



# CA Fastigheter AB ("CA") Green Bond Second Opinion

June 14, 2021

**CA Fastigheter AB ("CA") is a Swedish real estate company established in 1912, which owns, manages and develops residential and commercial properties primarily in Sweden but also in Germany, Estonia and Russia. At the end of 2020, CA owned property portfolio of approx. 632,800 sq. meters. 47% of these holdings consist of residential units, with the remaining area devoted to commercial space, consisting of warehouse, community service, stores and offices.**

**Categories in this framework covers Green buildings (~80%), Energy efficiency, Renewable energy, and Pollution prevention & control.** Green proceeds will only be allocated to buildings in Sweden. The Green building criteria builds on certifications and energy use, and ensures that eligible buildings are energy efficient compared with similar building stock. Most of the proceeds will go to existing buildings under the Green building category. It is a strength that the company includes eligibility criteria for older buildings with the ambition to reduce the company's overall environmental impacts. CA has a new energy target for 2026 to reduce the energy consumption by 15% compared to the 2020 level which is good. This amount to an average annual reduction of 2.5%. This is however less than that IEA says is needed in order to be aligned with the Paris agreement. CA's average energy use in 2020 was 130 kWh/m<sup>2</sup>.

**CA's longer-term climate-related targets are currently quantified on property portfolio level such as levels of environmental certifications, share of "green electricity", and own produced energy from solar panels.** They report on a set of climate-relevant key performance indicators and seek to improve these in the near term. The company does not have overall climate targets. Currently, greenhouse gas emission time series are not reported. The allocation and impact reporting under the framework is good. TCFD guidelines are not implemented. However, physical risks are assessed regularly as part of the due diligence process of new investments.

**The direct and indirect climate impacts of the real estate sector is of growing concern.** The environmental ambition level is not the highest but represents steps in the right direction.

Based on the overall assessment of the project types in the framework of CA, governance and transparency considerations, the green finance framework receives an overall **CICERO Light Green** shading. In order to achieve a darker green shading, the green finance framework would need stronger eligibility criteria in the Green buildings category supported by evidence of significant energy efficiency improvement over time and stronger proven governance structure at the company level (strategies, targets, reporting).

## SHADES OF GREEN

Based on our review, we rate CA's green bond framework **CICERO Light 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 CA's framework to be **Good**.



## 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 the client's framework dated June 2021. 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



**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.



**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.



**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.

### Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. 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. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



## 2 Brief description of CA's green bond framework and related policies

CA Fastigheter AB ("CA") is a Swedish real estate company established in 1912, which owns, manages and develops residential and commercial properties both inside and outside Sweden. The company operates mainly in property management and property development, primarily in Sweden but also in Germany, Estonia and Russia. At the end of 2020, CA owned property portfolio of approx. 632,800 sq. meters. 47% of these holdings consist of residential units, with the remaining area devoted to commercial space, consisting of warehouse, community service, stores and offices.

### Environmental Strategies and Policies

CA has published a sustainability policy that clarifies CA's overall sustainability strategy and sustainability development in terms of environment, economy and society. The CEO is responsible for the sustainability activities. CA is not aligned with the guidelines from TCFD. Currently CA follows BBR- and other legal requirements in every new project with respect to climate risks.

CA's first sustainability report (currently in Swedish) has been published on its website in accordance with the Global Reporting Initiative (GRI) guidelines for level core. CA is a member of the Sweden Green Building Council, which manages Miljöbyggnad (Environmental Building), a system for certifying buildings where sixteen different indicators must be reached.

CA produced 355 GWh of own wind power in 2020, a considerable share of which was for own use. More than 90% of the CA's energy consumption in Sweden comes from 100% renewable energy. On average, CA's energy consumption is 130 kWh/sqm in 2020.

CA aims to achieve

- totally 15% energy savings per sqm by 2026 compared to the 2020 level. For any year of the period, at least 1.5% yearly energy savings (like-to-like portfolio),
- 75 % renewable energy in all buildings and 100% renewable energy in buildings in Sweden by 2025,
- 1 % per year reduced water consumption (like-for-like portfolio),
- 50 % non-fossil fuel powered vehicles by 2025 and 100 % by 2030 (service cars, carpool vehicles and company cars used by CA are either electric or run-on biofuel), and
- a screening of the environmental risks of CA's Swedish portfolio.

