

# **Executive Summary**

## **GREEN BANK ALTERNATIVES FOR POLICY MAKERS: A Comparative Analysis**



**The Canadian Coalition for Green Finance**

Principal Author: Bryan Becker

## Executive Summary

1. **Green Investment Banks (GIB) are institutions that are established and capitalized by governments, for the purpose of facilitating private investment in low-carbon infrastructure. Currently there are 12 GIBs worldwide, with another 13 currently under development.** This study focuses on four institutions:

- The UK Green Investment Bank (UKGIB)
- The New York Green Bank (NYGB)
- The Connecticut Green Bank (CTGB)
- The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)

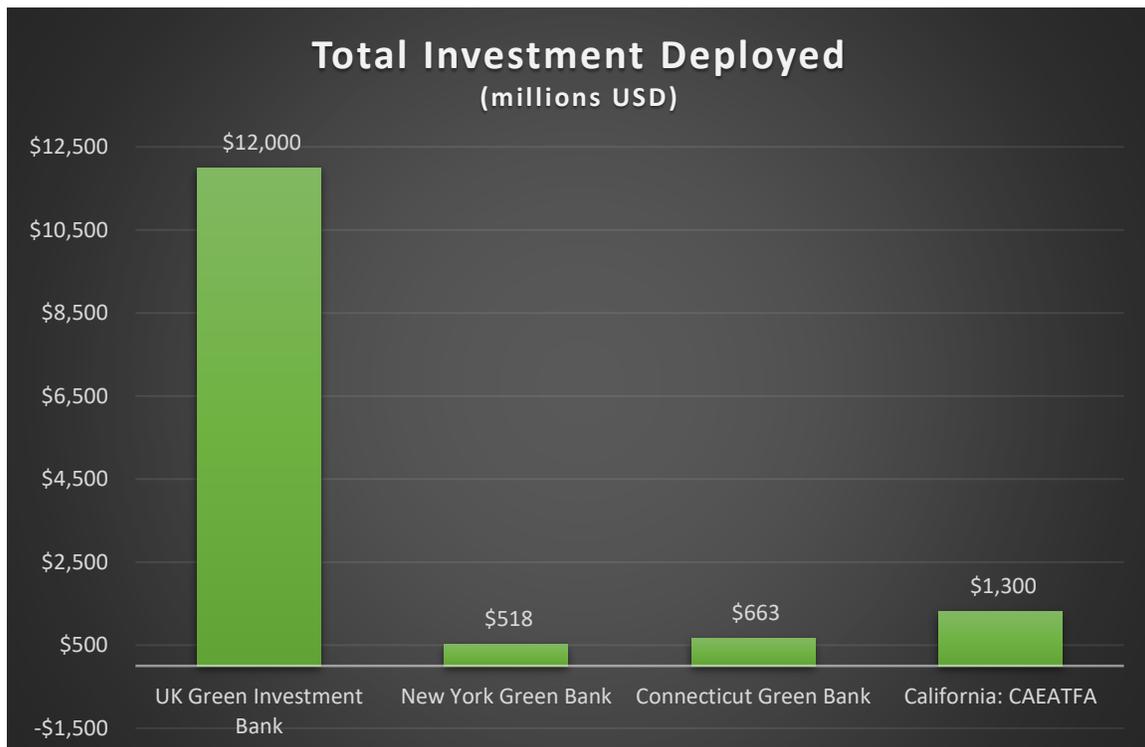


Figure 1 – Total Investment Deployed by Institution

2. **GIBs can vary in terms of structure, size, and commercial focus, but they all produce “Green Investment Bank outcomes”.** These outcomes include:

- Deployment of mature low-carbon technologies that result in emission reductions
- Leveraging public funds by “crowding-in”<sup>1</sup> private investment in support of low-carbon infrastructure projects
- Demonstration of the efficacy of low-carbon investment to private sector investors, in support of the long term goal of developing mature liquid markets for those investments

<sup>1</sup> Crowding-in occurs when public spending increases private investment in a sector. For a full definition, see **Error! Reference source not found.** in the section entitled **Error! Reference source not found.**

**3. The Green Investment Bank (GIB) model is adaptable.**

- The GIB's relationship to the state can vary:
  - The institution can be a state agency, with a low degree of autonomy, or it may be an arms-length institution with a high degree of independence and autonomy
  - The level of autonomy is also reflected in the institution's governance model – the more non-governmental participation there is in governance, the more autonomous the entity
- A GIB can be established as a new purpose-built institution, or by repurposing an existing agency
- The GIB model can scale up and down
- The GIB model is flexible enough that it can be adapted to the local conditions and tailored to specific circumstances

**4. Green Investment Banks are capitalized in a number of different ways.**

- Common sources of capitalization include:
  - Transfers from government treasury
  - Emissions trading schemes or carbon levy revenue
  - Utility bill surcharges
  - Renewable Portfolio Standards (RPS) or Energy Efficiency Resource Standards (EERS)<sup>2</sup>
  - Bond issuance
  - Redirection of funds from programs based on grants or subsidies
- GIBs are capitalized in a number of different ways and how they are capitalized depends on the fiscal circumstances that exist within the jurisdiction that hosts them.
- There seems to be no correlation between method of capitalization and the outcomes that are produced, however these are still very young institutions and latent patterns may yet emerge.

