

Green Bond Framework



Executive Summary

Reykjavik Energy (OR), through its subsidiaries, owns and operates Iceland's largest geothermal power plants, the distribution system for heating, water and sewage in Reykjavik City, and Reykjavik City's fibre network. OR provides the inhabitants of Reykjavik with renewable energy, and services relating to clean water and sewage.

Operating an environmentally and socially sustainable business constitute the basis of OR's long-term strategy. Sustainable financing is a key part of the strategy and offers means to mobilise debt for environmental efforts.

By establishing this Green Bond Framework, aligned with the Green Bond Principles published in June 2018 by the International Capital Market Association (ICMA), OR offers investors the opportunity to support the transition to a low-carbon and climate resilient future as well as further insight into its sustainability strategy.

Proceeds from bond issuances under this Framework will fund Eligible Projects that have environmental benefits and align with the progressive goals of OR to reduce its carbon emissions by 60% before the year 2030. Eligible Projects include, for example, renewable energy, energy distribution and management, and sustainable water and wastewater management. The selection of Eligible Projects will be conducted by a committee within OR

In order to provide investors with transparent and coherent reporting, OR will communicate how proceeds were allocated to Eligible Projects and certain performance indicators in its Annual Green Bond Impact Report.

CICERO has provided a second opinion with a Dark Green Shading to the Green Bond Framework. The second opinion is publicly available at OR's website.

Disclaimer

This document is for information purposes only. This document is not a registration document or a prospectus.





Introduction - Reykjavik Energy (OR)

Reykjavik Energy (OR) is the largest energy provider in Iceland, servicing around 67% of the Icelandic population. The company is leading in environmental and social responsibility as Iceland's largest producer of energy from geothermal resources. OR puts environmental issues at the forefront in its operations and has a clear commitment to continually improve in the field of environmental affairs.

OR is entrusted with the responsibility for the resources that it utilises. This entails working according to the ideology of sustainable development, ensuring sustainable utilisation in the present and for future generations.

OR is the parent-company of ON Power (energy generation), Veitur (utilities and distribution), and Gagnaveita Reykjavíkur (Reykjavík's fibre network). ON operates two geothermal power plants, the Hellisheidi plant (303 MWe and 133 MWth)¹ and Nesjavellir plant (120 MWe and 300 MWth)¹, and one small hydro plant. Both geothermal plants are located near Iceland's capital region of Reykjavik, to which they supply most of the hot water while the electricity is distributed to homes, business and industry across the country. Veitur, distribute electricity, hot and cold water, in addition to running sewage systems in Iceland's most densely populated areas, some of which are outside the capital area. Veitur also operates Reykjavík's sewage system and delivers potable water to the residents of Reykjavík. Gagnaveita Reykjavíkur installs infrastructure for optical fibre networks to households and businesses and operates within the same area as Veitur.

OR employed 509 persons in 2017 and the size of its premise amounts to 780 thousand m³. Majority of the energy used by OR is renewable, or 99%, whereas 1% comes from fossil fuels. Harnessing geothermal energy results in some emission of CO₂ due to the chemical composition of geothermal steam, although the emissions are minimal compared to emissions from conventional power production and the overall carbon footprint per kWh of power or heat is 7,5 gr. Thus, the vast majority of CO₂ emissions from OR activities is due to geothermal utilization. However, one of OR's environmental priority is to reduce its greenhouse gas emission by 60% before the year 2030. The net proceeds from bond issuances under this Framework will assist OR fund projects that align with that goal, and to supply the population of Reykjavík with low-carbon energy.

¹ 1 MWth refers to megawatts of thermal energy and MWe refers to megawatts of electricity.

Environmental Policy and priorities

OR operates according to its Environmental and Resource Policy. The policy is founded on five principles:

- Responsible resource management: OR shall protect the resources from threats and intrusions in line with the responsibility the company has been entrusted with.
- Value of utility operations: Access to OR's utilities promotes healthy living and opportunities for climate-friendly operations in the community.
- Minimising the impact of emissions caused by operations: OR strives to reduce the emission of greenhouse gasses and pollutants as much as possible and prioritise research and development to seek the best possible solutions for that purpose.
- Impact on society: The company passes on its know-how and influences the value chain, which encourages a responsible treatment of the environment and has a positive impact on the community.
- Operations: OR aims to run exemplary operations and to develop its personnel's qualifications in this regard.

