



# TINE

## Green Bond Second Opinion

1 November 2022

### Executive Summary

**TINE SA (“Tine” or the “issuer/company”) is the largest Norwegian dairy product producer.** It is structured as a cooperative owned by over 8,700 individual producers (members) spread out across Norway. Tine processes milk from its members to produce a variety of dairy products, such as cheese, milk, yoghurt, and soured milk. In 2021, Tine employed over 5,000 employees at over 30 dairies and terminals in Norway and had a revenue of NOK 24,045 million.

**Proceeds raised under this framework are expected to mainly finance projects in the energy efficiency and clean transportation project categories.** Investments to improve overall energy efficiencies in dairy production pertain to upgrading Tine’s production facilities, including its production lines, as well as investments in heat pumps and cooling displays, where such investments must improve overall energy efficiency by 30%. Eligible projects in the clean transportation category include light and heavy vehicles powered by electricity, hydrogen, or biogas, as well as associated infrastructure including electrical charging points and hydrogen or biogas fuel stations. Such investments are aligned with Tine’s overall ambition to exclusively use renewable energy and fuel in its transportation and logistics activities by 2030.

We rate the framework **CICERO Medium Green** and give it a governance score of **Good**. There are both Light Green and Medium Green elements in the energy efficiency project category, to which the issuer expects to allocate most of the proceeds raised. Overall, the Medium Green shade reflects that, by improving energy efficiency by specific thresholds and increasing the use of low-carbon transport solutions; the investments under the framework represent important steps towards a low-carbon dairy production overall. At the same time, it reflects that the 30% improvement criteria are measured against the current ‘pre-investment’ situation, where the criteria could be realised by upgrading older and less energy-efficient production technologies with nothing more than the current standard technology. Finally, we rate the clean transportation category Dark Green. For clean transportation projects, Tine informs that it aims to mainly finance new vehicles running on renewable fuels such as green hydrogen, biogas, or electricity.

### Strengths

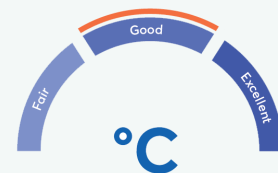
**The framework includes several project categories with well-defined criteria.** It is a strength that the framework includes various eligible project categories aimed at reducing the overall carbon footprint of Tine’s dairy production throughout its value chain. Agriculture and related land-use account for 17% of global greenhouse gas (GHG) emissions, 10% of GHG emissions in Europe, and 8% in Norway. Hence, decarbonising the sector, on

### SHADES OF GREEN



°CICERO  
Medium Green

### GOVERNANCE ASSESSMENT



### GREEN BOND PRINCIPLES

Based on this review, this framework is found to be aligned with the principles.



the whole, will require investments in all areas of the value chain and includes farm-level measures and measures regarding logistics and transport.

**It is a strength that the issuer is producing biogas from cow manure and food waste and is seeking to invest further in such projects.** Tine reported that in 2021, 22 of its vehicles ran exclusively on biogas produced from cow manure and food waste, and that it aims to add to its fleet of vehicles running on biogas. Tine informs that its test project, where it combined cow manure with food waste, yielded 25% better results than conventional biogas production<sup>1</sup>.

#### *Pitfalls*

**The result and impacts of energy efficiency projects may be overstated.** Overall, it is positive that most of the eligible energy efficiency sub-projects have criteria to improve energy efficiency by at least 30%. However, it should be noted that for most of these eligible technologies, the 30% improvement is against the current 'pre-investment' situation and could involve older and outdated production facilities for which upgrades would automatically confer significant improvements. However, Tine has received ENOVA support for its project at its dairy in Bergen, where ENOVA highlights the project's positive climate benefits and how such energy efficiency measures can be replicated in other dairies across Norway<sup>2</sup>.

**It is a potential pitfall that Tine can only influence and support its members to take action.** As a cooperative, Tine cannot directly control the farming activities of its members, but it can provide advice and support various initiatives that will contribute to mitigating and adapting to climate change. Hence, this may introduce risks that investments in climate calculations at the farms will not materialise in actions to mitigate climate change by reducing emissions or adapting to climate change by strengthening the farms' climate resilience. Such actions are urgently needed in order to reach Landbrukets klimaplan's<sup>3</sup> target of reducing GHG emissions by 5 million tonnes in the agriculture sector by 2030, which is mainly focused on reducing the considerable emissions stemming from the overall value chain of dairy production and products.

