Landshypotek Bank

Green Bond Impact Report

17 May 2023

This report has been prepared within Landshypotek Bank's Green Bond Framework published 24 April 2018. This is the fifth impact report.

Stockholm, 17 May 2023

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Vd

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Issued bonds – brief facts

Issue date: 25 May 2018

Tenor: 5 years

Nominal amount: SEK 5.25 billion

Maturity date: 25 May 2023

Type of bond: covered bond

Coupon rate: 0,75 %

ISIN: XS1824244807

Issue date: Issue date:

18 Nov 2019 (SEK 3 billion)/18 Nov 2020 (SEK 2.5 billion)

Tenor: 6 years

Nominal amount: SEK 5.5 billion

Maturity date: 18 Nov 2025

Type of bond: covered bond

Coupon rate: 0,615%

ISIN: SE0011870021

Forestry terminology

BEF (Biomass Expansion Factor) = conversion multiple for finding the total dry biomass.

Site quality = The land's natural capacity to produce timber. Expressed in m3ob/ha/year.

Carbon Fraction (CF) = carbon content of dry wood.

FSC = Forest Stewardship Council

PEFC = Programme for the Endorsement of Forest Certification

Volume over bark (m3ob) = This metric shows the forest stand's wood volume and includes the entire trunk above the normal stump height. Branches, stumps and roots are excluded.

The carbon dioxide effect: Through this green bond there are two carbon dioxide effects – absorption and avoidance. As the forest grows, carbon dioxide is stored and absorbed in the tree and the amount of carbon dioxide is reduced from the atmosphere. When harvesting forest and when forest raw materials are replacing other material the carbon dioxide emissions are reduced and carbon dioxide emissions are avoided and stored through substitution.

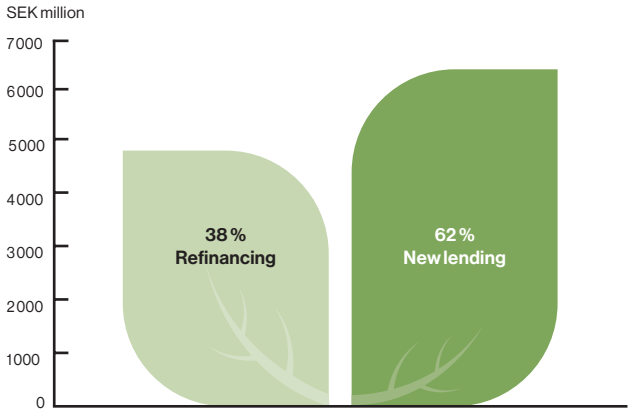
Net change in growing stock = The change in the standing growing stock measured in m3ob, that is growth less harvesting.

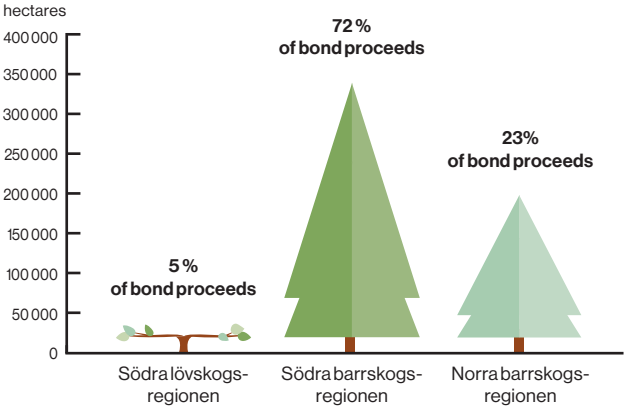
Landshypotek's Green Framework

In May 2018, Landshypotek Bank issued its first SEK denominated green covered bond. In 2019, the bank issued an additional green covered bond and a further tranche of the second bond in 2020. Both of these issues are covered bonds and are used exclusively to finance sustainable Swedish forestry. In April 2023, Landshypotek Bank issued a new green, covered bond which is also used exclusively to finance sustainable Swedish forestry. This report details the impact of the first two green bonds which Landshypotek Bank issued. The total volume issued amounted to SEK 10.75 billion. The underlying forest in the volume of green assets backing the bonds amounts to 510,000 hectares, which corresponds to an area the size of Dalsland and Öland combined. Reporting regarding the impact of the green bond which was issued in April 2023 will begin in May 2024.

