



# Delhi International Airport Ltd Green Finance Second Opinion

March 7, 2021

**Delhi International Airport Ltd (“DIAL”) is a joint venture that manages Indira Gandhi International Airport (“IGI Airport”).** The airport serves as one of India’s international aviation hubs and as a major domestic aviation hub, connecting the Indian capital of New Delhi nationally and globally. In financial year 2019, IGI Airport handled over 69 million passengers. Expansions underway across the airport will increase capacity to 140 million passengers per year. DIAL is a joint venture in terms of ownership structure while management control is maintained by the GMR Group, an Indian infrastructure and utility company.

**Green proceeds under DIAL’s Green Finance Framework will finance new, expanded or existing terminal buildings and other airport infrastructure at IGI Airport.** Substantial efficiency improvements of the airport and aviation industry are considered necessary steps to reach the well below 2°C target, in addition to alternative fuels, electrification, and alternative transport modes. Eligible assets are mostly green buildings as well as a variety of smaller green initiatives at the airport site in the categories of energy efficiency, renewable energy, waste, water, pollution prevention and control, and clean transportation.

**The majority of the eligible green assets in the framework is the expansion of Terminal 1 which has a target of has a LEED Gold certification, which we assess to be Light Green.** The current design for the terminal expansion is expected to result in up to 15% improved energy efficiency compared to the base case building. While the expansion of the terminal will include approx. 1000 more parking places, these will not be financed through green bond proceeds according to the issuer.

**While GHG emissions reductions at the airport are encouraging, there is a substantial risk of lock-in as the reductions will not outweigh the increase in emissions from the airport’s expansion and expected increase in overall emissions.** DIAL has a number of initiatives to reduce aircraft emissions however aircraft movements are forecast to increase from 460 thousand in 2019 to over 725 thousand by 2034. We view aviation as necessary to economic development, and encourage efficiency improvements at IGI Airport.

**IGI Airport is one of the first airports in the world to achieve the “Level 4+, Transition” level under the Airport Carbon Accreditation system operated by Airports Council International (ACI).** This included the use of 65,000 offset credits in 2020. In addition, airport infrastructure development at DIAL also comes with pitfalls associated with social implications. It is DIAL’s responsibility to closely monitor the environmental and social impacts and mitigate potentially adverse effects.

Based on the overall assessment of the project types that will be financed by the green bonds and/or loans, governance and transparency considerations, DIAL’s Green Finance Framework receives a **CICERO Light Green** shading and a governance score of **Good**. To improve, DIAL could increase requirements on efficiency, ramp up efforts to manage Scope 3 emissions, improve project selection and exclude projects with high risks of lock-in and rebound effects and report on the use of unallocated proceeds which can temporarily be used to refinance Terminal 3.

## SHADES OF GREEN

Based on our review, we rate the DIAL’s green finance framework **CICERO Light Green**.

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



## GREEN BOND and LOAN 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 March 2021. 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



**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.

### 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

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 finance 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 DIAL's green finance framework and related policies

Delhi International Airport Limited (“DIAL”) is a joint venture that manages Indira Gandhi International Airport (“IGI Airport”). The airport serves as one of India’s international aviation hubs and as a major domestic aviation hub, connecting the Indian capital of New Delhi nationally and globally. In financial year 2019, the IGI Airport handled over 69 million passengers and over 460 thousand aircraft movements.

DIAL is a joint venture, formed as a consortium between GMR Airports Limited (64%), Airports Authority of India (AAI) (26%), and Fraport AG (10%). GMR Airports Limited has interests in Hyderabad’s Rajiv Gandhi International Airport, Mactan Cebu International Airport in the Philippines and other new airport developments in India and Greece. GMR Airports Limited is 49% owned by Groupe ADP, an international airport operator based in Paris, and 51% owned by GMR Group which maintains management control. GMR Group is an infrastructure company headquartered in New Delhi.

GMR Group also has extensive interests in other sectors which are relevant for environment and climate change:

- coal-fired power generation, with 1650 MW operating and 1320 MW under development
- gas-fired power generation, with 608 MW operating
- thermal coal mining with mining operations in Indonesia producing 22 million tonnes per year
- wind power generation (3 MW installed),
- solar power generation (25 MW installed),
- hydro power, with 180 MW and 900 MW of capacity under development in India and Nepal.

