°CICERO Shades of Green

FCC Servicios Medio Ambiente Holding (FCCMA)

Green Bond Second Opinion

November 14, 2019

FCCMA provides urban sanitation services to over 5,000 municipalities through 300 centers across 35 countries in Europe, Africa, and the Americas. The company is made up of 5 regional entities, two of which are included in this framework: FCCMA Medio Ambiente (Spain), and FCCMA Environment UK. Services include waste collection and treatment (47%), street cleaning (33%), sewage management, and park and beach maintenance. 97% of the waste collected is residential, with the remaining 3% industrial or commercial.

FCCMA's green bond framework aligns with the Green Bond Principles and describes investments that will reduce emissions, divert waste from landfills, and promote activities consistent with a circular economy. FCCMA will use proceeds to finance or refinance projects in 5 project categories that include pollution prevention and control (55%), renewable energy, energy efficiency, clean transportation (40%), and terrestrial and aquatic biodiversity conservation in Spain (56%) and the UK (44%). New landfills, landfills without biogas extraction systems or waste incineration without recycling programs or below regulations for energy efficiency are excluded.

FCCMA has a climate change strategy that models implementation of emissions and waste-to-landfill reduction targets, and acknowledges material climate risk. This includes a plan to increase percentage of electric and hybrid vehicles to 44% of the fleet size by 2050 in Spain, which will significantly drive down scope 1 emissions. The company is a Global Compact Signatory, has ISO 14001 and 50001 certification for 80% of its activities and uses GRI G4 standard for sustainability reports. Its emissions reductions targets are in line with applicable EU regulations. It has developed and deployed the first electric waste collection vehicle in the market.

Investors should know that proceeds will be used for procurement and operation of fossil fueled vehicles and equipment, specifically compressed natural gas (CNG) vehicles and facilities. This represents significant exposure to methane and carbon emissions. Methane leaks are managed carefully with monitoring and detection systems, and frequent audits and repair. Proceeds may also be used to repurpose reclaimed rubber for artificial turf in sports complexes, which introduces significant risk of microplastic pollution.

To improve, the company can set more ambitious targets for a full transition to EV and hybrid vehicles and to grant environmental experts veto power in the selection process. Of particular interest on impact reporting is percentage of plastics and aluminum averted from landfill.

Based on the assessment of project categories and governance policies, FCCMA receives an overall **Light Green** shading and a governance score of **Good.**

SHADES OF GREEN

Based on our review, we rate FCCMA's green bond framework **CICERO Light Green.**

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in FCCMA's framework to be **Good**.

GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.

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Contents

1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated October 2019**.** 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 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.

Expressing concerns with 'shades of green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green	Examples
Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.	Wind energy projects with a strong governance structure that integrates environmental concerns
Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.	Bridging technologies such as plug-in hybrid buses
Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.	Efficiency investments for fossil fuel technologies where clean alternatives are not available
Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.	New infrastructure for coal

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, the governance aspects are carefully considered and reflected in the overall shading of the green bond framework. CICERO 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.

2 Brief description of FCCMA's green bond framework and related policies

FCCMA Medio Ambiente (FCCMA) provides urban sanitation services to over 5,000 municipalities across 35 countries in Europe, Africa, and the Americas. FCCMA has over 300 centers that handle 20 million tons of solid urban waste per year. The company employs 40,000 people and has been operating for over 100 years. The company is made up of regional entities: FCCMA Medio Ambiente (Spain – 58% of the group), FCCMA Ambito (industrial waste management and recultivation), FCCMA Environment UK, FCCMA Environment (CEE) and FCCMA Environmental Services (USA). Services include collection, treatment, recycling, waste-to-energy and disposal of solid urban waste, street cleansing, sewer network maintenance, ground maintenance and preservation of green spaces, polluted soils recovery and comprehensive management of industrial waste. Clients are approximately 75% public, 25% private. Collection and treatment of waste is 47% of activities, street cleaning is 33,1% and the remainder is split between sewage management, park and beach maintenance. 97% of the waste collected is residential, with the remaining 3% industrial or commercial.

