°CICERO Shades of Green

Grieg Seafood ASA
Green Bond Second Opinion

June 10, 2020

Grieg Seafood ASA is a Norwegian salmon aquaculture company with current production in Norway, Shetland, and British Columbia. In addition, it is starting up production in Newfoundland, and a large share of Green Bond proceeds are expected to be used here.

The carbon footprint of farmed salmon is considerably lower than that of beef, but higher than that of chicken and wild-caught fish. The majority of its footprint (at harvest) is due to feed production, with a disproportional contribution from soy, which has been linked to deforestation in Brazil. Around 20% of Green Bond proceeds are expected to finance procurement of feed that meets the company's sustainability criteria. Soy used in this feed will be certified as not originating from recently deforested land. However, certification of soy does not fully solve the deforestation problem. The company therefore seeks to use its market power to influence the soy industry towards reducing deforestation. This framework excludes one feed supplier because its mother company has been accused of contributing to deforestation.

Airfreight can more than double farmed salomn's carbon footprint. An increasing share of Grieg Seafood's produce is tranported by airfreight, currently one fifth. However, production in Newfoundland can be transported to the fast-growing North American market without airfreight.

Aquaculture causes a range of other environmental problems. Parts of proceeds will be used to finance fish farms certified, or in preparation to become certified, by the Aquaculture Stewardship Council (ASC). The ASC is regarded as the strictest voluntary certification scheme on environmental criteria.

Grieg Seafood has put forward science-based targets covering scope 1,2, and 3 GHG emissions. Its climate related reporting is rated A by the CDP and is in accordance with the TCFD and the GRI. However, reported emissions (scope 1 and 2) have increased the last two years. Under this framework, the company commits to report on several indicators, with external verification.

Based on an assessment of the framework's alignment with the Green Bond Principles, the project categories and Grieg Seafood's governance, Grieg Seafood's Green Bond framework receives the overall **CICERO Medium Green** shading and a governance score of **Excellent**.

SHADES OF GREEN

Based on our review, we rate Grieg Seafood's green bond framework **CICERO Medium 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 Grieg Seafood's framework to be **Excellent**.

GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.

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Contents

1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated May 2020**.** 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.

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. 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
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.	Wind energy projects with a strong governance structure that integrates environmental concerns
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.	Bridging technologies such as plug-in hybrid buses
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.	Efficiency investments for fossil fuel technologies where clean alternatives are not available
Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.	New infrastructure for coal

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 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 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. 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.

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

Grieg Seafood ASA ("Grieg Seafood") is a Norwegian salmon farming company headquartered in Bergen with production in Finnmark (north) and Rogaland (south-west) in Norway, British Columbia (BC) in Canada, and Shetland in the UK. In addition, it has acquired exclusive rights to salmon farming in Placentia Bay, Newfoundland in Canada, where it expects the first harvest in 2022/2023. In 2019, Grieg Seafood produced 83,000 tonnes of gutted weight equivalents of salmon, which is equivalent to approximately 1.4 million meals a day. The company targets 100,000 tonnes in 2020 and 150,000 tonnes in 2025. The supply-chain steps controlled by the company are breeding, freshwater farming, seawater farming, harvesting, and sales/distribution. By market value, it is the sixth largest aquaculture company listed on the Oslo Stock Exchange.

Grieg Seafood delivers salmon to over 50 countries. It owns the sales company "Ocean Quality" jointly with Bremnes Seashore AS, which has offices in the USA and China in addition to the countries where Grieg Seafood produces. Grieg Seafood accounted for 66% of volume sold through Ocean Quality in 2019. The geographical distribution of Grieg Seafood's sales in 2019 was 53% to the EU, 16% to Asia, 15% to North America, 12% to the UK, and 5% to the rest of the world. One fifth was transported by airfreight.

Environmental Strategies and Policies

Grieg Seafood has recently put forward a target to cut total GHG emissions (scope 1, 2, and 3) by 35% relative to 2018 by 2030. For 2050, the target is 75% reduction. These targets are currently indicative and subject to final approval. The company is working to include scope 3 emissions in reporting and will publish the results in 2020. It is pushing for a common standard for reporting of emissions embodied in feed through the Global Salmon Initiative.

