

Green Evaluation

City of Gothenburg

Transaction Overview

On June 15, 2016 the City of Gothenburg, Sweden issued Swedish krona (SEK) 1 billion of green bonds due June 15, 2022 to fund a number of eligible projects as part of its wider environmental initiatives. In accordance with the city's environmental programs, green bonds proceeds are targeted at financing projects in renewable energy, energy efficiency, public transportation, waste management, water treatment, and sustainable housing. The proceeds are solely dedicated to financing green projects, as defined within the city's environmental framework.

Entity:	City of Gothenburg
ICB subsector:	N.A.
Location (HQ):	Sweden
Financing Value:	SEK 1 billion
Proportion of proceeds:	Full
Evaluation date:	June 19, 2017
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Green Evaluation Overview

Transaction Transparency

- Use of proceeds reporting
- Reporting comprehensiveness

56

Governance

- Management of proceeds
- Impact Assessment Structure

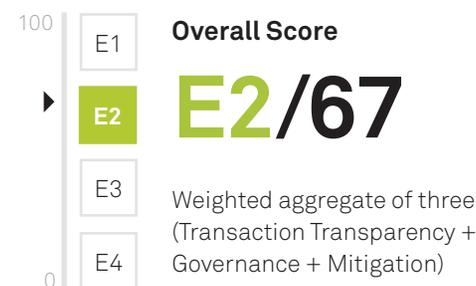
94

Mitigation

Sector	→ Net benefit ranking	→ Hierarchy overlay	
Green transport	Green transport without fossil fuel combustion		69
Green buildings	Green buildings – new build		

Adaptation

NA



Project Description

Gothenburg will use proceeds of the bond for environmentally beneficial projects being undertaken by the city including:

1. Green housing
2. Green transport (light rail projects, efficient traffic lights and improved bicycle infrastructure)
3. Tree planting
4. Water treatment (denitrification)

Currently our evaluation covers the sustainable housing and light rail projects which account for SEK 1.1 billion of the total SEK 1.3 billion allocated in 2016. The SEK 1 billion green bond issued in 2016 evaluated here is incorporated into this allocation.

Scoring Summary

This transaction achieves an overall Green Evaluation score of 67 out of 100 or E2 on our scale of E1 (highest) to E4 (lowest). This reflects an average score in Transaction Transparency (56) and a very strong score in Governance (94), as well as energy savings and reduced CO2 emissions resulting from the construction of new residential buildings as well as a green transport project targeting higher energy efficiency and increased capacity. The financing evaluated also achieves a strong overall Environmental Impact score because the proceeds will go to projects with high decarbonization potential.

Rationale

Summary

- All funds raised were allocated to environmentally friendly projects focusing on climate change mitigation.
- The projects funded by the bonds' proceeds target sustainable new residential developments leading to lower energy use as well as a new light-rail project with increased energy efficiency, resulting in a total Mitigation score of 69.
- Transaction Transparency and Governance scores are supported by a robust framework that governs the tracking and use of proceeds through special accounts, as well as high level commitments to reporting on energy saving efforts and reduced emissions.

Key Strengths And Weaknesses

The proceeds were allocated exclusively to green projects. We examined proceeds allocated by Gothenburg in 2016 totaling SEK 1.3 billion (SEK 0.3 billion of which was left over from issues in the series in previous years). Of the SEK 1.3 billion allocated, around SEK 1.1 billion were in scope for the Green Evaluation score, although all were compliant with Gothenburg's green selection criteria (available online). In 2016, projects funded included residential building construction that used green electricity, sustainable housing that targeted lower energy use, and a new light-rail project that aimed to increase capacity and energy efficiency in public transportation.

The three main projects include the 100% city-owned public housing company's residential housing development and a project for new light rail. One residential housing development targets annual energy savings (MWh) of 33% and fulfills environmental requirements on the construction process, materials, and energy usage. The other building development aims at keeping energy use at less than 45 kWh/square meter per year for water heating and other services, which is 60% lower than the requirements set by the Swedish National Board of Housing, Building, and Planning and is also in line with the standard for passive houses (which is a standard for sustainable buildings). The project for new light rail focuses on increased capacity and energy efficiency in the City of Gothenburg's public transportation. One effect of the new trams is almost 30% less energy used per passenger.

The Net Benefit Ranking is relatively low because Sweden's grid is already one of the cleanest globally; therefore, S&P Global Ratings assumes that these projects will displace relatively fewer emissions than similar projects in areas with a more carbon intense grid. However, because the allocation of proceeds to these assets contribute to the achievement of low carbon transition, we adjust the financing's Net Benefit Ranking of 19 to yield an overall Environmental Impact score of 69. We apply S&P Global Ratings' Green Evaluation retroactively, so the Transaction Transparency and Governance scores are based on current attributes.

