

**THIS IS NOT A STAFF PROPOSAL**

**Discussion Document for Expedited Expansion of Eligibility for VDER Value Stack**

**Process**

- a) Work toward Staff White Paper
- b) Up to 2 MW only;
  - a. Expansion to 5 MW is on its own commenting track (per 9/14 Order)—any below issues that create additional issues when applied to 5 MW should be discussed in November 20, 2017 Comments.

**Principles**

- I. **Practicality**: No changes needed to Value Stack element definition or calculation; and the resource in question exists and has at least some stakeholder support
- II. **Ripeness**: there is a complete enough factual record for a yes/no decision on granting “Expedited” eligibility
  - a. Note: No prejudice. An Expedited “no,” does not preclude a longer term “yes”
- III. **Environmental Impacts**: (i) Tier 1 REC credits only for Tier 1 REC eligible generation; and (ii) non-Tier 1 REC eligible technologies must be “no worse” than bulk system power.
  - a. Need details on how to define and operationalize (ii) (see below)
- IV. **System/Interconnection Impacts**: No unintended negative consequences
  - a. Nice idea, but what does it mean, and how to implement (one possible example: don’t want to undermine any progress we’ve made on queue management)
- V. **Non-participant Cost Impacts**: Any effect on CDG cost shifts, if applicable, should still be subject to the Tranche system approved in the March 9, 2017 Order. (Possibly only relevant if Principle VII, below, is not adopted.)
- VI. **Technology neutrality, except when technology affects the value that is provided.**
- VII. **MTC**: The MTC was based on kWh retail rates that mass market customers could avoid via NEM, and is a transition tool for NEM-eligible resources only.

**Currently Eligible Resources**: NEM (PSL §§ 66-j and 66-l) eligible

- a) Solar (66-j)
  - a. Residential: 25 kW or less (except Farm);
  - b. Farm: 100 kW or less;
  - c. Non-residential: 2,000 kW.
- b) Farm Waste (66-j)
  - a. 2,000 kW;
  - b. Agricultural waste and food waste; with

- c. 50% of annual feedstock, by weight, being livestock manure.
- c) Residential Micro-Combined Heat and Power (66-j)
  - a. Cogenerating building heat and electric power;
  - b. Any fuel (engine, fuel cell, or other);
  - c. Between 1 kW and 10 kW;
  - d. Produces at least 2,000 kWh annually;
  - e. Design total fuel use efficiency of 80%.
- d) Fuel Cell (66-j)
  - a. Residential: 10 kW or less;
  - b. Non-residential: 2,000 kW.
- e) Micro-Hydroelectric (66-j)
  - a. Residential: 25 kW or less;
  - b. Non-residential: 2,000 kW or less.
- f) Wind (66-l)
  - a. Residential: 25 kW or less;
  - b. Farm: 500 kW or less;
  - c. Non-residential: 2,000 kW or less.
- g) Storage Combined with a) - f) (March 9, 2017 VDER Order)

### **Potential Additional Eligible Resources**

- a) Tier 1 Rec Eligible (8/1/2016 CES Order, App. A) vs. Currently VDER Eligible
  - a. Solar (same as above)
  - b. Biogas: No minimum manure content
    - i. Landfill gas, Sewage gas, Manure digestion, other Anaerobic digestion
    - ii. Syngas
    - iii. Biogas Combined Heat and Power (CHP)
  - c. Biomass (only from eligible feedstock)
    - i. Direct combustion
    - ii. Biomass CHP
    - iii. Biomass co-fired with fossil (only electricity from biomass portion)
  - d. Liquid Biofuel (eligible methods and eligible biomass feedstock)
    - i. Ethanol, biodiesel, methanol, bio-oil, hydrothermal
    - ii. Liquid biofuel CHP
    - iii. Liquid biofuel co-fired with fossil (only biomass portion)
  - e. Fuel Cells (same as above)
  - f. Wind (same as above)
  - g. Hydroelectric
    - i. No new storage impoundments
    - ii. Upgrades: eligibility limited to incremental production associated with upgrade.
  - h. Tidal/Ocean (See App. A)
- b) Batteries/Storage

- a. Stand alone
- b. Combined with any VDER eligible resource
- c) Non-biofuel CHP (up to 2,000 kW) (see below)

**Potential Expedited Resource Mapped to Value Stack and MTC Elements, and Other Policy Issues**

- a) The Potential Resource categories for expanded eligibility are: (1) Other Tier 1 Renewables; (2) Batteries/Storage; and (3) Non-Tier 1 CHP.
- b) Potential sub-categories to address any sub-2 MW size restrictions (e.g. as imposed by NEM, by service class and by technology).
- c) The compensation elements are: LBMP; ICAP; E; LSRV; DRV; MTC.
- d) The JU proposal is in **RED**, one potential alternative is in **BLUE**:

| VS Element  | Potential Additional VDER Eligible Resources   |                   |                       | Notes |
|---|--|-------------------|-----------------------|-------|
|   | Other Tier 1   | Batteries/Storage | Non-Tier 1 CHP        |       |
| LBMP  | Yes,<br>YES  | Yes,<br>Yes       | Yes,<br>Yes           |       |
| ICAP  | Alt 3,<br>Intermittents get 1&2  | Alt 3,<br>Alt 3   | Go to NYISO,<br>Alt 3 | 1     |
| E   | Yes,<br>Yes  | No,<br>No         | No,<br>No             | 2     |
| LSRV  | Intermittent Only,<br>All Tier 1   | No,<br>Yes        | No,<br>Yes            | 3     |
| DRV   | Intermittent Only,<br>All Tier 1   | No,<br>Yes        | No,<br>Yes            | 4     |
| MTC   | No,<br>No  | No,<br>No         | No,<br>No             | 5     |
| <b><u>Rationale for potential alternative</u></b> |  |                   |                       |       |
| 1   | "Clean" intermittents were allowed Alt. 1 & 2 in Phase 1<br>Technology neutrality (principle VI) would argue for Alt. 3 to CHP |                   |                       |       |
| 2   | Principle III  |                   |                       |       |
| 3   | Principle VI, technology neutrality  |                   |                       |       |
| 4   | "  |                   |                       |       |
| 5   | Principle VII, MTC is NEM  |                   |                       |       |

