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Second Party Opinion

Svenska Cellulosa Aktiebolaget (SCA) Green Bond Framework

June 25, 2025

Location: Sweden **Sector:** Forest and paper products

Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✕

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

See Alignment Assessment for more detail.

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Dark green

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our Shades of Green Analytical Approach >

Strengths

SCA's sustainable forestry and bioproducts sequester carbon, while helping to reduce dependence on fossil fuels and create a more circular economy. Through its forestry activities, SCA aims to enhance its net carbon sink, providing increasing carbon sequestration benefits. Its bioproducts and waste-based bioenergy facilitate the use of renewable materials that can displace fossil fuel-intensive alternatives used in packaging, construction materials, transportation, and heating.

Weaknesses

No weaknesses to report.

Areas to watch

About one-quarter of SCA's wood inputs have no additional sustainability features beyond the Forest Stewardship Council (FSC) Controlled Wood standard. Although this standard offers important protections, it does not have the same requirements for sustainable management as the FSC or the Programme for the Endorsement of Forest Certification (PEFC) certification.

SCA has undertaken a scenario analysis to assess physical climate risks but has not yet implemented specific adaptation measures. Physical climate risks may be relatively lower in the main region in Sweden where SCA operates. But resilience to such risks will become increasingly important for the forestry sector.

Green projects within acquired entities are eligible for financing. Though we consider this structure aligned with the Green Bond Principles, it may create challenges in allocation processes and impact reporting.

Shades of Green Projects Assessment Summary

Over the three years following issuance of the financing, SCA expects to allocate more than 90% of proceeds to its valuable forests category based on its current business plan. The company expects the majority of proceeds to be allocated to refinancing projects.

Based on the project categories' Shades of Green detailed below, the expected allocation of proceeds, and consideration of environmental ambitions reflected in the SCA green bond framework, we assess the framework as Dark green.

Valuable forests	**Dark green**
PEFC- and/or FSC-certified forestland, forest management, and related infrastructure	

Fossil-free world	**Dark to Medium green**
Renewable forest products, facilities, and processes using wood that meets PEFC and/or FSC forest management certification requirements or the FSC Controlled Wood standard	
Renewable energy including bioenergy, wind, or solar as well as waste heat recovery	
Clean transportation, battery-electric or hydrogen vehicles, machinery, and equipment	

Efficient use of resources	**Light green**
Waste management and pollution prevention technologies and processes	
Wastewater management and water use efficiency technologies and processes	

See Analysis Of Eligible Projects for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Company Description

SCA is a vertically integrated forest products company headquartered in Sundsvall, Sweden. As Europe's largest private forest owner, SCA manages about 2.7 million hectares (ha) of forests in Sweden as well as in Estonia, Latvia, and Lithuania. Approximately 60% of its wood raw materials come from company-managed forests and over 95% originates from northern Sweden.

With these inputs, SCA manufactures wood products, pulp, and containerboard for sale in Sweden and internationally, supported by its marine and land logistics segment. The company also produces biofuels from forest inputs and has about 20% of Sweden's total wind power capacity on its landholdings.

SCA is a public company listed on the Nasdaq Stockholm exchange. Its largest shareholders include Aktiebolaget Industrivärden, Norges Bank Investment Management, AMF Pension & Fonder, Handelsbanken Pensionsstiftelse, and BlackRock. For 2024, SCA reported Swedish Krona (SEK) 20.23 billion (€1.85 billion) in net sales and EBITDA of SEK7.14 billion. It had over 3,400 employees.

Material Sustainability Factors

Climate transition risks

The forest sector can provide a range of climate mitigation solutions, including harvested wood products and bioenergy that can substitute emissions-intensive or fossil fuel-based alternatives. Intensifying forest production to meet increasing demand for bioproducts must be balanced with maintaining carbon storage in forests and soils, which could be increasingly protected in the future as important carbon sinks. Increasingly stringent regulation will likely necessitate a reduction in fossil fuel emissions and improvements in the efficiency of forest management equipment, wood product manufacturing, and associated transportation. Sweden's Climate Act and Climate Policy Framework adopted in 2017 set a long-term target for the country of achieving net-zero greenhouse gas emissions by 2045 and negative emissions after that, supported by increasing forest carbon sinks and bioenergy with carbon capture and storage. As an EU member, Sweden is also covered by relatively ambitious EU climate policies, including regulations on land use that limit the risk of deforestation and illegal land use conversion.

