



Vattenfall Green Bond Second Opinion

29 May 2019

Vattenfall is one of Europe's major retailers and producers of electricity and heat. Main markets are Sweden, Germany, The Netherlands, Denmark, the UK, France, Finland, and Norway. The Parent Company, Vattenfall AB, is 100% owned by the Swedish state, and its headquarters are located in Solna, Sweden.

Vattenfall's green bond framework (GBF) dated 24 April provides a progressive, clear and sound framework for investments into projects that well align with the 2018 Green Bond Principles. Sustainability in general and climate mitigation in particular is well integrated in the company's business model. The green bond framework lists eligible projects within the categories of **renewable energy, energy efficiency, electrification of transport and heating, and industry projects** which promote the transition to low carbon, climate resilient growth and a sustainable development. Proceeds will not be used to finance investments in fossil fuels or nuclear power, nor for fossil fuel based district heating.

The definition and selection of eligible projects under the Green Bond Framework is very good, the management of the proceeds follows best practice and the intended reporting is outstanding. We further note that Vattenfall carries out climate scenario analysis and risk assessments in alignment with the methodology recommended by TCFD. The overall assessment of the governance structure to support the implementation of the Green Bond Framework gives it a rating of **Excellent**.

Based on the project category shadings and consideration of environmental ambitions and governance structure reflected in Vattenfall's green bond framework, we rate the framework **CICERO Dark Green**.



Second Opinions
Dark Green

SHADES OF GREEN

Based on our review, we rate the Vattenfall's green bond framework **Dark Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in Vattenfall's framework to be **Excellent**.



GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the 2018 Green Bond Principles.

Contents

1	Terms and methodology	3
	Expressing concerns with 'shades of green'	3
2	Brief description of Vattenfall's green bond framework and related policies	4
	Environmental Strategies and Policies:	4
	Use of proceeds:	5
	Selection:	5
	Management of proceeds	6
	Reporting	6
3	Assessment of Vattenfall's green bond investments and policies	8
	Overall shading	8
	Eligible projects under the Vattenfall's green bond framework	8
	Governance Assessment	9
	Strength	10
	<i>Governance</i>	10
	<i>Project Categories</i>	10
	Weaknesses	10
	Pitfalls	11
	<i>Governance</i>	11
	<i>Project Categories</i>	11
	<i>Impacts beyond the project boundary</i>	11
	<i>Rebound effects</i>	11

1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of Vattenfall's green bond framework dated 24 April 2019. This second opinion remains relevant to all green bonds issued by Vattenfall 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 Vattenfall's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence with Vattenfall.

Expressing concerns with 'shades of green'

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 of the bonds. 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:

CICERO Shades of Green	Examples
<p>Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.</p>	<p>Wind energy projects with a strong governance structure that integrates environmental concerns</p>
<p>Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.</p>	<p>Bridging technologies such as plug-in hybrid buses</p>
<p>Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.</p>	<p>Efficiency investments for fossil fuel technologies where clean alternatives are not available</p>
<p>Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.</p>	<p>New infrastructure for coal</p>

Sound governance and transparency processes facilitate delivery of Vattenfall's climate and environmental ambitions laid out in the framework. Hence, the governance aspects are carefully considered and reflected in the overall shading of the green bond framework. CICERO Green considers four factors in its review of Vattenfall's governance processes: 1) the policies and goals of relevance to the green bond 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.

2 Brief description of Vattenfall's green bond framework and related policies

Vattenfall is one of Europe's major retailers and producers of electricity and heat. Vattenfall's main markets are Sweden, Germany, The Netherlands, Denmark, Finland, the UK, France and Norway and this is also the scope of the Green Bond framework. The Group has approximately 20,000 employees and total CO₂ emissions of about 22 million tonnes in 2018, down from approximately 80 million tonnes a few years ago, a reduction of more than 70%. The share of fossil-free electricity generation (including nuclear) was 75% the same year. The Parent Company, Vattenfall AB, is 100% owned by the Swedish state with headquarter in Solna, Sweden.

Environmental Strategies and Policies:

Vattenfall wants to drive the transition towards a fossil free society within one generation; help all customers power their lives in ever climate smarter ways and live free from fossil fuel within one generation; be a dedicated partner to customers and society at large, providing convenient and innovative energy solutions; and be a leader in sustainable production, ensuring reliable and cost-efficient energy supply. This is supported by ambitious quantitative targets for CO₂ emissions (to be lower than 21 million tonnes in 2020), renewable energy and energy efficiency in the short run (2020) and a overarching strategy for the years ahead based on four strategic objectives:

- Leading towards Sustainable Consumption
- Leading towards Sustainable Production
- High Performing Operations
- Empowered and Engaged People

Leading towards sustainable consumption means that Vattenfall focuses on increasing customer centricity, building a sizeable position in decentralised energy and promoting electrification and a climate smart society.

