

A person with long brown hair is seen from behind, looking out a window. The background shows a yellow building with windows, slightly out of focus. The overall scene is warm and bright.

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2022

GASUM GREEN FUNDING IMPACT REPORT

Green Funding Impact Report 2022



Gasum's Green Funding Impact Report highlights our investments into renewable energy and our contribution to the circular economy and climate change mitigation. The green financed loan raised under Gasum's Green Funding Framework is allocated to financing our assets in the biogas segment, which facilitates sustainable growth in the future and contributes to the UN Sustainable Development Goals.

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Interest in biogas amplified



During 2022 we developed and launched a new strategy for the Gasum Group. The strategy maps our way to increasing income from renewable and cleaner energy sources and accordingly reducing the role of fossil fuels for our company in the coming five years.

We see our role as being a trusted partner to our customers in the energy transition. We consider it our duty to guide our customers towards sustainable energy solutions and help them continuously reduce their greenhouse gas emissions.

The geopolitical instability currently present on the world stage has intensified an already sizeable interest in biogas as a way of increasing energy security in addition to reducing greenhouse gas emissions in logistics and industry. Gasum is uniquely positioned to provide the Nordic market with a growing amount of biogas through a constantly developing gas infrastructure.

Our aim is to reach a cumulative reduction of 1.8 million tons of carbon dioxide emissions through increasing biogas availability to 7 TWh by 2027. We are going to do this by investing into our own production as well as sourcing from trusted partners. Our biogas assets financed under the Green Funding Framework are an invaluable tool to reach these goals.

We see the coming years for Gasum as an exciting period in the company's trajectory, as the world shifts towards a cleaner energy future.

Mika Wiljanen

Gasum CEO

Sustainability is at the core of Gasum's renewed strategy

Gasum's strategy, renewed during 2022, is based on increasingly shifting emphasis towards renewable gas and electricity in our offering. Our target is to bring a growing amount of renewable biogas to the market by 2027 through both increasing investment in our own production and sourcing certified biogas from trusted partners.

Despite recent market turmoil and a changed geopolitical landscape, there is an increasingly urgent need to keep an eye on the long game – the transition to a cleaner energy future. Our role is to guide our customers towards sustainable energy solutions and help them continuously reduce their greenhouse gas emissions.

We look at sustainability holistically through environmental, social and economic lenses. This means enabling emission reductions for our customers, reducing the environmental impacts of our own operations, promoting a safe work environment and ensuring responsible business practices.

Gasum's sustainability work is steered by its Sustainability Program and objectives. Transparency, openness, and diverse

stakeholder cooperation are guiding principles for Gasum in both business and communication.

Objectives are set for each program theme and progress is communicated through our annual Sustainability Report. The Report is prepared in accordance with the Global Reporting Initiative (GRI) framework and has been published since 2010.



GASUM AND THE SDGS

Gasum as a provider of cleaner energy supports the UN Sustainable Development Goals (SDGs) of the UN 2030 Agenda. The SDGs are global goals adopted by the UN in 2015 as a universal call to action to solve by 2030 the urgent economic, social, and environmental challenges facing our world. Gasum has identified six priority SDGs towards which we can contribute the most in our operations.



CLIMATE ACTION

We are committed to helping our customers to reduce their climate emissions. We aim at 1,800,000 t CO₂ reduction for our customers with biogas by 2027 and develop to expand future decarbonisation pathways. We use 100% renewable electricity in all our operations and are committed to continuous energy-saving actions.



AFFORDABLE AND CLEAN ENERGY

We offer and develop low-carbon and renewable energy products and energy market services for our customers. Our investment plans increase the availability of renewable energy. We increase access to cleaner fuels with a developed gas infrastructure in the Nordics, above all in the maritime and heavy-duty road transport segments.



DECENT WORK AND ECONOMIC GROWTH

We respect human rights and promote the well-being, work ability and competence of our personnel. We have a strong safety culture and aim at zero harm for our employees and contractors.



