

Hufvudstaden AB Green Bond Second Opinion

September 23, 2021

Hufvudstaden AB is a property company that owns 29 commercial properties mostly comprised of office and retail space in the central areas of the two largest cities in Sweden, Stockholm and Gothenburg. At the end of 2020, the properties were valued at SEK 45.6 billion. Hufvudstaden has been operating in Stockholm for more than 100 years and for more than 60 years in Gothenburg. The Group includes the wholly owned subsidiary AB Nordiska Kompaniet, which owns the NK brand and has department stores in both cities.

The majority of the net proceeds under the framework are expected to be allocated to new projects and assets (defined as projects and assets financed within 12 months from completion) and, at least initially, will mainly be new financing in the Green buildings category. Other eligible categories covered in the green bond framework of Hufvudstaden are Renewable energy, Clean transportation, Energy efficiency and Environmentally sustainable management of living resources and land use. Eligible projects in the Green buildings category must at least gain the following certifications: Miljöbyggnad "Silver", BREEAM "Very Good" or LEED "Gold", in addition to restrictions on energy use in new and existing buildings. The energy requirement for new buildings in the framework is 20% lower energy use than prescribed in current regulations. This is lower than the longer term energy target for Hufvudstaden which is 25% lower than BBR, since this target is more difficult to achieve for projects associated with extension of properties with high cultural values.

Hufvudstaden has a comprehensive environmental program with fairly ambitious short term quantitative targets for specific energy use. In addition, Hufvudstaden targets climate-neutral property management by 2025 encompassing emissions from vehicles and refrigerants (Scope 1), purchased energy (Scope 2), as well as business travels (Scope 3), but this includes purchases of offsets. They have a sound selection process and a comprehensive plan for reporting which will be reviewed by a third party. Life cycle assessments, climate resilience work and consideration of potential rebound effects are clear strengths of Hufvudstaden's governance procedures. Hufvudstaden is working actively with external advisors on climate risk resilience issues, flooding risks in particular. However, Hufvudstaden does not formally follow the TCFD guidelines for climate risk reporting, but do carry out scenario based analyses of future physical climate risks to their portfolio. The issuer states that they carry out a screening of new tenants operating in controversial industries.

Based on the overall assessment of the eligibility criteria in this framework, governance and transparency considerations, and the prioritized use of proceeds, the framework receives a **CICERO Medium Green** shading and a governance score of **Excellent**. In order to achieve a darker green shading, the green bond framework would need stronger eligibility criteria in the Green buildings category.

SHADES OF GREEN

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

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



GREEN BOND PRINCIPLES

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



°CICERO Medium Green



Contents

1	Terms and methodology	3
	Expressing concerns with 'Shades of Green'	3
2	Brief description of Hufvudstaden's green bond framework and related policies	4
	Environmental Strategies and Policies	4
	Use of proceeds	5
	Selection	5
	Management of proceeds	6
	Reporting	7
3	Assessment of Hufvudstaden's green bond framework and policies	
	Overall shading	9
	Eligible projects under the Hufvudstaden's green bond framework	9
	Background	11
	Governance Assessment	13
	Strengths	13
	Weaknesses	13
	Pitfalls	14
Арре	endix 1: Referenced Documents List	15
Арре	endix 2: About CICERO Shades of Green	16



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 Examples Dark green is allocated to projects and solutions that correspond to the long-term Wind energy projects with a strong vision of a low carbon and climate resilient future. Fossil-fueled technologies that governance structure that lock in long-term emissions do not qualify for financing. Ideally, exposure to integrates environmental concerns 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-Bridging technologies such as term emissions do not qualify for financing. Physical and transition climate risks might be plug-in hybrid buses 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 Efficiency investments for fossil short-term GHG emission reductions, but need to be managed to avoid extension of fuel technologies where clean equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the alternatives are not available physical and transitional climate risk without appropriate strategies in place to protect them.

