

Borgarráð

Tillaga að Grænum ramma Reykjavíkurborgar

Lagt er til að borgarráð samþykki hjálagða tillögu að Grænum ramma Reykjavíkurborgar.

Greinargerð

Græn skuldabréf Reykjavíkurborgar eru hefðbundin skuldabréf með grænum “stimpli” sem byggja á, **Green Bond Principles (GBP)**, sem eru leiðbeinandi viðmiðunarreglur sem Alþjóðasamtök aðila á verðbréfamarkaði (**ICMA**) hafa sett (2014). Þessar reglur eru endurskoðaðar reglulega og aðlagðar að þróun markaðarins. Flestir útgefendur velja í dag GBP reglurnar. Tillagan um Græna ramma Reykjavíkurborgar fylgir þessum staðli og skilgreinir:

- hvaða fjárfestingar geta fallið undir fjármögnun Reykjavíkurborgar með grænum skuldabréfum,
- hvernig staðið er stjórnsýslulega að því að tryggja að einungis þau verkefni sem uppfylla kröfur Græna rammans verði fjármögnuð með grænum skuldabréfum,
- hvernig staðið er að því að tryggja að fjármunirnir séu eyrnamerkir völdum grænum verkefnum og haldið aðskildum fá öðrum,
- hvernig staðið verði að skýrslugjöf um framkvæmdina,
- hvernig staðið verði að staðfestingu ytri endurskoðenda
- hvernig fengin verði fagleg staðfesting á gæðum Græna rammans.

Tillagan er sett fram á ensku en þannig var hún borin undir rýningu og mat óháðs aðila, CICERO (Center for International Climate Research. Græni rammi Reykjavíkurborgar verður að sjálfsögðu settur bæði fram á íslensku og ensku.

Nú liggur fyrir fagleg staðfesting á gæðum tillögu Reykjavíkurborgar frá CICERO) en flestir útgefendur grænna skuldabréfa í Evrópu leita til þeirra. Samkvæmt mati CICERO fær Græni rammi Reykjavíkurborgar hæstu einkunn, *dark green* og er farið lofsamlegum orðum um hann, sjá meðfylgjandi.

Dagur B. Eggertsson

Hjálagt:

The City of Reykjavík Green Bond Framework (confidential), draft.

Second Opinion on the City of Reykjavík's Green Bond Framework, dags. 20.11.2018.

The City of Reykjavík Green Bond Framework



The City of Reykjavík

The City of Reykjavík is the capital of Iceland. It inhabits approximately 130,000 people or roughly 35% of Iceland's total population. It has an area of 273 km² and employed 6,928 full-time equivalent persons in the year 2017 and is responsible for public infrastructures such as public schools, roads, swimming pools, libraries, social welfare, museums, waste collection, and public transport.

The City of Reykjavík has furthermore established a climate policy along with its environmental and natural resource policy in order to reach its sustainability goals of carbon neutrality. Both electricity and space heating in the City of Reykjavík is provided with renewable energy resources, namely geothermal and hydro from nearby power plants¹. The absence of fossil fuels for heating and electricity production leaves the transport sector as the main contributor of greenhouse gases within the City of Reykjavík. Its Climate Policy acknowledges this and provides goals on how to reduce emissions from the transport sector.

Climate Policy

The long-term vision of The City of Reykjavík is to reach net carbon neutrality by 2040. Its climate policy and its environment and natural resource policy demonstrate the road and objectives towards this particular goal. By the year 2030 it aims to have its automobile traffic at 58%, public transport at least 12%, and walking and cycling traffic at 30%.²

Emissions from transportation within the City of Reykjavík amounted to 70% of direct emissions in 2017 (scope 1: 244 thousand tCO₂e). Its goal is to have automobile traffic and public transport free of direct greenhouse gas emissions by 2040, which will be the main objective to reach carbon neutrality. Fuel pumps will be extinct in the City of Reykjavík by 2040, and will already be halved in numbers by 2030. Charging stations for electric vehicles will be installed in its parking garages and public street areas.

¹ More information about renewable energy in Iceland can be found here (https://orkustofnun.is/gogn/Frettir/Iceland_Leader_RenewableEnergy.pdf)

² This metric has been updated from previous policy and is, as it currently stands, more progressive. The Climate Policy can be accessed at <https://reykjavik.is/en/reykjavik-and-climate>

A key measure to reach this goal is to improve infrastructure for electric vehicles, cycling and public transport within The City of Reykjavík's geographical limits. By 2025, 100% of vehicles owned by The City of Reykjavík will be powered by energy free of direct greenhouse gas emissions.

The City of Reykjavík has also realised the potential in wetland reclamation and forestry and aims to reduce and offset its emission through measures related to wetland reclamation and forestry.