Environmental Strategies and Policies

FCCMA Medio Ambiente has a Climate Change Strategy 2030-2050 that outlines initiatives intended to reduce emissions, including purchase of renewable energy credits and increasing alternative energy vehicles (electric, hybrid and gas) representation in its fleet. The report notes that scope 1, 2 and 3 emissions have increased slightly over the last three years, largely due to waste collection vehicle fleets and waste treatment plants. Targets for emissions reductions are 13% by 2030 and 37% by 2050, as compared to 2018. These targets are in line with the EU's recommendations. In accordance with EU law, FCCMA aims to recycle more than 65% of municipal waste, and limit waste to landfill to 10% by 2035. Per the issuer, FCCMA has process in place to sort all plastics to the extent possible before incineration.

FCCMA has an Environmental Policy and Code of Conduct that each outline the company's commitment to sustainable management of the environment, with specific focus on the efficient use of resources, pollution prevention, protection of ecosystems, and reduction of greenhouse gas emissions. These policies are applied worldwide and across the entire value chain. Environmental objectives include a 5% reduction in permit breaches from previous year's actual and 1% overall reduction in energy usage per tonne processed within FCCMA from the previous year's target. FCC Group is a signatory to the UN Global Compact, reports in accordance with the GRI G4 Core standard and reports to the CDP. FCCMA subcontracts refer suppliers to the company's Code of Conduct and the 10 principles in the UN Global Compact.

FCCMA Medio Ambiente is working on its seventh sustainability report for 2017-2018, which is written in alignment with the GRI G4 Core Standard and focuses on the Spanish market. The company has reported emissions for 6 consecutive years. Of scope 1 and 2 emissions, 46% of emissions come from use of electricity, 39,8% come from landfills, 13,2% from compost and 1% from biogas production. The report notes that emissions have been reduced 9,56% in scope 1 and scope 2 emissions between 2013 and 2016. The report mentions mapping climate risks and identifying adaptation initiatives, particularly in relation to water stress and extreme events like flooding. FCCMA Environment UK issued its first Sustainability Report in 2018. The report notes that 81,97% of FCCMA Medio Ambiente's activities are ISO 14001 and 50001 certified. The report includes data on the company's Scope 1 and Scope 2 greenhouse gas emissions and demonstrates that emissions in both categories have decreased for four consecutive years.

FCC Spain operates a fleet of 900 electric and hybrid vehicles, has installed 300MWe capacity wind turbines at 10 landfills to supplement biogas capture, and has recyclable material recovery rates (including composting) of over 30%. 37% of these vehicles are for waste collection, 15% for street cleaning, 34% are light vehicles and 14% are for other uses. FCCMA also invests in research and technology development for electric and lower emissions vehicles, smart services and fleet management.

FCCMA has aligned its green bond framework with Sustainable Development Goals, 7 – clean energy, 9 – infrastructure, 11 – sustainable cities, 12 – responsible consumption, 13 – climate action, and 15 – life on land.

Use of proceeds

Proceeds generated under this green bond framework will be used to finance new or refinance existing projects/expenditures, in part or in full. The lookback period for refinanced projcts is 5 years. 56% of eligible green projects are expected to be in Spain and 44% in the UK. These include investments and operating expenditues that provide clear environmental benefits and promote the transition to low-carbon technologies. The 5 project categories under this framework include pollution prevention and control, renewable energy, energy efficiency, clean transportation, and terrestrial and aquatic biodiversity conservation. FCCMA anticipates that approximately 55% of proceeds will be invested in activities under the “pollution prevention and control” category, 40% under the “clean transportation” category, with the remainder distributed between the other three categories.