Grieg Seafood's scope 1 and 2 GHG emissions in 2019 were 42 667 tCO2e. These emissions were higher than in 2017 and 2018 both in absolute terms and per kilo produce. These increases hold for all the four localities (Rogaland, Finnmark. Shetland, British Columbia). For the company, the increase was 62% in absolute emissions and 22% per kilo produce compared with 2017. Compared with 2018, the respective figures are 25% and 12%. The main emissions sources are diesel used at farms that are not connected to the grid and marine gas oil for boats. The emissions intensity varies greatly across locations, being more than three times higher in Shetland and BC than in Finnmark.. In Shetland, the main reason for high emissions intensity is that all farms are fueled by diesel (see Table below). In BC, the high emissions intensity is mainly related to the algae situation, where generators/compressors are used for upwelling at the sea sites to keep the algae away and to ensure a good oxygen level. Measures to reduce scope 1 and 2 emissions are connecting more sites to the grid, installing renewable energy generation, and improving efficiency through hybrid solutions.

	Rogaland	Finnmark	Shetland	BC
Grid	7	10		
Diesel + wind + solar	1			
Hybrid (diesel + batteries)		3		18
Diesel	4	7	19	
Sum	12	20	19	18

Table 1: Number of sites by energy source and region

Grieg Seafood recognizes that its scope 3 emissions are larger than its scope 1 and 2 emissions, which is supported by the science (Winther et al 2020). The company has taken some measures to reduce transport emissions. It has started introducig a technology called sub-chilling which makes ice redundant in transportation, thus saving around 10% of transported weight. Grieg Seafood is taking part in a test with transportation suppliers, where salmon from Finnmark will be moved from trucks to train through Sweden to get to the south of Scandinavia. It is estimated that carbon emissions for this distance can be reduced by approximately 66%.

Feed production accounts for the vast majority of farmed salmon's carbon footprint at slaughter. There are particular concerns about deforestation related to soy production. From 2020, Grieg Seafood has put in place a set of requirements for its feed suppliers (see Table 2). Soy ingredients must be certified as not originating from recently deforested land. The company also recognizes that even purchasing certified soy may indirectly put pressure on forests as it increases total demand for soy. The company therefore aims to use its market power to push soy producers to avoid deforestation in all their production, not only in the share of production that gets certified (see Strengths). During 2020, Grieg Seafood is conducting a broader risk assessment of feed ingredients, including focus on carbon footprint, human rights, and freshwater use. The categories and criteria for this risk assessment are based on the "Feed Compass" developed by Forum for the Future . The company has informed us that it will publish a policy specifically on deforestation shortly after the Green Bond framework is launched.

Grieg Seafood has several initiatives to protect biodiversity. One measure is post-smolt production, which means keeping the fish in land-based systems (or closed containments systems at sea) for longer than what is standard before transfer to open net pen systems. The company aims to minimize local emissions from its farms, and the impact of such emissions should be kept below limits considered acceptable by national authorities. Tests from the seabed under farms in 2019 showed Very good (92%) or Good results in Rogaland, but Poor in 24% and Very poor in 10% of sites in Finnmark. In Shetland, half of sites gave Satisfactory results, 25% Borderline and 25% Unsatisfactory. The company has informed us that it seeks to improve the situation in Finnmark and Shetland by spreading production over more locations, by phasing out poor locations, by coordinating and extending fallowing periods, or by applying new modelling system to optimize the placing of the sites. A new production cycle cannot start until satisfactory results are obtained, according to local regulations. If a satisfactory status is not obtained, the production volume must be reduced. In BC, there is no such scoring system but the same measures will apply.

The company aims for zero escapes, which was achieved in all regions for the last three years except in Shetland where two escape incidents were registered each of the two last years. It also aims for zero use of antibiotics and a survival rate for fish in sea water of 93%. These two targets were achieved in Finnmark and Rogaland in 2019, but not in Shetland and BC. Grieg Seafood also has targets and policies to minimize use of medicines and chemical for delousing.

