

NEW JERSEY CLEAN ENERGY PROGRAMS

2001 Program Plan

CUSTOMER-SITED CLEAN ENERGY GENERATION PROGRAM

OVERVIEW

PSE&G, GPU, Conectiv, Rockland Electric Company, New Jersey Natural Gas, South Jersey Gas and Elizabethtown Gas will coordinate administration of a statewide Customer-Sited Clean Energy Generation program to promote renewable projects sited on the customer side of the meter. The program will provide a coordinated set of market intervention strategies to help overcome market barriers and encourage the transition towards self-sustaining markets. Based on the findings of the recently conducted Comprehensive Resource Analysis Market Assessment,¹ rooftop photovoltaic systems and fuel cells are the technologies with the broadest technical and economic potential for customer-sited distributed generation development in the early years of this program. However, this study did not provide a substantial review of New Jersey's small wind system potential. Small wind systems may have a broad technical and economic potential as well. In addition, some participation may be expected from sustainable biomass facilities. As an initial matter, direct financial incentives will be limited to these four technologies. The program's activities will address market barriers common to these technologies, while adopting specific market interventions in recognition of important differences in current levels of market preparation and commercialization.

For 2001, the Customer Sited Clean Generation (CSCG) program design has been modified in several areas to be consistent with the BPU's March 9, 2001 Order.

- 1) The program will launch operations on April 9, 2001, and will not include a pilot phase. The utilities, in their role as administrators during the first year, will work with industry, consumers, regulators and other stakeholders to modify the program design and procedures as needed.
- 2) 25% of the total 2001 CRA budget is allocated to renewables, and sixty percent of the renewable budget is allocated to the CSCG program.

¹ New Jersey Comprehensive Resources Analysis Market Assessment. See Joint Filing, UTIL-CRA-1: Statewide Market Assessment. Appendix R1: Renewable Distributed Generation.

GOALS AND OBJECTIVES

The goals of this Program are to promote market conditioning, development and transformation. The program is expected to significantly increase demand, due to a combination of direct program and market effect impacts. The increased demand is expected to catalyze market forces that will drive additional growth in consumer demand and bring prices down. This pattern is seen in the market development of many emerging technologies. The Customer-sited Clean Energy Generation Program will decrease direct incentive levels and other forms of market support as indicators of sustainable market development emerge.

TARGET MARKETS

The program's target market is composed of customers who are interested in and able to invest in customer-sited clean energy generation, primarily motivated by environmental or power reliability concerns. While the program's outreach and broad marketing will aim to educate the general public about customer-sited clean energy technologies, the majority of participation is expected to be generated from more focused target marketing to these niche markets. The target markets can be further distinguished by system size, new construction versus retrofit, and generation technology. It is also envisioned that utilities may use this program in combination with other incentives in order to target areas of the transmission and distribution system in which distributed generation is of particular value.

Small-Sized Renewable Systems (Rated 10 kW or less)

For small renewable systems the target markets are residential and small commercial retrofit and new construction customers, and the decision-makers that influence their buying decision. These include builders, architects, home improvement contractors, lenders, Realtors, and electricians. PV and small wind systems appear to be currently the most market-ready and widely applicable technologies in this size class. It is anticipated that PV and small wind systems may constitute the bulk of early program participation. Customer-sited fuel cells are the next most likely technology to become market-ready with potentially broad participation.

Medium-sized Renewable Systems (Rated greater than 10 kW)

For medium-sized clean energy systems the target market is composed of medium and large commercial customers and the market actors who influence their decision-making, including designers, architects, service contractors, engineers, and lenders. The target market will include customers seeking to promote clean energy due to public interest benefits, environmental concerns, or for reliability and back-up power benefits. Customer-sited fuel cell technologies in the 200 kW range are commercially available. Fuel cells and PV systems are expected to represent the vast majority of projects in this

size class, although site-specific conditions may permit the development of suitable wind or biomass facilities.

