

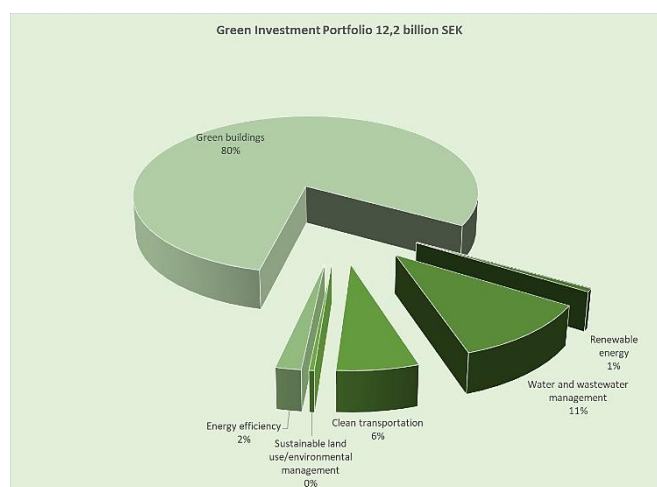
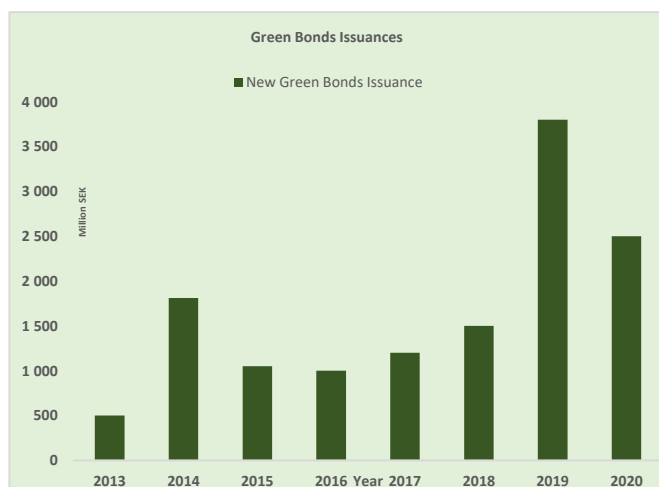


City of
Gothenburg

Green Bond Impact Report 2020



Executive Summary, as of 31 Dec 2020



CO2 impact Green indicators, based on outstanding disbursed amount			
Project category	GHG emissions reduced/avoided, tonnes CO2e/year	Outstanding disbursed amount to projects, SEK mn	Impact, tonnes CO2e per SEK mn
Renewable energy	4226	100	42,26
Green building	1593	9645	0,17
Water and Wastewater Management	n/a	1407	n/a
Clean transportation	1035	767	1,35
Energy efficiency	563	240	2,35
Sustainable Land Use and Environmental Management	n/a	49	n/a
Total	7417	12208	0,61
Disbursed amounts with CO2 impact, SEKmn		10752	
Impact, tonnes CO2e per SEK mn			0,69
Annual renewable energy generation, MWh			13487
Annual energy reduced/avoided MWh			9119

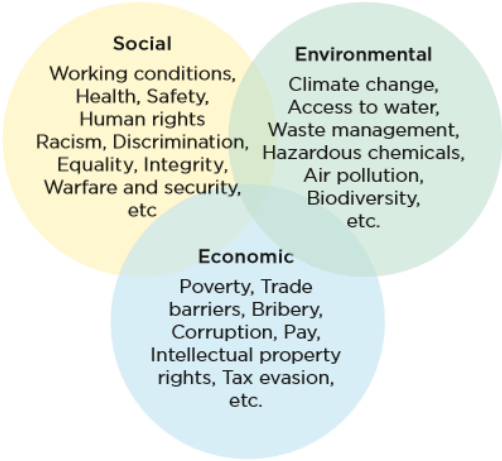
Basic information	
Green Bond Framework applied	Report comprises projects financed under Green Bond Framework dated September 2019
Related Green Bond ISIN(s)	Please see list in the report
External verifier of allocation report	PWC
Reporting period	Reporting for calendar year 2020. Comprises all eligible projects financed from GB programme start in 2013 until year-end 2020
Report publication date	June 2021
Frequency of reporting	Annual
Next reporting planned for	June 2022
Reporting approach	Portfolio and project-by-project reporting

