



Gasum

Green Funding Second Opinion

July 1, 2019

Gasum is a Finnish state-owned energy company active in the natural gas and biogas markets in the Nordic countries. In addition to being the largest distributor of liquefied natural gas (LNG), it is one of the leading suppliers of biogas and processor of biodegradable waste fractions in the Nordics. Biogas is suitable for various purposes, including road transport and industrial uses and can replace or be mixed with natural gas.

Gasum's processing and subsequent use of biodegradable waste is a contribution to the circular economy. In addition to fuel, the biowaste processing results in the production of solid and liquid fertilizers which can replace standard synthetic products.

Gasum has created a Green Funding Framework to govern bond issuances as well as green loans. The eligible project categories are Renewable Energy and Circular Economy Adapted Products, Waste Management and Pollution Prevention and Control and Energy efficiency - in line with categories proposed by the taxonomies of the Green Bond and Green Loan Principles. Investments in its LNG business are excluded.

Gasum has a solid governance framework in place for selecting and reporting on green eligible assets, as well as well-established corporate sustainability policies. Its corporate framework includes targets, annual reporting and an ambition to implement guidelines from the Task force on Climate related Financial Disclosures (TCFD). Its energy efficiency target is, however, a relatively modest 1% per annum, which is clearly below the target recommended by the International Energy Agency.

SHADES OF GREEN

Based on our review, we rate Gasum's green funding framework **CICERO Dark Green**.

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



GREEN BOND / LOAN PRINCIPLES

Based on this review, this framework is found in alignment with the Green Bond and Green Loan Principles.





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1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of Gasum's Green Funding Framework dated **June 2019**. This second opinion remains relevant to all green bonds and 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 issuer's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence with the issuer. Second opinions are restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. CICERO Green is not responsible for an institution's implementation of a framework, nor does it guarantee or certify the climate effects of investments in eligible projects.

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 green funding. 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



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.



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.



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.



Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available



New infrastructure for coal

Sound governance and transparency processes facilitate delivery of issuer'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 funding framework. CICERO Green considers four factors in its review of an issuer's governance processes: 1) the policies and goals of relevance to the green funding 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 Gasum's green funding framework and related policies

Gasum is a Finnish energy company founded in 1994. The company offers energy for road and maritime transport, as well as for industry and energy production.

Gasum's mission is 'cleaner energy' and it sees itself as part of the transition to a low-carbon and climate friendly future. It is the largest liquefied natural gas (LNG) actor in the Nordic market. Natural gas is a transition fuel in the transport market where it represents a low-emission alternative to diesel in the near term – especially in maritime transport and heavy-duty road transport. Production of compressed biogas (CBG) and liquefied biogas (LBG) and distribution of compressed natural gas (CNG) are other components of the company's clean energy strategy.

The Gasum Group has around 350 employees in Finland, Norway and Sweden. The company's revenues in 2018 totaled EUR 1,177 million. Gasum is a fully state-owned company.

Environmental Strategies and Policies:

Gasum has a corporate responsibility program which steers its operation in the three Nordic countries in which it operates. Its sustainability program addresses six themes: safety and security, climate change mitigation, circular economy, access to gas, responsible business, and people. Gasum's most significant environmental impacts are air emissions, energy consumption, utilization of waste and wastewater, odor nuisances, and adverse environmental impacts caused during project construction. Objectives are set for each sustainability theme and progress is monitored through an annual Corporate Responsibility Report and quarterly Interim Reports.

Gasum's overall greenhouse gas emissions increased by 42% between 2017 and 2018 (scope 1). Contributing aspects to the increase included changes in company structure (full acquisition of Skangas subsidiary), higher use of compressors, and flaring of gas. Methane is a potent GHG and make up 17 % of Gasum's GHG emissions. The company monitors and manages emissions through protocols (ISO standard) and reporting. When selecting projects, methane emissions are one of the selection criteria. Gasum's overall emissions in 2019 are likely to be similar to 2018 levels, however plans to divest the grid business in 2020 will lead to significantly lower Scope 1 emissions. The company believes its emissions will decrease over time as it ramps up its biogas production.

In 2018, the electricity supply for its operations became 100% renewable. Gasum supports the Sustainable Development Goals and has identified and aligned its business objectives with those that are relevant to the business (7).The company has a Code of Conduct, Corporate governance rules, and certified integrated management systems (ISO, OHSAS) to which all employees are subject. When choosing suppliers, the use of ecolabel products is taken into consideration. Gasum is a member of the Ecolabelling Network for Sustainable Procurement. The CEO carries the responsibility with the whole management team for the successful implementation of the company's corporate responsibility program.

Climate-related risks and opportunities are part of the company's HSEQ (health, safety, environment and quality) initiatives for this year. The company does not currently follow TCFD guidance but is strongly considering adopting it in the near future.



