



Linköpings Stadshus Green Bond Second Opinion

September 17th, 2019

Linköpingsgruppen was established by the Municipality of Linköping, Linköpings Stadshus, Tekniska verken i Linköping, Stångåstaden and Lejonfastigheter in 2017 to increase cooperation and create new financial solutions by e.g. establishing a common green bond framework. All these subsidiaries of Linköpingsgruppen will issue under one green bond framework. Linköpings Stadshus is a parent company without its own operations but acts as internal bank for companies without own financial management. Linköpings Stadshus plans to issue green bonds for on-lending to subsidiary Sankt Kors Fastighets AB, a company that builds properties and provides creative business environments for new companies. Therefore, this second party opinion (SPO) will refer to Sankt Kors from now on.

Linköpingsgruppen's green bond framework as applied by Sankt Kors, provides a progressive, clear and sound framework for investments into projects that well align with the Green Bond Principles. The green bond framework as developed by Linköpingsgruppen contains nine eligible project types. Only the green buildings project category is, however, of relevance for Sankt Kors. Use of proceeds excludes direct and indirect investments in fossil fuels.

Sankt Kors has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting. Sankt Kors carries out climate scenario analysis and risk assessments in alignment with the methodology recommended by TCFD. The Climate Adaptation program of Linköping municipality is comprehensive and covers a wide set of potential future risks under climate change. In terms of estimation of CO₂ emissions, Sankt Kors reports energy consumption to Linköping municipality, which in turn calculates emissions.

Investors should be aware that this green bond framework allows for direct investments into building related infrastructure, including parking lots with a small percentage of charging stations for electric vehicles. These projects raise concerns for emission lock-ins. Based on the overall assessment of the project types utilized by Sankt Kors, governance and transparency considerations, Sankt Kors' green bond framework receives an overall **Medium Green** shading. In order to achieve a dark green shading, the green bond framework would need a clearer requirement that best environmental technology is used in eligible green bond building projects. The framework would benefit from setting more ambitious targets for energy use to be in line with IEA recommendations for reaching the 2 degrees warming ambition of the Paris Agreement. Passive house technology and higher improvements in existing buildings through refurbishments would be in line with the 2 degrees goal.

SHADES OF GREEN

Based on our review, we rate the Linköpings Stadshus' **green bond framework Medium Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in Linköpings Stadshus' framework to be Excellent.



GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the





Contents

1	Terms and methodology _____	Feil! Bokmerke er ikke definert.
	Expressing concerns with 'shades of green'	Feil! Bokmerke er ikke definert.
2	Brief description of Linköpings Stadshus' green bond framework and related policies _____	4
	Environmental Strategies and Policies	4
	Use of proceeds	4
	Selection	5
	Management of proceeds	5
	Reporting	5
3	Assessment of Linköpings Stadshus' green bond framework and policies _____	6
	Overall shading	6
	Eligible projects under the Linköpings Stadshus' green bond framework	6
	Governance Assessment	7
	Strengths	7
	<i>Governance</i>	<i>Feil! Bokmerke er ikke definert.</i>
	<i>Project Categories</i>	<i>Feil! Bokmerke er ikke definert.</i>
	Pitfalls	8
	<i>Governance</i>	<i>Feil! Bokmerke er ikke definert.</i>
	<i>Project Categories</i>	<i>Feil! Bokmerke er ikke definert.</i>
	Appendix 1: _____	9
	Referenced Documents List _____	9
	Appendix 2: About CICERO Shades of Green _____	11









1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated August 2019. This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

Expressing concerns with 'shades of green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green	Examples
 <p>Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.</p>	 <p>Wind energy projects with a strong governance structure that integrates environmental concerns</p>
 <p>Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.</p>	 <p>Bridging technologies such as plug-in hybrid buses</p>
 <p>Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.</p>	 <p>Efficiency investments for fossil fuel technologies where clean alternatives are not available</p>
 <p>Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.</p>	 <p>New infrastructure for coal</p>

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, the governance aspects are carefully considered and reflected in the overall shading of the green bond framework. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent.