DIAL has stated that it plans to expand the capacity at Delhi International Airport to 100 million passengers per annum in 2023 and further to 140 million passengers at the completion of its 2016 Master Plan. Phase 3A expansion plans within the master plan include expanding the airfield from 3 to 4 runways with associated additional taxiways.

DIAL may issue financial instruments under its Green Finance Framework to a Special Purpose Vehicle which issues financial instruments to investors. This second opinion applies to DIAL’s Green Finance Framework.

### Environmental Strategies and Policies

The issuer has adopted the motto of “Building a Sustainable Future” and is committed to conducting its business in an environment-friendly and sustainable manner by minimizing the impact of its activities on the environment with necessary pollution control systems and safeguards. It has a variety of sustainability initiatives including Green Infrastructure Adoption, Energy Conservation, Use of Renewable Energy, Water Conservation & Rainwater Harvesting, Waste to Wealth Initiatives, and Noise Management.

The company’s Scope 1, 2 and 3 emissions for calendar year 2019 were: Scope 1: 4,513 tCO<sub>2</sub>; Scope 2<sup>1</sup>: 59,195 tCO<sub>2</sub>; Scope 3: 8,609,769 tCO<sub>2</sub>. Scope 3 emissions for DIAL in the 2019 reporting period include emissions from:  
1. Aircraft landing and take-off cycle; 2. Aircraft one way full flight (departure); 3. Aircraft engine testing and

<sup>1</sup> The Scope 2 emissions are reported as either market based (59,195 tCO<sub>2</sub> in 2019) or location based (112,151 tCO<sub>2</sub> in 2019). DIAL uses the market based approach.



operation of auxiliary power units; 4. Staff business travel; 5. Employee commuting; 6. Passenger surface access; 7. Ground support equipment; 8. Electricity consumption by airport tenants and concessionaires; 9. Non-road construction; 10. Off-site waste processing; 11. Security Force vehicles; 12. Tenants' electricity consumption.

DIAL has an objective of achieving “Net Zero Carbon Emission Airport” (Scope 1 and 2 plus employee business travel emissions) by 2030 and is already tracking those emissions with regular verification under ISO carbon accounting standards (ISO 14064). For Scope 3 emissions, DIAL has described a variety of initiatives which are underway or being developed.

In 2020 DIAL became the first airport in Asia Pacific to achieve “Level 4+, Transition” under the Airport Carbon Accreditation<sup>2</sup>, and only the second airport globally. As per the Airport Carbon Accreditation program, to achieve the Net Zero Emission status, the airport shall aim to reduce their absolute emissions (which is Scope 1 & 2 and Scope 3 of Employee Business Travel) to the greatest extent possible and address any remaining emissions through purchasing and surrender of offset credits. DIAL states that it purchased 65,000 credits from the Clean Development Mechanism to offset its emissions for the 2019 reporting period.

The company has a management system in place which includes an Environmental Management System, an Energy Management System and a GHG Management System, all certified under relevant ISO standards. Green buildings are a focus of the issuer. Terminal 3 was one of the first LEED Gold certified airport terminal buildings in 2011 under New Construction standard and it received IGBC Platinum in 2016 under Green Existing Building standard. The expanded Terminal 1 is also intended to be a LEED Gold certified building with energy performance 12% to 15% better than code<sup>3</sup>. DIAL has aspirations to achieve LEED Gold for the Terminal 1 expansion.

Environmental initiatives for airside operations include increased efficiency of aircraft taxi movements as well as increased used of centralized power and air at the aircraft gates. The company has also installed 7.84 MW of ground mounted solar panels which generate around 12MWh per year. The issuer plans to source the remainder of the electricity supply for the airport site from renewable sources via a Power Purchase Agreement with a 180 MW hydropower facility located in the Chamba District of Himachal Pradesh being developed by the GMR Group.

On waste, the company has a range of initiatives including the development of an Integrated Solid Waste Management System within the airport site, expected to be commissioned in 2021. Water efficiency initiatives include an advanced water treatment plant, a zero-liquid-discharge sewage treatment plant, and rainwater harvesting.