Impact attributable to green bond investors	90,5%
Green Bonds SEK 1050 mn maturing 3 June, 2021	8,60%
Green Bonds SEK 1000 mn maturing 15 June, 2022	8,19%
Green Bonds SEK 1200 mn maturing 14 June 2023	9,83%
Green Bonds SEK 500 mn maturing 5 November, 2024	4,09%
Green Bonds SEK 1000 mn maturing 5 November, 2024	8,19%
Green Bonds SEK 1500 mn maturing 24 September, 2025	12,28%
Green Bonds SEK 300 mn maturing 24 April, 2025	2,46%
Green Bonds SEK 1000 mn maturing 27 November, 2025	8,19%
Green Bonds SEK 1000 mn maturing 27 November, 2025	8,19%
Green Bonds SEK 1000 mn maturing 3 June, 2026	8,19%
Green Bonds SEK 500 mn maturing 3 June, 2026	4,09%
Green Bonds SEK 1000 mn maturing 18 November, 2026	8,19%

Sustainable City – Open to the World

The City of Gothenburg is a municipality on the west coast of Sweden, strategically located between Oslo and Copenhagen. With a population of just over half a million, Gothenburg is Sweden’s second largest city and home to Scandinavia’s largest port and a variety of strong industries. Swedish municipalities enjoy extensive fiscal autonomy and can issue bonds to fund the delivery of public services. The City is responsible for providing services such as education, social care, planning and building, health and environmental protection, waste collection, water supply and purification, energy supply and public transport.

Gothenburg is governed based on three sustainability dimensions: social, environmental and economic sustainability - all of which are mutually dependent on one another. Collaboration for achieving our sustainability objectives spans the entire organization and include both the municipal and the company sector. As for economic sustainability, anti-corruption is a key priority for the City. We work actively to combat corruption and irregularities by continuously strengthening governance, control and transparency across all operations. As to social sustainability, our long-term goal is to reduce gaps in living conditions and health and ensure that the city develops in a way that is equal and socially sustainable.



The ecological dimension of the sustainable development of Gothenburg is presented in our environmental programme. The programme includes 12 environmental goals with the overall aim to create a good living environment both now and in the future. These goals form the basis of our environmental work and they also have several sub-targets that we follow up on annually. A new programme based on the goal of

limiting global warming to 1.5 °C has been approved by the City council. The programme has set a target of a fossil-free local transport by 2030, a fossil-free district heating by 2025, and for the City to have a fossil-free vehicle fleet by 2023. We are determined to be one of the world's most progressive cities when it comes to tackling environmental issues and climate change.

Gothenburg was the first city in the world to issue a green bond back in 2013 and the instrument has become an important tool to reach the City’s climate and environmental goals. Our environmental efforts have been recognized several times over the years. In 2015, Gothenburg was named the National Earth Hour Capital by the World Wildlife Fund (WWF) and in 2016, the City won the United Nation’s climate award Momentum for Change. Other credits include a number one ranking in the Global Destination Sustainability Index 2016, 2017, 2018 and 2019. In 2019, the City also won an award from the Swedish Environmental Protection Agency for our perseverance and long-term perspective related to waste prevention across different sectors of the City.

The Global Goals for sustainable development

All the 17 global sustainable goals are relevant to the City of Gothenburg, but not all the 169 targets. The city has local goals and strategic documents that address the most important areas in the relevant targets. In our new Green Bond Framework, you will find how our project categories are connected to the SDGs. Our current portfolio primarily addresses the following

goals: 3 Good health and well-being, 6 Clean water and sanitation, 7 Affordable and clean energy, 9 Industry, innovation and infrastructure, 11 Sustainable cities and communities, 12



Responsible consumption and production, 13 Climate action and 14 Life below water.

City of Gothenburg's New Green projects

Full list of projects can be found in the appendix and below we present a selection of our new projects in the investment portfolio.