INDUSTRY, INNOVATION, AND INFRASTRUCTURE

We develop infrastructure for cleaner energy. We advance innovations, build partnerships, and participate in the activities of various research and development networks in circular economy, cleaner energy, decarbonization and resource-efficiency.



SUSTAINABLE CITIES AND COMMUNITIES

We increase the availability of our low-carbon and renewable energy products for the transport and industry segments, which positively impacts the local air quality in urban areas. We help cities to be more sustainable with partnerships in circular economy and clean energy solutions.



RESPONSIBLE CONSUMPTION AND PRODUCTION

We treat a substantial share of society's biodegradable waste and residues and produce biogas and recycled nutrient products from it. We participate in activities promoting the further development of technologies, feedstocks, and partnerships in this field.

Increasing biogas availability

Gasum aims to reach a cumulative reduction of 1.8 million tonnes of carbon dioxide emissions by 2027. We will achieve this through bringing 7 TWh of biogas to the market by investing strongly into our own production as well as sourcing from trusted partners. Gasum's investments in the Nordic gas ecosystem facilitate the growth of biogas production and use.

Global, EU level, and national energy and climate policies and targets are strongly committed to a rapid decrease in greenhouse gas emissions. The importance of biogas as a sustainable energy source over the longer term will increase further as the Nordic countries transition towards carbon neutral energy consumption in the industry and transportation sectors.

The use of gas is projected to grow strongly in the years ahead, particularly in industry as well as in road and maritime transport. Gasum has been preparing for the growth in demand by investing purposefully in the development of the Nordic gas infrastructure for several years already – our network of terminals, traffic filling stations and supply solutions for maritime transport have grown significantly. Gasum is one of the few companies who can offer biogas on an industrial scale in the Nordics.

Gasum's investments in the Nordic gas ecosystem and in new business applications facilitate future growth. Gasum is also involved in a number of different projects planning to develop the production of other renewable gases, such as synthetic methane and green hydrogen, in the Nordic countries.

Biogas is sustainable

Biogas is a completely renewable fuel produced from agricultural, industrial, and household waste and residues. Biogas makes it possible for users to cut greenhouse gas emissions generated over the fuel life cycle by an average of 90% when compared with a fossil-based fuel as defined in the EU Renewable Energy Directive (RED2 2018/28/ EC). If manure is used as a feedstock, there is potential to reduce emissions even beyond 100%. This is because the greenhouse gas emissions generated in the traditional manure treatment and storage are avoided.

In the biogas production process, microbes convert the organic fraction of biomass into biogas and the nutrients from the feedstock remain in the digestate that is used as a nutrient product, such as fertilizers. The biogas can be used locally as such, or upgraded to biomethane and further liquefied, which enables the transport of the gas over longer distances. Renewable biogas can be used as a fuel for cars, buses, heavy

duty vehicles, and maritime transport, as well as in industrial and energy applications.

Nitrogen and Phosphorus that remain in the digestate after biogas production are returned to the food chain as fertilizers or refined for industrial purposes to replace mineral and fossil nutrients and fertilizers.

We have an ambitious climate target

We have set a target to increase the availability of biogas and reduce our customers' cumulative greenhouse gas emissions by 1.8 million tonnes of CO₂eq by 2027. We intend to make 7 TWh of biogas available on the market from our own production and that of our certified European partners within the set timeframe. In addition, we aim to decrease the climate impact of our own operations. We work systematically to optimize our supply chain and improve the energy efficiency of LNG terminals and biogas plants. We use 100% renewable electricity in all our operations.



Gasum offers biogas production and biogas availability on an industrial scale in the Nordics

Gasum has established a green funding framework as part of the company's financing strategy

Gasum's Green Funding Framework governs bond issuances as well as green loans as part of the Company's financing strategy.

The Framework has been assessed by an independent third party, CICERO Shades of Green, which is a subsidiary of the Center for International Climate and Environmental Research (CICERO) in Norway.