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<sup>1</sup> [KUKRAFT | TINE \(tine.no\)](https://www.kukraft.no)

<sup>2</sup> [New TINE dairy in Bergen \(only in Norwegian\) | ENOVA \(enova.no\)](#)

<sup>3</sup> [Landbrukets Klimaplan \(Norwegian only\) | Statsforvalteren \(statsforvalteren.no\)](#)



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# 1 Tine's environmental management and green bond framework

## Company description

TINE SA (“**Tine**” or the “**issuer/company**”) is the largest Norwegian dairy product producer. It is structured as a cooperative, owned by over 8,700 individual producers (members) spread out across Norway. Tine processes milk from its members to produce a variety of dairy products, such as cheese, milk, yoghurt, and soured milk. Tine employs over 5,000 employees at over 30 dairies and terminals in Norway. Tine reported revenue of NOK 24,045 million in 2021, where roughly 95% of ready-made product was sold In Norway, followed by the Americas, rest of Europe, and the Oceania regions.

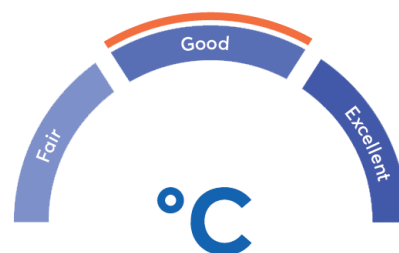
## Governance assessment

Tine has established quantified climate and environmental targets but has yet to determine a net zero target for its greenhouse gas (GHG) emissions. However, Tine has established a 2030 target to contribute to reducing 5 million tonnes of GHG emissions in the Norwegian agriculture sector. Policies covering its supply chain and suppliers, including environmental and climate-related requirements, have been established - however, Tine has not established a biodiversity policy. Further, Tine informs that it has good experience using life cycle assessments (LCA) for its largest product categories.

Tine has established emission reporting mechanisms for GHG emissions, following the GHG protocol, and reports according to the Global Reporting Initiative (GRI) reporting standards. Tine does not currently report climate risks following the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations but has integrated such risk assessments into its overall risk management approach.

The issuer's current investment committee is responsible for the selection process. Decisions in the selection process are decided by majority vote, where no veto is possible, including for the representative from the sustainability department. The selection process under the framework is generally good. Furthermore, the project selection criteria are well established, but could benefit from greater clarity on what climate risks will and will not be expressly considered in the selection process.

The reporting structure and metrics are well-defined and include clear metrics for allocation and impact reporting. The issuer informs that it has a robust data collection process in place, which will be followed for allocation and impact reporting. A third party will verify the allocation report.



The overall assessment of Tine's governance structure and processes gives it a rating of **Good**.



### Sector risk exposure

**Physical climate risks.** Science shows that extreme weather events are becoming more frequent and intense, that incremental climatic changes are highly likely to happen, and that their impacts are expected to grow more severe over the coming years and decades. The impacts of physical risks are uncertain in probability, magnitude, and timing. Agriculture is one of the most exposed sectors to physical climate risks, where short-term impacts, e.g., increased frequency of extreme weather events, are already being felt and are challenging to forecast. More extreme precipitation may damage crops and farm infrastructure and require substantial adaptation investments, e.g., improved drainage, drying silos, and lightweight machinery. More extended and intense drought periods reduce output and increase irrigation and animal feed costs, possibly forcing early slaughtering. Longer-term impacts, such as reduced yields from higher average temperatures and more significant intrusion of saltwater into coastal agricultural land, will require investments in resiliency measures, e.g., crop diversification. Climate change will also increase the long-term risks of pests and invasive species while damaging animal pollinator populations. Degradation of soil and water resources and biodiversity loss from unsustainable farming practices reduce productivity and climate resilience at system and farm levels, causing stranded assets in the worst case, e.g., abandoned land.

**Transition risks.** Due to the profound changes needed to limit global warming to 2°C, transition risk affects all sectors. More ambitious mitigation policies increase transition risks in the agricultural sector. Thus far, it has not been heavily regulated, e.g., carbon pricing or regulations on fertilizer use. Policies addressing biodiversity loss are also a source of transition risk that is materializing, e.g., reduced planting area due to regulations on nature restoration and protection and restrictions on pesticide use. Dietary changes are already taking place and may lead to a drop in demand for meat and dairy products over time. Policy changes and increased production of alternative proteins with lower emissions may amplify these behavioural changes. Government farm subsidies may increasingly be tied to climate and sustainability performance criteria.