In the winter of 2021 CA will introduce an environmental management system in accordance with ISO 14001:2015 to systematically manage its environmental responsibilities. CA also works to certify its properties according to Miljöbyggnad Silver, even for existing buildings, older than five years, although currently none of its properties has been certified.

CA works to reduce the amount of chemicals in the business, to recycle as much as possible and to actively work with energy-saving measures. CA also remotely monitors its energy consumption and uses operational analyses and energy audits to improve. In 2021, CA will measure total CO<sub>2</sub> emissions via the energy program Mestro, focusing on Scope 1 in 2021 and Scope 2 in 2022-2023.



Every property for renovation is subject to an environmental inventory. An example is the pilot project in Malmö, where CO<sub>2</sub>e emissions are expected to be reduced by 97% by replacing existing district heating with geothermal heating in a large property at Kryddgården. New production, maintenance and repair must reduce environmental impact. The company prioritizes resource-efficient alternatives and methods, and reduces environmental impact by hiring responsible suppliers of materials and transport. CA will start to inspect the largest subcontractors and will always prioritize subcontractors who can provide information on CO<sub>2</sub> emissions and energy use. 50% of CA's subcontractors should be inspected with respect to sustainability by 2024. CA will write a Code of Conduct for subcontractors with CA's requirements for supply chain and choice of material.

Based on risk analysis related to extreme weather such as torrential rain, storms and temperature fluctuations, all new buildings are climate adapted and constructed in accordance with Swedish Planning and Building Act as well as all current building standards.

The company follows Global Compact's guidelines for human rights, labor, environment, and anti-corruption.

### Use of proceeds

The proceeds from CA's green bonds will be used exclusively to finance or refinance (largely refinance), in part or in-full, new and existing eligible assets in Sweden within the green buildings, energy efficiency, renewable energy, and Pollution prevention & control categories that contribute to a low-carbon future and that promote climate resilience. Examples of projects include new construction or renovation of buildings, and energy retrofits. CA's sustainability manager may update the framework to follow the best practices in the market standards.

### 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 assets will be managed and consensus-based decided by a Green Bond Committee (GBC), which consists of the representatives from Senior Management, Treasury and sustainability, where the representative of sustainability has the option to veto decisions. The CEO determines how the net proceeds are allocated to relevant eligible assets.

The GBC also maintains and updates the list of eligible assets to ensure that there are sufficient eligible assets financed by the proceeds. The portfolio will act as guidance for determining whether there is sufficient headroom when issuing a green bond.

### Management of proceeds

CICERO Green finds the management of proceeds of CA to be in accordance with the Green Bond Principles.

The net proceeds will be used to eligible projects from a Green Bonds register. Any transfers to and from the Green Bonds register will be documented. Unallocated proceeds will be used in line with CA's internal liquidity policy aiming to use the proceeds for activities without using fossil fuels within one year and no more than two years. The portfolio balance of unallocated proceeds will be disclosed in the annual green bond report.



## 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.

The GBC of CA will be responsible for conducting annual allocation and impact reporting if there are green bonds outstanding. The allocation and impact reports will be available on CA's website after independent external review.

Allocation reporting will be on a portfolio-basis and will not be linked to individual bonds. The allocation report will include a summary, estimated share of financed assets, allocated amount of proceeds, unused net proceedings by GBP category, and project examples.

The impact report will, where feasible and where data is available, include quantitative performance indicators including:

- Use of environmental building certifications and energy performance certificates
- Energy consumption in absolute terms (kWh) and in intensity terms (kWh per square meter)
- Renewable energy capacity installed (MWh)
- Reduced/avoided greenhouse gas emissions (CO<sub>2</sub>e) based on the grid factors of well known Swedish Energy mix
- Quantities of harmful substances removed (area or kilograms, as applicable)



### 3 Assessment of CA’s green bond framework and policies

The framework and procedures for CA’s 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 CA 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 CA’s green bond framework, we rate the framework **CICERO Light Green**.

#### Eligible projects under the CA 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”.

CA has informed us that the proceeds will be used for only the Swedish portfolio over the next three years. The majority of the proceeds will be used for projects of Green buildings (~80%) and the others will be used for projects of Energy efficiency (~5%), Renewable energy (~10%), and Pollution, prevention and control (~5%).