Physical climate risks

Physical climate risks such as wildfires and droughts, as well as a greater prevalence of pests and diseases associated with a warming world, are highly relevant to forest owners and paper and forest product suppliers. Forest owners and paper and forest product companies around the world already contend with acute events and chronic changes in weather that will continue to affect stakeholders as climate change results in more extreme, and often unpredictable, weather patterns. In the boreal region, tree loss resulting from drier weather and outbreaks of pests, diseases, and wildfires may be balanced by a longer growing season.

Biodiversity and resource use

In addition to being the main source of raw materials for the paper and forest products industry, forests provide a wide range of ecosystem benefits, including water filtration and storage, pollution capture, soil conservation, and a habitat for biodiversity. The Swedish model of retention forestry, where patches of trees are left standing in clearcuts, has biodiversity benefits compared to clearcutting practices without retention. Sweden's Forestry Act sets some conservation requirements such as setting aside

some land, a minimum age for felling, and a consideration of environmental factors. Recent national inventories have found generally improving trends in Swedish forestry for biodiversity-relevant indicators. At the same time, Sweden's forestry practices have been criticized by some nongovernmental organizations and EU regulators for impacts on species and ecosystems from short rotations, limited tree species diversity, insufficient protections of old growth forests, and potential for landscape fragmentation.

Pollution

The use of chemicals such as chlorine dioxide, paper dyes, and fungicides in forest and paper production as well as emissions during bioenergy combustion means the industry must closely monitor local pollution risks. Companies must typically meet air pollution standards, in addition to water discharge and waste management standards, in their production facilities, with potentially significant penalties for any regulatory breaches. The public's increasing awareness of pollution could reduce demand for products and producers that contribute above average pollution. In Sweden, discharges are regulated under the country's environmental code.

Social risks

Workers in both timber harvesting and processing of forest products face the potential for significant bodily injury and exposure to hazardous materials. The agriculture, forestry, and fishing sector, for instance, had the fourth highest rate of fatal incidents at work in the EU during 2022, according to Eurostat. Paper and forest product companies are often a large employer in local communities and support local economies and tax bases. At the same time, the proximity of their assets to usually small or rural communities can have adverse effects. In northern Sweden, the indigenous Sámi people have customary rights to use forests for reindeer herding, a traditional way of life that has been threatened by intensive forestry as well as other land uses such as mining and wind farms that have reduced access to lichen-rich forests for grazing.

Issuer And Context Analysis

The framework aims to address climate transition risks, biodiversity and resource use, and pollution, which we view as key sustainability factors for SCA. Eligible sustainable forest management can improve ecosystem outcomes while enhancing carbon sequestration. SCA's proposed investments in bioproducts, renewable energy, and clean transportation activities can reduce climate transition risks. Framework criteria for emissions, waste, and water management can reduce local pollution and improve environmental quality. Social risks, including worker safety and impacts on local and indigenous communities, may be introduced by eligible forestry management and bioproduct production categories.

SCA's climate strategy is focused on balancing the increase in its forest carbon stocks and bio-alternatives for fossil fuel-intensive products. Using the ISO 13391 standard, SCA claimed a net positive climate benefit of 12.3 million metric tons of carbon dioxide equivalent (tCO_2eq) in 2024, exceeding its goal of 10 million tCO_2eq net positive climate benefits annually. The company calculated the net climate benefit by subtracting its Scope 1, 2, and 3 emissions from the emissions uptake from its forests, soils, other land removals (5.1 million tCO_2eq), and avoided or stored emissions from its bioproducts and bioenergy that substitute for fossil fuel-based alternatives (8.1 million tCO_2eq). Across its own holdings and sourcing regions, SCA reports that forest growth exceeds harvest, increasing carbon stocks over time.

The company has targets and actions to decarbonize its operations and value chain. The company aims to reduce its Scope 1, 2, and 3 greenhouse gas emissions by 50% by 2030 from a 2019 baseline. In 2024, the company reported 900,000 tCO_2eq in Scope 1, 2, and 3 emissions without any netting, a 1% increase compared to 2023, but a 17% reduction from 2019. In 2024, 87% of SCA's total energy consumption came from renewable sources. It has implemented measures to reduce emissions including increasing biofuel and wind production, phasing out residual fossil fuel use in production, investing in energy efficiency improvements, and optimizing and decarbonizing transportation. SCA expects to share a more detailed climate transition plan in 2025 to align with EU reporting requirements.

