

ASSESSMENT

29 August 2024



Contacts

Lena Gillich
Associate Lead Analyst-Sustainable Finance
lena.gillich@moody's.com

Krister Koskelo
Associate Lead Analyst – Sustainable Finance
krister.koskelo@moody's.com

Adriana Cruz Felix
VP-Sustainable Finance
adriana.cruzfelix@moody's.com

CLIENT SERVICES

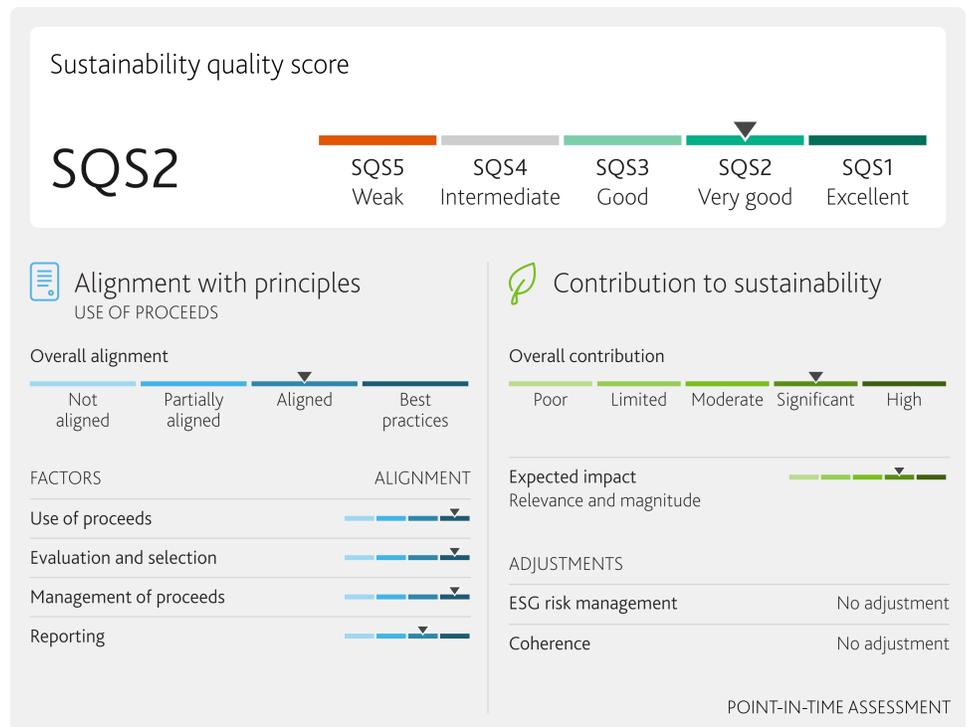
Americas 1-212-553-1653
Asia Pacific 852-3551-3077
Japan 81-3-5408-4100
EMEA 44-20-7772-5454

Ålandsbanken Abp

Second Party Opinion – Green Finance Framework Assigned SQS2 Sustainability Quality Score

Summary

We have assigned an SQS2 Sustainability Quality Score (very good) to Ålandsbanken Abp's (Ålandsbanken or Bank of Åland) green finance framework dated August 2024. The issuer has established its use-of-proceeds framework with the aim of financing projects across three eligible green categories — renewable energy, green buildings and clean transportation. The framework is aligned with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles (GBP) 2021 (including the June 2022 Appendix 1). The framework demonstrates a significant contribution to sustainability.



Scope

We have provided a Second Party Opinion (SPO) on the green credentials of Ålandsbanken's green finance framework, including the framework's alignment with the ICMA's GBP 2021 (including the June 2022 Appendix 1). Under its framework, the bank plans to issue green bonds to finance projects across three green categories, as outlined in Appendix 2 of this report.

Our assessment is based on the last updated version of the framework received on 28 August 2024, and our opinion reflects our point-in-time assessment¹ of the details contained in this version of the framework, as well as other public and non-public information provided by the bank.

We produced this SPO based on our [Framework to Provide Second Party Opinions on Sustainable Debt](#), published in October 2022.