Category	Eligible project types	Green Shading and some concerns
<b>Green buildings</b>  	<p>New Buildings.</p> <ul style="list-style-type: none"> <li>Financing of new commercial and residential buildings that either have or will receive a design stage certification, a post construction certification or an in-use certification from Miljöbyggnad Silver or an equivalent certification and that is at least 20 percent more energy efficient than the level required by the relevant building regulation (BBR or NZEB).</li> </ul> <p>Existing buildings.</p> <ul style="list-style-type: none"> <li>Financing of existing commercial and residential buildings that either have or will receive a design stage certification, a post construction certification or an in-use certification from Miljöbyggnad Silver, Miljöbyggnad idrift, or an equivalent certification and that achieves a 25 %</li> </ul>	<p><b>Light Green</b></p> <ul style="list-style-type: none"> <li>✓ The highest shading level, dark green, is reserved for the highest building standards such as Zero-Energy buildings and passive houses.</li> <li>✓ Refurbishment of existing buildings are often better than new constructions from a climate point of view but should ideally come with greater improvements in energy efficiency. IPCC recommends 50% energy efficiency improvements, and according to IEA, efficiency of building envelopes needs to improve by 30%</li> </ul>



energy efficiency from renovation and refurbishment or,

- Financing of building where renovation and refurbishments of existing buildings are made that lead to a 30% increase in energy efficiency or,
- Financing of buildings with a high environmental performance that achieve an energy use per square meter not exceeding the targets set out below:

Construction year	Energy use per m <sup>2</sup> (Atemp)
Before 1910	160 kWh / sqm
1910- 1971	135 kWh / sqm
1972-1999	125 kWh / sqm
2000-2006	100 kWh / sqm
2007-2012	90 kWh / sqm
2013-2018	20 % below BBR

by 2025 to be aligned with the Paris target.

- ✓ Issuer has informed that buildings built between 2013-2018 should perform 20 percent better than BBR at the time of construction. Buildings built 2019 and 2020 need to qualify as new construction in order to be eligible for green proceeds.
- ✓ CA has on average an energy use of 130 kWh/m<sup>2</sup> in 2020 including newly constructed buildings. CA's older buildings could have much higher energy use than the average. The criteria for existing buildings do not guarantee an energy performance above applicable regulation.
- ✓ The issuer should consider construction phase emissions and emissions related to transportation to and from the properties.

**Energy efficiency**



Financing of energy efficiency projects including, but not limited to, retrofitting and renovations of windows, ventilations, installation of LED lighting, insulation, in each case where the project results in an efficiency improvement of 30%.

**Dark Green**

- ✓ Efficiency measures in existing buildings is a good way to lower the climate footprint of buildings, unless it involves fossil fuel elements which then can be locked in. No upgrading of fossil fuel technologies will be allowed.
- ✓ Be aware of potential rebound effects following energy efficiency improvements.

**Renewable energy**



Financing of onsite renewable energy, and/or heating, the building and/or distributed to the wider grid. This could include, but is not limited to, renewable energy from solar, and non-fossil geothermal sources.

**Dark Green**

- ✓ To be aligned with the proposed EU Taxonomy, CO<sub>2</sub> emissions should be lower than 100 gCO<sub>2</sub>/kWh.

**Pollution prevention & control**

Financing of waste management such as HVAC systems contributing to reduction of waste as well as removal of harmful substances such as asbestos, PCBs, mould, chemicals and metals that have

**Medium Green**

- ✓ The highest shading level, dark green, needs quantitative standards besides the soft principles rules.



negative effects on biodiversity, human health and the environment.

✓ Fossil fuels might be used by certain activities, e.g. removal of harmful substances.

Table 1. Eligible project categories

### Background

As members of the EU, Sweden is subject to the EU’s climate targets of reducing collective EU greenhouse gas emissions by 40% by 2030 compared to 1990 levels, increasing the share of renewable energy to 32% and improving energy efficiency by at least 32.5%<sup>1</sup>. The European Green Deal aims for carbon neutrality in 2050<sup>2</sup>. Sweden has developed a National Energy and Climate Plan (NECP) in which it outlines the targets and strategies in all sectors<sup>3</sup>. These strategies include measures such as increasing renewable energy capacity, increasing energy efficiency, facilitating the large-scale implementation of clean transportation alternatives, and increasing carbon sinks through reforestation and the LULUCF sector. Non-ETS emissions, of which public buildings and households are a part, must decrease by 63% by 2030.

