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CASE MANAGEMENT

JAN 07 2019

BOARD OF PUBLIC UTILITIES
TRENTON, NJ



January 4, 2019

IN THE MATTER OF THE PETITION OF
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
FOR APPROVAL OF ITS CLEAN ENERGY FUTURE-ENERGY
EFFICIENCY ("CEF-EE") PROGRAM ON A REGULATED BASIS

BPU Docket Nos. GO18101112 and EO18101113

VIA ELECTRONIC AND OVERNIGHT MAIL

Aida Camacho-Welch, Secretary
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Trenton, New Jersey 08625

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JAN 07 2019

BOARD OF PUBLIC UTILITIES
TRENTON, NJ

Dear Secretary Camacho-Welch:

Enclosed for filing are the original and ten copies of the Supplemental Testimony of Karen Reif of Public Service Electric and Gas Company ("PSE&G" or the "Company") in the above referenced matter. This supplemental testimony is being submitted in response to the letter received from BPU Staff on November 14, 2018 regarding the administrative completeness of the filing. If you have any questions, please feel free to contact me.

Very truly yours,

Matthew Weissman

Case mgmt

C Attached Service List (via e-mail) ✓

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**STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES**

**IN THE MATTER OF THE PETITION OF PUBLIC
SERVICE ELECTRIC AND GAS COMPANY
FOR APPROVAL OF ITS CLEAN ENERGY FUTURE-
ENERGY EFFICIENCY PROGRAM ON A
REGULATED BASIS**

BPU Docket No. GO18101112 and EO18101113

**PUBLIC SERVICE ELECTRIC AND GAS COMPANY
SUPPLEMENTAL DIRECT TESTIMONY
OF
KAREN REIF
VICE PRESIDENT RENEWABLES & ENERGY
SOLUTIONS**

January 4, 2019

1 **PUBLIC SERVICE ELECTRIC AND GAS COMPANY**
2 **SUPPLEMENTAL DIRECT TESTIMONY**
3 **OF**
4 **KAREN REIF**
5 **VICE PRESIDENT OF RENEWABLES & ENERGY SOLUTIONS**
6

7 **Q. Please state your name and professional title.**

8 A. My name is Karen Reif. I am the Vice President of Renewables & Energy Solutions
9 at Public Service Electric and Gas Company ("PSE&G" or "the Company"). My
10 professional credentials are set forth in the previously submitted Schedule KR-CEF-EE-1.

11 **Q. Have you previously testified in support of the Clean Energy Future - Energy**
12 **Efficiency Program ("CEF-EE Program")?**

13 A. Yes. I am providing supplemental testimony in support of the Company's proposed
14 CEF-EE Program.

15 **Q. What is the purpose of your supplemental testimony?**

16 A. The purpose of this supplemental testimony is to respond to a letter received on
17 November 14, 2018 from the Board of Public Utilities ("BPU") staff indicating the CEF-EE
18 filing was not administratively complete ("Deficiency Letter"). The Deficiency Letter
19 identified five (5) deficiencies with respect to the Minimum Filing Requirements ("MFRs")
20 for petitions under N.J.S.A. 48:3-98.1. The deficiencies are identified in Table 1 below. In
21 this table, "Task" numbers are assigned to each deficiency, and shall be used in place of the
22 longer description for the remainder of my testimony, where appropriate.

Table 1

Task	MFR	Detail from Deficiency Letter
1	General Filing Requirements c. The utility shall provide supporting explanations, assumptions, calculations, and work papers for each proposed program and cost recovery mechanism petition filed under N.J.S.A. 48:3-98.1, including the rationale for selecting the approach included in its proposed program(s), and for all qualitative and quantitative analyses therein. The utility shall provide electronic copies of all materials and supporting schedules, with all inputs and formulae intact.	It requires the petitioner to provide "electronic copies of all materials and supporting schedules, with all inputs and formulae intact". The filing lacks these materials and the supporting schedules with the inputs and formulae intact.
2	Program Description a. The utility shall provide a detailed description of each proposed program for which the utility seeks approval, including, if applicable: 8. Proposed incentives	This MFR requires the petitioner to provide a detailed description of proposed incentives. The filing does not provide this information, presenting only "modeled average incentives." Neither exact dollar amounts nor incentive caps per household have been supplied for the majority of their programs; Petitioner states instead that "incentive levels may change prior to and during the implementation of each Subprogram." KR-CEF-EE-2 at Appendix A.
3	Program Description b. Comparison to in-state programs: The utility shall provide a detailed explanation of how the proposed program(s) are consistent with and/or different from existing or proposed New Jersey Clean Energy Program or utility programs (to the extent proposed program descriptions are available) targeting the same market segment, including how the proposed program(s) will complement, supplement, compete with, and/or impact existing programs being offered in-state.	The filing offers insufficient information regarding "how the proposed program(s) will complement, supplement, compete with, and/or impact existing programs being offered in-state;" The statement that PSE&G would be the exclusive provider of EE programs in its service territory does not provide analysis of the impact of the proposed program on the NJCEP or on markets that are currently served consistently statewide.

Task	MFR	Detail from Deficiency Letter
4	Program Description c. Comparison to out-of-state programs: The utility shall provide a detailed description of how the proposed program(s) are similar to and/or different from a sampling of examples of existing or proposed utility programs or pilots in other states that were used to form the basis of the proposed program(s), with all supporting documentation.	The filing includes a comparison to out of state programs but does not provide a detailed description of how "the proposed program(s) are similar to and/or different from a sampling of examples of existing or proposed utility programs or pilots in other states." Simply providing a list of similar out of state programs is not sufficient to fulfill this requirement.
5	Additional Filing Information a. The utility shall describe whether the proposed program(s) will generate incremental activity in the energy efficiency/ conservation/ renewable energy marketplace and what, if any, impact on competition may be created, including any impact on employment, economic development, and the development of new business, with all supporting documentation. This shall include a breakdown of the impact on the employment within this marketplace as follows: marketing/sales, training, program implementation, installation, equipment, manufacturing, evaluation, and other applicable markets. With respect to the impact on competition the analysis should include the competition between utilities and other entities already currently delivering the service in the market or new markets that may be created, where applicable. The analysis should also address competition with other entities already currently delivering the service in the market and new markets that may be created, where applicable.	As noted above, PSE&G has not met the minimum filing requirements since it has not provided any analysis regarding the impact of its proposal on NJCEP or the markets served by NJCEP. PSE&G's proposal is to shut down NJCEP in its service territory. However, PSE&G has not provided any analysis indicating what the impacts of the Company offering a program that differs from programs offered in the rest of the state will be.

