Growing Nevada’s Clean Energy Markets Quickly with Green Bank Financing

Jeffrey Schub, Executive Director, CGC
Nevada Interim Legislative Committee on Energy
November 20, 2015
CGC provides expert support and advice to states exploring green bank creation

**CGC’s mission** is to use state finance, regulatory and legal power to accelerate move to clean power platform.

- Nonprofit 501(c)(3) organization
- CGC’s leaders have been driving Green Bank movement since ‘09
- Based in Washington, DC
- Receives pro bono support from Latham & Watkins LLP & Covington & Burling LLP
Contents

• Intro to Green Banks & Benefits

• The Green Bank Landscape

• The Role of a Nevada Green Bank

• Green Bank Study
We finance everything to avoid the high upfront cost of purchasing goods & services, large & small.

- Cars
- Houses
- Education
- Cell Phones

Cash → Product → Repayment → Loan → Bank
Would you buy a house without financing?

Bank financing, aka Mortgage, eliminates 80% of upfront cost.
85% of all vehicle purchases are financed with a loan or a lease.

Auto loans can eliminate 100% of upfront cost of a car.
Like car or house, hard to buy energy efficiency or renewable energy technology without financing.

$25,000

Upfront Cost with no Financing

Price

Without financing for clean energy, you have to pay the entire cost upfront!
Common public sector approach to stimulating clean energy markets is through grants or rebate

A grant is nice, because it lowers the technology cost, but it still leaves huge upfront cost. Need financing!

- Price: $25,000
- Upfront Cost with no Financing after Grants
- Grants

?
Many large projects – fossil & renewable – can access financing, but not so for distributed projects.

<table>
<thead>
<tr>
<th>Centralized Projects</th>
<th>Distributed Projects</th>
</tr>
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<tbody>
<tr>
<td>• Utility-scale</td>
<td>• Smaller scale</td>
</tr>
<tr>
<td>• Power directly to grid</td>
<td>• Scattered locations</td>
</tr>
<tr>
<td>• Strong credit</td>
<td>• On-site energy use</td>
</tr>
<tr>
<td>• Traditional project finance</td>
<td>• Varying credits</td>
</tr>
<tr>
<td>• Relatively easy to finance</td>
<td>• Range of structures and approaches to finance</td>
</tr>
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</table>
Many clean energy markets suffer from expensive or lack of capital

**Markets With Adequate Private Capital**

- High-credit residential rooftop solar
- Credit-rated large commercial efficiency projects

**Markets With No or Expensive Private Capital**

- Low-to-moderate income residential upgrades
- Non-rated commercial solar & efficiency
- MUSH and non-profit rooftop solar
- Community-solar
- Residential energy efficiency
- MUSH energy efficiency
- Grid storage and micro-grids
- Alternative fuel vehicles and infrastructure
- Distributed biomass, biofuels, CHP and fuel cells
Green banks fill the financing gap and draw in the capital needed to make clean energy markets grow.

A green bank is a public financing authority that leverages private capital with limited public-purpose dollars to accelerate the growth of clean energy markets.

Deploy public-purpose capital efficiently to maximize private investment.

Implement new market behavior and lower price to spark demand.

Inefficient Capital Markets ➔ Green Bank ➔ Clean Energy Market ➔ Tepid Consumer Demand
Green Bank is a public institution that channels public & private investment

1. Public $’s capitalize green bank
2. Investment attracts private capital
3. Private investors fill market gaps

Consumer Savings, Job Creation, Taxpayers Protected, GHG Reductions
CGC provides expert guidance to state governments to help understand and set up the green bank

- Foundations
  - Grants
- Coalition for Green Capital
- Government
- Creation & Public Capitalization
- Green Bank
- Public Investment
- Payback
- Private Investment
- Payback
- Low Carbon Projects
- Private Investors
- Pro Bono Consulting
- Grants
Financing structured so that repayment plus remaining utility bill are less than prior utility bill.
Green bank recycles capital, re-leverages private investment multiple times

