

‘Second Opinion’ on Fingrid’s Green Bond Framework

18. oktober 2017

Summary

Overall, Fingrid's Green Bond Framework together with its land use and environmental policy, commitments to corporate social responsibility, implementing Codes of Conduct, and alignment with the Finnish National Climate and Energy Strategy provide a sound base for climate-friendly investments. Furthermore, Fingrid's use of land use planning tools such as environmental impact assessments, for which they have received recognition, shows their commitment to mitigating the local impacts of their operations. The green bond framework lists the eligible project category as energy efficiency and the sub-categories which support their objectives to promote the transition to low carbon, climate resilient growth and a sustainable economy. Fingrid is a well-managed company with a high credit rating and procedures which support sound management of proceeds, as well as regular and transparent reporting about green bond project achievements to investors and the public.

The framework promotes energy efficiency and excludes direct investments in fossil fuel and nuclear energy generation projects. Fingrid has also provided assurance that they are fully committed not to use the green bond to fund projects which directly connect or improve grid connection to fossil fuel based or nuclear power based production. The framework is however to some extent exposed to indirectly supporting fossil fuels through its funding of nationwide transmission networks which carry fossil fuel based energy due to Finland's current energy mix. The framework is also indirectly exposed to nuclear energy, which is an emissions-free climate friendly energy solution, but associated with other risks. Although Fingrid does not have control over the energy mix in the electricity grid, it aims to promote the increased share of renewables in the Finnish energy mix through the development of its transmission networks, specifically through connections to renewable energy sources and strategic connections with neighbors that have a higher renewable energy share. Green bonds can be used to finance both new projects as well as refinance existing eligible projects.

Based on the overall assessment of the project types that will be financed by the green bonds and governance and transparency considerations, Fingrid's Green Bond Framework receives a Medium Green shading. The use of proceeds includes many categories that we consider dark green, but also allows for the possibility of light and medium green projects.



°CICERO
Medium Green

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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 Fingrids's Green Bond Framework and policies for considering the environmental impacts of their projects. The aim is to assess the Fingrid Green Bond Framework as to its ability to support their stated objective of climate mitigation.

This Second Opinion is based on the green bond framework presented to CICERO by the issuer. Any amendments or updates to the framework require that CICERO 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. Network members strive 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 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.

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

- **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.

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations also factor in, as they can 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.

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

Fingrid is a Transmission System Operator (TSO) and a public limited liability company responsible for owning, operating and monitoring the high-voltage transmission system in Finland. It has been operating since 1997. Fingrid is also responsible inter-TSO co-operation with other Nordic countries, Russia and the Baltics. The company offers services, such as connecting consumption and production to the main grid, transmission system security, imbalance power trade and imbalance settlement, well-functioning electricity markets, the production and exchange of electricity market information, and guarantee-of-origin certificates. In 2016, Fingrid finalized its largest investment to date in a 400kV coastal power line. In late 2016, Fingrid agreed with its Swedish counterpart to build an AC transmission connection.

Unlike its Nordic peers, Finland has a diverse electricity generation mix with a total installed capacity of 17 GW (ENTSO 2016). Aside from hydropower at 3 GW, Finland also has 2.7 GW of installed nuclear power capacity and has plans to commission another 3 GW (1.8 GW by 2018 and 1.2 GW by 2024). Fossil fuels total 7.7GW of capacity, including 2.85GW of coal and 1.8 GW of Natural Gas. Renewable energy capacity includes 1.6 GW of biomass and 1.4 GW of onshore wind power. The country's first offshore windfarm is planned to be operational in fall this year (2017). Solar power has so far not taken much hold in Finland but has seen a tripling in capacity in 2016.

Finland also imports a considerable amount of its electricity from neighboring Sweden and Russia and exports electricity to Estonia. In 2016, a net amount of 15.4 TWh of electricity was imported from Sweden, a decrease from 17.95 TWh in 2014, and 5.9 TWh from Russia, an increase from 3.4 TWh in 2014. For 2016, net-energy imports accounted for ca. 22% of the total electricity consumption of Finland, which makes the country one of the most energy import dependent countries in Europe. Electricity imports influence the carbon intensity of the Finnish grid. In Sweden, almost all electricity is produced without fossil fuels, with renewables and nuclear power responsible for 57% and 40% of generated electricity respectively. Electricity from Russia is more carbon intensive, with more than 65% produced from fossil fuels (IEA 2017). At the same time, Finland has been exporting electricity to neighboring Estonia with a net-balance of 2.4TWh in 2016. The share of renewables in the Estonian electricity mix was 10% in 2016.

