

Opportunities for a Green Bank in California

California has long been a leader in developing and deploying clean, low-carbon technologies, in large part due to its supportive public policies. Revenues from the auction of carbon emissions allowances create new opportunities for California to continue its leadership in clean energy. Using a portion of these revenues to create a California Green Bank could leverage private capital to allow more Californians to access clean energy, reduce energy costs, and more rapidly transition to a lower-carbon economy.

What is a Green Bank?

Many low-carbon technologies cost more at first but save money over time. However, many of California's people, businesses, and public entities cannot obtain affordable financing to take advantage of low-carbon technologies. California's innovators and entrepreneurs face a similar problem accessing financing to scale-up and commercialize new low-carbon technologies.

A Green Bank is a quasi-public institution or a governmental financing authority that can help bridge this gap by encouraging investors and private lenders to start expanding financing opportunities for low-carbon technologies. By using financial tools such as long-term and low interest rate loans, revolving loan funds, insurance products (such as loan guarantees or loan-loss reserves), and low-cost public investments, a Green Bank could catalyze private financing for low-carbon technologies. Key opportunities include distributed and large-scale clean energy generation, clean transportation vehicles and infrastructure, as well as water and energy efficiency measures in small businesses and homes. Many of these opportunities are new to investors; a Green Bank's pioneering investments and support could provide the experience and data they need to enter this market.

A California Green Bank could build upon the experience of green banks recently established in Connecticut, New York, and Hawaii, and act in coordination with existing state and federal programs to promote a cleaner, low-carbon future. Through careful future analysis and stakeholder input, the green bank should be designed to:

- **Accelerate the transition to low-carbon technologies** by addressing market barriers to developing and deploying clean technologies.
- **Seek cost-effective solutions** that reduce costs to society and allocate risks appropriately.
- **Enable significant progress towards the state's policy goals** including energy, air quality, and emissions goals.
- **Consider opportunities across all sectors that can significantly reduce carbon emissions** – such as renewable energy, energy efficiency, transportation, the water-energy nexus, and innovation.
- **Avoid providing public support where private financing already does the job.**
- **Use public finance mechanisms where they are appropriate and efficient**, rather than to address problems that may be better addressed through policy or regulatory changes.
- **Improve access to low-carbon technologies**, particularly in disadvantaged communities.

How could a California Green Bank help accelerate low-carbon technologies?

Here we outline some of the more promising ways in which a California green bank could help accelerate emissions reductions, based on stakeholder interviews, review of other state green bank efforts, and a limited literature review. The opportunities generally fall into three categories:

1. **Help more Californians easily and affordably finance low-carbon technologies**
2. **Help businesses and public entities get low-cost private financing to reduce emissions.**
3. **Build on California's leadership in clean technology & practice innovation**

1. Help more Californians easily and affordably finance low-carbon technologies

Many Californians want to take advantage of low-carbon technologies that can save them money over time, but cannot because of difficulty finding affordable financing for high upfront costs. For example:

- **Lowering financing costs for home water & energy efficiency upgrades:** Unlike mortgages and car loans, a lender can't remove an upgrade if the loan isn't repaid. As a result such loans have higher interest rates, even though the energy savings may lower the homeowners bills overall.
- **Solar leasing for consumers with moderate credit scores:** About 15% of Californians have credit scores high enough to get affordable home mortgages, but don't qualify for a such leases; early experience suggests that banks' unfamiliarity with them may be a major reason.
- **Lower-cost financing for electric vehicles:** A recent poll¹ found 42% of households could switch to EVs without major lifestyle changes. However, a lower income buyer may not qualify for electric vehicle financing, but can finance a cheaper, inefficient car with higher total monthly costs.

A green bank could help by:

Providing the security needed to lower energy upgrade financing costs. For example, Property Assessed Clean Energy (PACE) financing secures a loan by linking payments to property taxes. The recently announced California loan loss reserve for PACE financing will most likely need additional funding, which a green bank could provide.

Offering credit enhancements to financiers to kick-start private lending. Many Californians who have lower incomes or credit scores have the ability to repay loans that finance a money saving upgrade. By providing targeted support to private sector lenders the green bank will help consumers reduce their expenses, increase comfort, reduce carbon emissions and will help meet legislated requirements to aid disadvantaged communities. Over time the strategy will attract increased private capital and lead to more widespread availability of consumer finance for such activities.

2. Help businesses and public entities get low-cost private financing to reduce emissions.

In finance, bigger is often cheaper. Many of California's small businesses and public sector entities have a hard time getting affordable financing for projects that can reduce carbon emissions. For example:

¹ Corfee, K., Salmon, J. P., Rogers, B., & Keneipp, F. (2013). Riding the Financing Wave : Integrating Financing with Traditional DSM Programming Financing Programs for Energy Efficiency. In *International Energy Program Evaluation Conference*.

- **Many commercial properties with existing mortgages often can't finance energy upgrades:** These projects may be creditworthy but are unattractive to private lenders due to banking regulations.
- **Small businesses as well as public and non-profit entities have a hard time financing renewable energy projects:** They often cannot directly make use of federal renewable tax incentives and have difficulty raising funds.
- **Uncertain business and financing models for deploying alternative fuel infrastructure are a barrier to reducing vehicle emissions:** For example, a recent poll found that a third of respondents met all the requirements for using plug-in electric vehicles – except for access to charging infrastructure. But we can't be certain where alternative fueling stations will first be needed, how many we'll need, or how often they'll be used. As a result, both private businesses and public entities have difficulty building business cases that can allow them to affordably finance infrastructure deployment.

