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## Engaging Private Capital to Drive Clean Energy Finance

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Hello! Welcome to the webcast.



## Katie Kramer

Vice President  
Council of Development Finance Agencies  
Columbus, OH

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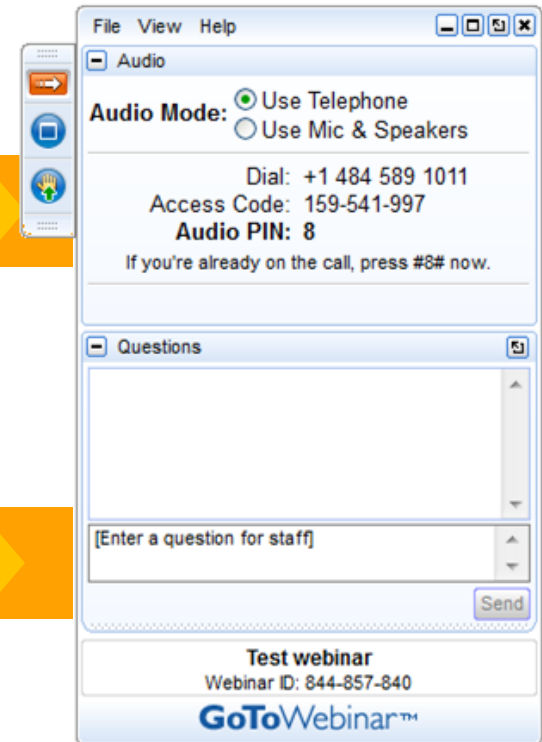
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# Engaging Private Capital to Drive Clean Energy Finance

## Panelists

### **Rena Nakashima, Moderator**

Senior Project Manager  
BNY Mellon

### **Karen Wayland**

Deputy Director for State and Local Cooperation  
U.S. Department of Energy

### **Doug Sims**

Director of Strategy and Finance  
Natural Resources Defense Council's Center for Market Innovation

### **Andrew McAllister**

Commissioner  
California Energy Commission

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## Rena Nakashima

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# Engaging Private Capital to Drive Clean Energy Finance



## Karen Wayland

Deputy Director for State and Local Cooperation  
U.S. Department of Energy

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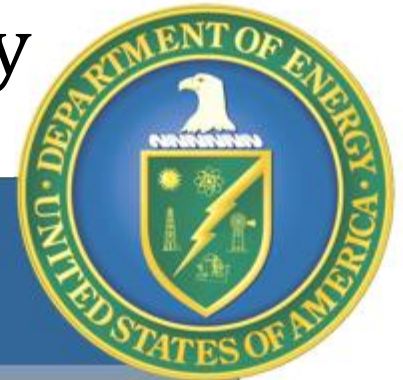


