‘Second Opinion’ on Samhällsbyggnadsbolaget i Norden AB’s (SBB) Green Bond Framework

June 20, 2018

Summary

Samhällsbyggnadsbolaget i Norden AB's (SBB) Green Bond Framework together with its climate and environmental policies provide a good base for climate-friendly investments. CICERO is encouraged to see that SBB takes climate mitigation seriously and is currently working systematically to reduce the company's carbon footprint.

The Green Bond Framework will fund acquisition of rent regulated residential apartment houses in Nordic countries, primarily in Sweden, built between 1900 and 1991, and investments in various technologies to save energy, measured as kWh per heated square meter. The energy performance of the buildings in the portfolio is initially on average 150 kWh per square meter and year, which will be reduced by an average 30 % over five years. For single buildings the minimum energy efficiency improvement is 15 %. Climate change risks associated with flooding and heavy rain will be assessed before any property acquisition, and investments to improve resilience to such damages considered. SBB has in place a good governance structure. A Green Bond Committee reviews information about the assets and evaluates the overall environmental benefit, with the assistance of external consultancies. The Framework includes ambitious and publicly available reporting of green bond operations, including estimates of reduced energy use and CO_2 emissions, as well as calculated impacts on energy and CO_2 after investments have been finalized.

CICERO has some concerns on how the energy and CO_2 emission performance of buildings in the portfolio after energy efficiency investments compares to the performance of present and future building standards required for an energy-efficient and low-carbon 2050 society. 30 % energy improvements from the present energy performance level seems modest compared to other property companies in Sweden, and also in light of the need for further improvements before 2050, which is not incorporated in SBB's Green Bond Framework. In this regard the minimum 15 % energy efficiency improvement target for single buildings seems even more modest. Compared to funding of acquisition of the buildings, the share going to energy improvement investments may be relatively small. SBB has only a small direct exposure to CO_2 emissions through heating systems for the buildings, and this will be removed, aside from a small CO_2 exposure through district heating and the power mix.

Based on the overall assessment of the project types that will be financed by the green bonds and governance and transparency considerations, SBB's Green Bond Framework receives a Medium Green shading.

Contents

1 Introduction and background

The global Expert Network on Second Opinions (ENSO), a network of independent non-profit research institutions on climate change and other environmental issues, was established by CICERO (Center for International Climate and Environmental Research – Oslo) to broaden the technical expertise and regional experience for second opinions. CICERO works confidentially with other members in the network to enhance the links to climate and environmental science, building upon the CICERO model for second opinions. In addition to CICERO, ENSO members include Basque Center for Climate Change (BC3), International Institute for Sustainable Development (IISD), Stockholm Environment Institute (SEI), and Tsinghua University's Institute of Energy, Environment and Economy.

This Second opinion was produced by CICERO on behalf of ENSO. CICERO is an independent, not-for-profit, research institute, focused on providing reliable and comprehensive knowledge about all aspects of the climate change problem. A more detailed description of CICERO can be found at the end of this report. CICERO 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.

The CICERO-led ENSO provides second opinions on institutions´ framework and guidance for assessing and selecting eligible projects for green bond investments and assesses the framework´s robustness in meeting the institutions´ environmental objectives. The second opinion is based on documentation of rules and frameworks provided by the institution themselves (the client) and information gathered during meetings, teleconferences and email correspondence with the client. ENSO 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.

ENSO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. ENSO network members do not validate or certify the climate effects of single projects, and thus, has no conflict of interest in regard to single projects. Network members are neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor the outcome of investments in eligible projects.

This note provides a Second Opinion of SBB's Green Bond Framework and policies for considering the environmental impacts of their projects. The aim is to assess the SBB Green Bond Framework as to its ability to support their stated objective of climate mitigation.

This Second Opinion is based on the Green Bond Framework presented to CICERO by the issuer. Any amendments or updates to the Framework require that CICERO undertakes a new assessment.

ENSO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near-term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long run. Network members strive to avoid locking-in of emissions through careful infrastructure investments and moving towards low- or zero-emitting infrastructure in the long run. Proceeds from green bonds may be used for financing, including refinancing, new or existing green projects as defined under the mechanisms or framework. ENSO assesses in this Second Opinion the likeliness that the issuer's categories of projects will meet expectations for a low carbon and climate resilient future.