- e) Other Policy Issues:

- a. In addition to VDER eligibility, should CDG be expanded to non-NEM technologies?
  - i. Other Tier 1 technologies. (Potential rationale: Tier 1 eligibility is a better list of what NY considers “clean” than is statutory NEM eligibility. Assumes CDG was meant to be limited to “clean.”)
  - ii. Other Expedited Eligible Technologies. (Potential rationale: Technology neutrality (VI), as long as (i) no “E” credits and (ii) no worse than system power. Assumes CDG was meant to be expanded to broader class of DG.)
- b. Should eligibility continue to be restricted to some level much smaller than 2,000 kW for certain rate classes and technologies? e.g. NEM restrictions of 25 kW for Residential; 100 kW Farm solar; 10 kW for CHP; 10 kW for Residential Fuel Cell; 500 kW Farm Wind?
  - i. Does the requirement that any non-NEM VDER get: (i) the Value Stack; (ii) an hourly meter; and (iii) only get bill credits for hourly injections take away the need for these “micro” constraints?
- c. What restrictions to place on stand-alone storage, and CHP, to guarantee “no worse” than system power, environmentally?
  - i. Possible Safe Harbor Provisos:
    - 1. Storage charged with system power, or other eligible technology
    - 2. CHP:
      - a. One possible standard:  
 CHP facilities ELIGIBLE FOR VDER shall have the following requirements with respect to qualification:
        - (i) an average annual efficiency of 60 percent or greater and has a usable thermal energy component that absorbs a minimum of 20 percent of the CHP facility’s total usage annual energy output. Average annual and peak efficiency will be determined using the Higher Heating Value of the fuel. For peak efficiency, power island system efficiency will be measured at the prime mover connections for fuel and electricity, and at the heat recovery device connections for steam and/or hot water. Peak efficiency calculations are performed based on full utilization of electrical and thermal energy.;
        - (ii) All CHP facilities shall meet the NOx emissions standard of 1.6 lbs/MWh or less;
      - and
      - (iii) the professional engineer of a Customer whose CHP facilities in one of the below zip codes must certify that the CHP facility is designed to meet the following NOx emission standards:

| <u>Nameplate Rating of the Facility</u> | <u>Max. NOx Emissions Rate</u> |
|---|--------------------------------|
| up to 1 MW                              | 0.6 lbs/MWh                    |
| above 1 MW up to 2 MW                   | 1.2 lbs/MWh                    |
| above 2 MW                              | 0.5 lbs/MWh                    |

| <i>Borough/Neighborhood</i>  | <i>Zip Codes</i>  |
|--|---|
| Bronx:<br>Crotona – Tremont<br>Fordham – Bronx Park<br>High Bridge – Morrisania<br>Hunts Point – Mott Haven<br>Pelham – Throgs Neck  | 10453, 10457, 10460<br>10458, 10467, 10468<br>10451, 10452, 10456<br>10454, 10455, 10459, 10474<br>10461, 10462, 10464, 10465, 10472, 10473   |
| Brooklyn:<br>Bedford Stuyvesant – Crown Heights<br>East Flatbush – Flatbush<br>East New York<br>Greenpoint<br>Williamsburg – Bushwick  | 11212, 11213, 11216, 11233, 11238<br>11203, 11210, 11225, 11226<br>11207, 11208<br>11211, 11222, 11249<br>11206, 11221, 11237   |
| Manhattan:<br>Central Harlem – Morningside Heights<br>Chelsea – Clinton<br><br>East Harlem<br>Gramercy Park – Murray Hill<br><br>Greenwich Village – SoHo<br>Lower Manhattan<br><br>Union Square – Lower East Side<br>Upper East Side<br>Upper West Side<br>Washington Heights | 10026, 10027, 10030, 10037, 10039, 10115<br>10001, 10011, 10018, 10019, 10020, 10036,<br>10096, 10097, 10103, 10104, 10105, 10106,<br>10107, 10110, 10111, 10112, 10118, 10119,<br>10120, 10121, 10122, 10123, 10196<br>10029, 10035<br>10010, 10016, 10017, 10022, 10055, 10151,<br>10152, 10153, 10154, 10155, 10158, 10165,<br>10166, 10167, 10168, 10169, 10170, 10171,<br>10172, 10173, 10174, 10175, 10176, 10177, 10178<br>10012, 10013, 10014<br>10004, 10005, 10006, 10007, 10038, 10041,<br>10043, 10045, 10080, 10081, 10203, 10259,<br>10260, 10265, 10270, 10271, 10275, 10278,<br>10279, 10280, 10281, 10282, 10285, 10286<br>10002, 10003, 10009<br>10021, 10028, 10044, 10128, 10162, 10065, 10075<br>10023, 10024, 10025, 10069<br>10031, 10032, 10033, 10034, 10040 |
| Queens:<br>Jamaica<br><br>Rockaways  | 11412, 11423, 11430, 11432, 11433, 11434,<br>11435, 11436, 11439, 11451<br>11096, 11691, 11692, 11693, 11694, 11697   |
| Staten Island: Port Richmond   | 10302, 10303, 10310   |

**Attachment 1: Pages 43-46 of March 9, 2017 VDER Order**

Commission decision finalizing and implementing the VDER Phase One tariffs as soon as Summer 2017. For that reason, the Phase One NEM CDG caps are designed to allow continued project development between the issuance of this order and Summer 2017.