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 Hufvudstaden's green bond framework and related policies

Hufvudstaden AB is a property company that owns 29 properties in central areas of the two largest cities in Sweden, Stockholm and Gothenburg. The property holdings are commercial and comprise mainly office and retail space. At the end of 2020, the properties were valued at SEK 45.6 billion. Hufvudstaden has been operating in Stockholm for more than 100 years and for more than 60 years in Gothenburg. The Group includes the wholly owned subsidiary AB Nordiska Kompaniet, which owns the NK brand and has department stores in Stockholm and Gothenburg.

At year end Hufvudstaden had 45,171 registered shareholders, the largest of which is L E Lundbergföretagen AB with 46.2 per cent of the outstanding shares.

Environmental Strategies and Policies

Hufvudstaden has a comprehensive environmental program covering e.g., low energy and water use, indoor environmental concerns like sound level, ventilation, lightning and humidity, a requirement of environmental certification of materials¹ as well as life cycle assessment of main material elements, reuse and recycling of waste, transports, noise and type of equipment used for new constructions and major renovations, and other sustainability requirements to sub-contractors. Their environmental program put emphasis on low climate impact, energy- and resource use. The focus is also on managing building materials and make active material choices based on the aspects of circularity, long-term usability, quality and environmental impacts. The life cycle analysis shall include extraction of raw materials, processing of raw materials into products, transport under the processing chain including transport linked to construction, i.e., steps A1-A5 according to EN 15804. All materials used in the building must be included. A quite unique requirement is that electric and magnetic fields from fixed electrical installations must be minimized within the building with a maximum of 10V/m and 0.2 μ T 0.8 m above the floor at permanent workplaces².

Hufvudstaden has as a target that all properties should be environmentally certified by 2025. At the end of 2020, 62% of Hufvudstaden's property holdings were environmentally certified, of which 15% by the Sweden Green Building Council, 43% by BREEAM In-use (Very Good) and 4% by Green Building.

One of Hufvudstaden's targets is to achieve climate-neutral property management by 2025. This will encompass vehicles and refrigerants (Scope 1), purchased energy (Scope 2), as well as business travels (Scope 3). Climate compensation is permitted when emissions cannot be entirely eliminated, e.g., due to loss of cooling refrigerants. The energy intensity of Hufvudstaden's portfolio of properties was 91 kWh/m² in 2020, down from 106 kWh/m² in 2019, a reduction of 14%. The CO₂ intensity similarly was reduced from 3.0 to 2.2 kg/m² from 2019 to 2020 (down 27%).³ In comparison, Hufvudstaden has as a target that energy use per square meter should be reduced by

¹ Hufvudstaden is using Byggvarubedömningen to select materials, for criteria see:

https://byggvarubedomningen.se/globalassets/engelska/criteria-5.0.pdf

² Electromagnetic hypersensitivity (EHS), known in the past as "Microwave syndrome", is a clinical syndrome characterized by the presence of a wide spectrum of non-specific multiple organ symptoms, typically including central nervous system symptoms, that occur following the patient's acute or chronic exposure to electromagnetic fields in the environment or in occupational settings. See e.g., Stein Y, Udasin IG. Electromagnetic hypersensitivity (EHS, microwave syndrome) - Review of mechanisms. Environ Res. 2020 Jul;186:109445. doi: 10.1016/j.envres.2020.109445. Epub 2020 Mar 30. PMID: 32289567. ³ The impressive reductions in energy use and CO₂ intensities are partially explained by the COVID 19 pandemic.

at least 16% from 2019 to 2025, and that the climate impact of emissions from construction activities shall be reduced by more than 50% from 2019 to 2030. Hufvudstaden's method for calculating GHG emissions has been verified by an independent third party. They report according to the GHG Protocol.

Hufvudstaden is working actively with climate risk resilience issues and has had independent experts go over flood risks for all their properties and provide guidance for increased resilience in this matter. However, Hufvudstaden does not fully follow the TCFD guidelines for climate risk reporting. They do, however, map out climate risks to their properties (mainly flooding), using the IPCC RCP 8.5 scenario.