**Original Investment**

- **Year 0:** Initial investment leverages private capital

- **Year 6:** Investment is fully repaid

**First Recycling**

- **Year 6:** Funds are re-loaned, attracting more private capital

- **Year 12:** Investment is fully repaid

**Second Recycling**

- **Year 12:** Funds are re-loaned, attracting more private capital

- **Year 18:** Investment is fully repaid
Green banks are flexible institutions that can employ various financing methods to suit the need:

**Credit Support**
- Senior Private Capital
- Green Bank Credit Enhancement

**Co-Investment**
- Green Bank Capital
- Project
- Private Capital

**Warehousing**
- Project
- Green Bank Origination
- Private Purchase of Portfolio
Range of financial tools, applied to prioritized markets, through innovative structures

<table>
<thead>
<tr>
<th>Green Bank Products &amp; Services</th>
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<tbody>
<tr>
<td>• Direct Debt</td>
</tr>
<tr>
<td>• Wholesale Debt</td>
</tr>
<tr>
<td>• Subordinated Debt</td>
</tr>
<tr>
<td>• Loan Loss Reserve</td>
</tr>
<tr>
<td>• Warehousing</td>
</tr>
<tr>
<td>• Securitization</td>
</tr>
<tr>
<td>• Standardization</td>
</tr>
<tr>
<td>• Data Collection</td>
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<tr>
<th>Financing Mechanisms</th>
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<tbody>
<tr>
<td>• On-Bill</td>
</tr>
<tr>
<td>• PACE</td>
</tr>
<tr>
<td>• ESA’s</td>
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<tr>
<th>Customer Acquisition</th>
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<tbody>
<tr>
<td>• Solarize</td>
</tr>
<tr>
<td>• Big-data</td>
</tr>
<tr>
<td>• Targeted</td>
</tr>
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<table>
<thead>
<tr>
<th>Markets</th>
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<tbody>
<tr>
<td>• Residential EE</td>
</tr>
<tr>
<td>• C&amp;I EE</td>
</tr>
<tr>
<td>• Multifamily &amp; LI EE</td>
</tr>
<tr>
<td>• MUSH EE</td>
</tr>
<tr>
<td>• Distributed Generation</td>
</tr>
<tr>
<td>• Community Solar</td>
</tr>
<tr>
<td>• Energy Storage</td>
</tr>
<tr>
<td>• EV’s and Charging</td>
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Green Banks are a win-win-win for consumers, businesses, investors and government

<table>
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<th>Green Bank Benefits</th>
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<td><strong>Private Sector Leverage</strong></td>
</tr>
<tr>
<td>– Financial tools designed to maximize the amount of private sector investment per public dollar used</td>
</tr>
<tr>
<td><strong>Efficient Government</strong></td>
</tr>
<tr>
<td>– Provide loans to preserve public capital &amp; do deeper efficiency projects</td>
</tr>
<tr>
<td>– Work in coordination with other agencies to maximize program value</td>
</tr>
<tr>
<td><strong>Create Jobs &amp; Economic Growth</strong></td>
</tr>
<tr>
<td>– Clean energy financing enables demand for projects from contractors</td>
</tr>
<tr>
<td>– Public private partnerships create investment opportunities for lenders</td>
</tr>
<tr>
<td><strong>Put Money Back in Citizens’ Pockets</strong></td>
</tr>
<tr>
<td>– Less funding needed to support public financing than public grants</td>
</tr>
<tr>
<td>– Reduced energy bills with efficiency, renewables create monthly savings</td>
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Green Banks are quickly spreading across U.S.
Example: Connecticut GB’s Residential Solar Tax Equity Fund expands customer access to rooftop solar

- Conn-GB created unique public-private financing platform
- Product enables local developers to offer financing to customers who otherwise would have to pay all upfront
Example: Connecticut Green Bank changes grants to loans, and expands solar penetration
Green Banks work!