The company aims for all its sites to be certified according to the Aquaculture Stewardship Council (ASC) or, if not possible, comply with all possible aspects of the certification, by 2021 in Finnmark and Canada, and by 2023 in Rogaland and Shetland. Currently, fifteen of twenty active sites in Finnmark and five of eighteen in BC are certified.

Grieg Seafood has engaged with the Carbon Disclosure Project since 2018 and received an A rating in 2019. The same year, it also issued its first report to the Task Force on Climate-related Financial Disclosures (TCFD). This report, enclosed with the annual report, contains a systematic assessment of the climate-related risks faced by the company. The company' reporting in the annual report is in accordance with the Global Reporting Initiative (GRI). It is a member of the Global Salmon Initiative (GSI). The Collier FAIRR protein producer index 2019 ranks Grieg Seafood 5th in terms of risk and 6th in terms of risk + opportunity, categorizing it as medium risk. On both rankings,

it is 4th among Norwegian aquaculture companies. The company has informed us that they believe the coverage of topics relevant to this index has improved in the annual report for 2019, which will be subject to the next assessment. Sustanalytics rates the company as high risk (38.3). This is the second highest risk score among the seven Norwegian aquaculture companies assessed, and on the 78th percentile among all companies assessed. Grieg Seafood has informed us that they have not previously engaged with Sustainalytics, but that they are in dialogue with Sustainalytics to understand the score and to improve relevant reporting and performance.

Use of proceeds

Net proceeds of the Green Bonds will finance or refinance, in whole or in part, assets and projects that comply with the list of Green Projects in Table 2. Grieg Seafood includes the following project categories in the green bond framework: Environmentally sustainable aquaculture; Pollution prevention and control; Water and wastewater management; Waste management. The company expects to allocate 75% of proceeds to the first category. Within this category, it expects to allocate 25% to Sustainable feed and 75% to Sustainable fish farming. It expects a large share of the proceeds to be used towards the new investment in Newfoundland. It may use parts of the proceeds for refinancing related to the Newfoundland operations. Overall, approximately 25% is expected to be used for refinancing.

No explicit components of the financing will go towards technologies running on fossil fuel. To the extent they are included as part of an overall financing need, the estimated costs will be subtracted from the allocation. Green Bonds will not be used to finance investments linked to fossil energy generation, nuclear energy generation, research and/or development within weapons and defense, potentially environmentally negative resource extraction, gambling or tobacco

Selection:

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 governance process.

Grieg Seafood has established an internal Green Bond Committee responsible for the evaluation and selection process. Its members are from Management, Technical, Sustainability and Finance teams as well as relevant farming regions, and all decisions will be made in consensus. Members' expertise includes biology, feed resources, stakeholder relations, and environmental accounting. The committee will convene every six months or when otherwise considered necessary. If a Green Project is sold, or for other reasons loses its eligibility, funds will then follow the procedure under Management of Proceeds until reallocated to other eligible Green Projects.

Management of proceeds

Net proceeds from issued Green Bonds will be credited to a separate account and used solely for financing and refinancing of Green Projects as defined by this Green Bond Framework. As long as there are Green Bonds outstanding and the separate account has a positive balance, funds will be deducted when relevant, or at least annually, in an amount equal to all disbursements for Green Projects made during the relevant time period. Transfers from the separate account will be documented to ensure traceability of Green Bond net proceeds and to enable reporting of allocations. The Finance department of Grieg Seafood will endeavour to ensure that the amount of Green Projects at all times exceed the total amount of Green Bonds outstanding. The company has informed us that proceeds will most likely be allocated to individual disbursements for the main projects but may include portfolio allocations to smaller projects within all categories

Net proceeds from Green Bonds awaiting allocation to Green Projects will be managed according to the overall liquidity management policy of Grieg Seafood and may be held as cash.

Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. Procedures for reporting and disclosure of green finance investments are also vital to build confidence that green finance is contributing towards a sustainable and climate-friendly future, both among investors and in society.

Grieg Seafood will annually publish a Green Bond Report on its website as long as there are Green Bonds outstanding. Green Bond Reports are expected to be published together with the annual reports. The first report is expected no later than 1 year after the close of the transaction. The Green Bond Report will include an allocation report and an impact report. Reporting is on a category-basis, not project-by-project basis. The finance team is responsible for the reporting.

