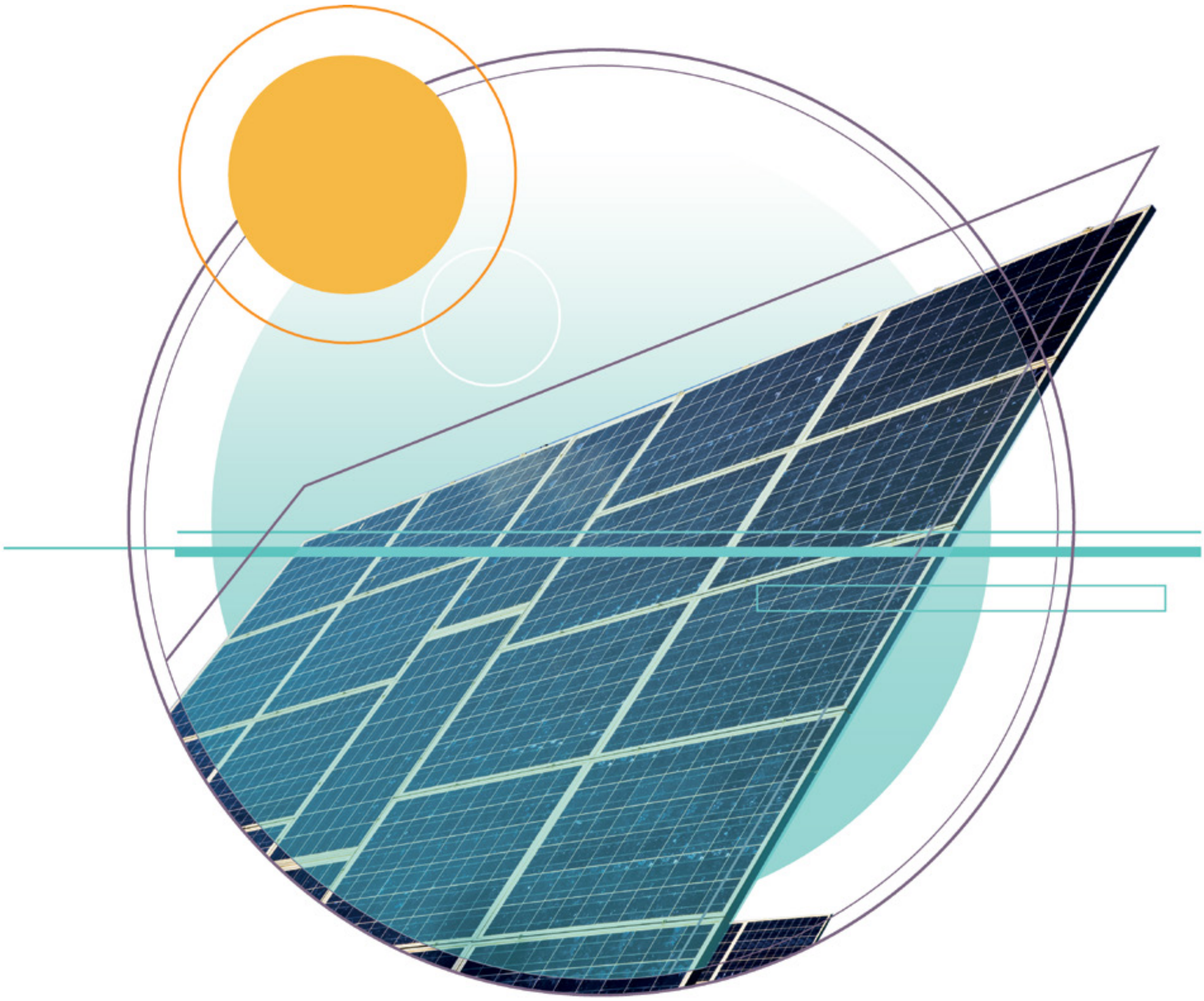
Green
Investment
Bank

# Green Investment Handbook

## A guide to assessing, monitoring and reporting green impact



GREEN IS GREAT BRITAIN

The UK Green Investment Bank plc was established by the UK Government and is the first bank of its kind in the world. We finance infrastructure projects which are green and profitable.

As one of the most active green infrastructure investors in the world, we finance complex and challenging projects, large and small, which need our help to go ahead. Between them, these projects will contribute to the global transition to a sustainable low carbon future.

### Mobilising private capital

Since inception we have worked with over 110 co-investors to drive investment in the green economy. We have brought in three times as much private capital as we have invested, mobilising over $13bn of investment into green infrastructure. We have also raised a leading renewable energy fund, drawing in new private investors to the renewable energy sector.

