



# The Climate Change Silver Bullet?

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## Cities Take Action

**July 2007:** 600 U.S. Mayors signed **The U.S. Conference of Mayors' Climate Protection Agreement**, pledging to reduce carbon dioxide emissions by 7 % below 1990 levels by 2012.

**By January 2010,** 1016 cities had signed on

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**Reducing energy demand in existing buildings is the key to meeting GHG reduction targets.**



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## Barriers to energy efficient and renewable energy investments

- Upfront costs
- Transaction costs
- Concern about length of house ownership
- Uncertainty about energy savings
- Split incentives
- Length of paybacks
- Lack of information

Sources:

U.S. Department of Energy

“Enabling Investments in Energy Efficiency” By Merrian Fuller, Energy & Resources Group, UC Berkeley

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## Existing Financing Options

- Pay up front
- Lease
- Fixed mortgage refinance
- Purchase power agreement
- Equity line
- On-Bill financing

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**Property Assessed Clean Energy** or  
“**PACE**” programs allow local government  
entities to offer sustainable energy project  
loans to eligible property owners.

*AKA*

Energy Financing Districts

Sustainable Energy Financing

Clean Energy Assessment Districts (CEAD)

Contractual Assessments

Special Tax Districts

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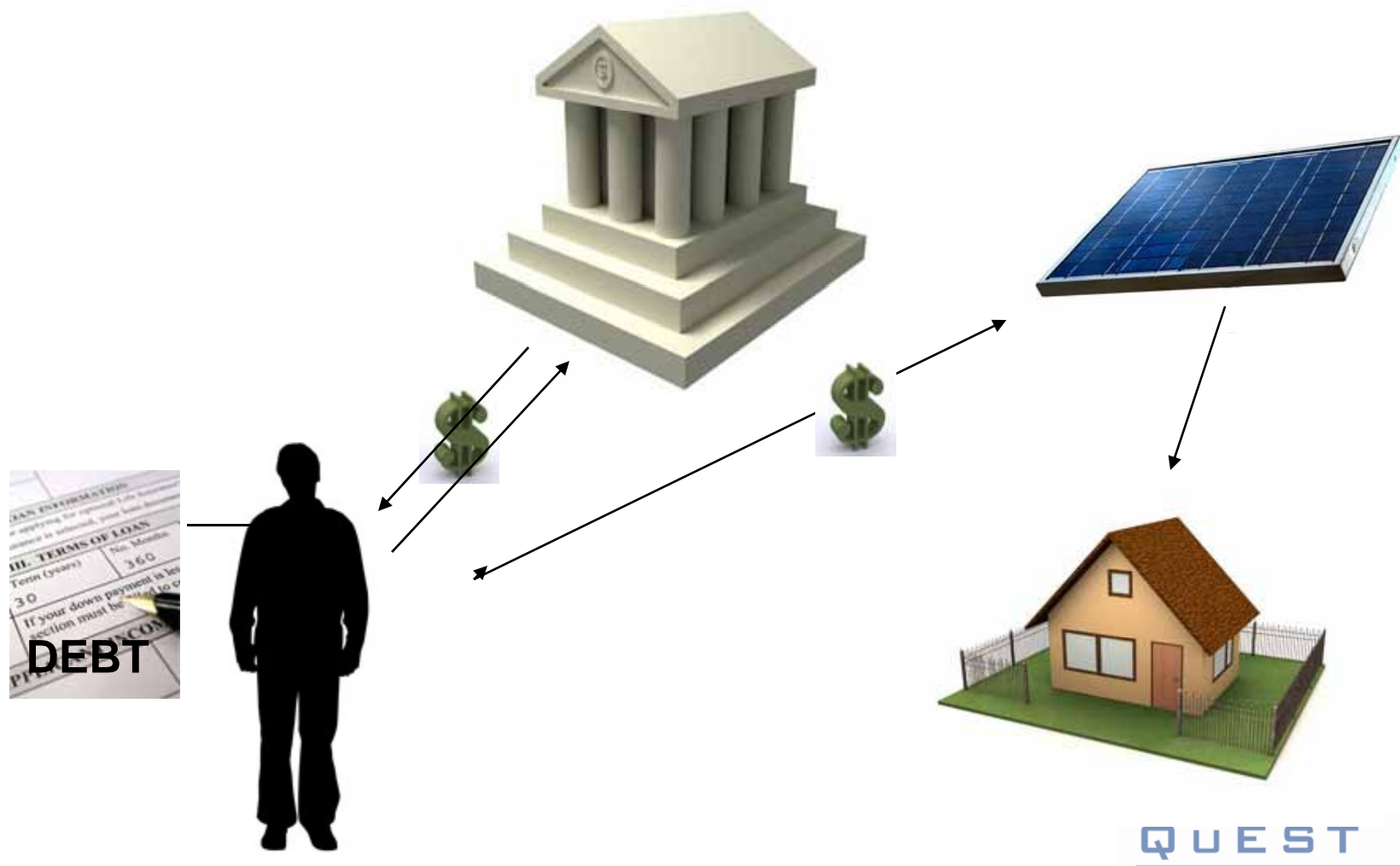
## How is PACE unique?



