



NYSERDA

Value Stack Calculator Overview

10.13.2017

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Section 1

Brief Overview of Value Stack

The Value Stack

- As part of VDER, the Value Stack is gradually replacing Net Metering.
- Compensates energy producers with monetary credits, not volumetric credits. Customers will see a dollar credit on their bill
- While net metering allowed customers to “bank” kWh credits that are injected to the grid for later use, the value stack converts the credits to dollars. The Monetary credits can roll over to following billing cycles
- The value of a kWh is related to when and where it is generated: greater compensation in congested parts of the electric grid, during periods of high demand

Who receives the Value Stack?

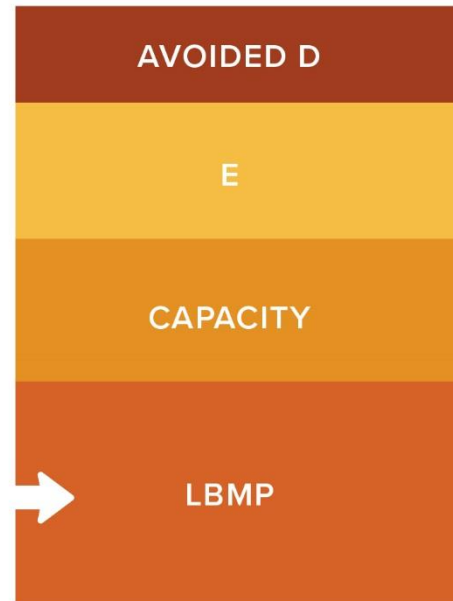
- Residential and non-demand commercial (“Mass Market”) projects will receive 20 years of Phase 1 Net Metering if interconnected before 1/1/2020
- Already-interconnected projects will continue to receive net metering. No action required to keep it
- Commercial projects that have **already** met certain milestones by July 2017 will receive 20 years of Phase 1 Net Metering
- PSEG-Long Island is not under the jurisdiction of NY’S Public Service Commission, and is not currently affected by the VDER Tariffs
- All other projects moving forward will receive the Value Stack

On-site consumption Vs Grid Injections

- Energy that is “injected” or pushed into the distribution grid will be compensated through the value stack
- PV production that is immediately consumed onsite never goes to the grid, so it is not compensated through the value stack
- Example:
 - A PV system produces 1000kWh in a given month. 600kWh are immediately consumed on-site by the customer, and the other 400kWh are sent to the grid
 - On his monthly bill, the customer sees a monetary credit, based on the 400kWh. The customer’s monthly electric consumption is reduced by the 600kWh he consumed on-site: he is simply not billed for those 600kWh

LBMP – Wholesale Cost of Energy

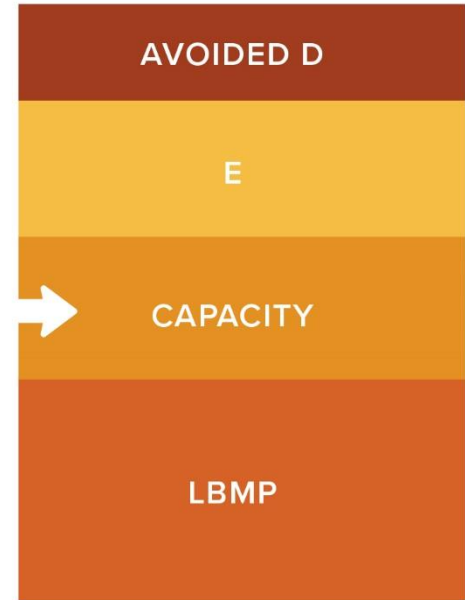
- Day-ahead hourly locational-based marginal pricing (LBMP), inclusive of electrical losses
- Based on [NYISO zonal prices](#)
- Fluctuates based on demand for electricity and fuel prices



ICAP - Capacity

- Compensation per kWh, based on the capacity portion of the utility's full service market supply charges (similar value as NEM)*
- Alternative 1 (default)– spread across all hours of the year
- Alternative 2 – a higher rate, but paid only on injection during 460 summer hours (2-7PM, June-Aug). Projects with storage may want to opt into this option
- Alternative 3 – tied to grid injections during single highest annual hour of peak grid demand

*For intermittent technologies



E- Environmental Value

- Environmental compensation is the higher of:
 - The applicable Tier 1 REC price per kWh generated delivered (currently \$0.02424 per kWh)
 - The social cost of carbon (SCC) per kWh value minus Regional Greenhouse Gas Initiative
- E value is locked in for 25 year project term when a project executes its SIR contract, or makes 25% payment on interconnection costs



DRV – Demand Reduction Value

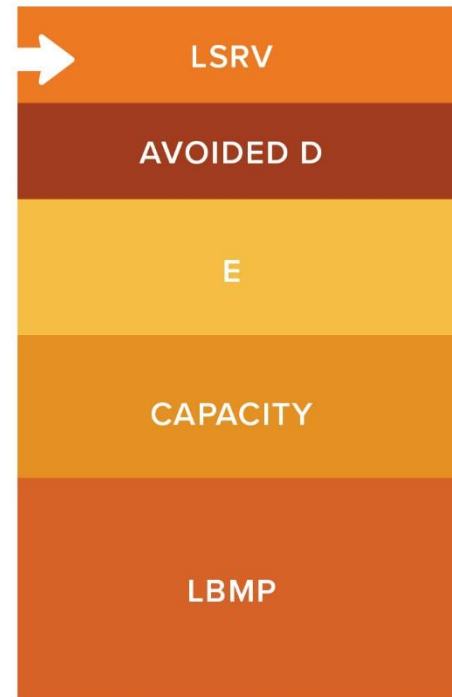
Value of PV System's Reduction of Peak Grid Distribution Demand

