

A critical look at the recent “Round-the-Clock” Supply of 400 MW RE Power
tender by SECI

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Supplementary Slides
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POWER PERSPECTIVES



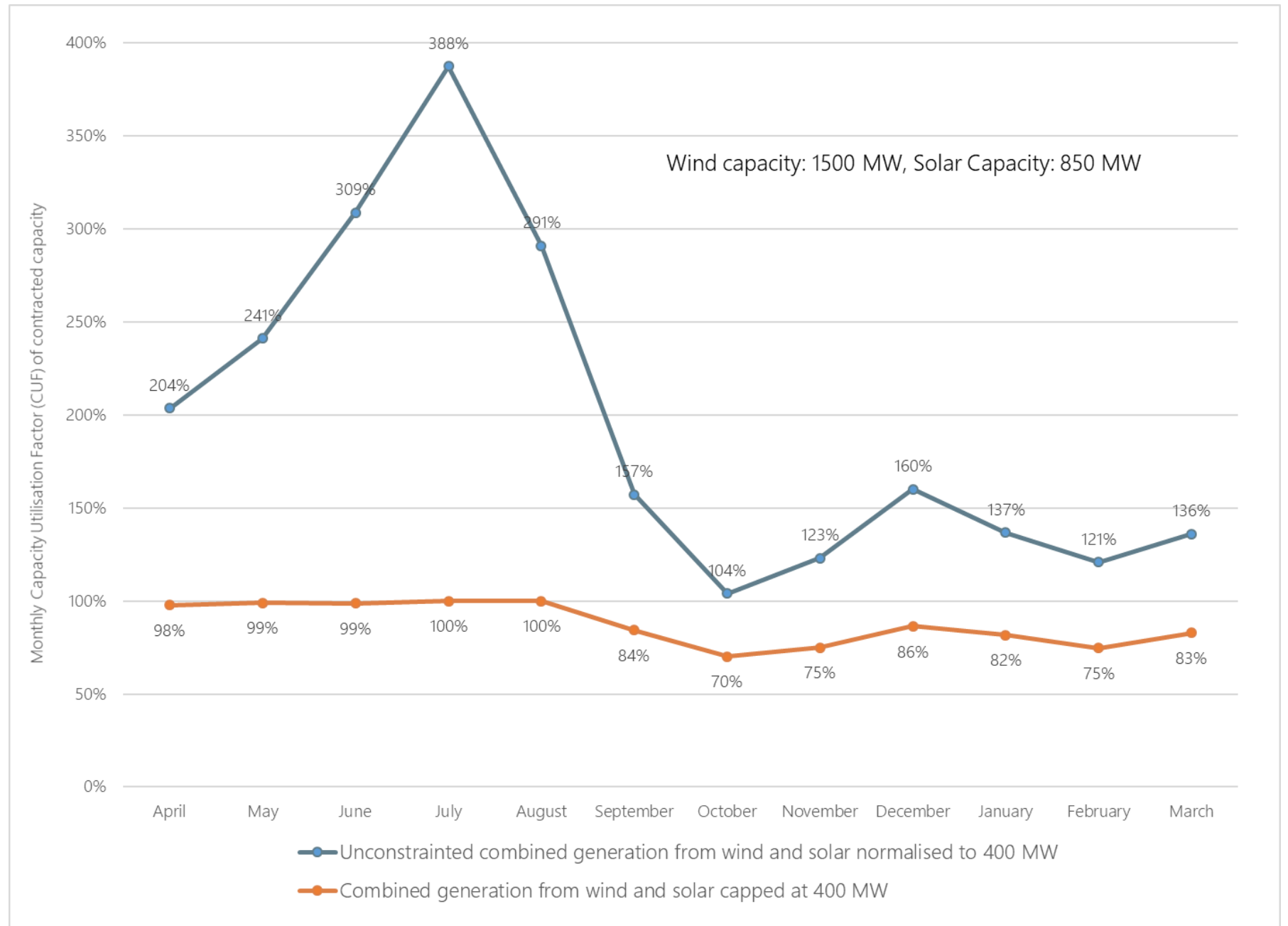