The environmental and natural resource policy of the City of Reykjavík consists of nine categories which are³:

- Resources: To ensure sustainable use of resources.
- Transportation: The ratio of public transportation should rise from 4% to 12%, the ratio of pedestrians and cyclists should rise from 19% to over 30%.
- Planning: The expansion of the urban area will be halted and at least 90% of new residential units will be inside the current urban area borders.
- Environmental quality: Environmental quality should be exemplary globally.
- Climate: Aim to reach net carbon neutrality before 2040².
- Sustainability in education: Sustainability will be visible in school curriculums of all kindergartens and elementary schools as well as in operational plans of after-school centres by end of the year 2014.
- Nature and recreation: A good connection for residents to outdoor areas will be ensured and the ratio of those living within 300m from recreational areas should stay at 92%. Residents will be encouraged to make use of recreational areas.
- Consumption and waste: Landfill waste disposal will be reduced and reusing and recycling increased. Estimated 80% of paper and cardboard, 60% of plastic, and all biodegradable waste to be reused by 2020.
- The City of Reykjavík's operation activities: Environmental impact stemming from the City of Reykjavík's operation activities will be specifically reduced, rendering it exemplary in this area.

The Green Bond is designed to fund projects that align with the City of Reykjavík's climate policy and have been demonstrated to deliver environmental benefits.

Management of proceeds

The net proceeds (hereafter referred to as proceeds) from this Green Bond issuance will be managed by the City of Reykjavík's Office of Finance. The management of proceeds will be conducted according to internal guidelines.

An amount equal to the proceeds of the issue of the bond will be credited to a special green budget account ("the green account"). The green account will fund a project if, and only if, the project is deemed eligible under this framework (see Eligible Projects and Selection of eligible projects below).

³ The Environmental and resource policy can be accessed on page 33 in Reykjavík's municipal plan 2010-2030 on <https://reykjavik.is/sites/default/files/reykjavik-municipal-plan-2010-2030.pdf>. It has now also been supplemented by a Biodiversity Policy.

Funds from the green account can also be used to repay a green bond or to refinance projects that fall under the Green Bond Framework, using a look-back period to the year 2016. Until disbursement, proceeds can be used for short-term investments in money market deposits, bank notes, covered bonds and government bonds. Proceeds will not be used to invest in corporate stocks or bonds.

The City of Reykjavík will communicate how proceeds were allocated to Eligible Projects in its Annual Green Bond Impact Report. An external auditor will verify the allocation of funds, the external audit is also communicated through the Annual Green Bond Impact Report.

The environmental impact from funded projects will be estimated by internal and/or external sustainability experts and reported by through annual Impact Reports for investor documentation (see section on transparency and reporting below).

Eligible projects

The selection criteria are aligned with ICMA's Green Bond Principles⁴ and the Position Paper on Green Bonds issued by the Nordic Public Sector Issuers⁵.

Eligible projects are projects that assist the City of Reykjavík in the transition to a low carbon economy and align with its long-term climate policy. Eligible projects have quantifiable environmental benefits, with environmental mitigation and/or adaptation potentials. Projects which lead to increased fossil fuel use cannot be financed using proceeds from bond issuances that fall under this Green Bond Framework. Project categories which are intended to be financed using the green bond proceeds are:

Project category	UN SDG	Project examples
Green buildings	7, 12, 13	• New and retrofitted buildings are expected to have a “Very good”⁶, “Excellent”, or “Outstanding” BREEAM rating. The grading must include the following: ○ A screening for climate risk and resilience included in the design. ○ Electricity and space heating from 100% renewable energy sources. ○ Solutions for a car-free living and electric charging stations fuelled with 100% renewable energy sources.

⁴ The ICMA Green Bond Principles are designed to guide issuers on areas to finance and improve transparency. They can be accessed through <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

⁵ Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting. October 2017.

⁶ If a building receives a “Very good” rating it must have a 65% score or higher, based on BREEAM scoring system. Only building projects initiated in 2017 or earlier can have a “Very good” rating, newer buildings will have an “Excellent” or “Outstanding” rating.

Energy efficiency	7, 9, 13	- Technologies for reducing energy consumption, e.g. retrofitting led bulbs for street lighting. - Energy efficiency projects can not include fossil fuel based technologies.
Clean transportation	7, 11, 13	- Urban rail or Bus Rapid Transit system for public transport. - Infrastructure for bicycle transport. - Infrastructure for EV charging. - Infrastructure for e-bike charging. - Transition to renewable energy in public transport.
Waste management	7, 9, 12	- Equipment for improving waste processing. - Waste collection vehicles using renewable energy (such as electricity from hydro or geothermal and hydrogen), or alternative fuels such as methane from landfills. - Increased methane collection from landfills for CNG production for public and private transport.
Sustainable land-use / environmental management	3, 6, 12, 14, 15	- Wetland reclamation and forestry within The City of Reykjavík's geographical limits. - Document and preserve biodiversity. - Urban planning for densification of the City of Reykjavík.
Adaptation measures	3, 11	- Mapping of risk due to rising sea levels. - Blue-green/self-sustaining surface water solutions. - Review of current flood prevention.