Proceeds will not be used for new landfills, landfills without biogas extraction systems (if applicable) or the following incineration activities: a.) waste-to-energy facilities that incinerate recyclable materials (including WtE projects that only treat rejections of treatment facilities and/or non-recyclable materials from selective waste collection), and b.) waste-to-energy facilities with an R1 value of energy efficiency < 0,65 (the EU regulatory standard for energy efficient WtE facilities). The issuer has excluded treatment of hazardous waste.

Selection:

The selection process is a key governance factor to consider in CICERO Green’s assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process.

FCCMA will set up a Green Bond Working Group to carry out the evaluation and selection process. The GBWG will also be responsible for reviewing the management of proceeds and facilitating reporting. Members include representatives from Finance & Administration, Management System, Human Resources, Machinery, and Legal. FCCMA has confirmed that representatives to the GBWG from the Management Systems group have environment and sustainability expertise. The GBWG will consult with other departments on a biannual basis to identify and recommend eligible projects or expenditures for inclusion in eligible projects. These proposed projects will be reviewed biannually to determine compliance with the green bond framework and approve allocation of proceeds. Projects are selected by consensus in the GBWG; controversial projects (i.e. projects that come close to not meeting eligibility criteria) will not be considered eligible. Allocation of proceeds will also be reviewed biannually to determine if any changes are necessary in case of canceled, sold or ineligible projects.

Management of proceeds

Pending allocation to eligible projects, FCCMA will temporarily hold an amount equal to the unallocated proceeds in its accounts, and will thereafter oversee the allocation and tracking of expenditures on eligible projects up to an amount equal to the net proceeds of green bonds issued. FCCMA will establish a Green Bond Register to manage this process. Proceeds will be deposited in FCCMA’s general funding accounts and earmarked for allocation in

the Green Bond Register. Proceeds will be allocated to a portfolio of projects. The Green Bond Register will be reviewed biannually by the GBWG. It will include details of the bond (ISIN, pricing date and maturity date), details of eligible use of proceeds including eligible green projects, amount of allocation made, and estimated impact of eligible use of proceeds. The balance of unallocated proceeds will also be disclosed in annual reporting; FCCMA will temporarily hold any unallocated proceeds in its accounts and apply the same criteria to use of proceeds.

Reporting

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

FCCMA will report on its green bond portfolio annually and within one year of issuance. The report will be made public on FCCMA's website. The allocation report will include total amount allocated to eligible green projects at the portfolio level, total amount allocated per eligible green project category, and unallocated amount. The report will also include expected environmental impacts, in line with best practice guidance on impact reporting. Impact reporting will be made on at least an annual basis. FCCMA has identified quantitative potential impact metrics for each of its project categories, such as GHG emissions from waste in tCO_2e, energy recovered from waste in MWh, annual renewable energy generation, percent increase in energy efficiency, estimated reduction in fuel consumption, and annual treatment of water in liters. For details, please see the framework table under Section 3.iv) Reporting. For carbon footprint calculation, FCCMA uses the GHG Protocol Standard under the operational control approach.

FCCMA commits to engaging an assurance provider to assess the compliance of bonds against the FCCMA Green Bond Framework on an annual basis. Per the issuer, the assurance provider will not review impact reports at this time. The report will be made publicly available on FCCMA's website.

3 Assessment of FCCMA's green bond framework and policies

The framework and procedures for FCCMA's green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where FCCMAs should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in FCCMA's green bond framework, we rate the framework **CICERO Light Green.**