# Energy Investment Partnerships

Dr. Karen Wayland

Energy Policy and Systems Analysis

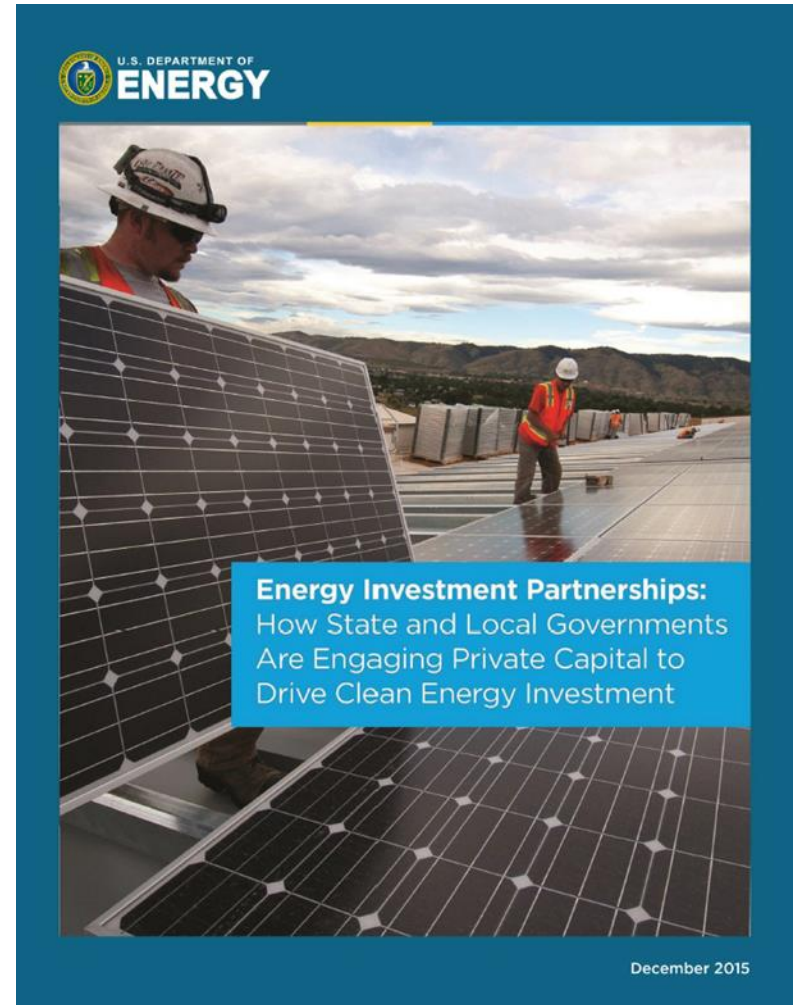
U.S. Department of Energy





# Energy Investment Partnerships Guide

- A technical document co-authored by CDFA under the supervision of the DOE.
- Details unique case studies across the United States where EIPs are most successfully utilized.
- State profiles include CA, CT, FL, HI, NJ, NY, OH, OR





State	Entity	Programs (in report)	Legal Structure	Capitalization	Market Sectors
CA	CA Alternative Energy & Advanced Transportation Financing Authority	PACE Loss Reserve; CA Hub for Energy Efficiency Financing	State agency	State allocation + CA Public Utility Commission allocation	Residential & commercial; efficiency & renewables
CA	CA Infrastructure and Economic Development Bank	CA Lending for Energy and Environmental Needs Center	State agency	Self-capitalized	State and local govt.; efficiency, renewable, water conservation, & distribution
CT	CT Green Bank	CT Solar Lease; Energize CT Smart E-Loan; Commercial PACE; CT Solar Loan	State agency	Systems Benefits Charge + RGGI funds + U.S. Dept. of Energy grant + private investments + fees	Residential & commercial; efficiency & renewables
FL	Solar & Energy Loan Fund	Clean Energy Loan Fund	Nonprofit, CDFI	U.S. Dept. of Energy grant + private investments	Residential & commercial; efficiency & renewables
HI	Hawaii Green Infrastructure Authority	Green Energy Market Securitization	State agency	Bonds + utility fees	Resident & commercial; efficiency & renewables
NJ	NJ Board of Public Utilities	NJ Clean Energy	State agency	Self-capitalized	Residential & commercial; efficiency & renewables
	NJ Energy Resilience Bank	Wastewater and Water Treatment Plant Funding	State agency	U.S. Dept. of Housing & Urban Development grant	Utilities; renewables
NY	NY State Energy Research & Development Authority	Green Jobs – Green NY	State agency	Systems Benefits Charge +RGGI funds + U.S. DOE grant + Qualified Energy Conservation Bonds	Residential & commercial; efficiency
	NY Green Bank	Clean energy financial products and advisory services	Division of a state agency, NYSERDA	Allocation of uncommitted Efficiency & Renewable Portfolio Standard & System Benefits Charge funds	Residential & commercial; efficiency & renewables
OH	Toledo-Lucas County Port Authority	BetterBuildings Northwest OH	Local agency	Fees + U.S. Dept. of Energy grant + tax levy	Residential & commercial; efficiency & renewables
	Greater Cincinnati Energy Alliance	Greater Cincinnati Home Energy Loan; Building Communities Loan	Nonprofit	U.S. Dept. of Energy grant + private impact investment + fees	Residential & nonprofit; efficiency & renewables
	Port of Greater Cincinnati Development Authority	Greater Cincinnati PACE	Local agency	Fees + county & city allocation	Commercial; efficiency & renewables
OR	Energy Trust of OR	General efficiency incentives	Nonprofit	System Benefits Charge	Residential & commercial; efficiency
	Enhabit	General efficiency incentives	Nonprofit	Fees + U.S. Dept. of Energy grant	Residential; renewables
	Craft3	Home Energy Efficiency Loan	Nonprofit, CDFI	Private investments + private contributions + grants	Residential; efficiency