Selection of eligible projects

Eligible projects are selected by a Selection Committee and must align with The City of Reykjavík's carbon neutrality objectives in its Climate Policy, and have quantifiable environmental benefits.

The selection of projects to be funded through the Green Bond is carried out in the following steps.

1. The City of Reykjavík's City Council selects all general projects to be funded. A Selection Committee decides on which projects are funded using the proceeds from bond issuances that fall under this Green Bond Framework.
2. The committee consists of personnel from The City of Reykjavík's Office of Finance, the Office of Environment and Planning, and the Office of Property Management and Economic Development. The committee will screen and review potential projects that are aligned with the City's Climate Policy and rely on an environmental expert opinion.
3. The environmental opinion is based on environmental benefits estimated by internal and/or external sustainability experts. This analysis is conducted to verify and quantify the environmental benefits of projects to be funded. In this context, it is important to estimate the rebound effect for energy efficiency projects⁷. The information generated throughout this

⁷ The rebound effect is observed when technological change leads to a change in the user's behaviour. This effect can reduce the observed environmental benefits from increased energy efficiency, as more energy may be used.

Draft Green Bond Framework as of 20 November 2018, subject to changes before publication

analysis is then used for investor impact reporting (see the following section). The screening process is based on the following indicators:

- a. Life-cycle view on environmental impact.
 - b. Climate resilience screening.
 - c. Possible rebound effects.
4. Upon consensus, the committee presents the projects, which truly are aligned with this framework and have demonstrated positive environmental impact, to the City Council for final approval.

A list of funded projects and the environmental impact associated with those projects is kept by the Office of Finance.

Transparency & reporting

In order to provide investors with relevant information, the City of Reykjavík will publish Annual Impact Reports about the Green Bond. The Impact report will be published in parallel with its Annual Report in early Q2 each year. The Impact Reports will entail both financial and non-financial information about the funded projects.

- The total funding of eligible projects.
- Funds allocated to each project.
- Funds who have yet to be allocated.
- Accumulated environmental impact of the projects funded.
- Environmental impact associated with each project funded, measured in a relevant metric.

The Annual Impact Reports will be published on the City of Reykjavík's website and other relevant media and investor forums.

The environmental impact assessment will be conducted using the relevant indicators as indicated in the Position Paper on Green Bonds Impact Reporting published by the Nordic Public Sector Issuers (NPSI). Projects funded by the Green Bond are evaluated ex-post throughout the lifetime of the Green Bond to validate that they still comply with the eligibility criteria. Indicators generally quantify CO₂ emissions avoided or reduced and kWh's of energy saved in efficiency projects⁸.

The above mentioned indicators are evaluated using the relevant methodology on a project by project basis. A summary on methodologies used for impact assessment will be provided along with the impact reports. The Impact Reports will, therefore, demonstrate to investors expected environmental impacts from projects that are to be funded but have not begun, and the environmental impacts from projects that have been funded and are now reaping the environmental benefits.

As stated by the NPSI, GHG reduction per invested monetary unit will be provided for individual projects where such reduction is quantifiable.

⁸ The IFI has developed an approach for GHG accounting for energy efficiency projects, which is recommended by the NPSI. It can be found here: https://www.thegef.org/sites/default/files/file_attach/Joint-IFI-EE-GHG-Accounting-Approach.pdf

External Reviews

To ensure transparency and quality, the City of Reykjavík undergoes the following external review process:

- Audits are conducted by an external auditor to verify that proceeds are used for selected projects.
- This Green Bond Framework is reviewed by a second-opinion provider who verifies that the framework is aligned with ICMA's Green Bond Principles.
- Environmental impact assessments for funded projects are conducted by external sustainability experts to be published in the Annual Impact Reports.

All relevant information regarding the Green Bond, including the Green Bond Framework, the Second Opinion, the Annual Impact Reports will be published on the City of Reykjavík's website and other relevant media and investor forums.

‘Second Opinion’ on the City of Reykjavik’s Green Bond Framework

November 20th, 2018

Summary

Overall, the City of Reykjavik's Green Bond Framework (GBF) provides a progressive, clear and sound framework for investments into projects that well align with the Green Bond Principles. The green bond framework lists eligible projects which promote the transition to low carbon, climate resilient growth and sustainable development. Proceeds will not be used to finance investments that increase fossil fuels use. Although it is not specified in the GBF, investments in nuclear energy are not relevant to Reykjavik due to the abundance of renewable energy. Green Bond proceeds can be used to finance both new projects as well as refinance existing eligible projects and most of the first issuance is projected to be allocated to refinancing. The allocation between these categories will be reported annually.

