

Comments on the 2019 Draft Energy Master Plan

New Jersey PACE

Saturday, September 14, 2019

Our comments address two topics:

- (1) Commercial PACE
- (2) Other issues not adequately addressed in the EMP

Commercial PACE

The current draft of the EMP states:

Goal 7.3.2: Develop financial protocols to support New Jersey's clean energy economy and the goals of the Energy Master Plan, such as lowering the cost of capital for renewable energy projects, enabling community solar projects, and supporting energy efficiency projects. New Jersey is exploring new and creative financing methods to ensure clean energy investments are made with fiscal prudence and that all customers have the ability and opportunity to participate in the clean energy economy. For example, on-bill financing is already offered by two of the state's natural gas utilities and has proven effective as a means of improving the repayment profile for clean energy loans; the state, utilities and third-party providers should work together to make on-bill financing an option for all customers. Similarly, NJBPU should work with utilities, third party providers, and other industry actors to develop mechanisms to provide rebates at the point of sale; this lessens administrative overhead and lowers barriers to entry for those who otherwise wouldn't be able to afford waiting for a rebate check.

Commercial Property Assessed Clean Energy (C-PACE) lending is another program that is being explored that can facilitate a greater amount of funding by private lenders, and on relatively better terms. C- PACE, which is currently authorized in approximately three dozen states and has been launched in approximately 20 states, does this by treating the obligation to repay a clean energy-related loan in the same fashion as a property tax assessment. In this scheme, municipalities are responsible for billing and collecting loan payments, while the loan repayment obligations are attached to the applicable property, just as with property tax obligations. Around the country, the security enhancement that C-PACE provides has made private lenders willing to extend the terms of their clean energy loans to as long as 25 years. This longer repayment period enables many projects funded through C-PACE to be cash flow positive from the outset.

This is helpful, but what we want people to know is that PACE is a much bigger deal than you may realize, capable of truly transforming our built environment to include efficiency, renewables, and resiliency measures. In addition, we have developed two innovative PACE Alternatives (called NICCE and DREEM), which we are currently discussing with the federal DOE and with the NJ Economic Development Authority, with a view to introducing these across the country, particularly wherever PACE is not available. If these mechanisms achieve market acceptance, they may further expand the opportunity for PACE and PACE-type financing to

significantly improve the energy efficiency, resiliency, and on-site renewable generation for the commercial (and eventually) residential built environment.

The EMP typically addresses the energy goals of the State, and the activities of the BPU and the Clean Energy Program, while usually referencing in a very general way the desire to attract additional private capital into the clean energy sector. This should be more than wishful thinking, however, since the state can do more to attract this additional private capital through appropriate policies, including PACE.

It's our understanding that the NJEDA will be playing a major role in developing and running the NJPACE program, as part of the clean energy innovation work being done at the agency, in consultation with the Board. If the key state agencies get behind it, it can and will have a major impact on both the economy and on the carbon footprint of commercial, industrial, agricultural, multifamily, and institutional properties.

Furthermore, as noted above, we have developed two PACE Alternatives, and a unique “bridge to PACE” program that will allow some projects to get financed in advance of PACE being available. The federal Department of Energy is currently reviewing our grant proposal to apply our innovative financing methods to increase the availability of capital for solar, especially in small businesses and in LMI communities.

So we strongly suggest that the BPU look at providing support for this program, as it can have a major impact without costing the taxpayer or the ratepayer anything. PACE, and the PACE-like structures we've developed, can provide 100% long-term affordable financing for deep retrofits, extensive solar and other renewables, and substantial resiliency measures to address the very real and immediate impacts of climate change on NJ — flood and hurricane protection, safe rooms, stormwater management, and so on.

The BPU can make a big difference by its actions and its stand in this matter, without in any way detracting from its other programs. It just takes comprehension and collaboration with the private and nonprofit sectors to bring about this part of a clean economy. Just to take one area, energy efficiency, the report prepared earlier this year for the Board by Optima Energy, “**Energy Efficiency Potential in New Jersey**,” notes that “if the maximum achievable potential is captured... the portfolio of statewide programs would produce net present value benefits for New Jersey of \$14 billion. The benefit-cost ratio shows that for every dollar of investment, New Jersey would gain \$2.57 in economic benefits. The \$8.9 billion of costs does not reflect hypothetical program budgets, but could be substantially higher because it considers all costs to society, not just ratepayer costs.”

