

Monetizing Electricity Produced by Farm-Based Anaerobic Digestion in NY

Part 5: How the Phase One Value Stack tariff works

September 2020

Components of the Phase One Value Stack

The Phase One Value Stack tariff is comprised of up to 6 parts (Figure 1) that apply only to grid-exported electricity on an hourly basis throughout the year. The blue boxes at the top half of the stack denote the Value Stack components that apply to all eligible systems, project formats and locations (Energy, Capacity, and Demand Reduction). The orange boxes at the bottom half of the stack denote the Value Stack components that apply only in specific cases (Environmental, Locational System Relief, and Community Credit).

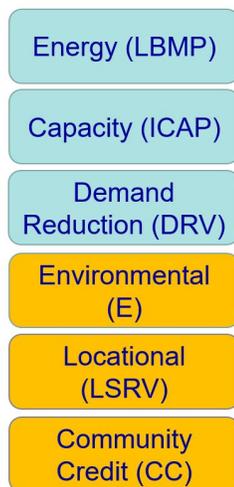


Figure 1. NYS Phase One Value Stack tariff components.

Environmental (E) Value

The Value Stack tariff E value currently applies only to those systems listed as *renewable energy systems* in the NYS Climate Leadership and Community Protection Act¹ (CLCPA). ADG-to-electricity systems utilizing reciprocating internal combustion engine or microturbine technologies are not included in the list; however, fuels cells using non-fossil fuels to generate electricity are included. To date, biogas fuel cells have not been implemented by NYS system owners primarily due to the higher capital and operating costs.

Locational System Relief Value (LSRV)

The LSRV component is applicable only in specific utility zones² based on distribution network conditions power generation is highly valuable. LSRV zones may change over time, and utility maps are updated regularly.

Community Credit (CC)

The CC value is reserved for projects using the Community Distributed Generation (CDG) format, outlined below. The CC value available is given to all eligible Value Stack systems, except fuel cells, where it is worth 16% of the full value³. Currently, the CC is allocated for a maximum capacity of eligible systems per utility in NYS (except Central Hudson Gas & Electric and Orange & Rockland utilities) on a first come, first served basis. Over time, the CC value may decrease or be eliminated.

Community Distributed Generation (CDG): “farm-based” and “standard” options

A CDG project format (Figure 2) is useful to consider, and may even be required, to maximize the electricity value from a farm-based ADG-to-electricity system under the Value Stack tariff. Under the CDG format, excess electricity (and associated monetary credit) is allocated to other utility customer accounts as members. In exchange for utility bill savings, the members make payments back to the host generator. “Farm-based” CDG applies when the host and all members are farm operations, or associated staff residences, and requires a minimum of only 1 member. “Standard” CDG, such as the common “Community Solar” projects in NYS, requires a minimum of 10 members none of which may be allocated more than 40% of the generation. Membership agreements are the responsibility of the host and so using the “farm-based” approach may be simpler if only one farm operation member is needed to allocate the excess electricity generated.

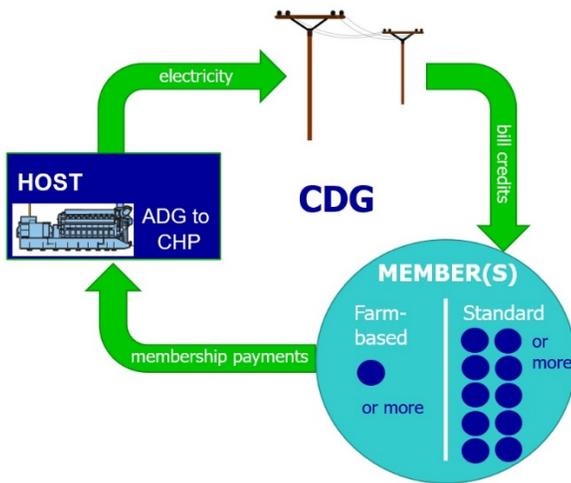


Figure 2. Community Distributed Generation illustration.

Example month – Phase One Value Stack tariff as farm-based CDG

An example of the Value Stack tariff components for a 1,000 kW ADG-to-electricity system with an annual average capacity factor of 0.90 and a 95% uptime is shown in Table 1.

The system uses an engine-generator set and therefore does not qualify for the E value. The system is also not located in an LSRV utility zone. As a farm-based CDG project, the host has elected to export all of the generated electricity behind a separate meter (to get the Value Stack tariff values of LBMP, ICAP, DRV, and CC) and to allocate 45% to offset their own farmstead utility usage and the remaining amount to a farm operation an hour away in the same utility territory. The currently available CC is locked in at \$0.02/kWh, 30% of the first year value. LBMP, ICAP, and DRV values fluctuate with hourly day ahead market pricing

and the power exported during peak demand periods (generally summer daytime hours).

The example month's average value is reported in Table 1. Estimated monthly utility bills were developed for the host farm electricity usage (Table 2) and for the CDG member farm's electricity usage (Table 3).

Table 1. Example month: value stack tariff components.

Component	Value	Note
Avg. LBMP rate	\$0.0324/kWh	Varies by hour
Avg. ICAP rate	\$0.0049/kWh	Varies by month
Avg. DRV rate	\$0.0062/kWh	Fixed for 10 years, then new
CC rate	\$0.0200/kWh	Fixed for term
Total exported generation	681,700 kWh	Reported on bill
Total Value Stack credit	\$43,317	Reported on bill

Table 2. Example month: CDG host farm utility bill.

Bill Component	Value
Host farm usage (kWh)	350,000
Host farm total billed charges	\$27,000
Host farm Value Stack credit	(\$19,493)
Host net utility billed amount	\$7,507

Table 3. Example month: CDG member farm utility bill.

Bill Component	Value
Member farm usage (kWh)	400,000
Member farm total billed charges	\$28,000
Member farm Value Stack credit	(\$23,824)
Member net utility billed amount	\$4,176

Through an agreement established by the host with each CDG member, the member would remit a percentage of the bill credit they receive to the host each month. If we assume this payment is set at approximately 90% of the credited amount, the host will receive \$21,440 in this example month and the member nets an 8.5% utility bill savings.

FACT SHEET SERIES: Monetizing Electricity Produced by Farm-Based Anaerobic Digestion in New York

- Part 1: Decision tree to identify electricity tariff options available
- Part 2: Compare and contrast electricity tariff options
- Part 3: Overview and eligibility guidelines of NEM and Phase One Value Stack electricity tariffs
- Part 4: How the Net Energy Metering (NEM) tariff works
- Part 5: How the Phase One Value Stack tariff works (including Community Distributed Generation)

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¹ New York State Senate Bill S6599.

² www.nyserdera.ny.gov/All%20Programs/Programs/NY%20Sun/Contractors/Value%20of%20Distributed%20Energy%20Resources.

³ NYS DPS Case 15-E-0751, Order Regarding High Capacity Factor Resources (issued December 12, 2019).