**PACE financing ties debt to the property, not the person**

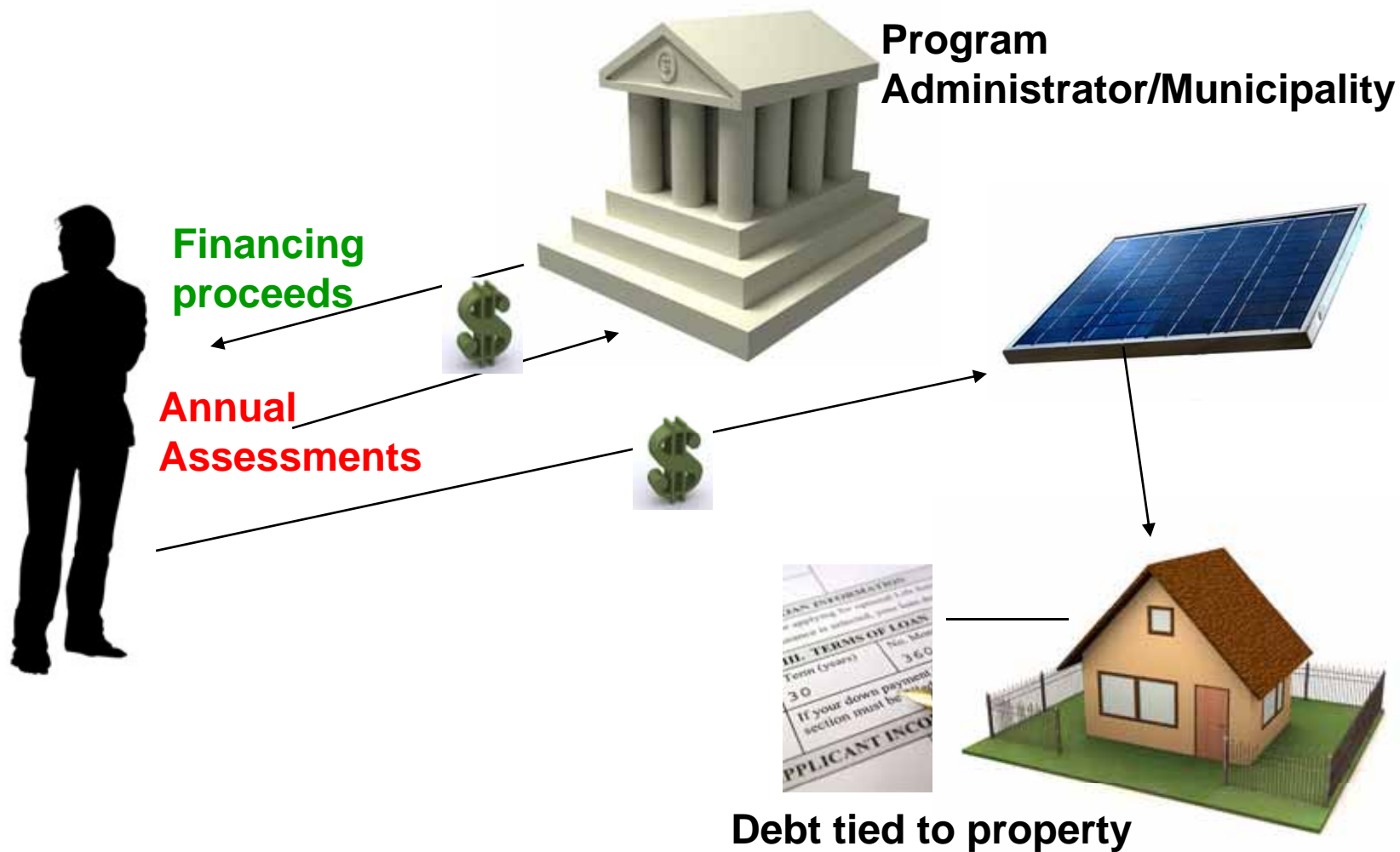
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# Standard Financing

