Value Stack Calculator Training

NYSERDA
Thursday June 6, 2019

Welcome and Context

- As part of NYS's transition away from net metering, we transitioned to VDER/The Value Stack about 2 years ago

- The Value Stack is a nuanced tariff that compensates energy based on when and where it is injected to the grid

- NYSERDA and E3 developed a calculator tool to help developers estimate project revenue

- A new Order made improvements to the Value Stack in April 2019. "Legacy" vs "New Order"

- Today's presentation is targeted for developers with some understanding of the value stack, but without in-house policy/modeling teams

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Overview

- The Value Stack

- Value Stack Calculator and other Web Resources

- Tips, Do's and Don'ts

- Sample Model Runs

- Q&A

This webinar is being recorded. A copy of the recording and the slides will be emailed out next week, and these resources will also be posted on the NYSERDA Value Stack website.

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Disclaimer

NYSERDA has provided the Value Stack Calculator as a tool to help developers understand the Value Stack Tariff and estimate project revenues. Estimated project revenue modeled by the calculator is not guaranteed by NYSERDA, and is heavily dependent on user-input factors – actual project revenue will be based on variables including weather and future market rates for energy and capacity.
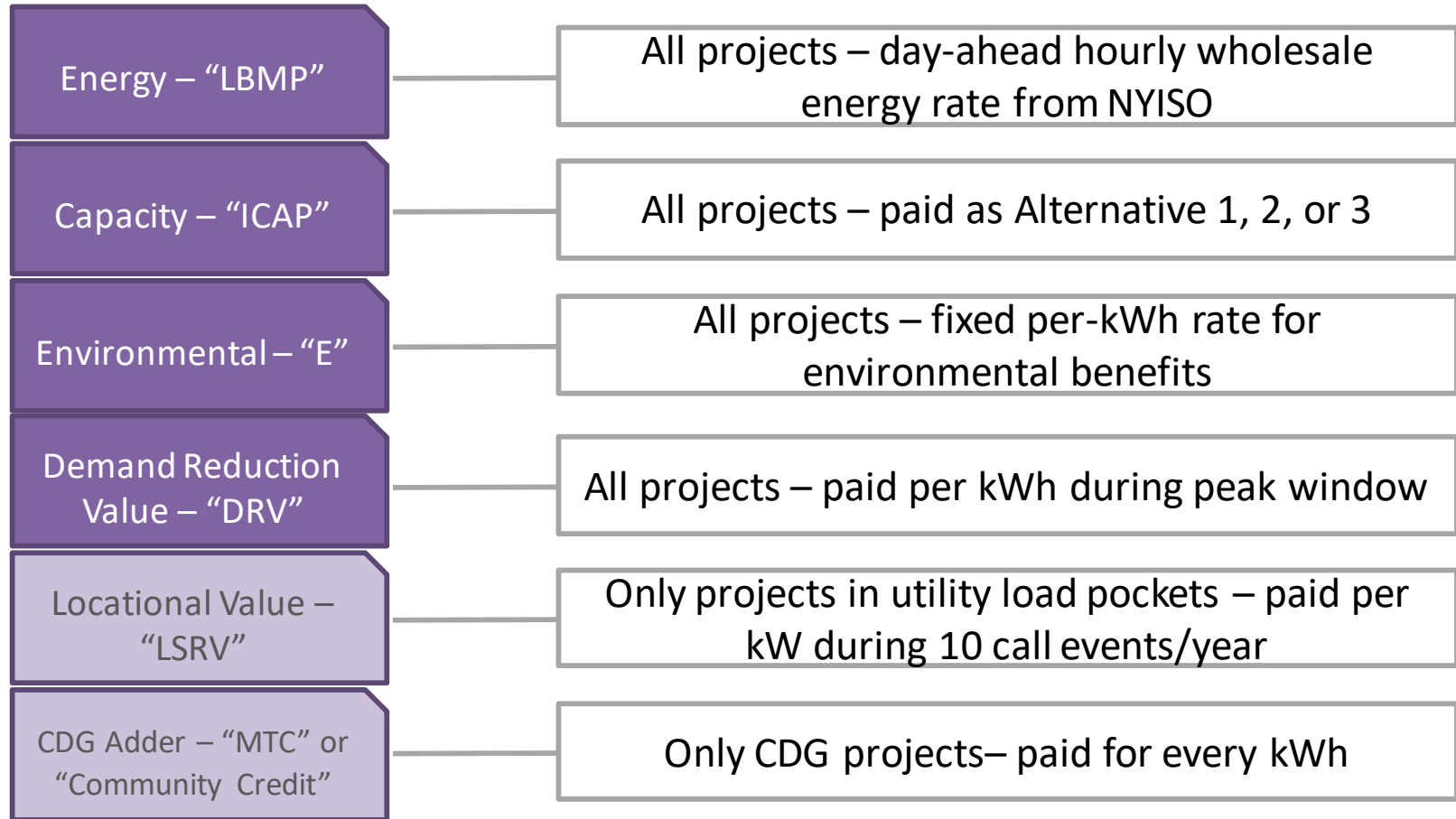
The Value Stack

- NYS is gradually transitioning away from net metering. The Value Stack is the current retail compensation tariff for non-mass market distributed energy resources

- Compensation is based on when and where energy is provided to the grid

- For a refresher on the individual value stack elements, see *Updated Value Stack Overview* presentation on the NYSERDA VS Website

Qualification Dates

- New Value Stack Order applies to all projects that qualify* after 7/26/2018 (date of July Whitepapers)

- Projects that qualified on or before 7/26/2018 will receive value stack compensation as calculated in original VDER Order

- Non-CDG projects that qualified before 7/26/2018 may permanently opt into new value stack

* Projects "qualify" on the date their pay their 25% utility upgrade payment. If no payment is required, qualification is based on the date the utility interconnection agreement is executed.