Leading towards sustainable production means a focus on growing in renewables and implementing a CO₂ roadmap to make fossil free living possible within one generation while protecting nature and environmental values like biodiversity.

Vattenfall is a signatory of UN Global Compact (since 2008) and report sustainability performance according to the Global Reporting Initiative's standards.

Vattenfall's activities contribute to the achievement of the UN's Sustainable Development Goals (SDGs). Six SDGs that are the most relevant for Vattenfall have been identified. These goals are: 7 – Affordable and clean energy, 9 – Industry, innovation and infrastructure, 11 – Sustainable cities and communities, 12 – Sustainable consumption and production, 13 – Climate action, and 17 – Partnership for the goals. Vattenfall also contributes to many other SDGs, including those in support of human rights, both at a local level and indirectly through their supply chain.



Use of proceeds:

Vattenfall intends to allocate an amount at least equal to the incremental net proceeds of Vattenfall Green Bonds to a portfolio of Eligible Green Projects in the following eligible categories:

a) Renewable energy and related infrastructure

- Wind energy
- Solar energy
- Biomass
- Geothermal
- Hydrogen

b) Energy efficiency

- Hydro power
- Smart grids/meters
- Fossil free district heating and district cooling
- Energy recovery

c) Electrification of transport and electrification of heating

- Infrastructure for electric vehicles
- Power to Heat

d) Industry projects

- Activities enabling the transformation to fossil free¹ production like the HYBRIT² project

Vattenfall informed us that they expect most, if not all, green bond proceeds to go to new, ongoing or planned growth investments. Vattenfall will not finance nuclear or fossil fuel based production projects with the proceeds of the Green Bonds.

Selection:

The selection process is a key governance factor in the Green bond Principles. CICERO Green considers how climate and environmental considerations are taken into account when evaluating whether projects can qualify for green bond funding. Vattenfall's green bond framework outlines a detailed and transparent selection procedure that is in line with the Green Bonds Principles. Vattenfall actively screen for controversial projects, e.g. projects with high local resistance.

Projects financed and/or refinanced through the Green Bond proceeds are evaluated and selected² by Vattenfall's Green Bond Committee that is formed by representatives from units responsible for Treasury, Sustainability,

¹ Fossil free: not depending on fossil fuels for its own operations (e.g. for Vattenfall no fossil fuels for energy generation and no fossil products to customers)

² See <http://www.hybritdevelopment.com/>

Strategy, Investor Relations as well as other parties to be nominated as subject matter experts, like Environment, Business Development, Research & Development, Communications etc.

Minutes are taken at the Green Bond Committee meetings. Final approvals of projects are taken in consensus by the Green Bond Committee.

Vattenfall applies as a minimum environmental and social (ESG) requirements and all applicable EU as well as national environmental and social regulation for all its activities. Assessing and managing physical risks is key to Vattenfall's operations – both in terms of production and in terms of safety. Within Vattenfall's nuclear plants, stress tests are regularly performed in order to assess and manage climate change risks such as storms and floods. Also, Vattenfall's hydro power plants are made resilient to floods as a result of climate change. Further, Vattenfall has performed a group-wide assessment of climate risks as a basis for further climate adaptation measures. Thus, Vattenfall screens projects for resilience under climate change and stress test projects against various future scenarios going forward to 2050. Finally, Vattenfall extend their sustainability policies to the supply chain as well. Vattenfall policies can be found on vattenfall.com³.

Management of proceeds

The proposed management approach for Green Bond proceeds are in alignment with the Green Bond Principles (2018). They are transparent and clearly separate green bond proceeds. An amount equal to the net proceeds of the issue of the Green Bonds will be credited to a separate account that will support Vattenfall's funding of Eligible Green Projects. Vattenfall intends to allocate the proceeds from the Green Bonds to the financing of an Eligible Green Project Portfolio, selected in accordance with the use of proceeds criteria and evaluation and selection process presented above. These projects can be new built projects, existing projects and refurbishments. Vattenfall intends to designate enough eligible projects in the Eligible Green Project Portfolio to provide that the total balance of green investments and expenditures always exceeds the total balance of all outstanding Green Bonds.

For each new Green Bond issuance, where necessary, additional Eligible Green Projects will be added to this Eligible Green Project Portfolio to ensure sufficient and timely allocation of the incremental net proceeds. During the life of the Green Bonds, if a project ceases to fulfil the eligibility criteria, Vattenfall will on a best effort basis remove the project from the Eligible Green Project Portfolio and replace it when necessary for the balance as soon as reasonably practicable.