The allocation report will include: Amounts invested in each of the Green Project categories and the share of new financing versus refinancing; Examples of Green Projects funded; The nominal amount of Green Bonds outstanding; The amount of net proceeds awaiting allocation to Green Projects. The allocation report will be reviewed by an auditor.

Impact reporting will, to some extent, be aggregated and depending on data availability, calculations will be made on a best intention basis. The impact assessment will, where applicable, be based on a set of KPI's listed in Grieg Seafood's Green Bond Framework. The impact report will be externally verified.

3 Assessment of Grieg Seafood's green bond framework and policies

The framework and procedures for Grieg Seafood'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 Grieg Seafoods 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 Grieg Seafood's green bond framework, we rate the framework **CICERO Medium Green.**

Eligible projects under the Grieg Seafood'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".

Category	Eligible project types	Green Shading and some concerns
Environmentally sustainable aquaculture	**Sustainable feed** - Procurement of feed where 100% marine ingredients comply with the sustainability standard set by Marine Stewardship Council (MSC), or the International Fishmeal and Fish Oil Organization Responsible Supply Standard (IFFO RS including FIPs) and where 100% of soy ingredients are certified according to the sustainability standards Proterra or Round Table on Responsible Soy, using the segregation module to ensure segregation of certified and non-certified soy. Feed shall also comply with the ASC standard on fish meal and fish oil. In addition, the procurement of feed should either:	**Medium Green** **Sustainable feed** ✓ Feed production accounts for the vast majority of farmed salmon's carbon footprint. In addition, it puts pressure on wild fish stocks. ✓ The MSC is an independent organization that certifies fisheries as sustainable and well-managed, issuing consumer-facing eco-labels. The ASC regards the MSC as the strictest standard for fisheries. ✓ The International Fishmeal and Fish Oil Organization Responsible Supply Standard certifies marine

  - support commercialization of novel fish feed ingredients with a smaller footprint, or
  - improve fish health and welfare.

  Feed from Cargill Aqua Nutrition will be excluded from the use of proceeds, until the mother company Cargill Inc. have significantly reduced their soy-related deforestation risk in Brazil.
- Contribution to the Cerrado Funding Coalition

Sustainable fish farming

- Construction, development, maintenance, acquisition and improvements of post smolt production facilities.
- Production of sterile (triploid) salmon. Sterile salmon cannot mix genetically with wild salmon should they escape.
- Construction, development, maintenance, acquisition and improvements of fish farms certified, or in preparation to become certified, by the Aquaculture Stewardship Council (ASC) salmon standard, only using sustainable feed as defined above.
- Efforts to promote fish health and welfare, in particular to apply preventative approach as often as possible, such as sustainable sea lice management, reduction of antibiotics use and systems for monitoring, control and analysis.
- Research and development projects aimed at better understanding and improving fish welfare.
- Efforts to restore and enhance surrounding ecosystems, such as escape prevention and systems for monitoring, control and analysis.
- Digitalizing our farming operations, by applying advanced sensors, big data, artificial intelligence and automation, which will provide better knowledge on correlation between the fish and the environment. The result is increased growth, reduced environmental impact, improved fish welfare, and lower cost.
- Construction, development, maintenance, acquisition and improvements of harvesting facilities that are certified, or in preparation to become certified, using Chain of Custody (CoC) to ensure traceability of ASC certified products.

ingredients rather than consumer products. They require whole fish inputs to come from well-managed fisheries, which can be documented through *inter alia* MSC certification. By-products must not come from threatened species or illegal, unreported or unregulated fisheries.

✓ The ASC standards of fish meal and fish oil limit the amount of these inputs used in feed production, to stimulate efficient use of marine resources.

✓ There is a climate risk regarding aquaculture in that soy used for feed may drive up demand for deforestation. As soy protein concentrate make up 23% of the feed used by Grieg Seafood in Norway and Shetland is, a share of proceeds will indirectly be spent on Brazilian soy given current practice. This represents a climate risk exposure.

