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 technology, PACE and the creation of Energy Financing Districts can give to cities and states the necessary tools to lead the change in energy field.

PACE: Operating Model

Step 1
Local government establishes clean energy assessment districts

Step 2
Property owners voluntarily opt into program

Debt Service Reserve Fund

Local Government

Property owner

Step 3
DSR fund set up to protect investors

Step 4
Loan goes to property owner

Step 5
Installation and payment

Contractor

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 a 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).

Results and Discussion

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Financial challenge:

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

International spread: Italy

For overshooting the CO₂ target under Kyoto Protocol Italy is accumulating:

• Gap 58.5 Mt CO₂
• 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.