Airports are often susceptible to climate risks such as floods, heat waves, extreme weather and the disruptions to infrastructure and logistics which result from those events. Floods have occurred at Delhi International Airport on numerous occasions in recent years due to heavy rainfall events. DIAL states that it has evaluated and mapped climate-related risks and opportunities for the airport business based on Transitional Risks and Physical Risks. It states that climate change impact is taken into consideration in all infrastructure planning and design, including for air conditioning systems and stormwater infrastructure.

On the social side of sustainability, DIAL has a long list of Corporate Social Responsibility programs which are either run by DIAL or the GMR Group. These mostly relate to communities close to the airport site. In addition, DIAL is part of “Clean Skies for Tomorrow” coalition which aims to develop a road map to achieve “100 million passengers fly on sustainable aviation fuel domestically in India by 2030”.

<sup>2</sup> <https://www.airportcarbonaccreditation.org/about/6-levels-of-accreditation.html>

<sup>3</sup> This improvement refers to 12% - 15% more efficient as compared to an ASHRAE compliant base case building of similar dimensions.



The issuer publishes its Sustainability Report in line with the Global Reporting Initiative (GRI) standards. The report is published every two years with the 2020 report currently being prepared

### Use of proceeds

According to the green finance framework, proceeds will be used to finance or refinance assets that fall in the environmental areas included in DIAL's green finance framework. Eligible green assets are included in the following Green Bond Principles and Green Loan Principles categories: Green Buildings, Energy Efficiency, Sustainable Water and Wastewater Management, Clean Transportation, Pollution Prevention and Control, and Renewable Energy.

At the first transaction the vast majority of the investments will likely consist of Green Buildings (i.e., Terminal 1 expansion) and much smaller shares will be in the other categories. The initial list of eligible green projects includes capital expenditures and operating expenditures up to FY2024.

New airport buildings such as new terminals or terminal expansions are eligible under this framework as long as they achieve a certain building certification level (see Table 1 for details).

DIAL has stated that it will use a best efforts basis to limit its eligible green assets to those where the investment has been made up to 36 months prior to issuance, or where the investment is made up to 36 months after issuance of the Green Finance Instrument. DIAL anticipates that full allocation of proceeds will be achieved over 36 months after issuance of the Green Finance Instrument.

According to the issuer, there are three exclusions from eligible green projects:

- Sourcing energy from hydropower projects with a generating capacity of over 25 MW
- Sourcing electricity from coal power plants or fossil fuel sources
- Fossil fuel-based power generation infrastructure.

These exclusions result in "carve-outs" from some of the eligible green projects, such as removing diesel backup generator sets from the eligible investment in green buildings. According to the issuer, car parking is also excluded.

### 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.

Eligible green assets and projects will be selected by the DIAL Sustainability Committee consisting of senior management members including Chief Operating Officer, Chief Financial Officer, Chief Development Officer and heads of engineering, environment, strategic planning, and procurement. The committee is responsible for the development, coordination and execution of DIAL's green projects, and reports to DIAL's CEO, who reviews the progress of initiatives on a half-yearly basis.

According to the framework, the Head of Environment & Sustainability will evaluate and determine which projects are eligible for inclusion in the portfolio of Eligible Green Assets according to the criteria required by DIAL's Green Finance Framework. The projects compiled by Head - Environment & Sustainability will be reviewed and validated by the Sustainability Committee.



The Sustainability Committee will track investments in Eligible Projects including brief descriptions of the projects. The progress will be reported regularly to DIAL's CEO.

### Management of proceeds

CICERO Green finds the management of proceeds of DIAL to be in alignment with the Green Bond Principles and Green Loan Principles.

The proceeds will be included in DIAL's general cash flows and an earmarking approach will be used to track the allocation of proceeds to eligible green projects. According to the framework, pending the allocation to Eligible Green Projects, net proceeds from Green Bond / Loan issuance will be temporarily placed in the liquidity reserve and managed accordingly.

### 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.

According to the framework, DIAL will make and keep readily available reporting on the allocation of net proceeds to the Eligible Green Project Portfolio and (wherever feasible) reporting on the impact of the Eligible Green Project Portfolio within a year from the issuance of the applicable Green Finance Instrument. The framework states that the reporting is to be renewed annually until maturity of the Green Finance Instrument or following any material events.