Issuer profile

Ålandsbanken Abp (Ålandsbanken or Bank of Åland) is a Finnish bank that was originally established in 1919 on the Åland Islands, an autonomous, Swedish-speaking region of Finland. The bank provides personal banking, business banking, wealth management and investment services. Ålandsbanken also has a subsidiary, Crosskey Banking Solutions (Crosskey), which provides IT solutions for banks and other financial companies. In Finland and Sweden, the main focus is private and premium banking, wealth management and investment services, with offices located in the larger urban areas. On the Åland Islands, the bank offers a full product range of banking services. Ålandsbanken has a market share of above 50% on the Åland Islands for universal banking, as well as well as less than 5% of private banking in Sweden and more than 5% of private banking in Finland.

The bank faces moderate environmental risks, primarily because of its portfolio exposure to carbon transition risk as a diversified bank. In line with its peers, the bank is facing mounting business risks and stakeholder pressure to meet broader carbon transition goals. In response, Ålandsbanken is developing its climate risk and portfolio management capabilities. It is proactively engaging with customers and stakeholders to reduce their footprint by initiating the Åland index. In line with Finland's national target, Ålandsbanken plans to achieve carbon neutrality by 2035. Its corporate climate goals include reducing its CO₂e emissions by 50% by 2030, compared with the 2021 level; reaching climate neutrality no later than 2035; and reaching net-zero emissions by 2050. In addition, its climate targets support the Bärkraft initiative for a sustainable Åland.

Strengths

- » Eligible projects target key sustainability challenges for the financial sector by addressing the avoidance of and decrease in carbon emissions.
- » The eligibility criteria for the financed assets follow the substantial contribution criteria for selected economic activities, as laid out in the EU Taxonomy Climate Delegated Act for Climate Change Mitigation.
- » The environmental objective is clearly defined and relevant for all eligible categories.

Challenges

- » The environmental and social risk evaluation and mitigation process is not detailed in the framework, but is part of the issuer's annual report.
- » There is no commitment to undertake an independent review of the allocation and impact reporting.

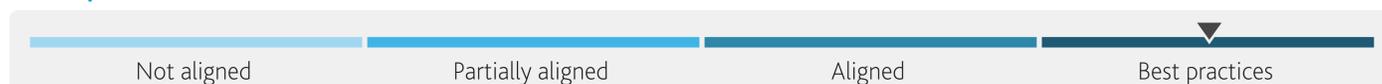
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Alignment with principles

Ålandsbanken's green finance framework is aligned with the four core components of the ICMA's GBP 2021 (including the June 2022 Appendix 1):

- Green Bond Principles (GBP)
- Social Bond Principles (SBP)
- Green Loan Principles (GLP)
- Social Loan Principles (SLP)
- Sustainability-Linked Bond Principles (SLBP)
- Sustainability Linked Loan Principles (SLLP)

Use of proceeds



Clarity of the eligible categories – BEST PRACTICES

Ålandsbanken has clearly and comprehensively communicated the nature of expenditures, as well as the eligibility and exclusion criteria for the three eligible green categories. The general definitions include references to the substantial contribution criteria for several economic activities, as laid out in the EU Taxonomy Climate Delegated Act for Climate Change Mitigation, thus constituting a reference to stringent, internationally recognized technical thresholds (see Appendix 2 for more details). All projects are located within Finland and Sweden.

Clarity of the environmental objectives – BEST PRACTICES

The Bank of Åland has clearly outlined the environmental objective as climate change mitigation, which is relevant for the three eligible categories and is coherent with recognized international standards, including the United Nations' (UN) Sustainable Development Goals (SDGs) and the EU Taxonomy Climate Delegated Act.

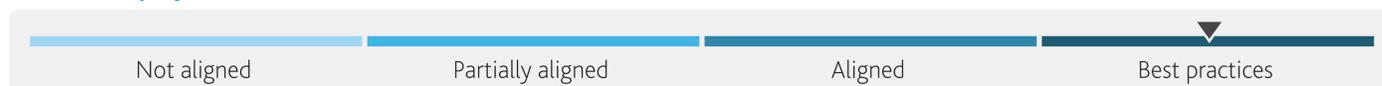
Clarity of the expected benefits – BEST PRACTICES

The expected environmental benefits are clear and relevant for all eligible categories. These benefits are measurable, and the bank will report on these quantitative benefits in its ongoing reporting. Further, the issuer commits to disclose the estimated share of refinancing before any green bond issuance. Typically, the lookback period for the eligible projects is limited to five years, although leeway may be granted, particularly for long-lived renewable energy projects.