## **EIP: What Is It & How to Get Started**

**February 23, 2016 | 1:00PM – 5:00PM (EST)**

*Surveying existing energy investment partnerships with a discussion about best practices and methodology for implementation.*

## **EIP: Market Assessment & Product Offerings**

**March 22, 2016 | 1:00PM – 5:00PM (EDT)**

*Determining a region's renewable energy needs and identifying the unique financing programs and gaps an EIP could fill.*

## **Access to Capital & Leveraging Existing Financing Tools**

**April 26, 2016 | 1:00PM – 5:00PM (EDT)**

*Understanding how to assemble an EIP and utilizing existing financing tools and programs.*

## **Measuring Impact & Data Collection**

**May 19, 2016 | 1:00PM – 5:00PM (EDT)**

*Evaluating successful EIPs and understanding the necessary data to collect to demonstrate impact.*

# Engaging Private Capital to Drive Clean Energy Finance



## Doug Sims

Director of Strategy and Finance  
Natural Resources Defense Council's  
Center for Market Innovation

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# ENGAGING PRIVATE CAPITAL TO DRIVE CLEAN ENERGY FINANCE

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*Introducing the Global Green Bank Network*

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*CDFA/ DOE WEBINAR JANUARY 19, 2016*

Doug Sims, Director of Strategy and Finance

Natural Resources Defense Council's Center for Market Innovation



# What investment shifts are needed for a clean energy future?\*

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Total energy supply investment stays at \$40T to 2035 but dollars shift from fossil fuels to clean electricity and energy efficiency

Upfront capital costs are higher

More investment is required in emerging markets (e.g., India, China, Brazil) where markets are less mature

Energy resources are increasingly “distributed” at homes and businesses, where access to reasonably priced capital can be limited

Innovative large scale technologies must be deployed quickly and at low cost (e.g., offshore wind) but a limited # of firms and lenders have capital and experience

\*IEA, 2014, World Energy Investment Outlook

# What are Green Banks?

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*Green banks are publicly capitalized financial intermediaries created to partner with the private sector to increase investment in clean energy and bring clean energy financing into the mainstream.*

*Through targeted, innovative strategies, Green Banks “crowd-in” the private investment needed to meet the sizable capital demands required to build a global clean energy platform.*

# What role do Green Banks play?

---

- The clean energy transition depends on innovative technologies and infrastructure, redesigned markets and corrected incentives.
- These changes in the status quo disrupt business-as-usual finance and investment, and lenders and investors may be slow to gain confidence.
- Green Banks *accelerate the transition to a new BAU* by reducing real and perceived risk, increasing liquidity and driving the development of underwriting criteria, performance standards, financial products, standard contracts and aggregation vehicles.
- Green Banks fulfill this “market transformative” role because neither traditional government programs, with their limited engagement with markets, nor the private sector, with its competitive pressures and fiduciary constraints, can reliably achieve this outcome.
- Green Banks create value for (ratepayer and taxpayer) money.

# What are the early indicators of Green Bank success?

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*CGB has increased clean energy investment nearly 4x in 3 years. Based on Connecticut's market size, growth rate, and public-private leverage ratio, a Green Bank in every state in America would yield **\$200 billion annually within 5 years, with 90% of the funds coming from private sources and all taxpayer contributions returned over 10 to 20 years.***

*The UK Green Investment Bank is now the most active investor in the UK's renewable energy and energy efficiency sectors and is leveraging private investment at a 3 to 1 ratio.*



# Connecticut Green Bank results

	FY 2000- FY 2011 (CCEF)	FY 2012- FY 2015 (CGB) <sup>1</sup>	FY 2016 Targets (CGB) <sup>2</sup>
<b>Model</b>	Subsidy	Financing	Financing
<b>Years</b>	11	4	1
<b>Energy (MW)</b>	43.1	123.1	110
<b>Investment (\$MM)</b>	349.2	608.3	670
<b>Leverage Ratio</b>	1:1	5:1	10:1
<b>% as Loans</b>	10	50	80

Deploying more clean energy at a faster pace while using ratepayer-taxpayer resources efficiently

