Better Buildings®
U.S. DEPARTMENT OF ENERGY

The Future of Green Banks

May 16, 2017
Better Buildings Summit

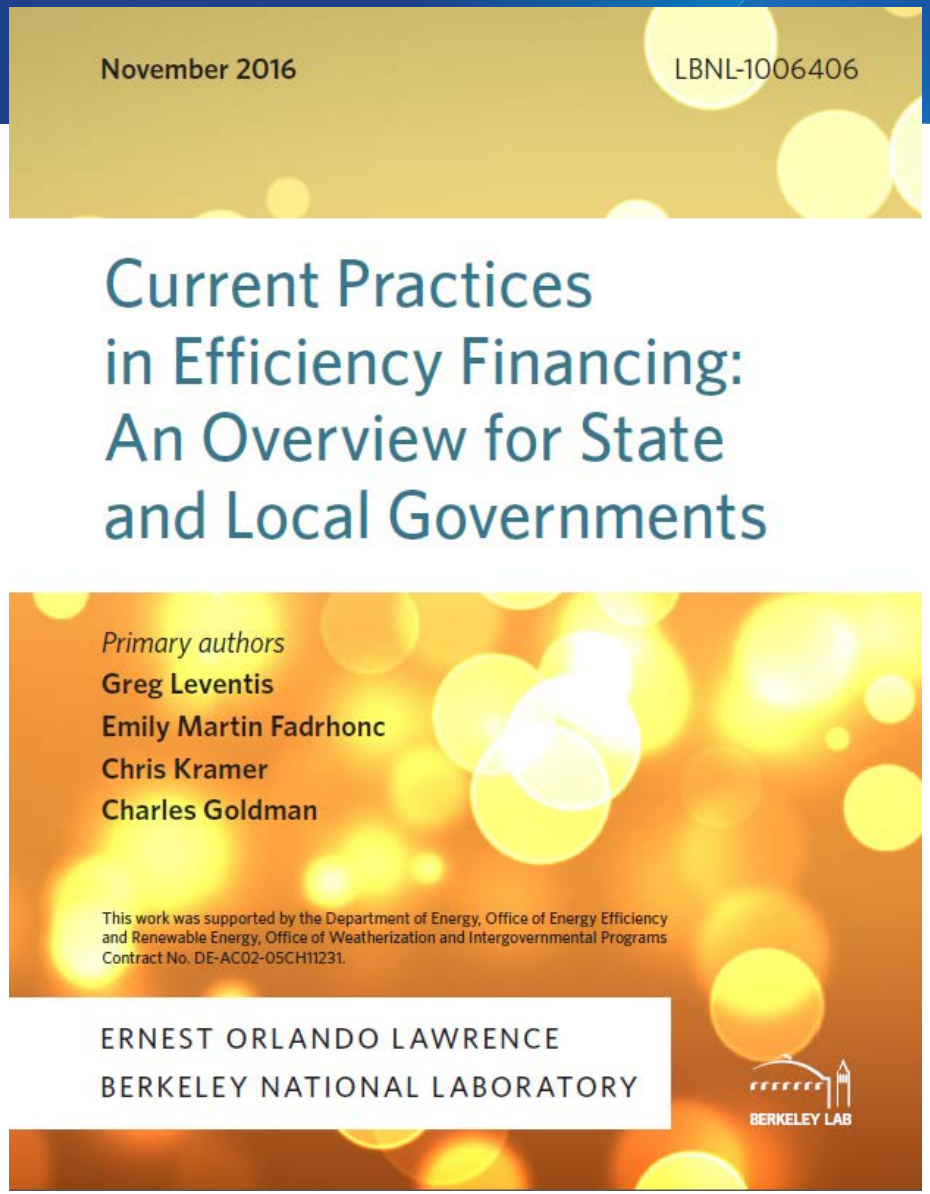
U.S. DEPARTMENT OF ENERGY

Speakers and Moderator

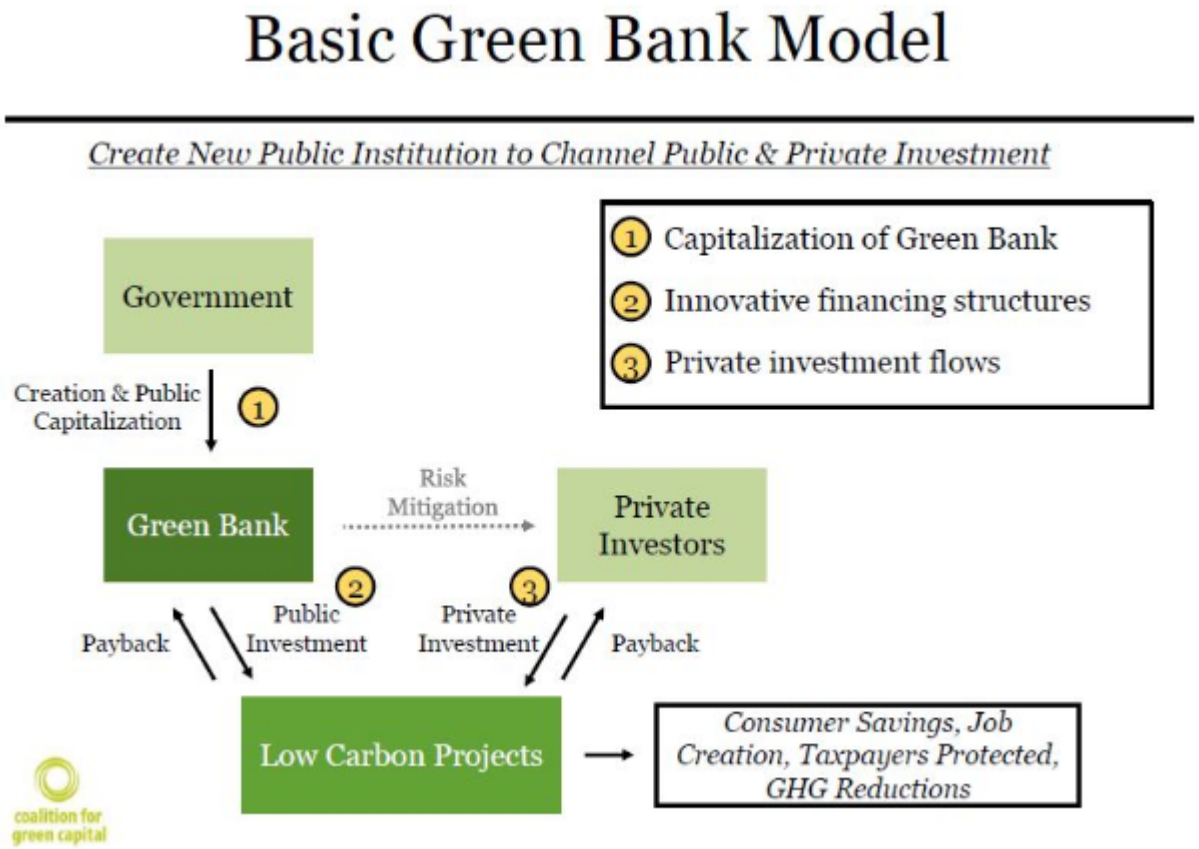
- Speakers
  - Jeff Schub, Coalition for Green Capital
  - Bonnie Norman, Montgomery County Green Bank
- Moderator
  - Sean Williamson, U.S. Department of Energy

Resources

State and Local Solution Center



Green Banks: An Overview



Credit: Coalition for Green Capital

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Green Banks in 2017: The State of Play

Coalition for Green Capital
Jeffrey Schub, Executive Director, CGC
Better Buildings Summit, DC

May 16, 2017

Green Banks use public dollars to drive more private clean energy investment, deploy affordable clean energy

- Are focused institutions, created to maximize clean energy adoption
- Use public-purpose money to de-risk & leverage private capital
- Provide financing in many forms to underserved market sectors
- Are market-oriented and flexible, and aim to increase consumer protection, information transparency, and ease of adoption
- Seek to be self-sustaining, and produce dividends for taxpayers
- Complement existing actors and programs, bridging gaps in capital supply chain
- Optimize clean energy solution, combining efficiency and renewable financing

Green Bank is a flexible model that can be implemented under various institutional forms, and can be capitalized using a range of capital sources. But the principles remain consistent.

