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Second Party Opinion

Grupo Energía Bogotá (GEB) S.A. ESP's Sustainable Financing Framework

October 30, 2023

Location: Colombia **Sector:** Utility Networks

Alignment With Principles

Aligned = ✔ Conceptually aligned = O Not aligned = ✘

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

See Alignment Assessment for more detail.

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Strengths

Robust human rights due diligence process and disclosure. Despite operating in regions (Colombia, Peru, Guatemala, and North of Brazil) with high social risks, GEB has a robust human rights screening process to ensure its activities and value chain are not linked with human rights breaches.

Issuer commits to have climate risk and vulnerability assessments to all financed assets under the framework. This involves, in the near future, performing a quantitative climate scenario analysis using the best available science to inform each assets adaptation plan.

Weaknesses

Emissions lock-in risk in pollution prevention and access to basic infrastructure project categories because of its emphasis on natural gas. While for the green category the company commits to retrofitting pipelines to blend green hydrogen with natural gas in the future, the social category considers natural gas infrastructure. While there is a social benefit from creating new natural gas connections to replace the use firewood for communities in an underdeveloped region, perpetuating natural gas infrastructure introduces high obsolescence risk. Still, the affordability of natural gas versus electricity in Colombia and Peru as well as the public health benefits of transitioning the targeted households from firewood and coal to natural gas support the social contribution of the investments.

Emission reduction targets do not include Scope 3 emissions. Indirect emissions account for a big portion of the midstream gas operators total GHG emissions.

Areas to watch

The availability of green hydrogen for GEB to transport is uncertain. Green hydrogen and low carbon gases should become relevant clean fuel sources in a low carbon and climate resilient future (LCCR). However, there is still uncertainty relating to their increased production and use in Colombia. If there is insufficient supply and demand for these gases, GEB's gas distribution network could perpetuate the use of natural gas, which we do not consider aligned to a LCCR future. We note that Colombia is expected to phase out the use of natural gas in electricity by 2040. The sector represented about 20% of natural gas demand in Colombia over the last four years (SEGAS, 2023).

Electric grid projects financed under the framework may supply electricity to high carbon intensive sectors such as oil and gas, through direct connections. Although these represent a somewhat low proportion of the total electricity delivered.

Eligible Green Projects Assessment Summary

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

Pollution prevention & control	**Light green**
Expenditures related to replacement or retrofitting of natural gas transmission and distribution networks, which enable the integration of hydrogen and other low-carbon gases.	
Construction, development, and/or maintenance of facilities, systems, or equipment aiming at reducing greenhouse gas (GHG) emissions or replacement projects and/or GHG control devices.	

Renewable energy	**Dark green**
Expenditures in electricity transmission lines that facilitate increased development and connection of renewable electricity generation sources.	
Expenditures related to the development, expansion, construction, maintenance, acquisition, and/or operation of renewable energy projects.	

Energy efficiency	**Light green**
Expenditures related to projects that will result in increased energy efficiency, based on GEB's best efforts to ensure all projects achieve at least a 15% energy efficiency improvement.	

Climate change adaptation and circular economy	**Dark green**
Investments related to upgrading, improving, and/or retrofitting of electrical transmission infrastructure and substations to enhance resiliency to weather-related events, including severe hurricanes and forest fires.	
Expenditures related to reducing /preventing waste (including landfill).	

Terrestrial and aquatic biodiversity protection	**Dark green**
Expenditures on projects related to the restoration and conservation of existing natural resources and/or biodiversity, including maintenance, protection and identification of endangered flora and fauna in areas where GEB operates.	

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

GEB, along with its subsidiaries, operates in the transportation and distribution of natural gas in Colombia and Peru, and in electricity transmission and distribution in Colombia, Peru, Guatemala and Brazil. GEB has more than 2,500 employees across the region, serving close to 4.5 million customers in electricity distribution and 4.2 million customers in natural gas distribution. The company also engages in power generation through its wholly owned subsidiary, Peru Power Co., and its 42.5% stake in Enel Colombia, which owns renewable (hydro, wind, and solar; 90% of installed capacity) and natural gas-fired plants (remaining 10%) with a total installed capacity of approximately 4.5 gigawatts (GW) in Colombia and Central American countries. Given Colombia's power grid high reliance on hydropower, the country sees natural gas as a strategic fuel to ensure grid stability and mitigate renewables intermittency. The City of Bogotá controls GEB, holding a majority ownership stake of 65.7%.

Material Sustainability Factors

Climate transition risk

Climate transition risks are highly material to electricity and gas network operators given their critical role in the energy delivery value chain and their direct exposure to upstream generators, which are a leading cause of GHG emissions. These drivers make the sector highly susceptible to growing public, political, legal, and regulatory pressure about their contribution in the achievement of climate goals. According to the International Energy Agency, the ongoing decarbonization of the energy sector is expected to triple its reliance on renewable power by 2030, which comes with significant grid expansion. In the gas network sector, continued focus on reducing reliance on methane-emitting natural gas could diminish growth prospects, making it more difficult to effectively manage regulatory risk.