## REFERENCES

1. Closed and completed transaction, Comprehensive Annual Financial Report (2014) + approved, closed, and completed transactions for FY 2015
2. Board approved targets for FY 2016

# Why is the Green Bank Network needed?

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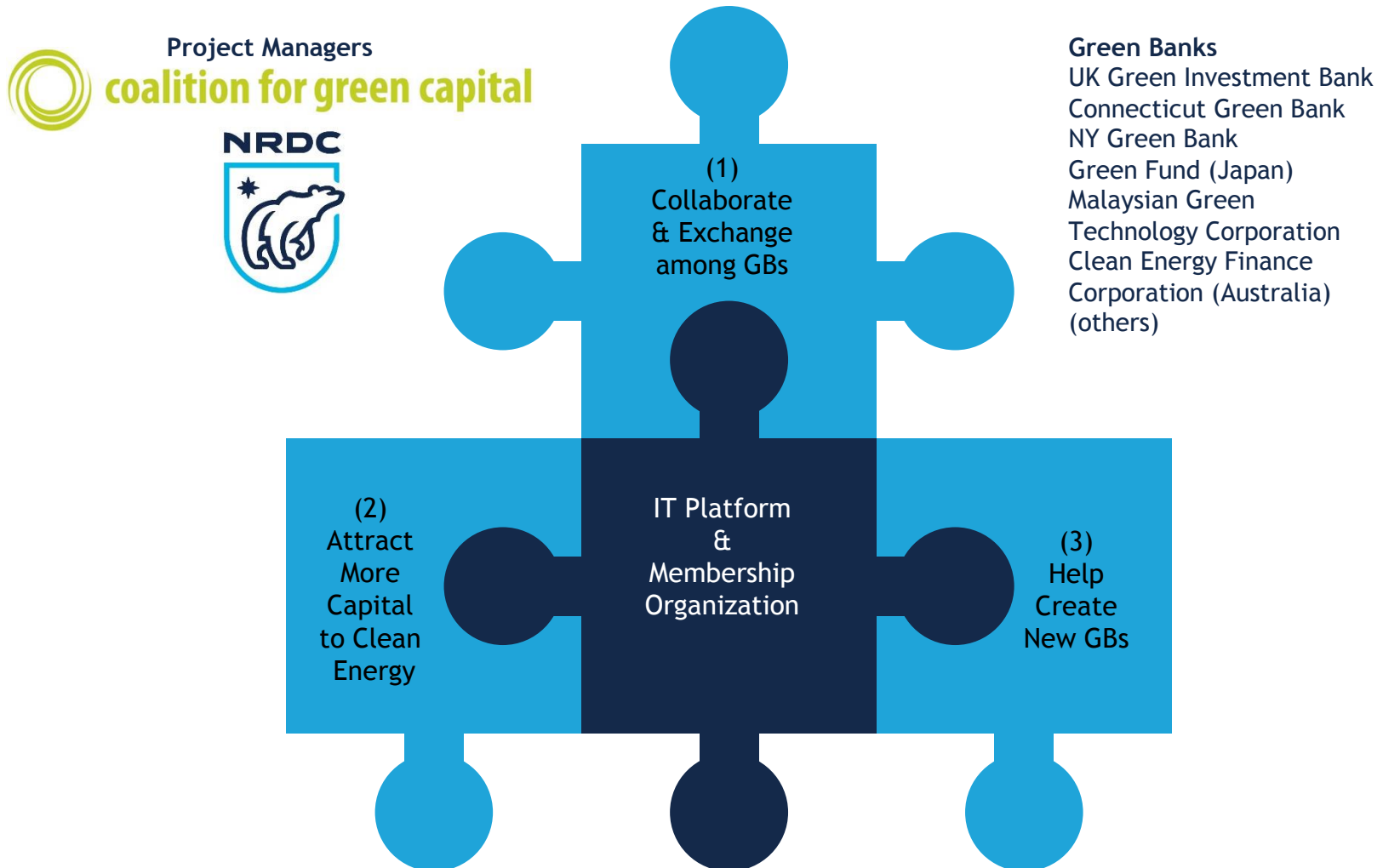
- Green banks aim to accelerate scale up of clean energy markets by cutting down on the time it takes for best practices to proliferate in the market.
- They seek to work on an “open source banking” basis --
  - Information on investments is developed and shared with deal participants, among green banks and with the market generally
  - Standardization of contracts and structures reduces risk and facilitates aggregation and new market entrants
- But Green Banks need to collaborate more quickly and systematically to get rapid, system-wide results.
- Investing in a joint collaborative platform focuses attention and efforts, leverages existing investments and drives down costs.
- The Green Bank Network will create a platform for Green Banks.