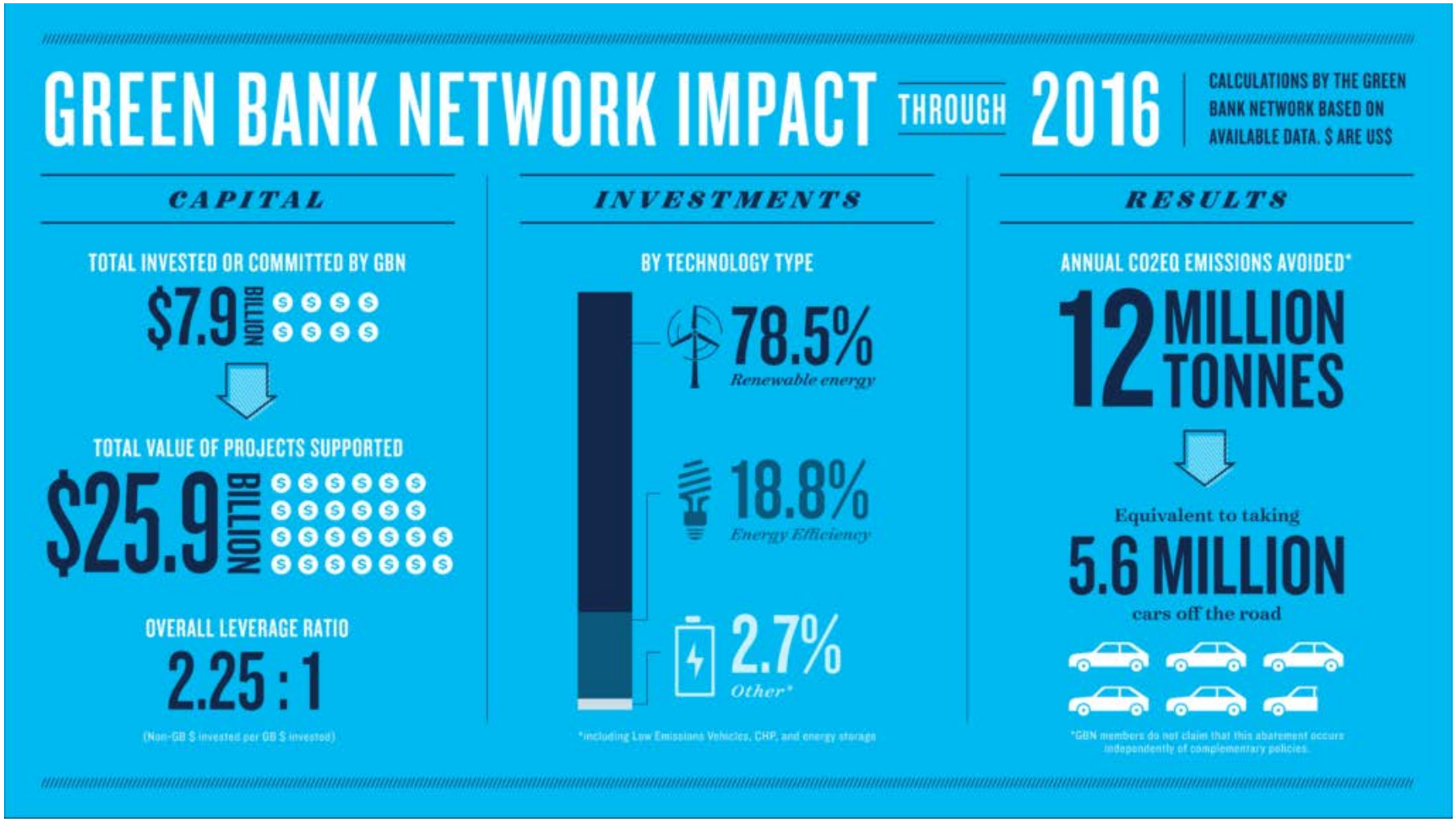
Observations & trends in Green Banks all point toward growth, less government dependence, new capital sources

Green Banks are working!

Green Bank interest continues to grow, with new "government adjacent" solutions

Variety of models & approaches highlight the choices, role and trade offs of Green Banks

Green Banks are working!



