2021, the directorate of the *Centre Hospitalier Emile Mayrisch* (CHEM) terminated the contract with the design consortium Health Team Europe (HTE), who had won the competition initiated in October 2015 for the construction of the “Südspidol”. Even if the planning work has been launched in 2012, and that EUR 37.8 million have already been committed, a number of problems had arisen. As a result, on September 2nd, the Board of Directors, following the favourable opinion of the Tenders Committee and in compliance with the applicable procedures, terminated the contract²⁰. Due to the unilateral termination, the project will be delayed for at least five more years.

The SBC received the news in the last quarter of 2021. In view of these difficulties, the SBC then eventually decided to stop financing the project. So far, the Sustainability Bond has contributed to a part of the expenses incurring in 2020 and 2021, amounting to around EUR 27.8 million and representing 6% of the expected total project costs. The remaining allocation amounts, which were initially dedicated to the “Südspidol” project for the year 2022, have accordingly been reallocated to other projects.

¹⁹Tronçon C | Luxtram.lu – Un tram pour la Ville de Luxembourg

²⁰Le Südspidol contraint de se séparer de ses concepteurs | Paperjam News

UPDATES ON PREVIOUS CASE STUDIES

“Elmen” – Affordable Housing in Kehlen/Olm

With its urbanistic and innovative approach, The *Société Nationale des Habitations à Bon Marché* (SNHBM) is creating a pleasant living environment for future residents, with the emphasis on a human-scale neighborhood and a high quality of life. The aim is to provide 375 new houses and 375 apartments to 2.000 occupants at the end of the three phases of the project. *Elmen* is part of the European *Interreg GReneff* project, which aims to finance innovative green neighborhoods and energy efficient social housing in the Greater Region.

After a first round of sales set off in July 2020, the second sales phase started in March 2021. A total of 87 single-family houses and 93 apartments were sold during these two sales rounds. Additional apartments are under construction for social renting.

In November 2021, the first steps for the construction of a new school building in the new village of Elmen were set.

A third sales round, including single-family houses and apartments, is planned to be launched by the end of the year 2022 or at the beginning of 2023.

By the end of 2022, the first occupants are expected to move in their new homes, eventually bringing Elmen to life.



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²⁰ Source: SNHBM

²¹ Source: Administration communale Kehlen

Feedback on the previous sustainability bond reporting

The Sustainability Bond has been well received by investors and the first Sustainability Bond Report was published in September 2021. After the publication of the Report, the SBC contacted the investors twice to receive feedback on the Report. However, no feedback was submitted, which the Committee interpreted as a positive sign and as the Report being clear, extensive and sufficiently detailed. Nevertheless, this year's report is meant to provide more in-depth information regarding the green and social projects financed by the LSB and their impact.

Outlook

For any future issuances of such bonds, the currently existing Sustainability Bond Framework will be updated and adjusted accordingly, as the LSB is exclusively founded on the drafts of the EU Taxonomy, which had not been in place yet at the time of the creation and the launch of the LSB.

Potential future sustainability bonds would be structured in accordance with the 2021 proposed EU Green Bond Standard (the "EU GBS") and the final EU Taxonomy with its Delegated Acts, in addition to the ICMA Green Bond Principles 2018, the ICMA Social Bond Principles 2020, and the ICMA Sustainability Bond Guidelines 2018.

Acknowledgments

This Report was produced by the Sustainability Bond Committee under the responsibility of the Luxembourg State Treasury, with the valuable collaboration of the different ministries and bodies that are responsible for allocated expenditures under the Sustainability Bond, as well as with input from the different benefiting institutions themselves.

The SBC is grateful for the many contributions, valuable input and assistance, in particular regarding the continuous and ongoing measurement of the impact indicators and the collection of the actual impact data, and the review of this Report.

The involved Government departments and State bodies are as follows:

- Luxembourg Ministry for the Environment, Climate and Sustainable Development,
- Luxembourg Ministry of Transport and Public Works,
- Luxembourg Ministry of Health,
- Luxembourg Ministry of Housing,
- Luxembourg Ministry of Education, Children and Youth,
- Luxembourg Ministry of Family Affairs, Integration and the Greater Region,

- Luxembourg Ministry of Foreign Affairs' National Reception Office,
- Luxembourg Water Management Administration.