1

2 **TASK 1**

3 **Q. Has the Company filed electronic copies of all materials and supporting**
4 **schedules that support the CEF-EE filing?**

5 **A.** Yes. Electronic copies of all materials and supporting schedules were delivered in
6 CD-format on December 7, 2018. That submission fulfilled Task 1 listed in the Deficiency
7 Letter.

1 **TASK 2**

2 **Q. Has PSE&G provided detailed descriptions of the proposed incentives for each**
3 **of the proposed subprograms, Task 2 above?**

4 A. Yes. The descriptions of the proposed incentives are located in Schedule KR-CEF-
5 EE-2 (Program Plan) at Section 3 and Appendix A, and in WP-KR-CEF-EE-1. Section 3 of
6 Schedule KR-CEF-EE-2 (Program Plan) describes each subprogram in detail, including a
7 section for each subprogram called “Proposed Incentives” that discusses information such as
8 the types of incentives that will be offered and how they are delivered, including caps on
9 subprograms such as Residential Existing Homes. Additionally, Appendix A contains a
10 listing of all measures for all subprograms, along with the proposed incentive levels that were
11 used for subprogram modeling. WP-KR-CEF-EE-1 also contains a listing of all measures
12 with proposed incentive levels.

13 **Q. Would you like to address anything else about the deficiency associated with**
14 **Task 2?**

15 A. Yes. The CEF-EE Program was designed to maximize the ability to deliver cost
16 effective energy efficiency measures. To support this, and consistent with best practices used
17 in other states, PSE&G’s proposed program design allows program staff to monitor and
18 periodically adjust incentives to respond to changing market conditions, foster greater
19 program participation, manage budgetary constraints, and support continuous improvement.
20 Below are examples of programs in other jurisdictions that recognize the value of this
21 flexible program design and empower the program administrator to make modifications to
22 incentives during the term of a program.

- 1 • **Massachusetts;** NGRID – MA’s Residential Products program plan states that
2 “Incentives are provided for qualifying consumer products. The list is continuously
3 updated and frequently changes.”¹
- 4 • **Michigan;** DTE’s ENERGY STAR Products program plan states that “Incentives
5 may change based on market prices and response as well as manufacturer/distributor
6 co-funding. Other incentive alternatives may be used when appropriate.”²
- 7 • **Maine;** Efficiency Maine’s program plan states that “Incentives will be set and
8 periodically adjusted by monitoring market activity and market prices.”³

9 PSE&G believes that this proposed incentive structure meets the MFR by proposing
10 both a dollar value by measure, as well as a strategic approach to ongoing management of the
11 incentives to ensure cost-effectiveness and prudent program design. The Company also
12 notes that the MFRs do not require the provision of “exact dollar amounts” or “incentive caps
13 per household” as suggested in the Deficiency Letter.

14 **TASK 3 and 5**

15 **Q. Where does PSE&G in its filing of October 11, 2018 provide a comparison to in-**
16 **state energy efficiency programs and describe the impact to the energy efficiency**
17 **marketplace, as referenced in both Tasks 3 and 5?**

18 **A.** PSE&G’s filing provides a detailed explanation of how the proposed subprograms are
19 consistent with and/or different from NJ Clean Energy Programs or in-state utility programs.
20 This information is contained in the following locations:

¹ “2016-2018 Massachusetts Joint Statewide Three-Year Electric & Gas Energy Efficiency Plan”

² DTE Electric Company’s “Residential Program Descriptions, Measures and Incentives” for program years 2016-2017

³ Efficiency Maine’s Triennial Plan For Fiscal Years 2017–2019

- 1 • Section 3 of Schedule KR-CEF-EE-2 (Program Plan) describes each subprogram
2 in detail, including a section for each subprogram called “Relationship to Existing
3 Programs” that discusses how the proposed subprograms compare to existing
4 programs run by PSE&G, other utilities in New Jersey, or the NJCEP;
- 5 • Section 4.12 of Schedule KR-CEF-EE-2 (Program Plan) further touches on
6 PSE&G’s proposal to greatly increase the level of investment and savings goals
7 over and beyond the existing in-state programs; and
- 8 • Appendix C of Schedule KR-CEF-EE-2 (Program Plan) shows a comparison
9 between the PSE&G proposed subprograms and other in-state programs from
10 either NJCEP or utilities.

11 PSE&G also provides details on the incremental activity that will be created in the
12 energy efficiency marketplace and the impact on competition. This information is contained
13 in the following locations:

- 14 • Attachment 1 – Direct Testimony of Karen Reif, at Section II.A describes the
15 benefits of the energy efficiency subprograms, including the significant job
16 creation aspects;
- 17 • Schedule KR-CEF-EE-2 (Program Plan) Section 3 describes each subprogram in
18 detail, including descriptions of the Market Segment / Efficiency Targeted,
19 Delivery Method, Projected Participants and Energy Savings, Relationship to
20 Existing Programs, Proposed Incentives, Marketing Approach, Contractor Role,
21 Market Barriers and Subprogram Costs;

- 1 • Schedule KR-CEF-EE-2 (Program Plan) Sections 4.7, 4.8, and 4.9 provide
2 explanations of the direct, indirect, and induced job creation, including labor
3 estimates by subprogram; describe the favorable impacts from emissions savings;
4 and outline the trade allies program that will create a skilled network of partners
5 for marketing and delivery of energy efficiency products and services;
- 6 • Petition, paragraphs 20, 22, and 23 further describe the energy savings and
7 economic benefits to customers, the emissions reductions, and the positive
8 impacts on green jobs and the local economy that result from the CEF-EE
9 proposal.

10 To supplement this extensive information provided in the filing, attached hereto as
11 Exhibit 1 is a paper describing the Company's suggested approach for transitioning the
12 administration of programs in the PSE&G service territory from the Office of Clean Energy
13 ("OCE") to the Company.

14 **Q. What is the impact of the CEF-EE proposal on markets that are currently**
15 **served statewide?**

16 A. Energy efficiency markets within PSE&G's service territory that are currently served
17 by the OCE programs will now be served by the comprehensive suite of programs proposed
18 by the Company. PSE&G's proposal offers a wider and deeper range of energy efficiency
19 services than currently offered by the OCE. As described in Exhibit 1 hereto describing the
20 transition plan, PSE&G proposes to work closely with the OCE to ensure continuity of
21 service for all currently served markets and suggests using the CEF-EE Programs as a
22 prototype for expanded offerings statewide.

1 PSE&G will work with the OCE to coordinate with market vendors to ensure they are
2 able to enroll and participate in the programs as program partners. Leveraging PSE&G's
3 unique relationship with its customers alongside the competitive marketplace will not only
4 provide customers with best-in-class service, but will also help to drive the energy services
5 economy and promote job growth and small-business success.