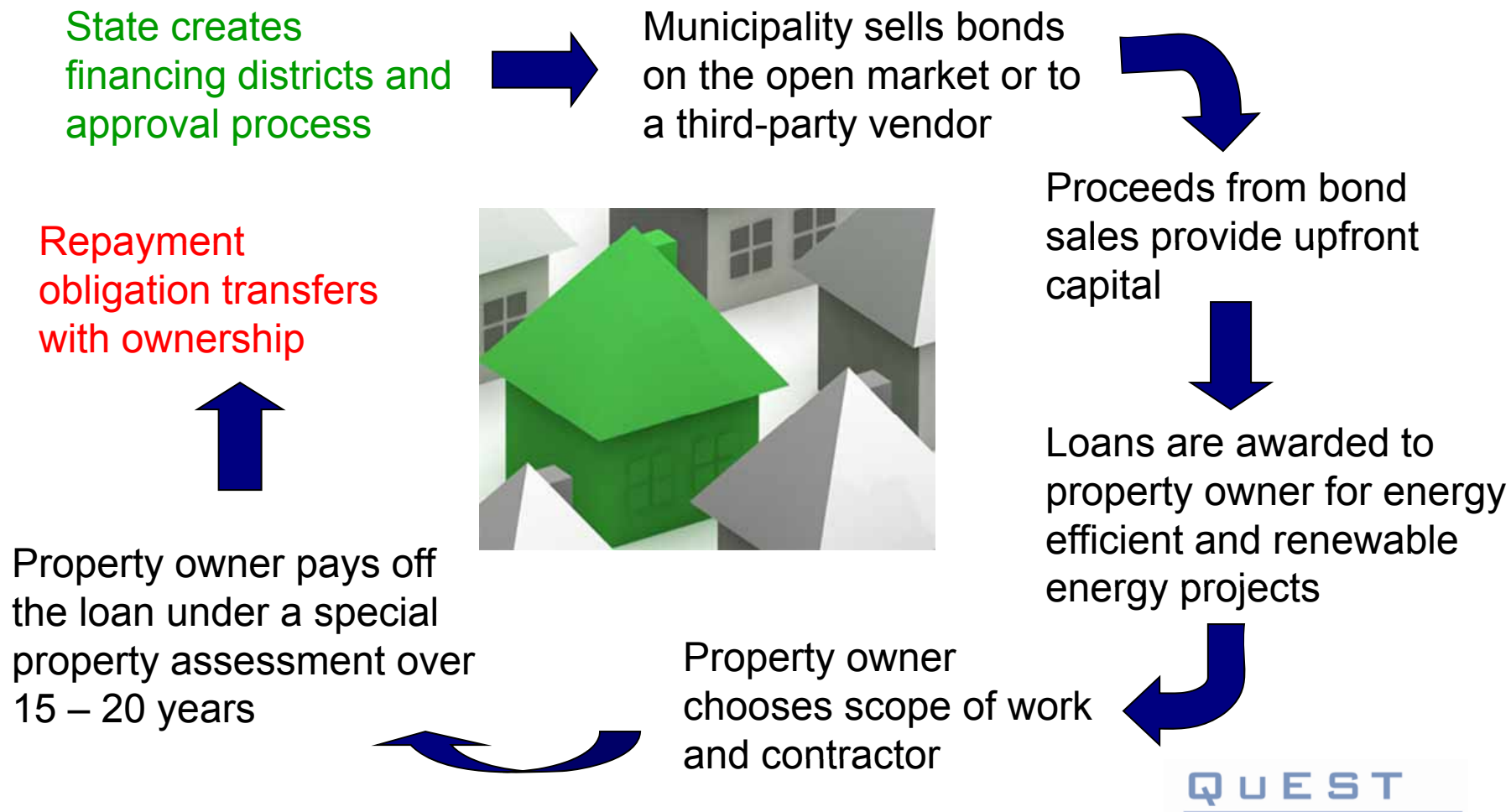




# PACE Financing



# How PACE programs works



## PACE programs streamline financing of energy efficiency investments in three key ways:

- Provides a secure, well-established payback mechanism that will lead to lower borrowing costs.
- Economies of scale reduce overhead and transaction costs.
- Creates consumer confidence