The benefiting entities/institutions:

- Luxtram S.A.,
- Société nationale des chemins de fer luxembourgeois (CFL) – National Rail Network,
- Syndicat des eaux du barrage d'Esch-sur-Sûre (SEBES) – Water treatment plant,
- Syndicat Intercommunal de Dépollution des Eaux résiduaires du Nord (SIDEN),
- Syndicat intercommunal de dépollution des eaux résiduaires de l'Est (SIDEEST),
- Syndicat intercommunal pour l'assainissement du bassin de la Chiers (SIACH),
- Administration Communale de Schengen,
- Ville de Luxembourg, Service Canalisation.

The SBC would again like to thank 4Climate, who, together with INFRAS, Beissel & Ruppert and Efor-Ersa helped identify the green impact indicators, estimated the environmental benefits including the calculation of avoided greenhouse gas emissions as well as elaborated the green impact methodology.

Other topics related to the Sustainability Bond

The Grand Duchy of Luxembourg

Type of Engagement: Annual Review

Date: August 24, 2022

Engagement Team:

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Introduction

In September 2020, The Grand Duchy of Luxembourg ("Luxembourg") issued a sustainability bond under the Grand Duchy of Luxembourg Sustainability Bond Framework¹ (the "Framework") aimed at financing green and social expenditures in order to achieve the ambitions set out in Luxembourg's "National Plan for Sustainable Development".² Sustainalytics provided a Second Party Opinion³ on the Framework in August 2020. In August 2022, Luxembourg engaged Sustainalytics to review the projects funded in 2021 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.

As per the impact report 2020, Luxembourg financed and refinanced expenditures for 65 projects incurred in the budget years 2018 to 2020 with total disbursements of EUR 771.6 million.⁴ In 2021, Luxembourg financed 65 projects with total disbursements of EUR 331 million.⁵ Newly financed projects in 2021 were within the following six Framework categories: (i) Low Carbon Transport, (ii) Water and Wastewater Management, (iii) Access to Essential Services - Education, (iv) Access to Essential Services - Healthcare, (v) Access to Essential Services - Social Inclusion, and (vi) Affordable Housing.

Evaluation Criteria

Sustainalytics evaluated the projects and assets funded in 2021 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, Eligibility Criteria, while Table 2 lists the associated KPIs.

Table 1: Use of Proceeds, Eligibility Criteria

Use of Proceeds	Eligibility Criteria
Green Buildings	<ul style="list-style-type: none"> • Construction and acquisition of energy efficient buildings • Renovation of existing buildings
Energy Transition	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Low carbon transportation including: <ul style="list-style-type: none"> - Public transport

¹ The Grand Duchy of Luxembourg Sustainability Bond Framework is available on the website of the Luxembourg State Treasury at: <https://te.public.lu/content/dam/tresorerie/fr/sustainable/20200831-Luxembourg-Sustainability-Bond-Framework.pdf>

² "Luxembourg 2030: 3rd National Plan for Sustainable Development", at: <https://environnement.public.lu/dam-assets/documents/developpement-durable/PNDD.pdf>

³ Grand Duchy of Luxembourg Sustainability Bond Framework Second-Party Opinion, 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-framework-second-party-opinion-pdf>

⁴ The Grand Duchy of Luxembourg Sustainability Bond Impact Report 2021, at: <https://te.public.lu/content/dam/tresorerie/fr/sustainable/2021-Luxembourg-Sustainability-Bond-Report-2018-2020.pdf>

⁵ The Grand Duchy of Luxembourg has communicated to Sustainalytics that it has disclosed the allocation and impact details in the Luxembourg Sustainability Bond Impact Report 2022.