**5. Green Investment Banks are designed to be instruments of market transformation.**

- Some of the elements of these transformational capabilities are:
  - Intervention for the purpose of addressing market failures
  - Creation of private sector awareness regarding low-carbon investment opportunities
  - Mitigation of risks related to low-carbon opportunities to encourage participation
  - Aggregation of transactions to create the scale necessary to interest institutional investors
  - Reduction of transaction costs through standardization of contracts, procedures, and metrics
- Over time, GIBs are to shift resources away from sectors that have proven themselves, to less mature sectors that are viable and can benefit from intervention
- In order to remain relevant as sectors mature, there must be mechanisms that allow the activities of the GIB to change and progress
- GIBs are considered to be a tool to aid in the transition to a low-carbon economy. As this transition hits critical mass, in theory GIBs will become obsolete because low-carbon investments will be the norm

---

<sup>2</sup> RPS or renewable electricity standards (RES) are policies that require electricity supply companies to produce a designated percentage of electricity from renewable sources. EERS set targets for energy efficiency savings that utilities must meet and often accompany RPS or are designed to complement renewable energy policies. Non-compliance with these different types of standards can trigger penalties, or "alternative compliance payments", which generate government revenues. (OECD 2016)

**6. The “public policy rationale” for the establishment of Green Investment Banks are similar across jurisdictions. The elements of this rationale often include:**

- Greenhouse gas (GHG) emission reductions;
- Energy cost reduction;
- Energy security and reliability;
- Job creation and economic growth;
- Market transformation, and in some cases;
- Transition from grants and subsidies to loans and loan guarantees.

**7. Green Investment Banks are effective at mobilizing private capital.**

- Mobilization of private capital is part of the mandate of a GIB and they are effective in this regard
- The ratio of private/public leverage varies based such things as program design, technology, sector, and market conditions

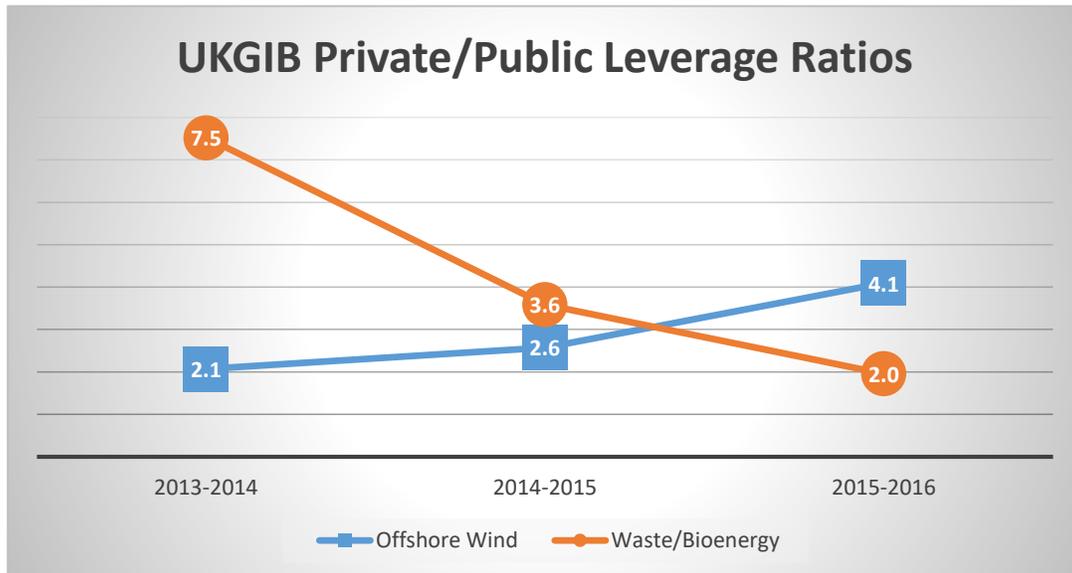


Figure 2 – UKGIB Private/Public Leverage Ratios 2013 to 2016

CTGB Capital Deployment and Leverage Ratios - 2013 to 2015 (millions USD)				
	FY 2013	FY 2014	FY 2015	Total
<b>Total Investment</b>	110.5	176.7	361.0	648.2
<b>Green Bank Investment</b>	19.6	46.3	95.1	161.0
<b>Leverage Ratio</b>	4.7 : 1	2.8 : 1	2.8 : 1	3.0 : 1

Table 1 – CTGB Capital Deployment and Leverage Ratios - 2013 to 2015

- On average, leverage ratios of 3:1 to 4:1 are the norm
- There are outliers on both ends of the scale:
  - The lowest leverage ratio observed is 1:1
  - The highest leverage ratio observed is 130:1
- Third party analysis has shown that over time, leverage ratios increase