Utby Solar Park

Göteborg Energi, Gothenburg's main energy and heat provider and Sweden's largest municipally owned energy company, has built a second solar park. Utby solar park situated at Utby in north east of Gothenburg was put into operation in Januari 2021. It covers an area of 7 hectare, hence smaller in size than its predecessor Nya Solevi which covers an area of almost 11 hectares. However, Utby



solar park is still expected to produce about the same amount of power, 5400 MWh of renewable electricity, sufficient to power about 1000 private houses annually.

Higab building an office for Kretslopp och vatten



Foto: Liljewall arkitekter

Kretslopp och vatten is a municipal administration providing drinking water, wastewater and waste collection services within the City of Gothenburg.

Kretslopp och vatten is responsible for Gothenburg's two waterworks. There, drinking water is purified and produced for the population of Gothenburg and several of Gothenburg's neighboring municipalities. In addition to producing drinking water, the administration is responsible of the construction, maintenance and reparation of Gothenburg's 1760 km long pipe network for drinking water.

Besides all pipes for the city's drinking water, there is a 2560 km long sewer network under the streets of Gothenburg. Kretslopp och vatten works to maintain these sewers and ensure that the wastewater can be led to the treatment plant.

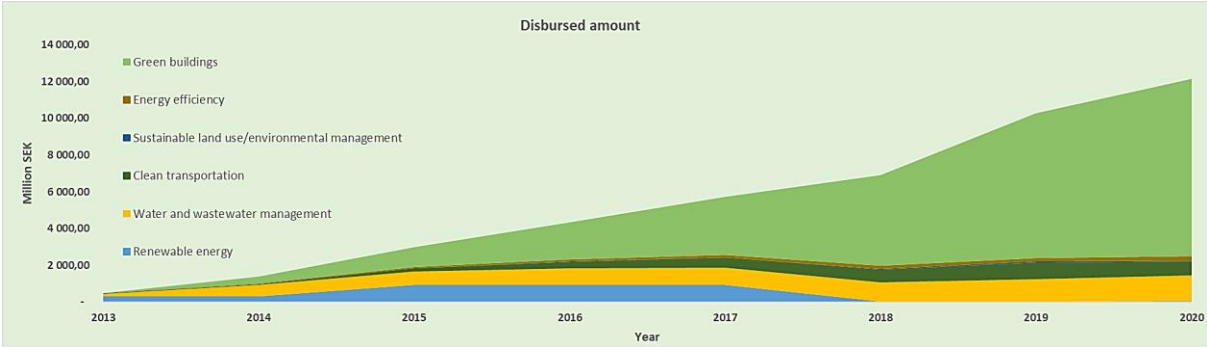
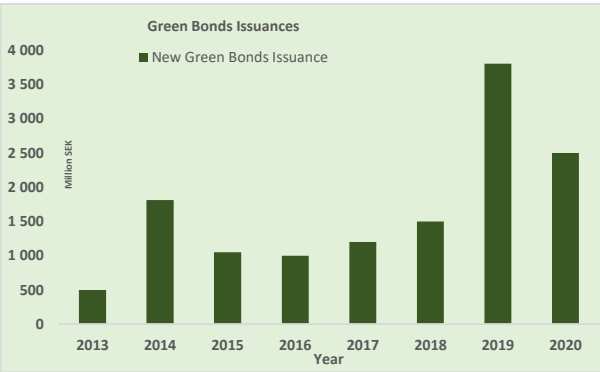
Regarding waste management, the administrations responsibility is to inform about how waste is to be sorted and how we can work together to reduce the amount of waste. The administration is also commissioned with collecting residual and food waste from all households and businesses in Gothenburg.

In 2019, Higab completed the work of building an office for Kretslopp och vatten in Alelyckan. It was a co-location project which meant that the administration was located in one place. Previously, the number of employees of just over 400 were located in seven different locations. Hence, the purpose of the co-location in Alelyckan was to strengthen the organization and the efficiency and in the long run increase customer value. The total area of the new office buildings is approximately 7000 sqm and the office accommodates workplaces for approximately 400 people. The co-location will lead to different profession categories previously separated now will meet, hence focus in this project has been on how people will meet and be made visible in a modern office building.

