°CICERO Shades of Green

HS Veitur
Green Finance Second Opinion

14 September 2022

Executive Summary

HS Veitur is an Icelandic electricity and hot- and cold-water utility service provider. It operates exclusively in Iceland, where it distributes electricity, hot water from combined geothermal heat and power plants and boreholes, and cold water.

Around 90% of proceeds are expected to be allocated to energy distribution (electricity and heat). These investments contribute to **a** well-functioning and reliable power grid and the provision of low-emission heat, which are important in a low carbon future. The remaining project categories relate to HS Veitur's potable water services and its smaller company vehicles. HS Veitur expects new financing to account for around 70% of uses of proceeds.

HS Veitur intends to take a 'balance sheet approach', where it considers that all its investments and activities satisfy the eligibility criteria, unless they fall under the framework's exclusions. This is on account of Iceland's almost-exclusively renewable grid, and because, in 2021, all its income was from energy distribution services or potable water distribution satisfying the framework criteria. HS Veitur excludes vehicles which are currently difficult to electrify - such as trucks and SUVs needed for operations - and the purchase of emergency backup generators and fossil fuel to power these.

SHADES OF GREEN

°CICERO Dark Green

GOVERNANCE ASSESSMENT

GREEN BOND AND LOAN PRINCIPLES

Based on this review, this framework is found to be aligned with the principles.

We rate the framework **CICERO Dark Green** and give it a governance score of **Good.** This reflects that most proceeds will be allocated to distributing almost-exclusively renewably produced energy and HS Veitur's consideration of relevant issues such as physical risk and biodiversity impacts.

Strengths

The energy distributed by HS Veitur is almost-exclusively renewable. In Iceland, over 99% of electricity is from renewable sources (hydropower and geothermal), while HS Veitur's heat derives exclusively from geothermal sources. Icelandic hydropower and geothermal production have been found to have life-cycle emissions well-below the framework's 100 gCO_2e/kWh threshold, and according to Iceland's Environmental Agency, the weighted average of emissions of Iceland's grid in 2021 was 9.8 $gCO_2e/kWh(e)$.

Pitfalls

The balance sheet approach to management of proceeds and allocation reporting can provide less certainty for investors. Under the balance sheet approach, HS Veitur will indicate that the value of eligible assets exceeds the value of outstanding green finance instruments. Allocation reporting will, moreover, be at the project category

level. As such, HS Veitur will not indicate precisely what assets have been financed. Openness and transparency on its operations will therefore be key.

The criteria for the sustainable water management project category are somewhat vague. HS Veitur bases the sustainability of its potable water supply on its close monitoring of reservoir and leakage levels. It also states that energy consumption is kept to a minimum, including through no fossil fuel use, while Iceland's renewable energy mix reduces emissions associated with this, and Iceland's water supply requires comparatively little treatment. Nonetheless, the criteria contain no quantitative element. This pitfall must also be considered in light of HS Veitur's 'balance sheet approach', where all projects are assumed to satisfy the eligibility criteria (unless captured by the exclusion criteria, which are not relevant for the sustainable water management project category) – in this context, detailed and specific criteria would be beneficial.

Several project categories may entail associated emissions, for example from the construction process or supporting infrastructure. While HS Veitur includes certain environmental issues in its procurement process, it is important it continues to increase its focus on impacts in its supply chain, particularly emissions associated with materials for power cables, water pipes, and installation.

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1 HS Veitur's environmental management and green financing framework

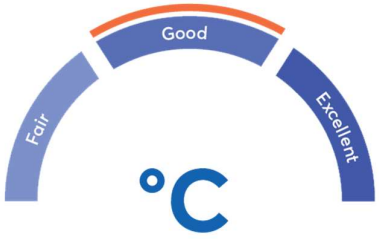
Company description

HS Veitur is an Icelandic electricity and hot- and cold-water utility service provider. It operates exclusively in Iceland, where it distributes electricity, hot water from combined geothermal heat and power plants and boreholes, and cold water.

Governance assessments

HS Veitur's sustainability reporting is in its early stages. Though it reports on Scope 1 and 2 emissions - and can point to certain targeted measures in respect of these - quantified and timebound emissions targets would be welcome. HS Veitur also shows consideration of material issues such as physical risk - for example identifying sea level rises as its most material physical risk and folding this into operational and project decision making - and biodiversity impacts.