2 Brief description of Linköpings Stadshus' green bond framework and related policies

Linköpings Stadshus coordinates the activities of municipal companies of the Municipality of Linköping and overlooks the operations of eight daughter companies, among which Sankt Kors Fastighets AB, Tekniska Verken, AB Stångåstaden and Lejonfastigheter. Linköpings Stadshus is a parent company without its own operations but acts as internal bank for companies without own financial management. Linköpings Stadshus plans to issue green bonds for on-lending to subsidiary Sankt Kors Fastighets AB, a company that builds properties and provides creative business environments for new companies.

Environmental Strategies and Policies

The investment process and reporting under this green bond framework will be administered by Sankt Kors. Being owned by the Municipality of Linköping, Stadshus and Sankt Kors abide by the municipality's sustainability and environmental policies as well as the Climate Adaptation Program and the Chemical Program. In this context, the issuer refers to the UN Sustainable Development Goals (Agenda 2030) and the Paris Agreement. A clear target for the Municipality of Linköping is to become carbon-neutral by 2025. Sankt Kors reports energy consumption to Linköping municipality, which in turn calculates emissions. According to the Environmental Policy of Linköping, the municipality will focus on pollution prevention and reduction of natural resource use, energy consumption reduction and increasing use of renewable energy, biodiversity preservation, continuous education and engagement of employees and elected representatives for continuous development of environmental activities and information of the local community and stakeholders.

Use of proceeds

Linköpings Stadshus' green bonds will finance and re-finance eligible projects under the administration of Sankt Kors and in accordance with the green bond framework. According to the issuer, the proceeds will be used to fund mostly new projects and the split between new projects and refinanced green projects will be included in Linköpingsgruppen's annual green bond investor report. No operating expenditure will be covered by this green bond framework.

The net proceeds will fund eligible projects and assets that meet one of the following purposes: reduce greenhouse gas emissions (1), adapt operations to climate change (2) or promote other environmental issues apart from climate change (3). According to the issuer, analysis shall be conducted to ensure that the projects do not contravene other prioritized areas.

The framework specifies nine project categories: renewable energy (1), energy efficiency (2), clean transportation (3), replacement of fossil raw materials (4), green buildings (5), waste management (6), water and waste management (7), climate adaptation measures (8) and environmental measures (9). However, only green buildings category is relevant for Sankt Kors. Green bond proceeds will not be allocated to nuclear power or fossil energy generation projects.



Selection

The selection process is a key governance factor in the Green bond Principles. CICERO Green considers how climate and environmental considerations are taken into account when evaluating whether projects can qualify for green bond funding. The Linköpings Stadshus' green bond framework on behalf of Sankt Kors, outlines a detailed and transparent selection procedure that is in line with the Green Bonds Principles.

Sankt Kors has established a decision-making unit, responsible for the evaluation of potential green projects which includes environmental and financial representatives who are responsible for evaluating and approving projects that meet the green criteria under consensus. Life cycle considerations will be taken into account. Relevant expertise will be called to inform the decision-making unit if necessary. The decision-making unit is responsible for documenting the decisions.

Management of proceeds

CICERO Green finds the management of proceeds to be in accordance with the green bond principles. Linköpings Stadshus will credit the net proceeds of any issuance under the green bond framework to a separate account. Financing or refinancing of eligible projects and/or assets that have qualified according to the project evaluation and selection process, will be deducted at the end of each quarter in an amount equal to disbursements for the financing of green projects. If an eligible green project or asset no longer meets the eligibility criteria, it will be removed from the pool of projects.

Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green bond programs. Procedures for reporting and disclosure of green bond investments are also vital to build confidence that green bonds are contributing towards a sustainable and climate-friendly future, both among investors and in society.

Sankt Kors has committed to annual reporting through the green bond investor report, on behalf of Linköpings Stadshus. The green bond investor report shall include a list of all approved green projects with description of the projects and their main environmental benefits and the total amount allocated and disbursed and information about the split between new projects and refinancing. According to the issuer, the annual report aims to include installed renewable energy capacity, energy efficiency gains (expected vs. achieved) certifications and expected vs. actual energy use per green building and estimated and avoided greenhouse gas emissions when relevant and possible. CICERO Green is encouraged to see that Stadshus and Sankt Kors will employ sustainability capacity in writing the green bond investor report and that reporting will be conducted on a project basis.

