Emerging Trends in Green Banks

Thursday, August 23rd, 2018 from 10:30am – 12:00pm
Panelists

Moderator
- Alex Kragie, Coalition for Green Capital

Speakers
- Tom Deyo, Montgomery County Green Bank
- Kerry O’Neill, Connecticut Green Bank
Kerry O’Neill
Connecticut Green Bank
Connecticut Green Bank
Attracting Private Investment, Growing Our Economy, Creating Jobs, and Helping Our Communities Thrive

Better Buildings Summit
Updates from the Field
August 23, 2018
Connecticut Green Bank
Delivering Results for Connecticut

- **Investment** – mobilized over $1.3 billion of investment into Connecticut’s clean energy economy
- **Economic Development** – created nearly 16,000 total job-years – 6,200 direct and 9,700 indirect and induced, while raising nearly $50 million in state and local tax revenues
- **Energy Burden** – reducing the energy burden on over 30,000 households and businesses, including “beyond parity” for LMI solar
- **Environmental Protection** – deployed more than 285 MW of clean renewable energy helping to reduce over 4.6 million tons of greenhouse gas emissions that cause climate change

**Private investment drives economic growth**
Creates jobs, lowers energy costs, and reduces GHGs

REFERENCES
CT Green Bank data warehouse report from July 1, 2011 through June 30, 2018
Connecticut Green Bank
Business Units and Nonprofit “Spinoff”

Connecticut Green Bank
Incentive Business
- RSIP
- SHREC
- PosiGen
- New Opps

Investment Business
- C-PACE
- SBEA
- Nonprofit
- Special Projects

IPC
(an independent 501(c)3)
- SF/LMI
- PosiGen & Others
- Smart-E
- Comm Solar PPA
- MFAH
- Special Projects

Cost Recovered
Self Sustaining (i.e., 5%@10 years)
Operating Leverage, Social Return, and Investment Return Opportunity
Incentive Business
RSIP Incentive and SHREC Securitization

When panels produce electricity for a home, they will also produce Solar Home Renewable Energy Credits (SHRECs). The Green Bank provides upfront incentives through RSIP and collects all the SHRECs produced per statute.

Utilities required to enter into 15-year contracts with the Green Bank to purchase the stream of SHRECs produced. This helps utilities comply with their clean energy goals (i.e., Class I RPS).

The Green Bank would then use the revenues from the 15-year fixed price contracts to support the RSIP incentives (i.e., PBI and EPBB), cover admin costs, and fund securitization or financing costs.

A public policy with 300 MW target will create more locally-sourced sustainable energy, helping make our power grid more secure and less congested, and also curb pollution.
# Investment Business

Public-Private Partnerships

<table>
<thead>
<tr>
<th>Credit Enhance</th>
<th>Warehousing</th>
<th>Tax Equity Finance</th>
<th>Project Finance</th>
<th>PRI</th>
<th>Tax Credit Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$45 MM</strong> OPEN 20:1&lt;sup&gt;1&lt;/sup&gt;</td>
<td><strong>$50+ MM</strong> OPEN 9:1</td>
<td><strong>$75 MM</strong> CLOSED 7.5:1</td>
<td><strong>$60+ MM</strong> OPEN 6:1&lt;sup&gt;3&lt;/sup&gt;</td>
<td><strong>$5 MM</strong> OPEN 100%&lt;sup&gt;2&lt;/sup&gt;</td>
<td><strong>$9 MM</strong> CLOSED 9:1</td>
</tr>
<tr>
<td><strong>$6 MM</strong> CLOSED 6:1</td>
<td><strong>$30 MM</strong> CLOSED 4:1</td>
<td><strong>$35 MM</strong> OPEN 4:1</td>
<td><strong>$22 MM</strong> CLOSED 8:1</td>
<td><strong>$3 MM</strong> OPEN 100%&lt;sup&gt;4&lt;/sup&gt;</td>
<td><strong>$3 MM</strong> CLOSED 3:1</td>
</tr>
<tr>
<td>Residential Solar</td>
<td>C-PACE</td>
<td>Solar for All</td>
<td>Colebrook Wind</td>
<td>Residential and Commercial Storage</td>
<td>City of Meriden CT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 MW Wind Project</td>
<td></td>
<td>Archimedes Screw Hydroelectric Project</td>
</tr>
</tbody>
</table>

