S&P Global
Ratings

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Second Party Opinion

Agilyx Green Finance Framework

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Location: U. S.	**Sector:** Chemicals

Primary contact

Enrico de Angelis
Milan
+ 39-347-628-4011
enrico.de.angelis
@spglobal.com

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

See Alignment Assessment for more detail.

Medium green

Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

Our Shades of Green Analytical Approach >

Strengths

Agilyx's technology and the Cyclyx Circularity Centers (CCC) support the transition to a plastic-waste circular economy. The issuer's proprietary technology, based on integrated digital solutions, contribute to the avoidance of hard-to-recycle plastics waste ending up in landfill or incineration.

Weaknesses

No weaknesses to report.

Areas to watch

Agilyx does not report on its greenhouse gas emissions nor have corresponding emission reduction targets, which constraints our assessment of the issuer's GHGs past performance. While the company acknowledges climate change, plastic waste, and the circular economy as key risks and opportunities for its business, it has not yet established internal targets for these key sustainability factors.

The issuer, in its CCC projects, lacks what we view as a complete overview and control of downstream emissions. While acknowledging the project's efforts to reduce direct emissions, we note that the most greenhouse gas (GHG)-intensive steps in the issuer's value chain likely lie downstream, through the plastics chemical recycling processes.

Eligible Green Projects Assessment Summary

According to Agilyx, bonds issued under the framework will finance its plastics waste sorting facility (Cyclyx Circularity Center 2 [CCC2]). Some proceeds under the framework can refinance existing projects.

Overall Shades of Green assessment

Based on the project category shades of green detailed below, and considering environmental ambitions reflected in Agylix's Green Finance Framework, we assess the framework Medium green. Eligible projects under the issuer's green finance framework are assessed based on their environmental benefits and risks, using Shades of Green methodology.

Medium green

Activities that represent significant steps towards a low-carbon climate resilient future but will require further improvements to be long-term low-carbon climate resilient solutions.

Our Shades of Green Analytical Approach >

Pollution prevention and control	Medium green
Investments and expenditure related to research and development (R&D), construction, installation, and maintenance of technology for plastic waste collection, handling and sorting.	

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

Agilyx ASA is a technology company founded in 2004 and headquartered in Portsmouth, N.H. The company operates through two segments--Agilyx and Cyclyx. Agilyx recycles difficult-to-recycle post-use plastic streams. Its conversion technology uses pyrolysis without a catalyst and depolymerizes plastics, which include polystyrene and PMMA, into virgin-quality products. The company's products include a chemical recycling technology suite. Cyclyx, a joint venture with ExxonMobil and LyondellBasell, focuses on feedstock sourcing and management, addressing the mixed waste plastic market.

Material Sustainability Factors

Waste and recycling

The use and management of chemicals in waste and recycling often draws public attention. For instance, plastic pollution has been increasingly under public scrutiny, given the very visual impact on landscapes and immediate toll on biodiversity because animals inadvertently ingest waste materials. The value chain is therefore under pressure to develop technologies and infrastructures for chemicals collection, recycling, and biodegradation. Accordingly, product lifecycle management is becoming increasingly relevant, especially for commodity chemicals, including through regulation of single-use or short-life plastics.

Pollution

Chemical manufacturing and recycling processes can emit harmful air pollutants, while leakages and spills--particularly during production, transportation, use, and end-of-life management--can have additional and significant consequences for human health, natural capital, and biodiversity. For instance, plastics recycling can release harmful pollutants like volatile organic compounds (VOCs) and microplastics, affecting air quality and human health. Virgin plastic production further intensifies these risks, increasing greenhouse gas emissions and biodiversity loss through resource extraction and chemical spills.

Climate transition risk

Chemical production emits significant greenhouse gases, accounting for 5%-6% of global emissions. The sector heavily depends on fossil fuels both for energy supply and product feedstocks. Regulatory pressure to decarbonize chemicals production is likely to grow and require investment in cleaner processes or more innovative feedstocks. Failure to curb emissions could lead to stranded assets. Nevertheless, some industry segments contribute to the economy's decarbonization, such as the production of specialized materials in key transition technologies and recycling.

Physical climate risk

Extreme weather events--including storms and heat waves--can disrupt transportation routes that deliver goods and therefore, supply chains across different sectors, including chemicals production and recycling. Facilities located in climate-sensitive regions--including coastal areas--are typically more exposed. These events, which are generally becoming more frequent and severe (although this varies by region), could directly affect large communities, including by impeding the ability to work, and their economies, including through delivery delays.