Linköpingsgruppen has informed CICERO Green that allocation of funds under the green bond framework and the green bond investor report will be reviewed annually by an external auditor. Impact metrics such as emission reductions and energy use will be included in the report. The annual report and the opinion of the external auditor will be publicly available on the webpage of every member of Linköpingsgruppen.



3 Assessment of Linköpings Stadshus' green bond framework and policies


The framework and procedures for Linköpings Stadshus' green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where Linköpings Stadshus' should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in Linköpings Stadshus' green bond framework, we rate the framework **CICERO Medium Green**.

Eligible projects under the Linköpings Stadshus' green bond framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be “well defined”.

Category	Eligible project types	Green Shading and some concerns
Green buildings 	<ul style="list-style-type: none">Commercial and residential buildings that, at the time of approval, at least meet the requirements for <i>Miljöbyggnad Silver</i>, <i>Svanen</i>, <i>BREEAM Very Good</i> or <i>LEED Gold</i> or have an energy use per m² Atemp that meets the requirement for the level silver for energy use (indicator 3) in <i>Miljöbyggnad</i>.Major renovations leading at least to compliance with <i>Miljöbyggnad Silver</i> or that lead to a reduction in energy use per year on a m² Atemp basis of at least 30%.Building related infrastructure	Medium Green <ul style="list-style-type: none">✓ A dark green shading would require passive or plus house technologies.✓ Miljöbyggnad Silver requires energy use at least 25% lower than the requirements in national regulations (Boverkets byggregler, BBR)✓ Construction projects can have potential negative local environmental impacts.✓ For investments into energy efficiency: Consider the potential for rebound effects on energy consumption.



- ✓ Climate resilience analyses will be carried out for new projects
- ✓ Building related infrastructure may include carpooling spaces and bicycle parking facilities.
- ✓ Projects under this category may include parking lots.
- ✓ Access to public transportation in the proximity of the building has been taken into account.

Table 1. Eligible project categories

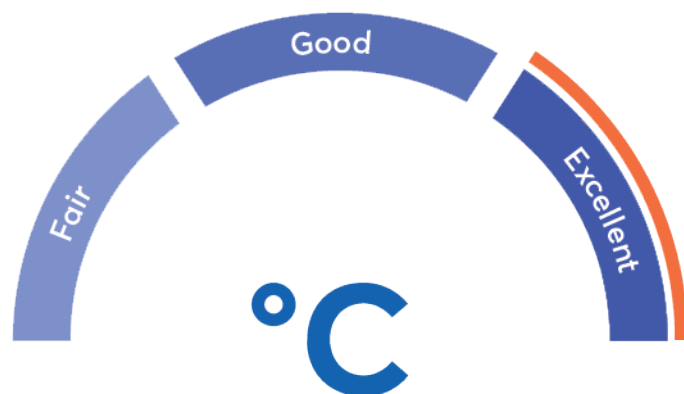
Governance Assessment

Four aspects are studied when assessing the Linköpings Stadshus' governance procedures: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent.

The overall assessment of the governance structure of Linköpings Stadshus' gives it a rating of Excellent.

Linköpings Stadshus has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting on a project level. Linköpings Stadshus carries out climate scenario analysis or risk assessments in alignment with the methodology recommended by TCFD¹. The Climate

Adaptation program of Linköping municipality is comprehensive and cover a broad set of potential future risks under climate change.



Strengths

Linköpings Stadshus is owned by the Municipality of Linköping and therefore abides by the municipality's ambitious sustainability and environmental policies as well as the Climate Adaptation Program and the Chemical Program. A clear target for the Municipality of Linköping is to become carbon-neutral by 2025. As an important property developer in Linköping, Sankt Kors plays a key role in reaching this target. The criteria for eligible

¹ <https://www.fsb-tcf.org/publications/final-recommendations-report/>



projects under the Green buildings category are good, but do not yet delivering the solutions needed in a low carbon 2050 perspective (passiv house technology and similar).