Hufvudstaden's sustainability work is based on the ten principles of UN Global Compact, the Global Reporting Initiative (GRI) and the European Public Real Estate Association (EPRA). In 2020, Hufvudstaden was awarded five stars in the annual GRESB ranking of ESG performance in the real estate sector and was recognised as an ESG Sector Leader.

Use of proceeds

An amount equivalent to the net proceeds from green bonds will exclusively be used by Hufvudstaden to fully or partly finance or refinance investments and expenditures that promote the transition to low-carbon, climate resilient and sustainable economies. Such assets ("Eligible Green Assets" or "Green Assets" or "Green Projects") must comply with the categories and criteria shown in table 1 as well as the exclusion criteria below. Eligible categories covered in the green bond framework are Green buildings, Renewable energy, Clean transportation, Energy efficiency and Environmentally sustainable management of living resources and land use. The majority of the net proceeds are expected to be allocated to new projects and assets (defined as projects and assets financed within 12 months from completion) and, at least initially, will mainly be new financing in the Green Building category. Not more than 15% of net proceeds will be allocated to eligible green assets with a primary alignment towards environmental objectives other than climate change mitigation and adaptation⁴. The proportion of net proceeds allocated to new projects and assets will be disclosed in the annual reporting.

Both financing and refinancing of tangible assets (without age restriction) and operational expenditure (up to 3 years backward looking before the starting year of any newly issued green bond) such as maintenance costs related to green assets that either increase the expected lifetime or the energy efficiency can qualify. Only a minor share is expected to finance operational expenditures. The combined allocated amount to a specific green asset, by one or several sources of financing with specified use of proceeds, may not exceed its value. Hufvudstaden only operates in the Swedish market and the net proceeds will therefore be used exclusively to finance or refinance investments and expenditure in Sweden.

The net proceeds will not be allocated or linked to fossil-based energy generation or infrastructure, nuclear energy generation, research and/or development within weapons and defence, potentially environmentally negative resource extraction (such as rare-earth elements or fossil fuels), 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.

'Second Opinion' on Hufvudstaden's Green Bond Framework

⁴ That is one of the objectives: Natural resource conservation, Biodiversity conservation or Pollution prevention and control.

Projects and assets potentially eligible for green financing will be identified as part of the ongoing operations. Hufvudstaden Sustainability Council ("HSC") is a group responsible for monitoring sustainability at Hufvudstaden. Each project is assessed based on potential ESG risks and screened for possible controversial aspects. Already at the design stage, risk analyses are carried out regarding sustainability risks such as, e.g., climate change, high energy consumption and transport solutions. Most ESG risks are highlighted early in the certification of properties.

The HSC was established in 2018 and coordinates and guides the sustainability work towards Hufvudstaden's sustainability targets. HSC has currently the following members: CFO, Head of Sustainability, Head of Property Development, Head of Human Resources, and Head of Gothenburg Management Area. The Head of Sustainability has extensive professional environmental competence. The HSC will review information about the assets and evaluate the overall environmental impact, which includes life cycle considerations, potential rebound effects, resilience considerations and adherence to at least one of the Environmental Objectives: Climate change mitigation, Climate change adaptation, Natural resource conservation, Biodiversity conservation or Pollution prevention and control. The evaluation is performed through an in-house assessment. Life cycle analysis is carried out for all larger project, and all properties have been analysed for climate risks, mainly torrential rains and floods, by third parties. The properties have been classified from low to high risk. In all major projects, an in-depth analysis is made of climate risks and measures are implemented based on the analysis. Regarding supply chain impacts, work is underway to produce climate calculations. Unfortunately, today there are few products with reliable data of high quality and which are comparable. The ambition of Hufvudstaden is to actively participate in the development and in the long run be able to make better decisions about product selection from a life cycle analysis perspective.