6 PSE&G envisions building off the foundation created by the OCE with both
7 customers and contractors to deliver programs and services that meet the EE requirements
8 established in the 2018 Clean Energy Act. Under the new structure, the functions of the OCE
9 staff would be redefined so that its energy efficiency knowledge and experience can be freed
10 to set policy and measure performance of utilities against program targets, while releasing
11 PSE&G's resources to undertake the groundwork of recruiting customers and developing,
12 implementing, executing and managing the programs.

13 **TASK 4**

14 **Q. How do PSE&G's proposed subprograms compare to programs in other states,**
15 **as referenced in Task 4?**

16 **A.** The Company's proposal draws from successful energy efficiency programs that are
17 operated in other states, including New York, Massachusetts, Maine, Colorado, California,
18 Connecticut, Ohio and Pennsylvania. These out-of-state programs are described in Appendix
19 D of Schedule KR-CEF-EE-2 (Program Plan). To address Task 4 in the Deficiency Letter
20 related to out-of-state programs, PSE&G has included an updated version of Appendix D,
21 attached hereto as Exhibit 2, which further highlights the similarities and differences between
22 the PSE&G proposal and comparable programs in other states.

- 1 **Q.** Does this conclude your supplemental direct testimony?
- 2 **A.** Yes, it does.

Exhibit 1

CEF-EE PROGRAM TRANSITION PLAN

OVERVIEW

The PSE&G Clean Energy Future - Energy Efficiency (CEF-EE) filing is a comprehensive commitment by PSE&G to move New Jersey to a national leadership position in EE in all sectors of the economy. PSE&G is proposing a substantial expansion of EE in its service territory, consistent with state and federal policy, including but not limited to the New Jersey Energy Master Plan development, the 2018 Clean Energy Act (P.L. 2018, c. 17, the “Act”), and the Global Warming Response Act. This effort is driven by PSE&G’s unique and ongoing relationship with its customers as well as its substantial resources in financial and human capital, which will enhance and change the way PSE&G delivers services -- with the goal of reducing energy costs and emissions and transforming EE so that all customers recognize it as the number one energy resource.

PSE&G is in a unique position to move the State to a leadership position since, as a utility, its grid assets and customer relationships cannot be duplicated. Through this initiative, PSE&G will utilize the synergistic interplay of these segments to improve the efficiency and comfort of its customers, while also reducing energy costs. Two examples from the filing that illustrate PSE&G’s exceptional capacity to transform the market are: (1) on-bill repayment, which will let customers reduce the up-front cost burden often associated with EE investments by paying off these investments over an extended period of time in a way that is accessible and logical, and packages energy and energy services into a single bill; and (2) the strategic positioning of its business customer representatives to promote a suite of EE incentives, for existing customers as well as -- and especially during -- requests for an extension or upgrade of utility service at the front end of construction. This example illustrates PSE&G’s distinct position, since the Company already manages the utility service construction process. PSE&G’s ability to effectively drive EE and technology investments flowing from the fact that it is already the main point-of-customer contact and already has representatives on-site cannot be overstated.

PSE&G recognizes the role currently played by the New Jersey Office of Clean Energy (OCE) and the Clean Energy Program (CEP) in delivering existing programs to customers. Since the utilities are obligated to meet the aggressive targets created under the Act, it is most appropriate for the utilities to have control over the programs needed to meet those targets. A smooth transition from the OCE delivery of services to PSE&G delivery of a much wider and deeper range of services is essential to achieving the mandates under the Act and maximizing savings for customers. PSE&G envisions building off the foundation created by the OCE with both customers and contractors to deliver programs and services that meet the EE requirements established in the Act.

EVOLVING ROLE OF THE OCE

In light of the mandates outlined in the Act, and the desire to achieve national leadership status, New Jersey needs to realign the roles of the EE stakeholders in the state. The OCE's knowledge of EE programs and regulatory activities can be best utilized by placing the OCE at the head of EE policy across the state, and performing roles related to standard setting and oversight. This would entail OCE staff moving away from the direct administration of programs and the management of contractors to deliver EE services, roles which more appropriately reside with the utility. A breakdown of the suggested roles is shown below.

OCE Functions



- ☐ Set EE policy and strategic direction
- ☐ Provide regulatory and program oversight
- ☐ Ensure statewide consistency, where appropriate
- ☐ Set and enforce EE metrics
- ☐ Review program cost-effectiveness
- ☐ Evaluate and issue performance incentives

Utility Functions



- ☐ Design programs and submit proposals to the BPU
- ☐ Implement, execute and manage programs
- ☐ Provide program education and outreach
- ☐ Manage vendors, contractors, implementers and other third-parties
- ☐ Deliver innovative EE services
- ☐ Provide quality customer service and handle customer complaints

This focus on oversight, planning, and evaluation would give the OCE the vital task of assuring that all customer segments have access to beneficial, cost-effective EE programs and incentives. This area will become more relevant and need enhanced oversight as New Jersey increases its commitment to energy efficiency. The following section provides PSE&G's proposed approach to this essential role realignment and the steps needed to lead the OCE into its new role as steward of New Jersey EE policy.

TRANSITION PLAN

To effectively transition the administration of programs from OCE to PSE&G, the first step will be to schedule a series of transition meetings between PSE&G and the OCE staff. PSE&G recommends these meetings begin within a short time following Board approval. These meetings will cover expansive topics, including dates when OCE will cease offering programs within the PSE&G territory and when PSE&G will begin offering the new

proposed programs, as well as the solidification of a prudent transition plan. Other topics will include coordination of marketing and outreach efforts to assure an effective and orderly switchover, discussion of best practices, opportunities for statewide consistency, and planning on how the new programs will be administered. PSE&G will look to the OCE to assure that these items conform to the State's energy policy, are consistent with the OCE's ongoing operations, and incorporate input based upon recent experience.

Another important topic of discussion will be the transfer and onboarding of contractors and contractor services. PSE&G will work with the OCE to coordinate with market vendors to ensure they are able to enroll and participate in the programs as program partners and can provide continuity of service to end customers. Leveraging PSE&G's unique relationship with its customers alongside the competitive marketplace will not only provide customers with best-in-class service, but will also help to drive the energy services economy and promote job growth and small-business success. A detailed transition plan will be developed with the OCE, building on the straw tasks below:

Task	3 Months following Approval	6 Months Following Approval	9 Months following Approval	12 Months following Approval
PSE&G / OCE transition meetings				
Review vendor contracts				
Outline plan for transfer of contractors				
Develop communication plan for affected customers				
Determine reallocation of SBC funding				
Effectuate transfer of program administration				

Under the new structure, the functions of the OCE staff would be redefined so that its EE knowledge and experience can be freed to set policy and measure performance of utilities against program targets, while releasing PSE&G's resources to undertake the groundwork of recruiting customers and developing, implementing, executing and managing the programs. As appropriate, other in-state utilities should be involved in this process and determine whether it is best for them to pursue similar approaches.