### Innovating so others can follow

We are leading the way in financing the deployment of new technologies, helping to create new markets, and building new financial products. Because we are doing this on fully commercial terms we are encouraging other private investors to join us and follow us.

### Working internationally

We are working with the UK Government's Department for Business, Energy and Industrial Strategy on a £200m pilot programme through the UK Climate Investments joint venture to invest in international markets, including India.

This involves an integrated approach to tackling climate change and promoting sustainable development. Our investments will support:

- Access to clean energy
- Building technical and economic capacity
- Advancing low carbon programmes
- Providing direct jobs and wider employment
- Improving local air quality resulting in related health benefits

### Managing green investments

We take the green performance of our investments seriously. We have developed a market-leading suite of principles, policies and processes to ensure that we consistently assess, monitor and report the green performance of each project, across a range of sectors and technologies.

The Green Investment Handbook is our manual, setting out and explaining the practical tools we use day-in, day-out to quantify and report the environmental benefits – the 'green impact'– of our investments. This is our proven methodology.

Our mission is to support the transition to a low carbon economy as a means of addressing the challenge of climate change. That transition will require an improvement in and greater standardisation of green impact assessment.

We are playing a leading role in driving that process of change and improvement. This handbook is part of that. We hope it will be used by others, including mainstream investors, seeking a robust yet simple approach to achieving greater consistency in standardising green investment impact assessment, monitoring and reporting.

# Foreword

**Shaun Kingsbury**
Chief Executive
UK Green Investment Bank

UK Green Investment Bank plc (GIB), set up by the UK Government, is the world's first dedicated green bank. Our job is to act as a specialist investor in green infrastructure and to act as a catalyst to mobilise other private sector capital into renewable energy, waste management and energy efficiency projects; the types of projects that will be critical in turning our decarbonisation policy ambition into carbon cutting action.

We have quickly become the most active investor in the UK green economy, one of the most advanced and sophisticated markets for green investment in the world and a global centre for climate finance.

We've backed almost 100 projects across a dozen different green technologies. Each of our investments has met our double bottom line of being green and profitable.

As experienced investors in green infrastructure we knew that we would need to build a consistent approach to managing how we assess the 'green-ness' of potential investment opportunities and then monitor and report on the green performance of the projects we invest in. So, over the first two years of our existence we set about building what we believe to be a market- leading approach. Each new investment gave us the opportunity to learn and then refine our approach. In 2015 we published the detail of our approach in a handbook, as a straight forward 'how to' guide.

While GIB began life in the UK, we have since joined forces with the UK Government's Department for Business, Energy and Industrial Strategy in a pilot project to invest £200m from the UK's International Climate Fund in renewable energy and energy efficiency projects in India and across Africa.

As an investor in India we have been working closely with local developers to identify a pipeline of projects. We expect to begin announcing investments shortly, with an early focus on solar and onshore wind.

We are also working with policy makers and market participants in India to share our experience in green impact assessment. As part of that, we have published the handbook you have in front of you, for an Indian audience.

India will play a leading role in the global transition to a low carbon economy. That transition will happen one step at a time across thousands of individual decisions, investments and projects. It is vital that this investment in India, like investment across the world, is underpinned by greater consistency and standardisation in transparent green impact reporting. We hope that by sharing our experience, forged in the UK, we can play a part in supporting India's ambitious plans for the future.

The Paris agreement has set us on an irreversible trajectory towards low-carbon growth. The markets are listening – the cost of renewables is falling and low-carbon investment is increasingly more attractive. Financial systems are evolving and business leaders are reaching a consensus on the need for action – their companies are competing for opportunities in the new economy.

The UK is developing a modern industrial strategy that reflects these market changes, builds on our strengths and promotes inclusive growth.

This strategy is based on a number of core pillars: investing in science research and innovation; developing skills; upgrading infrastructure; supporting business especially SMEs to grow; encouraging trade and investment, delivering affordable energy and clean growth; creating strong local institutions across the whole country.

The UK Green Investment Bank – the world's first – has a long track record in providing finance for renewable and energy efficiency projects across the UK. This record is underpinned by so many of these pillars demonstrating that investment in innovative clean technology can produce both strong commercial returns and environmental outcomes (the double 'bottom line'), create jobs and embed skills and expertise into the economy.

This handbook contains the wealth of experience that the UK Green Investment Bank has built up over time, in assessing, monitoring and reporting the green impact of their investments. By sharing the GIB's methodologies with important partners this handbook should help bring greater consistency and standardisation to green investing for both new and existing players investing in green infrastructure globally. So far we are already seeing the handbook used by private investors in the UK and it has been translated into Mandarin and Spanish. I hope it will prove to be helpful to you too in India.