Even though the operation of OR and its subsidiaries are considered among the most climate-friendly globally,² its environmental goals and policies are stringent and research-driven.

OR is, for example, in the forefront of GHG sequestration research in the geothermal sector, looking at CO₂ fixation in the subsurface through in-situ carbonation of basalts.³ To guide the environmental activities of OR, several priorities have been established and are as follows:

- To reduce the carbon footprint of its operations by 60% between 2015 and 2030.⁴
- To emphasize water conservation, the responsible management of water resources, and ensure the long-term supply of potable water.
- Show responsible handling and management of low-temperature geothermal resources.
- Show responsible handling and management of high-temperature geothermal resources, to reduce hydrogen sulphide emissions and discharge geothermal water in a responsible way.
- Show responsible handling and management of sewage systems.
- Handle waste in a responsible way.
- To continue to apply effective procedures to restore disturbed areas.
- To play an active role in promoting climate-friendly transport.



² The emissions from OR's power plants are low in comparison to fossil fuel powered plants (estimated to be 8.1 g CO₂e/kWh for electricity and 2.8 g CO₂e/kWh for hot water).

³ Gíslason, S. R., Sigurdardóttir, H., Aradóttir, E. S., & Oelkers, E. H. (2018). A brief history of CarbFix: Challenges and victories of the project's pilot phase. *Energy Procedia*, 146, 103-114.

⁴ In 2015 the emissions from the operations of Reykjavik Energy amounted to 71.485 tonnes CO₂e, excluding carbon sequestration. The Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard is used as a guiding methodology for calculating the amount of greenhouse gas emissions.



Reykjavik Energy Green Bond Framework

OR has established this Green Bond Framework to issue debt instruments for which the proceeds will target investments promoting environmental matters. The legal documentation for each individual OR green bond (Green Bond) shall provide a reference to this framework under the Use of Proceeds section. The following sections will detail the Green Bond Framework.

Management of Proceeds

The net proceeds (hereafter referred to as proceeds) from bond issuances under this Framework will be managed by OR's Finance department and according to internal guidelines. The proceeds from the issuance will be credited to a green account. The account will fund projects if they are eligible under this framework (see Eligible Projects and Selection of Eligible Projects below). The proceeds can be used for repayments of green bonds, new projects, or refinancing of projects that fall under this Framework.


















Until disbursement, proceeds can be used for short-term investments in mutual funds, money market deposits, bank notes, covered bonds, and government bonds. Proceeds will not be used to invest in stocks or investments in fossil-fuel based-technologies.

OR 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 in its Annual Impact Report for investor documentation (see section on transparency and reporting below).

Use of Proceeds - Eligible Projects

The proceeds from bond issuances under this Framework will be used to finance both new⁵ and existing⁶ Eligible Projects.

Eligible Project Categories	UN SDGs	Example Projects
Renewable Energy	7, 13  	<ul style="list-style-type: none"> Development, construction, and operation of geothermal energy facilities with GHG emissions less than 100 gCO₂e/kWh Exploration and exploitation of new geothermal wells Development of reinjection strategies to best sustain the geothermal resources Hydrogen production
Energy distribution and management	7, 9, 13   	<ul style="list-style-type: none"> Installation and maintenance of infrastructure to deliver electricity and hot water for district heating
Carbon Capture and storage	7, 13  	<ul style="list-style-type: none"> Mineralization of CO₂ and H₂S from power plant operations
Sustainable land-use / environmental management	13, 15  	<ul style="list-style-type: none"> Geomonitoring of various activity in the areas surrounding OR operations such as H₂S emissions, restoration of disturbed areas and earthquake activity. GPS monitoring of areas affected by operations
Clean transportation	11, 13  	<ul style="list-style-type: none"> Installation of charging stations for EV's on national highways and in populated areas.
Sustainable water and wastewater management	6, 14  	<ul style="list-style-type: none"> Development and operation of systems to deliver potable water and to handle wastewater Water conservation to ensure future quality of wholesome and untreated water.
Circular economy activities that lead to lower lifecycle energy and GHG usage	9, 12, 13   	<ul style="list-style-type: none"> Industrial Symbiosis: To develop opportunities for industrial symbiosis by utilizing waste streams from geothermal production, such as geothermal gases and warm geothermal effluent, to create value from waste
Products and technologies that support smart grid applications	9 	<ul style="list-style-type: none"> Installation and maintenance of infrastructure to deliver information for smart grid applications

