Slice of Day (SOD) PRM Tool Updates

Energy Division Staff has made several big updates to the SOD PRM tool published on October 24th and presented at October 25th workshop. The key changes are summarized below:

* Corrected formula error (identified during the workshop) that was incorrectly summing total resource supply on “Dashboard” tab not including SoCal Wind.
* Corrected SERVM portfolio to reflect the portfolio used in the 2024 RA LOLE study, published in February 2023. It was identified that the prior portfolio being used, was not correct. The new portfolio shows an increase of over 5,000 MW of batteries previously not included which raises the required SOD PRM.
* Revised the storage optimization to no longer allocate storage with a fixed 5-hour profile (see optimization details in number 6 below)
* Revised how Round Trip Efficiency (RTE) is accounted for. The new tool no longer includes RTE in the storage MWh limits available on the Storage tab. Instead, RTE is accounted for in the Cumulative Excess column E and State of charge columns G and H on the “PRM\_Setting” tab.
* Updated Demand Response and Pumped Storage Hydro profiles to reflect SOD Qualifying Capacity counting.

Below is a high level overview of the process used in the updated SOD PRM tool.

1. Input 1-2 managed load.
2. Obtain the storage values from SERVM. In the storage tab, calculate the energy using this formula: nameplate MW \* duration = 8035.54 \* 4 = 32,138 MWh.
3. The Sep\_profiles tab has the NQC values by unit category and the profile for each resource type, with solar and wind profiles based on the exceedance values. The PSH and DR shapes and counting are based on RA rules. The import is capped at 4000MW across 24 hours.
4. The final output tab calculates the MW by hour based on the profiles by unit category.
5. The Dashboard tab reflects the MW values of each unit category as well as managed load and supply with and without storage.
6. The PRM\_setting tab calculates the PRM using a solver by looking for the minimum PRM across 24 hours without storage, then optimizing by adding storage to the minimum required PRM while not allocating more than full battery MW capacity in a given hour and ensuring the total allocation does not exceed total energy MWh, also making sure there is enough energy to charge the batteries. In the old tool, battery capacity was calculated by multiplying the duration (in hours), and efficiency, then dividing the result by 5 hours into a fixed shape. This number was then allocated to batteries across the hours of shortage in capacity.