The “costs” could also be significantly *lower*, however, if the state implements the correct policies. It's important to distinguish between “costs” (amounts spent that are not recovered) and “investments,” amounts spent that attract greater returns than originally provided. The activities and programs of the Office of Clean Energy and the allocation of monies from the Societal Benefits Charge will typically be considered “costs,” whereas the dollars lent or invested in clean energy solutions are expected to be paid back, with interest, over the useful life of the improvements.

Based on an informal market study, completed for NJPACE in 2018, the total investable potential market in NJ for energy efficiency, solar, resiliency, and related measures in C&I buildings is upward of \$130 billion, with a potential return of two-and-a-half times that in financially measurable benefits (along with many other societal benefits, including improvements in technology, indoor air quality, reduction in future sources of greenhouse gases, and so on).

In addition, we're resubmitting the more details comments we provided in response to the original questions asked at the outset in developing the EMP.

Other Issues Not Adequately Addressed in the EMP

As noted by the Empower NJ Coalition of which we are members, "the latest overwhelming scientific consensus dictates that much more needs to be done much sooner than previously realized. Unfortunately, the draft clearly fails to address this urgent situation even after discounting the fact that it is only a draft, while other states have already surpassed our efforts. The Administration must strengthen the final master plan along the following lines and accompany these changed policies with aggressive implementation:

- **The EMP must include a moratorium on all new fossil fuel projects until GHGs are effectively regulated**
- **The goal of 100% carbon neutral energy by 2050 must be replaced with the goal of achieving 100% clean renewable energy by 2050**
- **The EMP's goals are inadequate to address the immediate emergency we are facing**
- **GHGs must be regulated to achieve IPCC's 2030 target and GWRA's 2050 mandate**
- **Total short and long term economic, social, health and total life cycle costs of burning fossil fuels must be calculated, disclosed and utilized by the EMP in setting policies**
- **The State must regulate black carbon, pure carbon particulates, aka soot**
- **The EMP drastically understates the global warming impact of methane released by the extraction, distribution and burning of natural gas**
- **Labor's buy-in is essential, practically and politically, to meet the EMP's goals**
- **The EMP admittedly lacks detailed plans and adequate public input**

The fifth point cited above is especially important in light of the reported business and ratepayer counsel concerns with the costs of these steps, since these typically do not take into account the cost of "business as usual" or doing nothing, which is largely responsible for the current climate and environmental crisis the planet is facing. This cannot be allowed to continue.

Moreover, based on the latest studies on the economics of clean energy:

Report finds consumers could save \$29 billion if clean energy replaced proposed natural gas plants

By [Kelsey Misbrener](#) | September 9, 2019

The economics guiding U.S. investments in electricity generation have reached a historic tipping point: combinations of solar, wind, storage, efficiency and demand response are now less expensive than most proposed gas power plant projects. According to a new report by Rocky Mountain Institute (RMI), portfolios of these clean energy resources can provide the same energy and reliability services as traditional gas power plants — but cost less.

This new economic reality has profound implications for electricity consumers and industry investors. Currently, there is an estimated \$90 billion of planned investment in new gas-fired power plants and over \$30 billion of planned investment in proposed gas pipelines. If clean energy replaces the proposed gas plants, consumers could save \$29 billion, according to the report, "The Growing Market for Clean Energy Portfolios."

For investors, the report highlights the significant risk that proceeding with announced projects will result in stranded costs. By the mid 2030s, as clean energy prices continue to fall, building a new portfolio of clean energy resources will become less costly than continuing to pay the operating costs of a combined-cycle gas plant, and such a portfolio will provide the same level of energy, capacity and reliability services.

