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Second Party Opinion

Cinis Fertilizer Green Financing Framework

Nov. 7, 2024

Location: Sweden **Sector:** Chemicals

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Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

- ✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2023

See Alignment Assessment for more detail.

Dark green

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our Shades of Green Analytical Approach >

Strengths

Cinis Fertilizer's sulphate of potash (SOP) production process has significant environmental advantages over conventional techniques currently on the market. According to Cinis Fertilizer, its process uses 50% less energy and reduces the production-related carbon dioxide footprint by about 96% (scopes 1 and 2) compared to the Mannheim process, currently the most widely used SOP production process. Cinis Fertilizer commits to using fossil-free energy in the production process--one driver of the lower emissions.

Weaknesses

No weaknesses to report.

Areas to watch

The nascency of Cinis Fertilizer's operations limits visibility as to its actual and targeted greenhouse gas footprint. It started producing SOP in May 2024, and has not yet started tracking key metrics such as greenhouse gas emissions or waste.

The company is also yet to quantify its scope 3 emissions, which it says are its largest source of emissions and result from the mining and transportation of muriate of potash (MOP), an input in SOP. Emissions arise, for example, from the use of fossil-fuel-based electricity and machinery, and conventional shipping. Nonetheless, the company states that fossil fuel use is not inherent in its mining or transportation processes, limiting lock-in risks.

Cinis Fertilizer has yet to conduct a climate scenario analysis of its portfolio. It follows local requirements that physical climate risks be considered in the construction of industrial buildings, which may not fully reflect changing physical risks under different climate-change scenarios.

Its long-term goal is to rely on waste products from industrial production as an SOP input, which we view as bringing circularity benefits. But when the issuer will be able to rely on waste for its process remains uncertain. Lower-than-expected production volumes at a key supplier have limited its ability to obtain enough locally produced waste so the company is relying on purchasing sodium sulfate from producers.

Eligible Green Projects Assessment Summary

Cinis Fertilizer aims to allocate the majority (60%-70%) of proceeds under the framework to finance and refinance the construction of SOP plants. The initial proceeds are expected to be allocated to refinancing its plants in Örnsköldsvik (Sweden), Hopkinsville, Kentucky (U.S.). The remaining proceeds will be used to finance and/or refinance loans to finance previous cost over-runs associated with the eligible projects and to meet working capital requirements when running the plants.

Based on the project category shades of green detailed below, the expected allocation of proceeds, and considering the environmental ambitions reflected in the Cinis Fertilizer Green Financing Framework, we assess the framework as Dark green.

Eligible projects under the issuer's green finance framework are assessed based on their environmental benefits and risks, using Shades of Green methodology.

See Analysis Of Eligible Projects for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Company Description

Cinis Fertilizer AB is a Sweden-based green tech company. It is focused on the production of a mineral fertilizer, potassium sulphate (SOP), and seeks to upcycle industrial waste products, for instance from the paper and pulp industry and electric vehicle batteries. The company started operations of its first production plant in May 2024, in Örnsköldsvik. The next plant is planned for Hopkinsville, Kentucky, and is scheduled to start operating in 2026. Another four plants are planned for 2026-2030.

Cinis Fertilizer was founded in 2018 and listed in the Nasdaq stock exchange in October 2022. It had around 4,200 shareholders as of Dec. 31, 2023. Its three main shareholders are Jakob Liedberg, founder and CEO of Cinis Fertilizer (36.4% of share of capital and votes), Roger Johansson (19.2%), and Thomas Ranje (15.3%).

Material Sustainability Factors

Climate Transition Risk

The global agri-food system relies on fertilizer use to increase crop yields: 30%-50% of crop yields are attributable to commercial fertilizer nutrient inputs (source: Agronomy Journal). As most of the fertilizer production process depends on fossil fuels, with fertilizer production accounting for about 1.4% of emissions globally (source: Carbon Brief). Regulatory pressure to decarbonize chemical production, including fertilizers, is likely to grow and require investments in cleaner processes or more innovative feedstocks. Longer term, failure to curb emissions may lead to stranded assets.

