



# Stångåstaden Green Bond Second Opinion

September 18, 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. AB Stångåstaden (publ) is the largest housing company in Linköping. The company owns and manages approximately 18,500 apartments, 4,200 of which are student housing and managed by the subsidiary Studentbostäder i Linköping AB. In total, Stångåstaden owns approximately 26 percent of the housing in the municipality.

**Linköpingsgruppen's green bond framework as applied by AB Stångåstaden, provides a progressive, clear and sound framework for investments into projects that well align with the green bond principles GBP 2018).** The green bond framework as developed by Linköpingsgruppen contains nine eligible project types. Only a subset is, however, of relevance for Stångåstaden. The main category is Green Buildings, but Stångåstaden may also to a smaller extent use the categories Clean transport, Energy efficiency, Replacement of fossil raw materials, Waste management, Climate adaptation measures, Environmental measures, and Renewable energy (wind power) in the future. Eligibility in the Green building category will require fulfilling Miljöbyggnad Silver or equivalent. Proceeds will not be used to finance investments in fossil fuels or nuclear power.

**Stångåstaden has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting.** Nevertheless, we note that Stångåstaden does not seem to carry out climate scenario analysis or risk assessments in alignment with the methodology recommended by TCFD. On the other hand, the Climate Adaptation program of Linköping municipality is comprehensive and cover a broad set of potential future risks under climate change. Methods and parameters used for estimating CO<sub>2</sub> emission reductions from eligible projects are clear and will be reported.

Based on the overall assessment of the project types utilized by Stångåstaden, governance and transparency considerations, Stångåstaden's green bond framework receives an overall **Medium Green** shading. While most of the eligible project categories are shaded Dark green, the main category – Green buildings – is shaded Medium green. 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.

## SHADES OF GREEN

Based on our review, we rate the Stångåstaden's 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 Stångåstaden's framework to be **Excellent**.



## GREEN BOND PRINCIPLES

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





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# 1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of Linköpingsgruppen's green bond framework dated 3 September 2019 as applied by AB Stångåstaden. 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. This second opinion remains relevant to all green bonds issued by Stångåstaden 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.

## 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 of the bonds. 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><b>Dark green</b> 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><b>Medium green</b> 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><b>Light green</b> 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><b>Brown</b> 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 Stångåstaden'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 Stångåstaden'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 Stångåstaden's green bond framework and related policies

Linköping is Sweden's fifth largest municipality with 160,000 inhabitants, and is known for its high-tech companies, its university, and scalable trade. The Municipality of Linköping conducts its activities in cooperation with a number of subsidiaries under the Linköping group. The group is formed by the following: Linköpings Stadshus, Tekniska verken, Stångåstaden and Lejonfastigheter and their subsidiaries. Through the Linköping group, the Municipality has chosen to issue a green bond for certain municipal activities, such as property development and management, energy production and distribution and waste management together with companies through Linköpings Stadshus and eight daughter companies. One of the subsidiaries is Sankt Kors Fastighets AB, which does not have its own financing business, but where Linköpings Stadshus lends to the company. Linköpings Stadshus has a coordinating ownership role vis a vis subsidiary companies. Tekniska verken i Linköping AB (publ), is the parent company in a group that offers goods and services in the production and distribution of electricity, trade in electricity, district heating/ cooling, biogas, bio fertilizer, broadband, water, drain, waste management, lighting and related services. Lejonfastigheter AB (publ) develops and manages public environments. The company's real estate portfolio contains 286 properties.

AB Stångåstaden (publ) is the largest housing company in Linköping. The company owns and manages approximately 18,500 apartments, 4,200 of which are student housing and managed by the subsidiary Studentbostäder i Linköping AB. In total, this means that Stångåstaden owns approximately 26 percent of the housing in the municipality. Currently, Stångåstaden produces approximately 500 new flats and refurbishes some 300-500 flats annually.