Source: Department of Energy

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## Benefits to Property Owner

- Repayment transfers with ownership
- Substantially reduced up-front costs
- Utility bills decrease due to energy savings
- Tax deductible
- Low interest rates
- Individual chooses contractor
- EE/RE-agnostic
- Don't have to apply for matching funds from utility



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## Benefits to Municipality

- Direct support for constituents' action
- Secure financing mechanism
- Job creation
- GHG reduction
- Positive publicity



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# 18 states have authorized PACE legislation



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## Berkeley FIRST Pilot Program

**Started:** November 2008

**Administration:** Program is contracted out to third party organization, Renewable Funding

**Who is eligible:** Residential or commercial properties located in the City of Berkeley, CA

**What is financed:** Solar photovoltaic systems

In the pilot phase Berkeley committed over \$1 million in funds for solar PV projects.

## Endorsed as National Model



In October 2009, Berkeley FIRST was endorsed by Vice President Joe Biden as a national strategy for clean energy.

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A 2009 UC Berkeley study, cited by the White House, found that PACE could finance upwards of \$280 billion in energy retrofits.



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## The Role of Utilities in PACE Programs

- Make it easier for local governments to collect bill data and track savings
- Help with setting the eligibility criteria for retrofit measures, provide savings analysis, and help with selecting measurement tools
- Help with training and identification of contractors
- Marketing, outreach and additional incentives

Source: Merrian Fuller, Lawrence Berkeley National Laboratory, Electricity Markets & Policy Group



# Boulder County, CO

## ClimateSmart Program

**Started:** April 2008

**Goal:** GHG reduction

**Eligible projects:** Solar PV, solar hot water, small wind, and energy efficiency measures – commercial & residential

## How it works



The City of Boulder's ClimateSmart Program:

- Offers 15-year repayment periods
- Issues federally tax exempt as well as taxable bonds to finance program
- Aggregates applicants and then issues a large bond based on demand

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The City of Boulder's ClimateSmart program received 517 applications for over \$9.5 million in financing for the first phase.

Source: Renewable Funding, LLC

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# City of Palm Desert, CA

## Energy Independence Program

**Started: August 2008**

Program administered through the Office of Energy Mgmt

**Goal:** Reduce the city's energy consumption by 30% by 2011

**Eligible Projects:** Residential and commercial energy efficiencies and renewable energy projects

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## Since its inception, the City of Palm Desert's Energy Independence Program has

- Saved 27 million kilowatt-hours of power, or 12% towards its goal
- Removed  $\approx$  3,475 tons of carbon from the air
- Made 127 loans, totaling \$5.7 million

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# Sonoma County, CA

## Energy Independence Program



**Started:** March 2009

**Goal:** To reduce GHG and water use & create jobs

**Eligible projects:** Energy efficiencies, solar PV, solar thermal and water conservation projects – commercial and residential

**Funded:** The first \$45 million was provided by the county; if successful, the county will be able to sell long-term bonds that will retire the initial county outlay and fund continuing projects up to \$100 million.

Source: [www.SonomaCountyEnergy.org](http://www.SonomaCountyEnergy.org)

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## Since its inception, the County of Sonoma's Energy Independence Program has

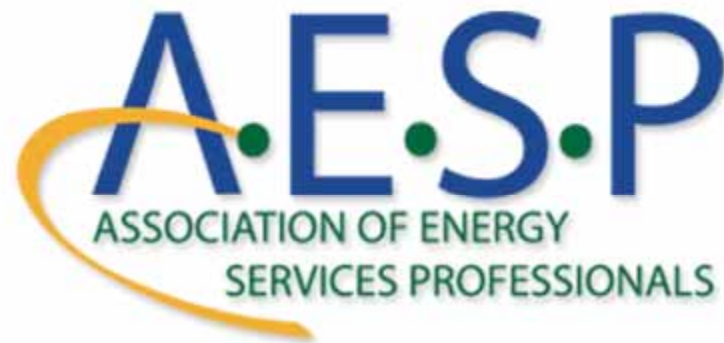
- Made \$40 million in loan requests
- Processed nearly 1,000 applications

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## A climate change silver bullet?



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# 21st National Conference & Expo

January 17-20, 2011 • Hilton Walt Disney Resort