The building sector accounts for a large share of primary energy consumption in most countries, and the IEA reports that the 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.<sup>4</sup> The energy efficiency of buildings is dependent on multiple factors including increasing affluence and expectations of larger living areas, growth in population and unpredictability of weather, and greater appliance ownership and use. Additionally, approximately half of life-cycle emissions from buildings stem from materials/construction. The other half stems from energy use, which becomes less important over time with the increasing adoption of off-grid solutions such as geothermal and solar. All these factors should therefore be considered in the project selection process. In addition, voluntary environmental certifications such as BREEAM or equivalents measure or estimate the environmental footprint of buildings and raise awareness of environmental issues. These points-based certifications, however, fall short of guaranteeing a low-climate impact building, as they may not ensure compliance with all relevant factors e.g., energy efficiency, access to public transport, climate resilience, sustainable building materials. Many of these factors are covered under the World Green Building Council’s recommendations for best practices for developing green buildings.<sup>5</sup> CICERO Shades of Green assesses all of these factors when evaluating the climate impact of buildings.

The Exponential Roadmap<sup>6</sup> lays out a trajectory for reducing emissions by 50% by 2030 and requires that emissions reductions strategies within the buildings sector be rapidly scaled up. The roadmap advocates for standardised strategies that are globally scalable within areas such as new procurement practices for construction and renovation that require dramatically improved energy and carbon emission standards, developing new low-carbon business models for sharing space and smart buildings to achieve economies of scale, and allocating green bond funding for sustainable retrofitting and construction.

<sup>1</sup> [https://ec.europa.eu/clima/policies/strategies/2030\\_en](https://ec.europa.eu/clima/policies/strategies/2030_en)

<sup>2</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

<sup>3</sup> [https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans\\_en](https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en)

<sup>4</sup> <https://www.iea.org/reports/building-envelopes>

<sup>5</sup> <https://www.worldgbc.org/how-can-we-make-our-buildings-green>

<sup>6</sup> [https://exponentialroadmap.org/wp-content/uploads/2020/03/ExponentialRoadmap\\_1.5.1\\_216x279\\_08\\_AW\\_Download\\_Singles\\_Small.pdf](https://exponentialroadmap.org/wp-content/uploads/2020/03/ExponentialRoadmap_1.5.1_216x279_08_AW_Download_Singles_Small.pdf)



### EU Taxonomy

In March 2020, a technical expert group (TEG) proposed an EU taxonomy for sustainable finance that included a number of principles including “do-no-significant-harm (DNSH)-criteria” and safety thresholds for various types of activities<sup>7</sup>. In April 2021, EU published its delegated act to outline proposed criteria for climate mitigation and adaptation, which it was tasked to develop after the EU Taxonomy Regulation entered into law in July 2020<sup>8</sup>. The mitigation criteria in the EU taxonomy includes specific thresholds for real estate sector activities relevant for the company<sup>9</sup>. Relevant activities for the green finance framework are Construction of new buildings, renovation and ownership and acquisition of buildings.

Do-No-Significant-Harm criteria include measures such as ensuring resistance and resilience to extreme weather events, preventing excessive water consumption from inefficient water appliances, ensuring recycling and reuse of construction and demolition waste and limiting pollution and chemical contamination of the local environment, as well as restriction on the type of land used for construction (no arable or forested land).

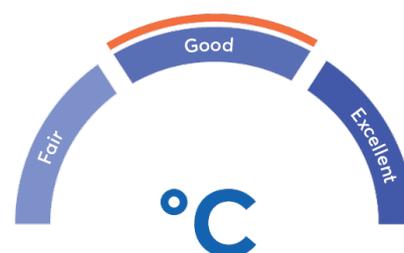
In order to qualify as a sustainable activity under the EU regulation 2020/852 certain minimum social safeguards must be complied with. The safeguards entail alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation’s (‘ILO’) declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights.

### Governance Assessment

Four aspects are studied when assessing CA’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. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

CA has a long-term goal for reducing energy consumption and increasing energy efficiency among several other UN Sustainable Development Goals, without mentioning climate change. The target of 15% energy savings per sq.m from 2020 to 2026 is ambitious, but other targets are on or below the sectoral average such as 75 % renewable energy in buildings by 2025. It is also possible to achieve 100% non-fossil fuel powered vehicles even today although this is planned by CA to be achieved until 2030. The plan to start accounting CO<sub>2</sub> emissions in 2021 is a good starting point since the lack of time series of greenhouse gas emissions makes it difficult to assess CA’s progress towards green development. CA is not aligned with the guidelines from TCFD.

The selection process is good and verified by independent external experts. CA’s internal liquidity policy excludes fossil-fuel-using activities to be financed by unallocated proceeds. Its management of proceeds is according to the Green Bond Principles and Green Loan Principles. The reporting is on a portfolio bases and covers key relevant indicators. Impact reporting is done when feasible, and if relevant data is available, and is subject to third party verification.



