°CICERO Shades of Green

K2A Knaust & Andersson Fastigheter AB (publ) Green Finance Second Opinion

January 12, 2020

K2A was founded in 2013 and is a real estate company focusing on long-term management of self-produced rental buildings for all types of housing. By using environmentally friendly raw materials, mostly locally produced Swedish wood, K2A has been able to produce the buildings with lower climate impact compared to conventional house production.

Proceeds will be used to finance or re-finance, in part or in full, Green buildings and Energy efficiency projects. The major part of the proceeds will be for new financing. The proceeds will not be used to finance fossil fuel energy generation, nuclear energy generation, the weapons and defense industries, potentially environmentally negative resource extraction, gambling or tobacco.

K2A has as a target to reduce demand for heat by 5% from 2018 to 2021. CO_2 emissions should be reduced by 1% per year to 2021. We note that this is less than the annual default economic efficiency gains of 1.6% in recent IEA scenarios. Total emissions in 2018 was 471 tons CO_2 (scope 1). K2A was the first manufacturer of prefabricated wooden apartment units that have been licensed to build Nordic Swan Ecolabelled ("Svanenmärkt") properties. The goal is that all new construction of properties from 2018 should be Nordic Swan Ecolabelled or equivalent.

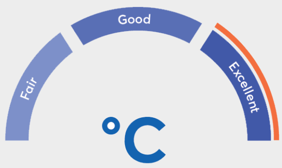
K2A's efforts to limit its environmental impact are based, among other things, on the principles of the UN Global Compact and are manifested in a code of conduct that includes both employees and suppliers. K2A has in place quantitative short-term environmental goals. They do have a sound selection process with veto power for the environmental expertice and a good plan for impact reporting. Management of proceeds are in accordance with the Green Bond and Green Loan Principles (2018). The reporting, which is on a portfolio level, is good. K2A has not yet implemented the recommendations by TCFD, but does consider using it in the near future.

Based on the overall assessment of the project types in the framework of K2A, governance and transparency considerations, the green finance framework receives an overall **CICERO Medium Green** shading. In order to achieve a darker green shading, the green finance framework would need a clearer requirement that best environmental technologies are used in eligible building projects and clearer quantitative climate targets in the longer term.

SHADES OF GREEN

Based on our review, we rate the K2A's green finance framework **CICERO Medium Green.**

Included in the overall shading is an assessment of the governance structure of the green finance framework. CICERO Shades of Green finds the governance procedures in K2A's framework to be Excellent.



GREEN BOND and GREEN LOAN PRINCIPLES

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

°CICERO Medium Green

Contents

Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated January 9, 2020**.** This second opinion remains relevant to all green bonds, commercial papers 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
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.	Wind energy projects with a strong governance structure that integrates environmental concerns
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.	Bridging technologies such as plug-in hybrid buses
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.	Efficiency investments for fossil fuel technologies where clean alternatives are not available
Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.	New infrastructure for coal

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 finance 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 finance 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.

Brief description of K2A's green finance framework and related policies

K2A Knaust & Andersson Fastigheter AB (publ) (hereafter K2A) was founded in 2013 and is a real estate company focusing on long-term management of self-produced rental buildings for all types of housing. The property portfolio further includes community service properties, such as elderly care centres, schools etc. K2A is involved in the entire value chain, from customer analysis to land acquisition, own industrial production, construction and ultimately long-term ownership and management. By managing its construction process in a sustainable way and using environmentally friendly raw materials, mostly locally produced Swedish wood, K2A has been able to produce the buildings in a resource- and energy-efficient industrial process with lower climate impact compared to conventional house production.

The company is currently operating in 16 locations in Sweden with focus on Stockholm, Mälardalen and a number of selected university cities located in other parts of Sweden, where demand for rental buildings is high. K2A's main target group is smaller households, with 1-2 people, a type of household that constitutes the largest market in Sweden.