Until disbursement to Eligible Green Projects, the balance on the separate account will be placed in the liquidity reserves and managed accordingly under the corporate policy on sustainability. Management of the liquidity reserve excludes investments in financial products directly connected to fossil or nuclear materials.

Vattenfall ensures that the systems and processes as specified above meet their requirements over the lifetime of all Green Bonds.

Reporting

The Green Bond Principles require green bond issuers to provide information on the allocation of proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green bond programs. Procedures for reporting and disclosure of green bond investments are also vital to build

³ <https://corporate.vattenfall.com/>



confidence that green bonds are contributing towards a sustainable and climate-friendly future, both among investors and in society.

Vattenfall is reporting climate-related information to the CDP (Carbon Disclosure Project) that is the largest data hub for corporate climate information globally. CDP is already integrating the TCFD recommendations into its climate-change questionnaire and Vattenfall is actively supporting this.

The reporting from Vattenfall's Green Bonds will include a list of the projects to which Green Bond proceeds have been allocated, a brief description of the projects and the amounts allocated and their expected impact.

Vattenfall will align, on a best effort basis, the reporting to the Nordic Public Sector Issuers' Position Paper on Green Bonds Impact Reporting⁴. Vattenfall will strive for maximum transparency but also make relevant benchmarks/comparisons possible. Hence, it will at least report using the European grid factor to support overall reporting harmonization but may in addition also report using other grid factors. The reporting basis for all Vattenfall Green Bonds and other potential green funding is the Eligible Green Project Portfolio and will be aggregated for all Vattenfall Green Bonds and other potential green funding outstanding. Although aggregated, full transparency and connectivity between realized projects and the financing is intended.

Vattenfall intends to report substantial changes yearly of the allocation to the Eligible Green Project Portfolio at least at the category level. To the extent practicable, Vattenfall will provide:

- A list of all projects included in the Eligible Green Project Portfolio and their expected impact
- The amounts per category invested in the Eligible Green Projects
- A qualitative description of key projects
- The proportion of new projects, existing projects, divested assets (earlier funded by Green Bonds), and refurbishments
- The balance of unallocated cash and/or cash equivalents.

Where feasible, Vattenfall may report on the impacts of the Eligible Green Project Portfolio funded with the Green Bond proceeds or refer to existing sustainability reporting. A set of sensible indicators related to the UN Sustainable Development Goals is suggested in the green bond framework. The investor report will be made publicly available on Vattenfall's website.

Vattenfall intends to include, in its yearly Annual and Sustainability Report, a verification by its external auditor of a management statement on the allocation of the Green Bond proceeds to the Eligible Green Project Portfolio.

⁴ See <https://corporate.vattenfall.com/investors/>

3 Assessment of Vattenfall’s green bond investments and policies

The framework and procedures for Vattenfall’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 projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where Vattenfall should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in Vattenfall’s green bond framework, we rate the framework **CICERO Dark Green**.

Eligible projects under the Vattenfall’s 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 investors with certainty 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”. Overall, we find the eligible projects under Vattenfall’s Green Bond Framework to be well aligned with a low carbon and climate resilience future, see table below.

Category	Eligible project types	Green Shading and some concerns
Renewable energy and related infrastructure 	<ul style="list-style-type: none"> • Wind energy • Solar energy • Biomass • Geothermal • Hydrogen 	Dark Green <ul style="list-style-type: none"> ✓ For use of biomass such as wood, bark and pine oil, Vattenfall often use locally sourced fuels like wood chips, forest residues and sawmill by-products, landscape conservation material and compost residues. Beware of potential issues with other types of biomass. ✓ Large scale geothermal projects could pose pollution risks. Consider climate resilience. ✓ Biodiversity impacts are assessed early in the planning stages of new projects.



