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# State Financing of Clean Energy and Energy Efficiency: The Role of State Green Banks

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**coalition for green capital**

# The Coalition for Green Capital

Develops mechanisms to provide:

- **Low-cost financing** for clean energy projects
- **100 percent financing** for residential and small business energy efficiency programs

## **National level**

- American Clean Energy and Security Act: Green Bank (H.R.2454), \$7.5 billion
- Senate Energy Committee Bill – 2010 -\$10 billion

# The Coalition for Green Capital

## State level

- January 2013 – CT passes CEFIA, 2011
- January 2013 – Governor Cuomo of NY proposes \$1 billion green bank
- January 2013 – Governor Abercrombie of Hawaii proposes \$200 million green bank
- February 2013 Senator De Leon's of California introduces SB798--Green Infrastructure Bank. Lt Gov Newsom is a driving force behind this
- March 2013 Washington State – small green bank type fund expected to be set up shortly.
- Working in 4-7 additional states

# The Green Bank Approach

- **Repurpose existing state funds into a new entity or within an existing finance authority** so they are:
  - More **easily leveraged**
  - Matched with **private funds** from investors with patient long-term capital who are seeking a conservative rate of return
- Design parameters
  - **No** tax increase; **no** rate increase; **no** state-issued bonds; **protect** consumers
- Push programs **away** from rebates, grants, loan write-downs and subsidies and **into** revolving loan programs
- Finance both EE and RE deployment with **no tech risks**
- Develop different structures for higher risk projects

# Energy Efficiency (EE) Raises Different Financing Issues

- Homeowners and many businessmen do not always act the way economists think they should act
- **Limited demand** for EE projects without the right financing in place
- A “Green Bank” could:
  - Provide **100 percent** up-front financing
  - **Tie repayment** roughly to **energy savings**
    - Only do the latter with low cost financing
  - **Replace interest rate buy-downs** and other measures that are arguably too expensive for EE to reach scale

# More Low Cost Financing = Lower Price of Electricity (from Brattle Model)

**Retail Price (\$/kWh) as a Function of Green Bank Debt\* and Installed Cost**

		% Green Bank Debt in Capital Structure				
		0%	10%	20%	30%	40%
<b>Installed Cost (\$/W)</b>	<b>4.5</b>	0.210	0.187	0.163	0.140	0.117
	<b>4.0</b>	0.174	0.154	0.133	0.112	NA
	<b>3.5</b>	0.139	0.121	0.103	0.085	NA
	<b>3.0</b>	0.103	0.088	0.072	0.057	NA

**Other Assumptions:**

Developer equity return:	15%
Tax equity return:	12%
Total leverage:	40%
Commercial debt int.:	6%
15-Year RECs:	\$0.030/ kWh
6-Year State incentives:	\$0.225/ kWh

**Cells with retail price < average 2011 CT retail price escalated to 2013 (\$0.190/ kWh) are shaded**

**\*Green bank debt at 2% interest for 15 years**

Download the Rooftop Solar PV “Green Bank” Financing Model from

<http://www.coalitionforgreencapital.com/the-model.html>

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# Green Bank Loans Offer Benefits Not Possible Through Grants or Commercial Lending

## **Low cost loans...**

1. Replace or complement cash grants and tax policies to help lower delivered price of renewables.
2. Create revolving funds that slowly but steadily increase in size.
3. Maintain funding even in volatile markets.
4. Create patterns of lending and borrowing to specific types of projects now unfamiliar to commercial lenders.
5. Permit lending authority more control over projects.
6. Attract private sector investors to clean energy projects that they might not otherwise invest in.
7. Expedite and expand conversion to sustainable energy platform.

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# “Green Bank” Models

We have found that there are **three** leading models for state green banks:

- Connecticut Model
- State Clean Energy Financing Authority Model
- Infrastructure Bank Model

# The Connecticut Model

- Established Clean Energy Finance and Investment Authority (CEFIA): a **quasi-public** corporation that **consolidated several existing funding** sources
- Given the power to **issue bonds**
- Authorized to **raise funds** from private sources of capital capped at an average rate of return set by the board
- Permitted to **finance** up to **80 percent** of the cost to develop and deploy a clean energy project and up to **100 percent** of the cost of financing an energy efficiency project

# The State Clean Energy Financing Authority Model

- **Part of the state government**, not a quasi-independent governmental entity
- **Separate entity** would need to be established **to raise private funds** and partner with the state financing authority under a formal **partnership agreement**
- As in the Connecticut model, a state would determine whether it could consolidate other funds into the green bank authority

# The Infrastructure Bank Model

- Clean energy projects and general infrastructure projects to be financed by a **combined state energy and infrastructure authority or bank**
- Because of **differences** between infrastructure and clean energy finance, we recommend that the bank create **separate “windows”** for each

# What you can do

- Need help in establishing a critical mass of support in each state
- Need expertise in working with Governor's office and legislature
- Need analysis of state programs – what is working and what can be improved
- Need analysis tying finance in with other state programs – i.e. interaction with renewable energy standards
- Need analysis of other barriers holding back deployment of clean energy