Waste and Recycling

The sector's management of waste and recycling often draws public attention. For instance, public scrutiny of plastic pollution has been intensifying given the very visual impact on landscapes and the immediate toll on biodiversity as wild animals

inadvertently ingest waste materials. Accordingly, product life cycle management is becoming increasingly relevant. In the case of fertilizer manufacturing, reusing raw materials that are otherwise disposed of as waste can reduce the sector's dependency on scarce raw materials and energy-intensive production processes. In 2022, the EU Fertilizing Product Regulation was implemented and opened the European market to types of fertilizers not covered by previous regulations, including fertilizer made from recycled materials and organic fertilizers. The new regulation is significant for circularity within the fertilizer industry in that it is improving supply-chain efficiency and creating a more robust internal market for secondary raw materials in the EU.

Pollution

Chemical manufacturing processes emit harmful air pollutants, while leakages and spills--particularly during production, transportation, use, and end-of-life--can have additional and widespread consequences for human health, natural capital, and biodiversity. Crop protection and fertilizer products can contaminate large areas of land, with the excess often washed away by rain, thereby polluting groundwater and waterways, and impairing the quality and availability of food and water, for instance.

Biodiversity and Resource Use

Chemical products can also impact biodiversity by polluting the air, soil, and water. This is especially true for agrichemicals. Chemical fertilizers, for example, affect soil fertility, weed density, and nutrient uptake, which in turn affects the composition of species and biodiversity. The fertilizer industry can have adverse impacts on biodiversity through promoting largescale monoculture for feedstock or by locating industrial complexes in sensitive ecological areas. Some policymakers are accelerating stringent regulatory measures to help assess and preserve natural capital, which may require changes as to how, where, and which materials are sourced.

Physical Climate Risk

Extreme weather events, including flooding, heatwaves, and hurricanes, can affect chemical production facilities and their supply chains. Flooding can disrupt power systems, which can lead to accidents (fires, explosions, contamination) following damage to structures and equipment. While the severity of physical risks varies by region, chronic risks such as changes in temperature and precipitation patterns, or acute risks such as flooding and heatwaves, need to be addressed during the design and construction phases of production plants, as well when planning emergency response mechanisms.

Issuer And Context Analysis

The framework's proceeds aim to address the climate transition, waste and recycling, biodiversity, and resource use, which we view as key sustainability factors for Cinis Fertilizer. Physical climate risk is also relevant because the production plants and supply chain are exposed to climate change effects. Cinis Fertilizer is exposed to biodiversity and resource-use risks, both linked to the application of its fertilizers and the potential for soil degradation due to overuse, but also because MOP is sourced from mining (and Cinis Fertilizer needs it for production). In terms of end-product use, its SOP fertilizer will be used solely by the agricultural sector.

The company produces a fertilizer using a patent-protected procedure, which it says consumes about 50% less energy and generates about 96% less carbon dioxide (scopes 1 and 2) compared to the Mannheim process. Solenco, a Sweden-based consultancy, has verified these calculations. However, we view the calculations as limited because scope 3 upstream emissions associated with mining MOP are excluded and are, according to Cinis Fertilizer, its main source of emissions. Its production process does not generate hazardous by-products--unlike the Mannheim process, which generates hydrochloric acid. Mannheim is the most common process for producing SOP and involves heating potassium and other raw minerals (such as sulfuric acid). We view Cinis Fertilizer's offering as particularly relevant to the industry, considering that SOP fertilizers are currently produced either by the Mannheim process, or from natural brine or ore--the latter depending on scarce resources available in only a few locations globally. We therefore view Cinis Fertilizer as playing an important role in disrupting an industry that is critical to food security.