Eligible projects under the FCCMA's green bond framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Category	Eligible project types	Green Shading and some concerns
Pollution prevention and control	Waste collection and management projects ✓ Recycling and waste diversion programs Waste-to-energy projects ✓ Generation of green energy from waste Waste processing projects ✓ Processing waste in a sustainable way, avoiding landfill	**Light Green** ✓ This category includes rubbish collection from streets, parks, beaches and the sea; waste composting projects; waste sorting; tire recovery projects; waste sorting and treatment facilities; waste-to-energy facilities. ✓ Approximately 55% of proceeds will be allocated to activities in this project category. ✓ Investors should note that proceeds will be used to operate CNG-powered vehicles. ✓ The issuer has confirmed that hard and soft plastics and aluminum are sorted in treatment plants and transported to authorized recyclers; waste delivered to WtE facilities is what remains that cannot be recycled. ✓ Plastic sorting before waste incineration is a key mitigation measure. Investors should note that even with best-in-class plastic sorting facilities, there is a certain

		percentage of residual plastics that make it through to incineration and contribute to emissions. Issuers are responsible for managing and reporting this risk. ✓ For beach and sea cleaning, the issuer uses small gas powered boats designed to collect floating waste and small spills; dragnets are not used. ✓ Composting facilities have protective barriers with leachate collection systems in place to protect soil and groundwater from contamination. Collected leachate is treated before disposal. ✓ WtE facilities capture biogas and use it for the production of electricity and/or heat. Waste is sourced locally, not imported. ✓ Facilities are fitted with methane leak detection and monitoring systems. ✓ Recovered rubber from tires is shredded and repurposed as playground flooring, carpet underlay, rubberized asphalt for road surfaces, and coal replacement in cement kilns. Proceeds may also be used to repurpose reclaimed rubber for artificial turf in sports complexes, which introduces significant risk of microplastic pollution. The recovered metal is recycled.
Renewable energy 	Construction, generation, or purchase of renewable energy from wind and solar	**Dark Green** ✓ Electricity generated will be used for own consumption or sold to the grid. ✓ Purchase of renewable energy refers to purchase of certificate of origin, which will be implemented in facilities with the highest consumption of energy. Approximately 6% of proceeds within this category will go towards purchase of renewable energy credits. Note that purchase of certificates does not guarantee development of new renewable energy projects. ✓ Mind impacts on biodiversity, landscapes, and affected communities in all power projects. ✓ We encourage the issuer to consider full life cycle emissions connected to procurement, disposal, suppliers and construction in new projects.
Energy efficiency  	Investment in projects leading to increase in energy efficiency in lighting by 30%	**Medium to Dark Green** ✓ This category includes purchase and installation of energy efficient, LED lightbulbs as well as replacement of electrical panels, automatic control systems, remote management systems, etc. ✓ In order to achieve dark green, the issuer is encouraged to set more ambitious targets for percentage of total lighting converted to LED per year by a target year.

		✓ Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity.
Clean transportation 	Procurement of electric and hybrid vehicles Procurement of natural gas fueled vehicles	**Light Green** ✓ FCCMA's current fleet of vehicles in Spain is 5.1% electric and 0.7% hybrid; it expects to increase share of electric vehicles to 13% and hybrid to 2% by 2030, with further increases to 44% hybrid/electric by 2050. This will significantly drive down scope 1 emissions. The UK entity does not have fleet goals. ✓ Issuer expects to allocate 20% of proceeds to electric vehicles, 15% to hybrid and 65% to CNG-powered vehicles. ✓ Consider grid factors in life cycle emissions for electrified vehicles. ✓ Methane is a potent greenhouse gas with a significantly greater global warming potential than CO_2 when released into the atmosphere precombustion. FCCMA has a robust system of leak detection and control in place to monitor and repair natural gas leaks in its facilities. ✓ This category includes all shades of green. Electric vehicles qualify as dark green and are an important part of a transition to a low carbon society; however, be aware of electricy grid emissions. ✓ Plug-in hybrids facilite the development of charging infrastructure and reduce emissions from transportation. These are considered medium green. ✓ The category is rated light green overall because of the focus on CNG-powered vehicles.
Terrestrial and aquatic biodiversity conservation 	Construction or purchase of facilities and technologies for ground remediation projects, including: ✓ Remediation of old landfills ✓ Treatment of contaminated soil ✓ Treatment of contaminated water ✓ Maintenance and conservation of	**Medium Green** ✓ Criteria for new facilities and renewed facilities include thermal solar-powered hot water, smart energy management systems, LED lighting, effective insulation and water efficient systems for toilets and laundry rooms. ✓ For projects that require construction, consider emissions intensity of materials and equipment used. ✓ 97% of waste managed by FCCMA is residential. Hazardous waste represents less than 3% of waste managed. The issuer has excluded hazardous waste from eligibility under this framework.