The City of Reykjavik has solid management and governance structures, as well as regular and transparent reporting about green bond project achievements to investors and the public. The overall assessment of the governance structure of Reykjavik gives it a rating of Excellent. The City of Reykjavik has in place strong environmental goals and targets, good mitigation and adaptation plans, a sound selection process and comprehensive and transparent reporting. Reykjavik has carried out climate risk mapping as a basis for its Climate Adaptation Plan and has included Adaptation related projects in the GBF. Reykjavik plans to report the impacts of its green bond investments in alignment with to the Joint Position Paper on Green Bonds Impact Reporting of the Nordic Public Sector Issuers, which is encouraging.

Based on the overall assessment of the project types that will be financed by the green bonds and governance and transparency considerations, Reykjavik's Green Bond Framework receives a Dark Green shading. All the categories in the GBF are rated as Dark Green, due to the reliance on renewables, combined with the energy efficiency, as well as the focus on adaptation. In our assessments, we have recently increased our attention on the importance of a balanced implementation of green bond frameworks with more than one project category. While Reykjavik has a balanced portfolio in terms of categories, it is expected that most of the funding will be allocated to Clean Transportation and Green Buildings.



°CICERO
Dark Green

Contents

Summary	2
1 Introduction and background	4
Expressing concerns with ‘shades of green’	5
Assessing governance	5
Overall shading	5
2 Brief Description of Reykjavik’s Green Bond Framework and rules and procedures for climate-related activities	6
Use of proceeds:	6
Selection:	6
Management of proceeds:	7
Transparency and Accountability:	7
3 Assessment of Reykjavik’s Green bond framework and environmental policies	11
Overall shading	11
Eligible projects under the Green Bond Framework	11
Governance assessment	13
Strengths	13
Governance	13
Project categories	14
Weaknesses	14
Pitfalls	14
Impacts beyond the project boundary	15
Rebound effects	15
Appendix: About CICERO and SEI	16

1 Introduction and background

The global Expert Network on Second Opinions (ENSO), a network of independent non-profit research institutions on climate change and other environmental issues, was established by CICERO (Center for International Climate and Environmental Research – Oslo) to broaden the technical expertise and regional experience for second opinions. CICERO works confidentially with other members in the network to enhance the links to climate and environmental science, building upon the CICERO model for second opinions. In addition to CICERO, ENSO members include Basque Center for Climate Change (BC3), International Institute for Sustainable Development (IISD), Stockholm Environment Institute (SEI), and Tsinghua University's Institute of Energy, Environment and Economy.

This Second opinion was produced by SEI and CICERO on behalf of ENSO. SEI is an independent international research institute that has been engaged in environment and development issues at local, national, regional and global policy levels for more than 25 years. CICERO is an independent, not-for-profit, research institute, focused on providing reliable and comprehensive knowledge about all aspects of the climate change problem. A more detailed description of each of these institutions can be found at the end of this report. SEI and CICERO are both independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure.

The CICERO-led ENSO provides second opinions on institutions' framework and guidance for assessing and selecting eligible projects for green bond investments, and assesses the framework's robustness in meeting the institutions' environmental objectives. The second opinion is based on documentation of rules and frameworks provided by the institution themselves (the client) and information gathered during meetings, teleconferences and email correspondence with the client. ENSO encourages the client to make this Second Opinion publicly available. If any part of the Second Opinion is quoted, the full report must be made available.

ENSO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. ENSO network members do not validate or certify the climate effects of single projects, and thus, has no conflict of interest in regard to single projects. Network members are neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor the outcome of investments in eligible projects.

This note provides a Second Opinion of the City of Reykjavik's Green Bonds Framework and policies for considering the environmental impacts of their projects. The aim is to assess the City of Reykjavik's Green Bonds Framework as to its ability to support Reykjavik's stated objective of promoting the transition to low-carbon and climate resilient growth.

This Second Opinion is based on the green bond framework presented to ENSO by the issuer. Any amendments or updates to the framework require that ENSO undertake a new assessment. ENSO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near-term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long-run. ENSO strives to avoid locking-in of emissions through careful infrastructure investments, and moving towards low- or zero-emitting infrastructure in the long run. Proceeds from green bonds may be used for financing, including refinancing, new or existing green projects as defined under the mechanisms or framework. ENSO assesses in this Second Opinion the likeliness that the issuer's categories of projects will meet expectations for a low carbon and climate resilient future.

Expressing concerns with ‘shades of green’

CICERO/ENSO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds and the robustness of the governance structure of the Green Bond Framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society. The shading methodology also aims at providing transparency to investors when comparing green bond frameworks exposure to climate risks. A dark green project is less exposed to climate risks than a lighter green investment.

This Second Opinion will allocate a ‘shade of green’ to the green bond framework of Reykjavik:

- **Dark green** for projects and solutions that are realizations today of the long-term vision of a low carbon and climate resilient future. Typically, this will entail zero emission solutions and governance structures that integrate environmental concerns into all activities.
- **Medium green** for projects and solutions that represent steps towards the long-term vision, but are not quite there yet.
- **Light green** for projects and solutions that are environmentally friendly but do not by themselves represent or is part of the long-term vision (e.g. energy efficiency in fossil-based processes).
- **Brown** for projects that are irrelevant or in opposition to the long-term vision of a low carbon and climate resilient future.