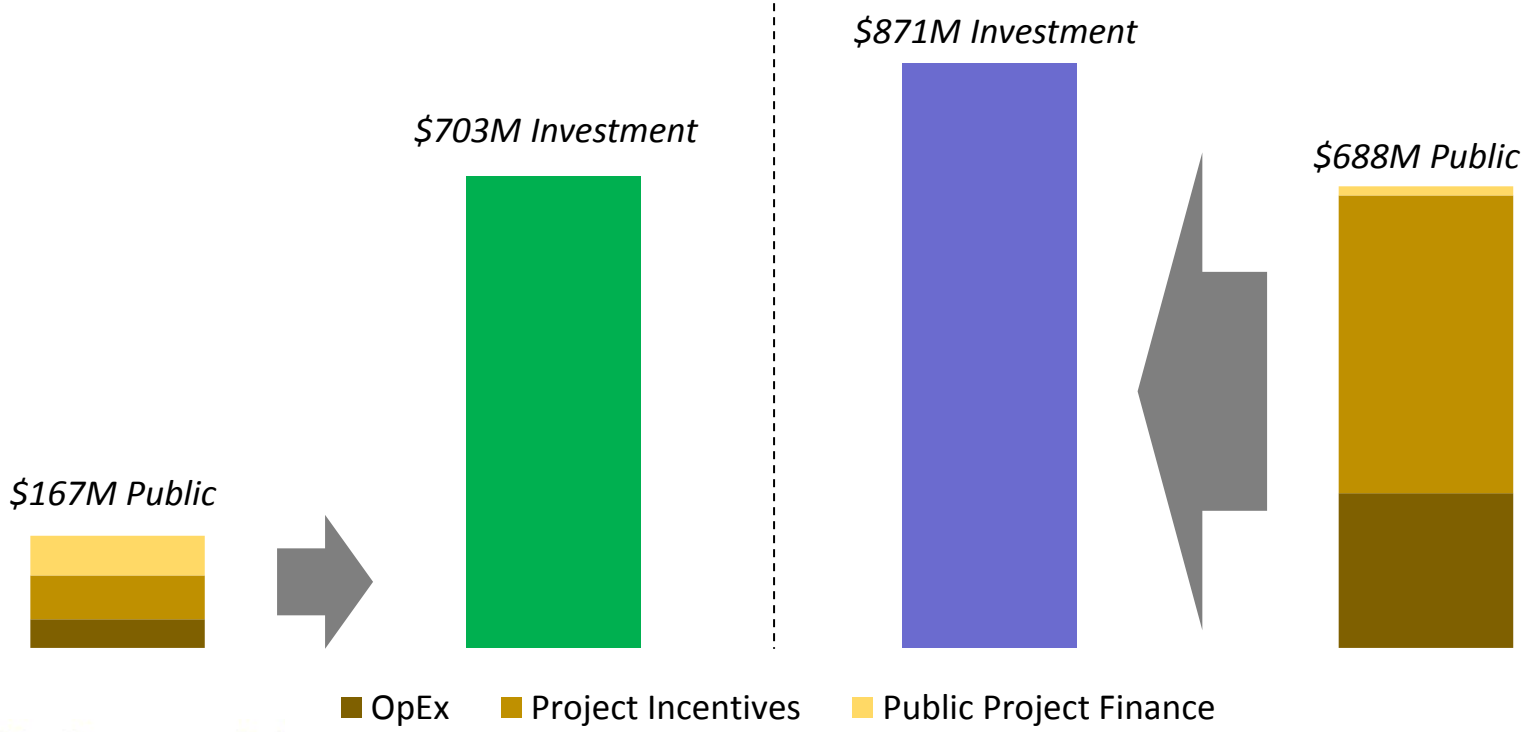
CT Green Bank uses far less public money than the Utility Incentive programs, but drives similar level of investment

Green Bank

From 2014-2016, the CGB used $167 million in public funds to spark $703 million in clean energy project investment.

Utility Incentive Programs

From 2014-2016, the utility incentive programs used $688 million in public funds to spark $$871 million in clean energy project investment.



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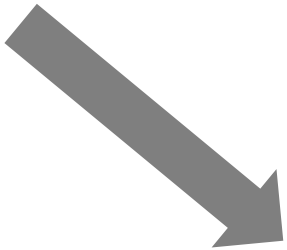
Notes: Only Closed & Completed transactions included.

This is because the Green Bank is designed to leverage many private dollars per public dollar invested

$4.65x

From 2014-2016 the Green Bank leveraged $4.65 of private investment per dollar of public investment…

The Green Bank's products are designed to "crowd-in" capital and get more bang for the buck.



$0.90x

…while the Incentive Programs leverage $0.90 of private investment per dollar of public investment.