HS Veitur intends to take 'a balance sheet approach', where it considers that all its investments and activities satisfy the eligibility criteria, unless they fall under the framework's exclusions. Under the balance sheet approach, HS Veitur will indicate that the value of eligible assets exceeds the value of outstanding green finance instruments, rather than indicate precisely what assets have been financed. Allocation reporting will, moreover, be at the project category level. This can provide investors with less transparency. Per the balance sheet approach, at the selection stage, projects will primarily be screened against the framework's *exclusion* criteria, though consideration may also be given the to the EU Taxonomy's Do No Significant Harm criteria and other environmental standards.



The overall assessment of HS Veitur's governance structure and processes gives it a rating of **Good.**

Sector risk exposure

Physical climate risks. Iceland is at risk from variety of hazards due to its particular location. These hazards include extreme snowstorms and cold, storm surges, earthquakes, increased volcanic activity and glacial outburst floods, snow avalanches and more frequent landslides, mostly where there is permafrost in the mountains, floods, hazards from geothermal activity and drift ice (Source: National-risk-assessment-for-iceland.pdf (almannavarnir.is)). These physical climate risks are expected to damage electric grid cables and other equipment thus creating a risk for more frequent power outages, among other risks (Source: 141667114.pdf (core.ac.uk))

Transition risks. Iceland aims to achieve carbon neutrality before 2040 and to cut greenhouse gas emissions by 40% by 2030 under the Paris Agreement (Source: Government of Iceland | Climate Change). While Iceland currently has close to 100 % of its electricity coming from renewable energy, and 90 % of residential heating comes from geothermal sources, the transition to a low carbon future, including the electrification of the transport sector, will require more electricity. Facilitating the distribution of renewable energy is key to a low carbon transition and HS Veitur can significantly contribute to this transition.

Environmental risks. The installation and operation of distribution lines and other related equipment may carry risks that could negatively impact communities and the environment. For example, such distribution lines may have direct impacts on the biodiversity (e.g., soil erosion and water pollution from construction, deforestation, wildlife mortality) and lead to land use change. Also, if electricity lines and equipment are not handled in accordance with the waste hierarchy at the end of life, pollution and soil contamination risks may also occur (Source: Entergy Pre-Filed Hearing Exhibit ENT000514, Environmental Impacts of Transmission Lines. (nrc.gov))

Environmental strategies and policies

HS Veitur has measured its Scope 1 and 2 emissions since 2018. In 2021, these amounted to 142 tCO_2 from its vehicle fleet and 203 tCO_2 from heat production, and these emissions are offset. It aims to minimise its emissions as far as possible, though it has no quantitative or timebound targets in this respect. For example, HS Veitur has switched to a lower intensity oil in its backup generators and has almost entirely electrified the company's light-duty vehicle fleet.[1] Scope 3 emissions are not reported.

HS Veitur also reports on the amounts of energy distributed and its source. HS Veitur points to several developments in this respect in the past years. For example, it has installed a heat pump station in the Westman Islands to supply hot water – HS Veitur states this technology is three times more energy efficient than the electric boiler operating as backup and during peak load. Additionally, HS Veitur has replaced all meters with smart meters for water, heat, and electricity in the distribution system.

HS Veitur has in place sustainability and environmental policies, which contain its high-level commitments such as its aim to minimize the negative effects of its operations on biodiversity and to reduce waste generation for landfills and recycle its materials when possible. In respect of biodiversity, HS Veitur informed us that it restores any disturbed land to at least its former state and that it avoids disposal of hot water into the ocean.

In respect of its supply chain, HS Veitur requires its suppliers to comply with its sustainability and environmental policies, which are incorporated into its contracts. Environmental criteria, which extend beyond emissions, also

[1] Heavy-duty combustion vehicles remain, though according to HS Veitur it aims to replace such vehicles with electric ones once the technology is available.

account for 20% of available points during procurement. HS Veitur does not conduct lifecycle assessments on projects.

On physical climate risks, HS Veitur identifies sea level rises and floods as the most serious climate related risk to its business. All distribution lines and water pipes are underground, and it also incorporates considerations for sea level rise, for example when providing energy distribution services at ports or during the installation of substations. HS Veitur does not report in accordance with the TCFD recommendations and climate scenarios are not utilized.

HS Veitur does not produce a sustainability report, though certain aspects of its sustainability approach are included in its annual report (e.g. emissions reporting).

Green financing framework

Based on this review, this framework is found to be aligned with the Green Bond Principles and the Green Loan Principles. For details on the issuer's framework, please refer to the green financing framework dated September 2022.

Use of proceeds

For a description of the framework's use of proceeds criteria, and an assessment of the categories' environmental impacts and risks, please refer to section 2.