In spring 2018, Landshypotek prepared its first green framework to enable the issue of green bonds. The framework has been reviewed by the independent Center for International Climate Research (CICERO), which awarded the framework the highest shade "Dark Green." Under the framework, Landshypotek can issue covered bonds, senior bonds and subordinated notes. The proceeds raised by Landshypotek through the green bonds are to be used to finance sustainable forestry, renewable energy or green buildings.

This Report solely describes the impact from the underlying projects that meet the framework's sustainable forestry criteria. This report, like previous years, includes all green assets backing the bonds which ensures that the pool of underlying green assets is larger than the amount of green bonds issued. The total volume of green assets backing the bonds which totals SEK 11.5 billion.





The breakdown for the volume of green assets backing the bonds between the three regions: Southern deciduous region SEK 0.5 billion, Southern coniferous region SEK 8.3 billion and the Northern coniferous region SEK 2.7 billion.

For forests since 1836

Landshypotek has financed Swedish forestry since 1836. The bank is owned by Landshypotek Ekonomisk Förening, in which all of the Bank's loan customers in the farming and forestry sector are members, and thereby own the bank. All of the bank's profits are reinvested in the bank or distributed to the association's members – Sweden's farmers and foresters. Being the first institution, back in 2018, to issue a green covered bond backed by Sweden's forests was unique and is fully aligned with the objective of Landshypotek's vision, namely, to make a real impact in promoting a sustainable society based on the daily activities by entrepreneurs across the country.

> **Sweden's sustainable forests continue to provide a benefit for the climate. Landshypotek Bank is proud that there is a such a high level of interest from investors in the bank's green bonds and sustainable Swedish forestry..**
>
> Martin Kihlberg, Hållbarhetschef Landshypotek Bank

Growing forests create a climate benefit

A growing forest binds carbon dioxide from the atmosphere. The more the forest grows, the more carbon dioxide is stored. The total net growth at the properties financed through the green bonds was estimated at a volume over bark of 789,000 cubic metres for the past year.This corresponds to an annual carbon sequestration and substitution benefit of around **2.25 million tons of CO2**. This means that for every SEK 1 million invested in the bond, around 260 tons of CO2 has been absorbed and avoided. The figures include substitution effects but have not taken into account loan-to-value ratios. *For further information and details, see section Growth and climate benefit calculations and Development since last year's report.*

12,8 % of the covered bonds issued by Landshypotek Bank are green

12,0% of all senior and covered bonds issued by Landshypotek Bank are green

240 ton CO_2 has been absorbed and avoided for every SEK 1 million invested

All data as of 31 March 2023

Sustainable Development Goals

SDG 13. Climate action

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters inall countries.

Landshypotek's contribution: Sustainable forestry- binds carbon dioxide and can also replace fossil fuels used for energy in the form of fuel and other products. This means a reduction in carbon dioxide levels in the atmosphere and greenhouse gas emissions, and thereby strengthens the resilience and ability to adapt to climate-related hazards and natural disasters. The target of setting aside a certain percentage to deciduous forest that is included in the bank's Green Bond Framework criteria also means that the resilience of individual forests also increases in terms of natural disasters such as fires, storms and pests.

SDG 15. Life on land

15.1 : Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

15.2: Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

Landshypotek's contribution: The Swedish Forestry Act states that the forest is a renewable resource, which is to be managed to ensure sustainable yields of good returns, while taking into consideration the natural and cultural environments, reindeer husbandry and other interests. An obligation to replant after harvesting is also contained within the law. The bank's framework requires customers to comply with the law, and also includes requirements in terms of a green forest management plan, that at least five per cent is set aside for nature conservation measures and that there are targets for inclusion of a minimum proportion of deciduous forest. The forest can also be certified through FSC/PEFC, both of which set at least equivalent requirements. These measures promote more long-term sustainable use of forests and accord with the international agreements implemented in Swedish legislation.