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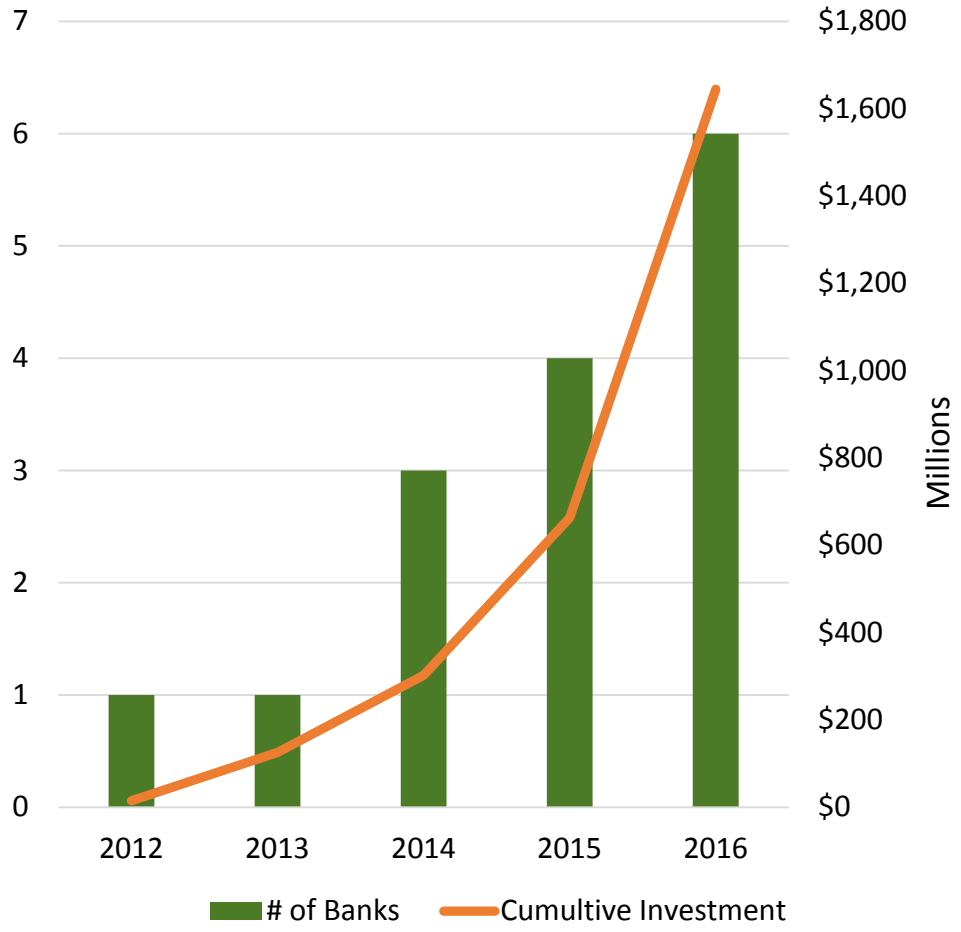
Notes: Leverage is measured by as private investment in projects divided by public investment in projects, no matter the form of investment (incentives or finance). For Utility Programs, private investment is equal to the "Customer Cost," the portion of a project cost not paid for by incentives.

Green Bank trends in the U.S. are all up



- Since 2011, six state and local Green Banks have been established in the US
- As of mid FY17, US Green Banks have sparked > $2 billion in energy investment, with majority of dollars coming from private sector

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Notes & Sources: CGC analysis; Green Bank numbers for *fiscal* year

More Green Banks are being developed to be "government adjacent"; private but still connected to government