**8. Green Investment Banks facilitate investment in mature technologies.**

- GIBs support technologies that have been proven ready for deployment at commercial scale
- Currently GIBs focus on deploying energy efficiency and renewable energy
- GIBs do not invest in early stage technology development nor it is seen as part of their role

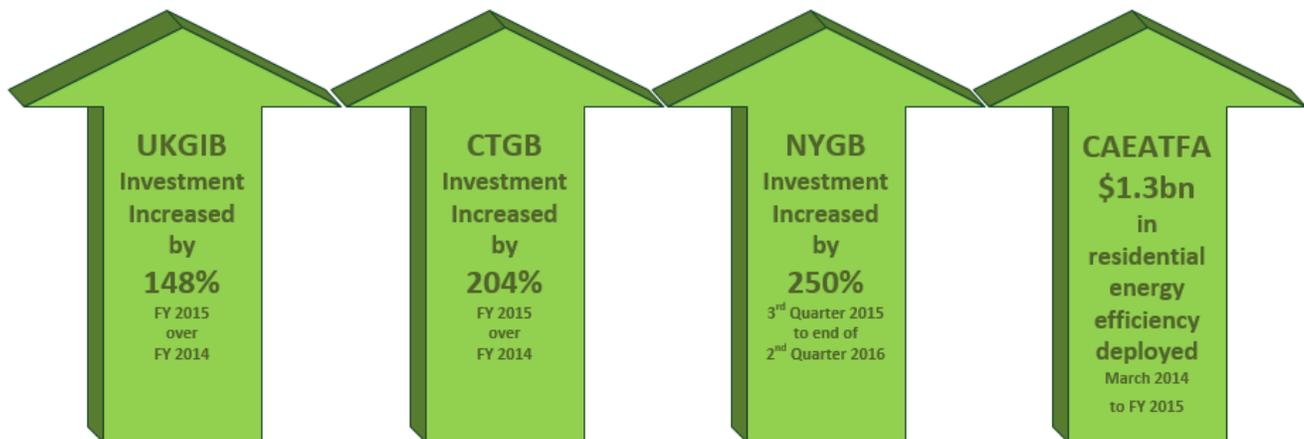
**9. Green Investment Banks are effective because they are an agent of the government.**

- It has been stated that GIBs are effective because they are ultimately backed by the government's balance sheet. While this is important, there are other reasons why GIBs must be a state institution
- Because GIBs are backed by government, they operate with a certain amount of neutrality and are perceived as neutral by private sector actors
- Neutrality gives GIBs the ability to access information that would not be available to private sector entities and gives GIBs the ability to understand and address information asymmetries and market failures
  - For example, during the inception of the UK Green Investment bank, Vivid Economics and McKinsey conducted a survey where, sector by sector, they systematically interviewed representatives of companies that could potentially enter into low-carbon investments, with the goal of understanding perceived risks and barriers entry
  - Information in the Vivid/McKinsey report was used to target the activities of the UKGIB
  - An agent of the government can gather high quality information regarding new markets and the perceptions of potential participant regarding those markets, in a way that private sector actors could not
  - Academic researchers may be able to access this type of information but in the hands of GIB it can be acted upon, and done in such a way that is highly effective
- A private green investment bank would not be able to effectively crowd-in private sector investment
  - It is unlikely that a private sector entity could perform the risk mitigation functions provided by a GIB, as it would be contrary to maximizing shareholder value
  - Crowding-in requires that "financial additionality"<sup>3</sup> occurs. It is doubtful that a private sector actor would be able to provide sustained additionality

---

<sup>3</sup> The principal of additionality (or financial additionality) states that for a given action, there must be a result that is of a greater magnitude that would have occurred without that action. Additionality is integral to the mandate of GIBs.

**10. The GIB and GIB-like institutions examined here are experiencing rapid growth**



- This growth is not restricted to the 4 institutions in our study. Information from sources such as the OECD indicates that the capital deployment of the established GIBs is accelerating, much like the growth observed in Green Bonds
- This kind of growth is especially interesting considering the prevailing economic conditions during this period

**11. Green Banks make money, both for themselves and their private sector partners**

- GIBs deliver profits for the participants in the investments that they facilitate
- Thus far we have seen that GIBs seldom incur losses on their investments. The losses that have occurred have been relatively small, especially when compared to losses incurred by private sector investors in more conventional sectors

**12. Although each of these institutions were all implemented quite differently, they all exhibit the ability to deliver “Green Investment Bank outcomes”.**

- These differences in implementation represent a menu of public policy options that are available to those involved in designing a GIB.
- Where there are similarities, like those found in the type of commercial activities engaged in or the public policy rationale, they are instructive and may represent best practices
- In this emerging field of research, the development of frameworks, guiding principles, and standard metrics, is an important endeavor that will strengthen the ability of government to optimize the use of the GIB model