These cost trends could lead to the economic retirement of plants representing over 90% of currently proposed new combined-cycle gas capacity by 2035, resulting in a significant risk of investment capital becoming stranded. Just as coal plants have retired due to competition from low-priced natural gas in the past 10 years, the ongoing cost declines in wind, solar and battery technologies threaten to do the same to natural gas plants by the mid-2030s, according to the report. The report notes examples from Colorado, Michigan, Indiana, California and other states across the country where this trend is already on display and causing industry leaders to prioritize investment in clean energy instead of new gas infrastructure.

A companion study by RMI examines the implications of this dynamic on the economics of new gas pipelines. This report, "Prospects for Gas Pipelines in the Era of Clean Energy," shows that power plant gas use has driven the overall increase in U.S. natural gas consumption over the past 20 years — expectations that this growth will continue underpin the economics of proposed new pipelines.

But because clean energy already outcompetes gas power plants and will soon lead to their early retirement, the underlying economic justification for new pipelines is now in question. The report finds that over 95% of gas use in proposed gas-fired power plants across much of the eastern United States could be economically offset by clean energy by 2035, reducing the utilization of proposed new gas pipelines by between 20% and 60%.

This reduction in gas flowing through new pipelines would, in turn, dramatically increase the costs that customers or shareholders will face in continuing to operate these pipelines. The report identifies the risk of a "death spiral," where

declining sales volume leads to higher prices, which in turn lead to further declines in sales. This reinforcing feedback loop would only end when pipeline projects go bankrupt and/or cease operations altogether.

The RMI reports highlight the fact that replacing proposed gas plants with clean energy is an opportunity to avoid 100 million tons per year of CO2 emissions, equivalent to 5% of total annual US electricity-sector emissions. While representing a small fraction of total grid emissions today, these avoided emissions are equivalent to over 20% of the US grid's emissions budget under 80% emissions-reduction scenarios. Thus, by cost-effectively replacing new gas with clean energy today, the country can make meaningful progress on long-term decarbonization efforts.

“The economics driving clean energy deployment are strengthening at a speed that has transformed what was a relatively abstract thought exercise only years ago to a present-day reality. This new reality requires careful analysis by policymakers and system operators who are planning for an increasingly low-carbon grid,” said Mark Dyson, a principal at RMI and the lead author of both reports. “The inflection point we identify in this study signals a historic opportunity for the energy industry to capture the valuable benefits clean energy provides, while greatly improving environmental performance and protecting customers from the risks of stranded investments.”

The reports conclude with implications and recommendations for investors, regulators and planners, suggesting ways to capture the opportunities at hand and avoid the risks of uneconomic gas investments. In particular, the reports recommend that regulators and utilities carefully assess their systems' needs and use open, technology-neutral planning processes to guide investment in the most economic solutions.

(Source: <https://www.solarpowerworldonline.com/2019/09/rocky-mountain-institute-report-clean-energy-natural-gas/>)

The recommendation for a moratorium on all new fossil fuel infrastructure is thus not simply a matter of achieving the Governor's stated clean energy goals by 2030 and 2050, but is also a prudent economic measure that NJ can take.

Addendum: Previously submitted comments with additional details on PACE and its potential implication for NJ's energy policies:

THE ROLE OF PROPERTY ASSESSED CLEAN ENERGY (PACE) IN NEW JERSEY'S CLEAN ENERGY FUTURE

A contribution to NJ's 2018 Energy Master Plan Reassessment
New Jersey PACE

Last updated: Saturday, September 14, 2019

Foreword

NJ's Energy Master Plan (EMP) is not just a roadmap for the state's energy policy, it's also a guide for industry and the private sector. It's important for businesses and property owners to have a sense of what's coming down the road, and what's likely to have an impact on energy costs, technologies, and regulations. With the election of Phil Murphy, an avowed "clean energy candidate," a reassessment of the EMP is both timely and important. In the early months of the new administration several laws were signed that set the table for a new era, and a new energy plan. The solar bill and the nuclear bill occupied a great deal of legislative and gubernatorial attention, and were finally passed and signed into law in the spring.