Assessing governance

In assessing the governance quality of the issuer, four aspects are studied: The policies and goals of relevance to the green bond framework; the selection process used to identify eligible projects under the framework, the management of proceeds and the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent.

Overall shading

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations are also important because they give an indication whether the institution that issues the green bond will be able to fulfil the climate and environmental ambitions of the investment framework. Hence, the governance assessment plays a role in the overall shading of the framework. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The overall shading reflects an ambition of having the majority of the project types well represented in the future portfolio, unless otherwise expressed by the issuer.

2 Brief Description of Reykjavik's Green Bond Framework and rules and procedures for climate-related activities

Reykjavik is the capital of Iceland with a population of about 130,000 and 273 km². Reykjavik is home to about 35% of Iceland's population and has an increasing population. The City of Reykjavik has net carbon neutrality by 2040 as a long-term vision with shorter term goals along the way documented in its climate policy. The Icelandic national electricity grid is based on 99,98% renewables (geothermal and hydro power). According to Iceland's latest National Inventory Report to the UNFCCC, the weighted average GHG emissions from electricity production in Iceland in 2015 were thus 10.1 g/kWh. The grid is used for meeting the city's electricity and space heating demand. The key source of greenhouse gas emissions is transport (70% of direct emissions in 2017) and total levels of greenhouse gas emissions from transport have increased since 2011. Reflecting this situation, the city holds at the center of its climate policy the issues of transport and energy use, awareness raising, and waste. Specifically, it envisions public transport and city owned vehicles being free of direct greenhouse gas emissions, and fuel pumps in the city replaced by electric charging stations, as well as the promotion of e-vehicle infrastructure, cycling and public transport. The city also plans for wetland reclamation and forestry to reduce and offset emissions. The city's emissions reduction goals support the Nordic Capitals' Declaration on Climate Change Commitments (2015) and Iceland's national Climate Action Plan (2018). Reykjavik is a signatory to the Covenant of Mayors for Climate and Energy.

In addition to its climate policy, Reykjavik also has a biodiversity policy, as well as several plans which support its climate goals, including its bicycle plan, transport plan, regional transport plan, and environmental and natural resource policy.

Use of proceeds:

Projects eligible under the Green Bond Framework (GBF) will have quantifiable environmental benefits, with environmental mitigation or adaptation potential. The Green Bond will fund projects supporting the City of Reykjavik's Climate Policy and demonstrating quantifiable environmental benefits. Eligible projects and their estimated allocations include green buildings (20-40%), energy efficiency (8-10%), clean transportation (45-60%), waste management (5-7%), sustainable land use / environmental management (1-3%), and adaptation measures (1-3%). According to the issuer's estimates, most of the proceeds will be allocated to clean transportation and green buildings. Projects increasing fossil fuel use are not eligible, and according to the issuer, funding of nuclear energy related projects is not relevant in the context of the City of Reykjavik and Iceland.

The Green Bonds proceeds can be used to fund both new and refinanced projects. According to the issuer, the first issuance will be used 70-100% for refinancing recent eligible projects (from 2016-2017). In contrast, future issuances will focus on new investments. The allocation between refinanced and new projects will be visible in the annual impact report.

Selection:

Projects will be initially proposed by the Reykjavik City Council and then screened and reviewed by a selection committee consisting of representatives from the City of Reykjavik Office of Finance, the Office of Property

Management and Economic Development, and the Office of Environment and Planning. The selection process will rely on assessments of environmental benefits performed by internal and/or external sustainability experts. The assessment consists of an LCA approach, Climate Resilience screening, and identifying potential rebound effects for energy efficiency projects. The selection committee selects projects based on alignment with the GBF and based on consensus. The committee then presents the selected projects to the City Council for final approval. The project funding and environmental impact is documented by the Office of Finance. Furthermore, projects will be evaluated for impacts (ex-post) throughout the Green Bond lifetime to ensure compliance.

Management of proceeds:

The City of Reykjavik will establish a dedicated account for the net proceeds of the issued Green Bonds (“the green account”) which will be managed according to internal guidelines and by the Office of Finance. Funds from the green account will be used to fund projects (new and refinancing) eligible under the Green Bonds Framework or also to repay a green bond. Until disbursement, the proceeds can be invested short-term in money market deposits, bank notes, covered bonds, and government bonds. Investment in corporate stocks or bonds is not allowed. The allocation of funds will be externally verified and the results of the audit will be communicated through the Annual Green Bond Impact Report.

Transparency and Accountability:

The City of Reykjavik will publish an Annual Impact Report on green bonds, alongside its Annual Report, in early Q2 each year. The report will include both financial and non-financial information including the total aggregated and individual funding of eligible projects; the allocation between refinanced and new projects; funds yet to be allocated; as well as accumulated and individual environmental impact of the funded projects. The investor report will be made publicly available on the City of Reykjavik’s web page, along with the Second Opinion and GBF. The environmental impact estimates will come from the external assessments used in the project screening (ex-ante) and also ex-post evaluations conducted throughout the lifetime of the Green Bond used to validate compliance.