The issuer states that it will provide allocation reporting and impact reporting. The allocation reporting will include net proceeds raised from Green Finance Instruments, the total amount of investments and expenditures in the Eligible Green Project Portfolio, the number of new and existing investments and/or projects (financing and refinancing), and the amount of unallocated proceeds.

The impact reporting will include a short description of the Eligible Green Projects as well as indicators for all project categories. Examples provided in the framework include number and level of green building certifications, total certified floor space for green buildings, number of electric or green fuel vehicles, energy consumption per passenger, water consumption per passenger, and waste diverted from landfill. The issuer has stated that it will also provide the methodologies and assumptions for the quantified indicators in its impact reporting.

The reports will be signed off by the Head - Environment, Chief Operating Officer, Chief Financial Officer (CFO) and Chief Executive Officer (CEO) of DIAL. Reports and other documents will be made available on the DIAL website : <https://www.newdelhiairport.in/>

According to the framework, after the issuance, DIAL intends to request a verification by its external auditor of a management statement on the allocation of the Green Finance proceeds to the Eligible Green Project Portfolio for its allocation reports. DIAL has stated that it shall appoint an external reviewer for the verification of the impact indicators.



### 3 Assessment of DIAL's green finance framework and policies

The framework and procedures for DIAL'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 DIAL 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 DIAL's green finance framework, we rate the framework **Light Green**.

#### Eligible projects under the DIAL's green finance 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
Green Building	<p>New development, existing or redevelopment of existing buildings that have or will receive any one of the following certification systems:</p> <ul style="list-style-type: none"><li>• LEED® (Leadership in Energy and Environmental Design): Minimum certification of Gold or above;</li><li>• IGBC (Indian Green Building Council) Standards: Minimum certification of Gold or above;</li><li>• GRIHA (Green Rating for Integrated Habitat Assessment): Minimum Rating of 3 star and above.</li></ul> <p>Sample Projects: Terminal 1 expansion project.</p>	<p><b>Light Green</b></p> <ul style="list-style-type: none"><li>✓ New and expanded buildings at airports lead to capacity increase of passengers and associated significant risks of total emission increase through air travel. DIAL's investments in airport buildings comes with a significant risk of lock-in since the overall emissions are not managed sufficiently.</li><li>✓ The main objective under this category is to finance the expansion of a LEED Gold certified Terminal 1 which is expected to be 12-15% better than the energy performance of the base case terminal building.</li><li>✓ Voluntary environmental certifications can measure or estimate the environmental footprint of</li></ul>



Passenger Terminals, Cargo Terminals, Airport Administrative Buildings and Other Airport Infrastructures at IGI Airport

buildings and raise awareness of environmental issues. However, they fall short of guaranteeing an environmentally-friendly building, reduction in GHG emissions and considerations of resiliency.

Pollution Prevention and Control

Projects that reduce air emissions, greenhouse gas control.

**Light Green**

- ✓ The emissions from aircraft auxiliary power units (APUs) include CO<sub>2</sub> as well as other local pollutants. Providing electricity and preconditioned air to aircraft while they are parked at terminal gates reduces APU use and associated emissions.
- ✓ Forecast increases in aircraft movements at IGI Airport will significantly increase overall aircraft emissions associated with the airport.

Pollution Prevention and Control

Facilities, systems and equipment that are used for the collection, treatment, and recycling of waste.

**Medium Green**

- ✓ Waste collection, segregation and recycling is key for a climate resilient future and a circular economy.
- ✓ DIAL is working towards being a “zero waste to landfill” airport by 2025.
- ✓ DIAL informed us that dry (recyclable) waste is sent to recycling units and the biodegradable waste is sent to waste to compost facility.
- ✓ The issuer has stated that any waste to energy operations are based on biogas from biodigesters.

Energy Efficiency



Projects relating to adoption of smart technologies and/or systems for optimizing energy management in new and existing buildings.



Sample Projects:  
Lighting and motion sensors or retrofitting projects, replacing air conditioning, chiller or lift systems.