Best practices identified - use of proceeds

- » Eligibility criteria are clearly defined for all project categories
- » Objectives set are defined, relevant and coherent for all project categories
- » Relevant benefits are identified for all project categories
- » Benefits are measurable and quantified for most projects, either ex-ante with clear baselines or with a commitment to do so in future reporting
- » Commitment to transparently disclose the share of proceeds used for refinancing where feasible
- » Commitment to transparently communicate the associated lookback period(s) where feasible

Process for project evaluation and selection



Transparency and quality of process for defining eligible projects – BEST PRACTICES

Ålandsbanken has established a clear and structured decision-making process for determining the eligibility of projects and assets in its framework, which will be disclosed in the framework and published on its website. The traceability of the decision-making process is ensured throughout the evaluation and selection process in the so-called green asset register file that is stored in a designated folder. The roles and responsibilities for project evaluation and selection are clearly defined and rely on relevant internal expertise convened in the form of the credit committee of the executive team, which is composed of the managing director, director of the Åland business area and further credit managers. The decision-making criteria are formalized in Ålandsbanken's public green financing framework.

Monitoring of the continued compliance of the selected assets with the eligibility and exclusion criteria is carried out quarterly by Group Treasury. This will be done throughout the life of any outstanding instrument issued under this framework. In case of non-compliance, divestments or maturities, assets will be replaced by another qualifying green asset.

Environmental and social risk mitigation process – BEST PRACTICES

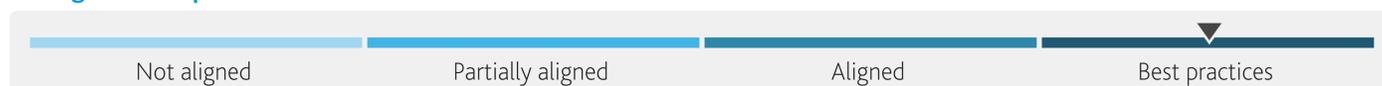
The issuer has established an adequate environmental and social risk mitigation process, including monitoring for controversies, and the identification and management of risks. The process is part of the general credit portfolio risk analysis performed by the risk control department and is publicly disclosed in Ålandsbanken's public annual reports. As a small-scale, relationship-focused bank, lending is based on thorough customer understanding; enabling the assessment of repayment capabilities; and identifying risks from climate change, changing consumer behavior or new regulations.

The monitoring of potential risks and controversies is performed throughout the life of a financial instrument. In the event an asset already included in the eligible green asset register no longer meets the criteria in this framework, such an asset will be replaced by other eligible green assets.

Best practices identified - process for project evaluation and selection

- » The roles and responsibilities for project evaluation and selection are clearly defined and include relevant expertise
- » There is evidence of continuity in the selection and evaluation process through the life of the financial instrument(s), including compliance verification and procedures to undertake mitigating actions when needed
- » The process for project evaluation and selection is traceable
- » Material environmental and social risks for most project categories are identified
- » Presence of corrective measures to address environmental and social risks across projects
- » ESG controversies are monitored

Management of proceeds



Allocation and tracking of proceeds – BEST PRACTICES

Ålandsbanken has clearly defined the process for the allocation and tracking of proceeds in its framework. The net proceeds from issuances under the framework will be held in the bank's general treasury and tracked adequately. While the bonds are outstanding, the balance of tracked net proceeds will be adjusted on a quarterly basis to match allocations to eligible assets. The proceeds are to

be allocated in close proximity to any issuance, with a provision allowing for their reallocation to other green or temporary assets throughout the instrument's life span.

