

---

# Supporting State and Local Green Banks

## An Analysis of the National Climate Bank

### Summary

The National Climate Bank Act of 2019 was introduced in the U.S. Senate on July 8, and forms an independent non-profit financial institution called the National Climate Bank (Climate Bank). This institution is designed to be capitalized with \$35 billion of federal funds, and charged with raising and investing capital in partnership with the private sector in order to maximize greenhouse gas (GHG) emissions reductions.

The National Climate Bank will directly finance a range of clean energy and greenhouse gas (GHG) emissions reduction projects. It will also support the growth and investment activity of state and local Green Banks across the United States to address more local project investment needs. This memo describes the way the Climate Bank and sub-national Green Banks will work together, how capital will flow, and why national and sub-national “layers” of Green Banks both provide distinct value.

### The Role for National and Sub-National Green Banks

A wide range of technologies and project types will be eligible to receive financing from the Climate Bank. This includes everything from large offshore wind projects to the construction of networks of electric vehicle charging stations.

Energy markets, and electricity markets in particular, are regulated at the state level. That means that prices, restrictions, policies, subsidies, utility structure, emissions goals and more are set within each state and can vary widely across them. The clean energy market participants in each state also tend to be localized. Contractors, project developers and other participants build their base of business in large part based on the market conditions set by each state. Table 1 provides examples to illustrate the diversity of these conditions.

These diverse conditions mean that there is a natural division between activity best served by the National Climate Bank and state and local

Green Banks. The Climate Bank will be able to directly finance activities that are large in scale, have high complexity and are likely to impact multiple states. High voltage transmission lines built to carry clean electricity from the Dakotas to load centers such as Chicago are a perfect example of this activity. Other project types, like community solar, or commercial or residential energy efficiency are better served by state and local Green Banks, where financing can be tailored to local conditions.

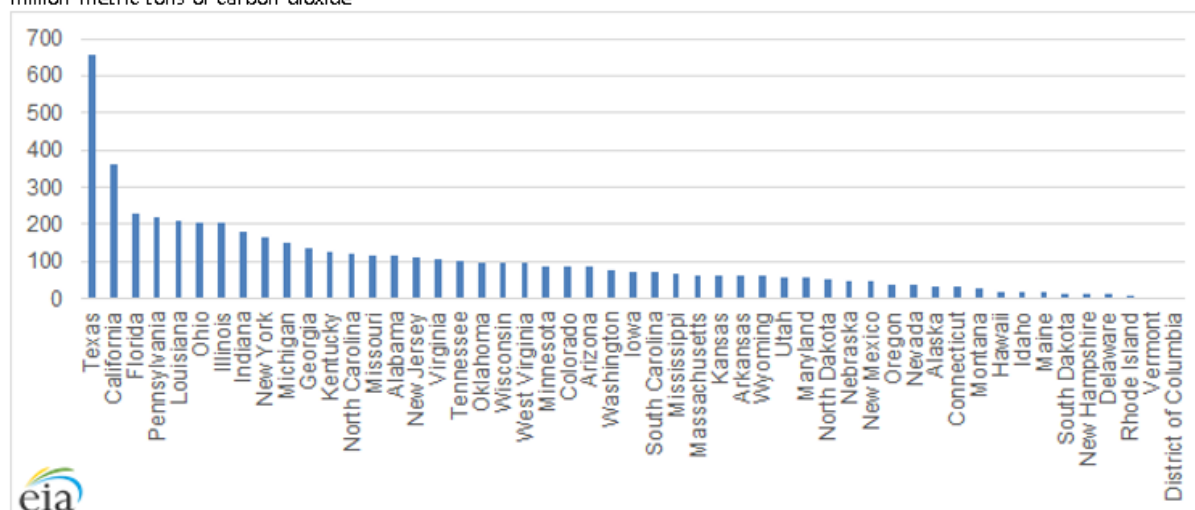
In the case of projects better served by state and local Green Banks, the Climate Bank will help in two ways. It will provide the start-up funding and technical assistance needed to create sub-national Green Banks where they don't already exist. And the Climate Bank will provide the low-cost capital base to new and existing Green Banks so they may finance the projects in their geography that require local expertise.

**Table 1: Selected Energy Facts by State**

State	Residential Electricity Price (cents/kwh) <sup>1</sup>	Total In-State Electricity Generation Capacity (GW) <sup>2</sup>	Leading Electricity Source <sup>3</sup>	% of Power from Renewable Generation <sup>4</sup>
California	18.89	76.4	Natural Gas	34%
Connecticut	23.35	8.9	Nuclear	4%
Hawaii	33.43	2.7	Petroleum	25%
Indiana	13.06	25.7	Coal	16%
Alabama	12.90	29.7	Natural Gas	10%
Wyoming	11.57	8.6	Coal	10%

**Figure 1: Energy-Related Carbon Emissions by State, 2016**

million metric tons of carbon dioxide



Source: EIA, State Energy Data System and EIA calculations made for this analysis.