India is an important partner to the UK on issues of trade, energy, climate change, and finance. Green finance is a relatively new area where we have built a strong relationship based on mutual interests and ambitions for clean inclusive growth. Through this Energy Dialogue and business roundtables, we look forward to that cooperation deepening between our respective governments and private sector.

**Rt Hon Greg Clark**
Secretary of State for Business, Energy and Industrial Strategy

# The Green Investment Handbook

The Green Investment Handbook provides a consistent and robust means of assessing, monitoring and reporting the green performance of investments. Each section – Assess, Monitor, and Report – sets out practical tools and best practice methodologies to support the large-scale mobilisation of climate finance required from the mainstream investment community to achieve both financial and green returns.

## Assess

Forecast green impact

How to assess and forecast green performance and risk as part of the investment decision

## Monitor

Actual and forecast green impact

How to monitor progress against forecast following financial close of an investment

## Report

Actual and forecast green impact

How to disclose and report actual and forecast green performance data

## Assess

This section of the handbook describes how to assess the green and responsible investment impact and risks of projects prior to investment, as part of the due diligence process.

The process described below will enable a project's forecast green performance to be assessed against a defined set of investment criteria and the associated risks to be considered. It also shows how to implement suitable legal covenants to enable the appropriate data to be obtained.

Project assessment should be conducted in a manner appropriate to the geography, sector, risk and the size of the proposed investment. Consideration should be given to the investment's material alignment with any environmental, social and governance investment criteria, including specific low carbon criteria within any policy or mandate requirement (here collectively termed Green Investment Policy).

### Establish a Green Investment Policy with specific low carbon criteria

The investor should develop and make publicly available a set of policy requirements, investment criteria, and/or stated objectives against which potential projects can be assessed for alignment. The policy could include: statement of investment principles; assessment criteria; covenants; monitoring; disclosure; applicable standards (e.g. IFC Performance Standards[1] and Equator Principles[2]); commitment from senior management and periodic review.

[1] www.ifc.org/performancestandards
[2] www.equator-principles.com

### Assess the project and management team capability against alignment to policy requirements

The investment should be considered against the stated objectives and/or policy requirements. The investee management team should be interviewed to consider capability, capacity and commitment to meet stated objectives.

### Request performance data

Project performance data should be requested from investee management. This includes the project's forecast renewable electricity and/or heat generation or demand reduction, and project life. The forecast carbon savings associated with the project can then be considered. This task can be integrated into the scope of works for a consultant (see below).

### Scope of works for consultant

In addition to assessing the potential green impact, where appropriate, environmental and social experts can be appointed to support in the due diligence. For some investors (such as Equator Principles Financial Institutions), engagement of consultants for an expert review of any environmental and social documentation will be likely be a requirement regardless of any green impact considerations.

### Green risk

The risk that the project may not deliver the forecast green impact should be considered. The formal risk assessment framework is also a useful method to include risks associated with non-carbon related aspects such as non-compliance with investment criteria and other environmental and social issues associated with a specific project. Taken together, this can be termed 'green risk'. Material green risks identified during this process should be mitigated in an action plan (see below) and/or included in any post-financial close monitoring (see 'Monitor' overleaf).

### Action plans

Where the due diligence process identifies gaps or non-alignment to an investor's policy or other standards, an Action Plan should be agreed with investee management. This can include costing/budget (Capex or management time) required to meet the objectives of the Action Plan. A good Action Plan should be Specific, Measureable, Achievable, Realistic and Time-bound ('SMART').

### Green covenants

A crucial aspect of being able to monitor and report the green impact is the integration of green covenants into formal financing/loan documentation. These must have equal legal status and include recourse to enforcement measures as with any other financial covenant.

### Investment decision

The findings of the due diligence along with forecast green performance and green risk assessment should be considered as part of any investment decision making (e.g. within Investment Committee). After financial commitment is made, projects should be subject to monitoring as described in the next section.

# Monitor

This section of the Handbook details how to monitor the green performance of portfolio projects, including issues initially identified through the due diligence process.

Once investment has been provided to a project, the performance of the project is monitored. The process described here shows how to monitor the green impact and green risks, including compliance with agreed covenants and environmental and social project-related risks.

In addition, investees should provide regular operational updates/reports, which will consistently address the progress for the expected green impact, and other environmental and social measures. Specific requirements will depend on the characteristics of the investment, the geography, its sector and size of investment.

### Annual green reporting

Annually the investee should complete a report which details the forecast and/or actual performance of the project. This report should include all relevant source data and references required for audit purposes. The report can be prepared or verified by an independent consultant.

