



Continuum Green Energy Green Bond Second Opinion

January 12, 2021; revised March 10, 2022

Continuum Green Energy Ltd, Singapore (“Continuum”) is a Singaporean renewable energy holding company. Through its fully owned subsidiary, Continuum Green Energy (India) Pvt Ltd, India, it focuses on large-scale wind farms which can be co-located with solar photovoltaic (PV) installations in India. Continuum has a total portfolio of 4.0 GW, with an operating capacity and under construction capacity of 1,299.8 MW across seven renewable projects in four Indian states. Among the projects, the Periyapatti plant in Tamil Nadu and Rajkot – III plant in Gujarat, are wind farms co-located with solar PV arrays. These plants are among India’s largest wind and solar co-located power projects. Continuum targets an installed capacity of up to 4 GW within the next 3-5 years. The original framework has been updated to include Continuum Green Energy Ltd, Singapore as the issuer, as well in respect of the timeframe for allocation of proceeds.

The green bond framework lists eligible projects within the renewable energy category, including wind farms, solar PV plants, and connected storage solutions. The projects will promote the transition to a low carbon, climate resilient growth and sustainable development in India. Continuum’s business activity in providing clean energy inherently reduces emissions by reducing the grid emissions factor in the regions it operates. Continuum has no standalone projects, and all of Continuum’s projects will be connected to the grid. Continuum will sell renewable electricity to several high-polluting customers, including steel and cement producers.

Continuum has established sound procedures to ensure that environmental impacts are considered during construction and operation, as well as transparent allocation and impact reporting. Extensive Environmental and Social Impact Assessments (ESIAs) based on IFC performance standards are conducted for all projects, even if this is not currently required by Indian law.

The investor should be aware that Continuum has included funding of access roads within the project site in their green framework and that project sites that might include dry forested land can be selected. The access roads will be available to the general public, as mandated by the law, and might lead to a rebound effect through an increased fossil fuel-based traffic. For a future wind project an area categorised as “dry forested land” has been selected. The use of forested land, upon requisite approval of the Ministry of Environment and Forest, India, even if not categorised as high value “tropical evergreen forest”, may lead to deforestation and will affect the local habitat. Continuum does not conduct life cycle or climate risk assessments.

Based on the overall assessment of the project types that will be financed by the green bonds, governance and transparency considerations, Continuum’s green bond framework receives a **CICERO Dark Green** shading and a governance score of **Good**. To improve the framework, Continuum could conduct climate risk and life cycle assessments including focusing on emissions from the supply chain and the construction phase. Furthermore, the company could minimise the selection of project sites that might lead to displacement of forest and work to minimise a potential rebound effect from improved access roads.

SHADES OF GREEN

Based on our review, we rate Continuum’s green bond framework **CICERO Dark 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 Continuum’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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1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated December 2020 with a revision in March 2022. Continuum's green bond framework has been revised with regards to the identity of the issuer, as well in respect of the timeframe for allocation of proceeds. Since this updated second opinion based on the revised framework is not a full revision, the expiry date remains the same as the one dated January 2021. Any further 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



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.



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.



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.



Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available



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, key governance aspects that can influence the implementation of the green bond are carefully considered and reflected in the overall shading. 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. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



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

Continuum Green Energy Ltd, Singapore ("Continuum") is a Singaporean renewable energy holding company. Part of the Continuum Green Energy group, through its fully owned subsidiary, Continuum Green Energy (India) Pvt Ltd, India, it focuses on large-scale wind farms, which can be co-located with solar PV installations, in India. The energy group consists of 25 subsidiaries and is one of the largest providers of renewable power to corporates in the commercial and industrial segment in India. It is currently supplying renewable power to more than 125+ industrial customers from diverse industries spanning auto, industrial products, textiles, chemicals, pharma, steel, FMCG (fast moving customer goods), food, cement, and agriculture. Continuum is building and connecting projects to high-capacity electricity grids or dedicated green electricity corridors to facilitate flexibly integration of the renewable energy projects. Around 50% of the electricity generated in the portfolio is related to customers while the other 50% is sold to the grid for general utility. Continuum is supplying all its generated electricity to the grid and does not have any standalone projects delivering electricity to customers directly according to the issuer.