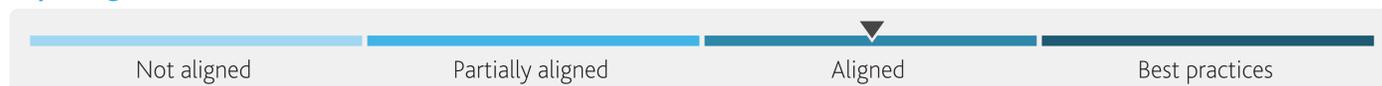
Management of unallocated proceeds – BEST PRACTICES

The issuer intends to temporarily invest unallocated proceeds in green bonds, managed per the bank's internal frameworks and liquidity reserve requirements, with a preference toward GBP-aligned green bonds. If a project is postponed, canceled or otherwise becomes ineligible, Ålandsbanken has stated its commitment to reallocate the funds to other qualifying projects.

Best practices identified - management of proceeds

- » Broad disclosure of a clearly articulated and comprehensive management of proceeds policy to external stakeholders; bondholders or lenders at a minimum
- » Short allocation period, for example typically less than 24 months
- » Disclosure on temporary placement and presence of exclusion criteria toward environmentally or socially harmful activities
- » Commitment to reallocate proceeds to projects that are compliant with the framework

Reporting



Transparency of reporting – ALIGNED

Ålandsbanken has committed to provide annual allocation and impact reporting in its green bond impact report as long as there is green debt outstanding. The report will be publicly available on the bank's website and will cover relevant information about the allocation of proceeds and the expected sustainable benefits of the projects. In case of any material developments, the issuer commits to publishing an impact report encompassing both allocation and impact changes, supplemental to the standard annual report. The calculation methodologies, assumptions and metrics used to report on environmental impacts will be included in the report.

There will be no external verification or assurance of the allocation nor of the impact data related to issuances under the framework.

Best practices identified - reporting

- » Reporting until full bond maturity or loan payback
- » Reporting covers material developments and issues related to the projects or assets
- » Reporting on allocation of proceeds and benefits done at least at eligible category level
- » Exhaustive allocation reporting – balance or % of unallocated funds, types of temporary investments (e.g. cash or cash equivalent) and share of financing vs re-financing
- » Clear and relevant indicators to report on the expected environmental/social impact of all the projects, where feasible, or eligible categories
- » Disclosure of reporting methodology and calculation assumptions to bondholders or lenders at a minimum

Contribution to sustainability

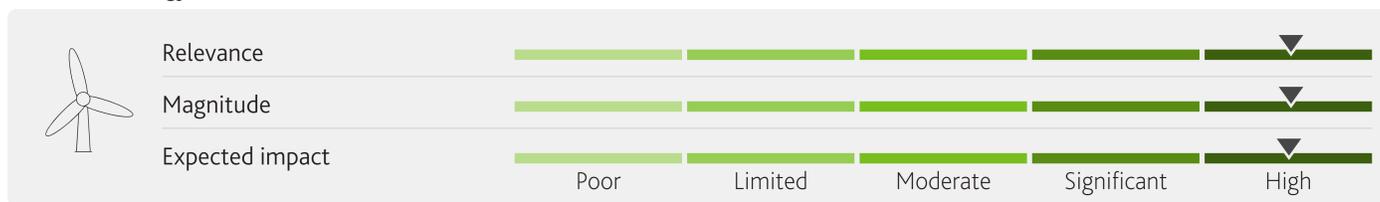
The framework demonstrates a significant overall contribution to sustainability.



Expected impact

The expected impact of the three eligible categories on the environmental objective is significant. Based on information provided by the bank, the largest share of proceeds from forthcoming issuances will be allocated to green buildings. We have, therefore, assigned a higher weight to that category when we assess the overall structure's contribution to sustainability. A detailed assessment by eligible category is provided below.

Renewable energy



For the bank operating across sectors, the financing of renewable energy deployment is highly relevant to address climate change. Finland and Sweden have ambitious decarbonization targets, with goals to achieve carbon neutrality by 2035² and 2045³, respectively. Both countries' energy mixes rely heavily on nuclear, hydropower, biofuels and wind, with minimal fossil fuel electricity. Wind power contributes to 17% of Finland's electricity generation and 19% of Sweden's, while the solar photovoltaic (PV) contribution is less than 1% in Finland and 1.1% in Sweden. Sweden experienced a 46% increase in solar installations from 2020 to 2021⁴. Despite having a predominantly clean electricity mix, Finland and Sweden still have significant emissions from the energy sector, contributing 29%⁵ and 17%⁶ of total emissions, respectively, as of 2022. Therefore, both countries could benefit from additional renewable energy installations to further reduce these emissions.