**Environmental risks.** As with climate change, nature and biodiversity loss can create physical risks due to the loss of critical ecosystem services, e.g., soil stabilization, climate regulation, pollination, water purification, etc. Such nature and biodiversity loss can contribute to operational and supply chain disruptions (e.g., via landslides, reduced crop yields, and pandemics) while reducing resilience to physical climate risks. Environmental risks can be exacerbated in the agricultural sector, often directly impacting primary products. In the Nordic region, key environmental risks stem from the use of fertiliser, which may lead to soil contamination and runoffs which result in damages to biodiversity and waterways.



## Environmental strategies and policies

Tine publishes an annual integrated report prepared in accordance with the Global Reporting Initiative standard (GRI). The company reports GHG emissions for scope 1, 2, and 3. In 2021, the company reported scope 1 GHG emissions of 62,308 CO<sub>2</sub> equivalents (CO<sub>2</sub>e) tonnes, where 66% of scope 1 GHG emissions stemmed from transportation and the rest from production and other operations. For scope 2, the company reported 152,842 CO<sub>2</sub>e tonnes of GHG emissions from dairies (market-based electricity factor). Further, it reported that 85% of its energy use was from renewable energy. Regarding scope 3, the company reported 1,321,414 CO<sub>2</sub>e tonnes of indirect GHG emissions, where almost all such indirect GHG emissions stemmed from production at the members farms<sup>4</sup>. Scope 3 also includes minor GHG emissions from employee travel by air and emissions from fuels used. In its latest annual reporting, Tine includes scope 1 GHG emissions data from 2010 and onwards, highlighting its progress towards reducing overall emissions from its internal operations. Tine has developed LCAs for its largest product categories. According to Tine, its average GHG emission for producing 1 litre of milk is 1.11 kg CO<sub>2</sub>e, which is less than half of the global average of 2.4kg<sup>5</sup>. Tine attributes the lower-than-average carbon footprint of its milk production to its focus on animal health and welfare, and high-quality feed for its cows.

Tine has established climate and environmental targets to support the Norwegian agriculture sector's national emission reduction pledge. The pledge, which is an agreement between the Norges Bondelag (Norwegian Farmers' Association), Norsk Bonde og Småbrukerlag (Norwegian Farmers' and Smallholders' Association), and the Norwegian government, entered into in June 2019. The pledge has eight focus areas: 1) use of the 'klimakalkulator' (climate-calculator), 2) more climate-friendly and sustainable feeding, breeding and healthier livestock, 3) fossil free machinery, 4) fossil free heating, 5) better use of fertiliser and good agronomy, 6) use of manure as raw material in industrial biogas, 7) using soil as carbon storage, and 8) new climate technology<sup>6</sup>. Accordingly, Tine aims to contribute to the cumulative reduction of 5 million CO<sub>2</sub>e tonnes in the Norwegian agriculture sector by 2030. Tine informs that it will mainly focus on improving the quality and types of feed for cows to reduce overall methane emissions, improving its fertiliser use and management, as well as various improvements initiatives resulting from its climate advice at the individual farm-level using the climate-calculator. Moreover, Tine informs that since 2017, it has reduced emissions by 24%. Tine plans to further reduce emissions from its primary dairy production site in Jæren by replacing natural gas with energy from biomass combustion. Tine notes that one of the key challenges it faces in reducing emissions is reducing the emissions stemming from transportation. This has been challenging mainly to the high costs and limited availability of biofuels and heavy trucks that run on biogas which suits TINE's needs. According to Tine, it is currently developing a set of environmental requirements to such external transport companies. By 2030, Tine aims to use renewable energy only in its complete value chain<sup>7</sup>. Further, Tine aims only to use recycled or fully sustainable materials for its packaging by 2030. Tine also aims to reduce food waste by 50% compared to its 2015 levels, and reports that it has reduced it by more than 21 % since 2015.

Tine informs that it works closely with its members through its counselling services, which includes advising on alternatives for feed and reducing the threat of flooding. According to Tine, climate risks are embedded into its overall risk management approach. Tine does not however report on climate risks facing its operations by following the recommendations from the TCFD.

Tine has developed guidelines for screening its suppliers<sup>8</sup>. The guidelines require suppliers to take steps to continuously reduce their GHG emissions, minimise the use of toxic chemicals, and have sustainable practices for

<sup>4</sup> Tine notes that it is challenging to determine the definite emission factor for production of Norwegian milk, and that such emission assessments are still in the early stages of development. The current basis for emissions stemming from milk production is 1.11 kg CO<sub>2</sub> equivalent per kg of milk.

