

Recruiting your help with

MetroPACE



The Environment

- **Environmental FACTS:**
 - For 420,000 years perfect correlation between CO₂, temperature and sea level
 - Never has CO₂ been above 300 PPM.
 - @ 300 PPM, sea level @ +26 Feet ¹
 - CO₂ is now at 390 PPM (12/2011)
 - Ice is melting faster
 - Melting rate accelerating (3/8/2011 Wash Post)
 - Track to 1,000 PPM and an 11°F Rise (11/28/2011 Wash Post)
 - CO₂ @1,000 PPM; sea level at +250 feet
 - China overtakes EU in CO₂ in 2015,
 - China overtakes US in 2035
 - India ? Brazil?
 - **Economic Environment: Just as Bad!**



Sea Effects : Level Rise 60 M 196 Ft.



Land Effects

- **What's happening now?**

U.S. set a record with A DOZEN BILLION-dollar weather disasters in one year. NOAA December 7, 2011

- Heat Waves
- Wildfires
- Unprecedented Rains Floods
- Snowmageddon's
- Hurricanes

Future Impacts: Emergency Relief Funds???

- Insurers: Premiums Bankrupt???
- Desertification: Food Impacts

Considering all this, especially the economy

WHAT ACTION DO WE TAKE!



My Answer Is: Intensify Conservation

- Mobilize Broad Base
- PACE programs Empower the Public to use 30 to 75% less power. The energy savings can pay for the improvements
 - This usually correlates to similar reductions in CO2
- Less energy needed means it can be more easily provided for by renewable or other power plants.
- It reduces the burden and need for a smarter grid etc.



What is The General Focus?

- Wind
- Smart Grids
- Electric Cars
- Biofuels
- Fracking and Natural Gas
- Clean Coal
- Solar
- Smart Buildings
- Deep Geothermal
- Carbon Sequestration
- Developing Building Codes
 - More Top Down Rulemaking
- Nuclear
- Cloud Particles

... And a vague hope that the public will conserve



What Are We Not Doing?

- **Implementing effective PACE programs.**
 - **The most cost effective energy investments are in energy conservation!**
 - **Net Zero**
 - **PACE costs are minimal: No grants! No government loans!**
 - **PACE empowers**
 - **PACE projects can pay for themselves**



Where Is PACE?

- **Consumers**
 - Green at No Cost
 - Lack of Awareness
 - EE is Not Market Driven
 - PACE is Complex Requires Learning
- **Municipalities**
 - Fiscally Stressed
 - Staff Time Stretched
 - Lack bond Capacity
 - Lack Awareness
 - No Public Outcry
 - Importance
 - Benefits
- **Lenders**
 - Lack of Awareness
 - Fannie Freddie
 - Commercial Loans????



Where is the PACE Opportunity?

- **Divorcing Municipal Bonds**
 - Break from Wall Street
 - \$\$\$ not sustainable for sustainability
 - 1.5 B \$\$\$ LC, SF Homes, GT Loops Only
- **Fund from Community Banks**
 - Redeploy Traditional Lending Sources
 - Home Equity (HE) Loans

Adopt the HE Loan into PACE district!



Home

Retrofit

Alternates



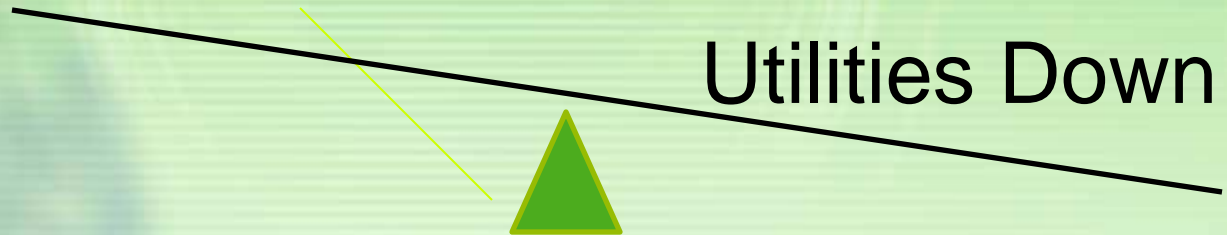
metroPACE <u>Property Assessed Clean Energy</u> metroPACE						
<i>PACE for Homeowners</i>	Replace	Without PACE	With PACE	metroPace	Comments	
<i>EXISTING HOMES</i>	With	Energy	Energy	Energy		
<i>Property Assessed</i>	Customary	Efficient	Efficient	Efficient		
<i>Clean Energy</i>	HVAC System	System	System	System		
	Column 1	Column 2	Column 3	Column 4		
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	

