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ENERGY EFFICIENCY AND PACE MODEL

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Abstract

Overcoming the upfront cost in energy improvements is the best challenge for energy efficiency and usage of renewable technologies.
PACE – Property Assessed Clean Energy enables to local governments to raise money through the issuance of bonds to finance the clean energy projects. The financing is repaid over a set number of years through a special assessment on the property tax bill of property owner.
The financing is secured with a lien on the property and if the property is sold before the repayment period the new owner would inherit both, the repayment obligation and the financed improvements.
Initial costs are always higher for a new technologies, PACE and the creation of Energy Financing Districts can given to cities and states the necessary tools to lead the change in energy field.

Parameters and program design options

To establish these programs it is important to evaluate the cost of energy project and resulting energy savings. **The net present value of energy savings has to increase the cost of property tax payment.**
In the analysis we considered the following parameters and program design options:

- **SIR – Saving to Investment Ratio should be greater than one;**
- **The term of assessment should not exceed the useful life of improvements;**
- **The assessment should not exceed 10% of property's estimated value;**
- **Debt Service Reserve Fund should be created;**
- **There should be non-acceleration upon property owner default;**
- **Quality assurance concerning efficiency's gains, licensed contractor, property's value should be guaranteed.**

United States Implementation

PACE has taken different approach according to the design in each case in each area.
Local government must determine:

1. **source of capital;**
2. **financing mechanism;**
3. **terms of loan;**
4. **collection mechanism;**
5. **eligible measures.**

To date 21 States and Washington DC authorized PACE (20 States have passed legislation and Hawaii has permitted it based on existing law).

2008	2009	2010
California	Illinois	Florida
Colorado	Louisiana	Georgia
	Maryland	Maine
	New Mexico	Minnesota
	New York	Washington DC
	Nevada	
	North Carolina	
	Ohio	
	Oklahoma	
	Oregon	
	Texas	
	Vermont	
	Virginia	
	Wisconsin	

PACE: Operating Model

Step 1
Local government establishes clean energy assessment districts

Step 2
Property owners voluntarily opt into program

Step 4
Loan goes to property owner

Step 5
Installation and payment

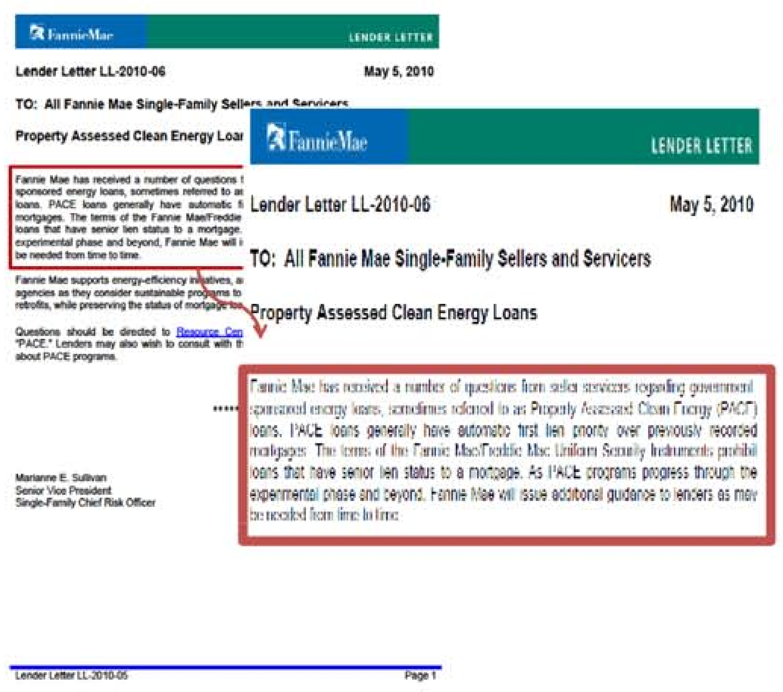
Debt Service Reserve Fund ← Local Government ⇄ Property owner → Contractor

Step 3
DSR fund set up to protect investors

Step 6
Owner receives and pays tax assessment for 20 years

Results and Discussion

	SOURCE OF CAPITAL	FINANCING MECHANISM	COLLECTION MECHANISM	ELIGIBLE MEASURES	RESULT AUGUST 2009
BERKELEY	Micro bond sold to financial partner	Special tax (Mello-Ross)	Property tax bill	Solar PV	38 projects $28.000 average $1 M committed
PALM DESERT	City's general fund, then Redevelopment Agency Bond, now seeking a financing partner	Assessment (AB 811)	Property tax bill	Energy efficiency Solar thermal Solar PV	206 projects $36.000 average $7,5 M committed
BOULDER COUNTY	County issues bonds	Assessment (HB 08-1350)	Property tax bill	Energy efficiency and renewable	393 projects $19.000 average $7,5 M committed
BABYLON	Municipal solid waste revolving fund	Assessment (amended solid waste code)	Separate bill, transfer to property tax bill if delinquent	Energy efficiency Solar thermal Solar PV	169 projects $7.100 average $1,2 M committed


Lender Letter LL-2010-06
May 5, 2010
TO: All Fannie Mae Single-Family Sellers and Servicers
Property Assessed Clean Energy Loans

Financial challenge:

FHFA
Federal Housing Finance Agency
since 2008 regulates
Fannie Mae, Freddie Mac,
Federal Home Loan Banks


Freddie Mac
Industry Letter

International spread: Italy

For overshooting the CO_2 target under Kyoto Protocol Italy is accumulating :

- **Gap 58,5 Mt CO_2**
- **Average debt of 1,5 Million per day**
- **Accumulated debt of about 1,1 Billion Euro**

Conclusions

PACE is an innovative and financial model that potentially increases the affordability and accessibility of energy saving measures. Different benefits can be enjoyed:

- **Energy efficiency and bill savings**
- **Reduction in greenhouse gas emissions**
- **Energy independence**
- **Green job creation**

The purpose of programs like these should be to create the conditions for a low-carbon, sustainable and job production model.

Energy in a Low Carbon Economy: New roles for Governments and Markets
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