

Second-Party Opinion

Municipality of Linköping
Sustainability Bond Framework

Evaluation Summary

Sustainalytics is of the opinion that the Municipality of Linköping Sustainability Bond Framework is credible and impactful and aligns with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2023. This assessment is based on the following:

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USE OF PROCEEDS The eligible categories for the use of proceeds are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. The eligible categories are: Renewable Energy, Energy Efficiency, Pollution Prevention and Control, Clean Transportation, Sustainable Water and Wastewater Management, Climate Change Adaptation, Circular economy Adapted Products, Production Technologies and Processes and Design, Green Buildings, and Access to Essential Services. Sustainalytics considers that investments in the eligible categories will lead to positive environmental and social impacts and advance the UN Sustainable Development Goals, specifically SDGs 3, 4, 6, 7, 9, 11, 12, and 13.
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PROJECT EVALUATION AND SELECTION The Municipality of Linköping has established a committee that is responsible for the project evaluation and selection process in accordance with the eligibility criteria under the Framework. In addition to its mandates, the Municipality has adopted policies, programmes, guidelines and processes, and relies on compliance with applicable regional laws and regulations to manage environmental and social risks associated with eligible projects. Sustainalytics considers the project selection process and the risk management system to be in line with market practice.
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MANAGEMENT OF PROCEEDS The Municipality of Linköping’s Finance department will be responsible for the allocation and tracking of proceeds using a sustainability register. The Municipality intends to allocate proceeds to eligible projects within one year of issuance. Pending full allocation, proceeds will be temporarily placed in the Municipality’s liquidity reserve and be managed in line with its financial policy. This is in line with market practice.
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REPORTING The Municipality of Linköping commits to report on the allocation of proceeds and corresponding impact through an annual investor letter that will be made available to the public. Allocation and impact reporting may include details such as total amount of outstanding sustainability bonds, share of proceeds used for new financing versus refinancing, a breakdown of green and social projects by project category, descriptions of selected green and social projects financed, and share of unallocated proceeds. Sustainalytics views the Municipality’s allocation and impact reporting as aligned with market practice.

Evaluation date	May 27, 2024
Issuer Location	Linköping, Sweden

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Introduction

Linköping is a municipality (kommun) located in Östergötland County in southern Sweden and is the country's fifth largest municipality with approximately 167,000 residents as of December 2023.

The Municipality of Linköping (the "Municipality") has developed the Municipality of Linköping Sustainability Bond Framework dated May 2024 (the "Framework") under which it intends to issue sustainability bonds and use the proceeds to finance and refinance, in whole or in part, existing and future projects that intended to deliver positive environmental and social impacts in Linköping and Sweden. The Framework defines eligibility criteria in eight areas:

1. Renewable Energy
2. Energy Efficiency
3. Pollution Prevention and Control
4. Clean Transportation
5. Sustainable Water and Wastewater Management
6. Climate Change Adaptation
7. Circular economy Adapted Products, Production Technologies and Processes and Design
8. Access to Essential Services

The Municipality of Linköping engaged Sustainalytics to review the Framework and provide a Second-Party Opinion on the Framework's environmental and social credentials and its alignment with the Sustainability Bond Guidelines 2021 (SBG), Green Bond Principles 2021 (GBP) and Social Bond Principles 2023 (SBP).¹ The Framework has been published in a separate document.²

Scope of work and limitations of Sustainalytics' Second-Party Opinion

Sustainalytics' Second-Party Opinion reflects Sustainalytics' independent³ opinion on the alignment of the reviewed Framework with current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework's alignment with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2023, as administered by ICMA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer's sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.16, which is informed by market practice and Sustainalytics' expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with representatives of the Municipality of Linköping's management team to understand the sustainability impact of their processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. The Municipality of Linköping representatives have confirmed (1) they understand it is the sole responsibility of the Municipality of Linköping to ensure that the information provided is complete, accurate and up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

¹ The Sustainability Bond Guidelines, Green Bond Principles and Social Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/>

² The Municipality of Linköping Sustainability Bond Framework is available on the Municipality of Linköping's website at: <https://www.linkoping.se/kommun-och-politik/fakta-om-linkoping/ekonomi-och-budget/linkopings-kommuns-finansverksamhet/>

³ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics' hallmarks is integrity, another is transparency.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Municipality of Linköping.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner. In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realized allocation of proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Municipality of Linköping has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Municipality of Linköping Sustainability Bond Framework

Sustainalytics is of the opinion that the Municipality of Linköping Sustainability Bond Framework is credible, impactful and aligns with the four core components of the GBP and SBP. Sustainalytics highlights the following elements of the Framework:

- Use of Proceeds:
 - The eligible categories are aligned with those recognized by the GBP and SBP. The eligible categories are: Renewable Energy, Energy and Resource Efficiency, Pollution Prevention and Control, Clean Transportation, Sustainable Water and Wastewater Management, Climate Change Adaptation, Circular Economy and Design, Green Buildings, and Access to Essential Services.
 - The Municipality has communicated to Sustainalytics that it will only finance and refinance capex under the Framework, and hence has not established a look-back period, which Sustainalytics considers to be in line with market practice.
 - Under the Renewable Energy category, the Municipality may finance or refinance the following activities:
 - Renewable energy production from onshore solar photovoltaic, wind, hydropower and geothermal energy.
 - Hydropower projects will be: i) run-of-river without an artificial reservoir or with low storage capacity; or ii) have power density greater than 5 W/m² or life cycle emissions intensity below 100 gCO₂e/kWh. The Municipality has confirmed that the financing will be limited to refinancing of facilities that became operational before the end of 2019.
 - Geothermal projects will have life cycle GHG emissions from the generation of electricity lower than 100 gCO₂/kWh.
 - Production and distribution of biogas.⁴
 - Biogas production from food waste feedstock originating from household, industrial and agriculture sources.
 - Sustainalytics notes that the feedstock used will include livestock processing residue. In this regard, industrial agriculture and meat processing activities have a significant carbon and water footprint that is not addressed nor offset through the use of livestock residue in energy generation. In addition, such farming and meat processing techniques may contribute to land degradation, biodiversity loss, deforestation, problems regarding animal welfare, increased use of

⁴ The Municipality has confirmed that any feedstock utilized by financed projects will exclude material from palm oil operations.

less sustainable alternatives, and incentivize livestock production.⁵ Furthermore, the IPCC notes with high confidence that meat and dairy consumption have a disproportionate impact on GHG emissions and recommends, where appropriate, a reduction in animal-sourced foods.⁶ Nevertheless, Sustainalytics considers the use of residues from day-to-day operations of existing facilities for biogas production to provide positive impacts in the short term and encourages the Municipality of Linköping to provide transparency on sourcing of such feedstock and prioritize alternative feedstocks where feasible. Sustainalytics further notes that all biogas operations financed under the Framework will be located in and source feedstock from Sweden, where minimum safeguards and standards apply for some of the above issues commonly associated with industrial livestock production, including animal welfare.⁷

- Bioenergy production from: i) non-waste feedstock, such as energy crops⁸ and biofuels; and ii) waste biomass, including forestry.
- The Municipality has confirmed that the feedstock for biogas and bioenergy used in this category will meet the criteria in Article 29 RED II (EU) 2018/2001.⁹
- Sustainalytics considers the expenditures under this category to be aligned with market expectations.
- Under the Energy Efficiency category, the Municipality may finance or refinance the following activities:
 - District heating and cooling production and distribution systems using waste-to-energy technology, where municipal solid waste is used as a feedstock, and the majority of recyclables are separated prior to incineration.
 - Sustainalytics notes that generating energy from waste can take potentially recyclable materials out of circulation and undermine the objectives of a zero-waste circular economy, including waste prevention and recycling. Additionally, the composition of residual waste, particularly fossil carbon content, is a crucial consideration for such projects to have low emissions intensity. However, Sustainalytics acknowledges that energy from waste can offer a better residual waste management option than landfills in many cases due to current constraints on recycling in many parts of the world. Sustainalytics recommends the Municipality to promote the removal of increasing amounts of recyclables, especially plastics and metals, and to monitor the thermal efficiency of the financed facilities.
 - Sustainalytics notes that the distribution assets financed will be connected to the Swedish grid, which has demonstrated a system grid emissions factor below 100 gCO₂e/kWh over a rolling five-year period.¹⁰
 - Sustainalytics further notes that 0.9% of the feedstock currently used in district heating and cooling production and distribution systems in Linköping is from fossil fuels. The Municipality has clarified to Sustainalytics that it has implemented policies to reduce it.
 - Electric or geothermal energy storage systems connected to renewable energy or the Swedish grid.¹¹
 - Smart grid solutions for energy transmission or distribution.
 - Noting the variety of definitions and applications of “smart grid” technology, Sustainalytics views positively investments that are designed to improve grid

⁵ Biofuel and biogas production from livestock residues including animal fats and oils can lead other industries such as oleochemicals and pet food to replace such inputs with less sustainable alternatives.