**Medium to Dark Green**

- ✓ Energy efficiency investments are key to reducing emissions, but only if they have a material impact on energy consumption.
- ✓ DIAL is targeting 5% improvement in energy efficiency every year but has not established a minimum



		<p>energy efficiency improvement threshold for the investments.</p> <ul style="list-style-type: none"><li>✓ The issuer states that this category is purely for energy efficiency improvements in electric powered mechanical, electrical, and lighting applications. This does not include any fossil fuel related activities.</li></ul>
Sustainable Water and Wastewater Management	<p>Water management projects – to improve water efficiency and water availability.</p> <p>Sample Projects: Rainwater harvesting and storage, recycling and reuse of treated water for landscaping and toilets, efficient fixtures.</p>	<p><b>Medium Green</b></p> <ul style="list-style-type: none"><li>✓ Water is a key component of airport operations and its management presents multiple opportunities for green investments and outcomes.</li><li>✓ This category includes the operating costs for the Water Treatment Plant and Sewage Treatment Plant management of rainwater harvesting structures, landscaping and irrigation systems at the airport.</li></ul>
Renewable Energy	<p>Projects relating to the installation of equipment or associated infrastructure to generate and use renewable energy on-site.</p> <p>Operation of energy generated from renewable energy sources.</p> <p>Sample Projects: Operation of the 7.8MW airside solar power plant</p>	<p><b>Dark Green</b></p> <ul style="list-style-type: none"><li>✓ Solar is key to a low-carbon transition.</li><li>✓ This category includes operating costs for the existing airside solar installation.</li><li>✓ This category only includes on-site renewable energy facilities and does not include the purchase of electricity from off-site RE facilities, such as the 180MW hydro power project described above.</li></ul>
Clean Transportation	<p>Projects that promote environmentally friendly transportation modes such as electric vehicles and related infrastructure.</p> <p>Sample Projects: Purchase and/or lease of electric vehicles.</p>	<p><b>Dark Green</b></p> <ul style="list-style-type: none"><li>✓ Electric vehicles and other zero emission solutions qualify as dark green.</li><li>✓ Electric cars contribute to the transition to a low-carbon society.</li><li>✓ This category excludes fossil fuel vehicles.</li></ul>

Table 1. Eligible project categories



## Background

The International Air Transport Association (IATA) has committed to the target to reduce net aviation CO<sub>2</sub> emissions by 50% by 2050, compared to 2005, and carbon-neutral growth from 2020<sup>4</sup>. In particular long haul flights generate significant emissions. Depending on the methodology used (e.g., 0.67tCO<sub>2</sub>e<sup>5</sup>, 1.8tCO<sub>2</sub>e<sup>6</sup> or 2.7tCO<sub>2</sub>e<sup>7</sup>), a round-trip flight from London to New York could generate more climate impact than annual average per person heating emissions in the EU (1.77tCO<sub>2</sub>e<sup>8</sup>). The climate impact estimations vary due to other climate effects such as radiative forcing and could lead to multiple times of the CO<sub>2</sub> effect.<sup>9,10</sup> Sustainable Aviation Fuels (SAF), e.g., biofuels, are urgently needed to reduce the industry's carbon emissions. According to the IEA's data, aviation biofuel accounted for only 0.1% of total aviation fuel consumption in 2018. In order to provide 2% of annual jet fuel with sustainable aviation fuel (SAF), about USD 10 billion for approximately 20 refineries would be needed compared to currently USD 60 billion in fossil fuel refineries only in 2017<sup>11</sup>. The IEA's Sustainable Development Scenario (SDS)<sup>12</sup> sees the share of aviation biofuel rise to 10% by 2030 and to 20% by 2040<sup>3</sup>. A recent report submitted to the Swedish government<sup>13</sup> suggests reductions in emissions in the aviation industry with gradually increasing annual reduction level from 0.8% in 2021 to 27% in 2030 and 100% sustainable aviation fuel by 2045. Currently, only very few airports offer biofuel regularly, e.g., Bergen, Oslo and Swedavia's Stockholm Arlanda Airport.

The IEA's Sustainable Development Scenario (SDS) requires an energy efficiency improvement of more than 3% per year to 2040 compared to an average annual improvement rate of 3.2% between 2000 and 2014 and less than 1% between 2014 and 2016.<sup>14</sup> At the same time, global aviation activity grew by 140% since 2000 and by 6.1% in 2018.