The City of Gothenburg is committed to transparent reporting and assessments when reporting the results from projects within the city's framework for green bonds. It will report on a variety of key performance indicators (KPIs), including four core indicators targeting energy savings, the production of energy, increased

capacity of energy production, and reduced or avoided GHG emissions. These will form an important part of Gothenburg's impact reports. Gothenburg has already disclosed these KPIs for a range of previously financed projects in its 2016 impact report.

The city executive office selects projects in accordance with the city's environmental and climate programs and the city's framework for green bonds. The City of Gothenburg has adopted 12 environmental objectives, the majority of which it expects to achieve by 2020. These present the ecological dimension of the sustainable development of Gothenburg (opposed to the social and economic dimensions).

Transaction Transparency of project impact reporting is very important to Gothenburg. It reports on both actual and anticipated results to communicate project impact. S&P Global Ratings views this as positive in our assessment especially as Gothenburg's disclosure of the methodologies for impact calculation for some projects provide extra transparency on the transaction. It transfers investments in green bonds to a special account for the eligible projects, which helps to assure investors that proceeds are likely to be used for the environmentally beneficial projects for which they have been earmarked.

Sector level scores

Sector	Project	Location	Use of Proceeds (SEK Mil.)	Use of Proceeds treatment	Net benefit ranking
Green transport	Urban rail	Sweden	170	Actual	60
Green buildings	Residential	Sweden	925	Actual	11
			1,095		

Green Evaluation Process

56

Transaction Transparency

94

Governance

69

Mitigation

Weighted aggregate of three
(Transaction Transparency + Governance + Mitigation)

E2/67

Overall score

Increasing Decarbonization Impact

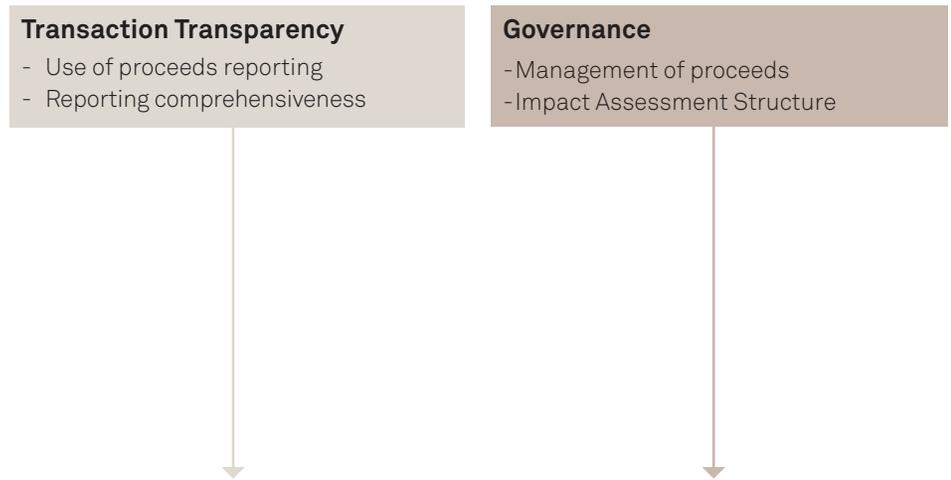
Carbon intensity technology	Local baseline of carbon intensity	Net benefit ranking	Hierarchy overlay	Environmental impact score	Proceeds (SEK Mil.)
	High  Low Sweden				
Wind power			Green energy		
Solar power					
Small hydro					
Large hydro					
Energy management and control			Energy efficiency		
Unspecified					
Green transport without fossil fuel combustion		60	Green transport	81	170
Green buildings – new build		11	Green buildings	66	925
Unspecified					
Energy efficient projects (industrial efficiencies)			Energy efficiency		
Green transport with fossil fuel combustion			Green transport		
Green buildings refurbishment			Green buildings		
Unspecified					
Nuclear			Nuclear power		
Large hydro in tropical areas			Green energy		
Unspecified					
Coal to natural gas			Fossil fuel power plants		
Cleaner fuel production					
Cleaner use of coal					
Unspecified					
Water enhancements	Local baseline of water scarcity	Net benefit ranking	Hierarchy overlay	Environmental impact score	Proceeds (SEK Mil.)
Water			Water		

Our Green Evaluation Approach

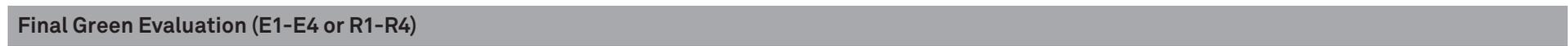
Weighted aggregate of three:



Common approach used amongst second opinion providers



Unique to S&P Global Ratings



eKPI – Environmental Key Performance Indicator

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