✓ The framework's certification criterion ensures that the soy is not grown on recently deforested areas. However, a problem with certification schemes is that major soy traders currently only certify a small share of their production, while the rest may contribute to deforestation. The framework therefore requires that the feed procurement must in addition a) support commercialization of novel ingredients *or* b) improve fish health and welfare. Criterion a has direct climate benefits and thus strengthens the framework considerably. Criterion b also contributes to reduce carbon footprint by reducing the amount of feed needed for each kilo of produce.

✓ The company also takes several additional actions address the

deforestation (see Environmental Strategies and Policies).

- ✓ The framework contains and exclusion for feed from Cargill Aqua Nutrition, due to the severe criticism that has been leveled against its mother company, Cargill Inc. (see Strengths).
- ✓ Contributions to the Cerrado Funding Coalition would be targeted specifically at reducing deforestation.

Sustainable fish farming

- ✓ Fish escapes pose a serious threat to wild salmon stocks, as the farmed fish modify the gene pool and outcompete local species.
- ✓ The high concentration of salmon in farms allow sea lice to thrive, which also pose a threat to wild salmon stocks.
- ✓ Chemicals used for delousing may negatively affect wild species such as cod and shrimp, and thus coastal fisheries.
- ✓ The ASC has safeguards on these local environmental problems by setting stricter limits than national regulation but has been criticized for tolerating 300 escaped fish per production cycle and for a lenient limit on hydrogen peroxide.
- ✓ Several of the eligible project types are expected to directly contribute to reducing the above-mentioned problems.
- ✓ Post-smolt production means keeping the fish in land-based systems (or closed containments systems at sea) for longer than what is standard before transfer to open net pens. Environmental benefits are less time interacting with the marine environment, lower mortality, and reduction in sea lice problems. However, energy consumption goes up. The

		company expects the majority of proceeds under this sub-category to flow to a new post-smolt facility in Newfoundland, which will have zero discharge of water, but proceeds may also be used on maintaining existing post-smolt facilities as well as upgrading their climate performance. ✓ Sterile triploid salmon will be used in the Newfoundland operations, where this is required by the licenses to operate, in order to protect wild salmon stocks. ✓ Improved fish welfare and growth, as well as reduced mortality and morbidity, will also contribute to lowering the carbon footprint of the final product, through increased feed efficiency. ✓ Projects in this category are expected to make substantial improvements in the environmental performance of aquaculture, while not completely resolving the environmental challenges of open net pen aquaculture. These projects are therefore considered Medium Green. Exceptions are efforts that are mandated by regulators, such as sterile salmon in Newfoundland, which would be considered Light Green.
Pollution prevention and control	- Construction, installation, maintenance, acquisition and improvements of renewable energy installations, such as wind and solar, as well as battery packs, to power fish farms, and vessels. - Costs directly related to switching from fossil fuels to electrical power and hybrid solutions. - Development projects aimed at reducing the carbon footprint in Scope 3 of the GHG protocol	**Medium Green** ✓ Renewable energy installations are considered Dark Green. ✓ Electrification through grid connection in Norway and Canada is considered Dark Green. In Shetland, the main power station is fueled by diesel, but Grieg Seafood reports no plans for connecting to this grid. ✓ Hybrid technologies improve the efficiency of diesel-based systems,

		and are considered Light Green, as there is a risk of locking in fossil fuel technology. ✓ Projects aimed at reducing Scope 3 emissions are important for reducing the company's total footprint, but could span the range from Light to Dark Green. Measures to improve transport efficiency would be considered Light Green, while shifting transport to electric rail would be considered Dark Green. Projects to reduce the carbon footprint in feed would likely be considered Medium or Dark green, depending on how innovative and ambitious they were.
Water and wastewater management	- Construction, installation, maintenance, acquisition and upgrades to water and wastewater management systems at freshwater facilities and harvesting facilities, reducing wastewater, increasing water recycling and improving water use efficiency.	**Medium Green** ✓ These measures are expected to contribute to increased resource efficiency and reduction of wastewater discharges to sea, which can cause toxic algae blooms.
Waste Management	- Waste management solutions that enable the reduction, recycle and reuse of waste, including, but not limited to, biological waste and plastics, promoting a high recycling rate and a reduced need for virgin raw materials.	**Medium Green** ✓ Organic waste from aquaculture pens contaminate the local seabed, can cause toxic algae blooms, and have other negative effects on marine life. Investments under this category can contribute to reducing such problems. ✓ Other projects under this category are expected to contribute to increased resource efficiency and reduction in waste to landfill or incineration.