### Material event reporting

Investee projects should also report material environmental and social incidents and accidents to the investor as soon as possible (along with details of any associated mitigation and/or actions taken to address the issue). The investor should consider these ad-hoc events in consultation with investee management, then assess if there is a requirement for remediation or mitigation action at the project.

### Independent monitoring/right to access

As part of the covenants agreed, investors should retain an independent environmental and social expert to conduct periodic monitoring reviews/verification of:

1. Green risks;
2. Action plan implementation progress;
3. Forecast and actual green impact performance ($CO_2$e saved and MWh generated/saved);
4. On-going compliance with wider environmental and social covenants.

Equator Principles Financial Institutions may also have additional environmental and social monitoring requirements not listed here.

### Aggregation of monitoring data

Once the data from the projects has been collected and verified by an independent consultant (as appropriate), it can be aggregated for external reporting to stakeholders, as described opposite.

# Report

This section of the Handbook details how to collect, validate and report data on the performance of portfolio investments for green and responsible investment-related data.

## Forecast and actual green impact.

It is critical that green impact is periodically reported to stakeholders on a transparent basis. green impact should be reported as defined metrics such as:

- tonnes of carbon dioxide equivalent (t $CO_2$e),
- tonnes of oil equivalent (toe),
- tonnes (t) of other air pollutant emissions,
- renewable energy generated (GWh).

Both forecast green impact performance (as assessed at financial close and revised periodically thereafter), and actual green impact performance delivered should be reported to relevant stakeholders.

Wider disclosure to the public can take the form of individual investment non-financial performance reporting, or aggregated reporting (e.g. by sector).

## Green impact calculation methodology

*Transparent Disclosure*

The methodology used to calculate a project green performance should be publically disclosed at the institutional level. This should include disclosure of sector-specific approaches, assumptions and parameters (e.g. greenhouse gas emission factors used for fuels and electricity, and the approaches to calculating jobs created generated as a result of the investment).

*General Principles*

The process described here builds on global standards and established reporting processes.

The calculation of a project's green impact is produced by comparing relevant information and data derived from that project against relevant baseline (or counterfactual) data for the assumed environmental impacts that would occur if the project did not take place.

GIB's methodology calculates results for likely green impact on an annual and lifetime basis. The green impact reported is 100% of the green impact of the underlying project(s). There is no proportionate allocation of green impact to any particular project investment or to particular investors, all of whom may report the same green impact from the underlying project(s).

## Some reference guidelines

For grid-connected projects that generate electricity, the baseline (or counterfactual) is assumed to be marginal electricity generated from the Indian grid. GIB's methodology calculates the net green impact of the project by comparing its likely emissions to those of a marginal grid electricity mix, using the methodology set out in the International Financial Institutions (IFI) approach to GHG accounting for renewable energy projects. For energy efficiency investments, the guidance set out in the International Performance Measurement and Verification Protocol and the IFI approach to GHG accounting for energy efficiency projects should be referred to.

# Green partnerships

## Adoption and implementation

The Green Investment Handbook is recognised globally and has been translated into multiple languages. In order to benefit from the full added-value and risk reduction elements of the handbook, investors are encouraged to implement and integrate this handbook framework within their existing processes.

## Institutional capacity building

Using the methods of the Green Investment Handbook, other investors can benefit from our expertise in green impact disclosure. If required, we can support institutional capacity building to develop and embed these tried and tested processes.

## Green impact reporting

We can provide simple, clear, quantified Green Impact Reports which deliver:

- Market leading transparency
- Robust, consistent, and globally comparable disclosure
- A statement on contribution to the low carbon transition

Examples of our Green Impact Reports are available at:
**www.greeninvestmentbank.com/green-impact/green-impact-reports/**