		<ul style="list-style-type: none"> ✓ Hydrogen production will use renewable electricity for electrolysis
<p>Energy efficiency</p> 	<ul style="list-style-type: none"> • Hydro power • Smart grids/meters • District heating and cooling • Energy recovery 	<p>Medium to Dark Green</p> <ul style="list-style-type: none"> ✓ Hydro power plants are all in Northern Europe. Landscape impacts could be an issue for upgrades of large hydro power projects ✓ The overall strategy for district heating is Third Party Integration, (re)using excess heat from partners. There may be fossil fractions involved in this ✓ Vattenfall has a long experience of LCA (Life Cycle Analysis) and is committed to working in accordance with the EU Waste Hierarchy. Waste can include household waste and does to a limited extent include plastics
<p>Electrification of transport and electrification of heating</p> 	<ul style="list-style-type: none"> • Infrastructure for electric vehicles • Power to heat - Converting electricity to heat using electric boilers combined with hot water storage 	<p>Dark Green</p> <ul style="list-style-type: none"> ✓ Electrification is good, but be aware of the grid factor used in assessing impacts
<p>Industry projects</p> 	<ul style="list-style-type: none"> • Activities enabling the transformation to fossil free production like the HYBRIT² project 	<p>Dark Green</p> <ul style="list-style-type: none"> ✓ HYBRIT is a joint venture project that endeavors to revolutionize steel-making by replacing coking coal, traditionally needed for ore-based steel making, with hydrogen produced by electrolysis.

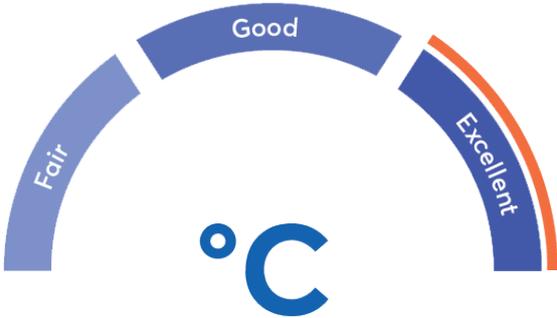
Table 1. Eligible project categories

Governance Assessment

A part of our assessment is to understand how the issuer’s core activities are aligned to a low carbon and climate resilient future to better understand the context in which the framework operates within the organization of the issuer. Four aspects are studied when assessing the Vattenfall’s governance procedures: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) 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.

Vattenfall has clear and ambitious targets related to impacts on climate change and a solid selection process for identifying eligible projects under the framework. Further, Vattenfall has performed a group-wide assessment of climate risks as a basis for further climate adaptation measures. In this assessment, acute physical risks are included. We find that the management of proceeds is in accordance with the Green Bond Principles and the intended reporting is excellent. The overall assessment of the governance structure of Vattenfall gives it a rating of **Excellent**.



Strength

Governance

Through its strategic framework and other policies, Vattenfall is deeply committed to contribute to a green transition towards a low carbon society in the longer run. In addition to subscribing to UN Compact and other sustainability guidelines, Vattenfall has clear and ambitious targets when it comes to reducing energy consumption and CO₂ emissions. It has a roadmap in place to reduce its CO₂ emissions by 75% by 2030 and be fossil free within one generation. In the shorter term, Vattenfall has set a target to achieve a cumulative total of more than 1,000 GWh in annual energy efficiency improvements for the period 2016–2020. To date, approximately 700 GWh have been realized.

The reporting and validation procedures are well described in the Green Bond framework. The Green Bond framework supports regular and transparent updates to investors and the public. It is a strength that the issuer will report on (estimated) impacts and list all projects. Among the indicators suggested is CO₂ emissions avoided. Here, the use of ‘right’ grid factor may be a challenge. Nevertheless, the intended impact reporting is clearly a strength of the framework, as is Vattenfall’s focus on life cycle considerations (LCA), reporting to CDP and support for the TCFD recommendations. Emissions based on LCA should also be reported to investors.

Project Categories

The eligible project categories are all very good and includes important and innovative industry projects. For use of biomass such as wood, bark and pine oil, Vattenfall often use locally sourced fuels like wood chips, forest residues and sawmill by-products, landscape conservation material and compost residues. Vattenfall is a member of Sustainable Biomass Partnership. Furthermore, biodiversity considerations are included early in project planning and Vattenfall supports biodiversity research and strives for the closing of knowledge gaps.

In summary, the Green Bond Principles are clearly fulfilled when it comes to the types of projects to be financed through the Green Bond, the selection process, the management of the proceeds and the reporting.

Weaknesses

We find no substantial weaknesses in Vattenfall’s Green Bond Framework.



Pitfalls

Governance

Vattenfall will align, on a best effort basis, the impact reporting to the Nordic Public Sector Issuers' Position Paper on Green Bonds Impact Reporting. Vattenfall and investors should be aware of the recommended use of a mean European grid factor in estimations of CO₂ emission reductions. Depending on locality, this can give a misleading estimate compared to 'real' emission reductions.

Project Categories

Vattenfall is aware of the pitfalls associated with the eligible project categories, in particular the renewable energy categories (biomass, geothermal, wind and hydro).

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. Vattenfall should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high, e.g. energy efficiency projects.