<sup>5</sup> [Greenhouse Gas Emissions from the Dairy Sector | FAO \(fao.org\)](https://www.fao.org/greenhouse-gas-emissions-from-the-dairy-sector/)

<sup>6</sup> [Landbrukets Klimaplan \(Norwegian only\) | Statsforvalteren \(statsforvalteren.no\)](https://www.statsforvalteren.no/landbrukets-klimaplan/)

<sup>7</sup> According to Tine, the share of renewable energy in TINE's production stood at 85 per cent in the end of 2021.

<sup>8</sup> [Retningslinjer for leverandører og andre forretningspartnere | TINE \(tine.no\)](https://www.tine.no/retningslinjer-for-leverandorer-og-andre-forretningspartnere/)



water, land, and forest management. According to Tine, the screening process and criteria are aligned with the general principles of the Norwegian Transparency Act (åpenhetsloven).<sup>9</sup>

### **Green bond framework**

Based on this review, this framework is found to be in line with the Green Bond Principles. For details on the issuer's framework, please refer to the green bond framework dated October 2022.

#### *Use of proceeds*

For a description of the framework's use of proceeds criteria, and an assessment of the categories' environmental impacts and risks, please refer to section 2.

#### *Selection*

The issuer has established an investment committee (IC), chaired by the Chief Financial Officer (CFO). The IC consists of various senior representatives from Tine, including a senior representative from the sustainability department. The IC is responsible for identifying and confirming project eligibility for green financing as outlined in the framework. The senior representative from the sustainability department is responsible for evaluating the compliance of the proposed projects with the eligibility criteria outlined in this framework, as well as policies and guidelines.

Tine informs that it will rely on inhouse expertise when identifying and selecting projects, and that it will seek to utilise its product LCAs if relevant when considering investments at the product level.

If an eligible 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. The IC holds the right to exclude any eligible green project already funded if the project no longer meets the eligibility criteria defined in the Framework.

The IC is set to meet at a monthly interval, and ad-hoc if necessary. All decisions are taken by majority vote, where no veto is possible, including for the representative from the sustainability department. All decisions are documented and filed for record keeping.

#### *Management of proceeds*

The issuer will monitor that an amount equal to the net proceeds from green bonds issued is allocated to eligible green projects using a register. If the total outstanding net proceeds of the green bonds exceed the value of the eligible green projects registered, then such unallocated amounts will temporarily be placed in the liquidity reserve such as money market funds and managed accordingly by the issuer. The issuer confirms that any unallocated proceeds will not be invested in industries, projects, or companies that are involved in fossil fuel/energy production, tobacco, or the weapons industry.

#### *Reporting*

The issuer will provide an annual allocation and impact report, including quantitative impact indicators and relevant data and information where feasible, until full allocation, and on a timely basis in case of material developments. Reported information will be provided on a best-effort basis subject to data availability. The issuer informs that an independent third-party auditor will, on an annual basis, or in case of material developments, verify the internal tracking processes and the allocation of the funds from the green bond proceeds.

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<sup>9</sup> [Bærekraftig forretningsdrift – åpenhetsloven | TINE \(tine.no\)](#)



### Allocation reporting

The allocation reporting will include:

- A list of projects financed, including project descriptions and allocated amount on project level and project category level
- Distribution between new financing and refinancing
- The amount of unallocated proceeds, if any.

### Impact reporting

The impact report aims to disclose the environmental impact of the assets financed under the framework based on the share of financing for each asset. The issuer informs that the methodologies for the selected impact indicators will be disclosed as part of the impact report and that the impact assessment is provided with the reservation that data calculations will be on a best effort basis. Furthermore, the issuer informs that the data will be collected from various responsible resources within the company, and that it will follow the same procedures as for its sustainability reporting process. According to the issuer, the process is verified by its third-party auditor.

Table 1 below showcases the selection of impact indicators for each project category.

Project category	Impact indicators
Energy Efficiency	<ul style="list-style-type: none"><li>▪ Annual energy savings (MWh)</li><li>▪ Annual GHG emissions avoided (tonnes CO2e)</li></ul>
Renewable Energy	<ul style="list-style-type: none"><li>▪ Annual renewable energy generation, MWh</li><li>▪ Annual GHG emissions reduced/avoided</li></ul>
Clean Transportation	<ul style="list-style-type: none"><li>▪ Number and type of vehicles</li><li>▪ Annual GHG emissions reduced/avoided</li></ul>
Circular economy adapted products, production technologies and processes	<ul style="list-style-type: none"><li>▪ Environmental impact by improved sustainable packaging</li><li>▪ Reduction in food loss, food waste and/or material use</li></ul>
Environmentally sustainable management of living natural resources and land use	<ul style="list-style-type: none"><li>▪ Project description</li><li>▪ Number of dairy farmers that have carried out climate calculations</li></ul>

**Table 1: Example of impact indicators to be used in impact reporting**







## 2 Assessment of Tine’s green bond framework

The eligible projects under Tine’s green bond framework are shaded based on their environmental impacts and risks, based on the “Shades of Green” methodology.