Selection

Evaluation and selection of eligible green assets will be overseen by HS Veitur's environmental and finance departments.

Per the 'balance sheet approach' described in the framework, HS Veitur considers that all its investments and activities satisfy the eligibility criteria, unless they fall under the framework's exclusions. This is on account of Iceland's almost-exclusively renewable grid, and because, in 2021, all its income was from energy distribution services or potable water distribution satisfying the framework criteria. In the selection process, potential investment and activities are therefore screened against the framework's exclusion criteria, while HS Veitur will also consider the EU Taxonomy's Do No Significant Harm criteria, international and local environmental and social standards, and local laws and regulations to the greatest extent possible. All eligible green assets are also subject to HS Veitur's environmental impact assessment processes.

Management of proceeds

HS Veitur will maintain a registry of green assets on the balance sheet. HS Veitur's executive management committee will be responsible for reviewing this registry and validating and categorizing the assets listed in it.

Using the 'balance sheet approach', HS Veitur aims for the value of eligible assets to exceed the value of outstanding green finance instruments. Any unallocated proceeds may temporarily be placed in cash, cash equivalents, or other liquid marketable instruments (and cannot be investment in fossil fuel related assets).

HS Veitur intends to fully allocate the proceeds from any financing within 36 months of the date of funding.

Reporting

HS Veitur will publish an annual allocation and impact report as a part of its annual report until net proceeds are fully allocated. The allocation of financing to eligible assets will be categorized by project categories.

In the allocation report, the issuer will report on the following elements:

- Summary of financing activities
- Types of financing instruments
- Outstanding amounts
- Balance of unallocated proceeds
- New vs. refinancing ratio
- Project category allocation
- An example list of projects financed

Impacts will be reported on an aggregated level on a portfolio basis. At least one metric per project category will be used, and suggested indicators are listed in the framework. It will disclose the methodologies used to calculate impacts and intends to have the allocation and the impact reporting externally reviewed.

2 Assessment of HS Veitur's green financing framework

The eligible projects under HS Veitur's green financing framework are shaded based on their environmental benefits and risks, based on the "Shades of Green" methodology.

Shading of eligible projects under HS Veitur's green financing framework

- Proceeds can be used for financing and refinancing. HS Veitur expects new financing to account for around 70% of uses of proceeds. The look back period is maximum one year (i.e. activities and/or projects initiated in the previous calendar year or earlier).
- HS Veitur expects uses of proceeds to mirror its cost structure, i.e. 90% on energy distribution (electricity and heat) and 10% on sustainable water management.
- HS Veitur excludes vehicles which are currently difficult to electrify, such as trucks and SUVs needed for operations and the purchase of emergency backup generators and fossil fuel to power these. Furthermore, net proceeds will not be placed in assets, projects, or in entities related to fossil energy generation or use, nuclear energy generation, research and/or development within weapons and defence, environmentally negative resource extraction (such as rare-earth elements or fossil fuels), gambling, or tobacco.

Category	Eligible project types	Green Shading and considerations
Clean Transportation	• EU Taxonomy category 6.5, criteria (b): for vehicles of category L, the tailpipe CO_2 emissions equal to 0g CO_2e/km calculated in accordance with the emission test laid down in Regulation (EU) 168/2013.	**Dark Green** ✓ This project category relates to HS Veitur's own fleet, including service and personal vehicles. HS Veitur will only purchase fully electric or hydrogen vehicles, while vehicles which are difficult to electrify, such as trucks and SUVs, are excluded under the framework. ✓ Zero tailpipe emission vehicles play an important part in decarbonising the transportation sector and reducing air pollution in a 2050 future. Note the use of natural gas in the production of hydrogen and the emissions associated with this. ✓ Embedded emissions are a crucial consideration, even for zero tailpipe emission vehicles. HS Veitur should consider such emissions, for example manufacturers' use of recycled or recyclable materials or low emission raw materials.