### Environmental Strategies and Policies

Stångåstaden is owned by the Municipality of Linköping and therefore abides 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. According to the Environmental Policy of Linköping, environmentally sustainable developments 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. A clear target for the Municipality of Linköping is to become carbon-neutral by 2025.

For new houses, Stångåstaden set as a requirement that specific energy use should be below 63 kWh/m<sup>2</sup>, well below the building standard of 85 kWh/m<sup>2</sup>. Stångåstaden is ISO 14001 certified since 2005 and uses a tool for securing environmentally friendly housing projects called SundaHus<sup>1</sup>. Work on reducing energy use is divided into four different areas; Technology, Construction, Operation and Behaviour according to an established energy strategy. Stångåstaden has a continuous dialogue with their tenants and inform them about how to behave to optimize energy consumption.

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<sup>1</sup> In SundaHus materials are evaluated and classified according to their environmental and health impact. Stångåstaden aim to use the best materials according to SundaHus.



Stångåstaden has the goal to decrease the amount of energy bought per square meter – in forms of electricity, warmth and district cooling – with 25% from 2011 until 2025. Currently, Stångåstaden is on track to reach this goal; up to and including 2018 the energy consumption (bought energy) has decreased by 13.3% since 2011. Another goal is to set social demands for entrepreneurs; e.g. Stångåstaden requires that the entrepreneurs employs personnel who are unemployed and have difficulties in receiving a job. Furthermore, Stångåstaden should own renewable energy capacity covering purchased electricity on an annual basis by the year 2025; Stångåstaden reached 59% in 2018.

In Stångåstaden's sustainability report, emissions of CO<sub>2</sub> are reported according to EURHO-GR, which is a European CSR framework developed by EURHONET (The European Housing Network; a network of 38 public and social housing companies from different European countries).

### Use of proceeds

Stångåstaden's green bonds will finance and re-finance eligible projects in accordance to the green bond framework. The proceeds will finance investments, not ongoing operations. According to the issuer the split between financing of new projects and re-financing of older projects is expected to be approximately 50-50%. The split between new projects and refinanced green projects will be included in Stångåstaden's annual Green Bond Investor Report.

The net proceeds will fund eligible projects and assets that meet one of the following purposes: 1) reduce greenhouse gas emissions, 2) adapt operations to climate change or 3) promote other environmental issues apart from climate change. According to the issuer, analysis shall be conducted to ensure that the projects do not contravene other prioritized areas. Stångåstaden will mainly utilize the Green building category. Green bond proceeds will not be allocated to direct or indirect 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 Stångåstaden's green bond framework outlines a detailed and transparent selection procedure that is in line with the green bonds principles and that includes screening for controversial projects such as wind projects with local resistance.

Stångåstaden 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 by consensus that meet the green criteria under the green bond framework. The environmental competence of the unit covers all the project categories in the framework that are relevant for Stångåstaden. Life cycle assessments will be carried out for specific projects, but not all. 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. Stångåstaden 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. Unallocated proceeds will be held in a bank account.



## 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.

Stångåstaden has committed to annual reporting through the green bond investor report which shall include a list with funds allocated and disbursed to all approved green projects with description of the projects and their main environmental benefits and information about the split between new projects and refinancing. The CFO together with energy manager and sustainability manager are responsible for the reporting. According to the issuer, the annual report aims to include installed renewable energy capacity, energy produced, energy efficiency gains (expected vs. achieved) certifications and expected vs. actual energy use per green building and estimated avoided greenhouse gas emissions when relevant and possible. Used grid factors will be presented in the report. 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 including impact metrics will be reviewed annually by an external auditor. The green bond investor report and the opinion of the external auditor will be publicly available on the webpage of every member of Linköpingsgruppen.



### 3 Assessment of Stångåstaden’s green bond investments and policies

The framework and procedures for Linköpingsgruppen’s green bond framework as applied by Stångåstaden 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 Stångåstaden 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 Stångåstaden’s green bond framework, we rate the framework **CICERO Medium Green**.