<sup>1</sup> “Electric Power Monthly: Table 5.6.A: Average Price of Electricity to Ultimate Customers By End-Use Sector.” EIA. May 2019.

<sup>2</sup> “State Electricity Profiles.” EIA. 2017 net summer nameplate capacity. Release Date Jan. 8, 2019.

<sup>3</sup> “Detailed State Data.” EIA. As measured in megawatt-hours of net generation. Release Date Oct. 12, 2018.

<sup>4</sup> “State Profile Analysis.” EIA. Updated June 2019.

“California On Track with 2020 Renewable Goal.” California Energy Commission. Includes hydro. Nov. 2018.

## Creating Sub-National Green Banks

---

The National Climate Bank Act specifically calls for the formation of a Green Bank Start-Up Division within the Climate Bank. This will be staffed by a specialized team of Green Bank formation experts who will work with state and local governments who want a Green Bank but don't yet have one. The support team will be able to provide two key forms of support: technical assistance to guide the formation and launch process, and start-up funding. These new Green Banks can be created at the regional, state or local level.

Technical assistance has proven to be a key ingredient in successful Green Bank formation, and those locations that want a Green Bank will be able to receive that assistance at no cost from the Climate Bank. This removes a significant barrier to growth in the Green Bank ecosystem. This technical assistance would likely include market evaluation, product design and implementation, organizational formation, hiring and business plan creation, and launch support to ensure a Green Bank can be formed quickly, while still suited to local conditions.

The other form of support provided by the Start-Up Division will be funding that the new Green Bank can use to start its operations. The amount will be scaled to meet the needs of the market and the specific business plan of the Green Bank. A realistic model would be to offer three years of operating funds, with the expectation that the Green Bank will be able to reach financial self-sustainability within three years. At that point, the

revenue generated by the sub-national Green Bank in the form of interest payments and fees on its loans or other products should meet or exceed its operating revenues.

The bill itself does not contain specific guidelines and processes for the Start-Up Division, meaning that staff will need to develop these internally to determine eligibility and guide applicants in seeking funding and technical assistance, with the final criteria subject to approval by the Climate Bank's Board of Directors. As guiding principles for decisions on funding for start-up projects, the Board should consider the project's potential for achieving emissions reductions and its overall size and scale. The Board should also look holistically at the Green Bank landscape; for instance, rather than supporting Green Bank formation in two adjacent counties in the same state, the Climate Bank could prioritize the creation of a single state-wide or regional Green Bank.

The sub-national Green Banks that receive support from the Climate Bank should operate under the same objective function as the Climate Bank: to reduce greenhouse gases and accelerate the clean energy transition by mobilizing investment into clean energy projects. Using this investment model, Green Banks deliver clean energy at prices competitive with grid power. At the same time, they can also deliver a host of other economic benefits including job creation, economic development, and serving low-to-moderate income households.

## Capitalizing Sub-National Green Banks

The Climate Bank will directly provide capital to each qualifying sub-national Green Bank, including existing Green Banks as well as new ones formed by the Climate Bank’s Start-Up Division. The legislation defines a Green Bank as:

“A dedicated public or nonprofit specialized finance entity that (1) is designed to drive private capital into market gaps for low and zero-emission goods and services; (2) uses finance tools to mitigate climate change; (3) does not take deposits; (4) is funded by government, public, private and charitable contributions; and (5) invests alone or in conjunction with other investors.”

The precise mechanism for moving funds from the Climate Bank to sub-national Green Banks is not specified in the Climate Bank’s authorizing legislation, nor is the level of funding.