Some of the major issues that the state needs to confront—including offshore wind, emissions reductions, and the need for greater resiliency—were also laid out in the Energy Transition report published soon after the Governor took office. This report covered a number of important areas, but did not mention Property Assessed Clean Energy (PACE). Nonetheless it is likely that PACE will play an increasingly important role in NJ's clean energy future.

What is PACE?

PACE is a means of financing energy efficiency, renewables, and resiliency improvements (including water conservation, floodproofing, hurricane-resistant construction, and so on), that is gaining momentum across the country. PACE solves the problems that have hindered commercial property owners from upgrading to clean energy, or building "greener," beyond the requirements of building codes for new construction. PACE also solves what's been called the "split incentive" issue in which the benefits for commercial tenants and the benefits to commercial real estate owners have diverged. PACE is a win/win/win/win for owners, tenants, the municipality and the public.

PACE allows property owners to make energy and resiliency improvements with 100%, long-term, off-balance-sheet financing, at reasonable rates, over the long term. There are no upfront costs with PACE, and 100% of the hard and soft costs of the deal are covered.

A major element to PACE is that payment terms can extend throughout the average useful life of the improvements, up to 30 years; contrast this with the fact that banks and other financial institutions typically do not make commercial loans beyond 7-10 years, and generally do not appreciate the financial value of clean energy projects. Typical PACE projects are designed to be cashflow positive from the start, such that energy savings exceed costs.

Specialized private sector capital providers are investing all over the country in commercial PACE projects at rates above typical mortgages, but below the rates charged for equity and mezzanine financing. PACE investments have become the fastest growing new asset class in the country. Many markets are beginning to see local financial institutions getting involved in PACE lending, which contributes to local economic development. Best practice, and as anticipated in the current New Jersey PACE amendment, Commercial PACE assessments must be approved in

writing by the mortgage lender(s), which is one of several checks and balances before PACE assessments are placed on the property.

PACE financing is a public benefit for carbon emissions reductions, local economic development and improving the building stock of the community. As such, PACE uses the tax mechanism of the municipality to collect payments as a Special Assessment on the property. Sewers, sidewalks and libraries are also public services that are repaid through special assessments. PACE financing requires that a municipality pass an ordinance to allow PACE financing, and a property owner must request this *voluntary* PACE Special Assessment. The benefit to the property owner of this special assessment is that the loan is attached to the property, and not the balance sheet of the owner, such that upon sale, the next owner pays for the improvements that they are benefiting from. Also, because the PACE assessment is part of the tax bill, assessments can be prorated to tenants in triple net and many other types of leases (tenants save money on their electricity bills as a result of the improvements, so the benefits of PACE are shared between owner and tenants). PACE financing is non-recourse and can never be accelerated—only the current and past due amounts become a tax lien if the special assessment goes unpaid by the owner. The municipality can be reimbursed for the costs of billing and collection, and, by law, the municipality has no obligation to pay PACE assessments.

PACE Legislation

Introduced in California in 2008, thirty-six states and the District of Columbia have laws enabling PACE, and about 20 of these states have active PACE programs. While PACE is law in many of our neighboring states, including Pennsylvania, New York, Connecticut, Rhode Island, Delaware, Maryland, Virginia, and Washington DC, implementation is lagging for a number of reasons, including legislative obstacles and a lack of streamlined, cost-efficient, and independent administration in most states—including New Jersey.

In New Jersey, the existing PACE statute (PL2011, ch.187) contains unworkable provisions which prevented the creation of local PACE programs, and fails to incorporate many important conditions that create a robust marketplace for clean energy and resiliency financing. Amending legislation is likely to be approved by the new Murphy Administration this year, which will open up a major new market for financing renewables, efficiency, and resiliency in the Northeast. The state has high energy costs and an aging industrial and commercial infrastructure that offers an optimal opportunity for self-renewal, with a wide-open market for sustainable and profitable “clean and green” development.

A major infusion of new investment is an opportunity for the revitalization, regeneration, and reinvention of sustainable local communities. The ultimate goal of PACE is to finance the long-term transition to clean energy, climate-adapted buildings, and low- to no-emissions from buildings. The expectation is that New Jersey will approve Commercial PACE in the fourth quarter of 2018. The current proposed legislation is S1611 and A1902. The prime sponsors of the bills are Senator Bob Smith and Assemblyman Raj Mukherji.