Physical climate risk

Utility networks operate fixed assets that span large service territories, making them highly exposed to physical climate risks. These events can cause network service disruptions for large populations, elevating stakeholder materiality. Wildfires, hurricanes, and winter storms are becoming more frequent and severe. These events disrupt service, leading to gas or power outages for large populations. Additionally, given fixed assets, generators are relatively more exposed to physical climate risks compared with other sectors. In turn, these dynamics, coupled with regulatory pressure to preserve security of supply, are driving players to enhance their assets' resilience. The physical climate risks generally involve significant financial losses for operators due to repairs, but more importantly from exposure to extreme power price spikes or claims due to business disruption. We expect these dynamics to continue but vary regionally depending on regulatory responses. Colombia's natural gas infrastructure is particularly exposed to changes in precipitation levels that can cause landslides and affect infrastructure, while electric grids can be exposed to wildfire risks during extended drought periods. In addition, extended drought periods could affect water availability of hydropower generation (most relevant source of electricity for Colombia), and therefore impact the stability of the power grid.

Access & affordability

Energy is an essential service supporting human health and well-being and global economic development. New regulatory requirements, the energy transition, and the physical aspects of climate change could exacerbate service disruptions or steep price increases. Additionally, for renewable energy utilities, intermittency of such power generation sources can affect the availability and useability of supply. That said, industry reliability has improved, and we expect this to continue as many utilities use long-term integrated resource planning, which accounts for many of these risks and a higher penetration of energy storage

systems. Customer affordability is key stakeholder concern, as utility bills can affect households' purchasing power and the competitive strengths of local industries. In some jurisdictions, we see mechanisms to mitigate affordability concerns, with assistance programs such as tariff subsidies. Moreover, some developing markets have yet to achieve full coverage of energy to the entire population, which limits sustainable development. According to the International Energy Agency, 3% and 6% of Colombia's population still lack access to electricity and cooking fuels and technologies, respectively.

Biodiversity and resource use

New pipeline infrastructure for green hydrogen and low-carbon fuels transportation is slowly expanding to meet climate goals. New gas networks often necessitate linear land tracks, which can have adverse impacts on biodiversity. Impacts can include reduced plant and animal species because of vegetation suppression and habitat fragmentation. This can lead to a decline in ecosystem services (services provided by nature such as soil erosion management) that support an asset's resilience. For example, for pipelines in mountainous and vegetation-rich areas, less vegetation can make the area more susceptible to landslides. In most jurisdictions, local regulations mandate that new projects undergo environmental impact assessments to identify biodiversity risks and place mitigation measures to avoid or minimize potential harm, including ensuring sufficient soil cover quality. Furthermore, air, land, or water pollution resulting from gas pipeline leaks or oil spills makes it one of the most material environmental factors, in addition to the sourcing of various metals used building these assets.

Impact on communities

Community impacts from utility networks may be acute given networks' proximity to where people live and work and the essential nature of energy services in community development and well-being globally. Stakeholder impacts arise from the construction and siting of lines--especially in areas unaccustomed to industrial development and in indigenous territories. Construction and siting of lines is accelerating to meet climate goals and is occurring in areas where eminent domain is granted by local governments. Moreover, service disruptions could include fires, gas explosions, and sometimes irreversible, community health and safety hazards. Renewable energy projects are typically situated in secluded areas, either rural, indigenous, or other communities. While construction of renewable energy projects can promote job creation, improve energy access, and reduce air pollution, they may also displace communities and compete for land with other vital activities that are part of traditional land management, like agriculture. This can lead to community opposition, conflicts over land rights, and resource allocation issues. It is crucial for the sector to minimize the environmental and social impact, secure community consent, and ensure that local communities benefit from its assets implementation.

Issuer And Context Analysis

GEB, through its financing framework, aims to address climate transition risks, a material sustainability factor (MSF), by building new transmission and distribution networks carrying renewable power and by retrofitting natural gas infrastructure to enable green hydrogen blending. Its green projects also include energy efficiency projects, which further supports GEB's effort to reduce its carbon footprint and support energy transition of countries where it operates. In addition, GEB seeks to mitigate its exposure to physical climate risk, a MSF, by including investments to improve the resiliency of its electrical transmission infrastructure in its framework. The company commits to following EU Taxonomy requirements for its adaptation plans. Furthermore, GEB's development of new gas networks and operations in a highly biodiversity rich region, including the Amazon, makes it uniquely exposed to biodiversity and resource use risk compared with the global utility networks sector. Through its framework, GEB aims to address such MSFs by allocating proceeds to terrestrial biodiversity protection projects.

Social financing aims to expand and improve access to affordable energy. Social projects financed under the framework, by targeting individuals that are low income, live in rural areas without any access or are underserved, aim to address access and affordability concerns, which we also view as a MSF for GEB. Other social projects financed under the framework aim to have a positive impact on communities by providing education, access to fiber optics and satellite communication to specific target populations.

Green projects under the framework, specifically renewable energy, expansion of electricity transmission and distribution (T&D) network, and projects enabling hydrogen integration are

key to address climate transition. The company plans to expand its electricity T&D network, which predominantly carries renewables, from 18,829 kilometers (km) to more than 21,000 km by 2030. This supports GEB's efforts to reduce its carbon footprint and contributes to the energy transition of Colombia and Peru.