Commercial PACE

- Owner: EE= Increased Capital; Increased Rent
- Full Service Tennant – Allowance; CAM, Taxes and Utilities: Lease Term
- NNN Tenant – Direct Payment of CAM, Taxes and Utilities: Lease Term
- Owner: PACE Neutralizes Investment

Taxes Up

Utilities Down



MetroPACE

- **MetroPACE: The Vision**

- Empower people to accomplish their own goals for environmentally beneficial projects
AT NO REAL COST!

- **The Goals:**

- Reduce energy consumed by existing and new infrastructure.
- Enhance the regions reputation as a progressive energy and environmentally friendly place to live and work
- Connect improvements to the beneficiaries i.e. the property users (not the mortgagee) BUT the energy user! As it is for government and institutions.
- Minimize government obligations, programs and avoid issuing municipal bonds and resulting impacts to the Municipalities bond rating, school construction funding, etc.
- Accelerate market transformation to a cleaner greener economy
- Create jobs
- Improve the environment
- Address, residential, commercial, NNN tenants, full service tenants
 - **START with Commercial -**
 - » Work out programs procedures
 - **Work on Fannie Freddie - be prepared for residential**



What do Municipalities need to do?

Enact PACE Overlay Zoning!

- Commercial and Residential
 - Residential Starts With GSE Approval
- Push Residential w/ Fannie Freddie
 - Be Ready



Conclusions:

- **For the Municipality:** Using a *MetroPACE* approach and working with banks, you can provide fantastic financial incentives to energy users that will half CO₂ creation AT NO COST to local governments, after enabling legislation is implemented.
- **Lenders:** Can offer secure loans secured by a tax assessment; at lower interest; that generate the funds needed to repay the loan. At the same time, the very same energy loan actually increases the value of the asset.
- **Homeowners** Their investment in energy infrastructure is protected by the PACE district! They can actually improve their equity position in a real estate asset by utilizing this *MetroPACE* structure. They are rewarded for going green The reward is more than intrinsic!

SO YOU SEE...

Working together public and private parties using the tools and expertise we already have can execute local and effective *MetroPACE* programs and thereby begin to address the biggest problem facing our country –

Climate Change



Go Green!

GO GREEN!



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Resources

PACE

- <https://www.renewfund.com/>
- <http://pacenow.org/blog/>
- <http://www.sonomacountyenergy.org/index.php>
- <https://energycenter.org/index.php/public-affairs/property-assessed-clean-energy-pace>

Household Geothermal Energy

- <http://www.waterfurnace.com/savings-calculator/default.aspx?v=3.0>
- <http://residential.climate-master.com/svcalc/sc01.php>

Sea Level Interactive

- <http://geology.com/sea-level-rise/>

Temperature Interactive/

- <http://www.youtube.com/watch?v=SQW3xi6Q9eE>

References

1. <http://www.johnenglander.net/t-co2-sl-420kyr-chart>
2. http://www.noaanews.noaa.gov/stories2011/20111207_novussta.html



Traditional PACE Programs

Q: Accelerate the energy retrofits of homes and buildings?

A: Connect Energy to Property: Property Assessed Clean Energy (“PACE”) Tax

- Low to no cost to taxpayers
- High probability of program success. Sonoma County, CA; Babylon, NY
- Opt in

Major Agents & Catalysts:

- Fannie Mae and Freddie Mac support PACE programs but NOT superior loan status. Effectively neutering PACE
- To escalate the progress of PACE, state or federal government could provide credit guarantees or default insurance



What is PACE Finance?