The projects and assets must also be compliant with applicable national laws and regulations, as well as policies and guidelines at Hufvudstaden. The HSC can request additional information and consult with internal parties, but the mandate to make decisions is held by the group. A decision to allocate net proceeds will require a consensus decision by the HSC. Decisions made by the HSC will be documented. Furthermore, the HSC is also responsible for signing off on the forthcoming reporting under the framework as outlined under the section Reporting and Transparency.

An updated list of all Green Assets will be kept by Hufvudstaden's sustainability department. If a project or asset ceases to meet the Green Terms, it will be removed from the list (and the funds will be recycled). The list will also be used as a tool to determine if there is a current or expected capacity for additional Green Bonds.

Management of proceeds

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

An amount equal to the net proceeds of any green bonds will be credited to a dedicated account (the "Green Account") or otherwise tracked by Hufvudstaden (the "Green Portfolio"). Net proceeds will be allocated to a portfolio of disbursements. Deductions will be made from the Green Portfolio by an equivalent amount corresponding to the financing, refinancing, investment or expenditure of eligible green assets or at repayment of any green bonds.

If an eligible green asset no longer qualifies or if the underlying project or asset is divested or lost, an amount equal to the funds allocated towards it will be re-credited to the Green Portfolio. Funds may also be reallocated to other green assets during the term of any green bond, unless otherwise restricted in the loan documentation⁵.

The treasury department will keep a record of the purpose of any change in the Green Portfolio and ensure that the combined funds directed towards a specific green asset, by one or several sources of green financing (such as green bonds and green loans) or other financing with specific use of proceeds, does not exceed its value.

While the Green Portfolio has a positive balance, the net proceeds may be invested or utilised by the treasury in accordance with Hufvudstaden's sustainability policy and investment criteria. Such unallocated funds may for instance be invested in short-term interest-bearing securities, such as Swedish treasury bills (and related entities) or Swedish municipal notes (including related entities). No investment will be made in short-term interest-bearing securities related to fossil fuel operations.

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 bond investors and other market stakeholders, Hufvudstaden will publish an annual report on its website (<u>www.hufvudstaden.se</u>) that will detail the allocation of net proceeds and adherence to the green terms of the framework (the "Reporting"). Allocation of proceeds from green bonds will be provided at project level, unless confidentiality agreements, competitive considerations, or a large number of underlying qualifying projects limit the amount of detail that can be made available, in which case the information will be provided at an aggregated level, with an explanation of why project-level information is not given. The reporting will be aggregated for all bonds issued under the framework. The first such Reporting under the framework is expected to take place in April 2022, in proximity to the release of the company's Annual Report and will be available in Swedish. Hufvudstaden will yearly publish the allocation and impact reporting until such time that no green bonds are outstanding.

The Reporting will be prepared by the treasury and sustainability department. It will contain information on the green assets that have been financed with green bonds, a summary of Hufvudstaden's activities in the past year as pertains to green bonds as well as information, including examples, of the financed green asset's adherence to the relevant criteria. The sum of outstanding green bonds and the sum of the green portfolio balance, including any short-term investments or net proceeds managed within the liquidity portfolio will also be reported. The data shall be from the last of December in the previous year.

The Reporting will furthermore contain a disclosure of asset level performance indicators. The Reporting will strive to disclose the impact based on the green financings share of the total investment. For financed green assets that are not yet operational, Hufvudstaden will strive to provide estimates of future performance levels. Hufvudstaden will emphasise energy savings and greenhouse gas reductions as the most relevant performance metrics for most projects.

⁵ The issuer states that the only real scenario where this might occur would be if a secured bond would be issued (i.e. a bond with security over one or more of the properties). Please note that this is a function of a secured bond and not a structure implemented by the rules of green finance. Hufvudstaden has no intention to issue secured bonds.



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To calculate GHG emission reductions, Hufvudstaden uses the Green House Gas Protocol and reports on Scope 1 and Scope 2 emissions. They will be transparent on the methodologies they use, and the methodology will be the same as used in the company's sustainability reporting.