#### Eligible projects under the Stångåstaden’s 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”.

The green bond framework as developed by Linköpingsgruppen contains nine eligible project types. Only a subset is, however, of relevance for Stångåstaden and the elements of this subset are listed in the table below. The main category is Green Buildings, but Stångåstaden may also to a smaller extent use the categories Clean transportation, Energy efficiency, Replacement of fossil raw materials, Waste management, Climate adaptation measures, Environmental measures, and Renewable energy (wind power) in the future.

Category	Eligible project types	Green Shading and some concerns
Renewable energy 	<ul style="list-style-type: none"><li>• Wind power</li><li>• Solar power</li></ul>	<b>Dark Green</b>  ✓ Consider local environmental impacts of renewables including potential impacts on biodiversity.
Replacement of fossil raw materials	E.g. fossil based plastics replaced with bioplastics	<b>Medium Green</b>  ✓ Note that biodegradable plastic cannot be recycled and can represent an environmental



challenge if not disposed of appropriately.

**Energy efficiency**



- Other measures to introduce and promote energy efficient solutions

**Dark Green**

- ✓ The issuer informs us that this category will be used for smaller energy efficiency measures, such as led lightning, etc.
- ✓ Consider the potential for rebound effects on energy consumption

**Clean transportation**



- Fossil free public transportation
- Pedestrian and bicycle paths
- Hydrogen, biogas and EVs
- Logistics solutions which reduce climate footprints from transportation of people and goods

**Dark Green**

- ✓ The issuer informs us that this category will be used mainly for pedestrian and bicycle paths, in addition to EV and biogas vehicles.
- ✓ Note that biofuels are not strictly CO<sub>2</sub> neutral.
- ✓ Hydrogen is an environmentally friendly alternative for clean power systems, such as fuel cells. However, hydrogen production has a high energy demand. Consider renewable sources in hydrogen production.
- ✓ Biogas vehicles have the potential of running on natural gas and will still be a source for local pollutants.

**Green buildings**



- Commercial and residential buildings that, at the time of approval, at least meet the requirements for *Miljöbyggnad Silver, Svanen, BREEAM Very Good or LEED Gold* or have an energy use per m<sup>2</sup> Atemp that meets the requirement for the level

**Medium Green**

- ✓ A dark green shading would require passive or plus house technologies.
- ✓ Miljöbyggnad Silver requires energy use at least 25% lower



silver for energy use (indicator 3) in *Miljöbyggnad*.

- Major renovations leading at least to compliance with *Miljöbyggnad Silver* or that lead to a reduction in energy use per year on a m<sup>2</sup> Atemp basis of at least 30%.

than the requirements in national regulations (Boverkets byggregler, BBR)

- ✓ Stångåstaden expects to build 5-6 new buildings per year the coming years. There is no fossil fuel directly involved in the heating system of the buildings.
- ✓ Construction projects can have potential negative local environmental impacts. Stångåstaden will put overall environmental requirements on subcontractors.
- ✓ Stångåstaden will carry out climate resilience analyses for new projects.
- ✓ For investments into energy efficiency: Consider the potential for rebound effects on energy consumption.

#### Waste management



- ✓ Waste prevention
- ✓ Waste minimization
- ✓ Recycling
- ✓ Reuse
- ✓ Rehabilitation of contaminated land
- ✓ Leachate management
- ✓ Other resource efficiency improvements

#### Dark Green

- ✓ Most proceeds under this category will be used to invest in improvements for sorting and recycling of waste.

#### Climate adaptation measures



Adaptation measures considered for:

- Buildings
- Infrastructure
- Sensitive habitats

#### Dark Green

- ✓ Consider the implications of climate change on developments along lakefronts, waterfronts and other locations at risk of climate impacts and natural hazards.

#### Environmental measures

- Nature conservation
- Biodiversity
- Sustainable agriculture

#### Dark Green



- Development of non-toxic environments
- Improved eco-system services.

✓ This is a minor part of eligible projects.