प्रयास

Scenario 1

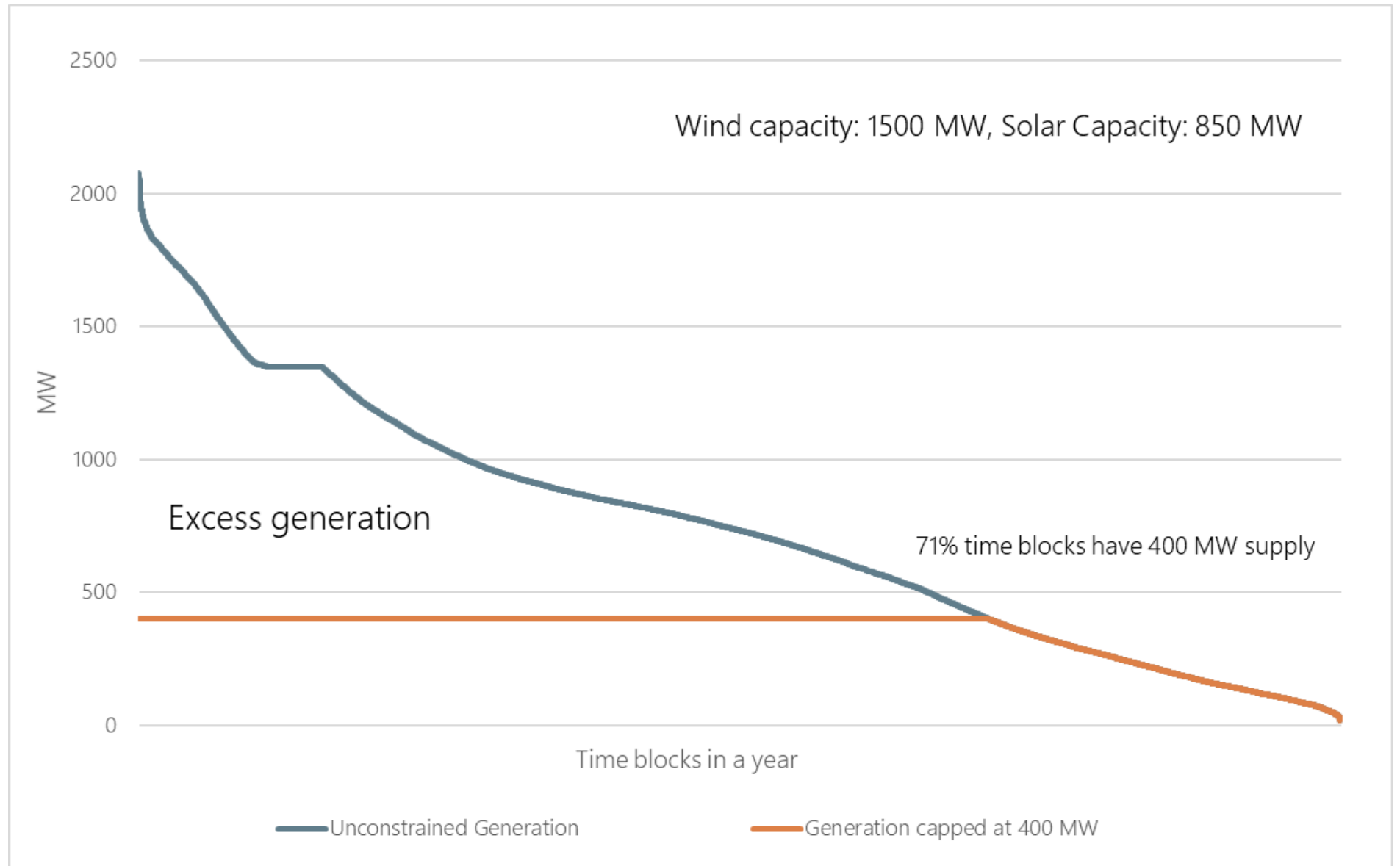
- Tender Conditions
 - Minimum Annual CUF: 80%
 - Minimum Monthly CUF: 70%
 - Contracted Capacity: 400 MW

- Assumptions
 - Wind Capacity: 1500 MW, CUF: 38%
 - Solar Capacity: 850 MW, CUF: 26.2%