Conceptually: PACE= Property Assessed Clean Energy

- **Description: Property owner borrows money from a “municipal financing district” to finance energy retrofits and repays the loans over a period of year matching the improvement life cycle. Repayment is through a special tax on their property tax bill.**
- **This financing device :**
 - **Eliminates the risk of loss on the investment?**
 - **Accommodates the longer term nature of the repayment period,**
 - **Structures the payment as an annual property tax surcharge**
- **Typical Steps:**
 - **State enabling legislation allows for special municipal taxing districts**
 - **Municipality (city or county) creates a special “PACE” district**
 - **“PACE” district issues a “PACE” master bond, distributes funds**
 - **Commercial/residential real estate owners apply for PACE funds to install hyper energy efficiency measures and renewable energy production devices , e.g. solar panels**
 - **PACE funding treated as senior “property tax lien” and repaid by real estate owner as a property tax surcharge**



Advantages of PACE:

- **To Our Nation, States and Local Government:**
 - Job Creation
 - Accelerates energy independence
 - Reduces GHG emissions
 - Very low government cost and a high probability of success
 - No public financial risk: Obligation remains liability of real estate owner
 - Opt in program:
- **To the Property Owner:**
 - Elimination of risk of “up-front” investment
 - Positive cash flow on retrofits (annual energy savings > loan cost)
 - Lower energy bills
 - Lower vulnerability to rising energy prices
 - Asset improvement
- **To the PACE Lender:**
 - Senior tax (lien) assessment with virtually no risk of capital impairment
 - 97% of property taxes are current
 - Property tax losses for PACE loans are less than 1% of home value.
- **To the Existing Mortgage Lenders:**
 - Improved borrower cash flow reduces mortgage default risk
 - Increases collateral value
 - PACE senior lien impacts in a foreclosure are relatively small



PACE Issues:

- **Fannie and Freddie Opposition to Seniority of Pace Loans**
 - **Fannie and Freddie Have No Opposition to Commercial PACE Loans**
- **Conventional Municipal Bond Approach***
 - **Requires Municipal Bonds to be Floated Affect s Bond Ratings**
 - **Drives Controls:**
 - **Protect Municipality from Liability**
 - **Consumer Protections: Protect from Contractor Fraud**
 - **Default Protections: Protect Mortgagor, Especially Fannie Mae and Freddie Mac**
 - **Local Government Protections: Protect Municipalities Bond Rating**

NOT ENOUGH BOND CAPACITY!

- **Example Loudoun County, VA 100,000 SF Homes**
- **\$1,500,000,000 1.5 B\$ just for GT Loop Fields for SF Homes**
- **TH Apts. Commercial, insulation, solar, wind,**

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PACE Bond Obstacles

- **PACE Finance Main Obstacle: Limited bond buyers and high financing cost**
 - PACE bonds are taxable
 - The market for taxable municipal bonds is illiquid, small and expensive
- **Federal Appeal: Senior lien status results in virtually no risk/cost to federal government and taxpayer. Purpose of credit guarantee is to jump start new asset class**
- **Bond Market Summary:**

<u>(10 yr duration +)</u>	<u>Treasury Bonds</u>	<u>Tax-Exempt Munis</u>	<u>Large Taxable Munis</u>	<u>Small Taxable Munis</u>
Market Size	\$540 billion	\$330 billion	\$6 billion	?
Rate	3.8%	4.5%	7%+	?

Solution: Department of Energy (“DOE”) or Treasury Department credit guarantee for PACE bonds

- PACE bonds/liens now viewed as treasury bond surrogate
- PACE bond issuers and buyers benefit from deeply liquid, large treasury bond market - \$500 billion + market
- Issuer/Bond Buyer Advantage: Interest rates reference the treasury bond market
- Federal Advantage: Serves as the catalyst for our nation’s retrofit program and has virtually no long term credit risk/cost to taxpayer