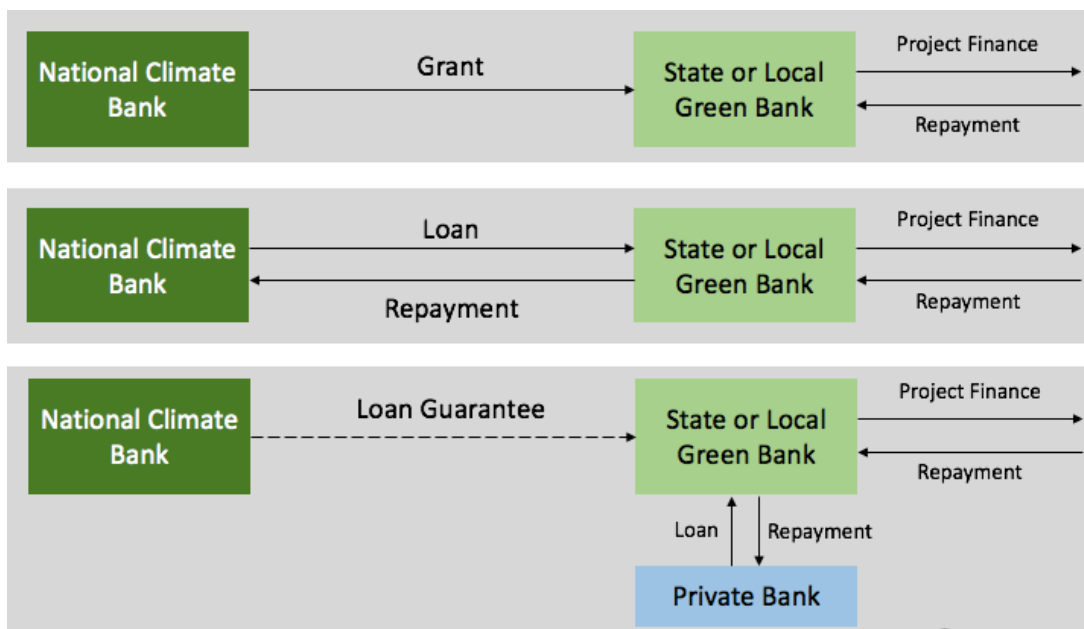
### Potential Funding Mechanisms

The relevant parameters to consider for Climate Bank funding mechanisms to sub-national Green Banks are form, repayment and cost.

#### Form of Funding

The primary forms that could be considered are a grant, a loan and a guarantee. A grant would be the direct transfer of funds from the Climate Bank to a sub-national Green Bank with no need to repay at any time with any interest. This would be the most beneficial approach for the sub-national Green Bank and would in effect replicate the capitalization approach used by states like Connecticut and New York to form their Green Banks. In both of those cases, state funds are transferred to the Green Bank with no requirement to repay the state. However, this is the most expensive for the Climate Bank, as none

Figure 2: Illustration of Funding Mechanisms



of that capital would flow back to the federal entity. This might be acceptable so long as the sub-national Green Banks use the capital themselves for financing, which is then recycled at the state and local level.

The Climate Bank could also provide a loan to regional, state and local Green Banks, where a lump sum is disbursed up front and principal and interest payments occurring over time. Different options for loan repayment structures are explored in the “Repayment” paragraph below.

A loan guarantee is another potential mechanism for the National Climate Bank to support capitalization of sub-national Green Banks. Under this approach, the National Climate Bank would stand behind the balance sheets of state and local Green Banks, thus allowing them to directly borrow funds from a commercial bank or another capital provider. One potential advantage to this approach is that it would allow those commercial banks to become comfortable lending to Green Banks and in turn supporting the financing of clean energy. This could lead to further lending without guarantee support in the future. However, this approach is not necessarily capital-efficient, because the National Climate Bank will have to reserve the capital it uses for the guarantees, while the capital that then flows to the sub-national Green Banks may not be at terms as favorable as what could be directly provided by the National Climate Bank. There are also complex questions around how long the guarantee should last and what would trigger payment against the guarantee.

## Repayment

---

Some loan repayment structures would be more viable than others. A short-term loan with mortgage-style amortization (equal repayment installments across the term) wouldn't be terribly

---

<sup>5</sup> If the Climate Bank issues bonds against its balance sheet, then those bonds will carry some positive cost greater than zero. If this capital was used to fund sub-national Green Banks, that loan would have to also carry

useful, because the sub-national Green Bank itself will need to lend out the capital at a longer term to support projects. Similarly, a straight-line amortization, where principal repayments are constant and interest payments gradually decrease over time, would likely be a less-welcome, front-loaded amortization style.

A balloon-style loan from the Climate Bank (where interest payments are due at a regular cadence and full principal repayment is due at the end of the term of the loan) might create a better match with the underlying loan portfolio of the sub-national Green Bank. It is likely the case that any loan would need to be structured with deferred repayments, where there is no requirement to start paying back the principal or interest on the loan until several years of operation by the sub-national Green Bank. A start-up Green Bank requires time to build its operations, build a pipeline of projects, close deals and then receive the loan repayments that are needed to repay the larger loan from the Climate Bank. No matter the term, payments from sub-national Green Banks to the federal entity realistically shouldn't start until five years into operation.

## Cost of Funding

---

Finally, the cost of the financing provided is a critical parameter. A grant has no cost, without even principal repayment. A loan with an interest rate of zero requires principal repayment but no interest above that. And an interest rate greater than zero will require the sub-national Green Bank to pay the Climate Bank back above and beyond the original amount of the loan extended.