Issuer And Context Analysis

The framework's eligible project category--focused on plastics waste collection and sorting plants--aims to address pollution risk through investment in the plastics waste management value chain, which we consider the most significant sustainability factor for the issuer's sector. The project category seeks to address climate transition risk from plastics recycling, another important sustainability factor. This move can help reduce GHG emissions by decreasing demand for virgin plastic production and emissions from the disposal or incineration of plastic. Additionally, physical climate risk is a relevant issue for all geographically fixed facilities.

Agilyx and its partnership, Cyclyx, address the issue of plastic waste. Through its integrated solutions, the issuer aims to recycle more plastic waste, contributing to a circular economy for plastics. Specifically, Agilyx's technology is designed to convert mixed-waste plastics into high-quality raw materials for new products. The company has developed an integrated solution for plastic recycling, including both chemical recycling technology and feedstock processing expertise. Its focus on diversion and conversion of plastic waste is further reflected in its 10to90 mission brand, which aims to increase plastic recycling rates from the current 10% to 90%. Cyclyx, focuses on targeting the plastics that currently go to landfill. Agilyx's sorting technologies, implemented at CCCs, leverage digital tools such as scanners, AI, and integrated IT and operational technology systems. This enables the creation of databases for polymers in hard-to-recycle plastic waste, facilitating categorization, sorting, and preparation for recycling. Nevertheless, different recycling processes, such as mechanical and chemical, entail different environmental considerations, like GHGs emissions, and ultimately produce differing output quality.

Agilyx's lack of GHGs data disclosure limits our ability to assess its performance. The issuer acknowledges climate change as a top risk for both itself and its stakeholders, and has established a goal to quantify its GHG footprint. However, the company's lack of transparency on its GHGs footprint and emissions reduction targets hinders our ability to assess its progress with climate transition risks. Nevertheless, Agilyx is working on defining internal processes to ensure accurate and complete reporting of Scope 1, 2, and 3 emissions. Scope 3 emissions, particularly in the downstream value chain, are likely to be significant because they encompass emissions from chemical recycling, whose potential for emissions reduction remains under scrutiny.

Similarly, the issuer's disclosure in other relevant environmental factors is nascent. Agilyx and its partnership have not reported comprehensive disclosure on energy consumption, waste management, pollution-related indicators, and water usage, since the data collection system is still in development. However, we positively note the group's efforts in 2023, its most recent reporting year, to review the stakeholder analysis and materiality matrix, assessing necessary adjustments in response to business developments, risks, opportunities, regulatory changes, and stakeholder perspectives. Additionally, we acknowledge the group's efforts to develop an ESG data collection system aligned with recognized reporting standards.

Alignment Assessment

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

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

✓ Use of proceeds

We assess the framework green project category as having a green shade, and the issuer commits to allocating the net proceeds issued under the framework exclusively to eligible green projects. Please refer to the Analysis Of Eligible Projects section for more information on our analysis of the environmental benefits of the expected use of proceeds. Agilyx commits to allocate an amount equivalent of the net proceeds from the green financing instruments to finance or refinance eligible green projects related to pollution prevention and control. The issuer further specifies that investments financed under the framework can be capital expenditure (capex) and operational expenditure (opex), identifying a lookback period of three years, in line with market practices. In addition, some proceeds may be allocated to majority investments in shares of pure-play companies deriving at least 90% of their revenue from green activities that meet the framework’s eligibility criteria, with the remaining 10% compliant with the framework's exclusion list.

✓ Process for project evaluation and selection

Agilyx established a dedicated green finance committee (GFC) responsible for the project evaluation and selection process, based on compliance with the green terms of the eligibility criteria. The GFC includes members from Agilyx management, operations and finance teams. The GFC is further responsible for identifying and mitigating social and environmental risks associated with the financing of eligible projects. Based on this assessment, the GFC holds the right to exclude green projects already funded by green bonds. We view as positive that Agilyx further outlines an exclusion list in the framework, ensuring that no activities related to fossil fuels energy generation, among others, can be financed under it.

✓ Management of proceeds

The issuer commits to credit an amount equal to the net proceeds of any green new financing or refinancing to an earmarked account, or using a tracking method, to document and monitor the allocation of proceeds to eligible green projects. Furthermore, Agilyx’s finance department is responsible to ensure that the total investment in eligible green projects always exceeds the amount of green finance instruments outstanding. The framework also states that proceeds will be periodically adjusted to match allocations to eligible projects during the time the instrument is outstanding. Unallocated proceeds will be held as cash or in short-term money-market funds allocated in compliance with the framework's exclusion list.

