Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth

Massachusetts Department of Energy Resources

Clean Peak Energy Standard Distribution Circuit Multiplier Working Group

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Background

- Clean Peak Energy Standard (CPS)
  - A market mechanism designed to provide incentives to clean energy technologies that can supply electricity or reduce demand during seasonal peak demand periods
- CPS Resources can do more
  - CPS resources may help open additional hosting capacity for solar and/or mitigate the need for infrastructure upgrades associated with increasing peak demands
- The Distribution Circuit Multiplier (DCM) adds a locational price signal to the CPS
  - The DCM is a tool that could increase/decrease the number of certificates a resource could generate within CPS according to the specific needs of a given circuit
  - It can help to maximize the benefits provided by CPS Resources

Clean Peak Distribution Circuit Multiplier Guideline Framework

- The Guide Posts: (Simplicity is key!)
  - Multiplier value of 2 if included, 1 if not
  - No more than 10% of an EDC's circuits included in initial roll out
  - Minimize the number of data sources used
  - Focus on transparency in the circuit designation
  - Ensure that the result is actionable information for responsive development

Proposed DCM Structure

- There are two distinct common causes for upgrades which may be resolved by CPS Resources:
  1) High solar PV saturation
  2) Increasing peak demands
- DOER proposes establishing two separate formulaic methods to identify circuits facing these conditions
  1) High solar PV saturation:
     a) Connected PV Capacity (MW) / Feeder Capacity Rating (MVA)
     b) Then sort from high-to-low for an indication of PV saturation
  2) Increasing peak demands:
     a) Annual Peak Load (MVA) / Feeder Capacity Rating (MVA)
- The formulaic methods would be established using existing public datasets
  - For example, data provided by utilities in annual Grid Modernization Reports
- DOER recommends an initial even split of circuit designations 1) and 2)

DCM Eligibility

- Clean Peak Resources eligible to receive the DCM should be limited to:
  - Project types that help to resolve the constraint, ensuring a grid benefit and not a negative grid impact
  - New CPS resources that receive a CPS Statement of Qualification after the DCM has been identified, ensuring they are a result of intentional siting decisions
- High solar PV saturation circuit resource eligibility:
  - BTM storage
  - Standalone storage which accepts operating limitations in its ISA and/or accepts EDC DERMs signals to limit system operations
- Increasing peak demands circuit resource eligibility:
  - Demand Response
  - RPS Class I/II
  - BTM storage
  - Standalone storage which accepts operating limitations in its ISA and/or accepts EDC DERMs signals to limit system operations

DCM Targeted Circuit Identification

- We propose to leverage existing public datasets to identify circuits to apply multipliers
  - Namely, the EDCs' annual Grid Modernization reports
- Grid Mod reports include substantial information at a distribution circuit level, including:
  - Circuit ratings
  - Annual peak demand
  - Amount of solar
  - Amount of other DG (e.g. CHP)
  - Other:
    - Number of grid mod devices deployed
    - Number of customers on circuit
    - Number of known EV chargers
    - Annual energy delivered on circuit
    - SAIDI/SAIFI, etc.

DCM Values

- We recommend either establishing:
  - A single multiplier applied to all selected circuits (e.g. 2x multiplier for all identified)
- We want to keep it simple, but also consider additional implementable filters for DCM valuation:
  - Geographic distribution
  - Multi-year trends
  - Whether the circuits have already been designated for reliability or other upgrades
  - Weighting EJ locations
  - Weighting by number of customers served by the circuit
  - Weighting by relative peak demand as compared to annual energy delivered

Size of Available Multiplier

- The existing guideline states that when the Distribution Circuit Multiplier is established, it will be established for a designated size (number of MW).
  - The circuit multiplier would remain available until the calendar quarter in which the designated size is filled. This is designed to limit the number of resources which can benefit from the multiplier on a single circuit, while ensuring the multiplier remains in effect for some period-of-time after it's filled to recognize resource development lags price signals.
  - DOER recommends that the multiplier continue to be applied for 8 years from the approval of a given Clean Peak Resource on a designated circuit with space available. So, a Clean Peak Resource meeting the eligibility and other requirements of the District Circuit Multiplier receiving program qualification on 1/1/2022 would have that multiplier applied through 1/1/2030, but not beyond.
- Alternatively
  - The multiplier could be in effect for the full year from circuit identification, and to remain in effect until the next year when the analysis is repeated, and new circuits are identified for multipliers. This would be more administratively efficient but is subject to potential overdevelopment of resources responding to the price signal.

Metrics and Future Refinement

- Metrics and monitoring will be critical to success
- One potential outcome to watch for is if by targeting the worst circuits, we are targeting circuits that will certainly face upgrades in the near term. If this comes to fruition, it may warrant adjusting the formulaic identification to instead target circuits which are trending toward necessitating an upgrade, but have substantial headroom before it occurs (e.g. target the 75th – 85th percentile circuits rather than 90th to 100th).

Conclusions and Next Steps

- Timeframe goals
  - DOER hopes to establish a framework to implement the DCM by mid 2022
  - This would allow for coordination between locational price signals and early CPEC EDC procurements
  - This would also provide guidance to developers and financiers as they look to 2022/2023 projects
- Next steps
  - Finalize proposed approach
  - Work with Program Administrator to plan for any necessary platform updates
  - Release DCM Guidelines updates for public comment
  - Finalize DCM Guidelines