What Difference Will PACE Make?

PACE has the potential to literally remake and transform the built environment around us. Major energy efficiency retrofits can make our buildings both more efficient and more comfortable year-round. On-site renewable energy generation produces a double or triple value-add: the savings on the actual energy produced, the displacement of carbon-emitting generation, and the proximity to the user are all benefits realized by the property owner with no requirement for an upfront capital investment. Fiscally-driven property owners will typically demand that their ongoing savings always exceed their ongoing costs. The good news is that with PACE, property owners reap immediate and ongoing cost savings while using someone else's money in the form of a PACE assessment. Meanwhile, the investor is receiving an attractive rate of return on an investment that is highly secure, being repaid through the town's property tax collection mechanism.

There are very strong market incentives, therefore, to the deployment and utilization of private capital, that are enabled by state PACE legislation that allows municipalities to exercise a governmental power, at literally no cost to the public, to secure the improvement loan. The estimated potential for investing in existing buildings alone exceeds \$130 billion in the state, based on an informal market assessment by New Jersey PACE. One of the fastest new applications for PACE is in new construction, where the "green" elements of the project may represent up to 30% of the cost, thereby reducing the requirements for equity or more costly mezzanine financing. PACE is expected to become a standard component of a real estate developer's capital stack.

Consequently PACE may prove to have as great (if not a greater) impact on building performance as the historical deployment of incentives through the NJ Clean Energy Program. PACE does not compete with any of these incentives, but rather provides a complementary mechanism to facilitate the uptake of both programs. Financing whatever is *not* covered by subsidies or other incentives simply removes another barrier to property owner acceptance.

What are the Projected Benefits?

Based on studies by the Rockefeller Brothers Foundation, Deutsche Bank, Navigant, and others, the estimated economic and environmental returns on this type of investment include:

- Fifteen local job-years per \$1 million invested
- Approximately \$2.30 of public and private benefits for each \$1 invested
- Savings of 25-50% on energy costs for buildings and industrial processes
- Corresponding reductions in emissions of CO₂

Based on the estimated \$130 billion potential addressable market, this could mean an estimated 195,000 job-years over ten years; nearly \$300 billion in improved asset and community values; and a reduction in emissions of as much as 15-20% (about half of the 40% contributed by buildings). These are of course rough approximations, but they're enough to show that PACE investments are win-win-win propositions—good for property owners, good for investors, and good for the environment.

Residential, Commercial, or Both?

Based on the language of the proposed PACE bills (A1902/S1611), New Jersey seems poised to enact Commercial PACE (C-PACE), only, at this time, with Residential (R-PACE) being considered later. The arguments for this are both political and practical. Residential and Commercial PACE are really two different programs at almost every level except the recording of the Municipal Special Assessment agreement. The professionals, contractors, and capital providers are typically different, and use different assessment criteria in approving PACE transactions. Commercial PACE in New Jersey is expected to require mortgage lender consent by law. R-PACE typically includes no more than lender *notification*, because in most cases it's impossible to get lender consent as a result of syndication, since it is difficult to identify a mortgage lender able to provide consent. Consumer protection, eligibility, and credit requirements are also very different.

R-PACE is currently working in only three states — California, Florida, and Missouri — but in these states it is also a much larger and more homogeneous market than C-PACE. Volumes of R-PACE investment are dwarfing Commercial at a rate of more than five to one: the latest PACENation figures show a cumulative \$5.2 billion worth of R-PACE projects vs. \$690 million for C-PACE. Consequently R-PACE is likely to have an even greater economic, social, and environmental impact on the state.

While Residential PACE is expected to have an even greater impact than Commercial PACE, when it is enacted into law in New Jersey, R-PACE has been controversial for several reasons:

1. It has been opposed by the Federal Housing Finance Agency (FHFA), the conservator for Fannie Mae and Freddy Mac, which together account for more than 80% of all residential mortgages
2. It has been opposed by some mortgage bankers and realtors

3. It has been compared, in widely-publicized **though factually inaccurate** media stories, to the subprime mortgage crisis
4. Because commercial property owners have access to more professional/advisory services as they navigate PACE, it is believed that more safeguards are needed in Residential PACE to avoid perceived or real consumer misunderstandings, including contractor or lender misrepresentation.