Selection process for green assets

Landshypotek Bank has a Green Bond Committee that determines which assets can be financed with the green bonds issued under the framework. Following the issue of the first bond, the Green Bond Committee has held 12 meetings to decide on the addition of further green assets. Repayments and redemptions are conducted on an ongoing basis throughout the year and, accordingly, it is crucial that the Committee meets regularly to ensure that, at any time, the volume of green assets backing the bonds exceeds the nominal amounts. At 31 March 2023, the volume of green assets backing the bonds amounted to SEK 11.5 billion, or approximately 2,700 underlying properties, and comprised exclusively sustainable forestry.

Review

Under the framework, Landshypotek's independent credit risk department is appointed to control and review, at least annually, that the allocations of Green Bond net proceeds are made in accordance with the Green Bond Framework. The review for the 2023 report has placed particular focus on checking that the underlying assets meet the criteria specified in the Green Bond Framework. The review concluded that certain random samples contained data quality issues where information about the loans was not available in a structured way. The bank will work to address these data quality issues.

Importance of sustainable forestry – for growth and climate benefit

Global warming is one of the greatest challenges of our times. The growing forest has a key role to play in countering climate change. 30 percent of the surface of the earth is covered by forest. The forest is key to the transition to a fossil-free society, since it is included as a natural part of the carbon cycle and absorbs carbon dioxide from the atmosphere. In Sweden, the forest covers almost two thirds of the total land area and is seen as a national asset and resource. Its significance and size makes it important to use and manage forests sustainably with a long-term perspective. This is to ensure that growth in the forests remains high and to preserve biodiversity and maintain the natural variations of the landscape.

Photosynthesis – function and impact

Photosynthesis is a natural process, whereby plants absorb carbon dioxide from the atmosphere and then convert it into energy. While some carbon dioxide is returned immediately through respiration, a considerable portion is allocated into the plant/tree. As the tree grows, carbon is also allocated into the ground via the roots. Active use and management of forests lead to increased growth and, accordingly, greater carbon sequestration, which in itself results in a greater climate benefit. When harvesting forest, forest raw materials are extracted for further consumption. Forest raw materials have numerous applications and the stored carbon could return directly to the atmosphere if used for combustion but can also be stored in, for example, buildings. Moreover, a substitution benefit arises when forest raw materials replace other fossil materials or materials that consume large amounts of energy in their extraction. The substitution benefit often outweighs the primary benefit arising from the carbon sequestration in forest growth, but it is difficult to calculate exactly since this requires information about the manufactured products and their lifespans as well as the materials they replace. An average value for the substitution effect in Sweden is around 470 kg CO2/harvested m3ob1.

A growing forest binds carbon dioxide from the atmosphere. The more the forest grows; the more carbon dioxide that is stored, which also means that sequestration by Sweden's forests varies according to the location of the forest. Site quality, defined as the soil's innate capacity to produce timber, is determined by the soil, the climate, moisture conditions and exposure. Site quality is expressed in volume over bark per hectare and year. There are substantial geographical differences in site quality in Sweden, from 11 m3ob/ha/yr in the south to 3 m3ob/ha/yr in the north.

1. Lundmark, T., Bergh, J., Hofer, P., Lundström, A., Nordin, A., Poudel, B.C., Sathre, R., Taverna, R., and Werner, F. (2014) Potential Roles of Swedish Forestry in the Context of Climate Change Mitigation, Forests 2014, 5(4),557-578.