Electricity and heat are the main components of energy use. K2A always choose green electricity and as much green as possible district heating. In Lund, Västerås and Haninge, they have mounted solar cells on the roofs of residential houses in order to become self-sufficient as much as possible. The surplus will charge electric cars in the proprietary carpool, Bobil, which is offered to tenants in Umeå, Örebro, Haninge, Västerås and Lund.

Environmental Strategies and Policies

K2A's efforts to limit and reduce the environmental impact of its business are based, among other things, on the principles of the UN Global Compact and are manifested in a guiding sustainability policy and a code of conduct that includes both employees and suppliers. Suppliers should e.g. assist in reduction of supply chain impacts on the environment and be open and transparent in reporting on product or service utilization and any environmental impacts. K2A aims to use renewable energy wherever possible and reduce the per capita electricity consumption by using energy saving devices wherever possible. K2A also seeks to reduce the impact on the environment by considering the carbon footprint in all dealings by e.g. reducing travel, source locally and choosing green energy options. K2A expects its suppliers to also find solutions to achieve this. K2A has not yet implemented the recommendations by TCFD but does consider using it in the near future.

K2A has as a target to reduce demand for heat by 5% from 2018 to 2021. In 2018 the specific use of heat was 143 kWh/m^2 and electricity 21 kWh/m^2 (BOA). Furthermore, CO_2 emissions should be reduced by 1% per year to 2021. We note that this is less than the annual default economic efficiency gains of 1.6% in recent IEA scenarios. Total emissions in 2018 was 471 tons CO_2 (scope 1).

The production method has made K2A the first manufacturer of prefabricated wooden apartment units that have been licensed to build Nordic Swan Ecolabelled ("Svanenmärkt") properties. A Nordic Swan Ecolabel means that the buildings have been assessed from a life-cycle perspective and based on a holistic approach, including the building process, the building by itself and how it is used and managed. The goal is that all new construction of properties from 2018 should be Nordic Swan Ecolabelled or equivalent.

Use of proceeds

Proceeds from K2A's Green finance instruments will be used to finance or re-finance, in part or in full, eligible green assets providing distinct environmental benefits. The major part of the proceeds will be for new financing. Eligible green assets belong to one of two categories: Green buildings or Energy efficiency, see table 1 for more details.

The proceeds of K2A's green finance instruments issuances will not be used to finance fossil fuel energy generation, nuclear energy generation, the weapons and defence industries, potentially environmentally negative resource extraction, gambling or tobacco.

Selection:

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process.

The selection of eligible green assets is managed by a dedicated group, the Green Finance Committee ("GFC"). Members of the GFC consist of CEO, Head of Investor Relations and CFO. K2A will make sure that sustainability expertise always relies within the GFC. All decisions are made in consensus, and that applies to the selection process of eligible green assets as well. A list of eligible green assets is kept by the Finance Department and the CFO is responsible for keeping this list up to date. The list of eligible green assets is monitored on a regular basis during the term of the green financial instruments to ensure that the proceeds are sufficiently allocated to eligible green assets.

Management of proceeds

CICERO Green finds the management of proceeds of K2A to be in accordance with the Green Bond and Green Loan Principles (2018).

Net proceeds from K2A's green finance instruments will be tracked by using a spreadsheet where all issued amounts of green financial instruments will be inserted. The spreadsheet will also contain the list of eligible green assets. Information available in the spreadsheet will in turn serve as basis for regular reporting and will be verified by an external part.

All green finance instruments issued by K2A will be managed on a portfolio level. The company will keep track and ensure there are sufficient eligible green assets in the portfolio. Assets can, whenever needed, be removed or added to/from the eligible green assets portfolio. Any unallocated proceeds temporary held by K2A will be placed on the company's ordinary bank account or in the short-term money market.