The building will be certified according to Miljöbyggnad 2.2 with the goal of achieving the Gold level regarding indicator 1 which is 'Energy usage' which requires an annual energy use of no more than 29 kWh/sqm A_{temp} . The calculated energy use for the building is 20 kWh/sqm A_{temp} , significantly lower than the requirements set by Boverket's building regulations, BBR 22, of 45 kWh/sqm A_{temp} .

Green Bond issuances, Green Account balance and proportion of refinancing

During 2020 City of Gothenburg issued three green bonds earmarked and dedicated to finance green projects defined within the city's framework for green bonds. Two of the bonds were issued on June 3rd and the total transaction amounted to 1,5 billion SEK. The third green bond with a transaction amount of 1 billion SEK was issued on November the 18th. However, two green bonds with maturity date June 3rd, 2020 and with a principal amount of 1,81 billion SEK was paid in full. Since the city of Gothenburg issued its inaugural green bond in 2013 the issuance has grown steadily and the outstanding amount as of December 31st, 2020 was 11,05 billion SEK.



The balance of the Green Account was at year end a deficit of 1,161 billion. The total proportion of net proceeds used to finance new projects is estimated at 83,6 percent. The proportion of refinancing is therefore estimated at 16,4 percent.

SEK (bn)	Share of total outstanding green bonds	Issuance	Maturity	XS no
1,05	9,5%	2015-06-30	2021-06-03	XS1253847815
1	9,0%	2016-06-15	2022-06-15	XS1433082861
1,2	10,9%	2017-06-14	2023-06-14	XS1627778316
0,5	4,5%	2018-11-05	2024-11-05	XS1900629616
1	9,0%	2018-11-05	2024-11-05	XS1900633303
1,5	13,6%	2019-09-24	2025-09-24	XS2054601369
0,3	2,7%	2019-09-24	2025-04-24	XS2054601443
1	9,0%	2019-11-27	2025-11-27	XS2084421986
1	9,0%	2019-11-27	2025-11-27	XS2084423925
1	9,0%	2020-06-03	2026-06-03	XS2180083052
0,5	4,5%	2020-06-03	2026-06-03	XS2180083136
1	9,0%	2020-11-18	2026-11-18	XS2259797079

Exclusion of green buildings not meeting requirements

Two years after a building has been completed, a measurement of the actual energy consumption is regularly done. In these measurements done on green buildings within the City's green bond investment portfolio, many of the projected energy ambitions has been proven to not meet the project's plan, and therefore not qualifying for the energy requirements set up the city's green bond framework. Four residential rental buildings at the value of 0,680 billion has been removed from the green bond investment portfolio, and 31 premises at the value of 0,473 billion has been removed.

High credit ratings

City of Gothenburg has received high credit ratings for the green bonds, E2 from Standard and Poor's (the second highest rating).

Standard and Poor's underline the city's transparent reporting, the use of a variety of key performance indicators for selected projects, transparency of project impact and special accounts for greens funds as being of substantial weight when assessing the rating.

S&P Global
Ratings

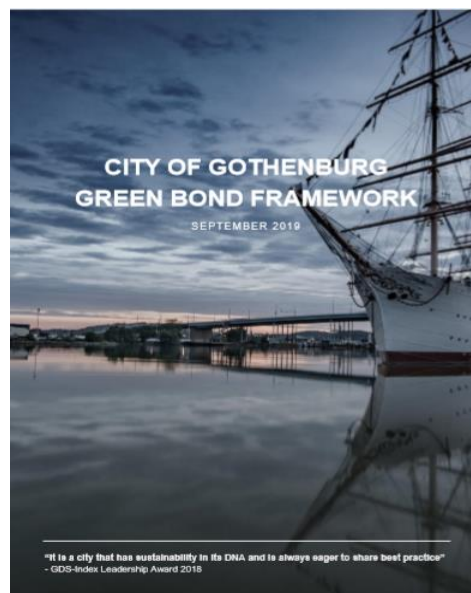
E1	E2	E3	E4
100	67	0	

Please read more at: www.goteborg.se/investorrelations

Green Bond Framework

City of Gothenburg updated on September 12, 2019 the Green Bond Framework. another big step forward in our work with Green Bonds.