Expressing concerns with 'shades of green'

CICERO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds and the robustness of the governance structure of the Green Bond Framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society. The shading methodology also aims at providing transparency to investors when comparing green bond frameworks exposure to climate risks. A dark green project is less exposed to climate risks than a lighter green investment. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement.

This Second Opinion will allocate a 'shade of green' to the Green Bond Framework of SBB:

- **Dark green** for projects and solutions that are realizations today of the long-term vision of a low carbon and climate resilient future. Typically, this will entail zero emission solutions and governance structures that integrate environmental concerns into all activities.
- **Medium green** for projects and solutions that represent steps towards the long-term vision but are not quite there yet.
- **Light green** for projects and solutions that are environmentally friendly but do not by themselves represent or is part of the long-term vision (e.g. energy efficiency in fossil-based processes).
- **Brown** for projects that are irrelevant or in opposition to the long-term vision of a low carbon and climate resilient future.

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations are also important because they give an indication whether the institution that issues the green bond will be able to fulfil the climate and environmental ambitions of the investment framework. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The overall shading reflects an ambition of having the majority of the project types well represented in the future portfolio, unless otherwise expressed by the issuer.

2 Brief Description of SBB's Green Bond Framework and rules and procedures for climate-related activities

Samhällsbyggnadsbolaget i Norden (SBB) was founded in 2016, with the aim to build a strong and stable Nordic real estate company focused on residential and community service properties. The company's strategy builds on long-term ownership, management and development of rent regulated residential properties in Sweden and low-risk community service properties in the Nordic region, including redevelopment and renovations of existing buildings as well as conversions of commercial properties in central locations, with proximity to efficient infrastructure. By end of 2017, SBB owned 749 apartments, at a value of 23 bill. SEK.

SBB is active on sustainability across its operations, and has integrated sustainability in business plans, wishing to contribute to meeting the Paris Agreement to reduce global warming. SBB supports the UN Global Compact, and the UN Sustainable Development Goals – especially Goal 11 to 'Make cities and human settlements inclusive, safe, resilient and sustainable'. According to the company, it puts high emphasis on reducing environmental impact throughout its operations, choosing energy efficient equipment, using environmentally friendly materials for construction, refurbishing and maintenance, efficient resource and water use, reducing waste and pollution, promoting recycling, and minimizing transports. The aim of the company is to reduce annual energy use in kWh per heated square meter for the property portfolio selected for green bond funding – 'The Green Project Portfolio' - by 30 % over five years. The estimated emissions of this portfolio are 2307 tons of CO_2 (given an electricity grid factor of 25 g CO_2 per kWh electricity). Therefore, SBB's target implies an annual reduction or avoidance of 868 tons of CO_2 emissions.

Use of proceeds:

Proceeds from SBB's Green Bonds will be used to refinance a property portfolio defined by SBB, consisting of rent regulated residential apartment houses in Nordic countries, predominantly Sweden, built between 1900 and 1991, and related investments. The buildings in this 'Green Project Portfolio' are predominately built between 1950s and 1980s. SBB will perform various investments in energy efficiency, with the commitment to reduce the purchased amount of energy (kWh) per heated square meter and year by at least 30 % over the property portfolio. Other relevant investments may support climate resilience or increase tenant functionalities. SBB might use other measures applicable, such as installation of rooftop solar units. If an apartment house is sold or excluded from the portfolio, it will be replaced with a similar apartment house.

Selection:

The selection process is a key governance factor in the Green bond Principles. We typically look at how climate and environmental considerations are taken into account when evaluating whether projects can qualify for green bond funding. The broader the project categories, the more importance CICERO places on the governance process.

The list of energy efficiency investments is defined by SBB in cooperation with the consultancy firm iNEX Internationell Exergi AB. Inclusion of property in the Green Project Portfolio follows a two-step process. In the first step, the SBB Business Controller team presents relevant buildings, which meet the relevant Green Project

Portfolio criteria. In the second step, the Green Bond Committee decides whether or not to include a new building in the Green Project Portfolio. Inclusion requires a consensus decision by the committee. The Green Bond Committee consists of Chief Executive Officer, Chief Financial Officer, and Residential Manager.