Based on the review of Gasum's governance framework for selecting and reporting on green eligible assets, as well as of the corporate sustainability policies, CICERO Shades of Green found the Framework to be in alignment with the Green Bond and Green Loan Principles. CICERO gave Gasum's Green Funding Framework the grade of dark green, which is allocated to the most climate friendly projects or business solutions that promote the long-term vision of the transition to a low-carbon society.

Gasum's Green Funding Framework was established in 2019. Since then, the framework and related policies have remained unchanged. Under the Green Funding Framework, Gasum can finance projects and assets connected to renewable energy and

circular economy adapted products, waste management and pollution prevention, and control and energy efficiency in line with the Green Bond and Green Loan Principles. Investments in the company's LNG business area are excluded.

The CICERO Shades of Green's second opinion and Gasum's Green Funding Framework are available on our website. The framework will be updated and published together with the second opinion of the new framework during 2023.



“Sustainability is a long-term strategy and an integral part of Gasum's strategy to promote development towards a carbon-neutral future. The company has a single purpose: cleaner energy.”



Assets financed with green loans in 2022

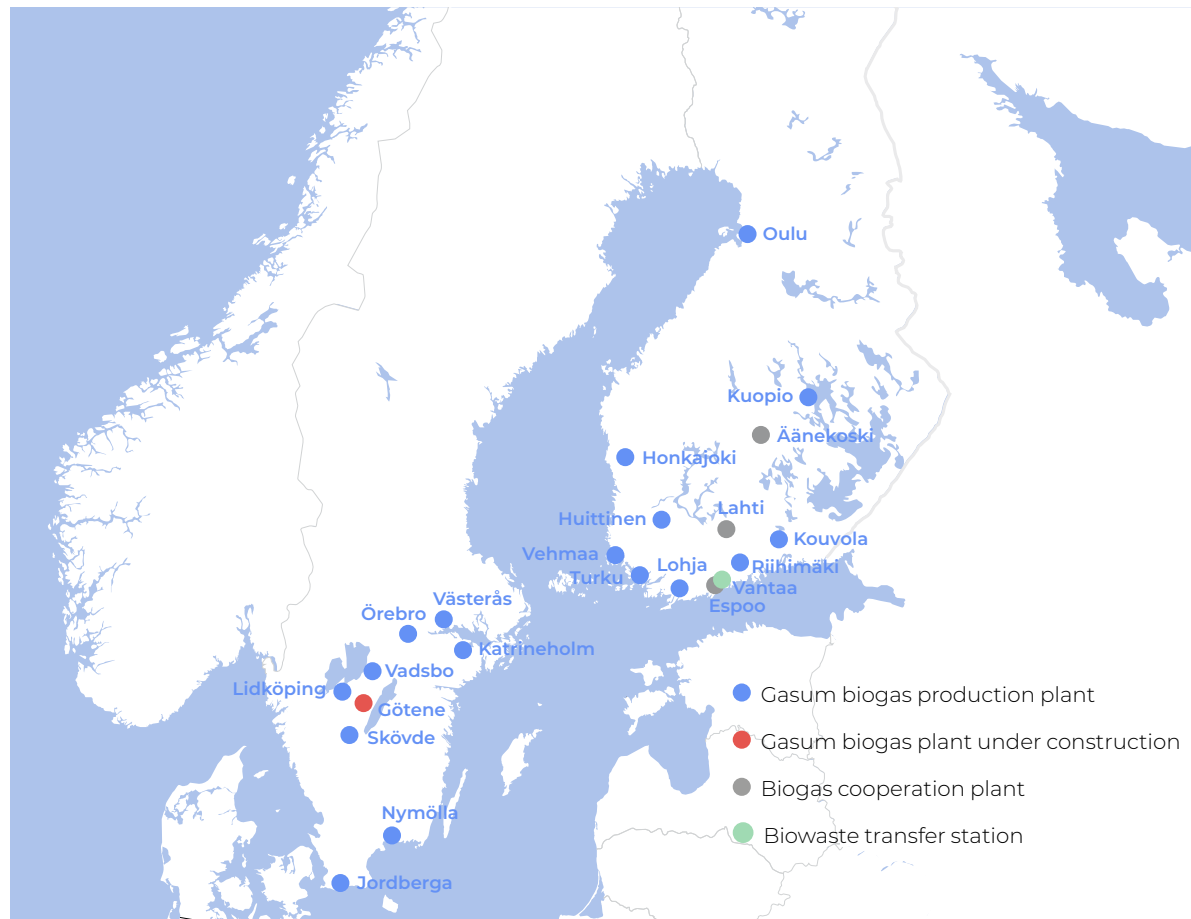
During 2022 no new loans were raised under the Green Funding Framework and thus the amount equal to the net proceeds of Gasum's green funding remained at EUR 152 million. This is allocated to financing Gasum's assets in the biogas segment. This equals 44 % of the total amount of loans taken out from the credit facility at end of 2022.