Transport & Environment, “Pigs do fly!”, (2023), at: https://www.transportenvironment.org/wp-content/uploads/2023/05/202304_Animal_fats_briefing_TE.pdf

⁶ IPCC, “Climate Change 2022 Mitigation of Climate Change”, (2022), at: https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf

⁷ Sustainalytics notes that Sweden ranks as one of the top-6 countries in the Animal Protection Index. World Animal Protection, “Animal Protection Index”, at: <https://api.worldanimalprotection.org/#>

⁸ The Municipality has confirmed that in the case of energy crops, life cycle emissions for such projects will be at least 65% lower than the fossil fuel baseline and that energy crops will be certified as sustainably sourced.

⁹ European Parliament, “Directive (EU) 2018/2001 of the European Parliament and of the Council”, (2018), at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001>

¹⁰ “Carbon intensity of the power sector in Sweden from 2000 to 2022”, at: <https://www.statista.com/statistics/1290491/carbon-intensity-power-sector-sweden/>

¹¹ Ibid.

- efficiency and encourages the Municipality to select projects that are clearly anticipated to deliver tangible efficiency improvements.
- Energy-efficient lighting technologies such as installation or conversion to LED lighting.
 - Replacement of legacy copper-based network with fibre optic.
 - Data centres with annualized PUE equal to or lower than 1.5 for data processing, hosting and other related activities.
 - Sustainalytics considers the expenditures under this category to be aligned with market expectations.
- Under the Pollution Prevention and Control category, the Municipality may finance or refinance activities aligned with the following criteria:
 - Waste prevention, reduction, recycling and reuse projects, including a waste sorting plant that separates residual household waste into five waste streams.
 - Sustainalytics notes that: i) chemical recycling of plastics will not be financed under the Framework; ii) financed waste collection vehicles will meet the relevant emissions thresholds in the Framework's Clean Transportation category; and iii) the waste management activities will support source segregation of waste.
 - Sustainalytics notes that the Municipality follows Swedish national waste management policies,¹² which constitute a robust waste management practice to mitigate associated risks from electronic and hazardous waste. Sustainalytics considers the expenditure under this category to be aligned with market practice.
 - Air pollution reduction and monitoring, including installation of new pollution control equipment such as dry and wet flue gas cleaning.¹³
 - Soil remediation and leachate management projects.¹⁴
 - Carbon capture, utilization and storage (CCUS) technologies, such as R&D for projects related to capture and utilization of CO₂, and the transport of captured CO₂. Projects also include the conversion of existing networks and terminals into CO₂ transport networks. Sustainalytics notes that the Municipality will exclude the direct application of CCUS technologies to any fossil fuel related activities or operations.
 - Sustainalytics considers the expenditures under this category to be aligned with market expectations.
 - Under the Clean Transportation category, the Municipality may finance:
 - Passenger cars and vehicles with zero direct CO₂ emissions, such as electric and hydrogen cars.
 - Infrastructure dedicated for pedestrians and bicycles, and infrastructure for fossil free public and non-public transportation systems, such as electric charging points. The Municipality has confirmed to Sustainalytics that parking facilities will be excluded from financed under the Framework.
 - Sustainalytics considers the expenditures under this category to be aligned with market expectations.
 - Under the Sustainable Water and Wastewater Management category, the Municipality may finance or refinance projects related to wastewater treatment and freshwater supply, including upgrade, replacement and improvement of drinking water supply systems, wastewater collection systems, wastewater treatment plants, water purification facilities and water efficiency improvements through leakage reduction measures, water conservation measures, water saving and water reuse. The Municipality has confirmed that fossil fuel-based equipment will be excluded. Sustainalytics considers this to be aligned with market practice.
 - Under the Climate Change Adaptation category, the Municipality may finance or refinance adaptation solutions in buildings, infrastructure and sensitive habitats, including measures to reduce damage from flooding, such as water treatment and projects to bury electrical cables, and to adapt buildings to the risk of heavy rain, increased water flows and high temperatures. The Municipality has further confirmed that all financed projects will be accompanied by vulnerability assessments and have climate change adaptation plans in place. Sustainalytics considers this to be aligned with market practice.
 - Under the Circular Economy Adapted Products, Production Technologies and Processes category, the Municipality may finance or refinance projects to improve resource efficiency and support the transition of society towards less dependence on fossil fuels through R&D of waste

¹² Sveriges Riksdag, Avfallsförordning (2020:614), at: https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/avfallsforordning-2020614_sfs-2020-614/

¹³ The Municipality has confirmed to Sustainalytics that: i) projects for fossil fuel operations will not be financed under the Framework; and ii) the pollution prevention measures financed will not be applied to fossil fuel-powered equipment or technologies.