Emissions from airports itself are much lower than from aviation in general, but crucial activities to be decarbonized include transport and the buildings. Global transport emissions grew by 0.6% in 2017 (compared to 1.7% annually over the past decade), as efficiency improvements, electrification helped limit the growth in energy demand. To meet the 2°C target goals, however, direct transport emissions must peak around 2020 and then fall by more than 9% by 2030.<sup>15</sup> The largest amount of carbon savings come from switching from inefficient modes of transport (e.g., private cars) to mass transit.<sup>16</sup> However, over the last ten years, emissions from airports have been relatively stable while passenger number increased by 40%.<sup>17</sup>

CICERO Green's Light Green shading is allocated to vital efficiency improvements in the fossil fuel related infrastructure particularly in sectors that are difficult to decarbonize. Despite the fact that the projects might be exposed to the risk of lock-in of emissions, CICERO Green views efficiency improvements as necessary to reach the well below 2°C target. The aviation industry including its supporting infrastructure is an example where no alternatives yet have proven to be commercially viable on full scale. Investments into efficiency and infrastructure

<sup>4</sup> <https://www.iata.org/publications/tracker/june-2018/Pages/corsia.aspx>

<sup>5</sup> <https://www.icao.int/environmental-protection/carbonoffset/pages/default.aspx>

<sup>6</sup> [https://co2.myclimate.org/en/portfolios?calculation\\_id=2427756](https://co2.myclimate.org/en/portfolios?calculation_id=2427756)

<sup>7</sup> <https://www.atmosfair.de/en/offset/flight>

8 <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/30599.pdf>9 [https://ec.europa.eu/clima/policies/transport/aviation\\_en](https://ec.europa.eu/clima/policies/transport/aviation_en)10 <https://www.carbonbrief.org/explainer-challenge-tackling-aviations-non-co2-emissions>11 <https://www.iea.org/newsroom/news/2019/march/are-aviation-biofuels-ready-for-take-off.html>12 <https://www.iea.org/weo2018/>13 <https://www.regeringen.se/493238/contentassets/6d591e58fd9b4cad8171af2cd7e59f6f/biojet-for-flyget-sou-201911>14 <https://www.iea.org/tcep/transport/aviation/>15 <http://www.iea.org/tcep/transport/>16 [https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_chapter8.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter8.pdf)17 [https://www.transportstyrelsen.se/globalassets/global/luftfart/statistik\\_och\\_analys/prognoser-luftfart/prognos-hosten-2018-002.pdf](https://www.transportstyrelsen.se/globalassets/global/luftfart/statistik_och_analys/prognoser-luftfart/prognos-hosten-2018-002.pdf)

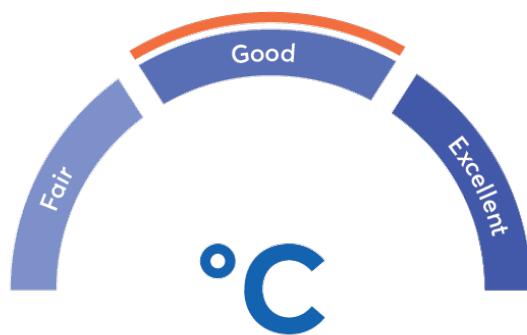


increasing airport capacity on a carbon neutral growth pathway or slight decrease in emissions pathway can therefore constitute a short-term solution, but is not sufficient to move to a low-carbon and climate resilient future in 2050.

### Governance Assessment

Four aspects are studied when assessing the DIAL's governance procedures: 1) the policies and goals of relevance to the green finance 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.

DIAL has in place a variety of management systems and policies focused on environmental aspects. The project selection process uses an existing Sustainability Committee which has a broader sustainability mandate within DIAL. Only high-level criteria for project selection are used and exclusion criteria leave room for interpretation with potentially significant climate impacts. The approach to management of proceeds is adequate. Reporting on use of proceeds and impacts is planned until maturity of the green financing instruments issued by DIAL. The overall assessment of DIAL's governance structure and processes gives it a rating of **Good**.



### Strengths

IGI Airport is recognised as one of the greenest airports in the world, based on the many certifications and awards it has received. DIAL has targets for net zero GHG emissions as well as zero waste to landfill and it intends to remain a zero water discharge airport. This is in the context of an emerging economy with strong growth in air travel, notwithstanding the disruptions of 2020.

DIAL's ownership structure ensures that its efforts at IGI Airport will contribute to international efforts to improve airport infrastructure and operations. Given DIAL's role in the Indian aviation sector, it has the opportunity to drive real effort towards greener and more sustainable airports.