GEB has set 2030 and 2050 GHG emissions reduction targets. By 2030, GEB commits to reduce scope 1 and 2 GHG emissions by 51% for Colombian assets under operational control, 30% for Peruvian operations, and 11.2% in Guatemala compared with 2019 emissions. GEB is committed to achieving scope 1 and 2 neutrality for companies in which it has a controlling stake by 2050. However, these commitments are highly reliant on carbon offsets from nature-based solutions (NbS), as the company expects to offset 38% of its scope 1 and 2 emissions. The reliance on offsets, together with the uncertainty about their additionality, extent, and permanence of the NbS used by GEB, is a limitation in our view. Additionally, GEB's emission reduction commitments do not include scope 3, which is highly relevant for the company given the natural gas use of its customers. The use of products sold (scope 3 category 11) generally accounts for the bulk of midstream operators' emissions.

GEB has developed the framework while trying to incorporate the four elements from ICMA's 2023 Climate Transition Finance Handbook (CTFH). Adhering to the first element, GEB's transition strategy has been approved by its board of directors and has dedicated oversight at the senior management level. Its transition strategy and GHG emissions reduction targets mirror Nationally Determined Contributions (NDCs) of Colombia, Peru and Guatemala, which are subject to periodic updates every five years to ensure progress towards the Paris Agreement's goal. On the second element, we believe that financed projects under the framework will contribute to the GHG emissions reductions including scope 3. Since September 2023, GEB has reported on scope 3 emissions across some categories, including upstream emissions exposure to gas production, but has yet to report on the use of products sold (category 11). Under the third element, for a credible transition strategy, the CTFH encourages issuers to benchmark their emission reduction, across all three scopes, to science-based pathways. Even though GEB has developed a decarbonization pathway based on the NDCs, it is not clear that its emissions reduction trajectory aligns to a below 2°C scenario at minimum. Therefore, the company fails to fully meet the third element. Nevertheless, the company has taken steps to model its emissions reduction trajectory for scopes 1 and 2 (which highly relies on offsets) and commits to referencing science based pathways in the future. Finally, aligning to the transparency element, GEB commits to publish its annual capex plans related to its transition strategy and the cost of carbon being used. Projects financed under the framework, such as the investments in electricity grids that only transport low carbon electricity, support Colombia's public commitment to phase out natural-gas based electricity by 2040.

GEB commits to assessing its exposure to physical climate risks using climate scenarios. The company commits to performing a climate risk vulnerability assessment for all assets financed under the framework. It also commits to developing an adaptation plan modeled after EU Taxonomy requirements, which we view as a strength. This will begin with its Colombian electricity transmission and gas transportation in 2024. GEB aims to allocate a portion of proceeds to build additional resilience to its electricity transmission lines, which is a positive step to address this MSF.

Using proceeds from issuances made under the framework, the company will increase access to electricity and gas by installing solar photovoltaic power in areas not connected to its electricity grid. Also, GEB aims to create new natural gas connections to replace the use of firewood and coal for communities in the south of Colombia and Peru (see more details about the social benefit of such projects under the Analysis of Eligible Projects section).

Projects financed under the terrestrial biodiversity protection category look to mitigate GEB's exposure to biodiversity risks. Under the legislation of the countries where it operates, the company can maintain or build assets in national protected areas, if it complies with the biodiversity loss prevention and compensation measures set out during environmental licensing. However, we believe that if safeguards and appropriate restoration activities are not fully

conducted, considering the company's harm on biodiversity can be significant given the region where it operates. To avoid such issues, beyond adhering to local regulation, GEB also commits to using the biodiversity mitigation hierarchy for new projects. We believe intended allocations for this project category are modest relative to new gas infrastructure in the south of Colombia.

The impact of eligible projects on communities is relevant. In the past, some of GEB's electricity transmission line activities received community push back. To better mitigate this risk, in addition to internal policies, GEB indicated it will perform social impact assessments on all projects financed under this framework, avoiding assets in high social risk areas, or developing mitigation strategies prior to construction. We note however that it is not applicable to the projects' supply chains. We believe social projects financed under the framework can have a positive impact on communities by addressing two relevant social gaps in the region: access to education and energy.

Alignment Assessment

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

Alignment With Principles

Aligned = ✔ Conceptually aligned = O Not aligned = ✖

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

✔ Use of proceeds

All the framework's green project categories are shaded in green and all social project categories are considered aligned with the Principles. The company commits to disclosing the share of financing versus refinancing in its allocation of proceeds. The maximum look-back period is two years, in line with market practice. Please refer to the Analysis of Eligible Projects section for more information on our analysis of the environmental and social benefits and risks for the expected use of proceeds.

✔ Process for project evaluation and selection

The framework articulates the process to select and evaluate the green and social projects. Executives from the company's sustainability and communication as well as finance departments and respective technical teams will be responsible for evaluating and approving eligible projects under the framework. Eligible projects will be subject to the company's due diligence process, and environmental and social risks will be assessed. These assessments follow internal policies and are aligned to local regulations. Moreover, the company identifies relevant objectives for all eligible green and social projects and defines target populations based on external references from the applicable jurisdiction of the eligible social project.