### Shading of eligible projects under Tine’s green bond framework

- The issuer informs that it expects to use 80% of the first issuance for refinancing an energy efficiency project at its largest dairy facility in Bergen. Further, the issuer confirms that it intends to focus mainly on new investments after that; hence, no maximum lookback period for refinancing has been determined. The remaining 20% to the clean transport project category.
- Proceeds shall only be used for eligible projects’ capital expenditures and shall not be allocated to any fossil fuel-based assets or related activities.
- The issuer informs that it will consider all eligible projects within its international and domestic operations, including from its subsidiaries.

Category	Eligible project types	Green Shading and considerations
<b>Energy efficiency</b>  	<b>Production</b> New or upgraded production facilities needed to produce, store, and distribute products, where it can be proven a 30% lower energy usage per litre of milk compared to pre investment situation.  <b>Energy improvements</b> Energy efficiency in production lines and operations, such as heat recovery and exchange systems, frequency converters, upgrading production units. Investments should improve energy efficiency in the respective area by at least 30%.  <b>Heat pumps</b> Electric heat pumps	<b>Light to Medium Green</b> <ul style="list-style-type: none"> <li>✓ Investments in the energy efficiency project category should contribute to reduced energy consumption and reduced risk of increased emissions from dairy production. The criteria for such investments must lead to 30% reduced energy consumption or better for producing milk, which is in line with the IEA recommendations for energy efficiency improvements needed by 2030<sup>10</sup> to achieve IEA’s net zero scenario<sup>11</sup>.</li> <li>✓ The issuer informs that its first issuance will be used to refinance new construction at its dairy in Bergen, which has according to them led to an overall reduced energy consumption of 53% compared to the pre-investment situation at the dairy. The original investment project eligible for refinancing under this framework included heat pumps that reuse excess heat, general reuse of excess heat throughout the facility, improved energy efficiency upgrades for facility lighting, as well as other production assets.</li> <li>✓ Tine informs that it has received support from ENOVA for its energy efficiency project at the dairy in Bergen, which was a first of its kind. Tine informs that it may seek to replicate such solutions in its other</li> </ul>

<sup>10</sup> [Energy Efficiency 2021 | IEA \(iea.net\)](https://www.iea.org/en/energy-efficiency-2021)

<sup>11</sup> [Net Zero by 2050 A Roadmap for the Global Energy Sector | IEA \(iea.net\)](https://www.iea.org/en/net-zero-by-2050-a-roadmap-for-the-global-energy-sector)



**Cooling display cases and cold rooms**

Cooling display cases and cold rooms needed to store and distribute products where it can be proven that

- a) the system is rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 or;
- b) result in an energy efficiency improvement of 30% compared to the system replaced, or;
- c) the system recycles 50% of the excess heat.

dairy facilities. Moreover, ENOVA is a reputable state-owned enterprise with distinct requirements for eligible energy efficiency projects and brings further confidence to the energy efficiency project category under the framework.

- ✓ Overall, it is positive that most of the eligible energy efficiency sub-projects have criteria to improve energy efficiency by at least 30%. However, it should be noted that for most of these eligible technologies, the 30% improvement is against the current ‘pre-investment’ situation, where the criteria could be realised by upgrading older and less energy-efficient production technologies with nothing more than the current standard technology.
- ✓ It is positive that eligible heating pump technology under this project category is informed to be industrial grade with natural working fluids (no refrigerant gases) that have a global warming potential (GWP) of zero.
- ✓ Cooling display cases and cold rooms must only meet one of the three listed criteria. Hence, there could be a risk that such systems could qualify despite not meeting the improved energy efficiency criteria of 30%.

**Renewable energy**



**Solar power**

Electricity generation using solar, such as on-site solar rooftop panels

**Waste heat**

Production of heat/cool using waste heat

**District heating**

Pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.