¹⁴ The Municipality has confirmed to Sustainalytics that soil remediation activities will not be related to contamination directly caused by the Municipality's own activities.

- prevention, reduction, recycling and reuse projects meeting the criteria in the Framework's Pollution Prevention and Control category. Sustainalytics considers the expenditures under this category to be aligned with market expectations.
- Under Green Buildings category, the Municipality may finance the acquisition, construction and renovation of residential and commercial buildings in accordance with the following criteria:
 - New residential and commercial buildings built after 31 December 2020 meeting the following criteria:
 - Primary energy demand (PED) at least 10% lower than the threshold set for the applicable nearly zero-energy buildings (NZEB) and certified to or expected to be certified in accordance with the following minimum certification levels: Miljöbyggnad Silver;¹⁵ Nordic Swan Ecolabel;¹⁶ BREEAM Excellent;¹⁷ LEED Gold.¹⁸
 - Energy use that meets at least the requirements for Miljöbyggnad silver level for energy use (indicator 3).
 - Energy performance certificate (EPC) A or B.
 - Existing residential and commercial buildings built before 31 December 2020 meeting the following criteria:
 - EPC A or within top 15% of the national or regional building stock expressed as operational PED and demonstrated by adequate evidence and certified or expected to be certified to the following minimum certification levels: Miljöbyggnad Silver; Miljöbyggnad iDrift Silver;¹⁹ Nordic Swan Ecolabel; BREEAM Excellent; BREEAM In Use Excellent; LEED Gold.²⁰
 - Energy use that meets at least the requirements for Miljöbyggnad silver level for energy use (indicator 3).
 - Extensive renovations meeting one of the following criteria:
 - Renovations leading to primary energy savings of at least 30% within three years and validated through an EPC upon completion of the renovation.
 - Major renovations leading to at least Miljöbyggnad Silver level.
 - Sustainalytics considers the expenditures under this category to be aligned with market expectations.
 - Under the Access to Essential Services category, the Municipality may finance or refinance the construction, acquisition, expansion or upgrades to the following projects:
 - Public rental housing adapted for individuals with physical or mental disabilities and nursing homes for elderly people.
 - Sustainalytics notes that public housing in Sweden is open to all, regardless of income, background, age and family situation with no income limits or similar thresholds established.²¹ In practice, the residents of public housing are on average less well off than the general population and have lower incomes, exhibit higher unemployment rates and receive more social benefits.²² Sustainalytics is of the opinion that the Swedish welfare system offers comprehensive support, including accessible and affordable services for people in need. Sustainalytics is of the opinion that the Municipality's investment in social public rental housing is socially impactful.
 - Public sports and cultural facilities such as public gyms, fitness centres, ice rinks, theatres and libraries. The Municipality has confirmed that these facilities will be free or subsidized and accessible to all.
 - Education facilities such as childcare centres, preschools, primary and secondary schools, upper secondary schools, higher education campuses and education centres. The Municipality has confirmed that these facilities will be tuition-free and accessible to all.
 - Sustainalytics considers the expenditures under this category to be aligned with market expectations.
 - Project Evaluation and Selection:

¹⁵ Miljöbyggnad: <https://www.sgbc.se/certifiering/miljobyggnad/>

¹⁶ Nordic Swan Ecolabel: Official Nordic ecolabel (nordic-swan-ecolabel.org)

¹⁷ BREEAM: <https://breeam.com/standards/new-construction>

¹⁸ LEED: <https://www.usgbc.org/leed>

¹⁹ Miljöbyggnad iDrift: <https://www.sgbc.se/certifiering/miljobyggnad/>

²⁰ BREEAM In-Use: <https://breeam.com/standards/in-use>

²¹ Housing Europe, "Social Housing in Sweden", at: <https://www.housingeurope.eu/resource-125/social-housing-in-europe>

²² Ibid.