✔ Management of proceeds

GEB will maintain a register to track the allocation of proceeds. The company intends to allocate an amount equal to the net proceeds within three years from the date of each issuance. Semi-annually, representatives from the departments will review the eligibility of projects and reallocate proceeds within 12 months if any projects fail to meet eligibility criteria or exclusion criteria. Unallocated proceeds will be managed according to GEB's corporate policies and may be held on GEB's balance sheet, used for other capital management activities, invested in cash, cash equivalents and/or other liquid instruments and/or used to

pay outstanding indebtedness, which we do not view as best market practice. Investing unallocated proceeds in controversial or high-emitting GHG sectors or activities is forbidden, which we view as positive.

✔ Reporting

GEB commits to publish its "Sustainable Instrument Financing Report" annually or in the event of material changes until the maturity of the instruments issued under the framework. The report will include the allocation of net proceeds, a brief description of financed projects and the remaining balance of unallocated proceeds. In addition, the company commits to disclosing the expected environmental and social impacts of financed projects, where feasible. The report will be available at the company's public website under its investor relations section.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "Analytical Approach: Shades Of Green Assessments," as well as our analysis of eligible projects considered to have clear social benefits and to address or mitigate a key social issue.

GEB will allocate proceeds to new and existing projects. For existing projects, it will use proceeds to refinance investments or expenditures that took place within two years prior to the issuance of a new sustainable financing instrument. New financing relate to spending on future expected investments for the next 36 months after the issuance date of any instrument under the framework. Refinancing considers investments made 24 months prior to the issuance date of any instrument under the framework.

The expected allocation informed below considers the initial issuance. Some categories are not yet contemplated as the company has yet to define the expected allocation for each subproject for the next issuances. Once defined, the company commits to report on allocation of net proceeds by project category.

For green project categories of the initial issuance, GEB expects to allocate 92% to renewable energy projects and 8% to energy efficiency. The expenditures for the first issuance made under the framework therefore does not cover the following projects: pollution prevention & control, climate change adaptation and circular economy, and some projects under energy efficiency and terrestrial and aquatic biodiversity protection categories.

For social projects of the initial issuance, GEB expects to allocate 71% to access to essential services and 29% to employment generation. These percentages do not contemplate the socioeconomic advancement and empowerment and access to basic infrastructure categories.

The framework contains an exclusion list for the financing of activities such as exploration and production of fossil fuels, activities comprising human rights exploitation, among others.

Green project categories

Pollution Prevention and Control

Assessment	Description
Light green	Expenditures related to replacement or retrofitting of natural gas transmission and distribution networks that enables the integration of hydrogen and other low-carbon gases (e.g., biogas), which enable increasing the share of cleaner energy sources into the national

systems while maintaining the current network's operating and safety standards.

Hydrogen criteria: To be eligible, one of the following thresholds must be met: (1) Electricity to be produced by electrolysis and powered 100% by renewable energy sources OR (2) Direct CO2 emissions from manufacturing of hydrogen: 0.95 tCO2e/t Hydrogen or less, OR (3) Electricity use for hydrogen produced by electrolysis is at or lower than 50 MWh/t Hydrogen, OR (4) The average carbon intensity of the electricity produced that is used for hydrogen manufacturing is at or below 100 gCO2e/kWh (taxonomy threshold for electricity production is subject to periodical update).

Construction, development, and/or maintenance of facilities, systems or equipment aiming at reducing greenhouse gas emissions ("GHG", including Sulphur Hexafluoride or "SF6") or replacement projects and/or GHG control devices (i.e. release monitoring equipment).

Analytical considerations

- We consider GEB's investments in retrofitting its existing gas T&D infrastructure in Colombia and Peru, to which will receive a blend of green hydrogen or biomethane in the future, as light green. This stems from a balance between two key factors.
    - The first, retrofitting reduces the obsolescence risk of the existing natural gas infrastructure and allows for the delivery of a cleaner fuel alternative to hard-to-abate activities (i.e., oil refineries, heavy duty trucks and fertilizer production; see expected uses in Colombia below). GEB has committed to not increasing the capacity of natural gas transportation for the retrofitted pipelines financed under this framework, so any new financing will not increase climate impact stemming from fossil fuels. By adapting the existing infrastructure, GEB incentivizes the production of low-carbon gas alternatives to the less affluent Colombian domestic market. In the medium-term, once the cost of green hydrogen production equals that of natural gas, we believe the retrofitting could serve the domestic use of green hydrogen in Colombia.
    - The second, GEB will continue to serve carbon-intensive sectors, such as oil refiners, which may extend the useful life of highly polluting assets in the economy. In addition, the maximum feasible green hydrogen blend is expected to be 20% based on current technological and health and safety considerations. The energy density of green hydrogen is lower than natural gas (methane), therefore the retrofitted pipeline will not provide a 1:1 reduction in natural gas related emissions. Still, we note that globally this is currently the best available alternative for pipeline retrofitting to reduce natural gas related emissions. In the short term, GEB does not have plans to make additional investments in new retrofitting technology to support a higher blending capacity. However, GEB will assess investment opportunities in new technologies as they become available.
- We see investments aimed at the reduction of SF6 emissions, a harmful GHG, from electricity transmission lines as dark green, commensurate with our overall view of GEB's investments in eligible transmission lines (see details in the renewable energy category). GEB expects to achieve a reduction by investing in electrical equipment such as switchgears and breakers that either reduce the risk of SF6 leakage or that are SF6 free.
- Given that most of proceeds are going to retrofitting its natural gas infrastructure, which receives a light green shade, the overall assessment is light green.
- The company does not expect to finance blue hydrogen transportation given the framework's emissions threshold criteria of 0.95 tCO2e per tonne of hydrogen produced. Blue hydrogen emissions are expected to be 1.5 tCO2e per tonne of hydrogen produced in Colombia. The current regulation does not allow for green hydrogen transportation as the current minimum gas quality parameters set by Colombia's natural gas regulator (Unified Transport Registry for Natural Gas; RUT) makes the transportation of any blend of green hydrogen with natural gas unfeasible.