The eligible projects under this category are likely to have a highly positive long-term impact by reducing greenhouse gas (GHG) emissions while also minimizing any risk of lock-in effects and inherent environmental negative externalities. The issuer's criteria for this category align with the latest technology and strictest standards, namely the substantial contribution criteria for activities "3.1 Manufacture of renewable energy technologies", "4.1 Electricity generation using solar photovoltaic technology" and "4.3 Electricity generation from wind power" in the EU Taxonomy Climate Delegated Act for Climate Change Mitigation.

Green buildings



Investment in the energy efficiency of buildings is highly relevant to tackle climate change because of the building sector's high energy consumption and the absence of the 'low-hanging fruit' of grid improvements in the context of the clean energy supply in both Sweden and Finland. In Finland, the building and construction sector accounts for around one-third of the country's emissions, and is an important part of the government's broader, country-level commitment to reach net zero by 2035.⁷ In Sweden, the building and construction sector accounts for around 20% of the country's emissions. The sector has various goals to reduce its impact, including a 50% reduction in GHG emissions in 2030 compared with the level in 2015, culminating in a goal of net zero by 2045, in line with national goals.⁸ In addition, real estate-related assets represent a prominent part of the bank's portfolio, highlighting the relevance for the bank to invest in the overall energy efficiency of buildings.

The magnitude is significant because green building projects financed under this category are likely to significantly reduce GHG emissions from the building sector in both Finland and Sweden. Projects in the eligible portfolio will adhere to applicable substantial contribution criteria of the EU Taxonomy for economic activities "7.1. Construction of new buildings," "7.2 Renovation of existing buildings" and "7.7 Acquisition and ownership of buildings", thus referring to recognized international standards. The issuer expects most of the proceeds to be allocated toward existing residential buildings. The issuer has different sets of criteria for buildings built before 2021, buildings built in or since 2021, and for the renovation of buildings. With regard to acquiring buildings built before 2021, the eligibility criterion of belonging to the top 15% of the country's building stock in terms of energy efficiency is considered ambitious, but not the most ambitious threshold. Buildings in the top 15% of the local housing stock can have Energy Performance Certificates (EPCs) of A or B (Finland); or A, B or C (Sweden). In Finland, the top 15% of buildings have an energy performance below 92 kWh/m²/year, which, although low, is higher than the long-term 1.5°C compatible threshold of 70 kWh/m²/year for Finnish residential buildings, as calculated by the Carbon Risk Real Estate Monitor (CRREM).

Buildings built since 2021 are considered newly constructed. Such buildings can be considered eligible on the basis of an operational emissions threshold alone, a performance that is at least 10% better than a nearly-zero energy building (NZEB), or holding a Nordic Swan certification. Although the Nordic Swan scheme includes thresholds and criteria around embodied emissions, which are meaningful in the Nordic context because they account for a substantial share of life cycle emissions, buildings satisfying the operational energy criterion alone will not be subject to any embodied emissions criteria. Lastly, building renovations must demonstrate an improvement in energy efficiency that results in an annual reduction of primary energy demand (PED) of at least 30% directly or through a succession of measures within a maximum of three years, which is in line with good market standards, but not the most ambitious ones.

Clean transportation



These eligible assets are highly relevant investments to decarbonize transportation emissions. According to the International Energy Agency (IEA), global CO₂ emissions from transport continued to rise in 2022, almost returning to 2019 levels, with road transport being the largest CO₂ emitter⁹. In both Finland and Sweden, the transport sector is a significant contributor to emissions, constituting around 30%-35% of total emissions, respectively, excluding land use, land-use change, and forestry (LULUCF). Despite reductions in transport emissions (22% in Finland since 2005¹⁰ and 30% in Sweden since 1990¹¹), the sector's proportional contribution to total emissions has remained steady in both countries. The adoption of electric vehicles (EVs) is on the rise, with battery electric vehicles (BEVs) predicted

to constitute 42% of new vehicle registrations in Finland by 2025¹², while plug-in hybrid vehicles (PHEVs) accounted for 20% of new registrations in 2022¹³. In Sweden, EVs represented 58% of new car registrations, and PHEVs made up an additional 23% in 2022¹⁴. Achieving GHG emission reduction depends heavily on the rapid electrification of the transportation sector by increasing the uptake of zero-emission vehicles.