Weaknesses

We find no substantial weaknesses in Linköpings Stadshus' Green bond framework.

Pitfalls

The Green building criteria allow for either a comprehensive certification (through Miljöbyggnad, Svanen, BREEAM or LEED) *or* a pure energy improvement requirement. In the latter case, other environmental concerns like material use, etc., is not binding.

In a low carbon 2050 perspective, the energy performance of buildings is expected to be improved, with passive house technology becoming mainstream and the energy performance of existing buildings greatly improved through refurbishments. The issuer is taking a step in this direction with energy efficiency criteria for both new buildings and in renovation of existing buildings. In order to achieve a dark green shading, the Green Bond framework would need a clearer requirement that best environmental technology is used in eligible green bond building projects.

New infrastructure related to buildings, such as new parking spaces is planned under this green bond framework. Global greenhouse gas emissions from the building sector has doubled since 1970, representing 19% of global greenhouse gas emissions, according to IPCC AR4². In Sweden, emissions from road traffic have increased in 2018, after a steady fall in the previous years. Furthermore, an increasing trend in purchases of new passenger vehicles has been registered. Diesel fueled vehicles are highest percentage of new cars while electric vehicles have more than doubled since 2014³. The Swedish government has committed to 70 percent reduction in traffic related emissions by 2030. To reach this goal, at least eight percent reduction in yearly emissions is needed. Investments in new infrastructure for increased capacity of fossil fueled vehicles does not support the governments commitments. Sankt Kors has informed CICERO Green that charging stations for electric vehicles will be installed in the new parking spaces. The exact number of charging stations is not yet decided but a similar project, Ebbepark has 14 parking spaces equipped with charging stations out of 160 total parking spaces. Investments in new parking facilities with limited number of charging stations bears a significant risk for emissions lock-in and rebound effects.

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and thus need to be considered with regards to the net impact of climate-related investments.

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity. An example is green buildings. Linköpings Stadshus should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

² https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter9.pdf

³ <https://www.transportstyrelsen.se/sv/vagtrafik/statistik/Statistik-over-koldioxidutslapp/>



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Linköpingsgruppens' Green Bonds Framework, 2019	This document comprises Linköpingsgruppens' Green Bonds Framework and how it intends to use proceeds, how it plans to evaluate and select eligible projects, manages the proceeds and reports to investors.
3	Environmental Policy of the Municipality of Linköping Lejonfastigheter AB	The environmental policy of the Municipality of Linköping describes the principles for ecologically sustainable development that apply to the municipality's activities.
4	Climate Adaptation Programme of the Municipality of Linköping	This document describes the climate adaptation plan of the Municipality of Linköping. The purpose of the document is to create an overall picture of the risks linked to already ongoing climate change that will not be avoided within the municipality and identify long-term directions and strategies with prioritization of special development initiatives to adapt the municipality's activities to manage these risks.
5	Chemical Programme of the Municipality of Linköping	This document elaborates on the Municipality of Linköping chemical programme with the purpose to develop guidelines for how the use of chemicals that are harmful to health and the environment should be reduced in municipal activities, municipal companies and in activities purchased by the municipality.
20	Sankt Kors Business Plan 2019	This document elaborates on Sankt Kors' approach on business planning, vision and focus.
21	Sankt Kors Environment and Energy programme 2013	The environmental program describes the overall environmental requirements for new construction and applies to all new buildings



22	Sankt Kors Sustainability Plan for Ebbepark	This document elaborates on the sustainability programme for Ebbepark and it is intended for both builders and the public.
23	Sankt Kors Procurement and Purchasing Policy for the Municipality of Linköping	The procurement and purchasing policy contains values-based approaches that must be taken into account in the procurement and purchasing process and apply to the municipal councils and administrations.

Lejonfastigheter AB



Appendix 2: About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).