## REFERENCES

1. LLR yields high leverage – and it is 2<sup>nd</sup> loss and thus with no to low defaults, we haven’t used to date. IRB’s not considered in the leverage ratio.
2. Foundation PRI is to HDF, guaranteed by the CGB in the case of MacArthur Foundation.
3. Onyx Partnership has no upper limit and CGB currently has authorization to commit up to $15mm.
4. Foundation PRI’s are backed by CGB balance sheet
## Investment Business
### C-PACE (Example)

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Commercial, Industrial, Nonprofit and Multifamily</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Summary</strong></td>
<td>Commercial Property Assessed Clean Energy (C-PACE) applies a benefit assessment to a property to finance clean energy improvements with SIR&gt;1</td>
</tr>
</tbody>
</table>
| **Support Needed** | • Capital to finance clean energy improvements  
• Contractors to install clean energy improvements  
• Supportive municipality  
• Supportive mortgage lender |
| **CT Results** | 232 projects for $135.9 MM investment and $220.5 MM in savings over the life of the projects |
C-PACE New Construction (or Gut Rehab, Adaptive Reuse) in the Capital Stack
Inclusive Prosperity Capital
Sparked by the Connecticut Green Bank

- **Foundation of Success** – mobilized over $1.3 billion of public and private capital deployed in Connecticut from 2012–2018 ($360 million in underserved markets)

- **Geographic Expansion** – $810 billion of renewable generation investment potential across the U.S. from 2018-2050 (Real 2017 $’s);

- **Cost Reductions & Scale** – origination expansion, geographic diversification, and operational efficiencies; and

- **Project Deployment & Risk-Adjusted Returns** – successful capitalization of underserved markets & credits with private capital at appropriate returns.
## Green Bank Solar PPA
### Underserved Commercial Credits

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Small/medium commercial, MUSH, affordable housing, nonprofits, community assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Summary</td>
<td>3rd party solar power purchase agreement, backed by C-PACE lien where possible</td>
</tr>
</tbody>
</table>
| Support Needed  | ▪ Good solar economics for C&I  
                  ▪ Local solar installer & project developer introductions  
                  ▪ Municipal, community and nonprofit introductions  
                  ▪ Subordinated debt capital – if available, but not required |
| CT Results      | 94 PPAs closed/completed, $69.3 MM, and 22.7 MW |
## PosiGen “Solar for All”
Underserved LMI Households

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Residential Single Family LMI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Summary</strong></td>
<td>Solar lease + energy efficiency package (fixed 20-25 years) to reduce energy burden with alternative underwrite/no credit score using community-based marketing approach</td>
</tr>
<tr>
<td><strong>Support Needed</strong></td>
<td></td>
</tr>
<tr>
<td>￭</td>
<td>Good solar economics including tiered LMI incentive</td>
</tr>
<tr>
<td>￭</td>
<td>Municipal, community and nonprofit introductions</td>
</tr>
<tr>
<td>￭</td>
<td>Subordinated debt capital – if available, but not required</td>
</tr>
<tr>
<td><strong>CT Results</strong></td>
<td>1,615 leases for $44.5 MM investment, 99.9% get EE (HES), 63% ESA, and 63% LMI</td>
</tr>
</tbody>
</table>

Connecticut Green Bank and PosiGen “Solar for All” Partnership – Bringing the Benefits of Clean Energy to LMI Communities

By Maria Blais Costello
July 19, 2018

There are many barriers to going solar for low- to moderate-income (LMI) communities and homeowners, including access to financing, real and perceived credit-quality issues, inability to fully realize public incentives, education gaps, and contractors’ customer acquisition strategies.
### Affordable Multifamily Housing
#### A Suite of Products