The eligible assets are likely to have significant magnitude in mitigating GHG emissions in the long term through the financing of zero tailpipe vehicles, with some negative lock-in effects through the financing of hybrid vehicles being eligible until year-end 2025. Eligible hybrid and zero-tailpipe (including battery electric and hydrogen fuel cell) vehicles must meet the EU Taxonomy's threshold under activity "6.5 Transport by motorbikes, passenger cars and light commercial vehicles", namely that vehicles financed before year-end 2025 should produce less than 50 gCO₂/km. The issuer has not provided an estimate of allocation to zero versus low-emission vehicles.

ESG risk management

We have not applied a negative adjustment for the management of ESG externalities to the expected impact score. Ålandsbanken has a general risk assessment in place across its entire lending portfolio. From the ESG perspective, it mainly covers climate risks. Going forward, risk identification and assessment will expand to include social and governance risks, which are currently not considered in the risk control department's evaluations. This enhanced assessment approach will be applied uniformly at the bank level to all credits, not just restricted to eligible projects. In terms of environmental stewardship, the bank cultivates environmental awareness among its employees to achieve climate targets. Leveraging its relationship-focused approach, the bank evaluates projects on the grounds of sustainability; repayment ability; and potential risks stemming from climate change, shifts in consumer behavior or new regulatory requirements. From the social perspective, there are initiatives spanning employee welfare to the involvement in local communities. Because the eligible projects are confined to Finland and Sweden, where strong legislative and collective agreements protect employee rights, the associated social risks are typically lower. In addition to managing the risks associated with violations of human and labor rights, the bank has established procedures to tackle issues of non-compliance with good governance, such as corruption, abuse or deficient business processes.

Coherence

We have not applied a negative adjustment for coherence to the expected impact score. The projects to be financed under the framework align with the bank's overall sustainability strategy, which includes three climate targets. The bank's immediate commitment is to halve its GHG emissions by 2030, a step toward the medium-term target of achieving climate neutrality by 2035, and ultimately reaching the long-term goal of net-zero emissions by 2050. Green eligible projects further support the targets of the Governments of Finland and Sweden to become carbon neutral by 2035¹⁵ and by 2045¹⁶, respectively.

Appendix 1 - Mapping eligible category to the United Nations' Sustainable Development Goals

The eligible categories included in Ålandsbanken's framework are likely to contribute to two of the UN's SDGs, namely:

UN SDG 17 Goals	Eligible Category	SDG Targets
GOAL 7: Affordable and Clean Energy	<i>Renewable Energy</i>	7.2: Increase substantially the share of renewable energy in the global energy mix
	<i>Green Buildings</i> <i>Clean Transportation</i>	7.3: Double the global rate of improvement in energy efficiency
GOAL 13: Climate Action	<i>Renewable Energy</i> <i>Green Buildings</i> <i>Clean Transportation</i>	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

The mapping of the UN's SDGs in this SPO considers the eligible project categories and associated sustainability objectives/benefits documented in the issuer's green finance framework, as well as resources and guidelines from public institutions, such as the ICMA's SDG mapping guidance and the UN's SDG targets and indicators.

