Property Assessed Clean Energy (PACE) and Economic Impacts in Boulder County

Promoting Energy Efficiency in Your Community and the Future of Property Assessed Clean Energy

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Brief Introduction to PACE

Preliminary Results from an on-going NREL study in Boulder County, Colorado
Property Assessed Clean Energy ("PACE") is a mechanism to finance energy efficiency and renewable energy projects for both residential and commercial properties.

Based on existing practice of property tax-assessed financing.

Variety of funding sources to capitalize PACE programs.
What are the Benefits?

**COST**
Eliminates the high upfront cost barrier to energy efficiency and particularly renewable energy projects.

**ABILITY TO TRANSFER**
Addresses the reluctance of property owners to make energy savings-related investments if they expect to move in the future given that the lien remains with the property.

**CASH FLOWS**
Better matches the cash flows between the cost of the project with the energy savings.
On-going savings offset special assessment payments.
What is the process to create a PACE program?

1. Pass or amend enabling legislation (23 states + DC)
2. Create the administrative structure to establish and manage the program
3. Create the special assessment district (local, regional or state level)
   - Participants in program agree to voluntarily opt into the special assessment district
4. Local government raises capital and finances the energy efficiency and renewable energy projects
5. Property owner signs off on project and contractor is paid out
   - Lien attached to property
   - Special assessment added to annual or biannual property tax collection process
What are some caveats?

Time consuming process to establish and manage a PACE program.

Most existing PACE programs are (were) in their pilot phase so both long run demand and availability of permanent financing are still to be determined.

May not be cheapest solution for all property owners.

Liens may not automatically transfer in all cases if property owner decides to sell or refinance underlying mortgage.

Interplay with tax credits may not be the most efficient
  • Long term financing of federal ITC as an example
Boulder County, Colorado
Economics Impacts Analysis
2009 Residential PACE Program
Background

• In February 2010, Boulder County requested (through its U.S. Rep. Jared Polis) assistance from NREL to conduct an analysis of the economic benefits of its ClimateSmart PACE program.

• NREL selected MRG & Associates based on MRG’s experience in this field (including NREL’s Jobs and Economic Development Impacts (JEDI) model).

• Focus was on 1st 2 tranches of Boulder’s residential PACE program in 2009

• Approximately 600 individual projects for roughly $9MM in PACE financing

What were the direct, indirect, and induced economic impacts of the 2009 PACE investment in Boulder County for both the County and the state?
The study adapted industry multipliers derived from the 2008 IMPLAN* model for the analysis. Impacts (jobs, earning and output) per million dollar of investment.

**Direct Benefits**: refers to the on-site or immediate effects produced by an expenditure.
- Boulder County pays the installer and equipment vendors for the project.

**Indirect Benefits**: refers to the increase in economic activity that occurs when a contractor or vendor receives payment for goods or services delivered and he or she is able to pay others who support their businesses.
- Installer pays his accountant
- Equipment manufacturer pays its employees

**Induced Benefits**: the spending of worker earnings associated with the direct and indirect benefits created by the energy efficiency expenditures.
- Installer’s accountant buys groceries with his wages
- Employees of the equipment manufacturer using their wages to pay their mortgages

*Implan Economic Modeling (www.implan.com)*
Methodology

Looked at both Boulder County and the State of Colorado
  - State approach allows MRG to capture some of the “leakage” in economic activity.
    - e.g. 124 of the 295 (42%) contractors came from outside Boulder County

Calculated the resources leveraged by the PACE investment, i.e. utility rebates and personal funds spent on projects.

Analyzed each invoice submitted to Boulder County

The results do not yet include the economic impacts of how the program participants are spending their utility bill savings.
  - Assumption is that roughly 60% of savings will be spent in Boulder County and an additional 15% will be spent in the state.
  - Utility jobs lost as a result of lower revenues to the utility will be factored in.
  - The local spending of these utility bill savings will have a much longer lifecycle as these will be annual savings as compared to the one time injection of the project funding.

Importantly, the results also do not capture the investments by homeowners who educated themselves about energy efficiency and renewable energy thru ClimateSmart but then financed the project using other methods.
Results for Boulder County

<table>
<thead>
<tr>
<th>Measure</th>
<th>Boulder County CSLP Loans$1</th>
<th>Total Investment$2</th>
<th>Local Contractor Share$3</th>
<th>Local Sales Tax Generated$4</th>
<th>Local Jobs$5</th>
<th>Earnings (Millions)$6</th>
<th>Output (Millions)$7</th>
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</thead>
<tbody>
<tr>
<td>Photovoltaics</td>
<td>$3,247,740</td>
<td>$6,801,922</td>
<td>$6,248,104</td>
<td>$125,840</td>
<td>49</td>
<td>$2.71</td>
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<tr>
<td>Windows</td>
<td>$2,213,237</td>
<td>$2,270,722</td>
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<td>Insulation</td>
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<td>$897,644</td>
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<tr>
<td>Roofing</td>
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<td>$504,016</td>
<td>$273,970</td>
<td>$9,324</td>
<td>3</td>
<td>$0.21</td>
<td>$0.39</td>
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<tr>
<td>Air/Water Heaters</td>
<td>$1,738,110</td>
<td>$1,757,210</td>
<td>$1,364,442</td>
<td>$32,508</td>
<td>12</td>
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<td>Solar Hot Water</td>
<td>$411,558</td>
<td>$442,829</td>
<td>$374,833</td>
<td>$8,192</td>
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<td>$0.20</td>
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<td>Landscaping</td>
<td>$16,663</td>
<td>$17,198</td>
<td>$15,678</td>
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<td>$0.01</td>
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<tr>
<td>Total</td>
<td>$9,007,868</td>
<td>$12,691,542</td>
<td>$10,072,036</td>
<td>$234,798</td>
<td>85</td>
<td>$5.15</td>
<td>$13.75</td>
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</table>

For every dollar of PACE investment in Boulder County, an additional $0.41 was invested in the projects.

Every dollar of PACE investment spurred at least another $0.53 in economic activity within the County.

Approximately 80% of the money paid to contractors/vendors went to Boulder County contractors/vendors.

On average, about 70% of workers employed by the contractors live in Boulder County.
Results for Colorado

Boulder County Residential Climate Smart Loan Program 2009-2010

State Summary Impacts - from All In-State Spending

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<th>Measure</th>
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<th>Total Investment&lt;sup&gt;2&lt;/sup&gt;</th>
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<th>Jobs&lt;sup&gt;4&lt;/sup&gt;</th>
<th>Earnings (Millions)&lt;sup&gt;5&lt;/sup&gt;</th>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>126</strong></td>
<td><strong>$7.14</strong></td>
<td><strong>$19.49</strong></td>
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</table>

Every dollar of PACE investment spurred at least another $1.16 in economic activity within the State.
Conclusions from the Study

In Boulder County, PACE

1. leveraged additional investment
2. had a positive economic impact
3. will channel utility bill savings into the local economy
4. created or preserved jobs
5. generated local sales tax revenue
6. educated the local community about energy efficiency
7. was not the solution for everyone (and that’s ok)