Energy distribution infrastructure and management	Electricity distribution: • EU Taxonomy category 4.9, criteria 1 (c): the average system grid emissions factor, calculated as the total annual emissions from power generation connected to the system, divided by the total annual net electricity production in that system, is below the threshold value of 100 gCO2e/kWh measured on a life cycle basis in accordance with electricity generation criteria, over a rolling five-year period. Thermal energy (district heating) distribution • EU Taxonomy category 4.15, criteria (a) and (b): the construction and maintenance of 'efficient district heating and cooling' means a district heating or cooling system using at least 50% renewable energy, 50 % waste heat, 75% cogenerated heat or 50% of a combination of such energy and heat Smart metering applications • EU Taxonomy category 4.9, criteria 2 (f): the installation of equipment such as, but not limited to future smart metering systems or those replacing smart metering systems in line with Article 19(6) of Directive (EU) 2019/944 of the European Parliament and of the	**Dark Green** ✓ A well-functioning and reliable power grid is a pre-requisite for electrification and the development of projects which contribute to the transition, while the use of renewable sources contributes to the decarbonisation of the heat sector. ✓ The Dark Green shading reflects that, according to Iceland's Environmental Agency, the weighted average of emissions of Iceland's grid in 2021 was 9.8 $gCO_2e/kWh(e)$.[2] Over 99% of Iceland's electricity is from renewable sources (hydropower and geothermal) and Icelandic hydropower and geothermal production have been found to have life-cycle emissions well-below the 100 gCO_2e/kWh threshold.[3,4] Moreover, HS Veitur's heat derives from combined geothermal heat and power plants and geothermal boreholes, with only marginal fossil fuel use for back up and during peak load. ✓ Lifecycle emissions in the installation and maintenance of grid infrastructure and district heating networks can be sizeable and should be mitigated, for example in the construction process which typically involves fossil fuel machinery and vehicles. ✓ All lines and pipes are underground – this mitigates certain risks associated with extreme weather, though issues such as increased flooding need to be considered. Electricity grids can impact local biodiversity – while HS Veitur restores disturbed land, it is crucial that impacts are considered in project planning and operation. ✓ Beyond general supply, HS Veitur does not provide any direct transmission to heavy emitting clients.

[2] https://ust.is/library/Skrar/loft/NIR/Losunarstudlar_UST.v4.0.1.pdf?fbclid=IwAR0MnnN75Fb3qAGtueaAWJ8FJiOsZQPTq9cshdHox9LTI-5tjWvcdGnW0Y8
[3] https://rafhladan.is/bitstream/handle/10802/18216/2018-064.pdf?sequence=1
[4] https://documents1.worldbank.org/curated/en/550871468184785413/pdf/106570-ESM-P130625-PUBLIC.pdf

	Council180, which meet the requirements of Article 20 of Directive (EU) 2019/944, able to carry information to users for remotely acting on consumption, including customer data hubs.	
Sustainable water management  	• All expenses supporting the development and operation of systems to deliver potable water, along with water conservation.	**Light to Medium Green** ✓ The Light to Medium Green shading reflects a certain vagueness in the eligibility criteria, including a lack of quantitative eligibility criteria for investments under this project category (including for embedded emissions). ✓ HS Veitur bases the sustainability of its potable water supply on its close monitoring of reservoir and leakage levels. It also states that energy consumption is kept to a minimum, including through no fossil fuel use, while Iceland's renewable energy mix reduces emissions associated with this. Iceland's water supply requires comparatively little treatment and it has generally abundant freshwater sources, supporting its sustainability.

Table 1. Eligible project categories

3 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated **September 2022.** This second opinion remains relevant to all green bonds and/or loans issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green 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.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

'Shades of Green' methodology

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

Shading	Examples
Dark Green is allocated to projects and solutions that correspond to the long-term vision of a low-carbon and climate resilient future.	Solar power plants
Medium Green is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	Energy efficient buildings
Light Green is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	Hybrid road vehicles

The "Shades of Green" methodology considers the strengths, weaknesses and pitfalls of the project categories and their criteria. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised, including potential macro-level impacts of investment projects.

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green bond/loan are carefully considered and reflected in the overall shading. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green financing framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

Assessment of alignment with Green Bond and Green Loan Principles

CICERO Green assesses alignment with the International Capital Markets' Association's (ICMA) Green Bond Principles, as well as with the Green Loan Principles. We review whether the framework is in line with the four core components of the GBP and the GLP (use of proceeds, selection, management of proceeds and reporting). We assess whether project categories have clear environmental benefits with defined eligibility criteria. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed. The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the selection process. CICERO Green assesses whether net proceeds or an equivalent amount are tracked by the issuer in an appropriate manner and provides transparency on the intended types of temporary placement for unallocated proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs.

Appendix 1:
Referenced Documents List

Document Number	Document Name	Description
1	HS Veitur's Green Financing Framework	Dated September 2022
2	Ársskýrsla 2021	HS Veitur annual report 2021 (only in Icelandic). hs-veitur-netu-tga-fa-2021.pdf (hsveitur.is)
3	HS Veitur Sustainability Policy	
4	HS Veitur Environmental Policy	

Appendix 2:
About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is 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. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent 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, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.