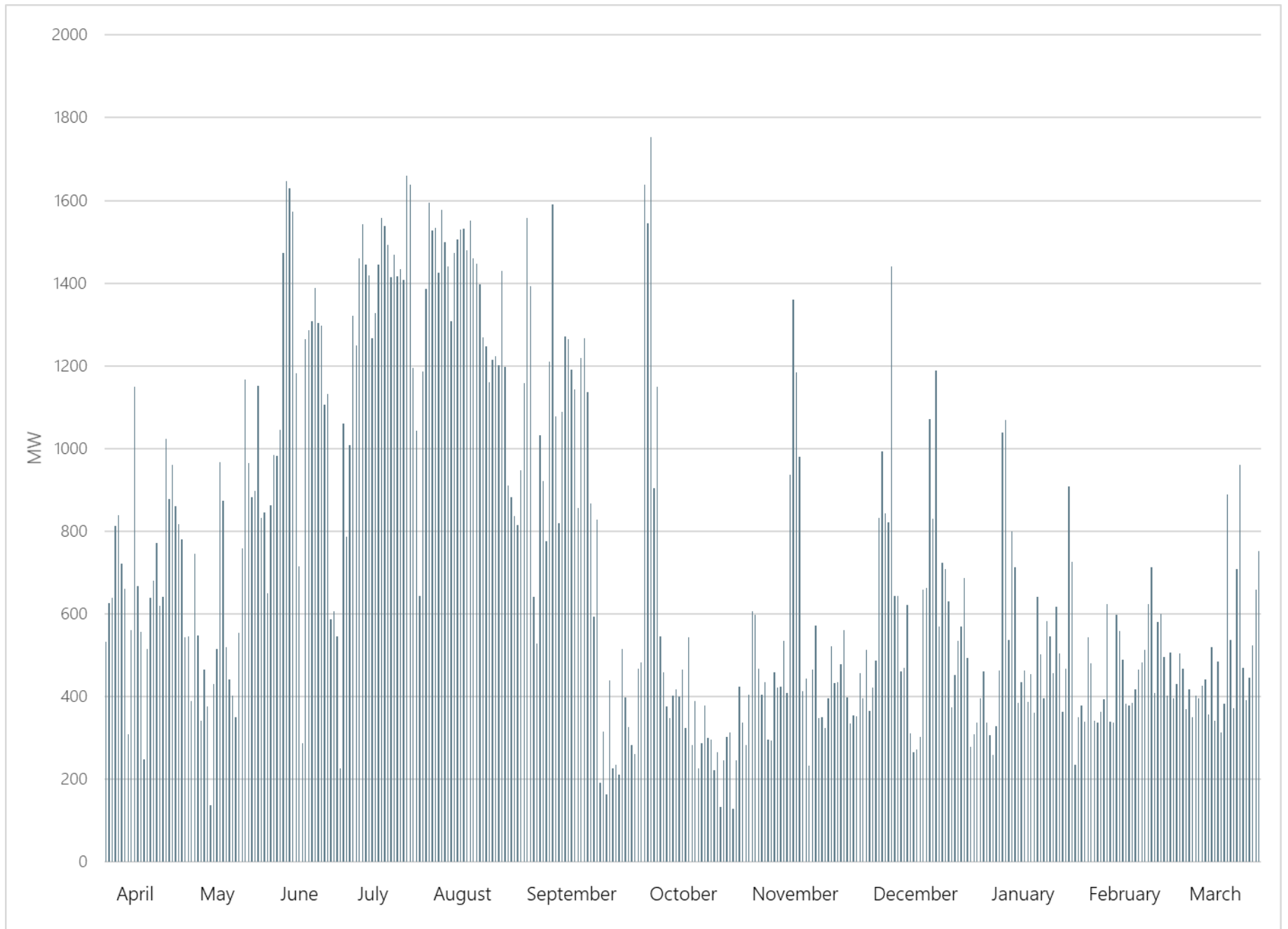
Monthly CUFs for the contracted capacity of 400 MW