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Review – the Value Stack

Energy – "LBMP"	All projects – day-ahead hourly wholesale energy rate from NYISO
Capacity – "ICAP"	All projects – paid as Alternative 1, 2, or 3
Environmental – "E"	All projects – fixed per-kWh rate for environmental benefits
Demand Reduction Value – "DRV"	All projects – paid per kWh during peak window
Locational Value – "LSRV"	Only projects in utility load pockets – paid per kW during 10 call events/year
CDG Adder – "MTC" or "Community Credit"	Only CDG projects – paid for every kWh

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The Value Stack Calculator

- Free, Excel-based model developed by E3 and NYSERDA

- Answers the question "What is the estimated value of the energy produced by my PV system?"

- 26MB

- Periodic revisions as Value Stack tariff and market data change

- Different versions for "Legacy" and "New Order"

- Contains explanations and citations to source data. See *Documentation* tab

The Value Stack Calculator - DOES

- Allow for flexible user input (escalators, multiple options for rates)
- Work for PV project, and PV + Storage projects. Small hydro, wind, anaerobic digesters, and fuel cells can be modeled in a pinch with a user-entered production curve

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The Value Stack Calculator – DOES NOT

- Provide a full project proforma. Doesn't account for your project costs, incentives & tax credits, details of how you structure a contract with your customer (10% savings per kWh on a PPA), etc.

- Guarantee your project's revenue. Actual bill credits care calculated by the utilities

- Work for standalone storage projects

NYSERDA's Value Stack Website

- https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Contractors/Value-of-Distributed-Energy-Resources

- Navigate by *NY-Sun* → *Contractors* → *The Value Stack*, or search engine

- Links to Value Stack Orders, summary presentation/webinar recording, tranche updates, links to utility monthly filings, VDER Order source documents, etc

NYSERDA's Value Stack Calculator Website

- https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Contractors/Value-of-Distributed-Energy-Resources/Solar-Value-Stack-Calculator

- "New Order" and "Legacy" calculator files

- Revision notes

- Sign up for email notifications

Tips, Do's, and Don'ts

- Think carefully about escalators – they compound a lot over a 25-year cashflow!
- Consider – do I want an optimistic, a conservative, or a best-guess estimate of revenue?
- Double-check LSRV eligibility with hosting capacity map and/or utility monthly filings
- If ConEd, double-check the CSRP window with the 2019 CSRP map
- Remember how on-site projects work
  - If under 750kWac, choice of net metering or value stack
  - kWh consumed onsite offset retail purchases. kWh pushed to grid get value stack
- If offsetting on-site load, enter the customer's correct retail per-kWh rate

Tips, Do's, and Don'ts

- Don't assume that **project** revenue equals the **developer's** revenue
  - If you have a PPA with 10% customer savings, the customer will only pay the developer 90% of the values in the "Summary Outputs" tab
- Send reasonable calculator/project questions to vder@nyserda.ny.gov
- Send policy questions to vder@dps.ny.gov
- Check out the *Documentation* tab and the actual Orders
- Password to unlock the calculator is *nysun*
  - Provided for the purposes of tracing formulae

Sample Model Runs

1. National Grid CDG

2. O&R small customer with on-site load

3. ConEd RNM with and without storage

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Sample Model Runs

1. National Grid CDG
   - Using New Order
   - 7.5MWdc
   - Fixed Tilt, ICAP Alt 1
     - $1.14M in credits Year 1
   - Single Axis Trackers, ICAP Alt 2
     - $1.30M in credits Year 1

Sample Model Runs

2. O&R small customer with on-site load

   - 40kW system for a dentist

   - Customer currently consumes 50,000kWh/year at $0.12/kWh

   - Customer's monthly bill (including demand charge) is $1,000/month

   - Solar reduces customer's O&R bill purchases by $3,106/yr

   - Solar provides value stack credits of $2,237/yr

   - Customer's total savings from solar is a combination of bill savings and value stack credits

Sample Model Runs

3. ConEd Remote Metered System

   - 1 MWdc of PV, 800kWac interconnection limit, no on-site load, 2-7PM peaking window

   - Year 1 revenue = $193k

- Add 200kW, 4-hr battery, ICAP Alt 2

   - Year 1 revenue = $237k

Thank you!

A copy of the slides and a recording will be emailed out over the next several days, as well as posted on the NYSERDA Value Stack website.