To manage climate and nature risks, SCA's wood sourcing strategy excludes the most harmful practices and manages risks with voluntary certification or retention forestry. As a minimum, SCA requires that all its wood raw material is compliant with the EU Timber Regulation, meets the FSC Controlled Wood standard, and avoids sourcing that is illegal, in high conservation value areas, or that leads to conversion to plantations or other non-forest forms of land use. The company aims to maximize FSC and PEFC certification where possible and has certified 100% of its own forests under at least one of these standards. SCA does not currently have a strategy to increase its share of FSC- or PEFC-certified wood inputs, but may set targets for certification by its private forest owner partners in the future. In 2024, 66% of its total wood raw material came from FSC- or PEFC-certified forests.

As part of its broader nature conservation strategy, SCA carries out ecological landscape planning across its forest holdings to target biodiversity interventions. The company undertakes mapping of and inventories of its holdings and holds talks with regulators and stakeholders to inform its conservation management practices. Measures have included prioritizing protections for species on Sweden's Red List, which indicates the risk of extinction, setting aside high conservation value areas, and determining the degree of retention of intact forest patches following harvest. In 2024, SCA established voluntary set asides or enhanced retention on 14% of its land in Sweden and 17% in the Baltics. It also performed specific actions to support biodiversity such as prescribed burning, wetland restoration, or continuous cover management on 7,137 ha (0.26%) of its forest holdings in 2024. Monitoring carried out by the Swedish National Forest Inventory has shown improvements on SCA holdings since 1996, such as an increase in trees that are 140 years or older (36% increase by 2021), deciduous trees (24% by volume), and dead wood (39%), which contribute to ecosystem quality. Future plans include enhancing reporting and implementing further monitoring and active conservation measures, such as greater specificity in conservation targets on a percentage area basis and restoring watercourses and wetlands.

As part of its risk management processes, SCA has undertaken scenario analysis to assess physical climate risks for its operations, but has not yet implemented adaptation measures. The company has identified risks across its activities in forestry, production, and transportation, including extreme weather events such as storms and chronic changes in weather like longer droughts and warmer, wetter winters. Higher forest growth may be possible with rising temperatures in northern Sweden. The company is investing in resilience research projects on forest management and pest control adaptation but has not identified the need for specific climate change-related adaptation measures at its sites at this time.

SCA's pollution of water and air is managed primarily through permits under Swedish regulation. SCA undertakes measures such as internal auditing to ensure compliance with regulations. In 2024, the company reported 34 environmental matters that required dialogue with authorities, zero of which resulted in any penalties. SCA has also set a voluntary target to reduce particle emissions to water by 10% by 2030 from a 2019 baseline.

SCA has processes in place to improve safety and engage local and indigenous communities. To pursue its zero accidents target, SCA pursues training, knowledge sharing, and incident follow up. In 2024, it had a lost time accident frequency rate of 3.1 accidents resulting in absence per million hours worked, a decline from 2023. SCA also has systems in place to engage local communities, including collaborative reindeer husbandry planning with the Sámi people during 91 meetings with 21 communities during 2024.

Alignment Assessment

This section provides an analysis of the framework's alignment to the Green Bond principles.

Alignment Summary

Aligned = ✓ Conceptually aligned = o Not aligned = ×

✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)

✓ Use of proceeds

We assess all the SCA green bond framework project categories as having a green shade, and the issuer commits to allocating the net proceeds issued under the framework exclusively to eligible green projects. Please refer to the Analysis Of Eligible Projects section for more information on our analysis of the environmental benefits of the expected use of proceeds.

SCA will use green bond proceeds to finance or refinance, in part or in whole, eligible assets and projects within SCA, its subsidiaries, joint ventures or acquired entities. Capital expenditure, assets, ownership, acquisition, research and development (R&D), and select operational expenditure that increases the lifetime or value of assets are eligible use of proceeds if they meet framework criteria. Refinancing is defined as eligible assets or projects finalized more than 24 months previously, with a lookback period of three years for operational expenditure and no lookback period for assets. The absence of a lookback period for financed assets is not best practice but is acceptable in the context of forestry where climate and biodiversity benefits can continue to accrue over time.

Only green projects within SCA's share of acquired entities are eligible for financing (i.e., not equity investments in subsidiaries or joint ventures), mitigating the risk of double counting and concerns in less common cases where SCA may not have a controlling stake or the acquisition may not be a green pure player. Valuations related to green financing within acquisitions are confirmed through both in-house due diligence as well as auditor spot checking. While financing eligible green projects within acquisitions might bring challenges related to transparency or reporting, we still consider them to be aligned with the principles in this context.