We issued our inaugural green bond in 2013. Our previous green bond framework was updated in 2015 but as the green bond market has evolved, with new market constructs such as the Green Bond Principles updated in June 2018 by the International Capital Market Association, this green bond framework is an update to the 2015 version. It is the City of Gothenburg's intention to follow best practices as new market standards develop.



By setting up this Green Bond Framework, the City of Gothenburg offer investors the opportunity to further support the transition towards a low-carbon, climate change-resilient and ecologically sustainable society.

This Framework defines the projects and investments eligible for financing by green bonds issued by the City of Gothenburg. In addition, the Framework outlines the process used to identify, evaluate, select and report on eligible projects and the set-up for managing the Green Bond proceeds.

Second opinion

On September 7, 2019, CICERO, an independent research institute at the University of Oslo, issued a second opinion regarding the city's new framework for green bonds. They rated the framework Medium Green and the governance procedures Excellent. They also found the framework in alignment with the Green Bond Principles. Please read more in the [full report](#).



Green Account Audit

According to the new Green Bond Framework published in September 2019, an independent external auditor shall be appointed to annually provide a limited assurance that an amount equal to the Green Bond net proceeds has been allocated to Green Projects. During the spring of 2021 PWC was appointed auditor once again, and their “Report of Factual Findings” is attached in Appendix 2. In summary, their report verified the following points together with the following observations:

- We have verified the attached summaries of issued “green bonds” with regard to the principal loan amount against relevant data. We found the principal loan amount stated was consistent with the relevant data.
- We have verified the attached summaries of issued “green bonds” with regard to amounts not yet used per bond loan against separate bank account(s) and separate account(s) respectively in the accounting. We found the amounts not yet used per bond loan stated were consistent with the balance(s) in separate bank account(s) and separate account(s) respectively in the accounting.
- We have verified the attached summaries of “green projects” with regard to the validity of the amounts used per “green project”. We found the amount stated per “green project” was consistent with a separate report per green project.
- We have verified that the attached summary of “green projects” decided in 2020 were approved by the City of Gothenburg Green Bond Committee. We found the City of Gothenburg Green Bond Committee had approved these.

Position paper on Green Bonds Impact Reporting

The Position Paper on Green Bonds Impact Reporting, originally launched in October 2017 by a group of ten Nordic public sector issuers, has been published in an updated version in February 2020.



The Nordic Position Paper proposes an outline for reporting environmental benefits of green bond investments. It also provides guidance on general matters such as to distinguish between

reduced and avoided emissions, as well as to report impact in relation to disbursed green bond allocations.

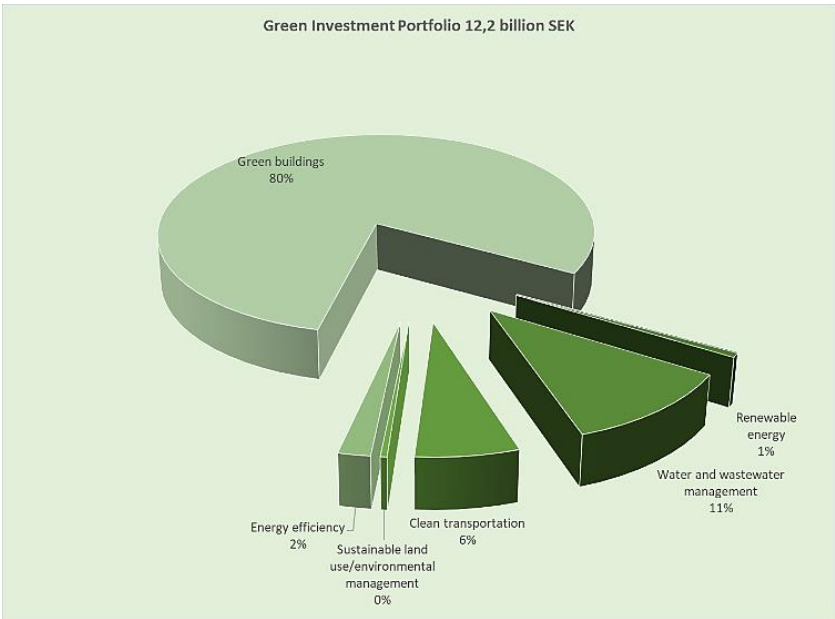
Moreover, the Paper provides suggestions for metrics and indicators relevant to eight different project categories. The effort builds upon reporting approaches suggested by the Green Bond Principles and multilateral development banks, as outlined in the GBP Handbook – Harmonized Framework for Impact Reporting. Please read more in the [full report](#).