New Jersey PACE supports the introduction of Residential PACE as soon as practical in New Jersey, given the extraordinary potential impact on families saving money on energy, improving the building stock of the state, creating jobs and economic development, increasing resiliency and reducing carbon emissions. Ultimately, both R-PACE and C-PACE are important in achieving the greatest level of impact.

PACE in the Broader Context

In its requests for comments, the BPU has asked that respondents address a series of questions. The following are some responses to the most relevant of these questions concerning PACE.

Clean and Reliable Power

1. General

- For the purposes of the Energy Master Plan (EMP) and reaching Governor Murphy's goal of 100% clean energy usage in New Jersey by 2050, how should clean energy be defined?
- Should the definition of clean energy contain flexibility between now and 2050 to allow for transitional fuels to be used and phased out over time? What intervening steps should be taken to complete the transition?
- What is the most significant obstacle to getting to 100% clean energy by 2050? How can the state address it?

Comment: PACE can be used to cover a very broad series of measures defined as “renewable,” including not only solar, wind, biomass, etc., but also combined heat and power (CHP) and other so-called “transitional” methods. Most importantly, for the purposes of PACE, the definitions of “renewable energy” are flexible enough to incorporate emerging technologies. Moreover, it is likely that the “most significant obstacles” to getting to 100% clean energy are:

- the availability of capital, which PACE addresses directly.
- getting the appropriate information to eligible property owners, along with easily understandable and financially compelling opportunities and instructions. It would be valuable for the BPU/Office of Clean Energy to promote PACE, along with OCE's programs

2. Transition and Technology

- How can the State immediately begin to transition to clean energy production and distribution? What intervening steps should be considered to clean existing technology? How should stranded costs be addressed?
- How should the state analyze the construction of additional fossil fuel infrastructure during the transition? How can the state plan to accommodate this infrastructure in both its short-term and long-term clean energy goals? What statutory or regulatory changes will be needed for the state to make and implement these determinations?
- How should the state invest in and encourage innovative technologies for renewable energy and energy efficiency?

Comment: Implementing PACE is likely one of the most immediate and practical steps to accelerate the transition to clean energy, by making capital available to private property owners to cover the costs of the switch to cleaner technologies.

3. State Policy

- Evaluate existing clean energy policies and programs: where are they most/least effective, and are they aligned with the 100% clean energy by 2050 goal? If not, what modifications can be made, if any?
- How should the state integrate low use property, such as brownfields and blighted zones, into new clean energy economy development?
- How should the state address the baseload needs v. intermittent elements of clean energy generation? What is the role of energy storage in the conversion to 100% clean energy?

Comment: PACE addresses one of the principal weaknesses of existing clean energy policies, i.e., the need for financing costs that are not covered by existing clean energy incentives. It can be used in addressing the challenges of brownfields and blighted zones, and can be used to finance energy storage improvements.

4. Planning and Zoning

- How can clean and reliable power support the expansion of clean transportation?
- Is there a role for communities in local energy planning and, if yes, what should it be? Are there opportunities for public-private partnerships to aide [sic] communities undertaking this planning?
- What portfolio mixtures can the state utilize in achieving its 100% clean energy goal? What can a transition portfolio mixture resemble in 2030 and what portfolio mixtures can the state utilize in 2050?
- Should changes be made to zoning and planning laws and requirements to allow for the development of clean energy generation?

Comment: PACE is a form of public-private collaboration, and directly involves municipalities in fostering local clean energy improvements. It does not require changes in portfolio standards or zoning and planning laws, but can readily adapt to such changes and expand their impact locally. PACE provides a unique opportunity for communities to promote clean energy cost

savings and carbon reduction to their constituents. We expect to develop a local economic development component to the Open Market PACE Program. To the extent that the PACE program can facilitate education and training, energy services providers can serve property owners, as locally as possible, and empower property owners with the information they need to retrofit their buildings or build new and significantly above code (Commercial PACE, initially, and then Residential PACE).