IMPLEMENTATION

Program Strategies

Target Marketing/General Outreach and Education

The program will conduct a coordinated outreach and education effort to raise awareness and knowledge concerning the availability, and benefits of customer-sited clean energy technologies. The program will develop materials and use multiple delivery channels to provide high quality information on how clean energy systems work, their costs and benefits, and raise the level of understanding of the relationship between electricity generation and the environment.

In addition to the outreach and education designed to raise general market awareness, the program will conduct more specific target marketing campaigns, including cooperative mailings or newsletter promotions with environmental organizations and other community organizations promoting clean energy and participation in new construction and home shows. Marketing and general outreach activities suitable for the medium size market will also be developed.

Market Facilitation

This component of the program will include activities designed to reduce specific market barriers to distributed small and medium sized clean energy technologies. The program development activities include:

- Develop a single, statewide, easy to understand interconnection contract and guidelines for timing and approval of interconnection applications;
- Provide technical assistance and vendor linkages, particularly early in the program implementation when technical assistance, products, and services will be most difficult for customers to identify on their own;
- Establish qualifications and certification requirements for system integrators and installers participating in year 2000 pilot activities. The program will transfer on-going responsibility for training and certification to the Market Development Program as soon as the ISA is ready to assume this role;
- Provide technical training for utility engineers, municipal electrical inspectors, and electrical contractors; and

- Facilitate consumer financing mechanisms in cooperation with private-sector financial institutions, including local and national mortgage lenders and the secondary mortgage and appraisal industries.

Incentives

The program will offer direct financial incentives to reduce the initial cost of systems, including installation and interconnection costs. Incentives will decrease over time, as the number of installed megawatts (MW) increases. The maximum incentive values listed in the following table include direct incentives and the value of financing incentives (e.g. interest rate buydowns). In each block total incentive value will be capped according to both the percent of total installed cost and on a dollar per installed watt basis. Customers will receive the lesser of these two values. The proposed levels for total incentives are set forth in the following table.

Customer-sited Clean Energy Program Incentives	NJ Statewide Incentive Block			
	<u>1</u> (2.0 MW)	<u>2</u> (5.5 MW)	<u>3</u> (12.5 MW)	<u>4</u> (30 MW)
Maximum buy-down per watt of system rated output (including value of financing incentive)				
Small Systems (<10kW)	\$5.00/watt	\$5.00/watt	\$4.00/watt	\$3.00/watt
Medium Systems (>10-100kW)	\$4.00/watt	\$4.00/watt	\$3.00/watt	\$2.00/watt
Larger Systems (>100 kW)	\$3.00/watt	\$3.00/watt	\$2.00/watt	\$1.50/watt
Maximum buy-down as a percentage of eligible system costs (including value of financing incentive)	60%	50%	40%	30%

Initially there will be no financing component to the incentives (over time the incentive may be divided into financing and direct components, with total value equal to those in the table above). Incentive calculations will be based on system rated output in AC watts. System rated output will be calculated for the different technologies based on power rating of equipment, inverter efficiencies and site-specific factors impacting resource performance. For example: photovoltaic installers will be required to propose an

appropriate system de-rating factor when calculating the incentive for systems installed under less than ideal conditions (e.g. for partial shading)).

The incentive schedule presented above will be in effect for the program launch on April 9, 2001. A proposed change to the incentive structure from a fixed amount by size to a weighted average by size, which will only be implemented after BPU review and approval, consists of the following modification:

Provide the highest dollar incentive (\$5.00 per Watt in Block 1) for the first 10 kW capacity of all systems, including those greater than 10kW in size. Provide the second dollar incentive (\$4.00 per Watt in Block 1) for the next 90 kW, and the final dollar incentive (\$3.00 per Watt in Block 1) to kW above 100 kW. This modification would result in a higher average incentive for larger projects, and would eliminate the two “deadbands” that occur just between 10kW and 12.5 kW, and 100 kW and 133 kW in the original incentive structure.