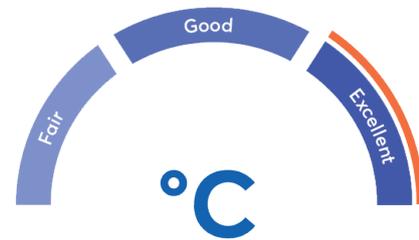
Table 1. Eligible project categories

### Governance Assessment

Four aspects are studied when assessing the Stångåstaden’s 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 Stångåstaden gives it a rating of Excellent.

Stångåstaden has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting on a project level. Nevertheless, we note that Stångåstaden does not seem to carry out climate scenario analysis or risk assessments in alignment with the methodology recommended by TCFD<sup>2</sup>. On the other hand, the Climate Adaptation program of Linköping municipality is comprehensive and cover a broad set of potential future risks under climate change.



### Strengths

The framework of Stångåstaden is fully compliant with the green bond principles (2018). Stångåstaden 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 housing owner in Linköping, Stångåstaden plays a key role in reaching this target. The criteria for eligible 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).

For new houses, Stångåstaden set as a requirement that specific energy use should be below 63kWh/m<sup>2</sup>, well below the building standard of 85kWh/m<sup>2</sup>. The current average energy use is 137,4 kWh/m<sup>2</sup> atemp. Stångåstaden has a continuous dialogue with their tenants and inform them about how to behave to optimize energy consumption.

Stångåstaden has the goal to decrease the amount of energy bought per square meter – in forms of electricity, district heat and cooling – with 25% from 2011 until 2025. Currently, Stångåstaden is on track to reach this goal. Another goal is to set social demands for entrepreneurs; e.g. Stångåstaden requires that the entrepreneurs employs personnel who are unemployed and have difficulties in receiving a job. Furthermore, Stångåstaden should own

<sup>2</sup> <https://www.fsb-tcf.org/publications/final-recommendations-report/>



renewable energy capacity covering purchased electricity on an annual basis by the year 2025; Stångåstaden reached 59% in 2018.

### Weaknesses

We find no substantial weaknesses in Stångåstaden's 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. According to IEA<sup>3</sup>, efficiency of building envelopes needs to improve by 30% by 2025 to keep pace with increased building size and energy demand – in addition to improvements in lighting and appliances and increased renewable heat sources. The issuer is taking a step in this direction with the energy efficiency criteria. 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.

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. Stångåstaden should be aware of such effects and possibly avoid green bond funding of projects where the risk of rebound effects is particularly high.

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<sup>3</sup> <http://www.iea.org/tcep>



# Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Årsredovisning	Annual report 2017 for Linköping municipality
2	Miljöpolicy för Linköpings kommunkoncern	Environmental policy for Linköping municipality
3	Klimatanpassningsprogrammet	Climate change adaptation program for Linköping municipality
4	Kemikalieprogrammet	Chemical program for Linköping municipality
5	Hållbarhetspolicy	Sustainability policy for Linköping municipality
6	Årsredovisning 2018	Annual report for 2017 for Stångåstaden, <a href="https://www.stangastaden.se/Documents/ekonomi/stangastaden_arsredovisning_2018.pdf">https://www.stangastaden.se/Documents/ekonomi/stangastaden_arsredovisning_2018.pdf</a>
7	Affärsplan 2017	Business plan 2017 for Stångåstaden
8	Hållbarhetspolicy	Sustainability policy for Stångåstaden
9	Miljömanual	Description of how Stångåstaden fulfills ISO 14001:2015
10	ISO 14001 certifikat	ISO 14001 certificate
11	Certifikat för Svanenmärkt hus och Miljöbyggnad Silver	Certificates for Svanenmärkt hus and Miljöbyggnad
12	Hållbarhetsrapport 2018	Sustainability report for Stångåstaden, <a href="https://www.stangastaden.se/Documents/ekonomi/stangastaden_arsredovisning_2018_hallbarhet.pdf">https://www.stangastaden.se/Documents/ekonomi/stangastaden_arsredovisning_2018_hallbarhet.pdf</a>
13	Code of conduct	Code of conduct for Stångåstaden



## 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).