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<tbody>
<tr>
<td>Years</td>
<td>11</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Energy (MW)</td>
<td>43.1</td>
<td>65.3</td>
<td>62.6</td>
</tr>
<tr>
<td>Investment ($MM)</td>
<td>$350</td>
<td>$350</td>
<td>$365</td>
</tr>
<tr>
<td>Leverage Ratio</td>
<td>1:1</td>
<td>5:1</td>
<td>5-10:1</td>
</tr>
<tr>
<td>Investment % Loans</td>
<td>9%</td>
<td>57%</td>
<td>77%</td>
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Nevada has shown strong commitment to taking advantage of in-state, clean energy resources

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<th>Standards, Grants &amp; Rebates</th>
<th>Financing &amp; Hybrids</th>
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</table>
| • **Renewable Portfolio Standard:**  
  • 25% by 2025  
  • 5% of this from solar  
• **Renewable Energy Tax Abatement**  
• **Green Building Tax Abatement for government buildings**  
• **State Energy Program Grant**  
• **Performance Contracting for Public Facilities**  
• **Home Energy Retrofit for Seniors** | • **Revolving Loan Funds**  
  • Since 2009, $17M+ to 20 projects  
  • 5 projects in 2013-2014  
  • Easiest to use with public buildings  
• **Energy Fit Nevada**  
  • Low-interest loans for energy efficiency  
  • $1,000+ rebate for homes with 20% increase in energy efficiency  
  • 550 upgrades completed from 2011 – 2013 |

**But Some Programs Closed – Need More Tools to Take Advantage of Resources**
A Nevada Green Bank can help expand clean energy markets and lower energy costs in many ways

• Provide credit enhancements to enable private lending for residential energy upgrades

• Administer & finance a Commercial Property Assessed Clean Energy (PACE) program

• Lower energy bills for low-to-moderate income households with focused financing solutions

• Build out alternative energy fuel vehicle infrastructure

• Finance energy upgrades in public buildings to reduce state energy bills
Nevada has a $1.6 billion energy efficiency investment opportunity – where will the money come from?

Energy Efficiency Potential
$1.6 Billion Investment Need

Annual Savings Opportunity
$732 Million in Energy Savings

A Green Bank Can Drive Investment
Nevada is poised to reap the benefits of a growing clean energy market

**Nevada Economy**

- **Job Creation**
  - Already 5,900 solar workers and growing (fastest solar labor force growth in the nation)
  - Investments in efficiency could add another 4,700 jobs by 2020

- **Economic Growth**
  - Financing enables demand, which is served by NV businesses

- **Energy Bill Savings**
  - More disposable income for citizens to spend in Nevada

- **Fewer Dollars Out-of-State**

**Clean Energy Leadership**

- Capitalize on greatest solar market potential in the nation
- Easier to meet RPS at low-cost
  - Especially in later years as EE is phased out
- Lower cost to comply with the federal Clean Power Plan
- Realize opportunity for cheaper, cleaner and more reliable energy
  - Make Nevada a national model for clean energy policy leadership by enabling markets
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Proposed Scope of Work (1 of 2)

1) Nevada Market & Policy Review
   – Energy Efficiency & Renewable Energy Program Review
   – Summary of Existing Efficiency & Renewable Energy Policies

2) Review of Existing Green Banks
   – Green Bank Structures, Funding Sources & Target Markets
   – Summary of Green Bank Outcomes, Including Leverage

3) Market Sizing
   – Calculate Addressable Market in Efficiency & Renewables
4) Clean Energy Financing Gap & Needs Assessment
   - Interviews with Key Stakeholders
   - Identification of Barriers & Gaps in Financing

5) Green Bank & Efficiency Incentive Need
   - Overall Need for Nevada Green Bank
   - Identification of Possible Green Bank Financing Structures
   - Impact and Need of Efficiency Resource Standard

6) Implementation Guidance
   - Recommendations & Options for Green Bank Implementation
Thank You

Comments and Questions:
Jeffrey Schub, Executive Director,
Coalition for Green Capital
jeff@coalitionforgreencapital.com