- The Municipality has established the Sustainability Bond Committee to evaluate and select eligible projects in line with the criteria outlined in the Framework. The Committee consists of representatives from municipal companies and their respective finance and sustainability units.
- In addition to its mandates, the Municipality has policies, programmes, guidelines and processes, and relies on compliance with applicable regional laws and regulations to address environmental and social risks associated with the eligible projects. Refer to Section 2 for more details.
- Based on the cross-functional oversight structure for project evaluation and selection and the presence of an environmental and social risk management system, Sustainalytics considers this process to be in line with market practice.
- Management of Proceeds:
 - The Municipality has communicated to Sustainalytics that the Municipal Office's Finance department will manage the allocation of proceeds using a portfolio approach and track them using a sustainability register. The Municipality intends to fully allocate proceeds within one year of each issuance. Pending full allocation, proceeds will be temporarily placed in the Municipality's general liquidity reserve.
 - Based on the use of a tracking system and the disclosure of the temporary use of proceeds, Sustainalytics considers this process to be in line with market practice.
- Reporting:
 - The Municipality commits to report on the allocation and impact of proceeds on its website on an annual basis until full allocation and in the event of significant changes.
 - Allocation reporting will include: i) total amount of outstanding sustainability bonds; ii) share of proceeds used for new financing versus refinancing; iii) breakdown of green and social projects by project category; iv) descriptions of selected green and social projects financed; and v) share of unallocated proceeds, if any.
 - Impact reporting may include impact indicators, such as annual renewable energy generation (in MWh), installed renewable energy capacity (in MWh), estimation of annual reduced or avoided GHG emissions (in tCO₂), annual energy reduced or avoided (in MWh), numbers of projects initiated within housing adapted for special needs, numbers of projects initiated within welfare, number of individuals benefitted from additional capacity for sports centres or culture facilities and numbers of projects initiated within education.
 - Based on the commitment to allocation and impact reporting, Sustainalytics considers this process to be in line with market practice.

Alignment with Sustainability Bond Guidelines 2021

Sustainalytics has determined that the Municipality of Linköping Sustainability Bond Framework aligns with the four core components of the GBP and SBP.

Section 2: Sustainability Mandate of Municipality of Linköping

Contribution to the Municipality of Linköping's sustainability mandate

The Municipality of Linköping has set climate targets to achieve carbon neutrality by 2025 and achieve net-zero GHG emissions by 2045, which is aligned with Sweden's national environmental objectives.^{23,24} To achieve these targets the Municipality has in place a Sustainability Policy which acts as its main guide to its sustainability practices and contribution to the UN SDGs.²⁵ The Sustainability Policy has three focus areas: i) social sustainability, ii) ecological sustainability, and iii) economic sustainability.²⁶ In addition to the Sustainability Policy, the Municipality also has the following programmes and policies on various areas of sustainability ranging from climate- and energy-related efforts to waste management:

- The Climate and Energy Programme sets the Municipality's long-term climate and energy related efforts, and also functions as the overall energy plan in line with the Municipal Energy Planning

²³ Municipality of Linköping, "A Sustainable City", at: <https://www.linkoping.se/en/business-linkoping/living/a-sustainable-city/>

²⁴ Naturvårdsverket, "Swedish environmental objectives", at: <https://www.naturvardsverket.se/en/om-miljoarbetet/swedish-environmentalobjectives/>

²⁵ Municipality of Linköping, "Hållbarhetspolicy för Linköpings kommunkoncern", (2018) at: <https://www.linkoping.se/contentassets/f0e17e4702a140ed8003c062a3cca3c8/hallbarhetspolicy-for-linkopings-kommunkoncern.pdf>

²⁶ Ibid.

Act.^{27,28} As part of this programme, the Municipality aims to contribute to the regions' goal of achieving net zero GHG emissions by 2045.²⁹ The programme has five priority areas: i) Energy- and climate-efficient homes, premises and businesses; ii) Climate-efficient building and construction; iii) Sustainable mobility and resource-efficient transport; iv) Proactive work for negative emissions; and v) Production and distribution of renewable and robust electricity, heating and cooling.³⁰ The Municipality's programme aims to reduce the climate impact of buildings and construction projects, and to increase the use of renewable energy, for example, having produced solar electricity make up at least 5% of the electricity use in Linköping in 2025 and at least 20% in 2040.³¹

- The Climate Adaptation Programme sets the Municipality's goals, principles and priorities for climate adaptation work.³² This programme sets five focus areas: i) operations with vulnerable groups; ii) existing and future buildings and communications; iii) technical supply; iv) natural and cultural environment, nutrition of region and tourism; and v) risk and safety.³³ As a part of this plan, the Municipality is responsible for keeping public spaces such as streets, roads, parks and buildings and municipality-owned buildings in a well-maintained state, aiming to ensure accessibility and functionality.³⁴
- The Nature Conservation Programme provides target areas and strategies for which the Municipality aligns its nature conservation activities and projects.³⁵ Additionally, the Municipality maintains a public database of important natural areas including red-listed and threatened species, which is accessible to the public and used as an important planning basis for all stakeholders.^{36,37}
- The Waste Plan governs activities for the sustainable management of municipal and hazardous waste. The plan has set goals to double the amount of waste prevented, double the amount of waste recycled and reduce municipal waste per person by 30% by 2025 compared to 2015 levels.³⁸
- The Travel and Transportation Policy applies to all travel that takes place within the service of the Municipality, including vehicles owned, rented and leased.³⁹ The policy aims to provide vehicles that promote safe, resource-efficient and environmentally conscious travel, and targets to have the entire vehicle fleet, including purchased vehicles and transport services, to be fossil fuel-free by 2025.⁴⁰