Appendix 2 - Summary of eligible categories in Ålandsbanken's framework

Eligible Project Category	Description	Sustainability Objective	Impact Reporting Metrics
<i>Renewable Energy</i>	<p>Renewable energy projects, including development, manufacturing, construction, operation, and maintenance of renewable energy from the following sources:</p> <ul style="list-style-type: none"> - Wind Energy - Solar Energy <p><u>EU Taxonomy economic activities:</u></p> <p>3.1 Manufacture of renewable energy technologies</p> <p>4.1 Electricity generation using solar photovoltaic technology</p> <p>4.3 Electricity generation from wind power</p>	Climate Change Mitigation	<ul style="list-style-type: none"> - Expected annual generation (MWh) - Estimated annual GHG emissions avoided (tCO₂e)
<i>Green Buildings</i>	<p>Residential buildings, including buildings owned by tenant-owner associations, which meet one the following criteria:</p> <p><i>Certifications</i> Buildings with the Nordic Swan Ecolabel certification.</p> <p><i>New buildings</i> Construction of new buildings with an energy performance classification that is at least 10 % lower than the primary energy demand resulting from the current national building regulation in accordance with nearly zero-energy building (NZEB) requirements. The energy performance is certified using an Energy Performance Certificate (EPC).</p> <p><i>Existing buildings</i> Ownership or acquisition of buildings, that meet one of the criteria:</p> <ul style="list-style-type: none"> - Buildings built before 31 December 2020, where the building has at least an Energy Performance Certificate (EPC) class A or where the building is within the top of 15 % of the national or regional building stock. - Renovations and refurbishment of existing buildings resulting in an annual reduction in primary energy demand on a square meter basis of at least 30 % compared to the pre-renovation levels. - Buildings built after 31 December 2020 must meet the criteria specified under “New buildings” above. <p><u>EU Taxonomy economic activities:</u></p> <p>7.1 Construction of new buildings</p> <p>7.2 Renovation of existing buildings</p> <p>7.7 Acquisition and ownership of buildings</p>	Climate Change Mitigation	<ul style="list-style-type: none"> - Expected annual generation (MWh) - Estimated annual GHG emissions avoided (tCO₂e)
<i>Clean Transportation</i>	<p>Fully electric and other low-carbon (e.g. hydrogen, plug-in hybrid) vehicles that meet the following criteria:</p> <ul style="list-style-type: none"> - Passenger cars and commercial vehicles with zero tailpipe emissions. - Low-carbon vehicles for passenger cars and commercial vehicles with tailpipe emission intensity lower than 50g CO₂/km (WLTP) until December 31, 2025. <p><u>EU Taxonomy economic activity:</u></p> <p>6.5 Transport by motorbikes, passenger cars and light commercial vehicles</p>	Climate Change Mitigation	<ul style="list-style-type: none"> - GHG emissions per kilometer (CO₂e) - Estimated annual GHG emissions reduced or avoided (tCO₂e)

Endnotes

- 1 The point-in-time assessment is applicable only on the date of assignment or update.
- 2 International Energy Agency, [Finland](#), retrieved in June 2024.
- 3 International Energy Agency, [Sweden](#), retrieved in June 2024.
- 4 Energimyndigheten, [Energy in Sweden 2022 - an overview](#), April 2022.
- 5 Climate Action Progress Report 2023, [Finland](#), retrieved in June 2024.
- 6 Climate Action Progress Report 2023, [Sweden](#), retrieved in June 2024.
- 7 Finnish Ministry of Economic Affairs and Employment, [Carbon neutral Finland 2035 – National Climate and Energy Strategy](#), September 2022.
- 8 Fossil Free Sweden, "[Building and construction sector](#)," retrieved in June 2024.
- 9 International Energy Agency, [Transport](#), retrieved in June 2024.
- 10 Ministry of the Environment Finland, [Annual Climate Report 2023](#), retrieved in June 2024.
- 11 Climate Roadmaps 2035, [Low-carbon roadmap for the Finnish logistics and transport sector](#), retrieved in June 2024.
- 12 Autoalan Tiedotuskeskus, [Vuoden 2023 tiedotteet](#), June 2023.
- 13 European Environment Agency, [New registrations of electric vehicles in Europe](#), October 2023.
- 14 European Environment Agency, [New registrations of electric vehicles in Europe](#), October 2023.
- 15 Ministry of Finance Finland, [Net-Zero Government Initiative \(NZGI\) Finland](#), November 2022.
- 16 Government Offices of Sweden, [Sweden's climate policy framework](#), March 2021.

Moody's assigns SPOs in alignment with the main tenets of the ICMA Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews and the LSTA/LMA/APLMA Guidance for Green, Social and Sustainability-Linked Loans External Reviews, as applicable; Moody's practices may however diverge in some respects from the practices recommended in those documents. Moody's approach to assigning SPOs is described in its Assessment Framework, and is subject to the ethical and professional principles set forth in the Moody's Investors Service Code of Professional Conduct.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

© 2024 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

REPORT NUMBER 1408096