**III. FOUNDATIONAL POLICIES FOR NEM TRANSITION AND VDER PHASE ONE**

**A. Technologies and Projects Included**

**1. Staff Proposal**

The Staff Proposal suggests that the VDER Phase One tariff apply to projects and technologies that are currently eligible for NEM under the PSL.<sup>17</sup> Those technologies were identified as either 1) intermittent and non-dispatchable, or 2) dispatchable, in recognition of their different characteristics.

The "Intermittent and Non-Dispatchable" category consists of technologies where the operator has no ability to control when the facility generates electricity or at what percentage of its capacity it generates, other than by limiting it or taking it out of service, once it has been put into operation, and includes solar photovoltaic generation, wind generation, and micro-hydroelectric generation. The "Dispatchable Technologies" category consists of technologies where the operator has a meaningful ability to control when, and at what percentage of its capacity, the facility generates, and includes farm waste generation, fuel cell generation, and micro-combined heat and power (CHP) generation.

The Staff Proposal notes that consistent with PSL §§ 66-j and 66-l, eligible projects must have a rated capacity of 2 MW or less, except for CHP projects, which must have a rated capacity of 10 kW or less. Projects must also meet certain other eligibility rules under PSL §§ 66-j and 66-l, including fueling requirements for farm waste generation and compliance

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<sup>17</sup> PSL §§ 66-j and 66-l.

with relevant government and industry standards for construction and operation, including compliance with the SIR.

The Staff Proposal recognizes that while a variety of other DER technologies exist, further consideration is needed to determine whether and how the VDER methodology could be applied to compensate those technologies. Staff notes that a number of existing tariffs and programs govern the treatment and compensation of projects that are not eligible for NEM.<sup>18</sup> Specifically, Staff identifies the following categories that should not be eligible for the VDER Phase One tariff:

- Projects larger than 2 MW;
- CHP projects larger than 10 kW;
- Projects involving generation using non-eligible fuel sources, such as natural gas and diesel, other than eligible fuel cells and eligible CHP generators; and
- Non-Generation DERs, such as demand response and energy efficiency.<sup>19</sup>

However, the Staff Proposal recommends that the development of future phases of VDER tariffs prioritize inclusion of a broader array of DER.

## 2. Comments

Several commenters representing non-NEM eligible technologies recommend that the VDER Phase One tariff should apply to a broader category of projects, including some of the technologies that Staff recommends not be included under Phase

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<sup>18</sup> For example, buy-back rates provide compensation for net injections and standby rates allow for the output of a generator, installed in-front of a customer's meter, to be netted against the usage of one or several buildings on the premises. In addition, the opportunity to earn compensation via a reliability credit under standby rates is now available.

<sup>19</sup> Customers that are otherwise eligible for participating in Phase One may, of course, also employ non-generation demand response and energy efficiency technologies without losing their eligibility.

One. Referencing the goal of technological neutrality, comments vary with the respect to the proposed timing for expanding eligibility for VDER. While NFG, NECHPI, and NFCRC recommend the inclusion of additional technologies under Phase One from the outset, AEMA, AEEI, NY-BEST, and DEC generally support Staff's recommendation to take up non-eligible technologies as part of the development of subsequent VDER phases and urge that this work commence expeditiously.

3. Determination

At this time, the VDER Phase One tariff will include only technologies and projects that are eligible for NEM. There is a pressing need to transition away from NEM, both to better target DER deployment to meet REV objectives and to manage impacts on non-participants. Many other types of DER, including demand management and response, energy efficiency and non-NEM-eligible DG, are eligible for participation in other existing tariffs and programs that reflect cost-benefit principles. In many cases, these programs have also been the subject of recent reforms to increase their ability to reflect more accurate price signals and compensation consistent with REV goals, including the addition of a reliability credit to standby rates, the expansion of demand response programs, and the development of the Clean Energy Standard. Adding the option to participate in the VDER Phase One tariff without further consideration could lead to overlapping compensation, opportunities for uneconomic arbitrage, and market confusion. Furthermore, as the Staff Proposal notes, technologies eligible for NEM share some basic similarities that not all DER possess, including the ability to produce electricity for on-site usage and for export to the grid, limitations on size, and environmental attributes. To permit other resources to participate in the VDER Phase One



tariff without sufficient consideration of their divergent attributes could lead to unintended consequences.

However, as commenters note, it is a key principle of REV that regulation and tariffs should be technologically neutral and focus on values provided and costs imposed by a DER and their behavior. Therefore, as part of Phase 2, VDER tariffs will be expanded beyond NEM-eligible DG technologies to all DER in a technologically-neutral, value-focused manner as soon as practicable.

B. Inclusion of Energy Storage

1. Staff Proposal

The Staff Proposal notes that energy storage technologies, such as batteries, are not addressed in PSL §§ 66-j or 66-1 and recommends that storage be included in Phase One. Specifically, Staff recommends that: 1) projects that pair any energy storage technology with an eligible generation facility, including for the purposes of exporting stored energy, should be permitted to receive compensation under the Phase One tariff; 2) mass market and small wind systems that include storage should be permitted to retain NEM compensation; 3) for CDG, RNM, and large on-site systems, the installation of storage should require participation in the Value Stack, rather than NEM; 4) the presence of energy storage should not result in any change in compensation except that compensation for environmental value and the MTC should only be provided for net monthly exports; and; 5) while the use of system power to charge storage should be permitted, and even encouraged to the extent that it can support the system by reducing peak demand and variability, environmental and MTC compensation should not be provided for the export of stored system power.