The external auditor of Hufvudstaden, or a similar party appointed by Hufvudstaden with the relevant expertise and experience, will investigate and report whether an amount equal to the net proceeds have been allocated to the Eligible Green Assets that Hufvudstaden has communicated in the Reporting. Their conclusions will be provided in a signed statement, which will be published on Hufvudstaden's website (www.hufvudstaden.se).



3 Assessment of Hufvudstaden's green bond framework and policies

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

Eligible projects under the Hufvudstaden's green bond framework

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

Category	Eligible project types	Gr	een Shading and some comments
Green buildings	New properties:	Me	edium Green
	Development, acquisition, add-on construction or	ı√	Passive or plus house technologies
	existing properties or otherwise recently		should become mainstream and the
°C	completed properties or add-on construction that		energy performance of existing
	have, or will, receive (i) a design stage		buildings greatly improved.
· · · ·	certification or (ii) a post-construction		Hufvudstaden is taking steps towards
	certification or (iii) an in-use certification in any		this long-term vision with energy
	of the following building certification schemes at		efficiency targets. A dark green shading
	the defined threshold or better: Miljöbyggnad		would require passive or plus house
	"Silver", BREEAM "Very Good" or LEED		technologies.
	"Gold", as well as at least 20% lower energy use	\checkmark	LEED and BREEAM certification
	than required by the applicable national building		schemes cover a broad set of issues that
	code (BBR/NZEB).		are important to sustainable
			development. These points-based
	Existing properties:		certifications, however, fall short of
	Existing properties or major renovations that		guaranteeing a low-climate impact
	have, or will receive, (i) a design stage		building, as they may not ensure
	certification, (ii) a post construction certification		compliance with all relevant factors
	or (iii) an in-use certification in any of the		e.g., energy efficiency, access to public
	following building certification schemes at the		

defined threshold or better: Miljöbyggnad "Silver", BREEAM "Very Good" or LEED "Gold", as well as achieve an energy target, as specified below:

- Properties that have, or are undergoing, major renovation require an overall reduction in energy use of at least 30 %.
- Existing properties require (i) an energy use per square meter lower than 90 kWh and (ii) 25% lower energy use than required by the national building code (BBR) at the time of construction (if applicable).

transport, climate resilience, and sustainable building materials.

✓

 \checkmark

- Miljöbyggnad Silver means that energy use has to be 20 % lower than that required by BBR (Swedish Building regulations).
- The issuer states in the framework that they always strive to achieve at least 25% lower energy use than required by the applicable national building code (BBR) in new properties and add-on construction, but due to some of the properties' high cultural values (several are historic listed buildings) the scope of activities that can be undertaken to limit energy use is often restricted. Therefore, a lower criteria threshold (20%) has been used, although the ambition will be to reach at least 25%. We encourage the issuer to report on any building not reaching the 25% below regulation target.
- Hufvudstaden further informs us that they choose materials with long usability. Byggvarubedömningen is used to assess products in projects.
- Hufvudstaden operates and owns only properties in the Stockholm and Gothenburg Central Business District (CBD). All properties are within walking distance of well-developed public transport.

Renewable energy	Renewable energy production, such as on-site solar power installations and on-site geo-energy installations (ground and surface systems), as well as related infrastructure investments for example grid connections, electric substations or networks.	Dai ✓ ✓	rk Green Renewable energy is part of a Dark Green Solution and is key to a low- carbon transition. To limit emissions from its renewable energy projects, we encourage Hufvudstaden to do life cycle analysis. Hufvudstaden informs us that they currently only plan for on-site energy installations.
Clean transportation	Supportive infrastructure such as charging stations for electric vehicles, bicycle garages, pedestrian walkways, bicycle lanes or other	Daı √	rk Green These are important elements to secure green buildings in a wider sense.