Table 2. Eligible project categories

Background

The carbon footprint of farmed salmon is around 80% lower than that of beef, slightly lower than that of poultry, but higher than that of chicken, according to a recent report by the Norwegian research institute SINTEF (Winther et al 2020). Its footprint is higher than that of all other Norwegian seafood products assessed in the report. The majority of salmon's carbon footprint arises in the production of agricultural and marine inputs for salmon feed. Except for airfreighted salmon (where feed is of lower relative importance), feed represents between 75-83% of total GHG emissions of salmon delivered to the wholesaler. Land-use change accounts for 28% of emissions at slaughter, and the vast majority is due to soy from Brazil, as its cultivation as it is linked to deforestation. The report's calculations are based on feed with 20.5% soy protein concentrate. The feed used by Grieg Seafood in Norway and Shetland contains 23%, while the feed used in BC contains no soy. The average for all feed used by the company is 16%. The report recommends shifting away from soy originating from countries with expanding agriculture to soy from countries where it does not cause land use change or to alternative ingredients.

Soy purchased under this framework must be certified by the Roundtable for Responsible Soy (RTRS) or ProTerra. For a property to be RTRS certified, no native forests have been cleared or converted later than May 2009. Stricter rules apply for land conversions later than June 2016, after which no conversion of natural land can have taken place. RTRS offers two alternative soy certificates. The strictest alternative (Segregation), which is required under this framework, ensures that the soy from certified properties is kept physically separate from soy from non-certified properties. For ProTerra certification, areas of native vegetation cannot have been cleared or converted after 2008. A comparison with RTRS finds that it has stricter criteria in many areas, but is weaker on transparency[1]. ProTerra does not allow physical mixing. Most SPC imported to Norway is ProTerra certified. A problem with all certification schemes is that major soy producers currently only certify a small share of their production, while the rest may contribute to deforestation. Demand for soy from Brazil, even if certified, risks displacing non-certified production to new agricultural areas. The SINTEF report does not distinguish between certified and non-certified soy, because it is currently not possible to quantify the differences in a reliable way.

Demand for marine ingredients in salmon feed puts pressure on wild fish stocks. Their use has been reduced over the last decade, as they have been replaced by vegetable ingredients, particularly soy. Grieg Seafood's Green Bond framework contains criteria to aiming to ensure that marine ingredients originate from sustainable fisheries.

Airfreight over long distances can more than double the product's footprint (Winter et al 2020) and there has been a large increase in airfreight of Norwegian salmon in recent years, particularly to the USA and Asia. The report recommends partially or fully shift supply chains away from airfreight.

Aquaculture also causes a range of local environmental problems:

- Demand for marine ingredients in feed puts pressure on wild fish stocks.
- Fish escapes pose a serious threat to wild salmon stocks, as the farmed fish modify the gene pool and outcompete local species.
- The high concentration of salmon in farms allows sea lice to thrive, which also pose a threat to wild salmon stocks.
- Chemicals used for delousing may negatively affect wild species such as cod and shrimp, and thus coastal fisheries.
- Effluents and waste negatively affects life on the sea bed around fish farms and can cause toxic algae blooms.

[1] Regnskogsfondet og Framtiden i Våre Hender 2017. Fra brasiliansk jord til norske middagsbord. En rapport om soya i norsk laksefôr.

- Medicines can kill shrimp and other crustaceans.
- Copper used in antifouling paint for fish farm installations is a toxin polluting the local marine environment.

The SINTEF report highlights that increasing problems with disease and sea lice have increased the carbon footprint of farmed salmon, through reduced feed efficiency and increased use of service vessels for treatment.

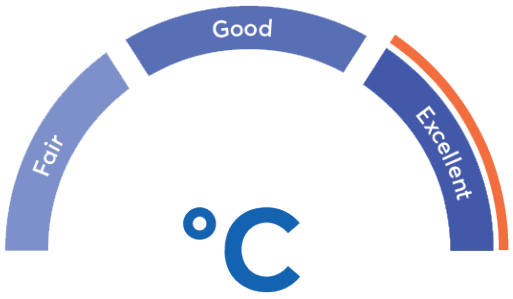
Governance Assessment

Four aspects are studied when assessing the Grieg Seafood'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. 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.