The Staff Proposal also suggests that NYSERDA and the utilities examine solar-plus-storage intervention and

## Attachment 2: PSL 66-j

§ 66-j. Net energy metering for residential solar, farm waste, non-residential solar electric generating systems, micro-combined heat and power generating equipment, fuel cell electric generating equipment, and micro-hydroelectric generating equipment. 1. Definitions. As used in this section, the following terms shall have the following meanings:

(a) "Customer-generator" means: (i) a residential customer of an electric corporation, who owns or operates solar electric generating equipment located and used at his or her residence; (ii) a customer of an electric corporation, who owns or operates farm waste electric generating equipment located and used at his or her "farm operation," as such term is defined in subdivision eleven of section three hundred one of the agriculture and markets law; (iii) a non-residential customer of an electric corporation which owns or operates solar electric generating equipment located and used at its premises; (iv) a residential customer of an electric corporation who owns, leases or operates micro-combined heat and power generating equipment located on the customer's premises; (v) a residential customer of an electric corporation who owns, leases or operates fuel cell generating equipment located on the customer's premises; and (vi) a non-residential customer of an electric corporation who owns, leases or operates fuel cell generating equipment located and used at the customer's premises; (vii) a residential customer of an electric corporation, who owns or operates micro-hydroelectric generating equipment located and used at his or her residence; (viii) a non-residential customer of an electric corporation which owns or operates micro-hydroelectric generating equipment located and used at its premises; and (ix) a non-residential customer of an electric corporation which owns or operates farm waste electric generating equipment located and used at its premises.

(b) "Net energy meter" means a meter that measures the reverse flow of electricity to register the difference between the electricity supplied by an electric corporation to the customer-generator and the electricity provided to the corporation by that customer-generator.

(c) "Net energy metering" means the use of a net energy meter to measure, during the billing period applicable to a customer-generator, the net amount of electricity supplied by an electric corporation and provided to the corporation by a customer-generator.

(d) "Solar electric generating equipment" means a photovoltaic system (i) (A) in the case of a residential customer (other than a farm utilizing a residential meter), with a rated capacity of not more than twenty-five kilowatts; (B) in the case of a customer who owns or operates a farm operation as such term is defined in subdivision eleven of section three hundred one of the agriculture and markets law utilizing a residential meter with a rated capacity of not more than one hundred kilowatts; and (C) in the case of a non-residential customer, with a rated capacity of not more than two thousand kilowatts; and (ii) that is manufactured, installed, and operated in accordance with applicable government and industry standards, that is connected to the electric system and operated in conjunction with an electric corporation's transmission and distribution facilities, and that is operated in compliance with any standards and requirements established under this section.

(e) "Farm waste electric generating equipment" means equipment that generates electric energy from biogas produced by the anaerobic digestion of agricultural waste, such as livestock manure, farming wastes and food processing wastes with a rated capacity of not more than two thousand kilowatts, that is:

(i) manufactured, installed, and operated in accordance with applicable government and industry standards;

(ii) connected to the electric system and operated in conjunction with an electric corporation's transmission and distribution facilities;

(iii) operated in compliance with any standards and requirements established under this section;

(iv) fueled at a minimum of ninety percent on an annual basis by biogas produced from the anaerobic digestion of agricultural waste such as livestock manure materials, crop residues, and food processing waste; and

(v) fueled by biogas generated by anaerobic digestion with at least fifty percent by weight of its feedstock being livestock manure materials on an annual basis.

(f) "Micro-combined heat and power generating equipment" means an integrated, cogenerating building heating and electrical power generation system, operating on any fuel and of any applicable engine, fuel cell, or other technology, with a rated capacity of at least one kilowatt and not more than ten kilowatts electric and any thermal output that at full load has a design total fuel use efficiency in the production of heat and electricity of not less than eighty percent, and annually produces at least two thousand kilowatt hours of useful energy in the form of electricity that may work in combination with supplemental or parallel conventional heating systems, that is manufactured, installed and operated in accordance with applicable government and industry standards, that is connected to the electric system and operated in conjunction with an electric corporation's transmission and distribution facilities.

(g) "Fuel cell electric generating equipment" means:

(i) (A) in the case of a residential customer, a solid oxide, molten carbonate, proton exchange membrane or phosphoric acid fuel cell with a combined rated capacity of not more than ten kilowatts; and (B) in the case of a non-residential customer, a solid oxide, molten carbonate, proton exchange membrane or phosphoric acid fuel cell with a combined rated capacity of not more than two thousand kilowatts; and

(ii) that is manufactured, installed and operated in accordance with applicable government and industry standards, that is connected to the electric system and operated in parallel with an electric corporation's transmission and distribution facilities, and that is operated in compliance with any standards and requirements established under this section.

(h) "Micro-hydroelectric generating equipment" means a hydroelectric system (i) (A) in the case of a residential customer, with a rated capacity of not more than twenty-five kilowatts; and (B) in the case of a non-residential customer, with a rated capacity of not more than two thousand kilowatts; and (ii) that is manufactured, installed, and operated in accordance with applicable government and industry standards, that is connected to the electric system and operated in conjunction with an electric corporation's transmission and distribution facilities, and that is operated in compliance with any standards and requirements established under this section.

2. Interconnection and net energy metering. An electric corporation shall provide for the interconnection of solar and farm waste electric generating equipment, micro-combined heat and power generating equipment, fuel cell electric generating equipment and micro-hydroelectric generating equipment owned or operated by a customer-generator and for net energy metering, provided that the customer-generator enters into a net energy metering contract with the corporation or complies with the corporation's net energy metering

schedule and complies with standards and requirements established under this section.

3. Conditions of service. (a) (i) On or before three months after the effective date of this section, each electric corporation shall develop a model contract and file a schedule that establishes consistent and reasonable rates, terms and conditions for net energy metering to customer-generators, according to the requirements of this section. The commission shall render a decision within three months from the date on which the schedule is filed.

(ii) On or before three months after the effective date of this subparagraph, each electric corporation shall develop a model contract and file a schedule that establishes consistent and reasonable rates, terms and conditions for net energy metering to non-residential customer generators, according to the requirements of this section. The commission shall render a decision within three months of the date on which the schedule is filed.