Additionally, the Board and the OCE would be able to reallocate funds collected through the Societal Benefits Charge (SBC) to provide additional value to New Jersey ratepayers.

PSE&G envisions ongoing discussions, cooperation, and open dialogue among PSE&G, the OCE, other New Jersey utilities, and other stakeholders. This could include periodic briefings on marketing and sales plans to help achieve substantially wider and deeper saturation of EE program participation within the PSE&G territory and to share lessons learned in the PSE&G territory for application elsewhere in the state.

Customers benefit most when PSE&G and the OCE are working hand-in-hand, with clearly defined program guidelines. The realignment discussed herein would raise the bar for the delivery of EE services in New Jersey and would allow PSE&G customers to realize greater savings more quickly. Any delays or inefficiencies in the process will cause savings to be lost. It is therefore imperative that the transition process is timely and efficient. PSE&G is eager and committed to dedicate the resources needed to effectuate a smooth and seamless transition pathway.

Exhibit 2

APPENDIX D – UPDATED COMPARISON TO OUT-OF-STATE PROGRAMS

Residential Programs	
Residential Efficient Products	Residential efficient products incentive programs are among the most common residential energy efficiency programs. While numerous administrators offer prescriptive incentives for residential efficient products, PSE&G has drawn from leading programs and emerging strategies to design a program that includes midstream incentives, an online marketplace, and has proposed to explore the viability of using a smartphone-based immediate point-of-sale rebate mechanism. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Xcel Energy (MN) offers similar rebates on Heating, Cooling and Water Heaters, and leverages a network of trade allies to perform some program work. The program differs in that it is narrower in scope of measures, and does not offer on-bill repayment. • National Grid (MA) leverages ENERGY STAR certification as a major qualifier of equipment eligible for rebate, for products such as clothes dryers, room air cleaners, dehumidifiers, lighting, pool pumps, and electric mini-split and heat pump equipment. The program differs in that it is narrower in scope of delivery channel, heavily leveraging customer-initiated mail-in rebates. The program in MA does not leverage a utility operated marketplace. • Pacific Gas & Electric (PG&E) leverages a marketplace, post-purchase rebates, and trade allies to deliver efficient products through a wide variety of delivery methods, similar to the customer-choice oriented proposal for the PSE&G Residential Efficient products proposal. While the PG&E program offers equipment financing through Gogreen Financing to help enable customers to make investments in energy efficiency including heating, cooling, and appliances, the program uses a different mechanism than is proposed as part of CEF-EE, and is not able to provide the repayment on customers' utility bills.

Residential Existing Homes	Home retrofit and weatherization programs are offered by many administrators to provide whole-home efficiency solutions to participants and improve the efficiency of residential housing stock. Existing homes programs typically either utilize an ‘unmanaged’ approach, whereby program incentives are available to any contractor or homeowner, or a ‘managed’ approach, whereby program incentives are available only to trade allies that are trained by the subprogram and meet eligibility criteria. PSE&G has chosen to pursue a ‘managed’ approach and modeled the Existing Homes program after leading Home Performance with ENERGY STAR (HPwES) programs. This strategy helps to build the contractor/trade ally marketplace around a culture of energy efficiency, so that the subprogram may organically grow, as opposed to simply ‘procuring’ energy savings. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • National Grid (MA): The Home Energy Checkups program at National Grid Massachusetts offers an upfront energy audit at no cost with free installation of energy saving equipment such as LED light bulbs, faucet aerators, low-flow showerheads, and more. The PSE&G proposed program is similar in that it uses the upfront energy audit both to directly install energy savings equipment, as well as identify customers who could benefit from heating, cooling, insulation, and other larger measures. One difference is that while the National Grid audit is at no cost, the Residential Existing Homes sub-program here envisions testing multiple price points to ensure efficient delivery of the program. The concept of a nominal fee is intended to ensure participating customers are committed to saving energy, and potentially limit waste. • EnergizeCT: The EnergizeCT program Home Energy Solutions offers a similar suite of measures, in addition to an upfront energy audit. Similar to the PSE&G proposed program, the EnergizeCT program offers on-bill financing for the measures in the program, to further incentivize customers to invest in deep-savings measures. One difference is that the CT program envisions delivery by a network of contractors, where PSE&G proposes to have an option to have PSE&G personnel perform the work in some components of the program. • Efficiency Vermont: Home Energy Assessments from Efficiency Vermont offers blower door tests, diagnostics, and an assessment of heating, cooling, air-sealing, insulation and more, all similar to the offering proposed in the PSE&G CEF-EE program. While Efficiency Vermont does offer financing to incentivize customers to invest, they offer financing with interest, through a third-party credit union, as opposed to the PSE&G offer to repay the cost of efficient measures directly on the PSE&G bill with no interest.
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Residential New Construction	The RNC program is similar to other leading residential new construction programs and market best practices. The RNC program will streamline the performance incentive structure as compared to NJCEP's existing program by basing the incentive on actual modeled energy savings, rather than HERS score. This new incentive structure is easier to understand and more directly aligns incentives with energy savings. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Duke Energy Carolinas: Duke Energy Progress in North Carolina offers Residential New Construction, which includes measures such as insulation, building shell, air circulation, and high-efficiency windows, similar to the types of measures contemplated in the PSE&G CEF-EE proposed program. Duke bases incentives on a HERS score, in contrast to the PSE&G proposed program which proposes actual modeled energy savings. • AEP Ohio: The EfficiencyCrafted New Homes program offers a similar suite of measures, and promotes non-energy benefits to help promote the program, including healthier indoor air quality, comfort, and lower maintenance costs. The AEP program also targets the HERS score as the driver of incentives, as opposed to actual modeled savings. • PECO: Similar to the PSE&G proposed program, Energy Efficient New Homes from PECO targets incentives toward builders to grow the market, but additionally educates homebuyers to help support development of the market for high efficiency homes. The PSE&G program proposes additional incentives for homes that are EV-ready and PV-ready.
Residential Multifamily	The multifamily program provides direct installation of low-cost efficiency measures, behavioral education and referral to the C&I Prescriptive Program for whole building or common area efficiency opportunities. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • PECO: PECO offers multifamily properties of two or more units a complimentary energy assessment as well as complimentary energy-saving products in resident units. PECO staff installs LED bulbs and low flow devices. They also offer incentives for energy-saving upgrades in common areas and whole building, such as HVAC equipment, water heating and occupancy sensors. The program differs in that it does not offer direct free installation of smart power strips in units. • Mass Save: Mass Save's Multifamily Program offers incentives for building owners with units 5 units or larger which begins with an assessment to determine eligibility. Measures could include lighting upgrades and controls, HVAC equipment and controls, water heating equipment, low flow devices, programmable thermostats, insulation and air sealing, etc. There is a separate offering for properties between 1-4 units. The offer for smaller buildings includes an energy