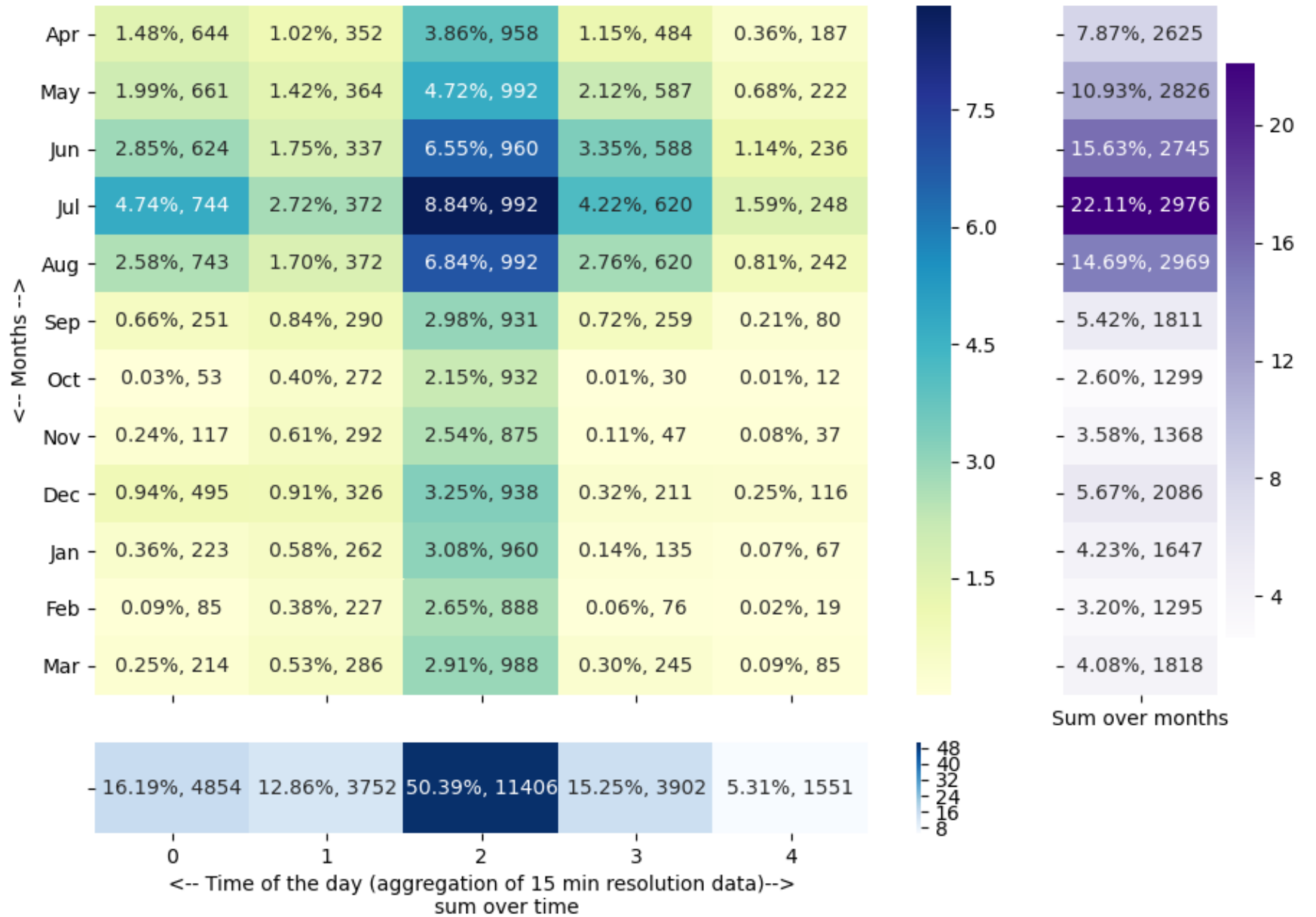
Load Duration Curve for unconstrained generation and generation capped at 400 MW



Curtailment in each 15-min time block during morning peak hours (6-9 am) and evening peak hours (5-10 pm)



Month-wise and time-wise excess generation as a percentage of total excess generation and number of time blocks with excess generation