(iii) Each electric corporation shall make such contract and schedule available to customer-generators on a first come, first served basis, until the total rated generating capacity for solar and farm waste electric generating equipment, micro-combined heat and power generating equipment, fuel cell electric generating equipment and micro-hydroelectric generating equipment owned, leased or operated by customer-generators in the corporation's service area is equivalent to one percent of the corporation's electric demand for the year two thousand five, as determined by the department.

(b) Nothing in this subdivision shall prohibit a corporation from providing net energy metering to additional customer-generators. The commission shall have the authority, after January first, two thousand twelve, to increase the percent limits if it determines that additional net energy metering is in the public interest.

(c) In the event that the electric corporation determines that it is necessary to install a dedicated transformer or transformers, or other equipment to protect the safety and adequacy of electric service provided to other customers, a customer-generator shall pay the electric corporation's actual costs of installing the transformer or transformers, or other equipment:

(i) In the case of a customer-generator who owns or operates solar electric generating equipment, micro-combined heat and power generating equipment, fuel cell electric generating equipment or micro-hydroelectric generating equipment located and used at his or her residence, or a non-residential customer-generator who owns or operates solar electric generating equipment with a rated capacity of not more than twenty-five kilowatts, up to a maximum amount of three hundred fifty dollars;

(ii) In the case of a customer-generator who owns or operates farm waste electric generating equipment located and used at his or her "farm operation," up to a total amount of five thousand dollars per "farm operation"; and

(iii) In the case of a non-residential customer-generator who owns or operates solar electric generating equipment or fuel cell electric generating equipment or micro-hydroelectric generating equipment or farm waste generating equipment as described in subparagraph (ix) of paragraph (a) of subdivision one of this section, with a rated capacity of more than twenty-five kilowatts located and used at its premises, such cost shall be as determined by the electric corporation subject to review, upon the request of such customer-generator, by the department.

(d) An electric corporation shall impose no other charge or fee, including back-up, stand by and demand charges, for the provision of net

energy metering to a customer-generator, except as provided in paragraph (d) of subdivision four of this section.

(e) A customer who owns or operates a farm operation as such term is defined in subdivision eleven of section three hundred one of the agriculture and markets law, or a non-residential customer-generator as defined by subparagraph (iii) of paragraph (a) of subdivision one of this section that locates solar electric generating equipment or farm waste electric generating equipment with a net energy meter on property owned or leased by such customer-generator may designate all or a portion of the net metering credits generated by such equipment to meters at any property owned or leased by such customer-generator within the service territory of the same electric corporation to which the customer-generator's net energy meters are interconnected and being within the same load zone as determined by the location based marginal price as of the date of initial request by the customer-generator to conduct net metering. The electric corporation will credit the accounts of the customer by applying any credits to the highest use meter first, then subsequent highest use meters until all such credits are attributed to the customer. Any excess credits shall be carried over to the following month.

(f) A customer who owns or operates a farm operation as such term is defined in subdivision eleven of section three hundred one of the agriculture and markets law, or a non-residential customer-generator as defined by subparagraph (viii) of paragraph (a) of subdivision one of this section that locates micro-hydroelectric generating equipment with a net energy meter on property owned or leased by such customer-generator may designate all or a portion of the net metering credits generated by such equipment to meters at any property owned or leased by such customer-generator within the service territory of the same electric corporation to which the customer-generator's net energy meters are interconnected and being within the same load zone as determined by the location based marginal price as of the date of initial request by the customer-generator to conduct net metering. The electric corporation will credit the accounts of the customer by applying any credits to the highest use meter first, then subsequent highest use meters until all such credits are attributed to the customer. Any excess credits shall be carried over to the following month.

(g) A customer who owns or operates a farm operation as such term is defined in subdivision eleven of section three hundred one of the agriculture and markets law, or a non-residential customer-generator as defined by subparagraph (viii) of paragraph (a) of subdivision one of this section that locates fuel cell electric generating equipment with a net energy meter on property owned or leased by such customer-generator may designate all or a portion of the net metering credits generated by such equipment to meters at any property owned or leased by such customer-generator within the service territory of the same electric corporation to which the customer-generator's net energy meters are interconnected and being within the same load zone as determined by the location based marginal price as of the date of initial request by the customer-generator to conduct net metering. The electric corporation will credit the accounts of the customer by applying any credits to the highest use meter first, then subsequent highest use meters until all such credits are attributed to the customer. Any excess credits shall be carried over to the following month.

(h) A non-residential customer-generator as defined by subparagraph (ix) of paragraph (a) of subdivision one of this section that locates farm waste generating equipment with a net meter on property owned or

leased by such customer-generator may designate all or a portion of the net metering credits generated by such equipment to meters at any property owned or leased by such customer-generator within the service territory of the same electric corporation to which the customer-generator's net energy meters are interconnected and being within the same load zone as determined by the location based marginal price as of the date of initial request by the customer-generator to conduct net metering. The electric corporation will credit the accounts of the customer by applying any credits to the highest use meter first, then subsequent highest use meters until all such credits are attributed to the customer. Any excess credits shall be carried over to the following month.

4. Rates. An electric corporation shall use net energy metering to measure and charge for the net electricity supplied by the corporation and provided to the corporation by a customer-generator, according to these requirements:

(a) In the event that the amount of electricity supplied by the corporation during the billing period exceeds the amount of electricity provided by a customer-generator, the corporation shall charge the customer-generator for the net electricity supplied at the same rate per kilowatt hour applicable to service provided to other customers in the same service class which do not generate electricity onsite.

(b) In the event that the amount of electricity produced by a customer-generator during the billing period exceeds the amount of electricity used by the customer-generator, the corporation shall apply a credit to the next bill for service to the customer-generator for the net electricity provided at the same rate per kilowatt hour applicable to service provided to other customers in the same service class which do not generate electricity onsite, except for micro-combined heat and power or fuel cell customer-generators or farm waste generating equipment customer-generators as described in subparagraph (ix) of paragraph (a) of subdivision one of this section, who will be credited at the corporation's avoided costs. The avoided cost credit provided to micro-combined heat and power or fuel cell customer-generators or farm waste generating equipment customer-generators as described in subparagraph (ix) of paragraph (a) of subdivision one of this section shall be treated for ratemaking purposes as a purchase of electricity in the market that is includable in commodity costs.

