



Table 1 Comparison of PACE Programs

metroPACE <u>Property Assessed Clean Energy</u> metroPACE					
<i>PACE for Homeowners EXISTING HOMES Property Assessed Clean Energy</i>	Replace With Customary HVAC System Column 1	Without PACE Energy Efficient System Column 2	With PACE Energy Efficient System Column 3	metroPace Energy Efficient System Column 4	Comments
Analysis For A Loudoun County Home	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	
1. Energy System					
Replace HVAC Base System	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	
EEE=Extra Energy Efficiency Costs		\$ -	\$ -		
Extra Cost for Iso Insulation etc.	0	\$ 15,000.00			
Extra Cost for Geothermal Loop	0	\$ 15,000.00			
Extra Cost for LED Bulbs		\$ 600.00			
Extra Cost for Solar Panels		\$ -	\$ -		
Replace HVAC	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00		Home Owner Funding
Final Energy Efficiency Cost and HI Loan		\$ 30,600.00			Home Owner Funding
PACE Loan			\$ 30,600.00	\$ 45,600.00	PACE Funding
Market Value Appraisal	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	
Cost Based Appraisal	\$ 515,000.00	\$ 545,600.00	\$ 545,600.00	\$ 545,600.00	
PACE Loan Capital Loan Improvements	0		\$ 30,600.00	\$ 45,600.00	
Assumed Mortgage L/V 75%	\$ 375,000.00	\$ 375,000.00	\$ 375,000.00	\$ 375,000.00	
2. Monthly Bill Impacts to Homeowner					
Mortgage	It is the same \$375,000 loan for all.				
Utility Bill WITH EEE Improvements		\$ 154.75	\$ 154.75	\$ 154.75	Based on Richmond Climate Master SEER = ????
Utility Bill Without EEE Improvements	\$ 361.33				
Interest Rate PACE or Home Improvement Loan	5.50%	5.50%	5.00%	5.00%	Interest rate should be lower on PACE loans
Loan Payment on HVAC	\$ 122.00	\$ 122.00	\$122.00	\$ 118.13	
EE Loan Payment	\$ -	\$ 169.12	\$ 161.00	\$ 161.00	Finance: \$Loan, @i%, 25 years
Total Monthly Utility Bill Plus LOAN Payments	\$ 483.33	\$ 445.87	\$ 437.75	\$ 433.87	
This does not include the 30% tax credit on geothermal etc!!!! In effect through 2016 only!!!!					
Monthly Savings (Loss)	\$ -	\$ 37.46	\$ 45.58	\$ 49.46	
3. Carbon Footprint (Metric Tons)	23	12	12	12	Go Green at No Cost to the Homeowner
4. Energy Consumption MBTUH	218	61	61	61	
5. Sale Impacts Note Home Values					
Sales Price	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	
Less Mortgage 75% L/V and 6% Fees	\$ 405,000.00	\$ 405,000.00	\$ 405,000.00	\$ 405,000.00	
Less Home Equity Loan	\$ 15,000.00	\$ 45,600.00	\$ 15,000.00	\$ -	
Net to Homeowner	\$ 80,000.00	\$ 49,400.00	\$ 80,000.00	\$ 95,000.00	Col 2 illustrates that without PACE the homeowner loses the \$30,600 investment in energy efficiency



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The following are assumptions or items to consider when reviewing the preceding table.

1. A two story Loudoun County brick front colonial home is the model.
2. The power costs are for VA Power @ \$0.11/kWh
3. The SEER of the heat pump was not confirmed. It's probably 21.
4. There is no life cycle costs, no energy cost escalation, nor net present value calculations.
5. The "Resources" section can give you links to Climate Master and Water Furnace. Geothermal Genius was not consulted for this table.
6. Interest rates are assumed.
7. Traditional PACE programs use funds from Municipal Bonds. Traditionally in order to maximize the number of citizens benefitted loans are limited to significant or hyper efficient improvements.
8. *MetroPACE* loans are made by banks and adopted into the PACE district. So the significant or hyper efficient improvements can be included with the basic improvements.
9. If all 100,000 LC SF homes paid \$15,000 for GT loops PACE Bond funding of \$1,500,000,000 or 1.5 Billion would be needed. How much more would be needed for commercial, retail, townhouses and apartments would be needed? What about wind, solar and hydro power?