**Biogas**

Production of biogas utilizing anaerobic digestion of organic material and manure sourced from the local farms. The produced biogas is used directly for the generation of electricity or heat, or upgraded to bio-

**Dark Green**

- ✓ Renewable energy – including solar, wind, hydropower, and geothermal is key to a low carbon transition.
- ✓ The issuer informs that some of its facilities have solar-roof panels installed, and that it may use proceeds raised under this framework to expand such investments in the future.
- ✓ According to the issuer, investment in waste heat systems could for example, include reusing the waste heat from refrigerating machines in heat pumps to save energy.
- ✓ According to the issuer, investments in district heating systems are meant to enable the transmission of excess heat from district heating plants and other sources, such as nearby buildings, which are not owned or operated by Tine, back to Tine’s facilities. It should be noted that district heating involves emissions, and the degree of emissions will vary depending on the heat source and how the heat is generated. Hence, there may be transition risks associated with such heating systems going forward<sup>12</sup>
- ✓ For biogas production, the issuer confirms that it intends to develop and use existing land and not acquire or use any new areas or land for such production.

<sup>12</sup> [Klimagassutslipp fra fjernvarme: Tiltak og virkemidler \(Norwegian only\) | The Norwegian Water Resources and Energy Directorate NVE \(nve.no\)](https://www.nve.no/klimagassutslipp-fra-fjernvarme-tiltak-og-virkemidler-norwegian-only)



methane for injection in the natural gas grid, or used as vehicle fuel or as feedstock in chemical industry.  
Residual material is returned to the farmers to be used as fertilizer or soil improver.

**Biomass**

Biomass facility that run primarily on locally sourced residual material such as wood pellets, as well as associated infrastructure.

✓ For biomass projects, the issuer informs that the primary sourced material will be residual wood pellets and wood chips, which will be mainly sourced from Rogaland and Agder county.

**Clean transportation**



**Light and heavy vehicles**

Light and heavy vehicles powered by electricity, hydrogen or biogas (such as KUKRAFT – cow power), as well as associated infrastructure including electrical charging points and hydrogen or biogas fuel stations.

**Dark Green**

- ✓ The issuer informs that it expects to allocate roughly 20% of first issuance to the clean transportation project category and that the majority of proceeds will be invested in vehicles.
- ✓ Electric transport solutions are part of the 2050 solution, even though such vehicle entail substantial lifecycle emissions (e.g. relating to raw material sourcing and battery production, and which depend on the electricity mix in the grid and factors such as vehicle size, weight, and power).
- ✓ Hydrogen-powered propulsion systems are considered a leading technology for heavy vehicles such as trucks. The issuer confirms that hydrogen related infrastructure investments are only eligible if the hydrogen has been produced through electrolysis powered by renewable energy – also known as green hydrogen production.
- ✓ CICERO Green views it as a strength that the issuer is producing biogas from cow manure and food waste, and that it has already achieved promising results<sup>13</sup>.

**Sustainable water and wastewater management**



New or upgraded wastewater facilities and rinsing equipment with an aim of reducing water consumption, energy use as well as discharges into water, and/or utilizing sludge for biogas production.

**Medium Green**

- ✓ Wastewater treatment and reusing water resources are part of the long-term solution to achieve the green transition to a low carbon and climate resilient future.
- ✓ Extracting waste materials and sludge from wastewater is vital in preventing damage to the local fjords.
- ✓ The issuer informs that projects under this category may pertain to new wastewater treatment plants connected to its dairy facilities and biogas production facilities and that such facilities will not run on fossil fuels.

<sup>13</sup> [KUKRAFT | Tine \(tine.no\)](https://www.tine.no)



- ✓ The organic matter and nutrients removed from wastewater as sludge can be valuable resources. Using sewage sludge as biomass is likely to have a positive climate impact.
- ✓ The lack of quantified criteria introduces uncertainty and risk with respect to expected results and outcomes from investments under this project category.

**Circular economy adapted products, production technologies and processes**



**Packaging**

Packaging machinery and equipment needed to optimise the use of resources, use renewable or recycle materials, and adapt packaging for recycling, where one of the following can be proven:

- a) Reduction in food loss, food waste and/or material use with 30%;
- b) Packaging is 100% recyclable or; the raw material is 100% renewable and/or recycled.

**Raw material and food waste**

Machinery equipment, measures and tooling related to tackling food waste in the production line and/or value chain, which leads to a reduction of food waste of at least 15% compared to pre-investment situation.