(c) At the end of the year or annualized over the period that service is supplied by means of net energy metering, the corporation shall promptly issue payment at its avoided cost to the customer-generator, as defined in subparagraph (i), (ii) or (ix) of paragraph (a) of subdivision one of this section, for the value of any remaining credit for the excess electricity produced during the year or over the annualized period by the customer-generator.

(d) In the event that the corporation imposes charges based on kilowatt demand on customers who are in the same service class as the customer-generator but which do not generate electricity on site, the corporation may impose the same charges at the same rates to the customer-generator, provided, however, that the kilowatt demand for such demand charges is determined by the maximum measured kilowatt demand actually supplied by the corporation to the customer-generator during the billing period.

5. Safety standards. (a) On or before three months after the effective date of this section, each electric corporation shall establish standards that are necessary for net energy metering and the interconnection of residential solar or farm waste electric generating equipment, micro-combined heat and power generating equipment and fuel

cell electric generating equipment and micro-hydroelectric generating equipment to its system and that the commission shall determine are necessary for safe and adequate service and further the public policy set forth in this section. Such standards may include but shall not be limited to:

(i) equipment necessary to isolate automatically the residential solar, farm waste, micro-combined heat and power and fuel cell electric generating system and micro-hydroelectric generating equipment from the utility system for voltage and frequency deviations; and

(ii) a manual lockable disconnect switch provided by the customer-generator which shall be located on the outside of the customer's premises and externally accessible for the purpose of isolating the residential solar and farm waste electric generating equipment and micro-hydroelectric generating equipment.

(b) Upon its own motion or upon a complaint, the commission, or its designated representative, may investigate and make a determination as to the reasonableness and necessity of the standards or responsibility for compliance with the standards.

(i) In the case of a customer-generator who owns or operates solar electric generating equipment located and used at his or her residence; an electric corporation may not require a customer-generator to comply with additional safety or performance standards, perform or pay for additional tests, or purchase additional liability insurance provided that the residential solar or farm waste electric generating equipment, micro-combined heat and power generating equipment, fuel cell electric generating equipment or micro-hydroelectric generating equipment meets the safety standards established pursuant to this paragraph.

(ii) In the case of a customer-generator who owns or operates farm waste electric generating equipment located and used at his or her "farm operation," an electric corporation may not require a customer-generator to comply with additional safety or performance standards, perform or pay for additional tests, or purchase additional liability insurance provided that:

1. the electric generating equipment meets the safety standards established pursuant to this paragraph; and

2. the total rated generating capacity (measured in kW) of farm waste electric generating equipment that provides electricity to the electric corporation through the same local feeder line, does not exceed twenty percent of the rated capacity of that local feeder line.

(iii) In the event that the total rated generating capacity of farm waste electric generating equipment that provides electricity to the electric corporation through the same local feeder line exceeds twenty percent of the rated capacity of the local feeder line, the electric corporation may require the customer-generator to comply with reasonable measures to ensure safety of that local feeder line.

5-a. Safety standards; non-residential solar electric generating equipment and micro-hydroelectric generating equipment. (a) On or before three months after the effective date of this subdivision, each electric corporation shall establish standards that are necessary for net energy metering and the interconnection of non-residential solar electric generating equipment or micro-hydroelectric generating equipment to its system and that the commission shall determine are necessary for safe and adequate service and further the public policy set forth in this section. Such standards may include but shall not be limited to:

(i) equipment necessary to isolate automatically the solar generating system or micro-hydroelectric generating equipment from the utility system for voltage and frequency deviations; and

(ii) a manual lockable disconnect switch provided by the

customer-generator which shall be located on the outside of the customer-generator's premises and externally accessible for the purpose of isolating the solar electric generating equipment or micro-hydroelectric generating equipment.

(b) In the event that the total rated generating capacity of solar electric generating equipment or micro-hydroelectric generating equipment that provides electricity to the electric corporation through the same local feeder line exceeds twenty percent of the rated capacity of the local feeder line, the electric corporation may require the customer-generator to comply with reasonable measures to ensure safety of the local feeder line.

(c) Unless otherwise determined to be necessary by the commission, an electric corporation may not require a customer-generator to comply with additional safety or performance standards, perform or pay for additional tests, or purchase additional liability insurance provided that the solar electric generating equipment or micro-hydroelectric generating equipment meets the safety standards established pursuant to this subdivision.

(d) Upon its own motion or upon a complaint, the commission, or its designated representative, may investigate and make a determination as to the reasonableness and necessity of the standards or responsibility for compliance with the standards.

6. Electric restructuring. Notwithstanding the provisions of this section, including, but not limited to paragraph (b) of subdivision three of this section, a customer-generator shall comply with any applicable determinations of the commission relating to restructuring of the electric industry.

7. Severability of provisions. The provisions of this section shall be severable and if the application of any clause, sentence, paragraph, subdivision, section, or part thereof to any person or circumstance shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not necessarily affect, impair, or invalidate the application of any such clause, sentence, paragraph, subdivision, section, part or remainder thereof, as the case may be, to any other person, circumstance, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part thereof directly involved in the controversy in which such judgment shall have been rendered.



### Attachment 3: PSL 66-1

§ 66-1. Net energy metering for residential, farm service and non-residential wind electric generating systems. 1. Definitions. As used in this section, the following terms shall have the following meanings:

(a) "Customer-generator" means a residential customer, farm service customer or non-residential customer of an electric corporation, who owns or operates wind electric generating equipment.

(b) "Residential customer-generator" means a customer who owns or operates wind electric generating equipment located and used at his or her primary residence.