Project categories and use of proceeds

In accordance with the Nordic Position Paper on impact reporting our project categories are as follows:

Green Project Categories
Renewable Energy
Green Buildings
Energy Efficiency
Clean Transportation
Waste Management
Water and Wastewater Management
Sustainable Land Use and Environmental Management
Climate Change Adaptation

Use of proceeds are allocated by sectors as shown in chart below.



Reporting approach and how to interpret the results

The City of Gothenburg is committed to transparent reporting of the projects financed within the city's framework for green bonds. The purpose of this impact report is to provide a more detailed understanding of the climate and environmental impacts that can be expected or are projected to result from the Green Bond eligible projects. Gothenburg has been a progressive stakeholder of developing the green bond market and investor reporting as an important part of that process. The City aims to follow all the key aspects of the Position Paper from the Nordic Public sector, but it will be a continuous process of development.

Estimations of impact indicators and projections of impacts are based on certain assumptions. The City of Gothenburg aims to make sound and conservative assumptions that are reasonably based on information available at the time. However, actual environmental impacts of projects may diverge from initial projections. Examples of this can be changes in law requirements, baseline conditions, behavior and slow start-up periods. Because of this, calculation methods and baseline assumptions may vary.

Collected data and baselines

- Electricity: 315 g CO₂/kWh (Position paper on Green Bonds Impact Reporting)
- District heating: 63 g CO₂ ekv/kWh (Environmental values for district heating delivered 2020, Göteborg Energi AB) <https://www.goteborgenergi.se/DxF-73541277/Miljovarden-for-fjarrvarme-2020-Prel.pdf?TS=637475282118203584>
- Cars:
 - Baseline emission fossil fuel cars 130 g CO₂/km. (The Swedish Transport Administration, 2019)
 - Calculated emission electric cars 0,22 kWh/km (Göteborgs Stads Leasing AB)
 - Average distance, 10000 km/year
- Busses: CO₂ emissions per km for diesel buses 1.16 kg CO₂ as baseline.

Contacts

Please do not hesitate to contact us for additional information or if any questions regarding this report.

Fredrik Block, Portfolio Manager, fredrik.block@stadshuset.goteborg.se

Nader Nadafan, Finance & Sustainability Controller, nader.nadafan@stadshuset.goteborg.se

Appendix 1

Impacts and allocated amounts

Name of Project	Administration/ Municipal company	Project start	Adaption/ Mitigation/ Environment	Project Category	SDG	Annual energy savings Reduced/ Avoided MWh	Annual energy produced MWh	Renewable capacity added MW	Annual GHG emissions Reduced/ Avoided tons of CO2 eq.	Project information	Allocated amounts (msek)
Electric cars	Göteborgs Stads Leasing AB	2013	M	Clean transportation	9, 11, 13	n/a	n/a	n/a	178 Reduced	<ul style="list-style-type: none"> • 294 electric cars in the city carpool • 63 new cars in 2020 	157
Celsius	Göteborg Energi AB	2014	M	Energy efficiency	7, 9, 11, 13	1015 Reduced	n/a	n/a	320* Reduced	<ul style="list-style-type: none"> • District heating to ship and to white gods. • Better air quality (ship) • Less noise (ship) • Project promotes the use and optimization of district heating technology in Europe 	5
Traffic lights energy efficiency	Road Traffic administration	2015	M	Energy efficiency	7, 9, 11, 13	770 Reduced	n/a	n/a	242 Reduced	<ul style="list-style-type: none"> • Replacements of ineffective fittings have resulted in energy savings of over 40 % • Increased urban safety. 	235
Energy efficient schools and preschools	City premises administration	2014	M	Green buildings	7, 11, 12, 13	3145 Avoided	n/a	n/a	614** Avoided	<ul style="list-style-type: none"> • Portfolio of new, energy efficient preschools, schools and retirement homes. • The buildings use green electricity 	3464