In terms of electricity generated domestically, renewables including hydropower, biomass and wind accounted for more than 40% in 2016, followed by nuclear power with more than 30% and fossil fuels with slightly more than 20%. According to the National Energy and Climate Strategy, Finland will phase out the use of coal for energy by 2030 and no new power plants can be built, or replacement investments made, that will be based on burning hard or brown coal.

The Fingrid Group is comprised of the parent company Fingrid Oyj and its fully owned subsidiaries Finextra Oy (former Fingrid Verkko Oy), responsible for statutory power reserve service and services for the guarantees of origin for electricity, and Fingrid Datahub Oy. The associated companies are eSett Oy (holding 33.3 %), providing imbalance settlement services to international electricity market participants, and Electricity Market Operator Nord Pool AS (holding 18.8 %).

In 2016, Fingrid joined the United Nation's Global Compact initiative. The group has reported on its corporate responsibility in accordance with the international Global Reporting Initiative (GRI) framework since 2011. Its corporate responsibility focuses on environmental protection, work safety and health, responsibility, governance, accountability and transparency.

Definition:

Projects eligible under the Green Bond Framework (GBF) are limited to energy efficiency and encompass: Development, construction and reconstruction of transmission networks to decrease network losses and/or enhance transmission capacity for clean energy (wind, hydro, solar and bioenergy); or development, construction and reconstruction of transmission networks to connect new, clean energy production to areas of demand through national grid enhancement; or development, construction and reconstruction of transmission networks to connect Finland's grid to neighboring countries; or development and construction of smart grids.

Green bonds can be used to finance both new projects as well as refinance existing eligible projects. Green bonds will not directly finance nuclear or fossil fuel generation projects. Fingrid has also given assurance that it is fully committed not to fund projects that directly connect or improve grid connection to fossil fuel based or nuclear power based production. Fingrid has the mandate to treat and serve all its customers equally and, as a TSO, does not have control over the energy mix in the electricity grid. However, it aims to promote the increased share of renewables in the energy mix through the development of its transmission networks.

Selection:

According to Fingrid's GBF, projects will be evaluated by representatives from three departments: the Grid Planning; Land Use and Environment; as well as the Finance and Treasury departments. Projects selected as potential eligible projects must then be unanimously approved by Fingrid's internal Steering Committee for Finance and Business development, along with representatives from the Grid Planning and the Land Use and Environment function including the manager responsible for Corporate Sustainability. The Committee will only approve Projects which meet the criteria of the GBF and that have a high likelihood for positive, net, long-term environmental effects.

For now, projects that will be considered by the Committee are based on Fingrid's long term capex plan. For future projects, Fingrid aims to have the Committee for Adequacy of Transmission Capacity review identified potentially eligible projects at an earlier stage of the project development cycle, i.e. projects would be identified (as projects to be potentially financed with a green bond) already at the investment proposal preparation stage. Once the projects reach the construction stage, an Environmental Specialist and Grid Planning Specialist will review and recommend the projects for the Committee approval (according to the current process).

Management of proceeds:

Fingrid will establish a dedicated account for the net proceeds of issued Green Bonds. As long as Green Bonds are outstanding and the dedicated account has a positive balance, at the end of every fiscal quarter, funds will be deducted from the dedicated account and added to Fingrid's Green Project Portfolio in an amount equal to all disbursements made during such quarter in respect of financing and/or refinancing of Eligible Projects. Until disbursement to Eligible Projects, the account balance will be placed in liquidity reserves and managed accordingly. If, for any reason, a financed Eligible Project no longer meets the eligibility criteria, it will be removed from the Green Project Portfolio.

Transparency and Accountability:

Fingrid will report on its green bonds through its annual Green Bond Investor letter. Reporting will cover 1) list of projects financed including a brief description and expected impact); 2) division of allocation between new projects and refinancing, as well as 3) a summary of their Green Bond portfolio's development. Fingrid has also provided assurance that it will report the amounts allocated to each project.

Fingrid will include quantitative and/or qualitative impact reporting on financed Projects in the Investor Letter when feasible, e.g. commentary on amount of renewable power generation connected or losses reduced. The indicators for reporting will be determined on a project by project basis and Fingrid aims to also disclose methodologies and assumptions related to the calculations of these impacts to the extent possible.

Furthermore, Fingrid's internal tracking method, the allocation of funds from the Green Bond proceeds and the Investor Letter will be verified by an external auditor or a similar third party appointed by Fingrid with the relevant expertise and experience. The Investor Letter and the opinion of the external auditor will be made publicly available on Fingrid's web site.