5. Economic Growth and Workforce Development

- How should the state address the workforce development needs associated with the transformation to 100% clean energy?
- How can the transition to 100% clean energy grow New Jersey's economy and create new innovative and high paying careers for New Jersey residents?
- How can the State encourage, require, or otherwise develop a robust supply chain for all clean energy industries?

Comment: PACE can play a major role in addressing these challenges, by creating new jobs, careers, and supply chain improvements as part of the private sector's development, without requiring additional public expenditures. Raritan Valley Community College has a workforce development program that includes energy services (HVAC, energy auditing, etc.) that will expand with the demand for services as a result of PACE. Other community colleges should follow suit, as jobs related to PACE are generally local, given the requirement to install, monitor, maintain equipment on location.

6. Environmental Justice

- How will the State consider and integrate overburdened communities into clean energy advancements?
- What efforts are most successful towards making clean energy and energy efficiency measures affordable and accessible to all?
- How can the state play a role in ensuring that disproportionately impacted communities receive opportunities and benefits connected to the clean energy economy?

Comment: Again, PACE can play a major role in addressing these environmental justice challenges, by providing 100% private capital for investments into "overburdened" and "disproportionately impacted" communities. PACE improvements are being made in various states to HUD and other affordable housing properties, which will advantage those in low income neighborhoods.

Reducing Energy Consumption

1. General

- What energy efficiency, peak demand reduction, and demand response programs and systems will assist in helping keep energy affordable for all customer classes, especially as technology advances in areas such as electric vehicles or heating and cooling, which will potentially increase electric energy usage?

- With the coming requirement that all commercial buildings over 25,000 sq. ft. be benchmarked through EPA's Portfolio Manager, what programs should be created to help with benchmarking and reduction strategies?
- What are the key non-energy benefits associated with energy efficiency? How can their value best be considered in cost-benefit analyses?
- What should the role of ratepayer funded programs, whether state or utility run, be in achieving reduction strategies?
- What type of educational outreach is needed to advance energy efficiency throughout New Jersey?

Comment: PACE can be utilized to maximize energy efficiency improvements, peak demand reduction, and commercial-building benchmarking. In fact, it's been estimated that 60% of all PACE projects to date are focused on energy efficiency, and more than half the remaining projects are mixed EE and RE projects. Commercial properties increase their Net Operating Income (NOI) through PACE, and their properties gain market value by being more competitive as places to buy, lease or rent. In NJ, if current proposed legislation is approved, PACE can also be used to finance resiliency improvements.

Because PACE provides 100% financing with no upfront costs, and amortization payments over the lifetime of the measures are less than the savings, making them cashflow positive from the start, PACE can reduce the need for ratepayer-funded programs. Private-sector PACE marketing, training and education/awareness efforts will expand and enhance educational outreach regarding energy efficiency as well as renewables. When Sustainable Jersey develops their program to give credits to municipalities for implementing PACE, Green Teams will be empowered to educate property owners about their options to retrofit buildings or build new, above code.

2. Technology

- What advances in technology should be considered as part of a strategy to reduce energy consumption? What technologies could complement and advance existing energy efficiency efforts?
- What are the intermediate timeframes and pathways to these new or enhanced technologies and energy efficiency and demand response systems?
- How do we best utilize data analytics for energy efficiency?
- What is the role of blockchain, IoT, bigdata, 5G, and other specific technologies in energy efficiency?

Comment: PACE is "technology-agnostic" but does typically require demonstrated cost effectiveness in implementing new measures and approaches. Reporting on PACE improvements can be part of an overall data-driven strategy to reduce energy consumption. If there were incentives for Measurement & Verification (M&V), Operations & Maintenance (O&M) and other monitoring programs that ensure that systems are delivering the savings promised, more property owners would use these technologies, which have been proven to be cost-effective.

3. State Policy

- How can the state play a strong role in reducing its energy consumption?