Growth and climate benefit calculations

Within the framework of this report, the locations of the forest properties, financed and refinanced with the bank's green bonds, have been divided into three geographic areas – the southern deciduous region (10.8 m^3ob/ha/yr), the southern coniferous region (8.3 m^3ob/ha/yr) and the northern coniferous region (4.4 m^3ob/ha/yr). Based on the Forest statistics 2022 from the Swedish University of Agricultural Sciences' Swedish National Forest Inventory, the average site quality has been established for the three regions. Thereafter, the average site quality has been used as a growth multiple for calculating the change in the growing stock. Growth has been calculated for a full year, even if the issue dates varied throughout the year.

To calculate carbon sequestration at the forest properties financed by Landshypotek, the following formula has been used:

Total carbon sequestration (tons) = change in growing stock (m3ob) x BEF x CF

BEF (Biomass Expansion Factor) = conversion multiple for finding the total dry biomass

CF (Carbon Fraction) = carbon content of dry wood

For calculation purposes, the BEF has been set at 0.752, which is a weighted average for pine and spruce, and the CF has been set at 0.513. To convert carbon sequestration into carbon dioxide sequestration, the following formula has been used:

Total carbon dioxide sequestration (tons) = carbon sequestration (tons) x (CO2 molecule's weight/C molecule's weight)

In 2022, the growing stock in the financed projects increased by 3.9 million m^3ob (6 percent of the growth was in the southern deciduous region, 73 percent was in the southern coniferous region and 21 percent was in the northern coniferous region). On the assumption that 80 percent of the growing forest is harvested and is used to replace other material, a substitution benefit arises of 1,483,000 tons in avoided carbon dioxide emissions. At the same time, the remaining standing forest contributes to a net carbon sequestration of around 1,106,000 tons.

The project's average loan-to-value ratio is 0.27, which means that 0.71 million tons of CO_2 is a direct result of the financing and 2.59 million tons of CO_2 indirectly (when the entire forest stands are included).

The calculations are based on site quality – in other words, the growth at the culmination of the average growth rate.

Development since last year's report

A growing forest is a biological process where the forest's growth and absorption of carbon dioxide varies from year to year. Compared with last year's report, the amount of carbon dioxide which has been absorbed and avoided per million invested SEK has decreased from 260t CO2 to 240t CO2. The decrease is due to a number of factors. The calculations in this year's report are based on the assumption that 80% of the growing forest is harvested as opposed to a harvesting rate of 75% which was used in last year's report. The higher harvesting rate is based upon information from the Swedish forest industry that harvesting rates increased during 2022 to around 80%. An increased harveting rate means that less carbon dioxide is absorbed directly in the forest. On the other hand, the substitution effect increases when raw materials from the forest are used to replace fossil fuels.

Another factor is a decrease in the loan-to-value ratio for forest properties. The loan-to-value ratio decreased from around 36% in 2021 to around 27% in 2022 as a result of extra amortizations from forest owners and a general increase in the value of forest properties. The site quality of the forest also varies from year to year which has an impact on the total amount of carbon dioxide which is absorbed per million SEK invested. Furthermore, the pool of assets backing the green bond is dynamic where the geographical spread of forest properties may change over time which also has an effect on calculations of the amount of carbon dioxide absorbed.

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2. Lehtonen, Aleksi & Mäkipää, Raisa & Heikkinen, Juha & Sievänen, Risto & Liski, Jari. (2004). Biomass expansion factors (BEFs) for Scots pine, Norway spruce and birch according to stand age for boreal forests. Forest Ecology and Management. 188. 211-224. 10.1016/j.foreco.2003.07.008.
3. 2006 IPCC guidelines for National Greenhouse Gas Inventories

Two voices for Sustainable forestry

County: Västerbotten County
Municipality: Skellefteå
Productive forest land: 135 ha
Site quality: 4.0 m^3ob per ha
Growth: 5.0 m^3ob per ha
Estimated climate benefit: 475 tons of CO_2 per year (the climate benefit is calculated using the same model for the entire portfolio, however as the growth factor, figures for actual growth according to the applicable forest management plan have been used instead of the site quality).
Breakdown of forest by management targets:
P/PG – Production target with environmental stewardship: 127.7 ha
NS – Nature conservation targets with management: 5.7 ha
NO – Nature conservation targets, untouched: 1.6 ha
Forest management plan: prepared in 2020

Revisiting the forest outside Burträsk

We have again had contact with Beatrice Wikman who together with her husband, Marcus, owns a forest property outside of Burträsk in the north of Sweden. The forest has always been a major part of Beatrice's life. Beatrice and Marcus' passion for the forest is clear in all the hard work they do together on their forest property. In 2018, the forest was PEFC certified and they work actively to ensure the forest is managed and looked after in the best possible way.