- Furthermore, RUT currently does not allow for the transport of biomethane in GEB's main gas pipeline network in Colombia. Therefore, even though GEB participates in engineering and economic feasibility studies, retrofitted pipelines would not be able to transport a blend of green hydrogen in the short term. In addition to an update to Colombia's regulatory framework, investments in this project category are also dependent on a ramp-up of biomethane and green hydrogen production in the country (see details below).
- Colombia's Ministry of Mines and Energy has recently published its hydrogen roadmap which includes clear short-, medium-, and long-term objectives to increase hydrogen, production, distribution, and use. Within Colombia's roadmap, the regulatory framework change, that would allow for hydrogen transportation, is estimated to occur within the next three to five years. Green hydrogen production is estimated to range from 0.15 to 0.4 million tons by 2030.
- The roadmap projects fossil fuel refining to be the first sector that will use green hydrogen (replacing grey hydrogen). The demand from the transportation sector is estimated to start in 2026, primarily in heavy-duty road transport (buses and trucks), potentially reaching light vehicles by the end of the decade. By the same time, the roadmap projects the use of green hydrogen in the production of fertilizers (via ammonia).
- Beyond 2035, the roadmap foresees the use of hydrogen (and derivatives) in other carbon-intensive activities such as mining fleets and marine transport. We note that the roadmap's implementation is subject to external factors, such as policy makers willingness and investor appetite, which could limit GEB's ability to transport green hydrogen.
- The biomethane GEB will transport will be generated in facilities that transform agricultural residue, municipal waste, or wastewater into methane. We note that the company does not have any specific criteria to produce the biomethane transportation. However, Colombia's regulation sets strict guidelines on biomethane production, which mitigates the climate impact risk of the absence of GEB's criteria, in our view.
- The company is developing physical risk adaptation plans for its gas infrastructure. The company expects to complete a climate risk and vulnerability assessment in 2024, to then implement adaptation measures.

Renewable Energy

Assessment	Description
Dark green	Expenditures in electricity transmission lines that facilitate increased development and connection of renewable electricity generation sources. Transmission and distribution of electricity projects will be considered as eligible where: • the building or repair of grid infrastructure with average system grid emissions factor of less than 100gCO2e/kWh over a rolling five-year period; or • the transmission lines would be either dedicated exclusively to renewable energy power plants or would carry at least 67% renewable energy; or • the company considers improving electrical systems for more efficient electricity (including smart grid development, distributed generation dedicated to reducing curtailment of renewable energy to the grid and peak demand management). Expenditures related to the development, expansion, construction, maintenance, acquisition, and/or operation of renewable energy projects, such as: • Solar Sources (Photovoltaic and Concentrating Solar Power (“CSP”); or • Wind Sources (onshore)

Analytical considerations

- The project category receives a dark green given the importance of well-functioning and reliable grids, that carry low carbon electricity, for the energy transition. Investments in Guatemala and Peru are expected to provide more additionality, given that non-renewable sources comprise 50%-60% of installed electricity capacity for both countries, compared with less than 25% for Colombia and less than 15% for Brazil (both mostly consist of hydro).
- The use of solar power generation is commensurate with a LCCR future and is therefore seen as a dark green investment. Still, solar panel supply chains can involve meaningful environmental and social risks from the mining of raw materials. We believe

GEB has sufficient policies and procurement guidelines to mitigate for those risks. However, GEB has yet to define high risk end-life treatment for its panels.

- This project category focuses on the expansion of GEB's electricity T&D infrastructure to support the decarbonization of the grid in the countries that it operates. Investments in electricity T&D could also include smart grid technologies to stabilize the grid during periods of high demand (peak demand management). The project category also contemplates investments in solar PV systems that will serve the company's administrative operations and transmission substations.
- GEB will not use proceeds on equity investments in Enel Colombia or ISA REP and ISA Transmantaro in Peru. The company does not foresee financing of wind power generation projects in the short term.
- The regulation in each country that GEB operates requires identification of physical climate risks and adaptation considerations in the design of the assets. The company is developing physical risk adaptation plans for its electricity T&D network, starting with Colombia in 2024. In the subsequent years, this will be done for its existing and new network in other geographies, as well as for wholly-owned new renewable power generation assets.
- The company expects that the vegetation suppression needed for the development of new electricity T&D networks and solar projects will have a low impact on each respective natural ecosystem.