	assessment and no cost direct installation of items like LED lighting, power strips, low flow devices and programmable and wireless thermostats. The Mass Save program differs from the PSE&G CEF-EE program in that it targets different size multifamily facilities with different offers. • Con Edison: Con Edison's Solutions for Multifamily buildings offers a split incentive structure for installation of gas and electric measures for market rate, affordable and in unit, all at different incentive levels. Additionally, there is a no cost in unit offering for customers in Brooklyn and Queens. The Con Edison Program differs from PSE&G's CEF-EE program in that building assessments are not provided for free but included in the rebate structure. Building survey fees for affordable housing only are refundable upon completion of measures.
Residential Behavior	Behavioral programs are offered by many utility administrators and have proven to be a successful strategy for producing behavior-driven energy savings and as a key touchpoint for informing customers of other energy efficiency measures and programs. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • National Grid (MA): The National Grid program is part of a statewide program initiative with the primary goal to encourage customers to engage in behavior that will result in energy conservation or demand reduction. The customers receive electronic or mailed reports on an ongoing basis and have access to an online portal. • PECO: The PECO program provides both paper and digital versions of a home energy report to its electric and natural gas residential customers, which compares the customers' electric consumption to similar households and makes personalized recommendations for the participants to use energy more efficiently. Other behavioral awareness tactics that may be utilized include real-time energy displays, social media updates, and community energy competitions. • ComED: The ComEd Home Energy Report provides select residential customers with information on how they use energy within their households. Reports and the online portal include usage comparison to that of similar, nearby households, personalized energy efficiency advice, program promotions, and application of behavioral principles and social norms to drive adoption of energy efficient behaviors.

K-12 Education	The major similarities between PSE&G's proposed school kit program and other utility programs are the measures included in the school kit and the process for verifying and rewarding installations. One major difference between PSE&G's program and other programs is that most other programs target grades 4-8. Only a few target all school-aged children. Another major differences is that the take-home school kit programs and school building efficiency programs tend to be separate program offerings, or utilities will offer one but not the other. School kit programs often fall in utility's residential portfolios, whereas school building efficiency programs tend to fall in commercial portfolios. Out-of-state programs with similarities to the proposed CEF-EE program are offered by the following administrators, among others: • PPL: PSE&G and PPL both target nearly all school-aged kids in the school kit program. PSE&G is only aware of a few utility programs that target this broad of a school audience. Most utility programs target 4th through 8th grade students because elementary and middle-school aged students tend to be more receptive to these energy education lessons and more willing to take the kit home and complete an activity with their parents. PPL's program does not include any school building efficiency components. PPL does not offer school building performance evaluations or identify recent school efficiency improvements. Most utilities offer separate programs for school-based efficiency, or only offer one program type or the other. • Xcel Energy: All of the measures in PSE&G's school kit are included in Xcel Energy's kit. These include LED bulbs, LED night light, shower head, kitchen aerator, and bathroom aerator. PSE&G's program differs in that it includes a digital thermometer and furnace filter whistle. Xcel Energy only offers its program to 5th and 6th grade students, and does not include school building efficiency. PSE&G's program would offer the program to all school-age students and incorporate school building energy assessment. • Indiana Michigan Power: Indiana Michigan Power and PSE&G have very similar measures in their respective kits, with the exception of a FilterTone alarm and digital thermometer in the Indiana Michigan Power kit. Indiana Michigan Power's program was designed to align with state academic standards. PSE&G did not indicate that its program would be aligned with these types of standards.
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Income Eligible	Income eligible programs are commonly offered by administrators to ensure energy efficiency opportunities are available to all customer segments. The subprogram will provide free, direct installation of energy efficiency services for income eligible customers, as coordinated via the existing Comfort Partners participation platform. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Efficiency Vermont: Is similar to PSE&G's proposed program as it provides renters and homeowners with access to free energy savings measures, such as free audits, insulation, air sealing, water-saving devices, LEDs, appliances, and heating systems. It is different from PSE&G's program as Efficiency Vermont does not arrange for the direct installation of energy savings measures, but rather builds relationships with a variety of public and private organizations that offer social and economic services to the low-income community. • Eversource: <i>The Home Energy Solutions – Income Eligible (HES-IS)</i> program is similar to PSE&G's proposed program as it utilizes Building Performance Institute (BPI) certified technicians to perform energy-saving improvements to reduce drafts and help customers save energy. Some measures, such as insulation and more energy-efficient refrigerators are installed by contractors. It is different from PSE&G's program as it is a Home Performance with Energy Star Program. • EmPower Maryland: <i>EmPOWER Maryland Low Income Energy Efficiency</i> Program is similar to PSE&G's program as it provides income eligible customers with energy efficiency measures, such as insulation in the attic, floors and walls, hot water system improvements, lighting upgrades, furnace cleaning, tuning and safety repairs, refrigerator retrofit, and, if applicable, health and safety items. It is different from PSE&G's program as its services are typically delivered by a weatherization agency or private contractor through the Maryland Department of Housing and Community Development. The Maryland Department of Human Resources' Office of Home Energy programs is the primary marketing channel that identifies and reaches out to households that previously received energy bill assistance.
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Commercial & Industrial Programs	
C&I New Construction	Commercial New Construction programs are offered by many program administrators to integrate energy efficient design and systems into new buildings during design and construction when these opportunities are the most cost effective. This subprogram draws from best-practices approaches to offer incentives to participants at different stages of the design/build process and with different objectives by providing incentives for equipment as well as a high-performance/whole-building pathway and a net-zero pathway. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Efficiency Vermont offers a program similar to the proposed PSE&G program. Both program includes equipment, high performance and net zero pathway. However, a difference between the programs is that Efficiency Vermont has extra savings available for an energy charrette, energy simulation and commissioning. • AEP Ohio offers similar incentives as PSE&G's program with its "Whole building" approach and system / equipment pathway. However, AEP Ohio does not offer the Net Zero Buildings pathway. AEP Ohio does offer a "My Solutions" approach that is a hybrid path within their New Construction program that allows commercial projects to participate in a "Whole building" approach without having to create an energy model. • National Grid also offers a similar "Whole building" approach and a systems approach. However, National Grid also offers an integrated design path for small commercial buildings that is different than the PSE&G program.
C&I Non-Residential Small Business	Small business programs are offered by many program administrators to offer turnkey efficiency services for small businesses that are often hard to reach through traditional DSM programs. Small business programs, including the proposed program, typically include an on-site energy audit, installation of simple direct-install measures, and provide small business customers with information and incentives to pursue additional efficiency measures. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Consumers Energy: Small Business Energy Efficiency Program is similar to PSE&G's as it utilizes contractors to perform energy audits and to install energy savings measures such as, replacing inefficient lighting with new LED's and installing energy efficient lighting controls. It is different from PSE&G's program as on bill financing is not offered and any Customer contribution is managed between the contractor and the Customer. • ConEdison: Small Business Owners Program is similar to PSE&G's as it utilizes contractors to perform energy audits and to install energy savings measures such as lighting, HVAC and refrigeration upgrades and or replacements. It is different