Grieg Seafood has put forward environmental policies and preliminary (subject to final approval) Science Based Targets (SBT) regarding absolute emissions reduction throughout the full value chain (Scope 1, 2 and 3. The company's reporting is in accordance with the TCFD and GRI and it is rated A by the Carbon Disclosure Framework. However, Collier FAIRR and Sustainalytics ranks the companies as relatively high risk compared with other Norwegian aquaculture companies. The company will report scope 3 emissions for 2020 and is lobbying for common standards for scope 3 reporting.

Grieg Seafood aims to have all aquaculture sites ASC certified or compliant by 2023 which would ensure all operations adhere to stringent environmental standards.

Grieg Seafood has established a green bond committee that includes members from the Management, Technical, Sustainability and Finance teams and that decides by consensus. Grieg Seafood also commits to report on several indicators, largely on a project-by-project level, and will obtain third party verification for its impact reporting. The overall assessment of Grieg Seafood's governance structure and processes gives it a rating of Excellent.



Strengths

A substantial share of Green Bond proceeds will finance fish farms certified, or in preparation to become certified, by the Aquaculture Stewardship Council (ASC). The ASC is regarded as the strictest voluntary certification scheme on environmental criteria[2] . Its standards are stricter than Norwegian regulation, which is already stricter than other national regulations[3]. Through certification, Grieg Seafood will ensure all its operations adhere to the high environmental standards despite being situated in different regulatory contexts.

Grieg Seafood's feed suppliers are Skretting, Biomar and Cargill Aqua Nutrition, which are the only relevant suppliers globally. Cargill Aqua Nutrition's US mother company, Cargill Inc., has been accused of massive

[2] https://www.bestfishes.org.uk/wp-content/uploads/Accreditation-table-v1.1.pdf
[3] Vormedal, I. and Gulbrandsen, L. (2018). Business interests in salmon aquaculture certification: Competition or collective action? Regulation & Governance.

deforestation, among other things, and been named "the worst company in the world" by the environmental NGO Mighty Earth[4]. Nestle recently stopped buying Brazilian-produced soy from Cargill Inc. due to deforestation concerns. Cargill Aqua Nutrition uses soy that is certified as not coming from recently deforested land (see Background), like also Skretting and Biomar do. Norwegian NGOs are nevertheless critical of their product due to the accusations against the mother company.[5] For these reasons, this framework excludes feed from Cargill Aqua Nutrition until the mother company Cargill have significantly reduced their soy-related deforestation risk in Brazil. Grieg Seafood is also engaging in a dialogue with Cargill Aqua Nutrition to put pressure on Cargill Brazil to address deforestation.

The criteria under Sustainable feed for supporting commercialization of novel fish feed ingredients with a smaller footprint or improving fish health and welfare are expected to be effective measures for reducing farmed salmon's footprint (Winther et al 2020, see Background).

Grieg Seafood is actively using its market power to address the problem of deforestation in the soy industry generally. Grieg Seafood is member of the steering committee of the Cerrado Manifesto Signatories of Support, an initiative aiming to halt deforestation in the Cerrado in Brazil, which is currently the world's largest area of deforestation. The company has also, together with Tesco and Nutreco, launched the Cerrado Funding Coalition, which aims to provide financial incentives for soy farmers in the Cerrado to halt deforestation. Grieg Seafood has committed to contribute with 2 dollars per ton Brazilian soy used in their feed for five years, starting when the financial mechanism is launched. Due to the current political situation in Brazil, it is uncertain when it will be launched but Grieg Seafood is pushing for fundraising to begin. The company has also shown support for the Amazon Soy Moratorium, which is currently under political pressure[6] and supports The Aquaculture Dialogue on Sustainable Soy Sourcing in Brazil[7], which aims to increase traceability of soy, among other things. The company also engages in a dialogue with suppliers to cooperate on developing novel sustainable feed ingredients, such as insect meal.