	parks, gardens and green areas	✓ Water management facilities have separated rainwater networks to avoid sewage overflow. ✓ Park maintenance includes investment in drip and automatic irrigation systems. It also includes a modest use of chemical fertilizers in urban parks, which can affect local ecosystems through groundwater runoff.

Table 1. Eligible project categories

Background

FCCMA Medio Ambiente and its regional entities offer a full suite of waste management services that provide opportunities for climate mitigation and transition to a circular economy. Each part of its business has particular risks and opportunities, which are generally described below.

Overall, the sector Water, Sewerage, Waste and Remediation (WSWR) contributes to a small share of the EU's total greenhouse gas emissions – water with 0.2% and sewerage, waste, remediation with 4.4% in 2016. Advanced solid waste management has a great potential to trigger greenhouse gas emission reductions in other sectors of the economy through waste prevention, separate waste collection, waste reuse and recycling.[1] In Spain, emissions from the waste sector represent 4,1% of total emissions, 76% of which come from landfills.

Centralized wastewater systems (including collection and treatment) can substitute untreated wastewater discharge or treatment systems causing high GHG emissions (e.g. onsite sanitation, anaerobic lagoons). Any level of treatment (primary, secondary, or tertiary) achieves significant reductions of GHG emissions. In case of increased precipitation and storm surges, combined sewer overflows may contaminate waterways. Implement appropriate measures to avoid and mitigate combined sewer overflow, such as nature-based solutions, separate rainwater collection systems, retention tanks and / or treatment of the first flush.

Landfill or wastewater gas collection and its use as heat, electricity of fuel contributes to climate change mitigation (i) by reducing methane emissions to the atmosphere emanating from biodegradable waste previously deposited in the landfill body and (ii) by displacing the use of fossil fuels for electricity/heat generation or fuel production.

Sewage sludge treatment for the production of biogas may lead to emissions of pollutants that have significant impacts on human respiratory systems and on ecosystems, in particular ammonia emissions from the sludge storage as well as emissions resulting from the subsequent use of biogas such as sulphur dioxide (SO_X), nitrous oxide (NO_X) and particulates.

Treated wastewater (sludge or digestate) can be used on farmland as organic fertilizer, directly or after a composting step. The use of digestate instead of synthetic fertilizers derived from by-products of the petroleum industry saves energy and reduces the consumption of fossil fuels. There is, however, a modest risk of soil pollution because of contaminants in the digestate, which can impact local ecosystems.

As part of an integrated waste management system, composting is a valid route to divert biodegradable waste from landfilling and thus reduce the uncontrolled emissions of landfill gas, in particular methane. Compost which can

[1] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-taxonomy_en.pdf

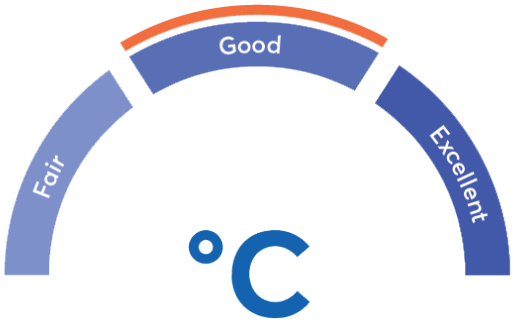
be used as a natural fertilizer or soil improver in agriculture. The use of compost instead of synthetic fertilizers – e.g. derived from by-products of the petroleum industry – saves energy and reduces the consumption of fossil fuels.