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Naturally occurring and subsidized/regulated affordable housing (5+ units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Summary</td>
<td>Pre-development and term financing products (including unsecured) for renewables, efficiency, storage, resiliency, health &amp; safety and other building improvements</td>
</tr>
</tbody>
</table>
| Support Needed  | - Overview of utility and state affordable housing program/incentive landscape  
                  - Portfolio owner introductions  
                  - Municipal, community and nonprofit introductions  
                  - Subordinated debt capital – if available, but not required |
| CT Results      | 73 loans for $72MM impacting ~5,400 units |
**Energize CT Smart-E Loan**  
**Comprehensive Energy and H&S Measures**

<table>
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<th>Market Segment</th>
<th>Residential Single Family</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Summary</strong></td>
<td>Partnership with eleven (11) local community banks and credit union to provide easy access to affordable financing for comprehensive clean energy measures, including H&amp;S. 5-20 year terms at rates ranging from 4.99-6.99% for $500-$40,000 of borrowing.</td>
</tr>
</tbody>
</table>
| **Support Needed** | - Provide 2nd Loan Loss Reserve (LLR) up to 7.5% of losses  
- EV pilot |
| **CT Results** | 2,942 projects for $51.8 MM financed with $5.9 MM of Interest Rate Buydowns (IRB) |
Inclusive Prosperity Capital

Fund Launch

- **Launch Date:** August 2018
- **Assets Under Management at Launch:** $20 million
- **Assets Under Management Year 1 Total Target Raise:** $75+ million
- **Key Contributors at Launch:** Connecticut Green Bank, Kresge Foundation, Hewlett Foundation, Calvert Impact Capital
- **Fund Leadership:** Seven (7) program and investment professionals transferring from the Connecticut Green Bank at launch
- **Unique Features:** In addition to capital injection, Connecticut Green Bank to provide full operational support of $10 million over first six (6) years of operation (no “going concern” risk)

**NOTES**

1. Of this total, $6 million will run through Inclusive Prosperity Capital, while $4 million will be expenses covered directly by the Connecticut Green Bank
Thank You

www.ctgreenbank.com

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CEO, Inclusive Prosperity Capital, Inc.
Connecticut Green Bank
Mission and Goals

Support the strategy to achieve cheaper, cleaner, and more reliable sources of energy while creating jobs and supporting local economic development

- Attract and deploy private capital investment to finance the clean energy policy goals for Connecticut

- Leverage limited public funds to attract multiples of private capital investment while reinvesting public funds over time

- Develop and implement strategies that bring down the cost of clean energy in order to make it more accessible and affordable to customers

- Support affordable and healthy homes and businesses in distressed communities reduce energy burden and address health & safety
Tom Deyo
Montgomery County Green Bank
Emerging Trends in Green Banks

Presented at
2018 Better Building Summit

Tom Deyo, CEO, Montgomery County Green Bank
Who We Are
Montgomery County Green Bank

- The nation’s FIRST County-level green bank, designated in July 2016, chartered by the County in 2015
- Not a Bank, a Fund.
- Independent, 501(c)3 non-profit corporation; 11 member board (2 County members)
- Capital opportunity of $14 million (County settlement from Pepco-Exelon merger)
What are we trying to do?

In partnership, grow the clean energy market in Montgomery County.

Cascade of results:
More Capital =
More Projects / Jobs =
Greater Energy Savings =
Better Financial Security =
Less Energy Demand =

Lower Greenhouse Gas Emissions
Can a local green bank work?