Sustainalytics is of the opinion that the Municipality of Linköping Sustainability Bond Framework is aligned with the Municipality's overall programmes, policies and initiatives and will further the Municipality's action on its key environmental priorities.

Approach to managing environmental and social risks associated with the projects

Sustainalytics recognizes that the proceeds from the bonds issued under the Framework will be directed towards eligible projects that are expected to have positive environmental and social impact. However, Sustainalytics is aware that such eligible projects could also lead to negative environmental and social outcomes. Some key environmental and social risks possibly associated with the eligible projects may include issues related to biodiversity loss and land use associated with large-scale infrastructure development;

²⁷ Municipality of Linköping, "Klimat- och energiprogram för Linköpings kommun 2022-2030", (2022), at: <https://www.linkoping.se/globalassets/gemensamt/regler-och-styrande-dokument/program/klimat-och-energi-program-inkl-energiplan-for-linkopings-kommun-2022-2030.pdf>

²⁸ According to the Municipal Energy Planning Act (1977:439), every municipality must have an up-to-date plan for the supply, distribution and use of energy. Please find more information on: <https://www.energimyndigheten.se/energieffektivisering/lagar-och-krav/lagen-om-kommunal-energiplanering/>

²⁹ Municipality of Linköping, "Klimat- och energiprogram för Linköpings kommun 2022-2030", (2022), at: <https://www.linkoping.se/globalassets/gemensamt/regler-och-styrande-dokument/program/klimat-och-energi-program-inkl-energiplan-for-linkopings-kommun-2022-2030.pdf>

³⁰ Ibid.

³¹ Ibid.

³² Municipality of Linköping, "Klimatanpassningsprogram för Linköpings kommun", (2023), at: <https://www.linkoping.se/globalassets/klimatsmart-linkoping/klimatanpassningsprogram-for-linkopings-kommun-remissversion.docx.pdf?49180d>

³³ Ibid.

³⁴ Ibid.

³⁵ Municipality of Linköping, "Naturvårdsprogram för Linköpings kommun", (2018), at: <https://www.linkoping.se/contentassets/3db6e6c9414344f28372ade03fb7a08f/naturvardsprogram-2018-antagande-tillg.pdf>

³⁶ Ibid.

³⁷ Municipality of Linköping, "Kartinhall", at: <https://kartan.linkoping.se/spatialmap>

³⁸ Municipality of Linköping, "Bilaga 1 Handlingsplan med åtgärder", (2021), at: <https://www.linkoping.se/globalassets/gemensamt/regler-och-styrande-dokument/lokala-foreskrifter/bilaga-1-handlingsplan-med-atgarder.pdf>

³⁹ Municipality of Linköping, "Policy för fordon, mobilitet och upphandlade transporter", (2023), at: <https://www.linkoping.se/contentassets/98d365b57af947378a69dab31877f1bc/policy-for-fordon-mobilitet-och-upphandlade-transporter.pdf>

⁴⁰ Ibid.

emissions, effluents and wastes generated in construction; occupational health and safety; and community relations.

Sustainalytics is of the opinion that Municipality of Linköping is able to manage and/or mitigate potential risks through implementation of the following:

- Regarding the potential adverse environmental impacts of large-scale projects, including risks related to land use and biodiversity loss, projects financed in the EU are expected to comply with Directive 2014/52/EU, which requires projects that are likely to have significant environmental effects to be adequately assessed before approval. It also requires that adequate measures be undertaken to avoid, prevent, reduce and, if possible, offset significant adverse effects on the environment, in particular on species and habitats. For land-intensive projects, the directive requires land use-related impacts to be identified, described and assessed through an environmental impact assessment. For large-scale projects, this also includes limiting impacts on land and soil, including organic matter, erosion, compaction and sealing.⁴¹
- To manage emissions, effluents and waste, the Municipality is required to follow applicable EU guidelines and regulations, such as the EU Construction and Demolition Waste Protocol and Guidelines,⁴² the EU Waste Framework Directive,⁴³ the Waste Electrical and Electronic Equipment Directive⁴⁴ and the European Waste Shipment Regulation. These regulations aim to ensure that waste management is carried out without endangering human health or negatively impacting the environment. In addition, through its Chemical Programme the Municipality sets guidelines and requirements for the use of harmful chemicals and guidelines for decreased chemical usage in municipal operations.⁴⁵
- Regarding occupational health and safety, the EU Directive on Worker Health and Safety establishes minimum safety and health requirements mandating employers to implement necessary measures to prevent occupational risks, improve working conditions, provide adequate instructions and training, among other workplace health and safety provisions.⁴⁶ Sweden has transposed the directive to its national legislation.⁴⁷
- The Municipality of Linköping's operations are governed by Swedish laws and incorporate regular stakeholder and community engagement for all activities, mandates and developments.⁴⁸
- Sustainalytics notes that the projects financed under the Framework will be located in Sweden, which is recognized as a Designated Country under the Equator Principles, indicating the presence of strong environmental and social governance systems, legislation and institutional capacity for protecting the environmental and communities.⁴⁹

Based on these policies, standards and assessments, Sustainalytics is of the opinion that Municipality of Linköping has adequate measures and is well positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

Section 3: Impact of Use of Proceeds

All nine use of proceeds categories are aligned with those recognized by GBP or SBP. Sustainalytics has focused on Green Buildings below where the impact is specifically relevant in the local context.

⁴¹ European Commission, "Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014", (2014), at: <https://eurlex.europa.eu/legal-content/EN/TXT/PDF>

⁴² European Commission, "EU Construction and Demolition Waste Protocol and Guidelines", (2018), at: <https://single-market-economy.ec.europa.eu/>

⁴³ European Parliament, "Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives", (2008), at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0098>

⁴⁴ European Parliament, "Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)", (2012), at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019>

⁴⁵ Municipality of Linköping, "Kemikalieprogram", at: <https://www.linkoping.se/contentassets/6698ae38104a4ecc8e77f2dfa190e90f/kemikalieprogram.pdf>

⁴⁶ European Commission, "Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work", (1989), at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01989L0391-20081211&qid=1691606114488>

⁴⁷ European Commission, "Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States", (2015), at: <https://ec.europa.eu/social/BlobServlet?docId=16895&langId=en>

⁴⁸ Politics in Linköping, <https://www.linkoping.se/language/municipality-politics/politics-in-linkoping/>

⁴⁹ Equator Principles, "About the Equator Principles", at: <https://equator-principles.com/about-the-equator-principles/>

Importance of financing green buildings in Sweden

The buildings sector is the largest energy consuming sector in the EU, accounting for approximately 40% of the total energy consumption in the bloc.⁵⁰ In 2021, the sector accounted for 36% of energy-related GHG emissions in the EU, primarily due to heating, cooling and domestic hot water use, which used 80% of the overall energy demand.⁵¹ As part of the Climate Target Plan 2030, the EU aims to reduce GHG emissions by 55% compared to 1990 levels by 2030 and achieve climate neutrality by 2050.⁵² The EU must decrease emissions from its building stock by 60%, lower final energy consumption of buildings by 14%, and cut energy usage from heating and cooling by 18% compared to 2015 levels in order to achieve its climate goals.⁵³ In addition, the European Commission's Renovation Wave strategy seeks to double building renovation rates by 2030.⁵⁴ In this context, renovating existing buildings has the potential to decrease the EU's total energy consumption by approximately 5-6% and reduce overall emissions by 5% and could also improve the health and well-being of vulnerable populations while reducing energy bills and increasing affordability.^{55,56}

Sweden has a target to achieve net zero GHG emissions by 2045, with interim milestones for a 55% reduction by 2030 and a 73% reduction by 2040, measured against a 1990 baseline.⁵⁷ After 2045, Sweden aims to achieve negative GHG emissions through the natural eco-cycle or supplementary measures.⁵⁸ The construction and real estate sectors play a crucial role in meeting these goals, as they collectively accounted for 34% of Sweden's total energy consumption and 22% of its national GHG emissions in 2021.⁵⁹ Aligned with the EU's climate goals and strategies, Sweden has committed to improving energy efficiency by 50% by 2030 compared to 2005 and achieving 100% renewable electricity generation by 2040 under its Integrated National Energy and Climate Policy.⁶⁰ Additionally, since 2022, all new buildings in Sweden must obtain a climate declaration that outlines the climate impacts of the entire construction phase.⁶¹

The Municipality of Linköping has set a goal to become net zero by 2045.⁶² Aligned with this target, between 2009 and 2020, net CO₂ emissions per resident in the municipality declined by 35%.⁶³

In this context, Sustainalytics is of the opinion that the Municipality's investments in green buildings will contribute to its climate strategies and targets, and more broadly to Sweden's emissions reduction targets.