Waste incineration is considered to have environmental benefits because not all residual waste can be reused or recycled, however all materials that could be recycled should be separated before incineration. However, it introduces the risk of discouraging reuse and reycyling, options higher in the waste hierarchy. It should be noted that even best-in-class sorting facilities do not capture all plastics before waste incineration. Miminimzing incineration of plastics and management of resulting emissions is the responsibility of the issuer.

Material recovery is a climate friendly activity because sorting and reuse of materials can substitute use of virgin materials, thus avoiding higher emissions from generated from extraction, transport and production of virgin materials.

Governance Assessment

Four aspects are studied when assessing the FCCMA's governance procedures: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent.



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

Strengths

FCCMA has good governance procedures in place that set clear organizational targets and strategies for the company, with detailed implementation models for emissions and waste-to-landfill reduction. The company is a signatory to the UN Global Compact, has identified material Sustainable Development Goals, and reports to CDP. The company has a high rate of compliance with ISO 14001 and ISO 50001 certification, over 80%, which translates to effective and efficient management of energy and natural resources. The company also has a climate change strategy for 2030 to 2050. In this report, waste collection and transport and waste treatment are identified as the biggest sources of emissions. Longterm plans include the phase out of diesel and oil fueled vehicles in favor of electric and hybrid vehicles. For waste, the company plans to reduce waste to landfill to 10% by 2035 by increasing composting, and reduce emissions by focusing on biomethane production and energy capture. The report features models of the respective implementation plans.

The two entities relevant to this framework, the UK and the Spanish entities, issue annual sustainability reports in compliance with the GRI G4 Core standard. The reports include information about emissions sources and emissions over time; scope 1 and 2 emissions have decreased for over four consecutive years. The reports note that water scarcity and extreme events (i.e. flooding and droughts) present material climate risks. The company prioritizes water management as a result. Initiatives include drip irrigation, drought-resistant plants, automatic irrigation, groundwater capture, smart meters for water, and rainwater catchment systems for flood mitigation. The company does, not as yet, report on climate risk per TCFD recommendations or conduct scenario stress testing.

FCCMA has studied its primary sources of emissions and is investing strategically in the solutions that will reduce both emissions and waste to landfill as part of its commitment to contribute to a circular economy. Its R&D in this

area has led to several notable innovations: the company is an early industry adopter of EVs and hybrids, and has developed electrically powered waste collection and street cleaning trucks that reduce energy use for waste collection by 50%. This innovation sets a high standard for industry peers and the technology will be an important part of a transition to a low carbon future. The clean transportation project category will ensure increased investment in and use of zero and low carbon transportation vehicles.

The company's sustainable waste collection process sets a high standard for companies seeking to minimize waste to landfill. Collected waste goes through several stages before reaching the landfill: it is sorted for recyclables (including hard and soft plastic, aluminum and biowaste), then treated (composting and biogas capture) and used to generate electricity and heat that is used onsite or fed into the grid. The company pairs biogas capture with wind power installations, an effective use of land and resources.

Weaknesses

Investors should know that proceeds from FCCMA's green bonds will be used to procure and operate natural gas powered service vehicles and equipment. Approximately 65% of funds allocated to the clean transportation category is expected to go towards CNG-powered vehicles as part of the company's transition to cleaner fuels and lower emissions. Although natural gas does not emit particulates like other fuels, methane is a potent greenhouse gas with significantly higher global warming potential than CO_2. Use of CNG for vehicles represents continued emissions from use, continued dependence on fossil fuels, and risk of emissions from leaked methane. Methane leaks – both from use as a fuel and from composting and landfill – represent a significant potential source of emissions. FCCMA is aware of these risks and mitigates potential leaks with robust detection and monitoring systems, frequent audits and repair. CICERO encourages FCCMA to increase the rate of its transition ambitions to EV vehicles.