Beatrice, what did you do in the forest during the winter and spring of 2022?

"During the winter and spring there was a lot to do as usual. During the winter, we thinned birch trees that were 30 years old according to our forest management plan. In addition to this, we cleared some of the forest to prepare for planned thinnings that will be carried out in the coming years".

"To improve drainage in the forest, we also cleared out some of the smaller ditches by hand. We also received an environmental permit to clear a larger ditch in the forest which will help with drainage and help the smaller plants start to grow".

What did you do in the summer of 2022?

"During the summer, we took the opportunity to plant fir trees and fir seeds which we have cultivated ourselves. It will be really interesting to follow their progress over time. We also want to see how the seeds we cultivated fare against the competition from the grass growing in the area".

What was done in the forest during the autumn of 2022?

"The autumn was a relatively quiet period for us in terms of work in the forest. Hunting takes up most of our time during the autumn. However, we did go out and complete an inventory of two areas in the forest during the autumn before clearing will commence in the spring of 2023 according to our forest management plan".

2022 was an eventful year on many fronts with the outbreak of war in Europe and high inflation. Was there anything special that you noticed during the year that had an effect on you as a private forest owner?

"The global situation was very unstable during 2022. We always try to find something positive and we witnessed a strong increase in demand for forest properties and forest-based products during 2022. As a result, there was an increase in the price for timber which we welcome. We also noticed that increased timber prices have had an effect on other areas too. There are attempts underway to begin selling waste products from clearing in Norrland which has not been commerically viable before".

"Unfortunately, high inflation has had an effect on us as private forest owners. The increase in energy prices are one example. We have also noticed that chainsaws and other machines and tools used in forestry have increased in price in the last year as well".

County: Västmanland County
Municipality: Sala
Productive forest land: 213.7 hectares
Site quality: 7.9 m3ob
Estimated climate benefit: 865 tons of CO2 per year

Management targets:
PG – production with general nature conservation: 201.4 ha
NS – Nature conservation targets with management: 4.9 ha
NO – Nature conservation targets, untouched: 7.5 ha
Forest management plan: prepared in 2020

An example of sustainable forest management outside Sala

Göran Carlsson lives on a property with his family several kilometres north of Sala. Together with 600 hectares of plant-based farming, Göran has forest properties. Göran's forests are one of many forest properties that make up the volume of green assets backing Landshypotek Bank's green obligations. Göran's forests are a good example of long-term and sustainable forest management which the bank can contribute to through our green bonds.

A long-term engagemang for the forest and nature

2022 was a particularly active year for Göran in the forest where he has worked with all parts of active forest management. Göran cleared and thinned parts of his forest to promote future growth. A lot of focus was placed on the latest forest property that Göran acquired in 2020 where the need for clearing was greatest. According to the forest management plan that Göran follows, it was time to harvest certain parts of that forest property. Göran also worked with ground preparation and to fix damage caused by machinery used during the current and previous harvestings.

Effects of an eventful year

2022 was an eventful year on many fronts and Göran has noticed the increased costs for energy and fuel. At the same time, demand for wood and biomass increased during 2022. This resulted in increased timber prices which Göran was able to benefit from as he harvested part of his forest. Despite these short-term cost increases and price fluctuations, Göran emphasises that forests are a long-term investment. Goran will continue to work in his forest during 2023 and for many years to come!

Further information about Landshypotek Bank Green Bonds are found at
www.landshypotek.se/en/about-landshypotek/investor-relations/green-bonds