Gasum continued investments in the green biogas assets, which within Gasum's Green Funding Framework are eligible with the criteria of verified asset category 'Renewable or circular economy adapted products'.

Operations during 2022 spread across 21 locations in both Finland and Sweden. At the end of the year the biogas upgrading unit in Espoo, Finland was closed as planned, as HSY's wastewater treatment operations were moved to another location.

In 2022, 10 projects were ongoing with an aim to further increase the production capacity of biogas while simultaneously improving the efficiency of the plants.

Investing strongly in biogas production is part of Gasum's strategy to help our customers move towards a carbon neutral energy future. In the coming years Gasum is, for example, planning to construct five new large biogas plants in Sweden.



Five new biogas plants planned to be constructed in Sweden

Gasum is commencing the process of consecutively constructing five new biogas plants to southern Sweden. The first one will be constructed in the municipality of Götene. The other planned plant sites will be Borlänge, Kalmar, Sjöbo and Tomelilla.

Each one of the plants has received an investment from the Swedish Environmental Protection Agency's Klimatklivet investment program.

The plants will use 1,8 million tons of different kinds of waste streams for feedstock and produce 55,000 tons of liquified biogas (LBG) per year, which equals 750 GWh of energy. This averages the yearly fuel consumption of 1,500 heavy-duty trucks and amounts to a yearly total of 150,000 tons less of carbon dioxide in the atmosphere when compared to using diesel.

The plants will also produce 1,5 million tons of high-grade environmentally friendly fertilizer per year as a side stream. Recycled fertilizers improve soil fertility ecologically and recycled nutrients can replace fossil sources used by industry.



Expected environmental impact

Renewable energy production financed with green loans promotes positive climate impacts of the company's business. In 2022, the biogas production financed with green loans totaled about 650 GWh. The corresponding estimated annual greenhouse gas emissions reduction was 171,000 tons of CO₂ equivalent.

Biogas produced by Gasum is 100% renewable. During the reporting year, biogas production met fully with the sustainability criteria laid down by the Renewable Energy Directive.

In 2022, the biogas plants utilized a wide base of biomass in biogas production. A total of 1,000,000 tons of biodegradable feedstocks were sourced from the food industry, retail outlets, municipalities, and agriculture, consisting of biodegradable waste and residues, municipal wastewater sludge, and agricultural byproducts and crops.

In addition, 12,000,000 tons of forest industry wastewater was received as feedstock for biogas production. Biogas production enabled the reuse of biodegradable waste material as energy, thereby reducing the energy lost in processes such as waste combustion or composting.

In addition, around 940,000 tons of nutrient residues were generated as a byproduct in the biogas production process. These are returned either as recycled nutrients for industry, or as recycled fertilizers for agriculture.