Appendix 1: Referenced Documents List

Document Number	Document Name	Source/Description
1	Vattenfall – Green Bond Framework	Dated 24 April 2019
2	Vattenfall – Core Values	https://corporate.vattenfall.com/globalassets/corporate/investors/capital_markets_day/180614_cmd_combine_d_for_webb_v9.pdf
3	Vattenfall – Sustainability Policy and management	https://corporate.vattenfall.com/sustainability/policies-and-management/sustainability-policy-and-management/
4	Vattenfall – Environmental Policy and management	https://group.vattenfall.com/who-we-are/sustainability/environmental-responsibility
5	Vattenfall – Annual and Sustainability Report	https://group.vattenfall.com/contentassets/da563d31cf814e8a901c3e6dd66c88b3/corporate/investors/annual_reports/2019/vattenfall_annual_and_sustainability_report_2018_eng.pdf
6	Vattenfall – Group Strategic Direction	https://group.vattenfall.com/who-we-are/about-us/our-goals-and-strategy
7	Vattenfall – Code of Conduct	https://group.vattenfall.com/siteassets/corporate/who-we-are/corporate-governance/doc/180819_code_of_conduct_en.pdf
8	Vattenfall – Code of Conduct for Suppliers	https://group.vattenfall.com/siteassets/corporate/who-we-are/about_us/suppliers/code_of_conduct_for_suppliers_en.pdf
9	Vattenfall – Supply chain policy and management	https://group.vattenfall.com/who-we-are/sustainability/social-responsibility/supply-chain-responsibility
10	Vattenfall – Environmental Product Declarations	https://group.vattenfall.com/who-we-are/sustainability/environmental-responsibility https://group.vattenfall.com/siteassets/corporate/who-we-are/sustainability/doc/life_cycle_assessment.pdf



11	Introduction to VPMM	Introduction to Vattenfall's Steering model for projects
12	Vattenfall – Environmental Governance – FI17	Describes the basic principles for Environmental Governance in Vattenfall which is an integrated part of the overall Vattenfall Management System.
13	Vattenfall - Environmental policy and management	https://group.vattenfall.com/who-we-are/sustainability/environmental-responsibility
14	Vattenfall - Share of electricity/heat generated under a certified system	For share of electricity/heat generated under a certified system, see page 162 in the Annual and Sustainability Report 2018. https://group.vattenfall.com/contentassets/da563d31cf814e8a901c3e6dd66c88b3/corporate/investors/annual_reports/2019/vattenfall_annual_and_sustainability_report_2018_eng.pdf
15	Vattenfall - List of environmental and energy management system certificates	List of environmental and energy management system certificated.
16	UN's Global Compact	https://www.unglobalcompact.org/AboutTheGC/TheTenPrinciples/index.html
17	OECD Guidelines for Multinational Companies	http://www.oecd.org/daf/inv/mne/48004323.pdf
18	UN's Guiding Principles on Business and Human Rights	http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
19	International membership/engagement to promote sustainability	Industry Partner in The World Economic Forum: http://www.weforum.org/industry-partners/groups/energy-technologies-energy-utilities/index.html Task Force member in CEPS: http://www.ceps.eu/ BSR network: https://www.bsr.org/ Member of CSR Sweden: www.csrsweden.se Member of Green Chain: https://www.natlikan.net/greenchain/

Centre for European Policy Studies:

<https://www.ceps.eu/>

European Technology Platform for Zero Emission
Fossil Fuel Power Plants – ZEP:

<http://www.zeroemissionsplatform.eu/>

Global CCS Institute:

<https://www.globalccsinstitute.com/>

Partnering Against Corruption Initiative – PACI:

<https://www.weforum.org/communities/partnering-against-corruption-initiative>

World Business Council on Sustainable Development:

<https://www.wbcsd.org/>

20	Vattenfall's major contribution to the Global Goals	https://corporate.vattenfall.com/sustainability/un-sustainable-development-goals/
21	Examples of Vattenfall's contribution to more a sustainable world	https://group.vattenfall.com/who-we-are/sustainability
22	Vattenfall ranking EcoVadis 2018	https://group.vattenfall.com/siteassets/corporate/who-we-are/sustainability/doc/ecovadis_sustainability_profile_20-8-2018.pdf
23	Vattenfall ranking Sustainalytics 2018	https://group.vattenfall.com/who-we-are/sustainability/sustainability-report-and-rankings
24	Vattenfall ranking CDP 2018	https://group.vattenfall.com/who-we-are/sustainability/sustainability-report-and-rankings
25	Long term market outlook 2018	Scenario document with a 2050 horizon.
26	Vattenfall CDP report 2018	



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 and the International Institute for Sustainable Development (IISD).