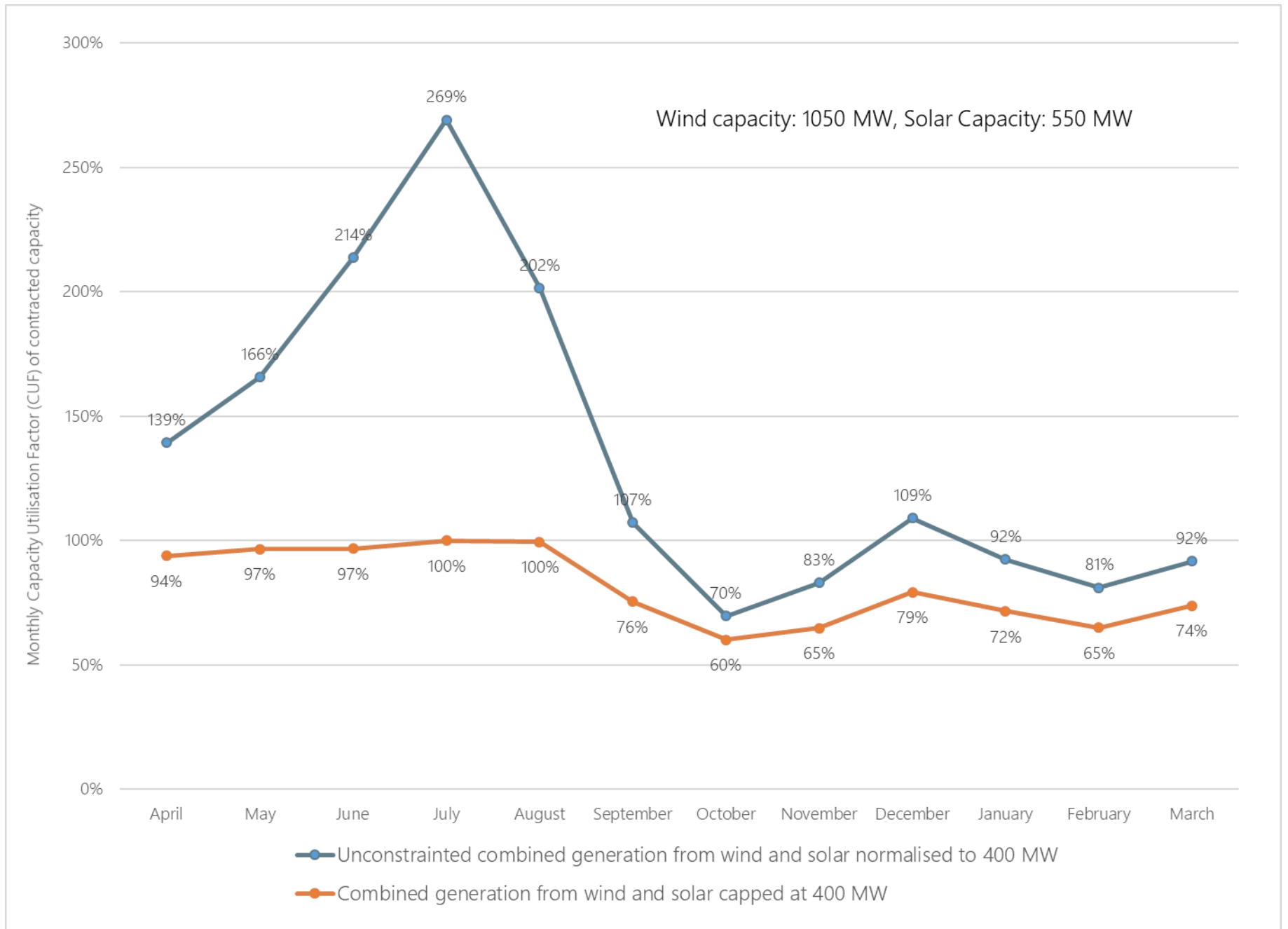
Additional 2 scenarios with slightly relaxed tender conditions

Scenario 2

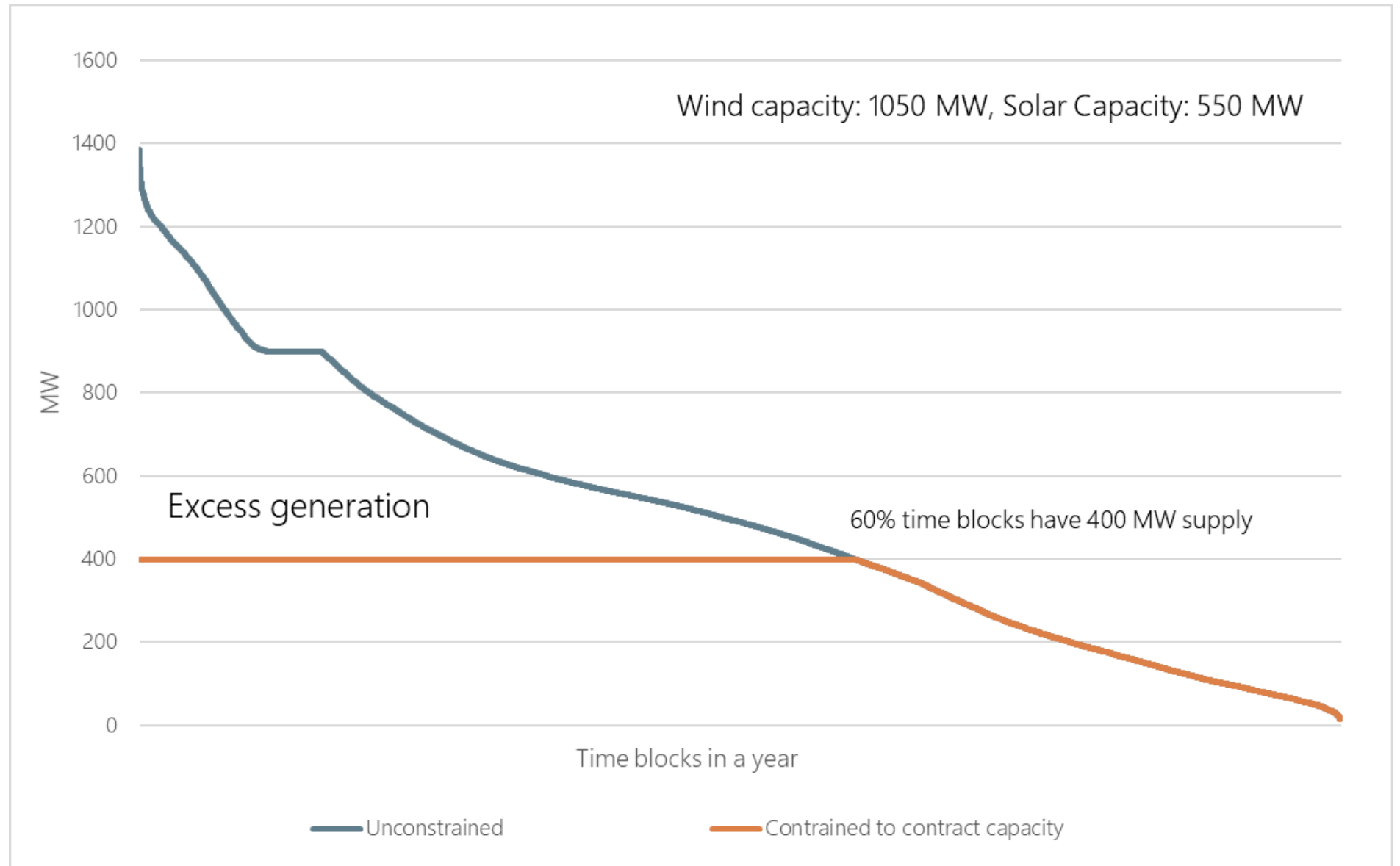
- Tender Conditions
 - Minimum Annual CUF: 70%
 - Minimum Monthly CUF: 60%
 - Contracted Capacity: 400 MW