Management of proceeds:

The proposed management approach for Green Bond proceeds are in alignment with the Green Bond Principles (June 2018). They are transparent and clearly separate green bond proceeds. An amount equal to the net proceeds of any issue under the Green Bond Framework will be credited to a Separate Account, under the responsibility of the Treasury Department. All transfers to and from the separate account will be documented. If Green Bonds are outstanding and the Separate Account has a positive balance, this account balance will be adjusted at least every fiscal quarter. Until full allocation of Green Bond net proceeds has taken place, reporting will disclose the amount not yet allocated.

Transparency and Accountability:

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.

SBB complies with international accounting standards and the Swedish Corporate Governance Code. SBB will publish an annual newsletter, providing investors with a summary of green bonds developments, outstanding amounts of issued green bonds, the balance on the Separate Account, and the Green Project Portfolio. The newsletter is made publicly available at SBB's website (http://sbbnorden.se). The newsletter will show avoided CO_2-equivalent emissions. The baseline calculation method is based on energy savings, avoided energy use, and reduced fossil fuels use. The metrics reported are: total pre and post energy consumption, likewise for energy consumption per heated square meter, energy reduction, calculated annual CO_2-equivalent emissions reduced or avoided per heated square meter, and percentage supplied by renewable energy. External consultants provide confirmation to every individual property. At the aggregated portfolio level, energy reduction and calculated annual CO_2-equivalent emissions reduced or avoided, are reported. This reporting cannot cover all relevant data, thus only showing impacts on a best intention basis. If investments are ongoing, an approximation of energy consumption savings is presented, confirmed by iNEX Internationell Exergi AB, until actual impact is confirmed.

Table 1 lists the documents that formed the basis for this Second Opinion.

Document Number	Document Name	Description
1	SBB's Green Bond Framework 15.06.2018	This document comprises SBB´s Green Bond Framework and how the company intends to use proceeds, the green project portfolio, green project portfolio investments, evaluation and selection, management of proceeds, and reporting and transparency. A selection of buildings in the Green Project Portfolio, the method of calculation, and a list of portfolio properties are included as an annex.
2	SBB introduction	A brief company overview.
3	Organisation och mål	A brief presentation of SBB.
4	Informationspolicy – Information Policy	Description of SBB's principles and rules for information and communication.
5	Instruktion för den finansiella rapporteringen	A brief note on the financial reporting from SBB.
6	Samhällsbyggnadsbolaget i Norden AB (publ) – Årsredovisning i 2017	Annual report from SBB.
7	Samhällsbyggnadsbolaget hållbarhetspolicy	A memo that describes SBB's policies related to sustainability.

Table 1. Documents reviewed.

3 Assessment of SBB´s Green Bond Framework and environmental policies

Overall, SBB´s Green Bond Framework provides a detailed and sound framework for climate-friendly investments.

The Framework and procedures for SBB's green bond investments are assessed and their strengths and weaknesses discussed in this section. The strengths of an investment framework with respect to environmental impact pertain to issues where it clearly supports low-carbon and resilience projects, whereas the weaknesses typically are issues that are unclear or too general. Pitfalls are also raised in this section to note issues where green bond issuers should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of the issuer's systematic sustainability work and strong governance structure of SBB Green Bond Framework in terms of management and use of proceeds, we rate the Framework CICERO Medium Green.

Eligible projects under the 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 certainty to investors 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 eligible project categories are depicted in Table 2, with our green shading and listing of concerns. A medium green shading is for investments that include technologies today that represent steps towards the long-term vision, but are not quite there yet.