Continuum has a total portfolio of 4.0 GW spread across in the states of Gujarat, Maharashtra, Madhya Pradesh, Tamil Nadu, Karnataka, Rajasthan, and Telangana, with an operating capacity and under construction capacity of 1,299.8 MW across seven renewables projects. Among the projects, the Periyapatti plant in Tamil Nadu and Rajkot – III plant in Gujarat, are wind farms co-located with solar PV arrays. These plants are among India's largest wind and solar co-located power projects, with 148 MW of wind and 78.8 MWp of solar in Periyapatti plant and 99.9 MW of wind and 140 MWp of solar in Rajkot – III plant. Within 3-5 years Continuum targets a capacity of up to 4 GW. Plans include developments in new states in India as well as cross-state electricity generation.¹

Environmental Strategies and Policies

Continuum's business activity in providing clean energy inherently reduces emissions by reducing the grid emissions factor in the regions in which it operates. Between January and December 2021, Continuum reported avoided emissions of 1595 634 tons of CO₂, based on their energy generation of 1698 201 MWh of electricity.²

The company has developed an internal Environmental Management Plan (EMP) to ensure that they are working in line with national laws and regulation and relevant IFC performance standards. The Continuum EMP also sets out responsibilities related to the construction and operation of the projects. Continuum has a HSE (Health, Safety and Environment) policy relating to the health and safety of their employees and operations. They also have a waste management policy in place to ensure that, e.g., hazardous waste is taken care of by a certified facility. However, Continuum does not have any concrete targets related to environment or climate change, like emissions accounting or reduction targets.

The company does not report according to the TCDF (Task force for climate related financial disclosures), has not carried out climate risk assessments, or life cycle assessments of their suppliers and value chain. They do not report according to the GRI guidelines and do not report on Scope 3 emissions (emissions related to, e.g., the construction phase and supply chain).

¹ Generation electricity in one state and transfer to other states using existing grid networks.

² Continuum uses a conversion factor CO_{2e} of emissions reductions per MWh produced, as per CEA CO₂ baseline data for the Indian Power Sector.



Under this framework, Continuum aims to contribute to two of the UN Sustainable Development Goals: Goal 7 – Affordable and Clean Energy and Goal 13 – Climate Action.

Use of proceeds

Under this framework, Continuum will undertake to finance or refinance projects within the renewable energy category. This includes the development, construction and operation of onshore and offshore wind farms, solar energy, and energy storage.

Continuum may own the projects directly or indirectly through their subsidiaries. The group will apply negative screening policies to exclude financing activities that include involvement in fossil-fuel related activities.

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.

Continuum has established a green bond committee (the Committee) to oversee the selection and evaluation of projects. The committee is comprised of representatives from the Sustainability, Finance and Project & Operations teams, which will meet on an annual basis for the assessment of eligible green projects. The committee will follow a five-step process from (1) project evaluation to (2) approval and (3) monitoring of projects, as well as (4) replacing projects that are no longer eligible and (5) updating the framework if this becomes relevant based on market developments. Decisions on project selections are consensus based. The Committee is responsible for reporting.

Continuum is through their subsidiaries developing Environmental and Social Impact Assessments (ESIA) as a part of selecting the location of new projects. The ESIA will also identify environmental and social risks/impacts in the establishment and operation of projects, including engaging in a dialogue with local stakeholders and communities to mitigate environmental and social impacts. The ESIA's include an EMP and a monitoring plan and cover assessment and monitoring procedures for relevant environmental factors such as noise, water, ecological environment, soil and soil contamination, air pollution, land use, as well as social factors including community engagement, local employment opportunities, laborer rights and welfare, occupational and community health and safety. The EMPs inform on the implementation of the ESIA's undertaken for each project. ESIA's are conducted based on relevant IFCs performance standards³ and the Equator principles⁴.

Management of proceeds

CICERO Green finds the management of proceeds of Continuum to be in accordance with the Green Bond Principles.

Continuum will establish a green project portfolio to track the allocation of net proceeds from any green bond issued to eligible projects. The portfolio will be reviewed by the Committee on an annual basis, and routinely monitored by the Treasury Team. Projects will not be affected by ex-ante changes to the green bond framework and will remain in the green project portfolio for as long as they meet the eligibility criteria at the time of bond issuance.

³ [Performance Standards \(ifc.org\)](https://www.ifc.org/standards)

⁴ [The Equator Principles – Environmental and social risk management for projects \(equator-principles.com\)](https://www.equator-principles.com/)



Continuum will aim to fully allocate the net proceeds of any green bonds to under development, under construction and/or operating eligible green projects in accordance with the business plan and funding requirements. However, any unallocated proceeds will be held in line with general liquidity guidelines in cash, cash equivalents and/or other liquid marketable instruments, and the balance will be reported on in the allocation report. According to the company, unallocated proceeds will be invested in stocks/bonds of other renewable energy projects of the Continuum Group and in bank deposits, and not be placed in investments including GHG intensive assets, inconsistent with the transition towards a low carbon economy.

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.

Continuum has committed to annually publish both allocation and impact reporting on their investor relations website. The allocation report will include details on the total amount of outstanding green bonds, share of financing vs refinancing, size of the green project portfolio with a breakdown by project type, unallocated proceeds, and illustrative examples of green projects to which proceeds have been allocated.