- For projects, or portions of projects, that do not receive MTC
- Compensation is tied to PV system grid injections over the grid's 10 highest usage hours per year (modeled in year 1)
- Details of calculation are available starting page 111 of March 9 VDER Order
- DRV rate is locked for 3 years when a project executes its SIR contract, or makes 25% payment on interconnection costs



LSRV – Locational Adder

- LSRV is paid for projects located on sections of the grid that are badly in need of DG. Each utility has provided maps and MW limits
- Like DRV, LSRV payments tied to PV system output during year's 10 peak hours of utility demand (modeled in Year 1)
- LSRV can be received in addition to **DRV & MTC** (CDG projects are eligible)
- Paid for first 10 years of project term
- LSRV rate is locked in when project pays 25% of interconnection upgrade costs or executes SIR

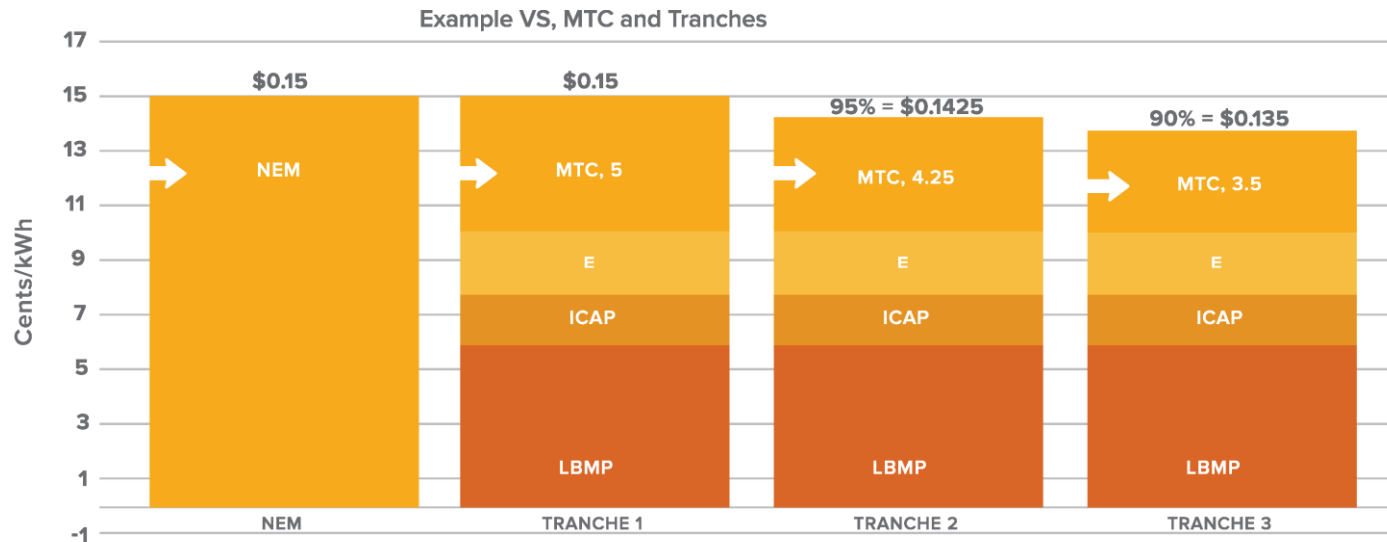


MTC – Market Transition Credit

- For CDG only: MTC is applied to CDG mass market membership proportion
 - Ex., if a project has 70% mass market (nondemand) off-takers and 30% large commercial off-takers, the project will receive MTC on 70% of generation, and DRV on 30% of generation
- MTC is also available for Mass Market and non-CDG projects that opt-in to the Value Stack
- The MTC is fixed and applies to a project's 25-year VDER term
- Projects are locked into MTC tranche when they pay 25% interconnection upgrade costs, or execute SIR



CDG Tranche Design



- MTC = Difference between *Base Retail Rate* and *Estimated Value Stack*
- Intended to make estimated CDG compensation...
 - equal to *Base Retail Rates* (NEM) in Tranche 1
 - 5% less than NEM in Tranche 2
 - 10% less than NEM in Tranche 3

Section 2

The Value Stack Calculator

Purpose of the Calculator

GOAL - To allow contractors to easily estimate project compensation under the value stack

- Developed by NY-Sun and E3
- We have received and incorporated feedback from utilities and a number of PV developers
- Available for free at nyserdera.ny.gov/vder

The Value Stack Calculator **DOES**

- Provide a reasonably accurate calculation of the \$ value of a PV system's production
- Allow users to input their own forecast data
- Be updated on a regular basis

The Value Stack Calculator **DOES NOT**

- Provide a 100% perfect guarantee of project revenue. Weather, future energy prices, forecast assumptions, and your specific project's performance are unknowns
- Calculate project costs, return on investment, etc. This is outside the calculator's scope
 - However, feel free to port the calculator's outputs into your own financial models

Additional Notes

- The Calculator is a large Excel file (33MB). It may take a minute to run, and is too large to attach to most emails
- If you use incorrect/inappropriate inputs, the results will not be accurate
- Questions? VDER@nyserda.ny.gov or contact Luke Forster

Demo of Calculator

Section 3

Additional Resources

Additional Resources

1. See the Documentation tab on the Calculator
2. VDER resources at nyserdera.ny.gov/vder
3. Utility and DPS filings related to VDER: [click here](#)
4. Questions? Email vder@nyserdera.ny.gov