The table below lists the documents that formed the basis for this Second Opinion. Additionally, relevant national legislation, national strategies, and various webpages on the Fingrid website were also reviewed.

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

Document Number	Document Name	Description
1	Fingrid's Green Bonds Framework 03.10.2017	This document comprises Fingrid's Green Bonds Framework and how the company intends to use proceeds, how it plans to evaluate and select eligible projects, manages the proceeds and reports to investors.
2	Fingrid's Annual Report 2016	Report summarizes Fingrid's Strategy and Management Systems, Business Operations and Governance, and reviews its financial, social and environmental performance in 2016. Also includes the GRI reporting, and environment pages.
3	GRI Index in Annual Report 2016	Fingrid's corporate responsibility reporting according to the Global Reporting Initiative standard and compiled in a GRI context index. Available online as part of the Annual Report 2016. Also serves as a

		Communication on Progress (COP) report in compliance with the UN's Global Compact initiative.
4	Fingrid's Supplier Code of Conduct, 2016	Document outlining Fingrid's expectation for their suppliers in terms of legal compliance, human rights, occupational safety and health, the environment, and monitoring and sanctions.
5	Fingrid's Code of Conduct, 2016	Document outlining Fingrid's social responsibilities and its expectations for its employees. The code is based on the UN Global Compact and the Guiding Principles on Business and Human Rights. It includes the reduction of environmental impact of its activities.
6	Fingrid's Land use and environmental policy, 2017	Document outlining Fingrid's approach to land use and environmental issues. It covers the areas of transmission lines, substations and reserve power plants, land use planning, rights of use of transmission line areas, and land acquisition, as well as interaction and communication.

Table 1 Documents reviewed

3 Assessment of Fingrid Green Bond framework and environmental policies

Overall, Fingrid’s green bond framework provides a detailed and sound framework for climate-friendly investments.

The framework and procedures for Fingrid’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, 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.

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
Energy efficiency		<p>For all projects: Should consider potential rebound and lock-in effects of domestic fossil fuel generation capacity and electricity imports from countries which have fossil fuel generation capacity.</p> <p>Construction and reconstruction: Should consider broader impacts, such as potential negative impacts on biodiversity, nature and local communities</p>
	<p>1) Development, construction and reconstruction of Transmission Networks to</p> <p>a) decrease network losses and/or</p>	<p>Light to Medium green: shading depends on the fossil-based elements of the grid, which are expected to decrease in future.</p>

b) enhance transmission capacity for clean energy (wind, hydro, solar and bioenergy);	Dark green
2) Development, construction and reconstruction of Transmission Networks to connect new, clean energy production (wind, hydro, solar and bioenergy) to areas of demand through national grid enhancement;	Dark green
3) Development, construction and reconstruction of Transmission networks to increase the share of renewable energy in the grid by connecting Finland's grid to neighboring countries (and/or areas therein) where	Medium to Dark green. The issuer indicated a focus on Sweden, with no concrete plans to invest into new or existing transmission lines connecting to Russia or Estonia, though it remains a future possibility.
<ul style="list-style-type: none"> a) the electricity generation mix has a <i>higher</i> share of renewables and Finland is a <i>net importer</i> of electricity or b) the electricity generation mix has a <i>lower</i> share of renewables and Finland is a <i>net exporter</i> of electricity; 	
4) Development and construction of smart grids	Dark green. Smart grids are a necessary technology to manage and increase the share of intermittent and decentralized renewable energy.

Table 2 Eligible project categories

Strengths

Established management and governance structures

Fingrid has a solid management and governance structure indicated by their existing corporate management and reporting processes, as well as their earlier experience with projects in the energy efficiency project category. Fingrid has internal policies, such as Land use and environmental policy, an internal Code of Conduct, as well as a Supplier Code of Conduct all of which deal with environmental and broader sustainability issues. Fingrid has also integrated climate and sustainability issues into its corporate strategy and daily operations, which is why it does not have separate strategies for these issues. Fingrid's Land use and environmental policy reflects attention to local impacts as well as a life-cycle approach to infrastructure in the recycling and reuse of structures and devices. It also joined the UN Global Compact Initiative in 2016 and performed CSR reporting since 2011.

In the planning of projects, Fingrid performs either an environmental study in compliance with the Electricity Market Act or environmental impact assessments (EIA) and is aware of and actively mitigating the local and global environmental impacts (climatic effects, changes in landscape, restrictions on land use, and impacts on nature) of its operations. It has even received recognition for some of its EIAs. Furthermore, Fingrid is in the working towards ISO compliance for its environmental management system according to the ISO 14001 standard for reserve power plants. Fingrid complies with European and national legislature and its investment program supports the Finnish national climate and energy strategy.