The impact report will detail the environmental impact of financed projects through key performance indicators such as renewable energy capacity installed (MW), annual renewable energy generation (MWh), annual CO₂ emission reduction/avoidance (tons of CO₂). Any assumptions used in calculation methodology, including benchmarks and grid factors, will be clearly stated in the reporting.

An external reviewer will annually produce a verification report on the allocation of proceeds.



3 Assessment of Continuum’s green bond framework and policies


The framework and procedures for Continuum’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 Continuum 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 Continuum’s green bond framework, we rate the framework **CICERO Dark Green**.

Eligible projects under Continuum’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
Renewable energy 	<ul style="list-style-type: none"> Development, construction, and operation of onshore and offshore wind farms and related support infrastructure. 	Dark Green <ul style="list-style-type: none"> ✓ Renewable energy is key to a low-carbon transition. ✓ Currently, all development projects are onshore projects. Continuum is continuously evaluating its business development opportunities, including offshore wind. The issuer however informs that there are currently no concrete plans related to offshore wind. ✓ The issuer has included investments to access roads in their green projects. The roads will be available to the general public as mandated by the law. Even if the company informed us that the projects are located in scarcely populated areas, this might lead to a rebound effect through an increased fossil fuel-based traffic. ✓ Continuum informed us that for a future wind project an area categorised as “dry forested land” has been selected with vegetation comprising of Thorn Forest. Continuum has received initial approval from the Ministry of Environment and Forest for the installation of this wind project. ✓ In India, wind farm projects are classified as Green Category projects from the environment and forest point
	<ul style="list-style-type: none"> Development, construction and operation of solar energy and related support infrastructure. 	
	<ul style="list-style-type: none"> Development, construction, and operation of energy storage. 	



of view and displacement of forest requires a compulsorily afforestation for the displaced forest land in the proximity of the forest. Continuum informed that they will provide mitigation measures in terms of afforestation. The use of forested land, even if not categorised as high value “tropical evergreen forest”, may lead to deforestation, will affect the local habitat and should be minimized.

- ✓ The issuer plans to build both co-located wind and solar photovoltaic (PV) projects as well as projects only including solar PV.
- ✓ Installed capacity for new projects is expected to be in the range of 25 MWp to 150 MWp per site for solar projects and 75 MW to 300 MW for wind projects.
- ✓ Wind and solar PV projects can have adverse local environmental impacts and impacts on local communities. The issuer is conducting ESIA's for all their projects. According to the issuer, there is no requirement to conduct ESIA's for solar PV and wind-projects in Indian national law.
- ✓ Contractors are required to adhere to the environment policy of Continuum. Environmental requirements to sub-contractors and life cycle impacts of the projects are currently not considered.
- ✓ Continuum is predominately looking at batteries as storage solutions, however other economically viable solutions are being explored and environmental studies being conducted.
- ✓ Energy storage projects can involve the use of lithium-ion batteries. Mining of lithium and other ingredients used in batteries (e.g., cobalt and nickel) can have severe environmental impacts due to the high toxicity and water-intensive processes that are undergone in the industry.

Table 1. Eligible project categories

Background

India has made significant progress in increasing access to clean and affordable energy, energy security, and energy efficiency. India's electricity security has improved markedly through the creation of a single national power system and major investments in both thermal and renewable capacity. In 2019, 71% of India's electricity was based on coal and lignite and 21% based on renewables⁵. The associated grid emission factor of the power sector amounts to 684gCO₂/kWh compared to a G20 average of 449gCO₂/kWh⁶. In order to decarbonize the sector, India has set a target of 500 GW renewable energy capacity by 2030. In its 2020 Renewables Forecast, the IEA expected India to be the largest contributor to the rebound of renewable energy in 2021/2, following a doubling of additions from 2020.⁷ A major priority issue for the increasing renewable generation will be ensuring flexibility of the grid to ensure the successful system integration of wind and solar PV.

⁵ <https://www.climate-transparency.org/wp-content/uploads/2020/11/India-CT-2020-WEB.pdf>

⁶ <https://www.climate-transparency.org/wp-content/uploads/2020/11/India-CT-2020-WEB.pdf>

⁷ [Renewable electricity – Renewables 2020 – Analysis - IEA](#)



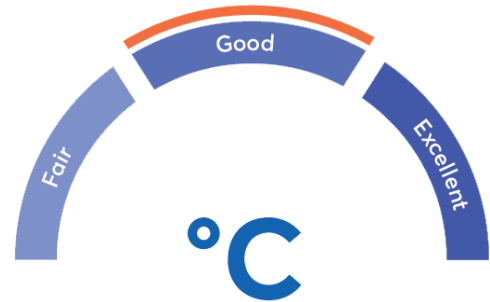
Governance Assessment

Four aspects are studied when assessing Continuum’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. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

Continuum has established sound procedures to ensure that environmental impacts are considered during construction and operation. Extensive ESIA’s based on the IFC performance standards and the Equator principles are conducted for all projects, even if this is not required by Indian law. Selection of eligible green projects and project locations are informed by the recommendations of the ESIA’s, and decisions are made in consensus by the green bond committee. Allocation and impact reporting will be made public on Continuum’s webpage.