Use of proceeds:

An amount equal to the net proceeds of the Green Funding will be used to finance or refinance eligible investments and operations that have been evaluated and selected by Gasum in accordance to this Green Funding Framework. The company currently suggests that approximately 60% of the proceeds will go towards refinancing.

The eligible project categories are Renewable Energy and Circular Economy Adapted Products, Waste Management and Pollution Prevention and Control, and Energy efficiency - in line with categories proposed by the Green Bond and Loan Principles.

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. The issuer will adhere to the following selection process for green eligible assets:

- Gasum business units (Portfolio Management and Trading, Biogas and Traffic) will propose potential green assets from new/existing projects
- Gasum Investment and Responsibility Council evaluates eligibility of proposals according to eligibility criteria and removes projects that do not meet the criteria
- Gasum Investment and Responsibility Council verifies the eligibility of remaining assets and presents the potential green assets to Gasum Board of Directors for final approval
- Gasum Board of Directors provides final approval and has the final veto right

The overall selection and evaluation process is governed by the Gasum Investment and Responsibility Council, comprising group and division representatives, CEO, Sustainability manager and headed by the CFO.

Management of proceeds:

CICERO Green finds the management of proceeds of Gasum to be in accordance with the Green Bond Principles. Gasum will establish a Green Funding Register for the purpose of monitoring the Green Assets and the allocation of proceeds. The Green Funding Register will form the basis for the impact reporting as well.

An amount equal to the net proceeds of the Green Funding will be earmarked for allocation in the Green Funding Register in accordance with Gasum's Green Funding Framework.

Gasum will maintain an aggregate amount of assets in the Green Funding Register that is at least equal to the aggregate net proceeds of all outstanding Gasum Green Funding. There may be periods when a sufficient aggregate amount of Green Assets has not yet been allocated to the Green Funding Register to fully cover the proceeds of each Green Funding instrument, either as the result of changes in the composition of Green Assets or the issue of additional Green Funding instruments.

Any portion of the net proceeds of Green Funding that have not been allocated to Green Assets in the Green Funding Register will be held in accordance with Gasum's normal liquidity management policy for general corporate purposes (cash and short-term money market instruments).



Reporting:

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

Gasum will annually publish an Impact Report that aims to provide:

- The amount of net proceeds that have been allocated within each eligibility criteria (category level)
- The remaining balance of net proceeds which have not yet been allocated to Green Assets (if any)
- Environmental impacts (energy savings and CO₂ savings/avoidance) financed through Green Funding instruments

The impact report will include the methodology used in impact calculations. Gasum is considering having the impact report externally assured. It will be published on Gasum's website.



3 Assessment of Gasum’s green funding framework and policies

The framework and procedures for Gasum green funding 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 issuers 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 Gasum’s green funding framework, we rate the framework **Dark Green**.

Eligible projects under the Gasum green funding 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 fundings aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bond Principles (GBP) and Green Loan Principles both require that projects should have a clear environmental benefits, and that project selection should be well defined.

Category	Eligible project types	Green Shading and some concerns
Renewable Energy and circular economy adapted products	1) Biogas or liquefied biogas (LBG) for the use of transport on land and at sea, industry and energy production. 2) Recycled fertilizer and nutrient products supplied to partners in agriculture or industry.	Dark Green ✓ All construction projects can have adverse local environmental impacts ✓ Production of biogas/biomethane produce fugitive emissions
	Investments can be in R&D of renewable and low-carbon feedstocks, products, processes, and technologies; Investments in and maintenance of facilities and equipment used for production or storage of products; Investments in and maintenance of infrastructure used for transporting and delivering the products, and; Other investments that improve availability and access to renewable, low-carbon and eco-efficient products	



Waste

Management and Pollution Prevention and Control



- 1) Treatment of a wide feedstock base of biodegradable fractions of waste and agricultural side-streams of the society.
- 2) Development of the use of side-streams of biogas production and improving resource efficiency of the process, and increasing the use of renewable energy in Gasum’s operations

Investments can be in R&D of waste management and pollution prevention solutions; Equipment and management systems for reduction of waste, wastewater, residuals and air emissions; Equipment and management systems for improved capacity / efficiency to process feedstocks; Developing renewable energy production for use in Gasum operations

Dark Green

- ✓ As with any activity, recycling will entail some emissions (e.g., through energy use, transport, etc.) and discharges to the environment (e.g., plastic pollutants etc.) and should be managed to ensure impacts are minimized

Energy Efficiency



- 1) Overall energy efficiency improvements in own or customer operations
- 2) Improvements related to management systems

Investments will only be made in operational energy saving projects or management systems related to the other Green Asset Categories

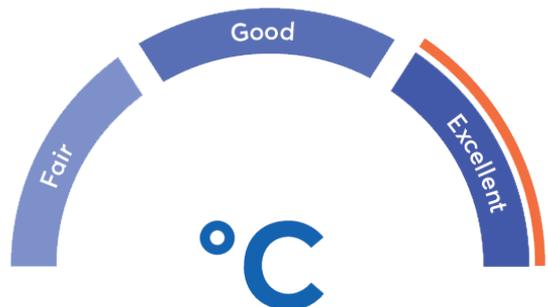
Medium Green

- ✓ The energy efficiency measures must align and contribute to Gasum’s energy savings targets but they don’t have to meet any thresholds in order to qualify as eligible.