## Contact us

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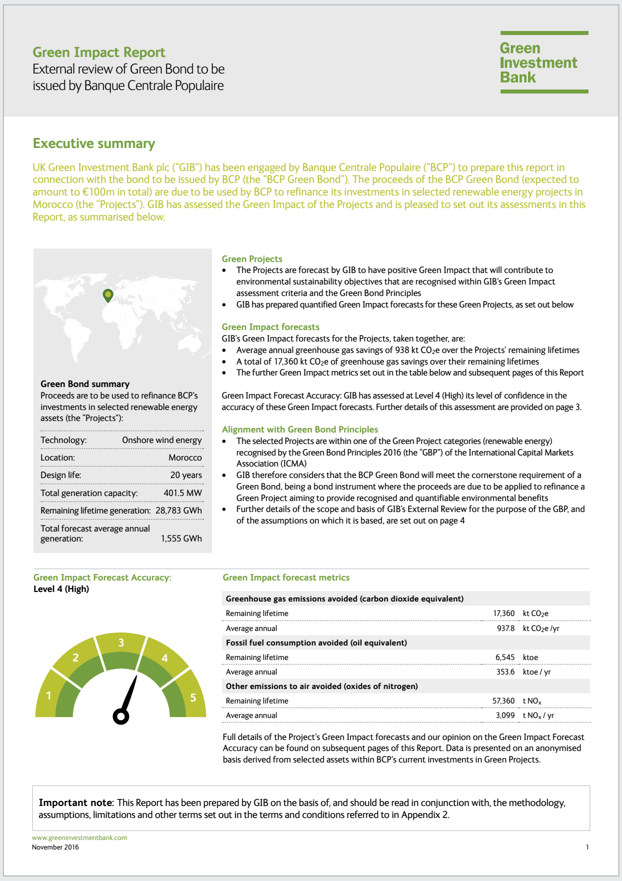

**Green Impact Report**
External review of Green Bond to be issued by Banque Centrale Populaire

Green Investment Bank

**Executive summary**

UK Green Investment Bank plc ("GIB") has been engaged by Banque Centrale Populaire ("BCP") to prepare this report in connection with the bond to be issued by BCP (the "BCP Green Bond"). The proceeds of the BCP Green Bond (expected to amount to €100m in total) are due to be used by BCP to refinance its investments in selected renewable energy projects in Morocco (the "Projects"). GIB has assessed the Green Impact of the Projects and is pleased to set out its assessments in this Report, as summarised below.

**Green Bond summary**
Proceeds are to be used to refinance BCP's investments in selected renewable energy assets (the "Projects"):

| | |
|---|---|
| Technology: | Onshore wind energy |
| Location: | Morocco |
| Design life: | 20 years |
| Total generation capacity: | 401.5 MW |
| Remaining lifetime generation: | 28,783 GWh |
| Total forecast average annual generation: | 1,555 GWh |

**Green Projects**
- The Projects are forecast by GIB to have positive Green Impact that will contribute to environmental sustainability objectives that are recognised within GIB's Green Impact assessment criteria and the Green Bond Principles
- GIB has prepared quantified Green Impact forecasts for these Green Projects, as set out below

**Green Impact forecasts**
GIB's Green Impact forecasts for the Projects, taken together, are:
- Average annual greenhouse gas savings of 938 kt $CO_2e$ over the Projects' remaining lifetimes
- A total of 17,360 kt $CO_2e$ of greenhouse gas savings over their remaining lifetimes
- The further Green Impact metrics set out in the table below and subsequent pages of this Report

Green Impact Forecast Accuracy: GIB has assessed at Level 4 (High) its level of confidence in the accuracy of these Green Impact forecasts. Further details of this assessment are provided on page 3.

**Alignment with Green Bond Principles**
- The selected Projects are within one of the Green Project categories (renewable energy) recognised by the Green Bond Principles 2016 (the "GBP") of the International Capital Markets Association (ICMA)
- GIB therefore considers that the BCP Green Bond will meet the cornerstone requirement of a Green Bond, being a bond instrument where the proceeds are due to be applied to refinance a Green Project aiming to provide recognised and quantifiable environmental benefits
- Further details of the scope and basis of GIB's External Review for the purpose of the GBP, and of the assumptions on which it is based, are set out on page 4

**Green Impact Forecast Accuracy:**
**Level 4 (High)**

1 2 3 4 5

**Green Impact forecast metrics**

| | | |
|---|---|---|
| **Greenhouse gas emissions avoided (carbon dioxide equivalent)** | | |
| Remaining lifetime | 17,360 | kt $CO_2e$ |
| Average annual | 937.8 | kt $CO_2e$ /yr |
| **Fossil fuel consumption avoided (oil equivalent)** | | |
| Remaining lifetime | 6,545 | ktoe |
| Average annual | 353.6 | ktoe / yr |
| **Other emissions to air avoided (oxides of nitrogen)** | | |
| Remaining lifetime | 57,360 | t $NO_x$ |
| Average annual | 3,099 | t $NO_x$ / yr |

Full details of the Project's Green Impact forecasts and our opinion on the Green Impact Forecast Accuracy can be found on subsequent pages of this Report. Data is presented on an anonymised basis derived from selected assets within BCP's current investments in Green Projects.

**Important note**: This Report has been prepared by GIB on the basis of, and should be read in conjunction with, the methodology, assumptions, limitations and other terms set out in the terms and conditions referred to in Appendix 2.

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