✓ Process for project evaluation and selection

The framework outlines the process to select and approve eligible projects and assets. This includes an initial review and proposals by the sustainability director and treasury representatives, followed by SCA sustainability council (SC) verification of alignment with framework criteria, approval by consensus, and documentation. SCA's SC includes sustainability, forestry, and renewable energy representatives among others and will meet at least four times annually until full allocation of proceeds to determine the alignment of proposed projects with the framework criteria. The SC identifies and manages environmental and social risks through a process aligned with SCA's company-level policies and procedures, which are described on its website. SCA excludes financing linked to fossil energy generation or potentially environmentally negative resource extraction. The company excludes any wood that is in violation of its wood sourcing policies described in the Issuer Sustainability Context section.

✓ Management of proceeds

SCA's business control team, with support from sustainability experts, will use a green register to monitor the allocation of proceeds issued under the framework, targeting full allocation of an amount equal to the proceeds within two financial years of the issuance of any green bonds. Assets and projects will be checked by the sustainability director at least annually for alignment with framework criteria, and those that are divested or no longer meet requirements will be removed from the register and the proceeds will be reallocated to eligible projects, although the timeframe for this is not specified in the framework. Unallocated proceeds will be temporarily managed by SCA's group treasury according to the company's finance policy and held as cash.

✓ Reporting

SCA commits to disclose the allocation and impact of invested proceeds annually in its green bond report published on its website until full allocation and on a timely basis in case of material developments or reallocation. Allocation reporting will include information on the assets and projects financed, including the category, the share of new financing versus refinancing, case studies from and a geographical distribution of financed assets and projects, and the balance of any unallocated proceeds. SCA will seek to align its reporting with the ICMA Harmonised Framework for Impact Reporting and will provide transparency on its calculation methodologies and baselines. It will report on metrics showing the environmental impacts of financed assets and projects, potentially including sustainably managed forest area, net carbon sequestration from forests, area of activities targeted for promoting biodiversity within forests, avoided emissions from wood-based products, annual renewable energy generation, energy, water or greenhouse gas savings, or pollution discharge reductions, among others, though these may change over time to ensure relevance. The company will provide additional information or estimates where the direct quantification of impact is not feasible. In the case of competitive considerations or large numbers of underlying assets or projects, SCA could report impacts on a generic or aggregated basis. The company commits to receiving verification of internal tracking and green bond allocation from an independent external auditor or other third party.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "Analytical Approach: Shades Of Green Assessments".

Overall Shades of Green assessment

Based on the project category shades of green detailed below, the expected allocation of proceeds, and the consideration of environmental ambitions reflected in the SCA green bond framework, we assess the framework as Dark green.

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our Shades of Green Analytical Approach >

Green project categories

Valuable forests

Assessment

Dark green

Description

- Forest management: Financing of forestland; forest management such as nurseries, harvesting, silvicultural operations, pre-commercial thinning, and restoration of native forests; R&D; and conservation of biodiversity that all have a certification (or will have a certification within 12 months) from the PEFC and/or the FSC.

  Proceeds can be used for capital expenditure, assets, ownership, acquisition, tree nurseries, and responsible forest management as well as related R&D and select operational expenditure that increases the lifetime or value of assets, which all provide positive climate and environmental benefits.

Analytical considerations

- Forests contribute to carbon sequestration and support biodiversity habitats while producing materials that can replace fossil fuel-intensive products. They can also provide ecosystem services, such as water regulation and soil stabilization, which improve climate resilience. Implementing sustainable forestry management practices, avoiding harmful land use change, and managing physical climate risks, including wildfires and pests, are key to achieving these benefits.
- While FSC- and PEFC-certified forests are typically Medium green on a standalone basis, SCA informs us that only its own forests are eligible under this category, and therefore its company-level carbon sequestration and nature strategies are always applicable. On this basis, we assign a Dark green shade to forest management activities due to SCA's robust use of voluntary certifications that support sustainable practices complemented by the company's strong additional measures to maintain or enhance forest carbon stocks and biodiversity.
- We view SCA's criteria requiring voluntary FSC and/or PEFC certification positively. FSC certification is generally seen as the most robust global standard for forest management, while PEFC has important complementary properties such as greater scrutiny of supply chains. The requirements in these certifications provide important safeguards against harmful practices and promote more sustainable management measures beyond regulatory requirements. Nevertheless, concerns remain around the stringency and real benefits of forest certifications, both in relation to the requirements (most reasonably run companies are likely to qualify) and application (audits seldom lead to the suspension of certifications).