- **Local is a benefit – everything is local:**
  - Understand and connect to local energy sector issues
  - Define products that meet specific gaps
  - Build partnerships that bring new resources
  - Support local goals: greenhouse gas reduction goals, jobs, business strength, and equity

- **Being local does not mean being alone - green banks have network**
  - Knowledge exchange
  - Resources
  - Peer mentoring

- **Scale – many different considerations**
  - Production is important
  - Scale of connections on energy efficiency and clean energy
  - Scale of Partnerships – bring new players into markets
  - Scale on voice – identify issues and get parties focuses on a response
Case Study:

Building A Product Portfolio:

- **Identify and fill gaps in the existing market** for private sector financing products (e.g., loans) offered to property owners for energy efficiency/renewable energy projects.

- **Partner with private lenders to co-invest Green Bank capital**, reducing their risk in order to attract their capital into the market. Target 5:1 leverage of Montgomery County Green Bank capital.

- **Meet key goals** of leveraging our dollars at 5:1, lowering county’s greenhouse gas emission, reaching lower income households and multifamily communities, and generate revenue to sustain operations.
First Product:

Commercial Loan for Energy Efficiency and Renewables (CLEER)

- Commercial buildings and businesses (include nonprofit, multifamily properties)
- Scope of work – energy efficiency, Co-Gen, Solar PV, Energy Storage, water conservation

- Loan Loss Reserve Structure
- Revere Bank (local) and Ascentium Capital (national) lenders in pilot
- Contractors are on PEPCO list for Commercial and Industrial Program

- Loans generally between $10,000 to $250,000
- 100% financing for retrofits
- Up to 12 years – helps match savings to loan payment
- Not Secured by Property
- Lower rates
- Customer underwritten for credit and not energy savings
How Did We Get There?
Product Development Cycle

1. Market Due Diligence
   - Utilities
   - Contractor
   - Lenders
   - Customers
   Insights: Identify key terms, Starts relationships, Identifies dead ends

2. Product Framing
   - Quality Control
   - Operational Burden
   - Lender Package – Process, Terms, Structure
   Insights: Methods narrowed, Means assessed, Marketing focused

3. Product Marketing / Feedback
   - Lenders
   - Contractors
   Insights: Builds real interest, Develops partners, Shows collaboration

4. Product Revision / Testing
   - Lender Targets
   - Contractor Buy-in
   Insights: Real partners found, Builds rapport, Sets up for long-term

5. Closing
   - Lender Agreement
   - Contractor Agreements
   Insights: Takes more time, Fallout happens, Excitement fills fallout

6. Marketing
   - Training
   - Outreach
   Insights: Not over at launch, Constant attention
First Product – How It Works

Simple structure:
• MCGB stands behind lender for losses
• MCGB authorizes contractors for program
• Lenders make loans on specific energy efficiency and renewable scopes of work
• Borrowers approved on credit; but savings support payments
• MCGB provides oversight
Creating a Product Continuum using Own, Government, and National Products

Commercial and Industrial Sector

Locally Created by Green Bank
- CLEER < $250k

Locally Available County Program
- C-PACE $250k+

National Opportunities Brought Locally
- Consortium of green banks

Large Scale
Financial Products in the Pipeline

Residential Energy Efficiency and Renewables
• Homeowners throughout County
• Focus on low and moderate income households

Community Solar
• Supports market and low and moderate income communities
• Various models under review

Affordable Rental
• Low and moderate income communities
• Technical assistance support being evaluated

Commercial PACE
• Large-scale commercial properties
Challenges For Standing up a Green Bank

**Capital**
Key to effort. Best source offers few requirements

**Infrastructure**
Emerging sector with many operational structures. But sharing is helping to create efficiencies

**Sustainability**
Achieving returns that can support operations. Takes time to build revenue streams, especially when taking risk positions at less than risk-based returns. Need operational subsidies for at least 3 years

**Market Assumptions**
Presenting as an investor when market looking for subsidy

**Models**
Early in green bank movement offers models for replication but must know models are not long-time tested. BUT, emerging network is a freely sharing one
The American Green Bank Consortium

Alex Kragie, Director of the American Green Bank Consortium
Coalition for Green Capital
August, 2018
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• CGC’s mission and team

• The American Green Bank Consortium concept
CGC is leading expert on Green Bank model, working for a decade to drive clean energy investment