The company is lacking concrete environmental and climate change related targets. Additionally, the issuer does not conduct climate risk or life cycle assessments of their projects, nor report according to the TCFD-recommendations. Continuum is not currently reporting in line with the GRI-recommendations, however the company informs us it is working with a consultancy firm to put in place a group-wide ESG framework and will release its first sustainability report in 2022 in line with GRI standards. We welcome these developments.

The overall assessment of the governance structure of Continuum gives it a rating of **Good**. The framework would benefit from applying climate risk as well as life cycle assessments, including ambitions toward managing construction and supply chain emissions.



Strengths

It is a clear strength that Continuum’s framework focuses exclusively on low-carbon solutions. Electricity generated from wind and solar PV plants will increase the share of renewable energy in India and reduce both local emissions and GHG-emissions. It is also considered a strength that Continuum is developing integrated plants combining wind and solar PV arrays, taking a holistic approach to renewable energy, and reducing the risks of low output from one of the energy sources. Furthermore, it is a strength that the company is partnering with high-emitting companies. This will increase the awareness of the CO₂-footprint of the energy consumed by the high-emitting sectors, as well as increase the need for renewable energy.

Continuum is using their own generated electricity for their power needs when local regulation permits and is to small degree using energy from the grid.

The issuer is conducting extensive ESIA’s for all projects, even if this is currently not required by Indian law. With this, the company is informed on potential vulnerable biodiversity close to or within the relevant site, and can mitigate negative impacts – e.g., by adjusting the project area selected. Through the ESIA’s the company will also get information on other potential risks, like water scarcity. CICERO Green encourages Continuum to make the ESIA’s available to the general public.

Continuum informed us that they are mitigating negative effects and ensuring a low fatality rate for birds by painting the turbine blades with bright colors and by using bird guards.



According to the company, a main part of the wind turbines is sourced locally, which will reduce emissions from transport. However, the company should also consider conducting life cycle assessments to make sure that emissions arising also in the construction phase is considered in the purchasing process.

Weaknesses

We find no material weaknesses in Continuum's green bond framework.

Pitfalls

While renewable energy projects generally are considered to have a very positive climate mitigation impact, there are nevertheless emissions associated with the construction process. CICERO Green encourages Continuum to conduct life cycle assessments of major projects. Life cycle assessments will provide valuable information on the environmental and climate impacts of the projects and point to suppliers that can lead to a reduction in GHG-emissions.

The investor should be aware that Continuum has included funding of building of new and strengthening of existing access roads located within the project area in their green framework, accounting for 0.5-0.75% of the capital expenditures for the project. The roads will also be assessable for the general public in the project areas, as mandated by law. Even if the projects are located in scarcely populated areas this might lead to increased traffic and create a rebound effect that can lead to increased emissions.

The issuer informed us that they so far do not have projects in forested areas. However, for a future wind project an area categorised as "dry forested land" has been selected with vegetation comprising of Thorn Forest. Continuum has received initial approval from the Ministry of Environment and Forest for the installation of this wind project. In India, wind farm projects are classified as Green Category projects from the environment and forest point of view and displacement of forest requires a mandatory afforestation for the displaced forest land in the proximity of the forest. Continuum informed us that they will provide mitigation measures in terms of afforestation. The use of forested land, even if not categorised as high value "tropical evergreen forest", may lead to deforestation, will affect the local habitat and should be minimized.

The company has not adopted TCFD-reporting and has not carried out climate risk assessment related to a changing climate with increased risks for extreme weather events, increased flooding or droughts and an increased need to consider the durability of the equipment.



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	Green Bond Framework. Continuum Green Energy. February 2022	Green Bond Framework provided by Continuum Energy. Dated February 2022
2	Environment Management Plan	Continuum's Environmental Management Plan
3	Disaster Management Plan	Continuum's Plan for disaster management at its project sites
4	HSE Manual	Continuum's Health Safety Environment (HSE) Manual
5	HSE Policy	Continuum's Health Safety Environment (HSE) Policy
6	Environment Report, Continuum Green Energy, April to October 2020	Continuum's Environment Report for Q1 and Q2
7	ESIA Reports	ESIA reports for the Ratlam, Bothe, Periyapatti (wind and solar), and Rajkot sites



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).