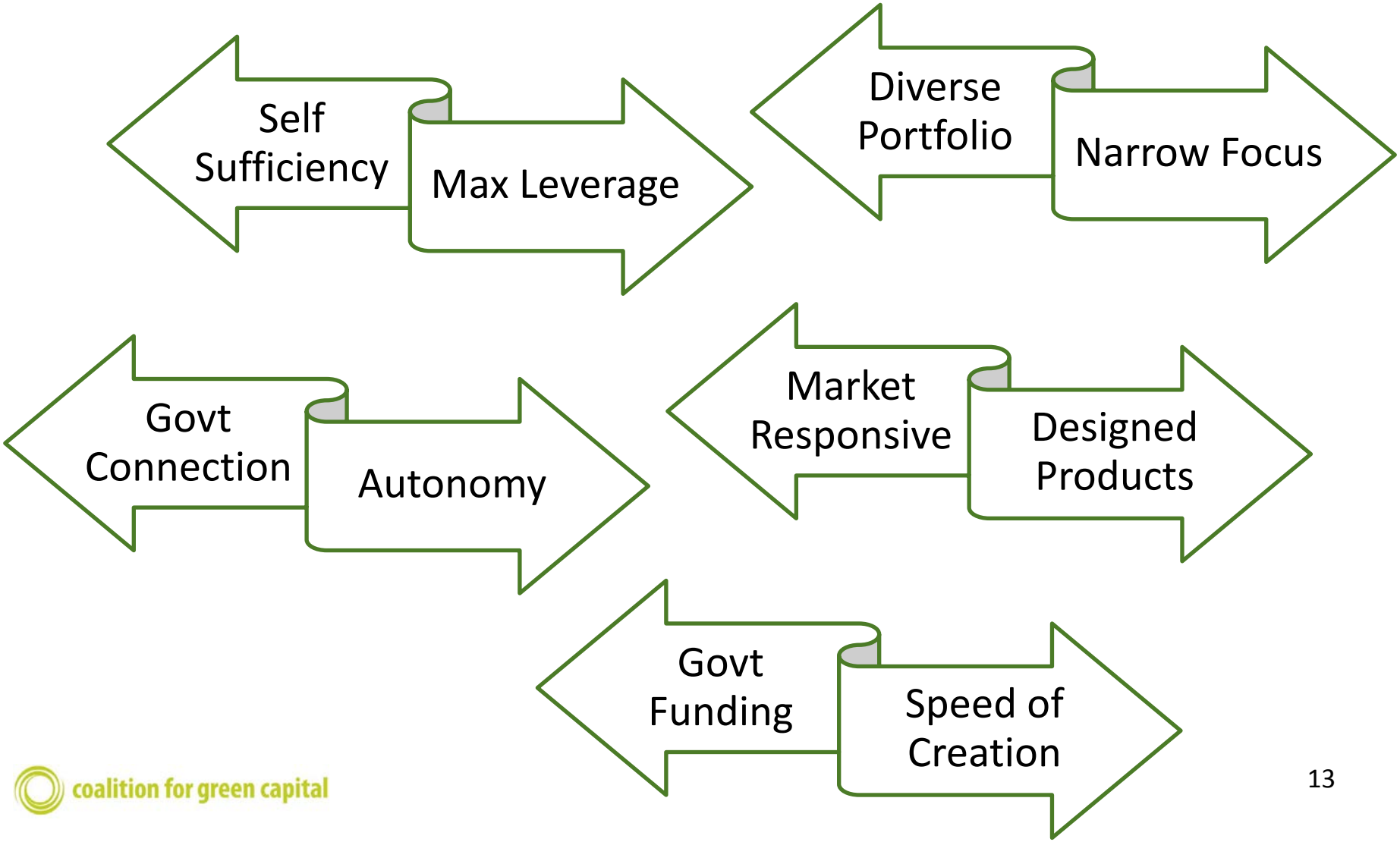
DC
- Legislation to create quasi-public with board
- Capitalized with public funds

Mont Co
- Legislation to create a non-profit with mixed public/private board
- Capitalized with Public Funds, but will also raise private funds

NV
- Legislation to create non-profit with mixed public/private board
- Will be capitalized primarily with private funds

PA
- No legislation – will be created as non-profit, but work with govt
- Will seek to raise public and private funds

What are the operational choices



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Thank You

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Montgomery County Green Bank

The Nation's First Local Green Bank

May 16, 2017

U.S. DOE Better Buildings Summit

The Future of Green Banks—A Case Study

About Us: Statement of Purpose

The Montgomery County Green Bank is a publicly-chartered nonprofit dedicated to accelerating affordable clean energy and energy efficiency investment in Montgomery County, Maryland.