Table 1. Eligible project categories

Governance Assessment

Four aspects are studied when assessing Gasum’s governance procedures: 1) the policies and goals of relevance to the Green funding 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. The overall assessment of Gasum’s governance structure and processes gives it a rating of Excellent.





Strengths

Gasum has in place advanced systems for ensuring good governance and process around sustainability for the company broadly speaking, as well as for the Green Funding Framework in particular. Its Corporate Responsibility Report is prepared in accordance with the Core option of the Global Reporting Initiative (GRI). GHG emissions, energy use and water metrics are reported on annually.

In Finland and Sweden, Gasum promotes a circular economy by processing biodegradable waste and agricultural side streams and producing biogas and recycled nutrients. Gasum is one of the leading processors of biodegradable waste and suppliers of renewable biogas in the Nordic countries. The biowaste is used as feedstock in the production of renewable biogas. Biogas is suitable for various purposes, including road transport segment and industrial uses. In road transportation, Gasum's biogas is estimated to reduce the greenhouse gas emissions generated over the fuel life cycle by up to 85-90% compared with traditional fossil fuels. The company is aiming to increase its biogas production capacity significantly over the coming years. This strategy is underpinned by the EU's revised Waste Directive and revised Renewable Energy Directive, as well as current proposals included in the EU Commission's Circular Economy Package. By reaching its sales volumes targets, Gasum aims to enable 1,300,000 t CO₂ emission reductions for its customers by 2025 compared to 2014.

Gasum's biogas used in transport fulfils the Nordic Swan Ecolabel criteria. During 2018, Gasum's Finnish biogas plants that are covered by the scheme were evaluated with the new stricter Ecolabel criteria. The label makes it easy for consumers and professional buyers to choose better environmental goods and services. The Nordic Swan Ecolabel guarantees that:

- the emission reduction is at least 60% when using sewage sludge as the raw material and 70% if the raw material is biodegradable waste;
- palm oil, soybean oils and sugar cans are not used as a raw material; and
- genetically modified plants are not used as a raw material.

Another aspect of Gasum's circular economy efforts is its production of fertilizer products: the residual solids and liquids created through the production of biogas are collected and used as fertilizer products in industry, agriculture, landscaping and can also be turned into gardening soil through a process of maturation involving composting. Gasum is producing organic fertilizers totalling 930 000 tons per year.

Gasum will report its GHG reduction impacts of its green funding in accordance with EU's Renewable Energy Directive (82009/28/EC) and the Finnish Energy Authority. The grid factor for Finnish electricity to be used is 128.5 g CO₂/kWh: the same grid factor as the company uses to report its corporate level GHG emissions.

Other strong governance aspects of Gasum's Green Funding Framework include a 3-step project selection protocol where environmental expertise will be required at all decision gates, the consideration of supply chain impacts for all Gasum projects and granular and consistent reporting with potential external verification. The reporting will include a list of the assets invested in and impacts at the category level.

Weaknesses

We find no overall weaknesses in Gasum's Green Funding Framework.

Pitfalls

Gasum has not yet adopted the guidelines of TCFD and currently has no resiliency plans implemented in its business planning. However, both aspects are being considered for implementation in the near future. We



encourage the company to make sure resilience and climate risk management become embedded as priorities in its plans and procedures.

In 2018, the company's cumulative energy efficiency savings were 4,672 MWh, which is above the savings target it has set itself for 2020. Moreover, energy saving plans have been created for both biogas and LNG production facilities and are followed up on regularly. These are positive features of Gasum's energy efficiency plans, however it is our assessment that the targets could be higher: The company aims for 1% energy efficiency improvements annually until 2025. In this respect, Gasum follows the guidelines of the Finnish Government. But according to the International Energy Agency (on a global level), energy efficiency must increase by 3.2% per annum until 2040 in order to be in line with the SDS scenario. Gasum's corporate energy efficiency target is 1 % per annum and hence lower than IEA's recommendation.

Impact reporting for green financial instruments other than green bonds is a relatively new field. We encourage the issuer to be as transparent and clear as feasible regarding the attribution of achieved impacts to single instruments.



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Gasum Green Funding Framework, June 2019	Green funding framework
2	Gasum Corporate Responsibility 2018 – Cleaner Tomorrow	Gasum’s Sustainability Report
3	Gasum Code of Conduct	Gasum’s code of conduct
4	CR KPI Reporting	Gasum’s quarterly CR report (sample)



Appendix 2: About CICERO Shades of Green

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 funding 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).

