Selected Resource Counting Topics

RA Reform Workshop

8/17/2022

Agenda

Slice-of-Day Resource Counting Philosophy

Hybrid Resources

Portfolio Limits / MCC buckets DR and imports

24-Hourly-Slice Resource Counting

- Counting should represent the expected marginal contribution of resource in given hour of a given month
  - **"What is reasonable to expect Resource X to contribute in hour Y of month Z"**
  - Since we are looking at hourly contribution, this value would equal both the "first-in" and "last-in" marginal contribution since the expected capacity contribution isn't portfolio dependent

- Conditioning is probably appropriate
  - **"What is reasonable to expect Resource X to contribute in hour Y of month Z, <u>when hour Y is higher than normal for hour Y in month Z</u>"**

- Sample size issues could be addressed by using interval production and/or capacity offer data
  - Four data points for every hour
  - VER capacity varies within hours
  - Would help answer **"What is reasonable to expect Resource X to contribute <u>throughout</u> hour Y of month Z"**
  - Granularity is not a substitute for duration, but in this case the granular data could also add to the quality of the estimates

What is a "Hybrid" Resource for RA Purposes?

Name	Charge Restrictions	Deliverability	Applicable RA Counting Rule	Excess Capacity Verification	Notes
A	None	Only Battery	BESS	LSE Showing	
B	None	Only VER	VER	Not applicable	BESS is "energy only" in this scenario
C	None	Both Fully deliverability	BESS and VER	LSE Showing	
D	None	Mixed deliverability	BESS and VER (limited by deliverability)	LSE Showing	
E	"Partial Paired" Restriction	Only Battery	BESS	LSE Showing	
F	"Partial Paired" Restriction	Only VER	VER	Not applicable	BESS is "energy only" in this scenario
G	"Partial Paired" Restriction	Both Fully deliverability	BESS and VER	LSE Showing	
H	"Partial Paired" Restriction	Mixed deliverability	BESS and VER (limited by deliverability)	LSE Showing	
I	"Only Paired" Restriction	Only Battery	BESS limited by VER	Resource Showing	
J	"Only Paired" Restriction	Only VER	VER	Not applicable	BESS is "energy only" in this scenario
K	"Only Paired" Restriction	Both Fully deliverability	BESS and VER	Resource Showing	BESS may be limited by VER, depending on relative size
L	"Only Paired" Restriction	Mixed deliverability	BESS and VER (limited by deliverability)	Resource Showing	BESS may be limited by VER, depending on relative size
M	"Only Paired" Restriction	Single Resource	BESS and VER (limited by deliverability)	Resource Showing	This may be a special case of "L" above

- A-H are separate resources from an RA perspective
  - Resource counting and showing limited by deliverability of underlying resource
  - "Excess Capacity" check done at LSE Showing level
- I-M are "Hybrids"
  - Limited by combined deliverability and production of underlying renewable
  - "Excess Capacity" check done at Resource Showing level

Hybrid Resource Showing Validation

- Hybrid showing should be bifurcated for ease of validation even if single resource ID
  - Can be bifurcated in normal showing table with sub-id's or a separate hybrid-specific table

- Gross level validations:
  - Total MWh shown + storage efficiency losses <= total daily MWh of renewable portion
  - Sum of Hybrid showing in each slice <= deliverable amount

- Component level validations:
  - Storage component shown within storage capabilities (see storage validation)
  - Renewable component showing must have storage MWh and efficiency losses removed from appropriate shape
    - Renewable component showing in each slice <= appropriate shape
    - Renewable component total shown MWh + storage charging requirements <= appropriate shape MWh

Hybrid Resource: Storage only charges from associated renewable under normal circumstances

Slice-of-Day Portfolio Limits / MCC Buckets

- Slice-of-day incorporates many of the limitations previously addressed through MCC buckets
- Several non-daily limits need consideration
  - Resources not available all days of the week/month
    - Some imports, DR, and CHP
    - Others?
  - Dispatchable resources available all days of month but with monthly limits
    - Dispatchable hydro
    - Others?

R.21-10-002 ALJ/DBB/lil

Category	Availability	Maximum Cumulative Capacity for Bucket and Buckets Above
DR	Varies by contract or tariff provisions, but must be available Monday – Saturday, 4 consecutive hours between 4 PM and 9 PM, and at least 24 hours per month from May – September.	8.3%
1	Monday – Saturday, at least 100 hours per month. For the month of February, total availability is at least 96 hours. January - February, May - December, 4 consecutive hours between 4 PM - 9 PM. March - April, 4 consecutive hours between 5 PM – 10 PM.	17.0%
2	Every Monday – Saturday. January - February, May - December, 8 consecutive hours that include 4 PM – 9 PM. March-April, 8 consecutive hours that include 5 PM – 10 PM.	24.9%
3	Every Monday – Saturday. January-February, May - December, 16 consecutive hours that include 4 PM – 9 PM. March-April, 16 consecutive hours that include 5 PM – 10 PM.	34.8%
4	Every day of the month. Dispatchable resources must be available all 24 hours.	100% (at least 56.1% available all 24 hours)

2024 MCC Bucket Proposal

As addressed in SCE's comments on the Proposed Decision, there needs to be a bridge from the current RA construct with MCC buckets to the Slice-of-Day construct

Slice-of-Day Test Year

MCC Bucket	Weekly Availability >=	Monthly Hour Limit >=	% at NQC hour <=
0	Mon-Sat	24	8.3
1	Mon-Sat	100	17
2	Mon-Sat	192*	24.9
3	Mon-Sat	None	34.8
4	Mon-Sun	None	100

Retains equivalent MCC buckets without the daily limitations

Current RA Program in 2024

- Consider Energy Storage resources "bucket 4" as long as portfolio also passes Slice-of-Day capacity sufficiency test

- Retain all other MCC bucket rules

*8 hours per day, 6 days per week, 4 weeks month