Example: Rebate calculation for an eligible system in Block 1, with a system rated output of 150 kW

0-10 kW rebate calculated at \$ 5.00/ watt $5.00 * 10,000 \text{ watts} = \$ 50,000$

11-100 kW rebate calculated at \$ 4.00/watt $4.00 * 90,000 \text{ watts} = \$ 360,000$

101-150 kW rebate calculated at \$ 3.00/watt $3.00 * 50,000 \text{ watts} = \$ 150,000$

The total incentive: $\$ 50,000 + \$ 360,000 + \$ 150,000 = \$ 560,000$ (or \$ 3.73 per watt)

Fuel cells, PV, small wind and sustainable biomass are equally eligible for the incentives. If factors other than resource availability (e.g., sufficient wind) preclude a reasonable amount of competition among technologies, it may be appropriate, subject to Board approval, modify the percent or dollar-per-watt caps for a particular technology or sub-category of technologies. In addition, there are caps, which may prompt program modifications. These soft caps are (1) the initial 50/50 budget allocation between the Customer-Sited program and those programs administered by the Independent Statewide Administrator, (2) the provision that no one technology should obtain more than 50% of the funds available through any program on an annual basis, and (3) in addition, for the customer-sited technologies, no more than 50% of the incentives available in any block shall support systems greater than 10 kW in size without explicit Board approval.

As the market transforms, the incentive amount, in total dollars and as percentage of first cost, decreases and the amount of customer contribution increases along with the size of

the block of customers eligible for that incentive. The key features of the customer-sited clean energy incentive are:

- The incentive is a rebate of a portion of the total system cost, including installation and interconnection. Financing incentives will be included in the calculation of the maximum buy-down amount;
- The incentive is paid to retailer, lender, or purchaser; and
- Incentive funding is divided into 4 blocks with declining rebate amounts.

Eligible Technologies

Technologies eligible for this program are fuel cells, PV, small wind and sustainable biomass. Although there is no size-limit in terms of maximum capacity, installations must be sized to meet customer loads. Installations sized to provide net supply to the grid are not eligible for this program and must compete for financial incentives through grid-supply or market development programs.

In addition, financial incentives under this program are applicable only for:

- New components;
- Systems located on customer premises in New Jersey;
- Systems that include at least a 5-year all-inclusive warranty, with the exception of fuel cell stacks, for which warranties against normal decline in output should not be required; and
- Products that meet minimum program requirements.

Participation Requirements

- The consumer or retailer must submit a customer-sited Renewable Systems Buy-down Application and the program administrator must approve it prior to installation;
- The Application must include information demonstrating that the system meets all applicable technical and certification requirements;
- Systems must be installed within 6 months of application approval date for small (<10kW) systems and within 12 months for medium (10 kW or greater) systems;
- Applicants must permit inspection of eligible systems. Program administrators will inspect 100% of the eligible installations in the first year prior to issuing any buy-down incentive. This percentage will decrease once the program is established;

- Rebates will be awarded on a first come/first serve basis on the basis of application date;
- Applicants must pay for all interconnection costs required by the interconnection standards approved by the Board (other than the portion covered by rebate); and
- Projects must be installed in New Jersey.

Roles of different parties

This program shall be administered as a single statewide program concurrently by each electric utility. The utilities shall coordinate their activities to ensure that the same incentives, eligibility and incentive structure applies in all service territories and to achieve administrative efficiencies. The utilities will work actively with interested parties to review program allocations and annual plans prior to submission to the Board for approval. The utilities will also take advice from interested parties on strategic data and research priorities. As a group, the utilities will also work to coordinate the initiative with the appropriate state, regional and national efforts.

Renewable Trade Allies

Renewable contractors will sell individual systems and install and maintain the equipment. The program will provide the format for buy-down applications and establish minimum qualifications and certification requirements for renewable contractors. The program will offer training and certification opportunities to allow contractors that do not initially meet the minimum qualification and certification requirements to participate in the program.

Competitive impact

The phased buy-down program is designed to provide sufficient incentive early on to attract customers and businesses. The size of the incentives declines over time in order to require the market to be sustainable. This should create a robust competitive market and delivery infrastructure for these technologies over the course of the program.