(c) "Farm service customer-generator" means a customer of an electric corporation who owns and operates wind electric generating equipment located and used on land used in agricultural production as defined in subdivision four of section three hundred one of the agriculture and markets law, and which is also the location of the customer's primary residence.

(c-1) "Non-residential customer-generator" means a customer of an electric corporation which owns or operates wind electric generating equipment located and used at its premises.

(d) "Net energy meter" means a meter that measures the reverse flow of electricity to register the difference between the electricity supplied by an electric corporation to the customer-generator and the electricity provided to the corporation by that customer-generator.

(e) "Net energy metering" means the use of a net energy meter to measure, during the billing period applicable to a customer-generator, the net amount of electricity supplied by an electric corporation or provided to the corporation by a customer-generator.

(f) "Wind electric generating equipment" means one or more wind generators with a combined rated capacity of not more than twenty-five kilowatts for a residential customer-generator, and not more than five hundred kilowatts for a farm service customer-generator, and not more than two thousand kilowatts for a non-residential customer-generator; that is manufactured, installed, and operated in accordance with applicable government and industry standards, that is connected to the electric system and operated in parallel with an electric corporation's transmission and distribution facilities, and that is operated in compliance with any standards and requirements established under this section.

2. Interconnection and net energy metering. An electric corporation shall provide for the interconnection and net energy metering of wind electric generating equipment owned or operated by a customer-generator; provided that the customer-generator enters into a net energy metering contract with the corporation or complies with the corporation's net energy metering schedule and complies with standards and requirements established under this section. The customer-generator shall be responsible for payment of one-half of the expense of such interconnection for wind electric generating equipment with a rated capacity of more than twenty-five kilowatts.

3. Conditions of service. (a) (i) On or before three months after the effective date of this section, each electric corporation shall develop a model contract and file a schedule that establishes consistent and reasonable rates, terms and conditions for net energy metering to customer-generators, according to the requirements of this section. The commission shall render a decision within three months from the date on which the schedule is filed.

(ii) On or before three months after the effective date of this

subparagraph, each electric corporation shall develop a model contract and file a schedule that establishes consistent and reasonable rates, terms and conditions for net energy metering to non-residential customer-generators, according to the requirements of this section. The commission shall render a decision within three months from the date on which the schedule is filed.

(iii) Each electric corporation shall make such contract and schedule available to customer-generators on a first come, first served basis, until the total rated generating capacity for wind electric generating equipment owned or operated by customer-generators in the corporation's service area is equivalent to three-tenths percent of the corporation's electric demand for the year two thousand five, as determined by the department.

(b) Nothing in this subdivision shall prohibit a corporation from providing net energy metering to additional customer-generators. The commission shall have the authority, after January first, two thousand twelve, to increase the percent limits if it determines that additional net energy metering is in the public interest.

(c) In the event that the electric corporation determines that it is necessary to install one or more dedicated transformers or other equipment to protect the safety and adequacy of electric service provided to its other customers, a customer-generator shall pay the electric corporation's actual costs of installing the transformer or transformers or other equipment:

(i) in the case of a residential, farm service or non-residential customer-generator with a combined rated capacity of not more than twenty-five kilowatts, up to a maximum amount of seven hundred fifty dollars; and

(ii) in the case of a farm service customer-generator with a combined rated capacity of not more than five hundred kilowatts, up to a maximum of five thousand dollars; and

(iii) in the case of a non-residential customer-generator with a combined rated capacity of more than twenty-five kilowatts, such cost shall be as determined by the electric corporation subject to review, upon the request of such customer-generator, by the department.

(d) An electric corporation shall impose no other charge or fee, including, but not limited to, back up, stand by or demand charges, for the provision of net metering to a customer-generator.

(e) A customer who owns or operates land used in agricultural production as defined in subdivision four of section three hundred one of the agriculture and markets law, or a non-residential customer-generator as defined by paragraph (c-1) of subdivision one of this section that locates wind electric generating equipment with a net energy meter on property owned or leased by such customer-generator may designate all or a portion of the net metering credits generated by such equipment to meters, at any property owned or leased by such customer-generator within the service territory of the same electric corporation to which the customer-generator's net energy meters are interconnected and being within the same load zone as determined by the location based marginal price as of the date of initial request by the customer-generator to conduct net metering. The electric corporation will credit the accounts of the customer by applying any credits to the highest use meter first, then subsequent highest use meters until all such credits are attributed to the customer. Any excess credits shall be carried over to the following month.

4. Rates. An electric corporation shall use net energy metering to measure and charge for the net electricity supplied by the corporation and provided to the corporation by a customer-generator, according to

the following requirements:

(a) In the event that the amount of electricity supplied by the corporation during the billing period exceeds the amount of electricity provided by a customer-generator, the corporation shall charge the customer-generator for the net electricity supplied at the same rate per kilowatt hour applicable to service provided to other customers in the same service class which do not generate electricity on site.

(b) In the event that the amount of electricity produced by a customer-generator during the billing period exceeds the amount of electricity used by the customer-generator, the corporation shall apply a credit to the next bill for service to the customer-generator for the net electricity provided at the same rate per kilowatt hour applicable to service provided to other customers in the same service class which do not generate electricity on site.

(c) At the end of the year or annualized over the period that service is supplied by means of net energy metering, the corporation shall promptly issue payment at its avoided cost to a residential or farm service customer-generator for the value of any remaining credit for the excess electricity produced during the year or over the annualized period by such customer-generator.

(d) In the event that the corporation imposes charges based on kilowatt demand on customers who are in the same service class as the customer-generator but which do not generate electricity on site, the corporation may impose the same charges at the same rates to the customer-generator, provided, however, that the kilowatt demand for such demand charges is determined by the maximum measured kilowatt demand actually supplied by the corporation to the customer-generator during the billing period.