Energy efficient housing	Förvaltnings AB Framtiden	2015	M	Green buildings	7, 11, 12, 13	2692 Avoided	n/a	n/a	590** Avoided	<ul style="list-style-type: none"> Portfolio of new, energy efficient apartment buildings. The buildings use green electricity. Some buildings labeled Svanen 	5124
Energy efficient commercial buildings – Selma Torg	Förvaltnings AB Göteborgslokaler	2018	M	Green buildings	7, 11, 12, 13	1090 Avoided	n/a	n/a	240 Avoided	<ul style="list-style-type: none"> New, energy efficient building, Selma Town Hall. Miljöbyggnad Silver 	570
Energy efficient commercial buildings - Alelyckan	Higab AB	2019	M	Green buildings	7, 11, 12, 13	176 Avoided	n/a	n/a	56* Avoided	<ul style="list-style-type: none"> New energy efficient office building. Miljöbyggnad Guld 	144
Energy efficient commercial buildings – Hotel	AB Liseberg Skår	2019	M	Green buildings	7, 11, 12, 13	373 Avoided	n/a	n/a	20* Avoided	<ul style="list-style-type: none"> New energy efficient hotel Aim to reach BREEAM-SE Excellent Part of Lisebergs investment for Gothenburg's 400th anniversary. 	342
Nya Solevi/Solar Panels	Göteborg Energi AB	2018	M	Renewable energy	7, 13	n/a	5500	5500	1733 Avoided	<ul style="list-style-type: none"> Gothenburg's first solar park. Situated on an old airport. When installed: Sweden's largest solar park. 	44
Utby solcellspark/Solar Panels	Göteborg Energi AB		M	Renewable energy	7, 13	n/a	5400	5400	1701* Avoided	<ul style="list-style-type: none"> Gothenburg's second solar park built by Göteborg Energi Smaller in size than Gothenburg first solar 	31

											park but with the same capacity	
Solar panels on roofs	City premises administration	2019	M	Renewable energy	7, 13	n/a	2821	2587	792** Avoided	<ul style="list-style-type: none"> Solar panels installed on roofs of existing schools and preschools. 	25	
Electric buses	GS Buss AB	GS Buss AB	M	Clean transportation	9, 11, 13	n/a	n/a	n/a	798* Reduced	<ul style="list-style-type: none"> Replacement of hybrid buses by purchases of 30 electric buses Powered by green electricity Noise is significantly reduced in urban areas. 	132	

* Projected results

** Projected and actual results

Impacts and allocated amounts

Name of Project	Administration/ company	Project start	Adaption/ Mitigation/ Environment	Sector	UN global goals	Project	Allocated amounts (msek)
Ultrafilter Alelyckan and Lackarebäck	Department of sustainable waste and water	2013	A	Water and wastewater management	3, 14	<ul style="list-style-type: none"> • Making the production of drinking water more resilient to climate change. • Safer purification prevents sick days which also entails lower social costs. 	624
Denitrification	Gryaab AB	2014	E	Water and wastewater management	6, 14	<ul style="list-style-type: none"> • Expansion of water treatment plant to reach a higher denitrification rate. • Estimated reduction of nitrogen emissions is 350 tonnes/year 	356
Tree planting	Parks and landscape administration	2014	E (A/M)	Sustainable land use/environmental management	11, 14, 15	<ul style="list-style-type: none"> • Trees are planted in the city annually. • The project improves biodiversity, promotes a green cityscape and has a positive effect on urban air quality. 	49
The Pedestrian City	Road traffic administration	2015	M	Clean transportation	9, 11, 13	<ul style="list-style-type: none"> • Improved conditions for pedestrians traveling in urban areas. • Examples include improved traffic security and accessibility. 	134
The Bicycle City	Road traffic administration	2015	M	Clean transportation	9, 11, 13	<ul style="list-style-type: none"> • Project includes several improvements to the city's bicycle infrastructure such as new bike lanes. • Measures to make it safer and more accessible to travel by bike. 	344
Sewage pump station, Kodammarna	Eco-cycle and water administration	2017	M/A/E	Water and wastewater management	6, 14	<ul style="list-style-type: none"> • Replacing Gothenburg's largest pump station. • Decrease energy consumption at the pump station by 30 %, approx. 0,5 GW/year. • Decrease the overflow of sewage to the river Göta älv. • Making the plant resilient to climate change, higher water levels. • Possible to install solar cells on the roof. 	269