APPENDIX Compliance Review by Sustainalytics

	- Infrastructure for low carbon transport
Protection of the Environment	<ul style="list-style-type: none"> Waste management Protection and restoration of healthy ecosystems and their services
Water and wastewater Management	<ul style="list-style-type: none"> Support the development of water and wastewater management systems allowing to significantly improve energy efficiency and/or water quality
Climate Finance and R&D	<ul style="list-style-type: none"> Mobilise and support investment in international climate finance Support research, development and innovation focusing on climate change mitigation and adaptation
Access to Essential Services - Education	<ul style="list-style-type: none"> Providing access to essential educational infrastructure and services for all by: <ul style="list-style-type: none"> Extending educational capacities Improving the quality of the existing educational infrastructure and equipment
Access to Essential Services - Healthcare	<ul style="list-style-type: none"> Provide access to essential healthcare infrastructure and services for all by: <ul style="list-style-type: none"> Extending healthcare capacities Improving the quality of the existing healthcare facilities
Access to Essential Services - Social Inclusion	<ul style="list-style-type: none"> Provide access to essential services for population groups at risk of social exclusion by: <ul style="list-style-type: none"> Providing access to essential infrastructure and services to vulnerable population Providing financial assistance to vulnerable population
Affordable Housing	<ul style="list-style-type: none"> Provide access to affordable housing to vulnerable population by: <ul style="list-style-type: none"> 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 Socio-economic Advancement and Empowerment	<ul style="list-style-type: none"> Support employment generation and socio-economic advancement and empowerment, including but not limited to: <ul style="list-style-type: none"> Employment generation and retention initiatives Support to Social and Solidarity Economy Support to the SMEs⁶ in the event of extreme events (e.g. natural disaster, extreme weather events, public health disaster etc.)

Table 2: Key Performance Indicators

Use of Proceeds	Key Performance Indicators
Green Buildings	<ul style="list-style-type: none"> Estimated ex-ante annual energy savings (in MWh) Annual GHG emissions saved (in tCO₂e)
Energy Transition	<ul style="list-style-type: none"> 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 tCO₂e)
Low Carbon Transport	<ul style="list-style-type: none"> Annual number of low carbon vehicles deployed by type of transport (e.g. number of trains/trams) Annual number of users served Other relevant indicators depending on the considered projects

⁶ 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

Protection of the Environment	<ul style="list-style-type: none"> Annual volume of waste collected and disposed or treated (in tonnes) Surface of protected or restored areas (in hectares) Other relevant indicators depending on the considered projects
Water and Waste Water Management	<ul style="list-style-type: none"> Annual volume of water collected and disposed or treated (in m³) Number of users served Other relevant indicators depending on the considered projects
Climate Finance and R&D	<ul style="list-style-type: none"> Number of investment funds that have been launched with the support of Climate Finance expenditures Total Net Asset Value of the investments funds Estimated annual CO₂ emissions avoided (in tCO₂e) 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 - Education	<ul style="list-style-type: none"> 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 - Healthcare	<ul style="list-style-type: none"> 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 - Social Inclusion	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Number of dwellings When available, additional information may be provided regarding the energy performance of eligible buildings
Employment Generation and Socioeconomic Advancement and Empowerment	<ul style="list-style-type: none"> 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 benefitting 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 assess conformance with the Grand Duchy of Luxembourg Sustainability Bond Framework.

Sustainalytics has relied on information and 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,⁷ nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, the reviewed 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. The Grand Duchy of Luxembourg is planning to reach full allocation by the end of 2022.

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 in 2021 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 in 2021 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.	All projects reviewed reported on at least one KPI per Use of Proceeds criteria.	None

⁷ 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

In September 2020, Luxembourg raised EUR 1.5 billion through its sustainability bond. In 2020, it invested EUR 771.6 million in 65 projects across three green and four social categories. In 2021, Luxembourg invested EUR 331.4 million in 65 projects across two green and four social categories. See below a summary of the reported allocated amount at category level.