	Eligible project types	Green Shading and some concerns
Energy efficient buildings	• Acquisition and renovation of a portfolio – Green Project Portfolio - of rent regulated apartment houses, built between the 1900 and 1991. The apartment houses shall have proximity to public services and public transportation. • Reduce annually purchased energy (kWh) per heated square meter by at least 30 % over five years, corresponding to about 870 tons of CO_2-equvivalent emissions annually avoided. • Each building in the portfolio shall achieve at least energy consumption reduction of 15 %. • The average energy performance of the portfolio is at 150 kWh per heated square meter and year (ranges between 117 and 281 kWh). • Investments in geothermal heating systems; recover heat from ventilation exhaust air; exhaust air heat pump; pressure and temperature controlled fans; pressure controlled toilet pumps; heat regulation based on weather forecasts; adjustment of heating system and installation of thermostatic valves; additional insulation; energy efficient windows; efficient water taps; and LED lighting. • The property portfolio is fossil free, with exception of a small CO_2 content in district heating and the power grid. • One property is still using oil-based heating, but this will be removed. • External consultants will verify reduced energy consumption of individual properties.	**Medium Green** ✓ The investments in better energy performance of apartment houses are aligned with a more climate friendly future. ✓ However, the energy performance aimed for - at least 30 % energy saving per heated square meter for the portfolio - may not be sufficient in a 2050 perspective. ✓ The minimum energy saving at 15 % for individual buildings seems modest, given a number of old buildings in the portfolio. ✓ The portfolio contains buildings going back to 1900, where energy performance could be substantially lower than for newer buildings, dependent on extent and timing of refurbishments. In a 2050 perspective, zero or plus emission houses will become mainstream. ✓ Using the European mainland including Norway power mix to calculate reduced CO_2 emissions from power savings, implies an upper end on CO_2 reduction estimates, whereas using the Swedish power mix represents a lower end.
Resilience of buildings to climate change impacts.	• Additional investments to improve climate change resilience (e.g. new roofing, renovation of facades, and drainage) and to increase tenant functionalities. • Promote transition to low-carbon and climate-resilient growth. SBB performs assessments of properties' exposure to heavy downpours and flooding events, and considers investments in water barriers etc. that can improve resilience to such damages.	**Medium green** ✓ Investments in improved climate change resilience of buildings is a critical first step to managing physical climate risk, particularly in light of observed increased intensity of precipitation and increased flooding in Northern Europe. ✓ Measures such as assessing exposure to water risk and investments in drainage and water barriers are critical for building resiliency. Other eligible measures such as new roofing may follow regular maintenance patterns rather than representing a significant improvement in resiliency planning.

Table 2. Eligible project categories.

Strengths

CICERO is encouraged to see that SBB appears to take climate mitigation seriously and is currently working systematically to implement strategies and policy measures to handle sustainability and climate concerns within the company. SBB's aim is to contribute to reaching the Paris Agreement target and the UN Sustainable Development Goal 11 on sustainable, inclusive, safe, and resilient cities and human settlements.

The property portfolio is fossil free, with exception of a small CO_2 content in district heating and the power grid. One property is still using oil-based heating, but this will be removed.

Calculating the effect of energy savings on CO_2 emissions is complex, since this depends on the power grid factor assumed. Estimating the actual marginal emission impact of electricity in the Nordic grid is therefore a complex task. However, investors should be aware of different approaches commonly applied in calculating emissions from production and use of electricity, dependent on the geographic boundaries of the electricity grid, emissions based on production average vs. production margin, the time window, and present compared to future fuel mix. The estimated reduction in CO_2 emissions is based on the Nordic Public Sector Issuers Position Paper on Green Bonds Impact Reporting (October 2017), which recommends using the European mainland mix including Norway - at 380 g CO_2 per kWh. This grid factor, however, can arguably be interpreted as the upper end, since Sweden has a national grid factor at only 25 g CO_2 per kWh, and since Sweden is not fully integrated in the European mainland power system. SBB's Framework outlines the sensitivity of estimated CO_2 reduction to the assumed grid factor. Given a 25 g CO_2/kWh grid factor, 30 % energy saving corresponds to a reduction of 868 tons CO_2, whereas a 380 g CO_2/kWh grid factors corresponds to a reduction of 1237 tons CO_2.

External consultants will verify reduced energy consumption of individual properties.

SBB's Framework targets resiliency measures, via assessment of exposure to heavy precipitation and flooding and investments in drainage and water barriers. In Northern Europe, increased intensity of extreme precipitation and increased flooding have already been observed and are expected to increase by mid-century across the range of climate scenarios explored in the IPCC 4th Assessment Report.[1,2] SBB's resiliency assessments and investments provide a first step in factoring the risk physical climate change.