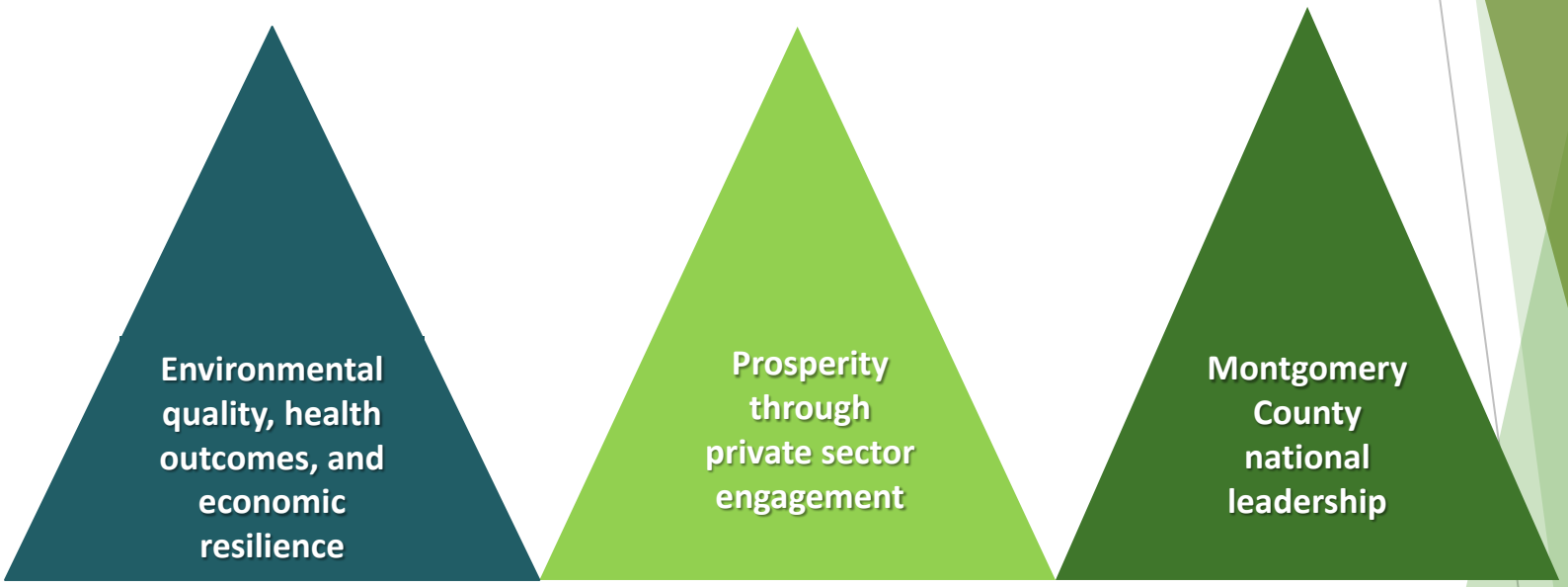
It partners with the private sector to inclusively build a more prosperous, resilient, sustainable, and healthy community.

- Improves environmental quality, health outcomes, and economic resiliency
- Grows prosperity by engaging the power of the private sector
- Demonstrates national leadership for Montgomery County

About Us

- Publicly-chartered by Montgomery County, MD in June 2015
- Designated as the County's Green Bank in July 2016
- An incorporated non-profit (pursuing 501c3 status)
- 11 members on the Board of Directors
- Set to receive ~$14m in funding over the next several years from the County as negotiated in the Pepco-Exelon merger settlement agreement (Customer Investment Fund)

What are our Green Bank Goals?



Jobs ⬆ CO_2 ⬇

Our Opportunities and Challenges

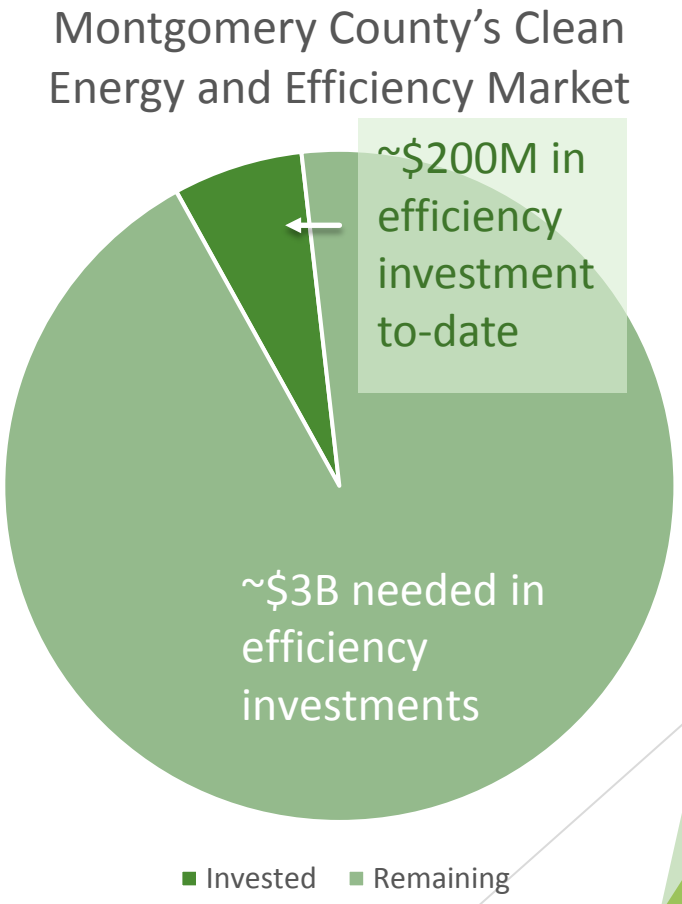
Montgomery County Clean Energy Potential