Reporting

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

To be fully transparent towards the green investors and other stakeholders, K2A commits to regular reporting at least on an annual basis until no green finance instruments are outstanding. The CFO will be responsible for the reporting. Allocation reporting for the green finance instruments will be published on the company's website on an annual basis, and will cover:

- Total amount of green finance instruments issued
- Share of proceeds used for financing/re-financing as well as share of proceeds used for the different categories
- Share of unallocated proceeds (if any)
- Examples of relevant eligible green assets

Allocation of proceeds for Green Commercial Paper, if any, will be published on the company's website on a semi-annual basis.

Impact reporting on a portfolio basis will be published on the company's website on an annual basis (not verified by third party) and will cover:

- Green buildings: type of certification and degree of certification, energy performance per square meter and/or estimated annual greenhouse gas emissions reduced or avoided for buildings (tCO_2e)
- Energy efficiency: amount of energy saved per square meter, and/or estimated annual greenhouse gas emissions reduced or avoided for buildings (tCO_2e).

Allocation of proceeds will be subject for an annual review by an external part/verifier. A verification report provided by the external part will be published on the company's website.

Assessment of K2A's green finance framework and policies

The framework and procedures for K2A's green finance 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 K2A 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 K2A's green finance framework, we rate the framework **CICERO Medium Green.**

Eligible projects under the K2A's green finance 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 finance instruments aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds and Green Loans 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	✓ Prefabricated wooden buildings produced in own factories by using locally grown Swedish wood as an input material ✓ Buildings that either have or will receive minimum certification of Nordic Swan Ecolabel. For multi-dwelling houses and buildings for preschools and schools the buildings' energy use per year may not exceed a maximum of 85% of BBR26 ✓ Buildings that either have or will receive minimum certification of Miljöbyggnad Silver or Passive House	**Medium green** ✓ Miljöbyggnad Silver requires energy use at least 25% lower than the requirements in national regulations (Boverkets byggregler, BBR) ✓ Passive or plus house technologies should become mainstream and the energy performance of existing buildings greatly improved. K2A is taking steps towards this long-term vision. However, a dark green shading would require passive or plus house technologies. ✓ Although voluntary environmental certifications such as Miljöbyggnad and Svanen can measure or estimate the environmental footprint of buildings and raise awareness of

		environmental issues, they fall short of guaranteeing an environmentally friendly building. They do not guarantee a reduction in greenhouse gas emissions nor necessarily include considerations of resiliency.
Energy efficiency	✓ Energy retrofits such as installation of solar panels, heat pumps, converting to LED lighting, improvements in ventilation systems, extension of district heating and cooling systems.	**Medium to Dark green** ✓ District heating in Sweden is becoming more and more based on renewable sources. However, in some regions some fossil fuel is used connected to the network (e.g. waste to energy and direct fossil fuel use).

Table 1. Eligible project categories

Background

According to the IEA[1], the buildings and buildings construction sectors combined are responsible for 36% of global final energy consumption and nearly 40% of total direct and indirect CO_2 emissions. 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. Energy efficiency improvements in buildings are thus important building blocks towards reaching the 2°C goal. Also, local transport solutions and easy access to renewable energy are important elements. Emissions from buildings are approximately half coming from materials/construction and half from energy use. Over time the energy use becomes less important (with off grid solution such as geothermal and solar increasing).

A large number of LCA studies show that wood-frame building results in lower primary energy and GHG emission compared to non-wood alternatives including concrete and steel. Less energy, in particular fossil fuels, is needed to manufacture wood-based building materials compared with alternative non-wood materials. Wood-based materials use primarily biomass residues for processing energy. Wooden materials also store carbon during their lifetime, temporary sequestering carbon from the atmosphere. Large amounts of biomass residues are produced during the manufacture and end-of-life of wood products, and these can be used to replace fossil fuels. Hence, wood-based buildings are appropriate for long-term strategies for reducing fossil fuel use and GHG emissions when combined with sustainable forestry[2]. Quantitative estimates are imprecise, but some studies indicate energy savings of the order of one third in the construction phase of wood buildings compared to buildings using mainly other materials.