A green bank could help by:

Leveling the playing field for small business and public sector energy projects. A green bank can directly provide long-term low-cost loans or credit enhancements for small businesses' renewable or energy efficiency projects; similarly, it could provide financing support to private sector entities that provide energy efficiency and solar services to public and non-profit entities.

Aggregating projects to improve access to low-cost private finance. A large portfolio of similar projects or loans based on standard terms and contracts can be financed at low cost by large investors who cannot cost-effectively provide such financing to any individual loan or project. Such a portfolio – with many projects across a diverse range of stakeholders, markets, and geographies – is a less risky investment than an individual project and could be attractive to large institutional investors such as pension funds. This approach could be extended to reduce financing costs for portfolios of large, utility scale projects financed by several state green banks.

Coordinating flexible financing support for alternative fuel infrastructure. A green bank could work with both the public and private sector to flexibly provide the financing support needed over time to spur the appropriate deployment of alternative fuel infrastructure, building the data and experience needed to establish the business case for increased future financing.

3. Build on California's leadership in clean technology & practice innovation

California leads the world in energy innovation, but faces difficulty in scaling up those innovations within our borders.

- **Financing for technology commercialization at scale is difficult to obtain:** The Department of Energy's loan programs, which supported nearly \$8 billion in loans to eight innovative California projects over the last four years, face an uncertain future. Financing for new projects that bridge the 'valley of death' between demonstration and commercialization at scale is largely non-existent.
- **California needs innovation in low carbon grid-flexibility and energy storage:** In order to support a cleaner electric grid, California utilities are required to procure 1.3GW of electric energy storage by the end of the decade. This mandate requires rapid scale-up of new grid storage technologies. However, investors will be reluctant to finance the first facilities under this new procurement mechanism because they lack historical financial and technical data on comparable assets.

- **Little financing is available for at-scale innovation in transportation infrastructure or practices:**
Financing support for bold, innovative ideas to transform our built infrastructure and change the way we move goods and people – like truck-lane electrification, novel city or neighborhood design, or novel modes of transport – fall between jurisdictions both at the state and federal level.

A green bank could help by:

Financing scale-up of innovative energy technologies, infrastructure, and practices in California.

California boasts some of the best innovators and entrepreneurs in the world. We can take advantage of that talent to identify the most promising energy technology and infrastructure projects for scale-up and provide them the advice and financing support they need to succeed. By offering long-term loans, loan guarantees, insurance products, or low-cost public investment, the Green Bank could leverage California's innovation advantage into facilities and jobs in California. For example, it could kick-start private financing of energy storage at scale by supporting financing for the first few such facilities. A focus on innovative approaches to building, transportation and industrial electrification could spur deep carbon reductions needed to achieve our 2050 goals.

Contributors include...

Expert guidance and analysis led and compiled by Climate Policy Initiative (RE/EE and Transportation), Natural Resources Defense Council and Agrion (water-energy nexus), CalCEF (innovation), and Environmental Defense Fund. Contributing organizations include DBL Investors, Silicon Valley Leadership Group, C2ES, Coalition for Green Capital, and EV Communities Alliance.

Appendix: Green Bank Case Studies

New York – New York State Energy Research and Development Authority (NYSERDA)

Objectives of NY Green Bank:

1. Provide a bridge to a sustainable and efficient private market that offers clean energy financing services
2. Remove barriers to financing energy efficiency and renewables, and reduce investment once a market is established
3. Partner with financial institutions to leverage capabilities and investment dollars
4. Work with other entities to evolve clean energy capital markets (in particular, the bond markets)
5. Enhance market confidence in clean energy investing

The New York State Research and Development Authority recently took such an approach in issuing \$24 million in highly rated, low interest rate bonds backed by repayment of energy efficiency loans from its Green Jobs, Green New York program.²

Proposed by Governor Cuomo in January 2013, NY Green Bank will have a \$1B capitalization. Initial funding of \$165M will come from collected but unallocated system benefit charges.

Connecticut – Clean Energy Finance and Investment Authority (CEFIA)

Example objectives:

1. Make customer lease financing available for small solar installers
 2. Develop finance and market a statewide Commercial Property Assessed Clean Energy program
 3. Develop residential On-Bill Repayment program
- Approved by the Connecticut state legislature in July 2011
 - Involved the consolidation of several existing state funding sources into a single Green Bank
 - CEFIA has attracted \$180M in private capital investment after deploying only \$20M of ratepayer funded loans, achieving a leverage ratio of 9:1.
 - CEFIA has a budget of \$40M

Hawaii – Green Energy Market Securitization (GEMS)

- Designed to lower costs for solar and energy efficiency projects
- Extend capital to low credit customers and renters that do not currently have access to financing
- \$100M capitalization funded by new bond issuance

Mandate to the New York Green Bank:

Accelerate deployment of clean energy by removing barriers in financing markets. The Bank will not compete with private sector entities but will instead partner with them, nor will its principal role be to provide subsidy. The Bank will focus its activities on clean energy projects that are economically viable but not currently financeable.

² See <http://www.nyserda.ny.gov/About/-/media/Files/About/NYSERDA-2013A-Final-OS.pdf>