	than PSE&G's program as on bill financing is not offered and any customer contribution is managed between the contractor and the customer. • AEP Ohio: Business Express Program is similar to PSE&G's as it utilizes contractors to perform energy audits and to install energy savings measures such as lighting, and HVAC measures. It is different than PSE&G's program as on bill financing is not offered.
C&I Custom	Custom programs are offered by many program administrators to offer efficiency incentives to commercial customers with unique savings opportunities. Key characteristics shared with other programs include per-unit savings incentives, project pre-approval, and use of additional measurement and verification steps where savings are difficult to quantify or expected to be above a size threshold. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Consumers Energy has a C&I Custom program that, like PSE&G's proposed C&I Custom program, provides business customers with incentives for high-efficiency measures that are not addressed through the Prescriptive program. The Consumers Energy program differs from PSE&G's proposal in that it targets mostly manufacturing facilities, hospitals, schools, and lodging/hospitality, whereas PSE&G's program targets non-MUSH building types, since municipalities, universities, schools and hospitals, because those types of buildings are captured under PSE&G's proposed Engineered Solutions program. • Xcel's Custom Efficiency program, like PSE&G's C&I Custom program, provides electric and gas incentives to qualifying business customers that install efficiency measures that are not covered by the traditional prescriptive products, and utilizes a network of trade allies. Xcel's program differs from PSE&G's proposal in that it provides study funding up to 75% of the study cost – not to exceed \$25,000 – to help identify project savings. • DTE Energy has an analogous program called <i>Non-Prescriptive Program</i> that is similar to PSE&G's C&I Custom program since it provides incentives offered on a per kWh basis. The DTE Non-Prescriptive program differs from PSE&G's proposed C&I Custom program in that it includes C&I new construction, whereas PSE&G's proposal contains a separate subprogram for new construction. Also, DTE's program is focused on electric measures only, whereas the PSE&G C&I Custom program includes gas measures.

C&I Prescriptive	Commercial prescriptive programs are among the most common commercial energy efficiency programs, and the proposed program shares similarities with many out-of-state programs with respect to the suite of measures offered. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Central Hudson's C&I Prescriptive program is like PSE&G's program since it provides prescriptive rebates for energy efficient equipment that participants select from a pre-qualified list of measures, and targets a broad range of C&I customers and trade allies. PSE&G's C&I Prescriptive program proposal is different in that it relies on a variety of methods for marketing, outreach and education, whereas the Central Hudson program relies most heavily on trade allies. • Consumers Energy has a C&I Prescriptive program that is similar to PSE&G's proposed C&I Prescriptive program in that it is designed to work through a variety of market channels to affect the installation of targeted technologies, and it engages a network of trade allies to assist with the program outreach. The Consumers Prescriptive program differs from PSE&G's proposed program in that it does not include midstream as a key delivery method. • Efficiency Maine has a C&I Prescriptive program that is similar to PSE&G's proposal in that it includes both electric and gas measures, encourages installation of "off-the-shelf" high efficiency equipment, and provides incentives in the form of rebates. The C&I Prescriptive program at Efficiency Maine differs from PSE&G's proposal in that it does not target the midstream sector delivery method as heavily as PSE&G's proposal.
C&I Energy Management	The C&I Energy Management Program includes two primary pathways: Retrocommissioning (RCx) and Strategic Energy Management (SEM), each of which focus on developing teams of people at large C&I customer sites to focus on low-cost and behavioral changes that can save significant energy through better operations and maintenance, and better advanced planning for efficiency opportunities. RCx focuses on identifying operations and maintenance improvements in existing commercial buildings to ensure optimal performance of building systems and system interactions. RCx applies the same systematic process to buildings as is applied during initial building commissioning, and may be performed every three to five years to ensure optimal building performance. SEM is primarily geared toward industrial and manufacturing buildings and is a holistic approach to managing energy usage focused on management of existing systems and processes (including behavior), as well as tracking and benchmarking performance to identify and evaluate energy optimization efforts. SEM is a long-term effort typically led by an external instructor focused on developing and executing an energy management strategy via workshops, webinars, and group/individual training sessions with cohorts of facility managers.

	The subprogram draws on the design of out-of-state programs including: • NYSERDA: The NYSERDA <i>Strategic Energy Management</i> (SEM) program consists of twelve training sessions, led by an energy coach, over twelve months. The sessions are a combination of group workshops, individual training, and webinars. • PG&E: The PG&E <i>Retrocommissioning</i> (RCx) Program offers business solutions and connects business customers with experts to ensure that their facilities, and the equipment and systems within them, are running in peak condition for optimal energy savings. • ComEd: The ComED <i>Retrocommissioning</i> program offers business customers a fully funded study to identify no cost and low cost operational savings improvements. Customers may also qualify for financial incentives based on energy savings achieved. • The ComEd Strategic Energy Management pilot program jointly operated by Com Ed and Nicor Gas. The goal of the SEM program is to implement a process of continuous energy management improvements that result in energy savings and reductions in energy intensity through low cost/no cost opportunities.
C&I Streetlight	The C&I Streetlight Program will advance the efficiency goals of municipalities by retrofitting to LED street lights and funding for other Smart City initiatives. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Georgia Power offers a similar C&I streetlight program that includes LED lighting technology, with turnkey installation and ongoing maintenance provided by the utility. The difference between the programs is Georgia Power also has camera product selection offering that also includes maintenance. PSE&G does include a pilot for Smart Cities in its product offering, including The enhanced services could include the addition of environmental sensors for monitoring air quality, temperature and humidity, local parking and traffic sensors to direct drivers to less congested areas, LED lighting banners for more efficient lighting use, and a communications backbone with sensors mounted on utility poles that allows the local government to deploy Internet of Things (IoT) to support public safety and public Wi-Fi networks. • PG&E offers a similar LED street light program that replaces High Pressure Sodium Vapor lamps with LED technology with turnkey replacement service. The PSE&G program proposes a Smart Cities Pilot which is not present in the PG&E offering. • National Grid offers an “Opt-In” LED street light program similar to PSE&G