°C	investments that support and emphasize the use of clean transportation solutions.	f✓	Note that charging stations may also be used by hybrid vehicles, thus including a fossil fuel element. There will also be greenhouse gas emissions associated with material used in construction of bike lanes and walkways.
Energy efficiency	 Upgrades to the existing portfolio of buildings that target a lower overall energy use and an improved environmental footprint. This could include, for instance, the installation of geothermal heating/cooling, energy-efficient lighting, IT-technology (monitoring, efficiency management and remote operation), energy efficient windows or an upgraded ventilation system. Only directly associated expenditure (e.g., material, installation and labour) is eligible for financing. Hufvudstaden will ascertain the following: High estimated energy savings in the targeted area (minimum 20%). Minimize long term negative climate impact and potential rebound effects. Minimal negative climate impact from the technology used. 	Da ✓	rk Green The issuer informs us that energy efficiency projects on fossil fuel technologies will not be eligible. Be aware of possible rebound effects and lock-in of fossil fuel infrastructure when upgrading buildings.
Environmental sustainable management of living resources and land use	 IySolutions for green urban environments that promote, restore and preserve biological diversity f ("urban oases"). These include, e.g., green roofs, g green walls, urban biotopes, flowerbeds and trees, which all have various positive effect on e.g., strengthening ecological values, reducing noise levels, mitigating physical climate risks or binding air-borne particles. 	Da ✓	rk Green Hufvudstaden says that this category will mainly focus on green roofs and courtyards. Good with elements of climate adaptation.

Table 1. Eligible project categories

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Background

The construction and real estate sector have a major impact on our common environment. According to the National Board of Housing, Building and Planning's environmental indicators, it accounts for 32% of Sweden's energy use, 31% of waste and 19% of domestic greenhouse gas emissions. Calculations from Sveriges Byggindustrier indicate that the climate impact of new production of a house is as great as the operation of the house for 50 years.

As member 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

°<mark>CICERO</mark> Shades of Green

improving energy efficiency by at least 32.5%.⁶ The European Green Deal aims for carbon neutrality in 2050.⁷ Sweden has developed a National Energy and Climate Plan (NECP) in which it outlines the targets and strategies in all sectors.⁸ These strategies include measures such as increasing renewable energy capacity, improving energy efficiency, facilitating the large scale implementation of clean transportation alternatives, and implementing 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.⁹ 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 of 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.¹⁰ CICERO Shades of Green assesses all of these factors when evaluating the climate impact of buildings.

The Exponential Roadmap¹¹ 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.

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 activities¹². 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 2020¹³. The mitigation criteria in the EU taxonomy includes specific thresholds for real estate sector activities relevant for the company¹⁴. Relevant activities for the green bond framework are Construction of new buildings, renovation and ownership and acquisition of buildings. Note that we have not assessed the taxonomy alignment of Hufvudstaden's framework.

⁶ https://ec.europa.eu/clima/policies/strategies/2030_en_

⁷ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

⁸ https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en

⁹ https://www.iea.org/reports/building-envelopes

¹⁰ https://www.worldgbc.org/how-can-we-make-our-buildings-green

¹¹ <u>https://exponentialroadmap.org/wp-</u>

content/uploads/2020/03/ExponentialRoadmap 1.5.1 216x279 08 AW Download Singles Small.pdf

¹² <u>TEG final report on the EU taxonomy (europa.eu)</u>

¹³Sustainable finance taxonomy - Regulation (EU) 2020/852 | European Commission (europa.eu)

¹⁴ taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf (europa.eu)

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 the Hufvudstaden'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.

Hufvudstaden's sustainability work is based on the ten principles of UN Global Compact, the Global Reporting Initiative (GRI) and the European Public Real Estate Association (EPRA) and they have a comprehensive environmental program with fairly ambitious short term quantitative targets for specific energy use and greenhouse gas emissions. The current target for energy use is that for larger projects the energy use should be less than 70% of current regulations (BBR). Also, Hufvudstaden's targets is to achieve climate-neutral property management by 2025. This will encompass vehicles and refrigerants (Scope 1), purchased energy (Scope 2), as well as business travels (Scope 3). Climate compensation is permitted when emissions cannot be entirely eliminated, e.g., leakages from cooling equipment. We note, however, that the likely most material emissions associated with supply chain transports to stores, are not covered by the target. They have a sound selection process which include professional and extensive competencies in environmental matters, and a comprehensive plan for impact reporting. Life cycle assessments, climate resilience work and consideration of potential rebound effects are clear strengths of Hufvudstaden's procedures. Hufvudstaden is working actively with climate risk resilience issues and has had independent experts go over flood risks for all their properties and provide guidance for increased resilience in this