5. Safety standards. (a) Each electric corporation shall establish and maintain standards necessary for net energy metering and the interconnection of wind electric generating equipment to its system and that the commission shall determine are necessary for safe and adequate service and further the public policy set forth in this section. Such standards may include, but shall not be limited to:

(i) equipment necessary to isolate automatically a wind electric generating system from the utility system for voltage and frequency deviations; and

(ii) a manual lockable disconnect switch provided by the customer-generator which shall be located on the outside of the customer's premises and/or farm and externally accessible for the purpose of isolating the wind electric generating equipment.

(b) Upon its own motion or upon a complaint, the commission, or its designated representative, may investigate and make a determination as to the reasonableness and necessity of the standards or responsibility for compliance with the standards.

(c) Unless otherwise determined to be necessary by the commission, an electric corporation may not require a customer-generator to comply with additional safety or performance standards, or perform or pay for additional tests, or purchase additional liability insurance, provided that:

(i) the electric generating equipment meets the safety standards established pursuant to this paragraph; and

(ii) the total rated capacity (measured in kilowatts) of wind electric generating equipment that provides electricity to the electric corporation through the same local feeder line, does not exceed twenty percent of the rated capacity of that local feeder line.

In the event that the total rated generating capacity of wind electric generating equipment that provides electricity to the electric

corporation through the same local feeder line exceeds twenty percent of the rated capacity of the local feeder line, the electric corporation may require the customer-generator to comply with reasonable measures to ensure safety of that local feeder line.

6. Electric restructuring. Notwithstanding the provisions of this section, including, but not limited to paragraph (c) of subdivision three of this section, a customer-generator shall comply with any applicable determinations of the commission relating to restructuring of the electric industry.

7. Severability of provisions. The provisions of this section shall be severable and if the application of any clause, sentence, paragraph, subdivision, section, or part thereof to any person or circumstance shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not necessarily affect, impair, or invalidate the application of any such clause, sentence, paragraph, subdivision, section, part or remainder thereof, as the case may be, to any other person or circumstance, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part thereof directly involved in the controversy in which such judgment shall be rendered.

**Appendix A: Eligibility of Resources**

| <u>RES Eligible Electric Generation Sources</u> | Source  | Other Requirements  |
|---|---|---|
| Biogas  | Landfill Gas (Methane) Reciprocating/Internal Combustion Engine   | Only the electricity generated from eligible fuel is eligible.  |
|   | Sewage Gas (Methane) Reciprocating/Internal Combustion Engine   |   |
|   | Manure Digestion (Methane) Reciprocating/Internal Combustion Engine   | If required to have a SPDES permit by NYSDEC regulations, a Concentrated Animal Feeding Operation (CAFO) providing the manure must have and be in compliance with its current Agricultural Waste Management Plan (AWMP) developed by a duly qualified Agricultural Environmental Management (AEM) Planner and must be operating in compliance with any applicable SPDES permit. If not required to have a SPDES permit, the CAFO must be operating in compliance with the best management practices for a facility of its size set forth in the Principles and Water Quality Protection Standards specified in the Agricultural Environmental Management (AEM) Framework & Resource Guide developed by the NYS Department of Agriculture and Markets and the NYS Soil and Water Conservation Committee. |
|   | Anaerobic Digestion (other biogas digestion using agricultural or food processing residues and by-products) |   |
|   | Biomass* Thermochemical Gasification (syngas)   |   |

| <u>RES Eligible Electric Generation Sources</u> | Source   | Other Requirements  |
|---|--|---|
| Biogas (cont.)                                  | Biogas (from eligible sources of biomass* feedstock) Combined Heat & Power                                 |   |
|   | Biogas (from eligible sources of biomass* feedstock) Co-fired with existing fossil-fuel Combustion         | Only the electricity generated from the eligible biomass portion of the fuel is eligible. |
| Biomass *                                       | Biomass Direct Combustion  |   |
|   | Biomass Combined Heat & Power  |   |
|   | Biomass Co-fired with existing fossil-fuel Combustion  | Only the electricity generated from the biomass portion of the fuel is eligible.          |
| Liquid Biofuel                                  | Biomass* Liquefaction through acid or enzymatic hydrolysis (Ethanol)                                       |   |
|   | Biomass* Esterification (Biodiesel, Methanol)  |   |
|   | Biomass* Thermochemical Pyrolysis (Bio-oil)  |   |
|   | Biomass* Hydrothermal Liquefaction   |   |
|   | Liquid Biofuel (from eligible sources of biomass* feedstock) Combined Heat & Power                         |   |
|   | Liquid Biofuel (from eligible sources of biomass* feedstock) Co-fired with existing fossil-fuel Combustion | Only the electricity generated from the biomass portion of the fuel is eligible.          |

| <u>RES Eligible Electric Generation Sources</u> | Source  | Other Requirements   |
|---|---|--|
| Fuel Cells                                      | Solid Oxide Fuel Cells (SOFC)   |  |
|   | Molten Carbonate Fuel Cells (MCFC)  |  |
|   | Proton Exchange Membrane Cells (PEM)  |  |
|   | Phosphoric Acid Fuel Cells (PAFC)   |  |
| Hydroelectric                                   | Hydroelectric Upgrades  | No new storage impoundment, eligibility limited to the incremental production associated with the upgrade. |
|   | Low-Impact Run-of-River Hydroelectric   | No new storage impoundment.  |
| Solar   | Photovoltaics   |  |
| Tidal/Ocean                                     | Tidal (Turbines and other rotary motion drives) electrical generators                                 |  |
|   | Ocean Wave (Turbines and other rotary motion drives)  |  |
|   | Ocean Current(Turbines and other rotary motion drives) Wave (Turbines and other rotary motion drives) |  |
|   | Ocean Thermal Pumped Storage Hydro Powered by Tidal   |  |
|   |   |  |
| Wind  | Wind Turbines   |  |