- We view it as a strength that SCA's forests' growth exceeds harvests, as this supports carbon sequestration. Forests are important carbon sinks and should be maintained and grown where possible to reduce greenhouse gas emissions. In 2024, SCA reported a net uptake in its growing productive forests of 3.9 million tCO_2eq, a decrease from 2023 levels of 4.5 million tCO_2eq due to higher harvesting levels but nevertheless a net benefit from an emissions perspective. The company's goal to achieve at least a 10 million tCO_2eq net climate benefit from its forests and fossil-free products each year provides further confidence that this positive carbon sequestration will continue.
- We note that current biodiversity maintenance or improvements are coming in the wake of a history of intensive forest management in Sweden and other northern European countries that has impacted biodiversity in the region. In this context, SCA's efforts to actively support conservation and restoration are positive. Examples include SCA's new biodiversity indicators to track progress and its proactive conservation actions such as ecological landscape planning, targeted interventions for threatened species, and biodiversity enhancement through measures such as voluntary set asides, wetland restoration, and prescribed burning. Where these conservation and restoration measures are also directly eligible under this project category, it is a particular strength of the green financing. SCA's good safeguards against practices harmful to biodiversity, including forestry that is illegal, in high conservation value areas, or associated with land use conversion, are also positive. We therefore consider SCA's biodiversity strategy that will be applied in forests eligible under this category as Dark green.
- Intensive cultivation of a limited number of tree types (spruce, pine) can be negative for biodiversity and can also diminish forests' resiliency to pests and climate change. This trend applies to many northern European countries and is not unique to SCA or to Sweden. We understand that about 90% of SCA's forests are conifers (pine and spruce) and about 10% are deciduous. SCA tracks volumes of old deciduous trees and overall deciduous trees as part of its biodiversity strategy and has achieved improvements in these measures from baselines in the 1990s. It has also committed to establish at least 10% of deciduous stems in its young forests to maintain tree species diversity.
- Felling practices can be another contentious aspect of forestry. We understand that SCA primarily does not fell deadwood and retention trees as part of its company biodiversity strategy and FSC and PEFC management systems in Sweden. In SCA's final felling planning, about 16% of the total area is retained as forest to support biodiversity. We view retention practices as more positive than clearcuts, though biodiversity risks and tradeoffs with beneficial bioproducts remain in these more intensively harvested forest systems. SCA's broader biodiversity strategy mitigates these challenges.
- Costs related to road development, fossil fuel vehicles or machinery, and fertilizer use within the limits of certification are not eligible for financing under the framework, which we view as a strength. Roads are linked with ecosystem disruption, while fossil fuel vehicles and machinery as well as fertilizer production and application are associated with greenhouse gas emissions.
- SCA has undertaken scenario analysis to better understand how physical climate risks may affect its forestry operations and engages in related research projects on forest management and pest control in a changing climate. While the company has not yet implemented climate-specific adaptation measures, other management practices such as promoting tree species diversity may increase the resilience of its forests.

Fossil-free world

Assessment	Description
Dark to Medium green	• Renewable products: Financing of production technologies and processes, including expansion and upgrades or modifications of facilities related to renewable and biodegradable products such as pulp, sawn wood products, and containerboard using wood certified to PEFC and/or FSC forest management standards or wood being procured in accordance with the FSC Controlled Wood standard. All with the purpose of replacing fossil-based and other non-renewable materials with bio-based alternatives. • Renewable energy: Financing of production of renewable energy including energy and fuels from forest operations, conversion to renewable energy, replacing fossil fuels, renewable electricity production, such as turbines for co-generation from excess heat in the industrial processes, as well as infrastructure to deliver surplus heat from SCA's plants

and facilities as district heating to municipalities. This category also allows for financing of wind and solar based energy.

- Clean transportation: Financing of zero-emission vehicles such as battery-electric and hydrogen machinery and equipment used at production sites or in the forest logistics.

  Proceeds can be used for capital expenditure, assets, ownership, acquisition, construction, as well as R&D and select operational expenditure that increases the lifetime or value of assets. Either with the aim to significantly reduce or eliminate the use of fossil fuels or to increase the substitution from fossil alternatives and to increase the share of zero-emission vehicle machinery.