We view the company's business strategy as positive for the material climate risks the sector faces and we note its aim to tackle the issues linked to waste generated in other industries. Cinis Fertilizer intends to offer a mineral fertilizer, potassium sulphate, by upcycling industrial waste products from several industries, including from EV battery manufacturing and the pulp and paper industries. In this way it will be facilitating the transition to a low-carbon future, based on a circular model.

Its start-up status limits visibility as to the actual and targeted greenhouse gas footprints and waste generated by its fertilizer-producing operations. It started operations at its first plant in May 2024 and therefore has not yet started tracking key environmental metrics such as greenhouse gas emissions, waste generated, or water consumption. While Cinis Fertilizer has said it intends to set environmental targets, including greenhouse gas emissions reduction, we currently do not know specific timelines and it has yet to publish a public commitment.

Cinis Fertilizer has yet to conduct a comprehensive climate scenario analysis of its portfolio and consider how extreme weather events could impact its production plans and supply chain. Its Sweden-based plants will comply with national requirements related to physical climate risks in the construction of its industrial buildings. In the U.S., it will consider physical climate risks during the building-permit process. We view this process as a driver of operational continuity and one that may not reflect or consider changes in physical risks under different warming scenarios.

We view positively that Cinis Fertilizer considers environmental factors, including climate, when selecting its suppliers. Its sustainability policy is to try to cooperate with suppliers and customers to improve sustainability outcomes in the industry. Moreover, in its supplier code of conduct, it refers to social aspects such as working conditions or health and safety. This is important considering its supply chain's exposure to mining.

Alignment Assessment

This section provides an analysis of the framework's alignment to Green Bond and Green Loan principles.

Alignment With Principles

Aligned = ✓ Conceptually aligned = o Not aligned = ×

- ✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2023

✓ Use of proceeds

We consider Cinis Fertilizer's overall use-of-proceeds commitments to be aligned with the principles. The issuer commits to allocate 100% of the net proceeds issued under the framework exclusively to finance or refinance eligible green projects, and to disclose the proportion of funds used for financing and refinancing in its annual reporting. However, the framework does not reference a look-back period for refinanced eligible projects, which we view as a best practice. Refer to the "Analysis of Eligible Projects" section for more information on our analysis of the environmental benefits of the expected use of proceeds.

✓ Process for project evaluation and selection

The issuer has established a Green Financing Committee, comprising the CEO, CFO, and directors of Investor Relations, Marketing, Communication, and ESG. The committee is responsible for selecting projects that are in line with the green eligibility criteria; evaluating how well the proposed assets comply with the criteria; and replacing investments that no longer meet the eligibility requirements. During the selection of eligible projects, the committee will consider aspects such as human and labor rights and the avoidance of significant harm to other objectives defined in the EU Taxonomy, to the extent possible. We note positively that committee decisions are subject to veto by the sustainability representative, and that the framework has an exclusion list, including, among others, fossil energy production.

✓ Management of proceeds

Cinis Fertilizer commits to using an earmarked account to manage the net proceeds from the instruments issued under the framework, to track the allocation of proceeds to the eligible green projects. If the value of the outstanding instruments exceeds the value of the assets included in the earmarked account, the unallocated proceeds may be deducted from the earmarked account and added to Cinis Fertilizer’s lending pool. Unallocated proceeds will be placed in the liquidity reserve and, if there is a positive balance in the Green Account, could be invested in short-term interest-bearing securities. Allowed investments are Swedish treasury bills and highly rated short-term bank notes (rated 'A+' or above by S&P Global Ratings or equivalent by Moody’s or Fitch). We view positively that the framework refers to a maximum two years and ideally one year to allocate all proceeds after issuance.

✓ Reporting

The issuer commits to report annually on the allocation of proceeds and the impact of the green financing instruments for as long as the green financing instruments are outstanding. The report will include information on the projects being financed, such as description of the projects and the type of financing instruments used, among others. Cinis Fertilizer also intends to report on the environmental impact of the eligible projects financed under the framework and specific quantitative key performance indicators (KPIs), when feasible and where relevant data is available. We note positively that the issuer intends to disclose the calculation methodology used for the environmental impact indicators outlined in the framework. Nevertheless, the framework does not specify whether the company will seek an external auditor's assurance of its annual allocation and impact report.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the Shades of Green methodology.