Water management	Department of sustainable waste and water	2019	A/E	Water and wastewater management	6, 14	<ul style="list-style-type: none"> Water pipes etc Increase resilience of drinking water supply. 	84
Stormwater management	Department of sustainable waste and water	2019	A/E	Water and wastewater management	6, 14	<ul style="list-style-type: none"> Installations for handling stormwater Improved resilience to handling increased rainfall. 	28
Brudaremassen landfill	Department of sustainable waste and water	2019	E	Water and wastewater management	11, 14	<ul style="list-style-type: none"> Project to purify leachate to reduce emissions to recipients from old landfill. 	46



REPORT OF FACTUAL FINDINGS

To the Executive Office of the City of Gothenburg

We have performed the procedures agreed with you and as described below concerning the "City of Gothenburg Green Bond Committee" as of 31 December 2020 according to the attached summaries. Our engagement was undertaken in accordance with the International Standard on Related Services 4400 *Engagements to perform agreed-upon procedures regarding financial information*. The procedures were performed solely to assist you in verifying the validity of the summary of "green" bonds issued being used for "green projects" and are summarised as follows:

1. We have verified the attached summaries of issued "green bonds" with regard to the principal loan amount against relevant data.
2. We have verified the attached summaries of issued "green bonds" with regard to amounts not yet used per bond loan against separate bank account(s) and separate account(s) respectively in the accounting.
3. We have verified the attached summaries of "green projects" with regard to the validity of the amounts used per "green project".
4. We have verified that the attached summary of "green projects" decided in 2020 were approved by the "City of Gothenburg Green Bond Committee".

We made the following observations:

- a) With respect to item 1, we found the principal loan amount stated was consistent with the relevant data.
- b) With respect to item 2, we found the amounts not yet used per bond loan stated were consistent with the balance(s) in separate bank account(s) and separate account(s) respectively in the accounting.
- c) With respect to item 3, we found the amount stated per "green project" was consistent with a separate report per green project.
- d) With respect to item 4, we found that the "Gothenburg Green Bond Committee" had approved these.


Because the above procedures do not constitute either an audit in accordance with International Standards on Auditing or a review made in accordance with ISRE, we do not express any assurance on "green bonds" as per 31 December 2020.

Had we performed additional procedures or had we performed an audit in accordance with the International Standards on Auditing or a review made in accordance with ISRE, other matters might have come to our attention that would have been reported to you.

Our report is solely for the purpose set forth in the first paragraph of this report and for your information and is not to be used for any other purpose or to be distributed to any other parties. This report relates only to the "Green bonds" and items specified above and does not extend to any financial statements of the City of Gothenburg, taken as a whole.

This report has been prepared by Öhrlings PricewaterhouseCoopers AB on behalf of the Executive Office of the City of Gothenburg in accordance with the conditions pursuant to the engagement agreement between them. Öhrlings PricewaterhouseCoopers AB is not responsible, without a separate written undertaking, to any party that reads and relies on this report, other than the Executive Office of the City of Gothenburg.

31 May 2021


Öhrlings PricewaterhouseCoopers AB
Mattias Johansson
Authorised Public Accountant