Analytical considerations

- Wood-based products can provide alternatives to fossil fuel-intensive materials and have lower value chain emissions, while renewable energy and clean transportation and equipment are key elements in limiting global warming to well below 2ºC. At the same time, limiting global warming requires sustainable input sourcing for bioproducts and bioenergy and a consideration of life cycle climate and nature impacts from energy infrastructure and vehicle components.
- We assign a Dark to Medium green interval to this project category, reflecting the strong climate and nature benefits of sustainably produced wood-based products that substitute fossil fuel-based alternatives, renewable power decarbonizing both SCA's own operations and the broader energy sector, and zero-emission vehicles and equipment that contribute to reducing transportation and operational greenhouse gas emissions. While the majority of this category is Dark green, the Medium green aspect reflects that a meaningful share of SCA's wood inputs meet the FSC Controlled Wood standard, which has a lower environmental benefit than the FSC or PEFC certification, and that there is not a strategy in place to actively increase the share of certified wood inputs and final products. Hydrogen-powered vehicles and equipment without visibility of life cycle emissions from hydrogen sourcing is also a Medium green element.
- We view SCA's eligible bioproducts positively as sustainably produced wood products are an important contributor to a low-carbon, climate-resilient future, replacing fossil-fuel-intensive alternatives while supporting carbon sequestration and biodiversity in well-managed forests.
- We view it as a strength that as of 2024, about 60% of SCA's wood inputs were from its own forests that are FSC- and/or PEFC-certified and have additional carbon sequestration and nature conservation measures described in the previous category. A further 6% of wood inputs from other suppliers are FSC- or PEFC-certified and an additional 9% are harvested using SCA retention methods aligned with FSC retention criteria, typically on small private forests holdings where certification is less feasible, also representing positive sustainability performance. We consider bioproducts produced with these inputs as Dark green.
- The remaining 25% of wood inputs to bioproducts meet the FSC Controlled Wood standard, as all SCA wood inputs do, but in contrast do not have additional sustainable sourcing criteria such as FSC or PEFC certification or harvest with SCA retention methods. Controlled Wood has requirements to avoid sourcing of wood from illegal harvesting, high conservation value forests, forest conversion, and genetically modified trees. At the same time, Controlled Wood does not provide the same performance assurance as FSC- or PEFC-certified inputs on more comprehensive sustainable forestry practices. While SCA encourages certification among its suppliers, the company informs us that it does not have specific targets or strategies in place to increase the share of FSC- or PEFC-certified wood inputs in its projects, but expects this to increase as customer demand for certification grows. While bioproducts produced with Controlled Wood are still a positive step towards a low-carbon, climate-resilient future, the standard represents a lower forestry management standard from an environmental perspective, contributing to the Medium aspect of the shading interval.
- All bioproducts are processed in FSC Chain of Custody certified production sites, except for bioenergy, which is ineligible for this certification. These production sites support supply chain traceability. Final products have a range of certifications or may be uncertified, depending on customer demand and the wood inputs used.
- SCA's fossil fuel exclusion covers any equipment or machinery that may be financed under this category as part of bioproduct production, which we view positively as reducing associated climate impacts. SCA also has high renewable energy use generally (87% of total energy consumption as of 2024), strengthening the climate benefits of final products.
- Water, pollution, and waste from bioproduct production are managed through legal compliance with Sweden's relatively robust regulations.