TRANSITION STRATEGIES

As program activities successfully reduce market barriers, the type and size of interventions needed to create and maintain sustainable orderly development for clean energy technologies will diminish. Over time, as clean energy manufacturers and installers capture economies of scale and consumer-financing products are developed and become more widely available, it should be possible to reduce or eliminate direct incentives. Similarly, as consumers, builders, and lenders become more familiar and gain more experience with clean energy technologies, the need for technical assistance will be

reduced. The long-term goal of this program is to help customer-sited clean energy markets develop to the point that continued market interventions are no longer necessary.

EVALUATION PLAN

The utilities will collaborate and hire one or more contractors to develop and implement an evaluation plan to assess the program's impacts in terms of both the performance and direct energy savings attributable to clean energy systems installed, and the market transformation impacts. Evaluation activities during the first year will include baseline study on consumer attitudes and perceptions, and a baseline study on financing and delivery infrastructure. The utilities, with Board staff input, will review program activities and evaluation reports on a regular basis and recommend program modifications that may be necessary to ensure sustained progress towards reducing the most important market barriers for each technology.

2001 TIMELINE/MILESTONES

Each utility will meet the following milestones for refinement and implementation of the program:

1. The utilities will launch the program and begin accepting and processing rebate and interconnection applications on April 9, 2001.
2. Hire a vendor(s) to provide quality control inspections and be ready to commence inspections by June 29, 2001.
3. Develop a comprehensive marketing and consumer education plan for the CSCG program by June 29, 2001 (plan may include demonstration projects);
4. Issue a request for proposals to provide training and certification services, hire a training and certification contractor(s) by June 29, 2001, and begin sponsoring training and certification services by October 1, 2001.
5. For systems less than 10 kW, implement a simple uniform statewide interconnection agreement within thirty days of a NJ BPU Order on net metering standards and within 4 months of such Order implement simple uniform procedural requirements. Document the efforts and progress towards the development of simple uniform, statewide contractual and procedural requirements for program participants, including interconnection requirements and agreements for systems larger than 10 kW, by October 1, 2001; and
6. Hire independent vendor to begin statewide evaluation by October 15, 2001.

PERFORMANCE INDICATORS

In the first year, the ability to meet the milestones identified above will be one measure of each utility's performance. In the following years, program administrators should be required to demonstrate measurable results and momentum towards the long-term development of the customer-sited clean energy market. The market indicators that will be used to measure this progress include:

- Increase in public awareness and consumer knowledge of small scale clean energy technologies;
- The number and capacity of systems installed;
- The number of firms installing systems that qualify for incentives;
- The number and variety of customer-sited clean energy systems eligible for program incentives and readily available in the New Jersey market; and
- Decreases in the first costs for customer-sited clean generation systems.
- Timely turn-around of properly completed project applications and interconnection agreements.

2001 PROGRAM GOALS

In 2001 the program will aim to achieve statewide installation of 50 or more small scale clean generation systems or a combined capacity of 200 kW or more (not including projects submitted to the BPU prior to April 9, 2001). This goal accounts for the ramp-up of program activities during the first year. An increase to the program goal may be proposed in quarterly reports. The longer-term goal, which program administrators will review and revise on a regular basis when reporting to the Board, is to install approximately (1,100) systems with a combined capacity of 4.4 MW by 2003. The goals after program year 2001 are based upon current expectations of market development and technology availability. It is likely that adjustments to these objectives will be made on an annual basis.

Based on experience and the net metering and interconnection standards approved by the NJ BPU the utilities will establish program goals for turnaround times on incentive applications and interconnection agreements.

MINIMUM REQUIREMENTS FOR PROGRAM ADMINISTRATION

The utilities must individually and jointly implement all of the activities listed under the timelines and milestones above no later than thirty days of the target date, and must implement no fewer than four of the six listed items by the target date. In the first year,

the utilities as a group must achieve at least 50% of the annual program participation goals articulated above. If appropriate, individual utility participation goals will be established for subsequent years.