SBB states that the company gives high priority to reducing the environmental impact throughout the company's operations, related to choosing energy efficient equipment, using environmentally friendly materials for construction, refurbishing and maintenance activities, reducing waste, promoting recycling, as well as minimizing transportation.

SBB has in place a good governance structure in its Green Bond Framework, involving a Green Bond Committee. The members of this committee does not represent environmental expertise, but is supported by external consultants specialized in clean energy. The exclusion criteria of the Framework prohibits any assets linked to fossil energy generation, research and/or other carbon dioxide intense activities, and resource extraction potentially having negative effects on environment, from being eligible.

SBB's green bond related decisions are well documented in an annual newsletter to investors, publicly available at SBB's website. The newsletter will provide calculations of energy savings and reduced or avoided CO_2

[1] Shades of Climate Risk, CICERO 2017 (https://cicero.oslo.no/en/climateriskreport)
[2] Flood Risk for Investors, CICERO 2018 (https://www.cicero.oslo.no/en/posts/news/half-of-flooding-damage-left-uninsured)

emissions, on a preliminary pre basis, and a post actual outcome basis. These impact calculations will be confirmed by an external consultant.

Weaknesses

No significant weaknesses perceived.

Pitfalls

CICERO very much welcomes the development and use of a common methodology in impact reporting. CICERO is encouraged that not only emissions reductions, but also other indicators that measure the transition to a low carbon and climate resilient society are reported.

Estimates of energy savings and reduced CO_2 emissions are dependent on a combination of measurements and average values for use of district heating and power, which means that such calculations will be approximations. The data on district heating are actual purchased energy, whereas 10 % (of district heating energy) for electricity and 75 % of purchased energy used for heating (temperature harmonized) are approximations. The investments' actual impact on energy use and CO_2 emissions, however, will be calculated after the investments have been carried out. These calculations will be more accurate than estimates before investments, but still depend on approximations from using some average factors.

In a low carbon 2050 perspective, the energy performance of buildings is expected to be improved, with passive and plus house technologies becoming mainstream and the energy performance of existing buildings greatly improved through refurbishments. In this regard, the 30 % reduced energy consumption target may not be sufficient in a low-carbon 2050 perspective. More energy efficiency improvements will be needed before 2050, which are not included in SBB's Green Bond Framework. Even more so, the 15 % minimum energy saving for individual buildings seem quite modest, especially when the green bond funding applies to the acquisition of whole buildings. Efficiency of building envelopes need 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.[3]

For investors it would be interesting to understand how the energy performance of the Green Property Portfolio compares to the energy performance of buildings in Sweden. The Swedish average heating requirement in kWh per square meter and year would present a relevant standard to compare with. Since the initial average energy consumption for heating of the portfolio is at 150 kWh per heated square meter and year, a 30 % reduced energy consumption implies an average heating energy consumption at 105 kWh per square meter and year.

The total environmental impact of buildings over their lifetime is difficult to calculate with accuracy. Energy efficiency is key, but it is not sufficient to ensure low overall environmental impact and a good living environment. Related to calculation of energy savings and impact on CO_2-equivalent emissions, a better description of how lifecycle and delivery chain impacts are considered would be useful.

Impacts beyond the project boundary

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.

[3]Tracking Clean Energy Progress, IEA 2017 (https://www.iea.org/etp/tracking2017/)

Rebound effects

Energy 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. From Table 2, energy efficiency investments in buildings which in part may lead to more energy use. SBB should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

Appendix:
About CICERO

CICERO Center for International Climate Research is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen inter-national climate cooperation. We collaborate with top researchers from around the world and publish in recognized international journals, reports, books and periodicals. CICERO has garnered particular attention for its work on the effects of manmade emissions on the climate and the formulation of inter-national agreements and has played an active role in the UN's IPCC since 1995.

CICERO is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO received a Green Bond Award from Climate Bonds Initiative for being the biggest second opinion provider in 2016 and from Environmental Finance for being the best external review provider (2016 and 2017).

CICERO Second Opinions are graded dark green, medium/light green and light green to offer investors better insight in the environmental quality of green bonds. The shading, introduced in spring 2015, reflects the climate and environmental ambitions of the bonds in the light of the transition to a low-car-bon society.

CICERO works with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions. Led by CICERO, ENSO is comprised of trusted 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). ENSO operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

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