✓ Reporting

The issuer commits to reporting annually on both the allocation and impact of proceeds until the full allocation of the green financing instruments. Reporting will include a description of the eligible projects financed, the sum of green financing outstanding, the amount invested in green projects, and that of net proceeds awaiting allocation, the share of capex and opex, and the proportion of net proceeds to new and to existing projects. In addition, Agylix will align its impact reporting, on a best effort basis, with ICMA's Harmonised Framework for Impact Reporting (June 2023), which we view positively. The framework specifies that an external auditor will provide an assurance covering the annual allocation report, though not the 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.

Green project categories

Pollution prevention and control

Assessment	Description
Medium green	Investment and expenditure related to R&D for technology and solutions, and the construction, installation, operation, improvement, repair, and maintenance of facilities connected to: • Plastic waste collection • Plastic waste handling and sorting, including chemical characterization and custom compounding of waste plastics as feedstock for further advanced recycling

Analytical considerations

- Waste management is an important pollution prevention measure that can avoid harm to human health and local ecosystems from waste streams. Recycling, if done properly, increases the useful life of materials, thereby reducing carbon and other air pollutants' emissions, energy, and natural-resource use. Waste prevention and reuse solutions are preferred under the waste management hierarchy because they have the lowest negative environmental impact among waste management options, followed by recycling, energy recovery, and disposal. Waste collection and sorting projects can increase recycling and reusage, diverting waste from less environmentally beneficially disposal solutions.
- We assess the issuer's project focused on increased plastics circularity and recycling as Medium green. The CCC2 project, while taking important steps in the transition and improving on business-as-usual, is still associated with climate risks, particularly given its downstream exposure to chemical recycling. The CCC2 plant relies on Agilyx's proprietary technology to accept, analyze, and process a wide range of difficult-to-recycle plastics, including food packaging, chip bags, and bottle caps. Without this, 70% of the total waste that CCC2 receives would otherwise end up in landfills, according to the issuer. The final output from the CCC2 sorting process is plastics feedstock, customized based on the off-takers' needs, in an effort to increase the portion of recyclable waste while focusing on GHG emission reduction through efficiency. The plant, currently under development, is grid-tied, so its primary energy source will be electricity (in Texas, whose grid emissions factor of 0.37 kilograms of carbon-dioxide equivalent per kilowatt-hour is in line with the U.S. average). The issuer prioritizes electric equipment, such as electric forklifts, since reliance on renewable energy, either through the grid or direct investments in solar panels, is being considered. Nevertheless, its operations and processes continue to entail fossil fuel use.
- The issuer informs us that about two-thirds of the feedstock produced from the plant will be directed to off-takers relying on chemical recycling processes, while the remaining one-third will be sent to mechanical recyclers. The issuer informs us that external off-takers, not Agilyx, handle the recycling of feedstock from the CCC2 plant. Chemical recycling has higher emissions and environmental risks than mechanical recycling, entailing higher climate risk downstream in the value chain. While the issuer lacks direct control over downstream emissions, it discloses that by leveraging proprietary technology at the CCC plant, focused on optimizing the selection of preferred plastic types as feedstock, it also enhances efficiency in the final conversion for recyclers, ultimately reducing GHGs downstream. Agilyx further shared that its chemical recycling off-takers will focus on producing plastics products (for instance, packaging), and not fuels production, thereby avoiding carbon dioxide emissions from recycled-fuels combustion while fostering circularity.

- Lastly, we view positively the issuer's involvement in reducing the project's logistics emissions. One initiative targets plastic-waste providers, to consolidate plastic materials and compress them to reduce volume, optimizing transportation efficiency. Furthermore, according to the issuer, the CCC2 plant's location was based on its railways readiness, to minimize tailpipe emissions related to logistics.
- Agilyx acknowledges the importance of assessing climate physical risks on its assets. Because its facilities are in light industrial areas, where the issuer discloses having low exposure to physical risks (such as flooding and related landslides), the issuer has not defined concrete plans for climate-related risks mitigation. Agilyx further discloses it will perform a physical risk assessment for all new projects and facilities as part of the assessments for eligible projects under the framework.

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).

Related Researches

- 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 Maps, July 20, 2022

Analytical Contacts

Primary contact

Enrico de Angelis
Milan
+ 39-347-628-4011
enrico.de.angelis
@spglobal.com

Secondary contacts

Luisina Berberian
Madrid
+34 91 788 7200
luisina.berberian
@spglobal.com

Tim Axtmann
Oslo
+47-941-57-046
tim.axtmann
@spglobal.com