Proceeds will not be allocated to projects focused on energy generation using fossil fuels or other greenhouse gas intense activities, nuclear energy generation, environmentally negative resource extraction (such as rare-earth elements or fossil fuels), weapons and defence, gambling, or tobacco.

⁵ New financing is defined as when proceeds allocated to Eligible Projects initiated up to 12 months prior to the issuance of a bond under this Framework.

⁶ Refinancing of existing projects is defined as financing of Eligible Projects dating back further than 12 months from the issuance of a bond under this Framework.

Selection of Eligible Projects

Eligible projects are proposed by OR subsidiaries. The selection is then confirmed or rejected by a Selection Committee within OR. The selection must align with OR's environmental priorities, outlined in its Climate Policy, have quantifiable environmental benefits and align with this framework.

The selection of projects to be funded from proceeds of bond issuances under this Framework is carried out in the following steps.

1. Each of OR's subsidiaries selects possible projects to be funded under this Framework.
2. A Selection Committee, operating within OR, decides if the selected projects chosen by its subsidiaries align with this Green Bond Framework.
 - a. The Selection Committee consists of representatives from OR and each of OR's subsidiaries.
 - b. The Selection Committee consists of at least one sustainability expert who has veto power.

3. The Selection Committee uses estimates of environmental benefits, conducted by internal and/or external sustainability experts in order to quantify environmental benefits. The selection furthermore needs to align with this Framework. The information resulting from this 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.⁷
 - b. Rebound effects.⁸
4. The committee confirms or rejects the Green Bond funding of projects proposed by OR's subsidiaries, which truly are aligned with this Framework.

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



⁷ The comprehensiveness of the impact assessment may vary between projects. Relevant standards and methods will be used, where notice is taken of the project being undertaken.

⁸ A rebound effect is observed when technological change modifies a user's behavior. This effect can reduce the observed environmental benefits from increased energy efficiency, as more energy may be used.

Transparency and Reporting

OR publishes its Annual Green Bond Impact Reports at the same time as its Annual Report. The Annual Impact Report will be published on OR's website and other relevant investor platforms. The Annual Impact Report demonstrates the following:

- The aggregated funding of projects under this Framework.
- Funds allocated to project categories and main individual projects.
- Remaining funds from proceeds.
- Environmental impact of each project (or project category) funded, measured in a metric relevant to the project (or project category).
- Refinancing ratio.

Information containing the allocation of funds to eligible projects will be disclosed annually. Information regarding environmental impacts is evaluated by sustainability experts and reported as projects finish and throughout the lifetime of bond issuances under this Framework. A methodology summary demonstrating how environmental impact is estimated will be provided in the Annual Impact Report.

In order to provide relevant information for investors in the Annual Impact Report, the Position Paper on Green Bonds Impact Reporting published by the Nordic Public Sector Issuers (NPSI) will be used as a guide⁹ to select relevant indicators for each project category.

Wherever possible, the quantifiable impacts from projects funded from bond issuances under this Framework are also provided per invested monetary unit.

External Reviews

The following demonstrates the review process which OR undergoes in relation to bond issuances under this Framework.

- A second opinion on this Framework is provided by external experts to ensure its alignment with ICMA's Green Bond Principles.
- An external auditor confirms that proceeds are used for funded projects, at least until full allocation.
- An external sustainability expert will assess the reported environmental factors and the Selection of Eligible Projects against the project Eligibility Criteria.

The information listed above will be made available on OR's website and other relevant investor forums.

⁹ The guide will be adapted to fit the Icelandic scenario, especially with regards to baseline emissions.





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