**Medium Green**

- ✓ A circular economy is an integral part of a low-carbon future. Eligible projects under this category are steps in that direction.
- ✓ Improvements in packaging to reduce food loss and waste can have a substantial climate benefit by reducing the demand for food associated with GHG emissions and land needed for food production. The circularity of products, e.g. recycling of packaging materials, reduces the amount of resources needed and the products' climate- and environmental footprint. In this context, it's a strength that the issuer has achieved good results from various initiatives to reduce materials used in its product packaging<sup>14</sup>.
- ✓ Packaging can be associated with petroleum use if the packaging is plastic. Plastic packaging is included in this category. However, the issuer will only consider packaging that is either recycled or can be 100% recycled or 100% renewable, which should be considered a strength.
- ✓ The issuer has established screening processes for its suppliers, where one crucial factor is to ensure that none of its suppliers or business partners is contributing to deforestation. The issuer confirms that such deforestation activities breach its guidelines and would warrant terminating any relationships with such suppliers.
- ✓ Machinery, equipment, and tools that can enable at least 15% food waste reductions are eligible for financing. In this context, the issuer informs that such investments could relate to machines that can transform residual food dust, such as cheese dust into new products.

**Environmentally sustainable management of living natural resources and land use**

**Sustainability on the farm**

Measures, processes, and techniques that support sustainability on the farm leading to a reduction of the overall environmental impact. Such investments can be related to carrying out the Climate-Calculator for all TINEs farmers, which will be an important tool in how

**Dark Green**

- ✓ Research and development (R&D) projects aimed at improved agricultural management processes are vital to decarbonising the sector overall.
- ✓ The issuer informs that such R&D projects could involve updating the current LCA methodology to better capture the overall environmental impact of dairy farms and related activities. Further, such

<sup>14</sup> Examples include saving 61% of plastic materials used for packaging cheese products, going from a plastic box to a plastic bag.



milk production can be altered to reduce greenhouse gas emissions.

Research and development related to new technologies, processes, concepts, manure management and raw materials aimed at reducing climate impact of farms, with particular focus on reducing CO2 and methane emissions.

eligible R&D projects could involve carrying out climate calculations at the member farms, including implementing recommended measures to reduce methane emissions.

- ✓ The issuer informs that it will likely invest in R&D projects related to improving cows' feed, aiming to decrease overall methane emissions further. Currently however, no such specific projects have been identified for funding under this framework.
- ✓ Tine can only influence and support its members to take action to reduce their emissions. As a cooperative, Tine cannot directly control the farming activities of its members, but it can provide advice and support various initiatives that will contribute to reducing emissions. Hence, this may introduce risks that investments in climate calculations at the farms will not materialise in actions to reduce emissions, which are needed to reach Landbrukets klimaplan's<sup>15</sup> target of reducing GHG emissions by 5 million tonnes in the agriculture sector by 2030.
- ✓ The breadth of the measures outlined may introduce uncertainty concerning the actual investments that might be undertaken as a result of the various R&D initiatives. However, the issuer informs that its primary focus is to conduct R&D on improving the feed for cows, and that it expects good and tangible results from such R&D activities.<sup>16</sup>

Table 1. Eligible project categories

<sup>15</sup> [Landbrukets Klimaplan \(Norwegian only\) | Statsforvalteren \(statsforvalteren.no\)](#)

<sup>16</sup> [TINE climate calculator \(only in Norwegian\) | TINE \(tine.no\)](#)

### More on the agriculture sector

Agriculture and related land use emissions accounted for 17% of global GHG emissions, 10% of GHG emissions in the European Union, and 8% in Norway. The agricultural sector can contribute significantly to emission reductions and to reaching the goal of achieving a net zero carbon economy. Unlike other sectors, the sector's primary contributor to climate change is not CO<sub>2</sub> from energy use, but other GHGs from livestock and crop production, namely methane and N<sub>2</sub>O, whereas emissions of methane and N<sub>2</sub>O from enteric fermentation, manure management, and agricultural soils collectively accounted for 80% of emissions (figure 1 below).

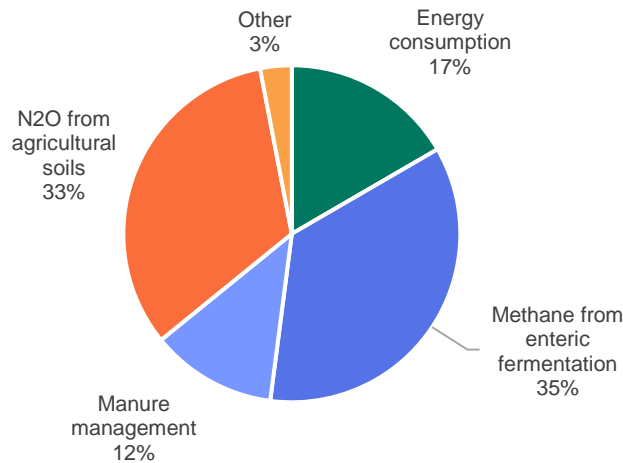


Figure 1. Sources of emissions in the EU agriculture, forestry and fishing sector (2019)

Addressing the sector's impacts depends on production shifts away from the most emissions-intensive products, improving on-farm crop and livestock management practices, as well as eliminating land use change from livestock feed supply chains. Further, maintaining carbon sinks and increasing sequestration are vital to capturing emissions. This entails halting land use change and improving on-farm practices, particularly concerning improving soil health and protecting biodiversity, e.g. through regenerative and climate-smart agriculture. The above are important aspects of climate risk management for agricultural producers facing growing transition risks. These include market risks from a gradual shift to more plant-based diets and growing sustainability expectations from food manufacturers, but also regulatory risks, e.g., about fertilizer, carbon pricing, and biodiversity protection.