- SCA's eligible bioenergy production, renewable energy conversion and fossil fuel phase out projects, waste heat capture, and wind and solar power generation are well-aligned with a low-carbon, climate-resilient future.
- We view it as a strength that SCA's eligible bioenergy, including for energy generation and transport fuels, is produced from forestry wastes and residues, which have strong life cycle climate benefits and low biodiversity risks. We also view it as positive that these feedstocks will come from forests that are at least FSC Controlled Wood, if not FSC and/or PEFC, certified and have additional company-level carbon sequestration and nature management measures to support sustainable production practices. Compliance with life cycle emissions improvement requirements and safeguards against ecosystem conversion in the EU Renewable Energy Directive also supports the sustainability performance of eligible bioenergy.
- Conversion to renewable energy and phasing out of fossil fuels is critical to decarbonize the forestry product industry's operations and is highly positive from a greenhouse gas emissions perspective. Similarly, capturing waste heat for use on site or in district heating avoids the need for additional energy production. SCA informs us that no fossil fuel use is associated with the initial heat generation from which waste is captured, further increasing climate benefits.
- Wind and solar projects can involve biodiversity and ecosystem impacts from associated infrastructure. In Sweden, where projects will be financed, energy infrastructure proposals are required to undergo an environmental impact assessment to prevent or mitigate these concerns.
- Battery electric vehicles and hydrogen machinery have the potential to significantly reduce greenhouse gas emissions from SCA's transportation, logistics, and forestry operations. We view zero-tailpipe, heavy-duty vehicles and forestry equipment particularly positively due to the need to innovate for decarbonization in these less commonly financed areas.
- SCA does not have specific requirements for vehicle, equipment, and machinery component sustainability sourcing, but addresses these issues in broader terms through its supplier code of conduct and through direct engagement with suppliers. In particular, we note batteries can be associated with significant local pollution and biodiversity impacts from the mining of sensitive input materials as well as greenhouse gas emissions during production.
- While SCA informs us that hydrogen-powered equipment is not expected to receive significant allocation in the near term, the company does not currently have sustainable sourcing requirements for hydrogen used in financed vehicles and machinery. The ultimate climate impact of financed equipment is therefore uncertain, as green (renewables-based), blue (fossil gas with carbon capture-based), or grey (conventional fossil gas-based) hydrogen has widely varying life cycle climate impacts. We still view hydrogen-powered machinery as green due to the potential for greenhouse gas emission reductions with lower life-cycle emission hydrogen use and because there are no lock-in risks related to a particular hydrogen type. However, we note this uncertainty on ultimate climate performance. Hydrogen procurement itself is not eligible for financing under this category.
- SCA has undertaken scenario analysis to better understand how physical climate risks may affect its operations, including its wood processing facilities, renewable energy infrastructure and supply chains, and its own transportation. At the same time, we note the company has not yet implemented climate-specific resilience measures.