Overall Shades of Green assessment

Based on the project categories Shades of Green has detailed below, and considering the environmental ambitions reflected in Cinis Fertilizer's Fertilizer Green Financing Framework, we assess the framework as Dark green.

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our Shades of Green Analytical Approach >

Green project categories

Eco-efficient and/or circular economy adapted products, production technologies, and processes

Pollution prevention and control

Environmentally sustainable management of living natural resources and land use

Assessment	Description
Dark green	Construction of Cinis Fertilizer's SOP production plants (the "Green Project")
	Recycling/upcycling industrial waste products from Swedish industrial production
	Reduction of greenhouse gas emissions in production compared to traditional SOP processes, using only fossil-fuel-free electricity
	Improving water treatment and quality by reducing chemicals and metals emissions dumped into seas and oceans
	Circular and fossil-fuel-free production of fertilizer, enabling environmentally sustainable agriculture

Analytical considerations

- In our view, the three eligible project categories in the framework are interlinked, as the second and third are enabled by the first (construction of the plants). Therefore, in our analysis we combined the three categories--encompassing the construction of Cinis Fertilizer's SOP production plants, and the production of a circular and fossil-free produced fertilizer, enabling environmentally sustainable agriculture.
- We assess the eligible projects for which Cinis Fertilizer intends to use the proceeds as Dark green. This is because we view them as aligned with a low-carbon climate-resilient future given their positive climate impact and the company's ambition to contribute to a more circular economy. In fertilizer manufacturing, we view reducing emissions linked to production as a key topic to address from a low-carbon perspective. According to the issuer, its process for producing SOP fertilizer uses 50% less energy and reduces by about 96% the carbon dioxide footprint compared to the Mannheim process (currently 50% of market share). We view positively that an independent third party has verified the emissions and energy savings calculations, while noting that the calculations exclude scope 3 emissions, including those related to the sourcing of MOP. Our Dark green assessment also reflects Cinis Fertilizer mitigating risks linked to its supply-chain emissions by considering environmental aspects, including carbon emissions, in its tendering process. It engages with suppliers regularly and has chosen K+S AG as

its MOP supplier based on environmental and climate considerations beyond the economic and financial. We also note that, according to the issuer, on-field emissions are immaterial considering the type of fertilizer being produced.