Energy Efficiency

Assessment	Description
Light green	Expenditures related to projects that could result in increased energy efficiency, based on company's best efforts to ensure all projects achieve at least a 15% energy efficiency improvement. Projects include: ▪ Financing of electric powered machinery or incorporation of energy efficient technology, such as LED lighting, ventilation, air conditioning (HVAC), refrigeration, and electrical equipment; or ▪ Renovation of real estate assets with energy management systems; or ▪ Investments in energy storage systems (e.g. battery storage); or ▪ Investments related to smart grid projects, smart sensors/meters, and automation systems to improve energy efficiency of the grid.

Analytical considerations

- We view GEB's investments in the energy efficiency of its real estate across its geographies, as light green. Even though we see reduced climate risk on GEB's real estate from the renovation, we do not see evidence on a strong additionality of the 15% improvement. We view GEB's investments in battery storage and smart grids as dark green as they facilitate a greater integration of renewables into the Peruvian grid. The overall project category receives a light green based on the real estate renovation.
- This project category focuses on general renovation of GEB's administrative offices to improve energy use efficiency, a battery energy storage system (BESS) at GEB's Peruvian distribution subsidiary (Electrodunas) to help stabilize the grid, and the installation of smart meters in its Peruvian distribution network. This project category does not involve energy efficiency investments in any natural gas infrastructure operated by GEB.
- Colombia's Ministry of Environment and Sustainable Development has disclosed a net zero building roadmap, which aims to achieve net zero in all new buildings by 2050. Within this roadmap, Colombia establishes that by 2030 existing building should aim for a 30% emission reduction from a 2021 baseline. Under this project, GEB foresees investments that improve energy efficiency at least by 15% allocated to the company's buildings. Although this means investments could stay below the regional thresholds, we believe it improves to the climate impact of GEB's real estate.

- GEB commits to developing adaptation plans for assets financed under this project category. The company expects the vegetation suppression needed for the BESS will have a low impact on natural ecosystem. The company is in its initial stages of assessing and mitigating potential environmental and social risks in its battery value chain. It commits to select battery suppliers that adhere to certified environmental standards.

Climate Change Adaptation and Circular Economy

Assessment	Description
Dark green	Investments related to upgrading, improving and/or retrofitting of transmission infrastructure and substations to enhance resiliency to weather-related events, including severe hurricanes and forest fires. Expenditures related to reducing /preventing waste (including landfill),

Analytical considerations

- The dark green assessment for adaptations project that will exclusively serve eligible T&D networks under this framework follows similar analytical considerations for the Renewable Energy category. We see GEB's approach on committing to follow the waste management hierarchy for its operations contributes to reducing the climate and resource use impact of its operations, in our view. However, we have yet to observe what the circular economy entails and embedded additionality to determine the effectiveness of its contribution to a low carbon and resilient future, hence we apply a light green assessment to GEB's waste prevention expenditures. The company expects to start rolling out some solutions by 2024.
- GEB expects adaptation spending will first focus on its Colombian electricity T&D generation as it rolls out such division's adaptation plan in 2024, to then reach its other operations. Expenditures related to reducing waste will be allocated at the source of waste at GEB's facilities. This project category excludes any adaptation or circular economy solutions for the company's natural gas infrastructure operations.
- The company is in the initial stages of developing its adaptation plan across its operations, therefore there is little evidence around the environmental considerations of it.