Contribution to SDGs

The Sustainable Development Goals were adopted in September 2015 by the United Nations General Assembly and form part of an agenda for achieving sustainable development by 2030. The instruments issued under the Municipality of Linköping Sustainability Bond Framework are expected to help advance the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

⁵⁰ European Commission, "In focus: Energy efficiency in buildings", (2020), at: https://commission.europa.eu/news/focus-energy-efficiency-buildings-2020-02-17_en

⁵¹ European Commission, "Directive of the European Parliament and of the Council on the energy performance of buildings (recast)", (2021), at: <https://data.consilium.europa.eu/doc/document/ST-15088-2021-INIT/en/pdf>

⁵² European Environment Agency, "2030 Climate Target Plan", at: <https://www.eea.europa.eu/policy-documents/2030-climate-target-plan>

⁵³ European Commission, "A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives", (2020), at: https://eurlex.europa.eu/resource.html?uri=cellar:0638aa1d-0f02-11eb-bc07-01aa75ed71a1.0003.02/DOC_1&format=PDF

⁵⁴ European Commission, "In focus: Energy efficiency in buildings", (2020), at: https://commission.europa.eu/news/focus-energy-efficiency-buildings-2020-02-17_en

⁵⁵ Ibid.

⁵⁶ European Commission, "Renovation Wave", at: https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

⁵⁷ Swedish Ministry of Climate and Enterprise, "Sweden's climate policy framework", (2021), at: <https://www.government.se/articles/2021/03/swedens-climate-policy-framework/>

⁵⁸ Ibid.

⁵⁹ Boverket, "Miljöindikatorer – aktuell status", (2024), at: <https://www.boverket.se/sv/byggande/hallbart-byggande-och-forvaltning/miljoindikatorer--aktuell-status/>

⁶⁰ The Ministry of Infrastructure, "Sweden's Integrated National Energy and Climate Plan", (2020), at: https://energy.ec.europa.eu/system/files/2020-03/se_final_necp_main_en_0.pdf

⁶¹ Boverket, "Climate declaration for new buildings", (2023), at: <https://www.boverket.se/en/start/building-in-sweden/developer/rfq-documentation/climate-declaration/>

⁶² Municipality of Linköping, "A Sustainable City", at: <https://www.linkoping.se/en/business-linkoping/living/a-sustainable-city/>

⁶³ Ibid.

Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
Pollution Prevention and Control	11. Sustainable Cities and Communities	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
Clean Transportation	9. Industry, Innovation and Infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
	11. Sustainable Cities and Communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
Sustainable Water and Wastewater Management	6. Clean Water and Sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Climate Change Adaptation	13. Climate Action	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Circular economy Adapted Products, Production Technologies and Processes and Design	12. Responsible consumption and production	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
Green Buildings	9. Industry, Innovation and Infrastructure	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
Access to Essential Services	3. Good Health and Wellbeing	3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
	4. Quality Education	4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
	11. Sustainable Cities and Communities	11.1. By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Conclusion

The Municipality of Linköping has developed the Municipality of Linköping Sustainability Bond Framework under which it may issue sustainability bonds and use the proceeds to finance or refinance projects under the following categories: Renewable Energy, Energy Efficiency, Pollution Prevention and Control, Clean Transportation, Sustainable Water and Wastewater Management, Climate Change Adaptation, Circular economy Adapted Products, Production Technologies and Processes and Design, Green Buildings, and Access to Essential Services. Sustainalytics considers that the eligible projects are expected to contribute to positive environmental and social impacts.

The Municipality of Linköping Sustainability Bond Framework outlines processes for tracking, allocation and management of proceeds, and makes commitments for the Municipality to report on allocation and impact. Sustainalytics considers that the Municipality of Linköping Sustainability Bond Framework is aligned with the Municipality's overall sustainability strategy and that the use of proceeds will contribute to the advancement of the UN Sustainable Development Goals 3, 4, 6, 7, 9, 11, 12 and 13. Additionally, Sustainalytics considers that the Municipality of Linköping has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects.

Based on the above, Sustainalytics is confident that Municipality of Linköping is well positioned to issue sustainability bonds and that the Municipality of Linköping Sustainability Bond Framework is robust, transparent and in alignment with the four core components of the Sustainability Bond Guidelines 2021, Green Bond Principles 2021 and Social Bond Principles 2023.

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