[1] https://www.iea.org/topics/energyefficiency/buildings/
[2] R&D Fund for public real estate, The Swedish Association of Local Authorities and Regions (2016): Climate impacts of wood vs. non-wood buildings. https://webbutik.skl.se/bilder/artiklar/epub/7585-377-2.epub

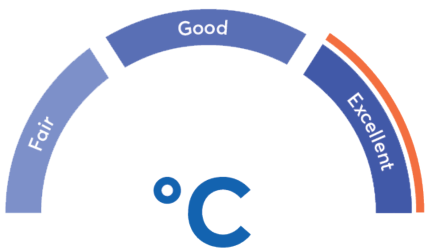
Finally, the building sector traditionally has incentive problems due to the different interests of constructors, owners and tenants of buildings:

- Constructors do not necessarily focus on long-term efficiency, but more on short term cost of construction.
- Owners do not necessarily upgrade the building as the running costs are carried by the tenants.
- Tenants often have less flexibility to upgrade efficiency as this requires investments from owners.

Governance Assessment

Four aspects are studied when assessing the K2A's governance procedures: 1) the policies and goals of relevance to the green finance 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.

K2A has in place quantitative short- and long-term environmental goals. They do have a sound selection process with veto power for the environmental expertise in the Green Finance Committee. Management of proceeds are in accordance with the Green Bond and Green Loans Principles (2018). The reporting, which is on a portfolio level, is good. We note that K2A does not carry out climate scenario analysis or risk assessments in alignment with the methodology recommended by TCFD[3].



The overall assessment of K2A's governance structure and processes gives it a rating of Excellent.

Strengths

The green finance framework of K2A is well aligned with the Green Bond and Green Loans Principles (2018). The eligible categories, Green buildings and Energy efficiency, are well defined and provide important steps toward a low carbon future. The criteria for eligible projects under the Green building category are good, but do not yet delivering the solutions needed in a low carbon 2050 perspective (passive house technology and similar).

The company's suppliers are confronted with demands regarding waste management, transportation as well as the re-use and re-cycling of materials. Life cycle analysis of buildings, resilience considerations and strong environmental requirements of sub-contractors, are other strong points of the framework.

Weaknesses

We find no substantial weaknesses in the green finance framework of K2A but note a lack of risk assessment and scenario analysis as recommended by TCFD vis a vis future climate risk. It is thus unclear whether resilience concerns are an integrated part of project planning.

Pitfalls

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. This is particularly the case when it comes

[3] https://www.fsb-tcfd.org/publications/final-recommendations-report/

to transport solutions associated with the buildings. 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.

Although voluntary environmental certifications such as Miljöbyggnad and Svanen or equivalents can measure or estimate the environmental footprint of buildings and raise awareness of environmental issues, they fall short of guaranteeing an environmentally friendly building. They do not guarantee a reduction in greenhouse gas emissions nor necessarily include considerations of resiliency.

In order to achieve a dark green shading, the green finance framework would need a clearer requirement that best environmental technology is used in eligible green finance building projects.

Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	K2A Green Finance Framework 20200109_clean v.2	K2A’s Green Finance Framework, dated January 9th, 2020
2	Årsredovisning 2018	Annual report 2018
3	Affärsidé och strategi	Business idea and strategy: https://k2a.se/om-k2a/#Affarside_och_Strategi
4	Criteria for Nordic Swan ecolabel - buildings	Criteria for certain type of smaller buildings, schools, etc. https://www.svanen.se/contentassets/7abc01dd391b4dc4b6d7d5627574cd20/kriteriedokument_089_smahus-flerbostadshus-och-byggnader-for-skolor-och-forskolor-089_svenska.pdf
5	Supplier code of conduct	Supplier code of conduct dated June 2018. https://k2partnering.com/wp-content/uploads/2018/11/K2-Supplier-Code-of-Conduct-June2018.pdf

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 finance investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green finance instruments, since the market's inception in 2008. CICERO Green is independent of the entity issuing the finance instruments, 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).