Our network of biogas plants improves economy of scale and efficiency and allows biomass processing to be optimized between plants depending on, for example, logistics, capacity, market conditions and different feedstocks. Relatively modern production assets, continuous work to improve energy efficiency and use of renewable electricity in all operations provide a good basis for emission control in Gasum's operations.



Impact calculation principles

Gasum follows the reporting standards published by the Global Reporting Initiative (GRI) and discloses more detailed sustainability targets, key indicators and related achievements in the Sustainability report 2022.

Climate impact

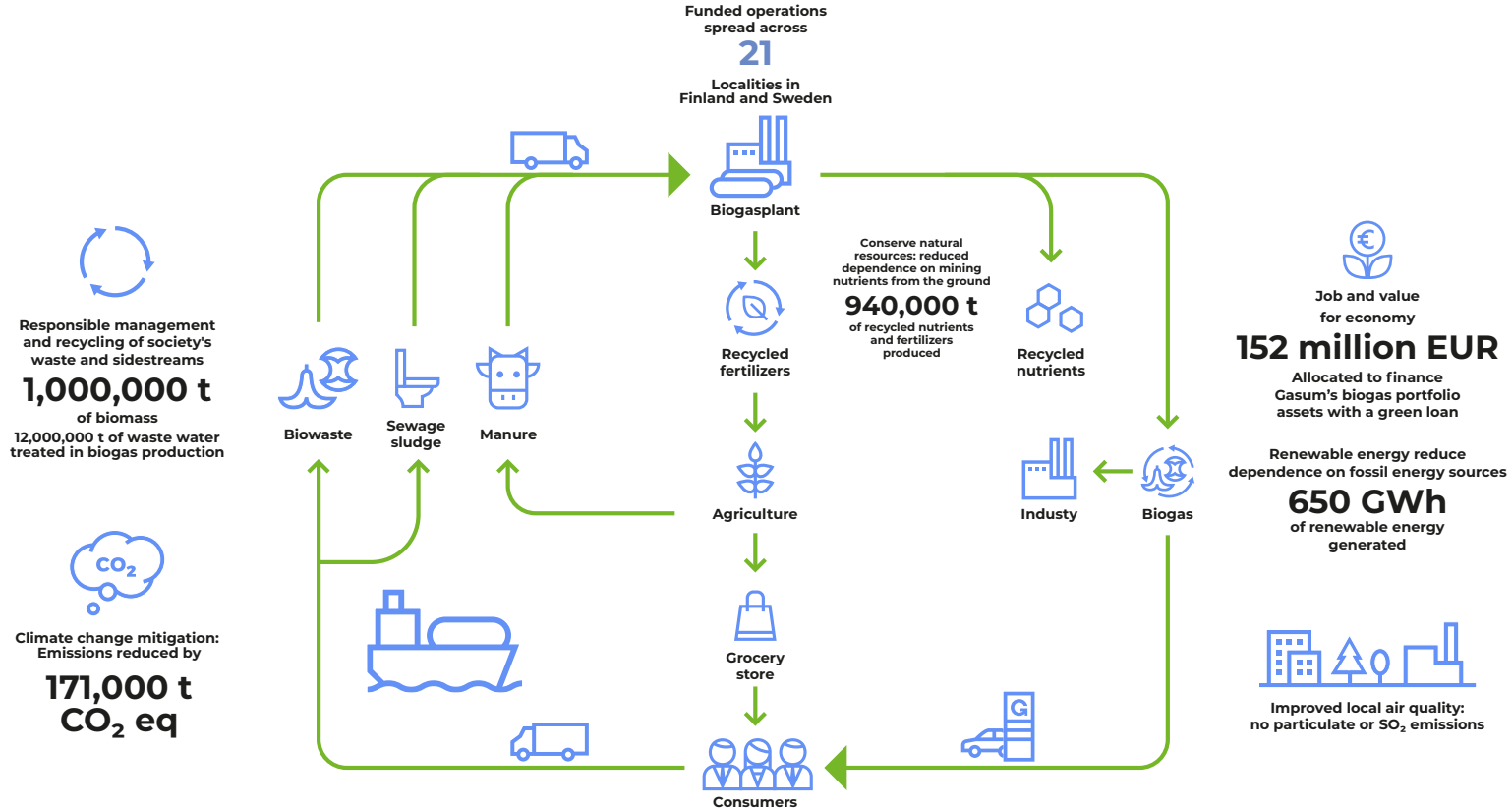
The estimated tons of CO₂eq emissions avoided because of assets to which green funding proceeds have been allocated, have been calculated according to methodologies and assumptions described below.