### Weaknesses

The framework involves investments in aviation infrastructure that is heavily associated with fossil fuels including the expansion and development of new terminal buildings at one of the world's largest and fastest growing airports. There are inherent limitations on what can be done in the aviation sector and its essential infrastructure until there are broader solutions for aircraft emissions. For example, Scope 1 and 2 emissions for DIAL in 2019 were around 65 thousand tCO<sub>2</sub> while the Scope 3 emissions were over 8.6 million tCO<sub>2</sub> – over 130 times what DIAL controls. DIAL's efforts to reduce Scope 3 emissions could be better elaborated in the framework and further prioritized within the organizations efforts to transition to a low carbon and sustainable future. There are opportunities for DIAL to push harder on the trialing, access to and acceptance of sustainable aviation fuels. Development of new infrastructure is the perfect time to integrate frontier technologies and avoid the lock in of stranded assets. The expansion plans at the airport must include the infrastructure which will be required to make sustainable aviation fuel the predominant energy source for aviation.



Expansion of Terminal 1, the main project under the expected use of proceeds, represents a major investment into increasing the capacity of aviation infrastructure. This is part of a broader expansion program which will see the airport go from around 70 million passengers and over 450 thousand aircraft movements in 2019 to capacity of 140 million passengers per year at the completion of its 2016 Master Plan. DIAL's ambition of 15% more energy efficient than the base case could be more ambitious.

### Pitfalls

For green buildings the issuer has a target of achieving LEED Gold for the expanded Terminal 1. Terminal 3 already has a LEED Gold rating. However, the broader airport expansion plans also include over 1000 new car parking spaces and a fourth runway – both of these projects are not included under this framework. In addition, the terminal will offer a range of services such as shopping and restaurant services.

Based on the timing of the first transaction under the framework, the focus on the Terminal 1 expansion, and the timeline for project completion, it is expected that there will be a substantial amount of unallocated proceeds for a period following issuance of the green finance instrument. Given the predominant nature of DIAL's assets and investments are focused on fossil-fuel related infrastructure, there may be challenges to manage the unallocated proceeds in line with the Green Bond Principles, Green Loan Principles and market expectations. However, the issuer informed us that pending allocation part of the proceeds of the imminent green bond issued under the green finance framework will be used to refinance the capital expenditure in relation to the LEED Gold Terminal 3 that has already been built CICERO Green encourages the issuer to report on the use of unallocated proceeds.

It is a pitfall that DIAL is yet to publish a report following TCFD recommendations, although DIAL has conducted internal mapping under its Climate Action Program. DIAL already anticipates potential developments on transition risks but has not formalized this process within the TCFD framework. Preparing for potential climate impacts at the airport site as well as stress testing DIAL's investments and business model against different scenarios and transparently communicating potential climate risks can reduce long-term risks for investors.

We note as a pitfall that the current project selection of DIAL is not substantially exceeding business-as-usual project selection. Life cycle assessments, screening for rebound effects and lock-in are not sufficiently integrated into the selection process. Efforts to support sustainable aviation fuels are not included in the framework's project categories.

Airport infrastructure development at DIAL also comes with pitfalls associated with social implications. The issuer has informed us that the expansion of the airport is being developed within available land of the airport, however the capacity expansion projects are labor intensive involving many temporary and migrant workers. CICERO Green has not conducted a social screening of the framework and DIAL itself, and it is DIAL's responsibility to closely monitor the environmental and social impacts and mitigate potentially adverse effects.



# Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	DIAL Green Finance Framework March 2021	
2	DIAL Environmental Achievements & Initiatives, including 28 Annexes (not dated)	
3	DIAL Indicative Green Project List (draft) February 2021	
4	DIAL Annual Report 2019-20	
5	DIAL Sustainability Report 2018	
6	News articles on expansion of Terminal 1 at Indira Ghandi International Airport	
7	DIAL website, including Environment section, blog and relevant news items	
8	Application Manual for Airport Carbon Accreditation, Airport Councils International	
9	News articles on DIAL power purchase agreement with hydropower facility	
10	GMR Group website, early March 2021	
11	Project Pre-Feasibility Report for Airport Expansion, Towards application for Environment Clearance, Delhi International Airport (P) Limited; Oct, 2016	



## 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).