- CGC, a non-profit, partners with governments, NGOs and market actors to create Green Banks that increase volume of clean energy investment
- CGC delivers on-the-ground technical expertise to design, launch and operate GBs
- Helped design & create 6 GBs, which have catalyzed over $2 billion in clean energy investment
- CEO Reed Hundt, former chairman of U.S. FCC
- Supported by major global foundations
CGC team includes deep experience with Green Banks, finance, consulting, developers, and government

- 9 member team includes experience at:

[Logos of various organizations]
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• CGC’s mission and team

• The American Green Bank Consortium
American Green Bank Consortium allows Green Banks to tap shared resources, capital, and realize scale efficiencies

- Initiate value-creating partnerships between Green Banks and the Consortium
- Represent Green Banks in public fora
- Offer intra-organizational learning opportunities
- Realize bulk purchasing power on operational expenses and other purchases
- Create template documents for members’ use
- Allow for facilitated mentorship opportunities
Consortium will have three types of participants, with Members and Supporters contributing annual dues.

<table>
<thead>
<tr>
<th>Description</th>
<th>Members</th>
<th>Supporters</th>
<th>Champions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Banks of all kinds, and other entities that share a similar mission and way of operating for public benefit.</td>
<td>For profit, non-profit, and other organizations that can provide value to Members of the Consortium but are not Green Banks.</td>
<td>Validators of the Green Bank model. These are public officials and private citizens that are leaders of the Green Bank movement.</td>
<td></td>
</tr>
</tbody>
</table>

| Example | Connecticut Green Bank, Michigan Saves, Nevada Clean Energy Fund, NY Green Bank etc. | SolarCity, Hannon Armstrong, Ernst + Young, Salesforce, Town Creek Foundation, Bank of America, etc. | CT Governor Dannel Malloy, Senator Chris Van Hollen, NV Governor Brian Sandoval, NY Governor Andrew Cuomo, etc. |

Want to build expansive, inclusive community of practitioners, supporters, investors, and service providers to deliver value to members and build robust Green Bank field.
Consortium designed to deliver value to Members, with goal of increasing collective investment

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
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<tbody>
<tr>
<td>Collaboration</td>
<td>The Consortium will create structured opportunities for members to be present with each other both physically and virtually.</td>
</tr>
<tr>
<td>Guidance</td>
<td>A peer to peer mentoring network will allow Members to receive guidance and support from Members across the AGBC that might have experience with particular challenge facing them.</td>
</tr>
<tr>
<td>Agency</td>
<td>The Consortium will facilitate revenue generating programmatic opportunities for Members of the AGBC. The Consortium will serve as an agent of Member organizations that have products or services that they wish to market to other Members, Supporters, or other organizations.</td>
</tr>
<tr>
<td>Influence</td>
<td>The Consortium will provide opportunities to present the policy and funding needs of Members to government representatives on all levels.</td>
</tr>
<tr>
<td>Savings</td>
<td>The Consortium will deliver quantifiable dollar amounts that can be derived from a service provided by the Consortium.</td>
</tr>
<tr>
<td>Services</td>
<td>The Consortium will allow Members to benefit from the breadth of professional services and expertise available through the Coalition for Green Capital and its partner organizations.</td>
</tr>
<tr>
<td>Access to Capital</td>
<td>The Consortium will provide opportunities for Members to receive access to funding streams they might not otherwise be able to take advantage of.</td>
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</table>
The American Green Bank Consortium will give voice to and add value for Green Banks across the U.S.

Starting Point 2019

The USGB and the newly formed local Green Banks are the Consortium’s founding Members

CGC runs the Consortium and delivers programs for participants

Stage 2 2019 - 2021

Other existing Green Banks and Green Bank-like facilities join the Consortium, either as Members or Affiliates, fostering greater collaboration between Green Banks

Stage 3: 2022 Onwards

The Consortium now grows continuously, as more Green banks are created and Supporters and Champions also join
Questions?