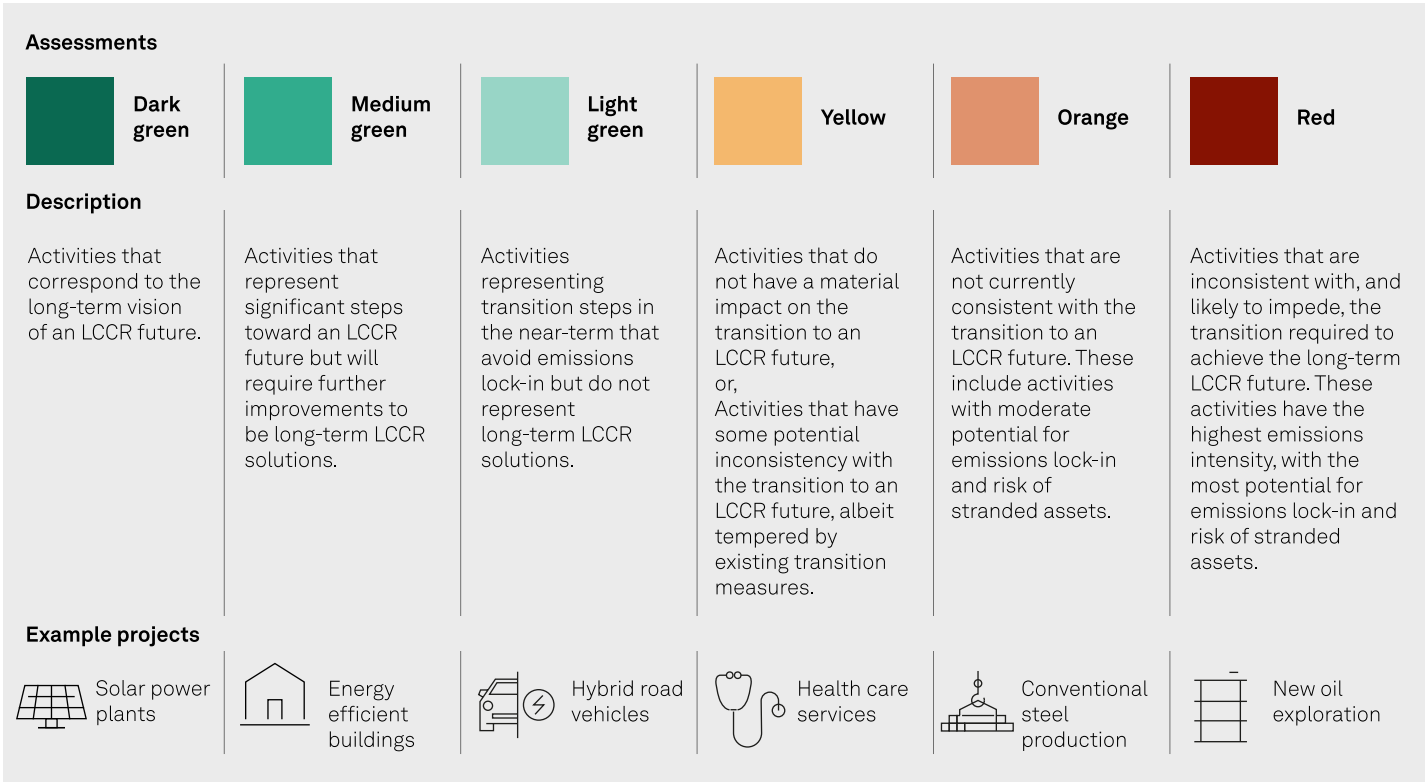
Efficient use of resources

Assessment	Description
Light green	• Pollution prevention and control: Financing of waste management technologies, treatment, and processes; replacement of fossil-based materials with bio-based alternatives; and pollution prevention to air and soil. • Wastewater management: Financing of wastewater technologies, treatment, and processes for protection of freshwater sources, and the implementation of water-use efficiency. Proceeds can be used for capital expenditure, assets, ownership, acquisition, construction as well as R&D and select operational expenditure that increases the lifetime or value of assets. All aiming to move waste upwards in the waste hierarchy and to increase the share of products and materials that can be reused or recycled as well as enabling reductions in life cycle greenhouse gas emissions.

Analytical considerations

- Pollution prevention and wastewater systems have the potential to reduce local air, water, and soil pollution and enhance ecosystem health, while waste management and water efficiency can reduce greenhouse gas emissions and demands on natural capital. Fossil fuel phase-out measures can also reduce climate and local pollution impacts. Although these activities can vary in ambition, expected benefits, and the management of associated issues such as energy sourcing, they are key components of a low-carbon, climate-resilient future.
- We assign a Light green shade to this project category, reflecting the positive local environmental and climate impacts of SCA's eligible pollution prevention, waste management, fossil fuel phase-out, and wastewater treatment measures. Uncertainty over the ultimate performance of measures beyond legal compliance is a limitation.
- SCA informs us it plans to prioritize projects with strong expected performance. At the same time, the company has not included any specific quantitative thresholds or other performance indicators, telling us it has already addressed many of the easier-to-achieve opportunities in these areas, which makes additional improvements more difficult to achieve. SCA informs us that these projects will likely be related to compliance with Sweden's relatively robust regulatory requirements. While we view the environmental and climate benefits of these activities positively, we note there is limited certainty of performance beyond applicable legal standards.
- The company's exclusion of fossil fuels covers any equipment or machinery that may be financed under this category, which we view positively as reducing associated climate impacts from these environmentally beneficial activities. The potential to finance projects that phase out fossil-fuel use in favor of renewable alternatives is similarly a strength from a climate and local pollution perspective.
- While SCA does not anticipate significant allocation to this project category, the most likely example would be a wastewater treatment plant to improve water quality discharged to the local environment. As pulp and paper mills can contribute significantly to water pollution, we view these projects as beneficial contributions to reducing the negative environmental impacts from the industry. SCA undertakes several stages of mechanical and biological water treatment before discharge.
- SCA has undertaken scenario analysis to better understand how physical climate risks may affect its operations, including where activities in this category would be undertaken. At the same time, we note the company has not yet implemented climate-specific resilience measures.

S&P Global Ratings' Shades of Green



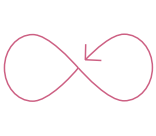
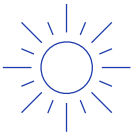
Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Mapping To The U.N.'s Sustainable Development Goals

Where the financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not affect our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs
Valuable forests	 **12. Responsible consumption and production***  **15. Life on land***
Fossil-free world	 **7. Affordable and clean energy***  **11. Sustainable cities and communities***  **12. Responsible consumption and production**
Efficient use of resources	 **3. Good health and well-being***  **6. Clean water and sanitation***  **12. Responsible consumption and production***  **14. Life below water**

*The eligible project categories link to these SDGs in the ICMA mapping.

Related Research

- Ripple Effect: How Value Chains Compound Sector Exposures To Physical Climate Risks, March 13, 2025
- Analytical Approach: Second Party Opinions, March 6, 2025
- FAQ: Applying Our Integrated Analytical Approach For Second Party Opinions, March 6, 2025
- Analytical Approach: Shades Of Green Assessments, July 27, 2023
- Environmental, Social, And Governance: Too Late For Net-Zero Emissions By 2050? The Potential Of Forests And Soils, June 4, 2020

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