It is the City of Reykjavik ambition to provide impacts using relevant indicators where feasible, according to the Joint Position Paper on Green Bonds Impact Reporting of the Nordic Public Sector Issuers. Specifically, CO₂ avoided or reduced, kWh of energy saved, and GHG reduction per invested monetary unit will be reported for individual projects where quantifiable. A summary on methodologies used for calculation of indicators and emissions factors will be included in the report.

The City of Reykjavik verifies that Green Bonds proceeds are used for selected projects through an external audit.

The table below lists the documents that formed the basis for this Second Opinion:

Document Number	Document Name	Description
1	Reykjavik's Green Bonds Framework 15.11.2018	This document comprises Reykjavik’s Green Bonds Framework and how intends to use proceeds, how it plans to evaluate

		and select eligible projects, manages the proceeds and reports to investors.
2	City of Reykjavik Climate Policy 2016	This strategy outlines goals for mitigation and adaptation, along with an action plan until 2020, which is to be reviewed regularly.
3	Memo (English) on the Environment and Natural resource policies of Reykjavik (2015), 25.10.2018 plus original language policy (2015).	English language introduction to Policy and Policy. The introduction describes the objectives and 9 categories of the policy. Sample KPIs provided.
4	Reykjavik Biodiversity Policy (2016)	Policy including 6 policy goals and policy implementation.
5	Memo (English) on the Proposed Measures for Climate Change Adaptation (2017) with original language “Overview of major risk factors due to climate change in Reykjavik, ways to adapt and current status” report (2017).	City Council Document setting out the proposals for climate change adaptation measures based on the risk assessment performed. Measures are categorized as Grey, Mild and Green solutions and linked partners are identified.
6	Reykjavik Municipal Plan 2010-2030 (2014)	Outline and explanation of the main objectives and the future vision proposed in the new Municipal Plan. It provides an overview of the areas that will be subject to change over the time period covered.
7	Memo (English, 2018) on the Action Plan in Waste Management, with original language plan 2015-2020	Description of the Action Plan, its 4 categories, and subcategories where relevant. Table of waste collection improvements until 2020.
8	Memo (English, 2018) on the report on wetland reclamation action plan for the area of Úlfarsárdalur (2016).	Map of area, as well as brief description of potential impact of reclamation in terms of C sequestration and biodiversity.

9	Memo (English, 2018) on Reykjavik's Procurement Policies.	Aim, general principles and general clauses related to procurement procedures and selection criteria.
10	Memo (English, 2018) on the Proposal of city rules on procurement and leasing of vehicles (2018)	Introduction to the rules applying to vehicle procurement and leasing in support of the climate policy.
11	Memo on Iceland's Climate Action plan 2018 - 2030, September 2018	Introduction to the action plan with main goal, the 2 most important actions, with a figure related to emissions allocation and a table listing the actions proposed.
12	Nordic Capitals' Declaration on Climate Change	Signed declaration issued ahead of the COP21 in Paris 2015 detailing the mitigation and resilience objectives,
13	Confirmation of Reykjavik's participation in the Blue Flag program (ecolabel) (2018)	Letter of confirmation relating to Blue-Flag, which relates to beaches, marinas and boating tourism operators, stating the requirement for a control visit. Also states results of Blue Flag certification in Reykjavik.
14	Memo (English, 2018) on the Green Accounting in Reykjavik (02.2018)	Document describes ghg trends in the city based on the Green Accounting for 2015-6. Table summarizing various Scope of emissions.
15	Memo (English, 2018) on GHG emissions 2017 Original language report (2018)	Memo shows scope 1 and 2 emissions in 2017. Table on emissions within Reykjavik by scope in the year 2017 measured in tCO ₂ e.
16	BORGARLÍNA Recommendations Screening Report (September 2017)	A report based on the screening process performed for the planning of the regional public transportation system.

17	Memo (English, 2018) on the Energy transition in public transport - scenarios, 1111276-000-MRP-0001 (May 2017)	Outline of the two possible scenarios to achieve a fully electric fleet of buses in Reykjavík by 2040.
18	Memo related to the City Council minutes (Oct 8, 2015) where the agreement was made to utilize BREEAM.	Memo on the agreement to use BREEAM in buildings owned by the City.
19	Memo (English) to the Bicycle Plan 2015-2020 plus original language plan	Document discusses cycling and walking; SUMP; incentives; relevant plans/policies; future plans.
20	Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (October 2017)	A practical guide on impact reporting for Nordic public sector green bond issuers.
21	National Inventory Report Iceland (2017)	Includes the weighted average GHG emissions from electricity production in Iceland in 2015.