If the Climate Bank itself does not need to repay the US Treasury a specified rate of return, it could lend the capital at any rate it chooses.<sup>5</sup> If the Green Bank Start-Up Division must operate on a

that cost of capital, on top of any additional costs associated with potential losses and operating expenses. That suggests that funds used to capitalize state and local Green Banks would likely need to be partitioned and not

self-sustaining basis, where revenue covers operating expenses, then the loans to sub-national Green Bank will likely have a non-negligible interest rate. This is because the Division would have to cover both its operating expenses and expected losses on the underlying loans to the sub-national Green Banks. But if the sub-national Green Banks receive capital with a meaningful cost they in turn will have to lend capital into projects at a rate even higher to make enough margin to cover their own costs. This quickly leads to the conclusion that the cost of funds from the Climate Bank to the sub-national Green Bank must be minimal for the entire network to function effectively.

Based on these considerations and the profile of the underlying types of projects the sub-national Green Banks are likely to finance, an optimal approach will be a very long-term and low-cost or no-cost loan. Given the Climate Bank's 30-year charter, a 30-year 1% or 0% loan with deferred repayment structure would provide the most benefit to the sub-national Green Banks and catalyze the greatest total investment, while still preserving the Climate Bank's principal.

### **Potential Funding Allocations**

---

The National Climate Bank Act does not specify any method or formula for distributing funds to state and local Green Banks. There is almost an endless number of approaches the Climate Bank could use, but the main questions to consider are:

- The size of a Green Bank's target market.
- The price of energy in that market.
- The carbon intensity of the existing energy mix in that market.

The market size indicates how much investment is needed. Variables that can be used to gauge market size include population, total energy

consumption per capita, and total energy expenditure per capita.

Energy prices matter because they indicate how price competitive clean energy can be against the existing fossil fuel-based energy. This in turn indicates how much Green Bank capital will need to be used in a typical transaction. If the price of electricity in a target market is incredibly high, that means renewable power is better positioned to compete on price. This would directionally mean that less Green Bank capital would be required to move a typical renewable energy project forward. Price competitiveness alone does not lead to demand or investment, but a Green Bank may be able to take a smaller risk mitigation position in a transaction where the competitive price is higher. Conversely, in a market where grid power is cheap, a Green Bank may need to take a more significant part of a transaction to meaningfully impact the project economics.

The last key consideration is the emissions intensity of the market. In markets where the existing energy mix is highly carbon-intensive, each megawatt of additional clean energy will generate the greatest emissions reductions. In markets where the existing energy mix is already more clean, each additional megawatt of clean energy or "negawatt" of energy efficiency will produce diminishing returns in terms of emissions reductions. This does not mean that relatively clean energy markets should not receive additional investment: a fully decarbonized energy system will require clean energy everywhere. Emissions intensity is a factor that can be taken into account in determining the investment required to achieve emissions reductions as rapidly as possible.

---

used as part of the asset base against which the Climate Bank issues any bonds.

Collectively, these factors imply that in order to decarbonize the nation's energy use as rapidly as possible, the Climate Bank should tilt its allocation of capital towards sub-national Green Banks that serve large, more carbon-intensive

markets where the price of existing energy is low. However, ultimately the Climate Bank's investments should reach every energy market in the country.

## Conclusion

---

Supporting and capitalizing state and local Green Banks will be an important part of the National Climate Bank's role. These institutions fill a necessary role in understanding local regulations, market conditions, and market participants. They are especially well-suited for mobilizing investment into distributed renewables, community solar, and commercial and residential energy efficiency. They are also better positioned to serve frontline communities, as they understand the needs and opportunities for strengthening communities through climate investment.

The National Climate Bank Act specifies only that the Climate Bank will be empowered to fund state and local institutions, and that it will contain a start-up division to help establish new state and local Green Banks. But, based on the relevant considerations in play, it is possible to infer a likely strategy for the Climate Bank.

In funding these state and local institutions, the National Climate Bank could employ a mixture of grants, loans, and guarantees. There are considerations around each of these options, but the most feasible and likely approach may be a very long-term low-cost or no-cost loan.

In determining how to allocate available funds between state and local institutions, the Climate Bank should consider the target market's size, energy price, and carbon intensity. To maximize greenhouse gas reductions, the Climate Bank may tilt towards allocating more capital to sub-national Green Banks that serve large, carbon-intensive markets where the price of existing energy is low.

Using these techniques, the Climate Bank will be a powerful tool to mobilize clean energy investment, boost state and local economies, and forestall the impacts of the climate crisis by reducing the emission of greenhouse gases.

### About CGC

The Coalition for Green Capital (CGC) is a non-profit organization focused on accelerating the growth of clean energy markets through the creation of Green Banks. CGC offers a unique and proven capacity as the leading creator, advocate, and expert on Green Banks since 2009. CGC works directly to support the formation of Green Banks with governmental and civil society partners, and provides on-going consulting and guidance to operating Green Banks. For more information visit [coalitionforgreencapital.com/](http://coalitionforgreencapital.com/).