The evaluation is carried out based on portfolio-based specific emission calculations, based on an annual level analysis for 2022. The determination of emissions is based on the sustainability criteria guidelines provided by the Finnish Energy Authority and Swedish Energy Agency and is in accordance with the Renewable Energy Directive, RED2 (2018/2001/EU), which governed the climate impact calculation rules during the reporting year.

Emission calculations have been carried out in the context of Gasum's certified sustainability systems in Finland and Sweden. The sustainability systems and the emission calculations are verified annually by an independent certification body.

In calculating the greenhouse gas emissions generated by the usage of electricity, grid factors of 99 g CO₂eq/kWh for Finland and 26 g CO₂eq/kWh for Sweden have been applied. In determining emissions reductions, the applied fossil fuel comparators are 94 g CO₂ eq/MJ for transport use, 80 g CO₂eq/MJ for production of useful heat, heating and/or cooling, and 183 g CO₂ eq/MJ for electricity production. Carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions are considered in the total climate impact with GWP100 values defined in the RED2 (25 for CH₄ and 298 for N₂O).

Gasum's green funding 2022 in figures



We aim at operational excellence

We consider the health, safety, and environmental aspects with care. We believe that all accidents related to people, environment and assets can be prevented. We invest in energy efficiency, maintenance, and process and emission control development to improve our performance.

We promote a safe and secure working environment for our employees and contractors. Process safety starts with the design phase of building facilities and extends throughout their lifecycle, ensuring the facilities are operated safely, maintained systematically, and inspected regularly to identify and deal with any potential process safety hazards. Every one of us is responsible for following safety and security instructions, making observations, and eliminating hazards, and for taking part in safety and security training. Documenting observations helps to prevent damage, accidents, and injuries, and to ensure we continuously improve our daily operations. Where risks are identified, we set deadlines and responsibilities for corrective actions in response to them and monitor these actions.

In our daily work, we make systematic efforts to minimize the most significant environmental impacts of our operations:

air emissions, energy consumption, odor nuisances, and environmental impacts caused during project construction. We employ environmentally sound and energy-efficient technologies. We are committed to improving energy efficiency and favor renewable electricity in all our operations. At many of our biogas plants, efficient water recycling means that no wastewaters are produced at all. We increase our understanding of the life-cycle impact of our products and use this information to improve our performance.

Our certified integrated management system (IMS) supports our work in achieving operational excellence and continuous improvement. The IMS consists of quality, environmental, energy, occupational health, and safety management systems (ISO 9001:2015, ISO 14001:2015, ISO 50001:2018 and ISO 45001:2018 standards), as well as the certified biogas sustainability systems. Compliance with the standards is verified annually by internal and external audits. All sites systematically follow up on any deviations, proactively report observations, conduct safety walks, and compile risk assessments.

We commit our business partners to our operating practices by providing them with training and continuously assessing our critical suppliers. Our Business Partner Code of Conduct sets the requirements we expect our partners to comply with when

doing business with us. We work together to maintain high ethical standards and to conduct business in a responsible way. Our fundamental principles include e.g., avoiding bribery and corruption, competing fairly, respecting human rights and the environment, maintaining quality and regulatory excellence, as well as health, safety, and security. [The Gasum Business Partner Code of Conduct is available on our website.](#)



We continue to invest in maintenance and process improvements to improve our environmental performance

Gasum



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