Table 1. Documents reviewed

3 Assessment of Reykjavik's Green bond framework and environmental policies

Overall, the City of Reykjavik's green bond framework provides a detailed and sound framework for climate-friendly investments.

The framework and procedures for Reykjavik's green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon and resilience projects, whereas the weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where issuers should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of the issuer's systematic sustainability work, governance structure and transparency considerations, we rate the framework **CICERO Dark Green**. The issuer has in place an excellent governance structure and process, including climate risk assessment and veto power of environmental experts in the selection process, but lacks specific performance criteria for eligibility in many categories. Instead, the issuer has identified likely projects to be funded and requires projects to align with and move the city towards its climate goal of carbon neutrality.

Eligible projects under the Green Bond Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide certainty to investors that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Category	Eligible project types	Green Shading and some concerns
Green buildings	New and retrofitted buildings are expected to have a "Very good" ¹ , "Excellent", or "Outstanding" BREEAM rating. ² The grading must include the following:	Dark green ✓ For investments into energy efficiency: Should consider the potential of rebound effects for energy consumption.

¹ If a building receives a "Very good" rating it must have a 65% score or higher, based on BREEAM scoring system. Only building projects initiated in 2017 or earlier can have a "Very good" rating, newer buildings will have an "Excellent" or "Outstanding" rating.

² According to the issuer, it is expected that all the buildings under the framework will meet the minimum criteria in the energy efficiency category (ene 1) for excellent rating with energy efficient solutions supplementing the 100% renewable energy supply.

	• A screening for climate risk and resilience included in the design. • Electricity and space heating from 100% renewable energy sources. • Solutions for a car-free living and electric charging stations fueled with 100% renewable energy sources.	✓ Best available technology for energy efficiency should be used. ✓ Construction projects can have potential negative local environmental impacts. ✓ In addition to climate issues, BREEAM covers a broader set of issues, which is important to overall sustainable development.
Energy efficiency 	Project examples: • Technologies for reducing energy consumption, e.g. retrofitting led bulbs for street lighting. • Energy efficiency projects cannot include fossil fuel based technologies.	Dark green ✓ Screening process covers assessment of rebound effects.
Clean transportation 	Project examples: • Urban rail or Bus Rapid Transit system for public Transport; • Infrastructure for bicycle transport; • Infrastructure for EV charging; • Infrastructure for e-bike charging; • Transition to renewable energy in public transport.	Dark green ✓ Potential for emission reduction depends on area planning and degree of urbanization, introduction of new vehicle technologies for passenger and goods transportation, and fuel types. ✓ Screening process covers assessment of potential lock-in effects and life-cycle analysis. ✓ Should avoid fossil-fuel use.
Waste management 	Project examples: • Equipment for improving waste processing³; • Waste collection vehicles using renewable energy (such as electricity from hydro or geothermal and hydrogen), or alternative fuels such as methane from landfills; • Increased methane collection from landfills for CNG production for public and private transport⁴.	Dark green ✓ Should avoid lock-in effects due to project screening process. ✓ Incineration or combustion are neither practiced by Reykjavik nor are they planned.
Sustainable land-use / environmental management	Project examples: • Wetland reclamation and forestry within the City of Reykjavik's geographical limits⁵; • Document and preserve biodiversity;	Dark green ✓ Consider negative impacts on wildlife, nature and lifecycle pollution. Avoid negative impacts on biodiversity.

³ According to the issuer, the aim is to decrease waste collection frequency and thus fuel consumption.

⁴ According to the issuer, methane is currently collected from landfills, but later could be collected from biogas production from anaerobic digestion of organic waste.

⁵ According to the issuer, projects will have a positive long-term impact to reduce GHG emissions.

	Urban planning for densification of the City of Reykjavik.	
Adaptation 	Project examples: - Mapping of risk due to rising sea levels; - Blue-green/self-sustaining surface water solutions⁶; - Review of current flood prevention.	Dark green ✓ For investments into climate change adaptation: Should consider the implications of climate change on developments along lakefronts, waterfronts and other locations at risk of climate impacts and natural hazards.

Table 2. Eligible project categories

Governance assessment

In assessing the governance quality of the issuer, four aspects are studied: The policies and goals of relevance to the green bond framework (1), the selection process used to identify eligible projects under the framework (2), the management of proceeds (3) and the reporting on the projects to investors (4). Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent.

The overall assessment of the governance structure of the City of Reykjavik gives it a rating of Excellent. Reykjavik has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting. Also, although Adaptation is considered a project category in the Green Bond Framework, and climate resilience is supported by this and other project categories, resilience screening could potentially be added to other project categories as well.

Strengths

Governance

It is a strength that the City of Reykjavik takes a holistic approach to sustainable development, evident from its linking of the eligibility categories to the SDGs and the variety of categories included in its GBF. The city has set itself emissions reductions goals to be net carbon neutral by 2040⁷. The GBF also includes adaptation measures, which are based on an initial mapping of climate risks for Reykjavik based on the Covenant of Mayors for Climate and Energy Reporting Guidelines. The City of Reykjavik uses a comprehensive environmental governance and reporting structure indicated by their Green Accounting methods and numerous climate (mitigation and adaptation), environmental policies, and plans which are aligned with each other.