- Cinis Fertilizer's strategy is to use only fossil-fuel-free energy, and preferably renewable energy, in its production process. In Sweden, it will accomplish this by using grid electricity from nuclear power, hydropower, and wind sources. In the U.S. it will use renewable energy certificates initially until it can sign power purchasing agreements. Guarantees of origin and similar certifications do not influence the emissions from electricity used. While Kentucky has high coal use in its electricity, the issuer has specified that the plant's location will have a share of 70% renewable electricity.
- According to Cinis Fertilizer, scope 3 forms the bulk of its emissions. These come from the mining and transportation (including fossil-fuel-based electricity and conventional shipping) of MOP, an input in SOP. We see as a limitation the lack of visibility regarding the volume of scope 3 emissions associated with its products, particularly with sourcing MOP. Nevertheless, this does not represent a lock-in risk because Cinis Fertilizer's suppliers could switch to fossil-fuel-free equipment, electricity, and transportation methods in the future. We view positively that, when selecting its MOP supplier, Cinis Fertilizer considered carbon emissions in the tendering process. It selected K+S AG because of the latter's comparatively more energy-efficient mining methods compared to peers.
- Cinis Fertilizer plans to use waste products from various industrial processes (for example battery manufacturing, paper, and pulp) as inputs to produce SOP. In our view, this will contribute to a more circular economy. Specifically, Cinis Fertilizer will use sodium sulphate from electrostatic precipitator dust (waste ash) from pulp and paper mills, and from EV battery manufacturing. In doing so, it will also help cut down on this waste being dumped in the seas and oceans, which otherwise pollutes the marine environment. The circular production model rests on several partnerships across its countries of operations. However, we note that its circular model depends on waste inputs from other companies, which raises uncertainties if not enough waste is generated. As of October 2024, Cinis Fertilizer has shared that it is obtaining all its sodium sulphate from Spain-based producers, and not from waste streams, due to lower-than-expected production volumes at a key supplier, which have limited its ability to temporarily obtain enough locally produced waste.. The issuer has said that using sodium sulphate directly from producers will not result in material changes in terms of the product’s lifecycle emissions or comparative lifecycle emissions savings compared to the Mannheim process. Moreover, it says that it expects waste streams from paper and pulp mills located near its plant to supply the majority of the necessary sodium sulphate within the next year.
- Positively, the company’s existing and planned production plants are and will be strategically located next to raw material suppliers and in areas with access to fossil-free energy and close to hubs and ports. For example, in Sweden one of the Örnsköldsvik plants is close to pulp and paper mill suppliers. In the U.S., the company has partnered with Ascend Elements, a battery recycler that produces new cathode materials from spent lithium-ion cells. Cinis Fertilizer is also talking to several major pulp and paper producers about activities that would recover precipitator dust. According to the issuer, in Sweden the forest management of pulp producers is mostly certified using FSC or PEFC. While the use of such certifications can indicate that a company complies with guidelines for responsible forestry, Cinis Fertilizer does not yet explicitly screen suppliers for the use of these. However, it aims to start screening suppliers soon as the company grows.
- Cinis Fertilizer's production process recycles water and generates extremely low emissions. Moreover, the process does not generate hazardous byproducts, unlike Mannheim. Besides Mannheim, another process for producing SOP is through natural brine or ore. However, this depends on mining a scarce raw material that is only present in a few remote locations and requires significant volumes of water and fossil-fuel based power. Cinis Fertilizer is also exposed to biodiversity and resource use risks, both linked to the application of its fertilizers and potential soil degradation stemming from overuse.
- The company's plants will be designed in a way that reduces energy consumption, which we view favorably. For instance, plants will use a heat recovery system to minimize the power needed to produce the fertilizer. Moreover, Cinis Fertilizer will conduct an environmental impact assessment of all its plants.
- We note that Cinis Fertilizer's purchase of raw materials derived from mining, such as MOP, exposes it to health and safety risks across the supply chain, as well as other environmental risks associated with mining activities, such as waste and land degradation. In our view, it mitigates these risks by considering environmental aspects in the tendering process and ensuring that its supplier code of conduct considers aspects such as working conditions and health and safety.

S&P Global Ratings' Shades of Green

Assessments	Dark green	Medium green	Light green	Yellow	Orange	Red
Description	Activities that correspond to the long-term vision of an LCCR future.	Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions.	Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions.	Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures.	Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets.	Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets.
Example projects	Solar power plants	Energy efficient buildings	Hybrid road vehicles	Health care services	Conventional steel production	New oil exploration

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Mapping To The U.N.'s Sustainable Development Goals

Where the Financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs
Eco-efficient and/or circular economy adapted products, production technologies and processes	 **9. Industry, innovation and infrastructure**  **6. Clean water and sanitation**
Pollution prevention and control	 **12. Responsible consumption and production***  **13. Climate action**  **14. Life below water**
Environmentally sustainable management of living natural resources and land use	 **15. Life on land***

*The eligible project categories link to these SDGs in the ICMA mapping.

Related Research

- Analytical Approach: Second Party Opinions: Use of Proceeds, July 27, 2023
- FAQ: Applying Our Integrated Analytical Approach for Use-of-Proceeds Second Party Opinions, July 27, 2023
- Analytical Approach: Shades of Green Assessments, July 27, 2023
- S&P Global Ratings ESG Materiality Map: Chemicals, May 18, 2022

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