The company has put forward science-based targets to reduce its scope 1,2, and 3 GHG emissions. Its reporting is rated A by the CDP. It will report scope 3 emissions for 2020 and is working towards common industry standards for scope 3 reporting.

Parts of this Green Bond proceeds will finance innovative methods to reduce Grieg Seafood's local environmental footprint, including post smolt production and intelligent monitoring. Post smolt production means the fish spend less time interacting with the marine environment, lower mortality, and reduction in sea lice problems. However, energy consumption goes up. The company has achieved good results in limiting escapes, antibiotics, medicines and chemicals.

Weaknesses

Soy protein concentrate constitutes 23% of the feed used by Grieg Seafood in Norway and the UK. This is relatively high, as the range for Norwegian feed producers is 10-26%[8]. This means that a significant share of Green Bond proceeds will indirectly be spent on Brazilian soy, which is currently associated with risks of deforestation in Brazil. However, as noted above, the company is using its presence in this market to put pressure on suppliers

[4] http://www.mightyearth.org/wp-content/uploads/Mighty-Earth-Report-Cargill-The-Worst-Company-in-the-World-July-2019.pdf
[5] https://www.dagbladet.no/mat/verdens-verste-selskap-frer-norsk-laks/71374176
[6] https://e24.no/naeringsliv/i/WbyX6Q/norsk-laksenaering-med-paa-globalt-soya-opproer-mot-brasil
[7] https://www.feednavigator.com/Article/2019/12/19/Salmon-feed-producers-reveal-new-Brazilian-soy-traceability-system-roundtable-for-action
[8] Regnskogsfondet and Framtiden I Våre Hender 2017. Fra brasiliansk jord til norske middagsbord. En rapport om soya i norsk laksefôr.

of soy protein concentrate to become deforestation free. The feed used in BC uses poultry bi-products instead of soy, which means that the average soy content for the feed used by the company is 16%.

While Grieg Seafood has ambitious targets for reducing GHG emissions, their scope 1 and 2 emissions have increased the last two years, both in absolute terms and per capita. The emissions intensity is particularly high in Shetland and BC.

Pitfalls

The company reports increasing use of airfreight for transporting its produce in the TCFD report. Airfreight over long distances can more than double the product's footprint (Winter et al 2020[9]). However, the majority of Green Bond proceeds is expected to go to operations in Newfoundland, from which the majority of produce will be transported by road to the US east coast. The company will also process the fish in Newfoundland, meaning lower transport volumes. Both the operations in BC and Newfoundland enable Grieg Seafood to serve the North American market without airfreight.

The environmental assessment process for Grieg Seafood's plans in Newfoundland has been somewhat controversial, as The Atlantic Salmon Federation took the government's decision to court. However, the assessment was finally approved after the company completed an environmental impact study of the farming area.[10] The process may indicate risk of local resistance.

The Canadian prime minister has set in motion a plan to transition away from open pen salmon farming in BC by 2025. This represents a regulatory risk, as land-based or closed containment systems at sea would significantly raise costs.

[9] Winther, U., Hognes, E.S., Jafarzadeh, S. & Ziegler, F. (2020). Greenhouse gas emissions of Norwegian seafood production in 2017. SINTEF Ocean AS. For the comparison with other foods, emissions relating to land-use were excluded.

[10] https://www.cbc.ca/news/canada/newfoundland-labrador/placentia-bay-project-released-again-1.4812791

Appendix 1:
Referenced Documents List

Document Number	Document Name	Description
1	Green Bond Framework	
2	Annual Report 2019	Includes TCFD report
3	Grieg Seafood ASA Green investment projects	List of example projects for financing under the Green Bond Framework
4	Grieg Seafood Rogaland Post smolt strategy	Powerpoint presentation
5	The acquisition of Grieg Newfoundland AS	Powerpoint presentation dated February 7, 2020
6	Placentia Bay – A unique growth opportunity	Powerpoint presentation dated March 6, 2020
7	GSF Energy supply sites and ASC certification	Powerpoint presentation dated June 5, 2020
8	Sustainalytics score 2019	Word document presenting Sustainalytic's scores for Norwegian aquaculture companies. Compiled by Grieg Seafood.

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).