Use of Proceeds Category	Sub-category	Allocated amount ⁸ (EUR)			
		2018	2019	2020	2021
Low Carbon Transport	Public transport	36,262,909	35,502,137	63,104,052	42,423,149
	Infrastructure for low carbon transport	82,434,946	91,828,319	72,403,615	94,557,780
Water and Wastewater Management	Supporting the development of water and wastewater management systems allowing to significantly improve water quality	21,617,003	30,581,130	12,373,662	20,169,995
Access to Essential Services - Education	Providing access to essential educational infrastructure and services for all	19,487,752	31,579,543	47,557,026 ⁹	61,487,367
Access to Essential Services - Healthcare	Providing access to essential healthcare infrastructure and services for all	25,454,576	27,340,591	45,454,415	35,564,187
Access to Essential Services - Social Inclusion	Providing access to essential services for population groups at risk of social exclusion	18,218,290	22,635,308	20,533,404	24,410,953
Affordable Housing	Providing access to affordable housing to vulnerable population	15,167,975	26,704,393	25,387,381	52,831,175
Allocations by budget year		218,643,451	266,171,421	286,813,555	331,444,606
Total allocated		1,103,073,034			
Total proceeds raised		1,500,000,000			
Unallocated proceeds		396,926,966			

⁸ Full amounts displayed under 2018 and 2019 and part of the amounts displayed under 2020 were refinanced from the respective budget years with the bond issued in 2020. The actual allocations took place in 2020.

⁹ Luxembourg has informed Sustainalytics that there has been a retroactive change in allocation for this figure. Hence, this is not consistent with the figure reported in the previous Impact Report and Annual Review.

Appendix 2: Impact Reporting by Eligibility Criteria

Use of Proceeds Category	Indicators	Impact Reported			
		2018	2019	2020	2021
Low Carbon Transport	Number of low-carbon vehicles deployed by type of transport (trams/year)	8	9	11	17
	Number of users served on new tram and train lines (users/year)	5,752,704	7,230,837	5,180,667	15,395,304
	Length of new tram lines / new rail lines built (km) ¹⁰	15.8	15.8	18.56	18.56
	Passenger-kilometers (pkm) on additional low-carbon transport infrastructure (pkm/year)	25,680,312	38,567,788	22,639,071	88,028,468
	Number of freight containers and semi-trailers - maximum annual capacity/year (ITU) ¹¹	600,000	600,000	600,000	600,000
	Number of freight containers and semi-trailers/year (ITU)	127,448	133,863	135,207	163,471
	Number of tonnes transferred from road to rail transport (per year)	3,186,200	3,346,575	3,380,175	4,007,180
Water and Wastewater Management	Volume of water treated (m ³ /year)	-	-	15,584,926	15,927,376
	Total number of users served (population equivalent/year)	15,346	16,551	169,951	170,947
	Sewage sludge anaerobic digestion and use of biogas for energy generation (tonnes of sewage sludge/year)	-	-	2,700 ¹²	2,891
Access to Essential Services - Education	Number of institutions benefiting from these investments ¹³	9	9	9	10
Access to Essential Services - Healthcare	Number of institutions benefiting from these investments ¹⁴	20	20	20	20

¹⁰ These values are absolute values.

¹¹ The OECD defines Intermodal Transport Unit as "international transportation method that involves several different modes of transportation: ocean freight, air freight, rail, trucking, etc.", available at: <https://stats.oecd.org/glossary/detail.asp?ID=4303>

¹² Luxembourg has informed Sustainalytics that there has been a retroactive change for this figure. Hence, this not consistent with the figure reported in the previous Impact Report and Annual Review.

¹³ These values are absolute values. All institutions benefitted were schools and childcare facilities.

¹⁴ These values are absolute values. Projects were in the following locations: Luxembourg (7 projects), Putscheid (1 project), Steinfort (1 project), Esch-sur-Alzette (2 projects), Ettelbruck (1 project). Two other projects financed all four hospital centres of the country.

Access to Essential Services- Social Inclusion	Number of beneficiaries ¹⁵ /year	237	1,012	2,786	1,823 ¹⁶
Affordable Housing	Finished Housing units	-	-	-	274

¹⁵ Beneficiaries are defined as people having applied for or benefiting from international protection.

¹⁶ Institutions benefitted were the following: Reception centres for people having applied for or benefiting from international protection (487 beneficiaries); reception centre for homeless people and multifunctional emergency structure for people in need (1,246 beneficiaries); and construction, renovation and transformation of different properties to create a new residential home and day centre for persons with disabilities (90 beneficiaries).

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