- Which strategies should be state-led, and which ones should be advanced by the private sector? What other players are important leaders in energy efficiency?
- Should the state require energy efficiency in particular projects receiving state incentives?
- Should the state play a role in encouraging pilots of different “next generation” buildings? How could the state foster the implementation of net zero or passive buildings projects? How could that impact and restructure redevelopment efforts?
- What Treasury design standards or procurement policies should be updated to reflect and encourage energy efficiency in state building designs or protocols?

Comment: PACE requires state legislation to permit and encourage local adoption, but such adoption is typically advanced most effectively by the private sector. PACE can also be used to offset the private-sector burden of energy-efficiency requirements, next-generation buildings, and additional standards in design, protocols, and procurement.

4. Codes and Standards

- What portion of the overall energy savings in the transportation, heating, processing, and cooling and electricity markets should be achieved through advanced and enhanced building energy codes and appliance standards systems?
- How should each sector — residential, commercial and industrial — be considered in terms of codes and standards updates towards reduced energy consumption? In terms of energy efficiency, are certain sectors more adaptable or important than others?
- What type of zoning changes or incentives should be considered related to green infrastructure? How can these be achieved?
- What are some examples of existing or potential advanced building energy standards or metrics? (Examples include: net zero energy, Passive House, Living Building Challenge, etc.) How could these be implemented in New Jersey to accelerate greenhouse gas emissions reduction in new and existing residential and commercial buildings?
- Are there barriers to implementing new energy efficiency codes for building inspectors? How can potential code updates be made less burdensome for inspectors in order to increase compliance and uniformity?

Comment: PACE can be adapted to and used to facilitate improvements in codes and standards in each building sector, and can make such improvements less burdensome for the private sector.

5. Security

- How can energy efficiency and peak demand reduction strategies assist in ensuring enhanced energy security, reliability, and resiliency in the energy markets?
- Should strategies across the transportation, residential, commercial, industrial, and electricity generation sectors vary based on differing security risks?

Comment: PACE can be adapted to and used to facilitate improvements in security-related energy strategies.

6. Economic Growth and Workforce Development

- What new or expanded manufacturing could be developed related to energy efficiency?
- What associated jobs and training will be needed in the new clean energy economy (particularly regarding reducing energy consumption)?
- What type of overall workforce training is needed in the energy efficiency industry, whether for maintaining systems, installation and inspection, or in other areas?
- What type of educational outreach is needed to advance energy efficiency in the workplace?

Comment: The widespread adoption of PACE supports all of these strategies, and adds jobs and careers related to financing and project origination to those involved in the direct implementation of energy efficiency technologies. An example is the Raritan Valley Community College's Environmental Control Technology Program (<https://www.youtube.com/watch?v=JnyZSxXfc1k>) and the Commercial Energy Management Technology Program (<https://youtu.be/uJv6GDE7U6E>.) These are the kinds of education and training that will expand with the demand for labor.

Finally, any project applying through the Office of Clean Energy should be provided with information on accessing PACE financing for the balance of payments, beyond subsidies and other benefits the state provides.

7. Environmental Justice

- How can the state be responsive in helping keep clean energy affordable in communities that are disproportionately impacted by the effects of environmental degradation and climate change? How can the state play an active role in improving the condition of older building stock and encouraging energy conservation measures in communities that are disproportionately impacted by the effects of environmental degradation and climate change?
- What efforts are most successful towards making clean energy and energy efficiency measures affordable and accessible to all?
- How can the state play a role in ensuring that disproportionately impacted communities receive opportunities and benefits connected to the clean energy economy?

Comments: Again, PACE can play a positive and supportive role in offsetting environmental injustice impacts, by providing readily-available private financing to improve building stock in LMI communities, encouraging energy conservation measures, and making clean energy benefits affordable and accessible to all.

For more information, please contact:

Jonathan Cloud, Executive Director

New Jersey PACE

An initiative of Possible Planet, a 501(c)(3) nonprofit

jcloud@newjerseypace.org • 908-581-8418

www.PossiblePlanet.org • www.NewJerseyPACE.org