Specified criteria for selection

Fingrid identifies four types of projects eligible for funding. Despite the overall category heading of energy efficiency, some of the GBF criteria for eligibility guide projects towards their aim of increasing the share of renewables in Fingrid's grid. This is true for project types 1-3, which support new (#2) and enhanced (#1b) transmission capacity to renewables domestically, as well as transmission capacity through connections with neighboring countries in areas with a higher share of renewables in the energy mix compared to Finland (#3a). Clearly stating the aims of eligible project types in the use of proceeds supports the evaluation process in selecting projects that fulfill the overall aims of the GBF to support low carbon and climate resilient growth. It should be noted, however, that for project type #3a, where the share of renewables in the energy mix of neighboring country areas compared to that of Finland is used as eligibility criteria, projections of future trends in emissions in neighboring countries and import / export levels should also be accounted for. Fingrid supports this longer-term perspective in investments with their 5-25 year development plans and accounts for expected future developments of the energy mix in their investment decisions.

Capable committee for project evaluation and selection

Projects are initially evaluated by an environmental expert prior to moving to the selection process. Fingrid has diverse representation on its selection committee, with representatives coming from the Steering Committee for Finance and Business development; Grid Planning function; Land use and Environment function, including manager for corporate sustainability. Although it can be assumed that as Fingrid operates in a specialized field and utilizes EIAs, then the various environmental impacts can be assessed by a single environmental representative (e.g. various specialists are not necessary) to ensure positive net long term environmental effects of projects. However, Fingrid is encouraged to assess the sufficiency of this expertise and adjust capacity in the future if needed.

It also is encouraging that in the future, Fingrid aims to have projects reviewed for potential eligibility already at the planning stages. This could result in greener projects for the project pool.

Reporting and Review

Fingrid has overall good track record on reporting. Fingrid's Annual Report (Environment) details both their successes as well as their "environmental deviations". This kind of communication about also negative impacts reflects a commitment to transparency.

Related to its green bonds, Fingrid has an annual reporting process in place that includes verification by an external party. The GBF details the basic information to be included in the annual Green Bond Investor Letter. The investor letter will also report on the impacts when feasible, e.g. commentary on the amount of renewable power generation connected or losses reduced. The Investor letter, together with the verified results, will be made available online on the company website.

It is encouraging that Fingrid aims to further develop its reporting and impacts calculation once the GBF is well established. However, we encourage Fingrid to also consider moving towards the analyzing and reporting of actual impacts, rather than simply the expected impacts, for projects in the future.

Weaknesses

We find no obvious weaknesses in the Fingrid GBF.

Pitfalls

ENSO takes a long-term view on climate change, and thus, recommend excluding projects that support prolonged use of fossil-fuel based infrastructure that will contribute to GHGs in the long run.

One way to better ensure long-term positive effects is through impact assessments. In the project selection, Fingrid will use the results of Environmental Impact Assessments, which are mandatory for many of their projects. However, a more thorough impact analysis (ex-ante and ex-post) and a standardized set of indicators against which to assess the projects could help avoid selection of projects that may not represent a significant improvement over status quo. This would also support Fingrid's reporting of impacts and assessment methodologies in its Green Bond Investor Letter.

Although Fingrid does not have control over the energy mix in the electricity grid, the framework is to some extent indirectly exposed to fossil fuels through its funding of nationwide transmission networks which carry fossil fuel based energy due to Finland's current energy mix. There is also a small risk of funding transmission capacity which could, under changed circumstances in the future, increase the emissions of the Finnish grid. Fingrid mitigates this risk with their long term planning and the eligibility criteria of the connections to neighboring countries. Prioritizing projects which reduce the emissions and eliminate the risks indirectly associated with the transmission grid would strengthen the GBF as a mechanism to promote climate friendly solutions. Further, Finland plans to increase the renewable share of the energy mix over time. The framework is also indirectly exposed to nuclear energy for similar reasons. Although nuclear is an emissions-free climate friendly energy solution, it is associated with other risks, such as reputational risk and safety risks (potential leaks, radioactive waste, etc.) which are of concern to some investors.

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 investment to reduce network losses, which decrease emissions from losses but may not decrease the consumption of energy. Fingrid should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

4 References

ENTSO, European Network of Transmission System Operators for Electricity (2016): Statistical Fact Sheet 2016. Provisional Values as of May 2017.

IEA (2017):

<http://www.iea.org/statistics/statisticssearch/report/?country=Russia&product=electricityandheat>

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.

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