- Assumptions
 - Wind Capacity: 1050 MW, CUF: 38%
 - Solar Capacity: 550 MW, CUF: 26.2%

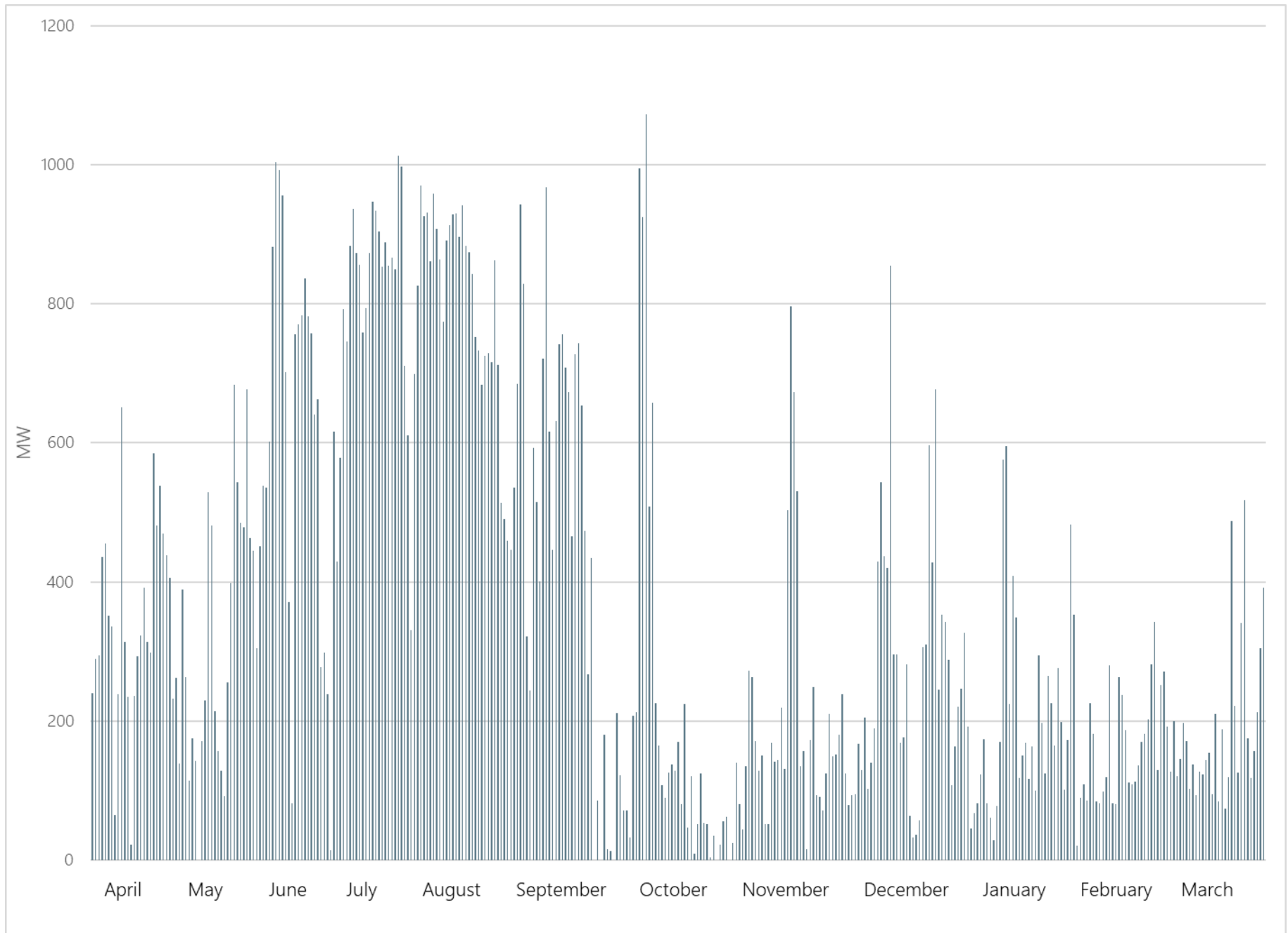
Monthly CUFs for the contracted capacity of 400 MW