Pitfalls

The governance procedures for project selection and reporting meet basic requirements for Green Bond Principles. FCCMA has environmental expertise on the GBWG and the selection process may benefit from ISO 14001 and 50001 certification for over 80% of its internal processes, which provide certainty that they are optimized for environmental and energy efficient management. However, there is currently no clear requirement for independent environmental or sustainability review of potential projects prior to project selection and approval. This is particularly important for a company like FCCMA that operates in more than one country and must consider a broad array of regulatory contexts, geographically diverse transition and physical climate risks, grid factors, and technical processes for waste treatment. Third party assurance does not currently cover impact metrics.

To further strengthen its practices, FCCMA could require an environmental expert on the GBWG and demonstrate that the expert can veto projects considered environmentally controversial or problematic.

Best practice according to the ICMA recommends third party assurance of both proceed allocation and impact metrics. CICERO also encourages FCCMA to set emissions reductions targets that exceed EU regulations.

The framework includes waste incineration facilities, albeit only WtE facilities that do not incinerate recyclable materials and meet regulatory requirements for energy efficiency. When coupled with robust recycling programs – as is the case with FCCMA – waste incineration with energy recovery can be an effective option to divert waste from landfills and repurpose waste usefully. However, this does introduce a risk of rebound effects: when the capacity for waste incineration is high, it might be seen as an inventive to prioritize incineration of waste for energy purposes over recycling, which is counterproductive. CICERO encourages FCCMA to continue its ambitious recycling programs to mitigate this risk.

Within the pollution prevention and control category, proceeds can be used to repurpose reclaimed rubber for playground flooring, carpet underlay, rubberized asphalt for road surfaces, coal replacement in cement kilns, and artificial turf in sports complexes. Although recycling is encouraged and a key part of a circular economy, shredded and granular rubber introduces significant risk of microplastic pollution. Artificial turf is the second largest source of microplastic emissions in nature, after car tires and roads.

Activities under biodiversity conservation include potential, modest use of chemical fertilizers in urban park maintenance. Mind lifecycle emissions of chemical fertilizers as well as potential risk of contaminated groundwater runoff. The same category includes potential construction of facilities, which presents opportunities to consider lifecycle emissions and green, energy efficient building practices.

Appendix 1:
Referenced Documents List

Document Number	Document Name	Description
1	FCCMA Medio Ambiente Green Bond Framework	Framework dated October 2019
2	FCCMA Environment UK Sustainability Report	http://www.FCCMAenvironment.co.uk/wp-content/uploads/2019/07/3847-Sustainability-Report-2018-v15.pdf
3	FCCMA Environment UK Environmental Policy	Overview of environmental principles for UK entity
4	FCCMA Medio Ambiente Code of Conduct and Ethics	Overview of Spanish entity's principles
5	FCCMA-MA Memoria Sostenibilidad 2017-2018	Draft sustainability report for 2017-2018
6	FCCMA Whistleblowing channel procedure	Internal policy on corruption and whistle blowing
7	FCCMA Policy on relationship with partners	Internal policy on subcontracting, procurement, etc.
8	FCCMA Investigation and response procedure	Internal policy on management of conflict and corruption.
9	FCCMA Human rights policy	Internal policy on human rights

10	FCCMA Harassment prevention and eradication protocol	Internal policy on harassment prevention
11	FCCMA Gifts policy	Internal policy on corruption and gifts
12	FCCMA Crime prevention manual	Internal policy on crime prevention
13	FCCMA Compliance Model	Internal policy on compliance
14	FCCMA Compliance committee regulations	Internal policy on compliance committee regulations
15	FCCMA Anticorruption Policy	Internal policy on anticorruption
16	FCCMA Agents Policy	Internal policy on agents
17	2019 Climate Change Strategy	FCCMA describes climate targets and strategies, modeling out interventions by year to get to targets.
18	CCGG Pedidos	Internal procurement policy.

Appendix 2:
About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).