# What is the Green Bank Network?

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- Now in its design phase, the Green Bank Network was announced in Paris at the OECD COP21 event to much enthusiasm and received positive press coverage.
- Six participating Green Banks - UK Green Investment Bank, Connecticut Green Bank, NY Green Bank, Green Fund (Japan), Malaysian Green Technology Corporation and Clean Energy Finance Corporation (Australia) - are working with the Coalition for Green Capital (“CGC”) and NRDC to design, staff and build the Network, with funding from ClimateWorks.
- Over the coming year, the Project Team will create the Network as a stand-alone, member-driven organization with ongoing funding and activities.
- Public updates will periodically be given in 2016, with full launch anticipated for late 2016 or early 2017.

# What are the Network's goals and structure?\*



\*As of January 2016.

# Goal 1: Collaborate and exchange information

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The Network will collect and organize information that its Members deem relevant, such as:

- Financing strategies, tactics and deal structures
- Underwriting methods, metrics, M&V techniques, standards, etc.
- Case studies and qualitative information on deals (e.g., “lessons learned”)
- Aggregated cross-bank data
- Marketing and demand creation approaches
- Transaction documentation

## Goal 2: Attract more capital to clean energy investment

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GBN will work with its key outreach targets (commercial lenders, Development Finance Institutions (DFIs) and institutional investors) to:

- Capture, incorporate and share target know-how on clean energy financing in developed and emerging markets
- Identify markets, structures, policies and processes that will increase flow of investment and the deployment of clean energy

## Goal 3: Help create new Green Banks

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With an increasing number of Green Banks in operation, best practices are emerging in Green Bank creation. The Network will:

- Engage with policymakers and key stakeholders in target nations/regions to support Green Bank creation process
- Adapt and identify key steps necessary to systematically support new GB formation
- Provide technical assistance together with local partners
- Channel support from Network members to new Green Banks
- Connect new Green Banks to capital providers
- Invite new Green Banks to join the Green Bank Network

How can you track the Network's development?

---

Webinar series launches in February



Web landing page planned for 2Q 2016



Thank You

For more information contact:  
Doug Sims ([dsims@nrdc.org](mailto:dsims@nrdc.org))  
Jeff Schub ([jeff@coalitionforgreencapital.com](mailto:jeff@coalitionforgreencapital.com))

# Engaging Private Capital to Drive Clean Energy Finance



## Andrew McAllister

Commissioner  
California Energy Commission

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# Engaging Private Capital to Drive Clean Energy Finance

Commissioner Andrew McAllister  
California Energy Commission

January 19, 2016



# EE Finance in California- Overview



California Infrastructure and  
Economic Development Bank



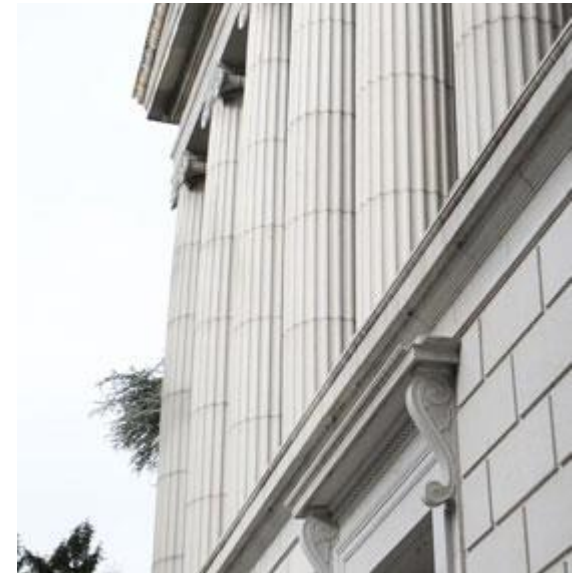
CALIFORNIA ALTERNATIVE ENERGY AND ADVANCED TRANSPORTATION FINANCING AUTHORITY



# California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)

The Office of the State Treasurer established CAEATFA to provide more affordable financing and to leverage private capital, both of which fall within the Treasury's core functions.