The preceding table tells the story of the same homeowners and how they are impacted by energy upgrades with and without PACE programs. There are very different bottom line outcomes in response to the 4 scenarios outlined.

Column 1 The owners want to be green. They listen to the mechanical contractor who gives a price for replacing the HVAC plant as is, but using today's higher SEER ratings. It is \$15,000. The owners ask about geothermal. They're told it's \$15,000 more. He thinks he may get transferred, (promoted, divorced, sick laid off) next year. They decide against investing extra because the house won't sell for that much more, if any more, because of the investment. Better off with those granite counter tops!

Result no investment in energy efficiency is made. Tons of Carbon 23/year

Something happens. They sell next year. They pay off the mortgage, and pay off the Home Equity Loan used to pay for the HVAC contractor. They net \$80,000



Column 2. The owners want to be green. They listen to the mechanical contractor who gives a price for replacing his HVAC plant as is, but using today's higher SEER rating. It is \$15,000. The owners ask about geothermal. They're told it's \$15,000 more. They look at their kids. They think he may get transferred, (promoted, divorced, sick laid off) next year. They decide in favor of their kids and investing extra because it's the right thing to do. Better for the kids than those granite counter tops!

Result an investment in energy efficiency is made. Tons of Carbon 12/year

Something happens. They have to sell next year. They pay off the mortgage, and pay off the Home Equity Loan used to pay for the HVAC contractor. They net almost \$50,000. They have lost their investment in energy efficiency.

Column 3. The owners want to be green. They listen to the mechanical contractor who gives a price for replacing his HVAC plant as is, but at today's higher SEER rating. It is \$15,000. The owners ask about geothermal. They're told it's \$15,000 more. They look at their kids. They think he may get transferred, (promoted, divorced, sick laid off) next year. They decide in favor of their kids and investing extra because it's the right thing to do. Better for the kids than those granite counter tops! They also learn that their municipality has a PACE program. They hope their improvements are adopted into the PACE district. This lets the next owner, should there be one; continue paying off the Home Equity Loan while enjoying the lower energy costs.

Result an investment in energy efficiency is made. Tons of Carbon 12/year

Something happens. They have to sell next year. They pay off the mortgage, and pay off the Home Equity Loan used to pay for the HVAC contractor. They net \$80,000 The same as the owners in Column 1 Whew! At least there is no punishment through a financial loss for making this investment in the environment.

Column 4. The owners want to be green. They listen to the mechanical contractor who gives a price for replacing his HVAC plant as is but to today's higher SEER rating. It is \$15,000. The owners ask about geothermal. They're told it's \$15,000 more. They look at their kids. They think he may get transferred, (promoted, divorced, sick laid off) next year. They decide in favor of their kids and investing extra because it's the right thing to do. Better for the kids than those granite counter tops! They also learn that their municipality has a MetroPACE program. They can just have the entire Home Equity Loan adopted into the MetroPACE district. This lets the next owner, should there be one; continue paying off the Home Equity Loan while enjoying the lower energy costs.

Result an investment in energy efficiency is made. Tons of Carbon 12/year

Something happens. They have to sell next year. They pay off the mortgage, and pay



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off the Home Equity Loan used to pay for the HVAC contractor. They net \$95,000 This is \$15,000 more than the owners in Column 1. Now they are rewarded with a financial gain for making the investment in their children, grandchildren and the environment. Next time they are going to add solar panels!

OTHER IMPORTANT POINTS FOR FANNIE AND FREDDIE

Lenders responsibly make Home Equity loans all the time. However this type of PACE loan has two distinct advantages. First, the loans are adopted into a PACE district so the lender will not be wiped out in a foreclosure. Thus, the lender is better protected and the MetroPACE loan can be offered at a lower rate. Second the improvements save energy expenses. The beauty is the loans themselves generate the funds needed to repay the loans. The taxpayer is almost getting something for nothing.

Removing the constraints from municipal bond loans that allow only extra or hyper improvements to be included allows MetroPACE participants to include ALL costs, not just the hyper energy efficient ones. Since we can increase the loan amounts to include these items we are providing, in a level or rising market, a cushion greater than the PACE repayments in arrears. Thus, in a foreclosure, the owners position is now enhanced by the extra amounts placed in the PACE district.

In the example the investing homeowner in the MetroPACE district has an extra \$15,000 to address financial issues. The \$15,000 will be repaid by the property.