	whereas they are replacing existing lighting with LED lighting technology. One difference between the programs is Nat Grid's "Opt-In" LED replacement program is for Failed Company – owned HID Luminaires.
C&I Engineered Solutions	The C&I Engineered Solutions Program includes two primary pathways: tailored energy efficiency assistance to public service entities, such as municipalities, universities, schools, hospitals (MUSH), non-profit entities and multi-family facilities (many of which are HMFA qualified), and Combined Heat and Power (CHP). The 'tailored energy efficiency assistance' component is (to our knowledge) unique, and while no known out-of-state program administrators combine these elements into a single 'engineered solutions' offering, out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • CenterPoint Energy: CenterPoint Energy's Healthcare Energy Efficiency Program (HEEP) is similar in its approach targeting hospitals. CenterPoint does not require a participant deposit and provides free technical assistance and benchmarking as well as cash incentives for implementation of eligible energy conservation measures (ECMs). The program differs in that it does not provide upfront financial assistance for implementation of ECMs and incentives are capped at 50%. The program also does not offer on-bill repayment. • PG&E: PG&E's School Energy Efficiency Program (SEE) assists public school districts and county offices of education to identify, evaluate, and process incentives on energy efficiency retrofits. The SEE Program offers deemed rebates as described in PG&E Rebate Catalogs, as well as calculated incentives for upgrades that are not addressed through the deemed rebate process. PG&E's program is similar in that it provides technical assistance and access to rebates as well as an interest free loan however loans are limited to \$5,000 to \$100,000 with up to \$250,000 for Government agencies. Additionally, participants are not provided with cash upfront for implementation. • PECO: PECO offers a Combined Heat and Power (CHP) Program to a similar segment of customers with a sizable load including healthcare, education and multifamily housing. PECO's CHP offering is based on performance and capacity with capped incentives. PECO's program does offer design assistance however; it is in the form of an incentive and not part of the program offering. PECO's program does not offer a 10 year on bill repayment component.

Pilot Programs	
Emerging Technologies and Approaches Pilot	The purpose of the Emerging Technologies and Approaches (ETA Pilot) is to evaluate, demonstrate, and deploy the next generation of technologies and customer engagement approaches, promote economic development in New Jersey, and coordinate ETA Pilot activity and lessons learned with all utilities in New Jersey. The ETA Pilot is proposed as a pilot due to the experimental and supporting role it will play in PSEG's energy efficiency efforts. By supporting the development and widespread adoption of advanced energy efficiency technologies and customer engagement approaches, this pilot will support statewide goals for efficiency and greenhouse gas (GHG) reductions. The pilot accomplishes these tasks through a collaborative research, reporting, and review process with a committee of utility, government, trade ally, and other stakeholders. For the most promising new technologies and approaches, the ETA subprogram will create business plans (with associated growth) for their cost-effective deployment in future energy efficiency subprograms. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • Sacramento Municipal Utility District (SMUD): The <i>Customer Advanced Technologies</i> (CAT) program is recognized as a market leader for this type of program (per E Source). The PSE&G program shares some similarities on the approach to provide funding and support for real world demonstration projects. The PSE&G ETA Pilot goes beyond this, by also supporting commercialization efforts of emerging technologies, by engaging customers and trade allies to raise awareness and availability of these products, developing their availability for broad-reaching energy efficiency programs in the future. • Nicor Gas: Nicor works closely with the Gas Technology Institute (GTI) to test and demonstrate technologies. Nicor's program is more focused on R&D, and demonstration of projects based on emerging technologies. The PSE&G ETA Pilot has a broader scope, helping to develop the commercial viability of proven technologies. This information was sourced from an E Source evaluation of the Nicor Gas research program.

Energy Efficiency as a Service Pilot	The Energy Efficiency as a Service (EEaaS) Pilot Subprogram will offer C&I customers a deeper, ongoing relationship with PSE&G through service contracts, incentives, and extensive guidance on executing service contracts for intelligent building equipment and software. This could include automation, controls, and information technologies for data collection and communication, as well as software analytics focused on equipment management, including remote monitoring, fault detection and diagnostics, and reporting. A key element of EEaaS is the use of service contracts with vendors through which customers pay a monthly fee for energy service, which enables them to avoid performance risk and up-front cost exposure. The EEaaS construct is an innovative divergence from the traditional measure-based design to incentive programs. It offers a pathway for ongoing communication, a structure for more comprehensive advisory services, and terms that enable more holistic retrofits that deliver greater energy savings, customer satisfaction, and business improvements. Program offerings reviewed include: • PG&E worked on development of a turnkey C&I energy efficiency solution, presented at Distributech 2016. The program was similar in that it proposed a hands-off solution for the customer, and targeted a similar market. The PG&E offering differed in that they planned to hold the contract with the customer, and some of the risk. The PSE&G program proposal instead has the utility playing the role of the market facilitator between customers and third-party vendors. • Research did not turn up other similar utility-operated programs, however PSE&G proposed EEaaS pilot will help customers achieve deeper energy savings by leveraging existing utility customer engagement channels to connect them with 3rd party vendors providing energy efficiency services.
Smart Homes Pilot	A “Smart Home” is one whose mechanical systems and energy-using devices have functionality that act intuitively and intelligently through an ecosystem of communicating devices, software, and services. The smart home functionality can enrich customers’ lives by fostering increased comfort, awareness, convenience, and cost and energy savings. The automation and data stemming from smart technologies can enable the home to become a dynamic grid asset that will help PSE&G to shift and shed load, generate clean energy, and contribute to grid reliability. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • AEP Ohio: <i>It’s Your Power</i> by AEP Ohio is an app-based home energy management pilot to help customers monitor and manage the energy-using equipment in their homes. PSE&G’s proposal is similar in that it envisions connecting devices in customers’ homes to manage energy usage, as well as comfort and convenience. A major difference is that the AEP program leverages smart meters, currently being rolled out to customers, to enhance the value to the customer, giving real-time feedback to data at the meter. • FirstEnergy Ohio: <i>Smartmart</i> offers a Connected Home Plan, including a