CAEATFA has administered several clean energy-related programs, including Qualified Energy Conservation and Clean Renewable Energy Bonds; advanced transportation, and advanced manufacturing projects; and a loan loss reserve (LLR) program for residential energy efficiency retrofits.



# CAEATFA in Collaboration with Partners

CAEATFA, housed in the State Treasurer's Office, works with a variety of partners to support clean energy investments, including:

- local governments,
- public and investor-owned utilities (IOUs),
- the **California Public Utilities Commission (CPUC)** and **California Energy Commission**,
- private sector clean energy developers,
- commercial lenders,
- private financial institutions, and
- state bond-financing agencies.



# CAEATFA



**Property Assessed Clean Energy (PACE) Loss Reserve Program-** Finances renewable energy and energy efficiency projects. Focused on supporting the challenges faced by residential PACE programs.

**California Hub for Energy Efficiency Financing (CHEEF)-** Finances a diversity of credit enhancements, including on-bill repayment (OBR) and loss reserves (for IOU territory). Focused on residential and nonresidential energy efficiency projects.



# CHEEF Residential

CHEEF Programs, administered by CAEATFA, directs 3 Residential pilot programs, with an emphasis low & moderate income (LMI) households.

## Residential Pilots

1. Residential Energy Efficiency Assistance Program
2. Energy Financing Line Item Charge
3. Master-Metered MF Financing Program with OBR





# CHEEF Nonresidential

CHEEF's nonresidential pilots will assess OBR's value to private lenders. Two of the nonresidential programs target small businesses, while the third is available to businesses of all sizes.



## Nonresidential Pilots

1. OBR for Small Business with Credit Enhancement
2. Small Business Sector Lease Providers: Sub-Pilot with Credit Enhancement
3. Nonresidential OBR without Credit Enhancement



# California Infrastructure and Economic Development Bank (IBank)

IBank's mission is to finance public infrastructure and private economic development that promote economic growth, protect and sustain the environment, support clean energy and efficiency, revitalize communities, and enhance the quality of life for the citizens of California.

IBank has exercised its broad statutory authority to approve:

(1) direct financings to state and local governmental entities and public-benefit, tax-exempt, nonprofit entities for infrastructure projects; (2) conduit bond financings for manufacturing businesses, nonprofit entities, and public entities; and (3) other financing transactions important to the state of California.



# IBank - CLEEN

## California Lending for Energy and Environmental Needs (CLEEN) Center

Financing for various state agencies and local governments, for projects that reduce carbon/pollution.

CLEEN enables the protection of the environment and helps the state achieve its GHG reduction goals.

Eligible CLEEN Center applicants include local and state government departments, agencies, commissions, cities, counties, nonprofit corporations; as well as schools and hospitals.

CLEEN Center funding is available in amounts ranging from **\$500,000 to \$30 million.**



# IBank - SWEEP

**Statewide Energy Efficiency Program (SWEEP)** operates within the CLEEN Center.

- For municipal, university, school, and hospital borrowers
- Targets comprehensive clean energy improvements to new and existing facilities.

Examples include, City of Huntington Beach- Street light Acquisition and Light Emitting Diode (LED) Retrofit Project.

- Nearly \$7.7 mil direct financing
- Retrofit w/new LED consumes 50% less energy
- Saves the City money, creates jobs and supports small businesses



# California Energy Commission PACE programs

The Energy Commission funded PACE programs during the ARRA period, which are now under the Local Government Commission (LGC):

- The City and County of San Francisco
- The City of Los Angeles



**Local Government Commission**  
*Leaders for Livable Communities*



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*How State and Local Governments Are Engaging Private Capital to Drive Clean Energy Investment*

February 23, March 22, April 26, May 19 | 1:00-5:00pm Eastern

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January 20, 2016  
2-3:30pm (CST)

**Fundamentals of Economic Development Finance WebCourse**  
January 27-28, 2016  
Daily: 12-5pm (EST)

**Intro Bond Finance WebCourse**  
February 24-25, 2016  
Daily: 12-5pm (EST)

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