Terrestrial and Aquatic Biodiversity Protection

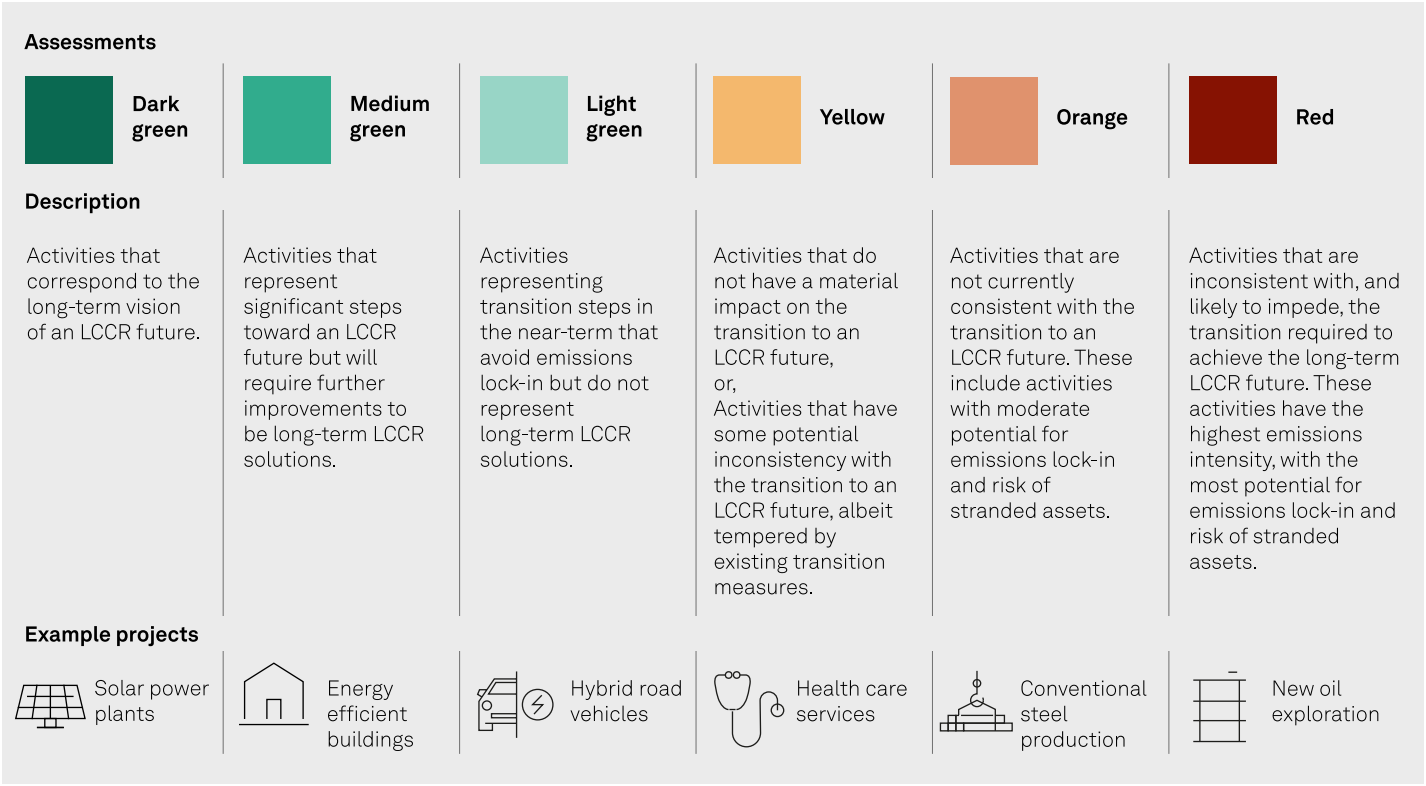
Assessment	Description
Dark green	Expenditures on projects related to the restoration and conservation of existing natural resources and/or biodiversity, including maintenance, protection and identification of endangered flora and fauna in areas where GEB operates. Projects Include o Connectivity of green corridors; or o Conservation of the Andean Bear and Mountain Tapir species in Central mountain ranges; or o Conservation of the Woolly Tigrillo in the upper and middle basins of the Bogotá river.

Analytical considerations

- The company's biodiversity conservation projects receive a dark green. Halting and reversing biodiversity loss is key to a LCCR future. We view as a strength that such projects will be conducted with assistance from regional environmental authorities and partnerships with non-governmental organizations that specialize in biodiversity conservation. The projects financed are also in line with the issuer's no net loss target.

- This project category focuses on biodiversity conservation projects in Colombia and Peru by creating green corridors (via reforestation or afforestation) to promote connectivity between ecosystems and expenditures on monitoring and conservation of relevant animal species in the Central Mountain region and Bogotá River. These activities seek to compensate the impact of GEB's operations on biodiversity and have been part of the company's both mandatory and voluntary environmental investments. We believe these investments are coherent with GEB's biodiversity strategy and no net loss target.

S&P Global Ratings' Shades of Green



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).

Social project categories

Socioeconomic Advancement and Empowerment

Projects under this category include expenditures used for programs aimed at developing capabilities on topics such as energy transition, development of abilities for women, and education infrastructure for undeserved communities. The company has already participated in these initiatives in previous years and aims to continue these projects to enable more people to have access to education. Education programs consider vulnerable population like women, people with disabilities, youth and minorities based on race, ethnic background and sexual identity or orientation. The programs considered under the category are:

- "Fabio Chaparro Energy Transition" which seeks to strengthen the technical skills needed for the energy transition. Includes: postgraduate scholarships and skills training for employees (does not include PHd), education in areas of influence of GEB and research awards.
- "Mujeres Linieras" training programs for women to enable their participation in construction and O&M departments in positions traditionally occupied by men.
- "Solar Power Classroom Module" in alliance with the ministry of education, aims to reduce educational gaps in rural areas by helping in the construction of interactive solar classrooms.

Analytical considerations

- The continuous work on these programs shows GEB's commitment to advance growth opportunities for women, youth, low-income individuals, and other minorities. We view GEB's focus to develop technical skills necessary for the energy transition as a strength of this project category.
- The company clearly defines the target population of financed programs, including the use of local regulation (Colombian and Peruvian) references to define low-income individuals, which we view as a strong practice.
- The company's public targets related to the eligible programs such as the commitment to strengthen the capacities of at least 6,000 people in Colombia through the Fabio Chaparro Program by 2025 and 20,000 by 2030; install and deliver 43 interactive solar classrooms by 2030 and develop entrepreneurship and training programs for 200 women by 2030. In our view, this strengthens the company's commitment to guarantee the social benefit of the eligible projects.