	monthly fee for a smart thermostat and ongoing HVAC Monitoring Service. Additionally, they offer the ability to lease EV chargers through the same program, tying together major components of customers' vision of the smart home. PSE&G's Smart Homes pilot proposes to offer customers the tools they need to manage energy consumption, as well as the comfort and convenience they gain from operating that equipment efficiently.
Non-Wires Alternative Pilot	The purpose of the PSE&G Non-Wires Alternatives (NWA) Pilot is to assess whether, with sufficient focus and level of customer engagement, certain targeted initiatives that use non-traditional distribution solutions can cost-effectively defer or replace the need for and investment in new infrastructure and equipment upgrades, such as distribution lines or transformers, by reducing the electric load at a substation or circuit level. NWAs that can be employed to address congestion 'hot-spots' and potentially avoid or delay the need for infrastructure upgrades include: distributed generation (DG), energy storage, energy efficiency (EE), demand response (DR), and grid software and controls. Pilots similar to this proposal are offered by the following EE program administrators, among others: • National Grid (Rhode Island): This NWA project uses geographic targeting to deliver energy efficiency, demand response and distributed generation in order to offset utility investment in electric transmission and distribution (T&D). National Grid targeted the communities of Tiverton and Little Compton. The project leverages a number of initiatives including: Enhanced energy efficiency initiatives, DR events, Thermal energy storage / load shifting, EV off-peak charging initiative, Installation of volt-ampere reactive (VAR) optimization technologies, and Customer education, outreach, and engagement. • Consolidated Edison: Brooklyn Queens Demand Management (BQDM) pilot. In 2013, Brooklyn and Queens began to experience increased customer electric demand, which began to overload the capabilities of the sub-transmission feeders that serve the Brownsville No. 1 and 2 substations. The BQDM Program was designed to address the overload by reducing load 69 MW by summer 2018. To achieve this goal, 52 MW of the reduction was attained through a combination of nontraditional utility-side and customer-side solutions and 17 MW by using traditional utility infrastructure investment.
Non-Pipes Solution Pilot	The PSE&G Non-Pipes Solution (NPS) Pilot is a natural gas pilot that will test whether, with sufficient focus and level of customer engagement, certain targeted initiatives that use non-traditional pipe solutions to reduce gas load at the localized level during peak periods, can cost-effectively defer or replace new pipeline construction. Pilots similar to this proposal are offered by the following EE program administrators, among others: • Consolidated Edison: Con Ed is launching a non-pipes program to meet growing energy needs in its service area. Con Ed stated proposed to spend at least \$100

	million annually to avoid construction of a major new gas pipeline. The investments would focus on demand reduction measures and local gas supply enhancements. Demand reduction measures may include energy efficiency, demand response and environmentally-beneficial electrification of space and water heating. Local gas supply enhancement may include biogas technology and natural gas storage. • National Grid (MA): National Grid is also working with the Fraunhofer Center for Sustainable Energy (CSE) in Massachusetts to design, deploy and measure a small gas demand reduction program to assess the potential for and value of gas demand reduction at large. This research is funded by a \$200,000 grant from the Massachusetts Department of Energy Resources.
Volt Var Pilot	The PSE&G Voltage and Reactive Power Optimization Pilot (also-called Volt-Var-Optimization, or VVO) will test smart-grid technology that enhances the control of circuit voltage and reactive power controls on an electric power distribution grid to reduce energy consumption, peak demand, system losses and enable more solar. VVO uses distributed sensors, two-way communications infrastructure, remote controls on substation transformer load-tap changers and capacitor banks and integrating/optimizing software algorithms to flatten voltage profiles and lower the average voltage levels delivered to customers. Customers will still receive tariff-required voltage levels; those that previously received higher-than-required voltages should see modest reductions in their voltage and bills with possible savings due to reduced peaks, energy and system losses. Out-of-state programs with similarities to the proposed program are offered by the following administrators, among others: • PECO: The Conservation Voltage Reduction (CVR) program is credited with very cost-effective energy savings. The conceptual program design is very similar to the PSE&G program, optimizing the distribution network to optimize voltage levels to reduce energy consumption and peak demand. One key area of difference is that the program launched nearly a decade prior to the proposed launch date of the PSE&G program and new technologies both on the grid and behind the meter may impact overall program effectiveness. • Sacramento Municipal Utility District (SMUD): The CVR program at SMUD was credited with returning 0.6% reduction in energy/demand correlated to a 1% reduction in system voltage. As will most/all CVR/VVO programs, the grid will remain within tariff-required voltage levels, while gaining savings for those customers who may have been operating at higher than required voltages. The PSE&G program will additionally look to leverage the newest technologies and help enable technologies such as solar and energy storage.

Business Energy Reports Pilot	Business Energy Reports (BER) programs are offered by several utilities. These programs drive energy conservation behavior by educating business owners and facility managers of their detailed energy usage profiles and energy savings opportunities. Additionally, these programs present customers with customized suggestions where they can take action to save energy by using C&I customer analytics on building type, business and energy consumption history. Out-of-state programs with similarities to the proposed program are offered by the following utilities: • PG&E's Business Energy Checkup program is similar to the PSE&G proposed pilot. Both programs suggest energy conservation measures ideas that may interest the customer to take action and save. There are no differences between the programs. • BC Hydro and Consumer Energy both used business energy reports similar to proposed PSE&G pilot. They all use business energy reports as a marketing strategy for other DSM programs. As a marketing strategy, business energy reports serve as a lead generator that promotes commercial DSM programs to boots engagement in other DSM programs. There are no differences between the programs.
Building Operator Certification Pilot	Building Operators programs are offered by many program administrators. Building Operator Training and Certification (BOC) Pilot will implement a training and certification for operations and maintenance staff working in commercial, institutional, or industrial buildings. BOC achieves energy savings by training individuals directly responsible for the maintenance and control settings of energy-using building equipment and day-to-day building operations. The BOC Pilot Subprogram is designed to improve job skills and lead to improved comfort and energy efficiency at the participant's facility or facilities. Certification can be earned by attending training sessions and completing project assignments in participants' facilities. Similar out-of-state programs include: • DTE Energy offers a program similar to the PSE&G pilot. Both programs provide certification for personnel responsible for energy –intensive building equipment maintenance and day to day operations. The only difference is the DTE requires the participant to attend a specific Midwest Energy Efficiency Alliance (MEEA) training course. • National Grid also offers a program in conjunction with Northeast Energy Efficiency (NEEP) similar to the PSE&G BOC pilot. Both programs include a competency-based training and verification program for building operators, aiming to improve the energy efficiency of commercial and industrial buildings. Building operators can earn certification by attending training sessions and completing project assignments in their facilities. There are no differences between the programs.