Project selection and decision procedures and responsibilities are identified and there is commitment and procedures to ensure that projects produce long-term positive environmental impacts related to mitigation and/or adaptation. There is a three-step screening where projects are proposed by the City Council and further assessed and selected from by a selection committee before final approval by City Council. It is a strength that the screening of projects is performed jointly with representatives from various sectors and final selection is based on consensus. Environmental expertise is included in the selection committee, selection is based on assessment

⁶ Blue green surface water solutions refer to open storm water solutions.

⁷ Carbon neutrality, as referred to in the Climate Policy of the City of Reykjavik, relates to emissions within the city's geographical scope.

of environmental impacts and in some cases also involve external environmental expertise. The selection process will also consider potential rebound effects, potential lock-in effects and utilize LCA approaches for assessment. It is also considered a strength that certifications, along with additional criteria, are used for project selection in the Green Building category. It would strengthen the GBF if performance criteria were included also in other categories.

Reporting

The City of Reykjavik has plans to report the impacts of its green bond investments in an annual report which will be made publically available on its website. The report will include information on both an aggregate basis, as well as a project by project basis. The reporting includes financial allocation, as well as environmental impacts using indicators aligned with the Joint Position Paper on Green Bonds Impact Reporting of the Nordic Public Sector Issuers. It is a strength that results of ex-post impacts will also be reported when available, as they are also assessed regularly, and that methodologies will be summarized for transparency.

Project categories

Based on allocation, the Green Bonds will focus mainly on carbon mitigation. An estimated 45-60% of the proceeds will be allocated to clean transportation which will support the shift of public and private transport to be free of direct ghg emissions. This directly deals with the City of Reykjavik's main source of ghg emissions. The framework also mentions potential projects such as wetland reclamation and forestry, urban planning, and various projects in waste management (another significant source of emissions) which will contribute to emissions mitigation.

To support climate resilience, the City of Reykjavik has included Adaptation as an eligible project category and overall risk mapping has already been performed. Although Adaptation is estimated to cover a low share of financed projects, resilience is also supported by other project categories. For example, project examples mentioned within the Sustainable land-use/environmental management category support climate resilience. Due to the resilience screening required for building design of new and retrofitted buildings, the Green Building category, which is estimated to comprise 20-40% of allocated funds, also supports climate resilience. It should be noted that all long-term infrastructure investments, e.g. in waste management, transportation etc. should be screened for climate risk in order to support resilience, along with mitigation.

Controversial projects are not mentioned as ineligible in the GBF, but it is mentioned that projects will not increase fossil fuels use and according to the issuer, investments in nuclear are not relevant for them due to their current abundant energy sources. As the grid is already based on renewable resources and the issuer's projects represent a move towards utilizing the grid, along with other renewable resources, lock-in to fossil fuel supporting infrastructures is not seen as a large risk.

Weaknesses

We find no substantial weaknesses in Reykjavik's Green Bond Framework.

Pitfalls

ENSO takes a long-term view on climate change. One way to better ensure long-term positive effects is through impact assessments and certifications, e.g. in green building. However, these certifications do not necessarily ensure improved energy performance or that resilience aspects are taken into consideration.

Impacts beyond the project boundary

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and thus need to be considered with regards to the net impact of climate-related investments.

Rebound effects

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity. From the project categories in Table 2, an example is green buildings, energy efficiency or even clean transportation. Reykjavik should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

Appendix:

About CICERO and SEI

CICERO Center for International Climate Research is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international climate cooperation. We collaborate with top researchers from around the world and publish in recognized international journals, reports, books and periodicals. CICERO has garnered particular attention for its work on the effects of manmade emissions on the climate and the formulation of international agreements and has played an active role in the UN's IPCC since 1995.

CICERO is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO received a Green Bond Award from Climate Bonds Initiative for being the biggest second opinion provider in 2016 and from Environmental Finance for being the best external review provider (2017).

CICERO Second Opinions are graded dark green, medium green and light green to offer investors better insight in the environmental quality of green bonds. The shading, introduced in spring 2015, reflects the climate and environmental ambitions of the bonds in the light of the transition to a low-carbon society.

CICERO works with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions. Led by CICERO, ENSO is comprised of trusted research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD). ENSO operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

cicero.oslo.no/greenbonds

SEI is an independent international research institute that undertakes policy oriented and applied research on environment and development issues. Our innovative, integrated systems research forms the basis for our work on policy advice, capacity development, decision support and implementation of policy and practice. Our mission is to support decision-making and induce change towards sustainable development around the world by providing integrative knowledge that bridges science and policy in the field of environment and development.

sei-international.org/