Selected Technologies		Total Current Installed Capacity	Total Potential Market	Total Unfilled Potential Cost
Wind		0 MW	N/A	$0
Solar PV	Residential	14.3 MW	182 MW	$549 M
	C&I	13.7 MW	175 MW	$308 M
Energy Efficiency	Electric	896 GWh	3,842 GWh	$879 M
	Thermal	N/A	9,032 BBtu	$701 M
Bioenergy Electric Generation[1]		54 MW	31 MW	$122 M
Combined Heat & Power		67 MW	75 MW	$90 M
TOTAL		N/A	N/A	$2,652 M

Notes & Sources: (1) Chart above reflects estimated technical potential for renewable and alternative energy sources and energy efficiency. (2) Only includes power generation. Does not include bioenergy used for end-use efficiency. Sources: SEIA, EIA, NREL, GTM, EmPOWER, ACEEE, DOE, GDS, EEFA, CHP Market Analysis

Montgomery County's Clean Energy Goals

County's Climate Protection Plan calls for reduction of GHG emissions to **80% of 2005 levels by 2050**



Confirmed Market Barriers to Clean Energy

Project Barriers

- High upfront costs, long payback periods for deep retrofits
- Projects too small to attract cheap capital from large investors
- Competing uses for scarce capital – business equipment investments, residential home improvements, etc.

Financing Barriers

- Few clean energy specific financing products available, especially for residential
- Debt is often not available for terms that match payback
- Consumers cannot or are hesitant to take on more debt

Lending Barriers

- Financial institutions are unfamiliar with clean energy projects
- Energy savings not valued/understood in lending or appraisal markets
- Collateral requirements by lenders for homeowners or businesses

*"**Financing is our biggest barrier**—it's out of reach for many in the space. Commercial clean technology is still unattainable for many."*

*"There is a big knowledge gap—no one knows what is available, or how things work—and there is a big learning curve—**things are complicated, don't seem worth the time**."*

Montgomery County Green Bank's Response

- Efficiently utilizes public-purpose dollars to leverage private capital—creating jobs and economic growth
- Inclusively provides low cost financing—including to underserved market sectors and communities
- Responsibly increases consumer protection, information transparency, and ease of adoption
- Proactively improves local community environmental quality, health outcomes, economic and climate resilience

Where we are today

So far, we've achieved the following:

- ✓ Legislative push creating Montgomery County Green Bank
- ✓ Conducted 9-month stakeholder working group process
- ✓ Incorporated as a non-profit within the State of Maryland
- ✓ Established Board of Directors
- ✓ Completed Governance and Operating Documents
- ✓ Received designation from County Council as Montgomery County's Green Bank
- ✓ Initial philanthropic support secured: Communications and Replicability
- ✓ Initial Program Development and Partnerships Securing first tranche of funding (anticipated May 2017—County Appropriation from Pepco-Exelon merger $)
- ✓ Product development in progress—Commercial, Single Family, Multi-Family
- ✓ Branding and website development underway

Green Bank Aligns with Other County Programs

- New residential program educates homeowners & renters on available incentives
- Benchmarking of buildings to understand energy use and identify opportunities
- C-PACE and Green Bank to provide innovative financial tools
- Partnering with commercial buildings owners & managers, contractors, lenders, utilities, trade associations, non-profits and others
  - Raise awareness of energy efficiency and renewable energy opportunities
  - Develop County programs that respond to these stakeholders' needs

Green Bank Complements Utility Efforts

- Coordination with utilities to promote energy efficiency incentives and low-interest loans to help reduce project costs
- Local utilities offer residential and commercial customer incentives for energy-saving projects through EmPOWER Maryland
  - Covers: “light” energy audits, LED lighting, HVAC, energy-efficient appliances, O&M training, commissioning, etc.
- Utilities are starting to offer on-bill financing to small biz customers
  - For example: Pepco’s Small Business Energy Advance offers 0% interest financing for up to 24 months for customers that have a monthly max demand of 60 kW

What we will do

- “One-stop-shop” information hub
- Market & deploy financial products with capital providers
- Partner with lenders and contractors
- Initiate market development/technical assistance activities
- Manage portfolio of investments
  - Technical assistance
  - Credit enhancements
  - Co-investment with independent capital providers

Thank you

Comments and Questions:

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Questions?

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Thank You

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