<sup>7</sup> Taxonomy: Final report of the Technical Expert Group on Sustainable Finance, March 2020. [TEG final report on the EU taxonomy \(europa.eu\)](https://ec.europa.eu/easf/document/easf-technical-expert-group-final-report)

<sup>8</sup> Sustainable finance taxonomy - Regulation (EU) 2020/852 | European Commission (europa.eu)

<sup>9</sup> [taxonomy-regulation-delegated-act-2021-2800-annex-1\\_en.pdf \(europa.eu\)](https://ec.europa.eu/easf/document/easf-technical-expert-group-final-report)



Climate risks are properly accounted for within the Swedish laws and regulations for building projects, and taken into account in CA's due diligence processes.

The overall assessment of CA's governance structure and processes gives it a rating of **Good**.

### Strengths

Requirement of energy consumption at least 20% below levels defined in applicable national legislation in the Green building category is a strength of the framework. A commitment to impact reporting, though conditional, increases transparency to investors. CA works with well-known suppliers, which allows for a closer cooperation and provides better insights.

### Weaknesses

Lack of quantitative target for greenhouse gas emissions at the company level in both short-term and long-term (at least scope 1 and 2), is a weakness. Lack of time series reporting of emissions today, also makes it difficult to assess progress towards its long-term green development. There is also a lack of scenario analysis whether or not formally in alignment with the TCFD recommendations. Other than that, we find no material weaknesses in the framework.

### Pitfalls

CA has as an energy target for 2026 to reduce the energy consumption by 15% compared to the 2020 level which is good. This amounts to an average annual reduction of 2.5%. This is however less than that IEA says are needed in order to be aligned with the Paris agreement.

CICERO Green factor in if there have been any considerations around transportation solutions and environmental impacts in the construction and demolition phases of the building (building material and waste considerations). The CICERO Dark Green shading is difficult to achieve in particular in the building sector because buildings have a long lifetime. CICERO Dark Green shading in the building sector should therefore conform to strict measures and is reserved for the highest building standards such as LEED Platinum, Zero-Energy buildings and passive houses. The issuer is encouraged to also consider construction phase emissions and systematically work on reducing emissions related to transportation to and from the properties.

The Green building criteria in CA's green finance framework build on new construction or in-use Miljöbyggnad Silver or an equivalent certification scheme in addition to energy use at least 20% below current national regulations for new buildings, which is quite strict in Sweden. Nevertheless, the green buildings eligible under CA's framework are falling short of the long-term vision of zero-energy buildings or passive houses. Also, to the extent that the buildings rely on district heating, there is an inherent probability that some fossil fuel fractions (e.g., plastics) will be involved.

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 the project categories in table 1, an example is energy efficiency investments in buildings which in part may lead to more energy use or a failing to reach the potential reductions. CA's energy use monitoring and work with its property users can actively mitigate the risk of rebound effects related to energy efficiency.

When relevant, life cycle assessment of projects is mainly carried out in connection with some of the environmental certification schemes. There is no emission accounting covering construction and demolition phase activities. 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. CA's green finance framework is not quite there yet, but is taking steps towards this long-term vision. More stringent criteria would have been required for a darker shading.

## Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	CA Green Finance Framework. Dated June 2021	Green Finance Framework for CA's green bonds.
2	2020 CA Fastigheter AB Årsredo. <a href="https://www.cafastigheter.se/media/uwefnbjx/2020-ca-fastigheter-ab-%C3%A5rsredo.pdf">https://www.cafastigheter.se/media/uwefnbjx/2020-ca-fastigheter-ab-%C3%A5rsredo.pdf</a>	Annual report for CA Fastigheter.
3	CA Real Estate Hallability. <a href="https://www.cafastigheter.se/media/fmzd115n/h%C3%A5llbarhetspolicy.pdf">https://www.cafastigheter.se/media/fmzd115n/h%C3%A5llbarhetspolicy.pdf</a>	Sustainability Policy for CA.
4	CA Fastigheter Sustainability Report 2020. <a href="https://www.cafastigheter.se/media/x1fhqj41/h%C3%A5llability%20accounting-ca-2020.pdf">https://www.cafastigheter.se/media/x1fhqj41/h%C3%A5llability accounting-ca-2020.pdf</a>	Sustainability Report 2020 for CA



## 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).