matter. However, Hufvudstaden does not formally follow the TCFD guidelines for climate risk reporting, while carrying out scenario-based analyses of future physical climate risks to their portfolio.

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



Strengths

It is a clear strength that the green bond framework of Hufvudstaden is supported by a strong governance structure, such as comprehensive screening for physical climate risks, and clear environmental goals.

The framework of Hufvudstaden is well aligned with the Green Bond Principles. A commitment to substantial impact reporting increases transparency to investors and is a clear strength. The eligible categories are well defined and provide important steps toward a low carbon future.

Weaknesses

We find no material weaknesses in the green bond framework of Hufvudstaden.

Pitfalls

Although voluntary environmental certifications such as LEED and BREEAM 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. Hufvudstaden's energy criteria for new and existing buildings and exclusions of fossil fuel technologies mitigates this weakness. We note, however, that Hufvudstaden's energy efficiency policy target is more ambitious than the eligibility criteria expressed in the framework. The reason for this is, according to Hufvudstaden, that in the shorter term many of the intended projects involve buildings with 'high cultural values', either as refurbishment of, or extensions to existing buildings. In these projects there will be restriction on material use and technical installations that preclude a full realization of Hufvudstaden's longer term ambitions when it comes to energy efficiency improvements.

Hufvudstaden's approach to use of materials with e.g., pre-demolition audits for recyclability and emphasis on long lifetimes of materials, is a strong point of Hufvudstaden's practise, as is the focus on environmental issues in discussions with entrepreneurs and construction companies.

In a low carbon 2050 perspective, the energy performance of buildings is expected to be improved, with passive house technology becoming mainstream and the energy performance of existing buildings greatly improved through refurbishments. According to IEA, efficiency of building envelopes needs to improve by 30% by 2025 to keep pace with increased building size and energy demand – in addition to improvements in lighting and appliances and increased renewable heat sources. The criteria for eligible projects under the Green buildings category are good, but do not yet delivering the solutions needed in a low carbon 2050 perspective (passive house technology and similar). The issuer is taking a step in this direction with the energy efficiency criteria. 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.



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Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Hufvudstaden Green Bond Framework September 23, 2021	Hufvudstaden's Green Bond Framework dated June 2021
2	Arbetsmiljöpolicy	Hufvudstaden's Work environment policy
3	Finanspolicy	Hufvudstaden's Financial policy
4	Hälsopolicy	Hufvudstaden's Health policy
5	IT-policy	Hufvudstaden's IT policy
6	Mångfaldspolicy	Hufvudstaden's Diversity policy
7	Jämställdhets- och likabehandlingsplan	Hufvudstaden's Gender equality and equal treatment plan
8	Resepolicy	Hufvudstaden's Travel policy
9	Hufvudstadens policy om mutor och otillåtna förmåner	Hufvudstaden's policy on bribes and illicit benefits
10	Miljöprogram Hufvudstaden	Hufvudstaden's Environmental policy
11	Analys klimatrisk översvämningar (Hufvudstaden)	Screening of Hufvudstaden's property portfolio
12	Policy for visselblåsning	Hufvudstaden's whistleblowing policy
13	Code of Conduct (uppförandekod)	Hufvudstaden's Code of conduct
14	Hufvudstaden Annual Report 2020	Hufvudstaden's Annual report 2020
15	Verification of GHG-assertions Hufvudstaden AB 2020	Independent verification of Hufvudstaden AB GHG- assertions

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, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.