Agricultural productivity is at the same time vulnerable to the physical effects of climate change, which are to an extent, locked-in given the extent of climate warming that has already taken place. Droughts, flooding, heatwaves, general changes in seasonality, and extreme weather events are the sector's main physical risks. Measures to improve the sector's resiliency, e.g. minimising freshwater withdrawals, introduction of climate-resilient crops, diversification of production, and innovations in crop insurance and early warning systems for extreme weather, will be critical.

Potentially green investments in the sector will focus on the above areas while maintaining safeguards against macro-impacts, particularly the potential to induce additional land use change. Key opportunities include the demand for alternative proteins and animal feeds and reducing food waste on farms. Pitfalls pertain to quantification of soil carbon sequestration, particular as the market for carbon offsets continues to expand and develop, as well as competition for land with other uses, e.g. biofuels production and re/afforestation projects.









## 3 Terms and methodology

This note provides CICERO Shades of Green’s second opinion of the client’s framework dated October 2022. 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 Shades of 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.

### ‘Shades of Green’ methodology

CICERO Shades of 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:

Shading	Examples
 <b>Dark Green</b> is allocated to projects and solutions that correspond to the long-term vision of a low-carbon and climate resilient future.	 Solar power plants
 <b>Medium Green</b> is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	 Energy efficient buildings
 <b>Light Green</b> is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	 Hybrid road vehicles

The “Shades of Green” methodology considers the strengths, weaknesses and pitfalls of the project categories and their criteria. 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, including potential macro-level impacts of investment projects.

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 Shades of 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.



### *Assessment of alignment with Green Bond Principles*

CICERO Shades of Green assesses alignment with the International Capital Markets' Association's (ICMA) Green Bond Principles. We review whether the framework is in line with the four core components of the GBP (use of proceeds, selection, management of proceeds and reporting). We assess whether project categories have clear environmental benefits with defined eligibility criteria. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed. The selection process is a key governance factor to consider in CICERO Shads of Green's assessment. CICERO Shades of 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 Shades of Green places on the selection process. CICERO Shades of Green assesses whether net proceeds or an equivalent amount are tracked by the issuer in an appropriate manner and provides transparency on the intended types of temporary placement for unallocated proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs.





# Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	TINE Green Bond Framework	Green Bond Framework, dated October 2022
2	TINE Annual Report 2021	Integrated annual report 2021, including sustainability reporting, dated 16.02.2022
3	TINE sustainability brief	Sustainability brief, “Bærekraftig Verdiskapning“, dated 30.05.2022
4	TINE Procurement policy	Internal procurement policy, dated 23.02.2022
5	TINE Ethical guidelines	Ethical guidelines, dated 27.09.2022
6	TINE guidelines for suppliers and business partners	Guidelines and requirements for suppliers and business partners, dated June 2022.
6	Documentation for new Dairy construction, TINE Bergen	Various documentation regarding the upgraded dairy facility in Bergen, dated 2017.



## Appendix 2: About CICERO Shades of Green

CICERO Shades of 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 Shades of Green.

CICERO Shades of Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Shades of 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 Shades of 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, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.

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- ★ **2021 Largest External Reviewer**, Climate Bonds Initiative Awards
  - ★ **2020 External Assessment Provider Of The Year**, Environmental Finance Green Bond Awards
  - ★ **2020 Largest External Review Provider In Number Of Deals**, Climate Bonds Initiative Awards
  - ★ **2019 External Assessment Provider Of The Year**, Environmental Finance Green Bond Awards
  - ★ **2019 Largest Green Bond SPO Provider**, Climate Bonds Initiative Awards
  - ★ **2018 External Assessment Provider Of The Year**, Environmental Finance Green Bond Awards
  - ★ **2018 Largest External Reviewer**, Climate Bonds Initiative Awards
  - ★ **2017 Best External Assessment Provider**, Environmental Finance Green Bond Awards
  - ★ **2016 Most Second Opinions**, Climate Bonds Initiative Awards