Access to Essential Services

Eligible projects will help reduce gaps on rural, underserved, low-income communities by providing services such as energy and access to telecommunication which can help with their social and economic development. Projects consider under this category include the construction, improvement, acquisition, or maintenance and operation of facilities and equipment of:

- Photovoltaic Solar Power in zones not connected to the system.
- Fiber optic connectivity to unconnected communities.
- Satellite communication services to underserved communities.

Analytical considerations

- Projects providing energy to underserved communities are in line with the company's commitment to decarbonize the energy grid in the countries in which it operates. Photovoltaic solar power installation will help isolated communities get access to reliable and clean energy.
- Providing and improving fiber optics and satellite communication on communities can provide several social benefits from education to access to financing. It is considered key to accomplish the United Nations Sustainable Development Goals related to education, women empowerment, finance, and health. However, the framework is unclear on the availability of these services or whether they will include affordability guarantees for underserved or low-income individuals, which is a limitation.
- In line with other eligible project categories the target population is defined for rural population, low-income individuals and underserved individuals.

- We believe this project category provides a relevant social benefit given that eligible communities are the ones without availability.

Affordable basic infrastructure/ Access to Basic Infrastructure

Projects only include expenditures in new natural gas connections, and primarily to low-income communities which do not have a stable energy resource and still depend on coal and firewood for their energy consumption.

- Installation of leak detection systems that will help monitor in real time and be able to intervene in case of gas leaks.
- Replacement or renovation of valves, controls and command devices, pneumatic actuators, and instrumentation that that will enable the reduction of at least 20% of natural gas GHG emissions.
- Replacement of boilers for more efficient ones (skids) that will enable energy savings and reduction of gas emissions.
- Revamping of the network connection nodes by replacing gas powered pneumatic instrumentation with electrically driven instrumentation.
- Replacement of turbo-compressors with latest generation machines that will allow for a reduction in Nitrogen Oxides (NOx) emissions.
- Electrification of compressor units and replacement of turbo-compressors powered with gas with electric machines leading to a reduction in consumption of natural gas and NOx emissions.

Analytical considerations

- This project category is targeted for areas not connected to natural gas infrastructure, primarily low-income communities, that would benefit from access to natural gas. For example, by replacing firewood and charcoal stoves with gas-based cooking methods, which not only has a positive environmental impact but also reduces health hazards. For example, on public health, the conversion improves household air quality, thereby reducing exposure to harmful air pollutants. This is especially relevant for rural households in Colombia and Peru, where access to health services is limited. GEB's expansion plans are aligned with the Colombian and Peruvian Governments priorities to promote natural gas access. According to Colombia's Regional Center of Energy Studies (CREE), firewood remains the primary energy source for 1.6 million homes (10% of the country's households) in the region in 2023, where electricity generation is also mostly not available.
- Despite the high risk of obsolescence associated with natural gas-based infrastructure and home appliances, we view natural gas as a secure and cost-effective energy source for these communities in the short to medium term, especially considering that a direct transition to electrification is not as feasible.
- In Colombia, the expansion is subsidized by a national funding scheme (Fondo FONENERGIA) that support the extension of coverage of natural gas in unconnected areas. This further supports the affordability of the financed project.
- The company's commitment to use efficient natural gas equipment, including methane leak detection systems and electrification of compressor units, provides some form of climate impact prevention.

Employment generation, and programs designed to prevent and/or alleviate unemployment stemming from socioeconomic crises, including through the potential effect of SME financing and microfinance

The company describes projects under this category as trainings for supplier and development programs.

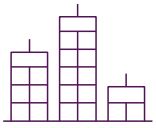
Analytical considerations

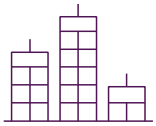
- The company relies on a wide number of suppliers that operate in or with marginalized communities. Through training and development programs, GEB supports further developments of such communities' economy.
- In line with other eligible project categories the target population is defined for rural population, low-income and underserved individuals.

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
Pollution Prevention & Control	 **13. Climate action**  **11. Sustainable cities and communities***
Renewable Energy	 **7. Affordable and clean energy***  **13. Climate action**
Energy Efficiency	 **9. Industry, innovation and infrastructure***  **11. Sustainable cities and communities**  **12. Responsible consumption and production**
Climate Change Adaptation and Circular Economy	 **12. Responsible consumption and production**  **13. Climate action**

Terrestrial and Aquatic Biodiversity Protection	 **13. Climate action**  **15. Life on land***
Socioeconomic Advancement and Empowerment	 **1. No poverty***  **5. Gender equality**  ***8. Decent work and economic growth**
Access to Essential Services	 **13. Climate action**
Access to Basic Infrastructure	 **11. Sustainable cities and communities***
Employment generation, and programs designed to prevent and/or alleviate unemployment stemming from socioeconomic crises, including through the potential effect of SME financing and microfinance	 **1. No poverty***  **8. Decent work and economic growth***

*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

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