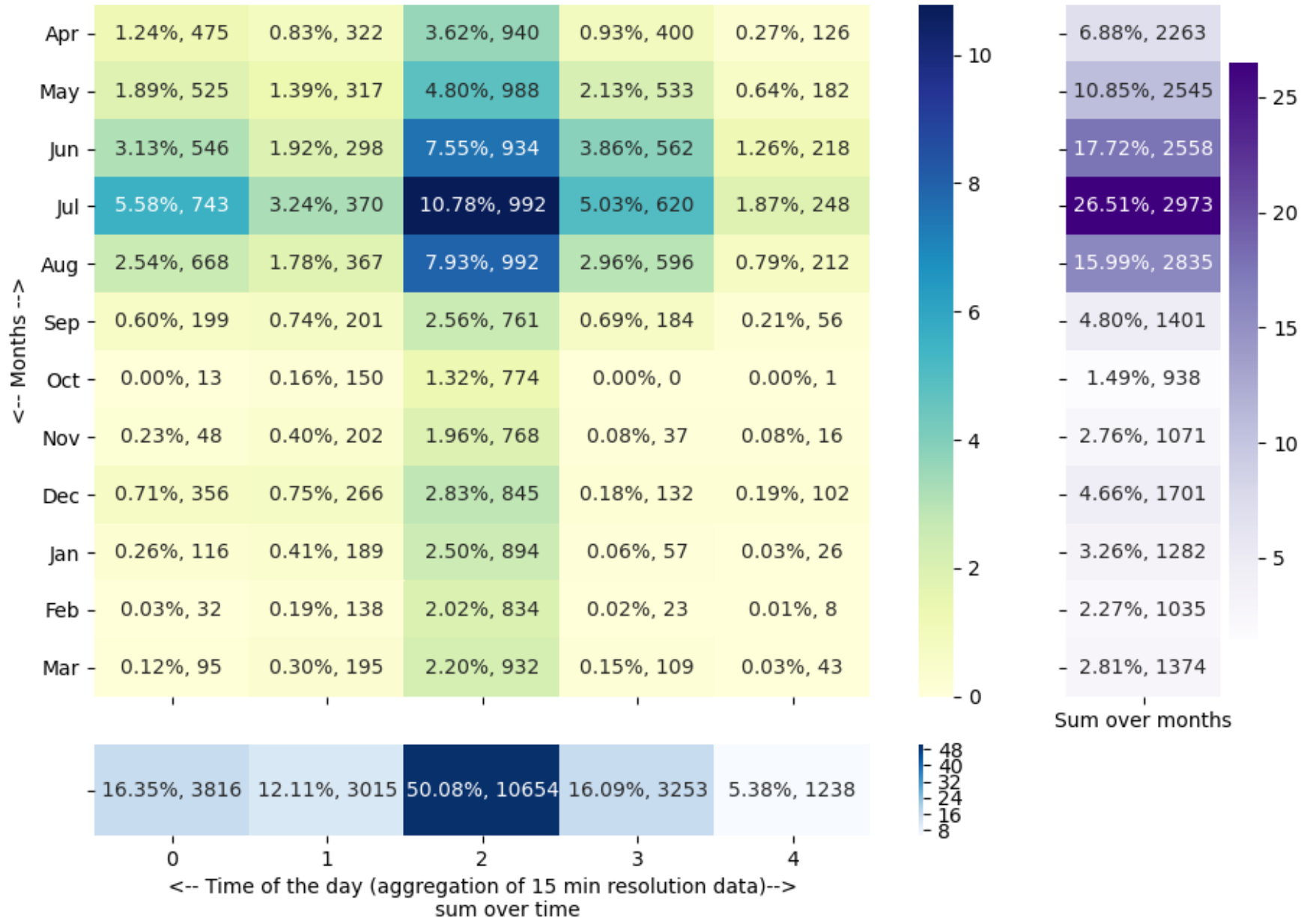
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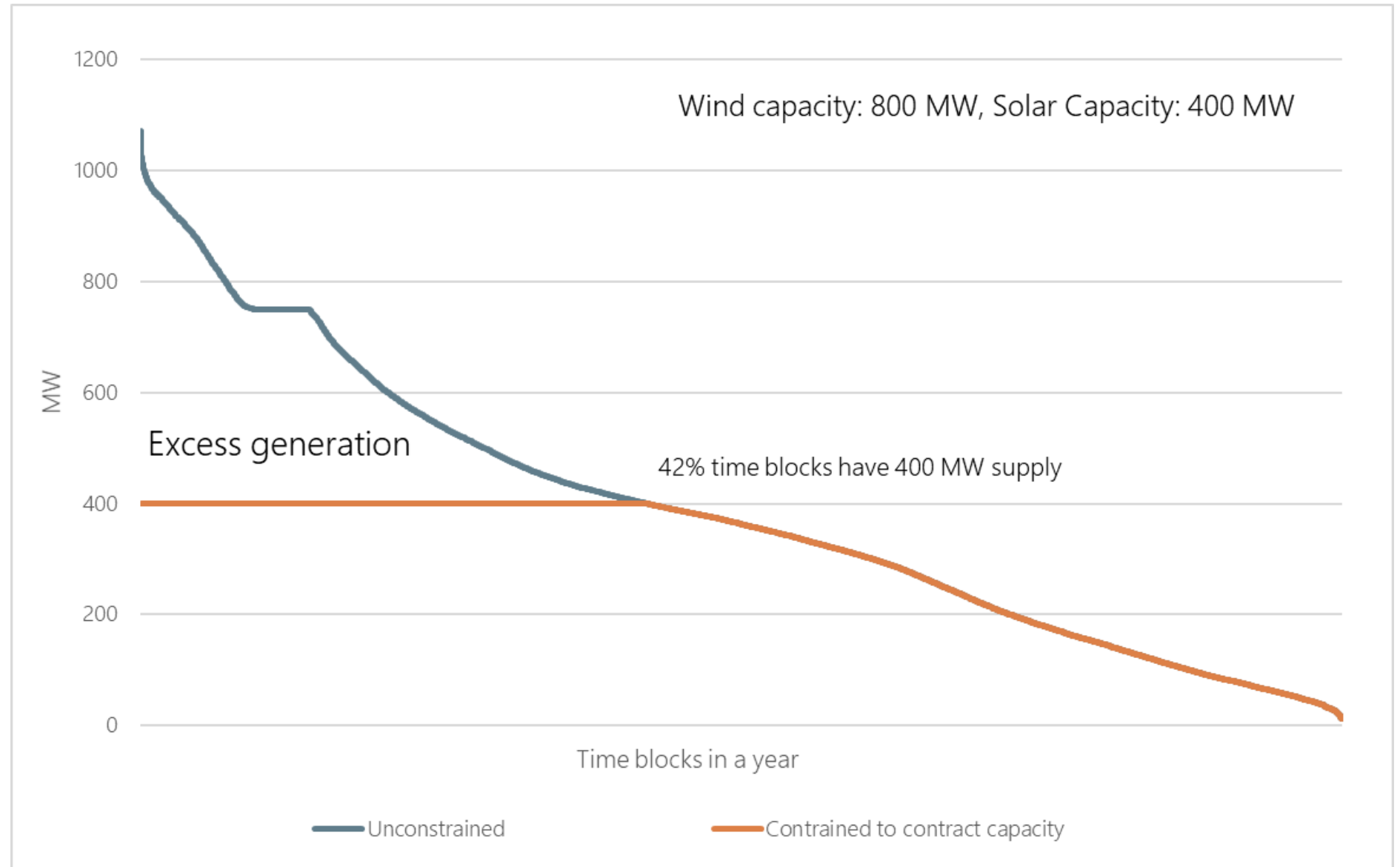
Scenario 3

- Tender Conditions
 - Minimum Annual CUF: 60%
 - Minimum Monthly CUF: 50%
 - Contracted Capacity: 400 MW
- Assumptions
 - Wind Capacity: 800 MW, CUF: 38%
 - Solar Capacity: 400 MW, CUF: 26.2%

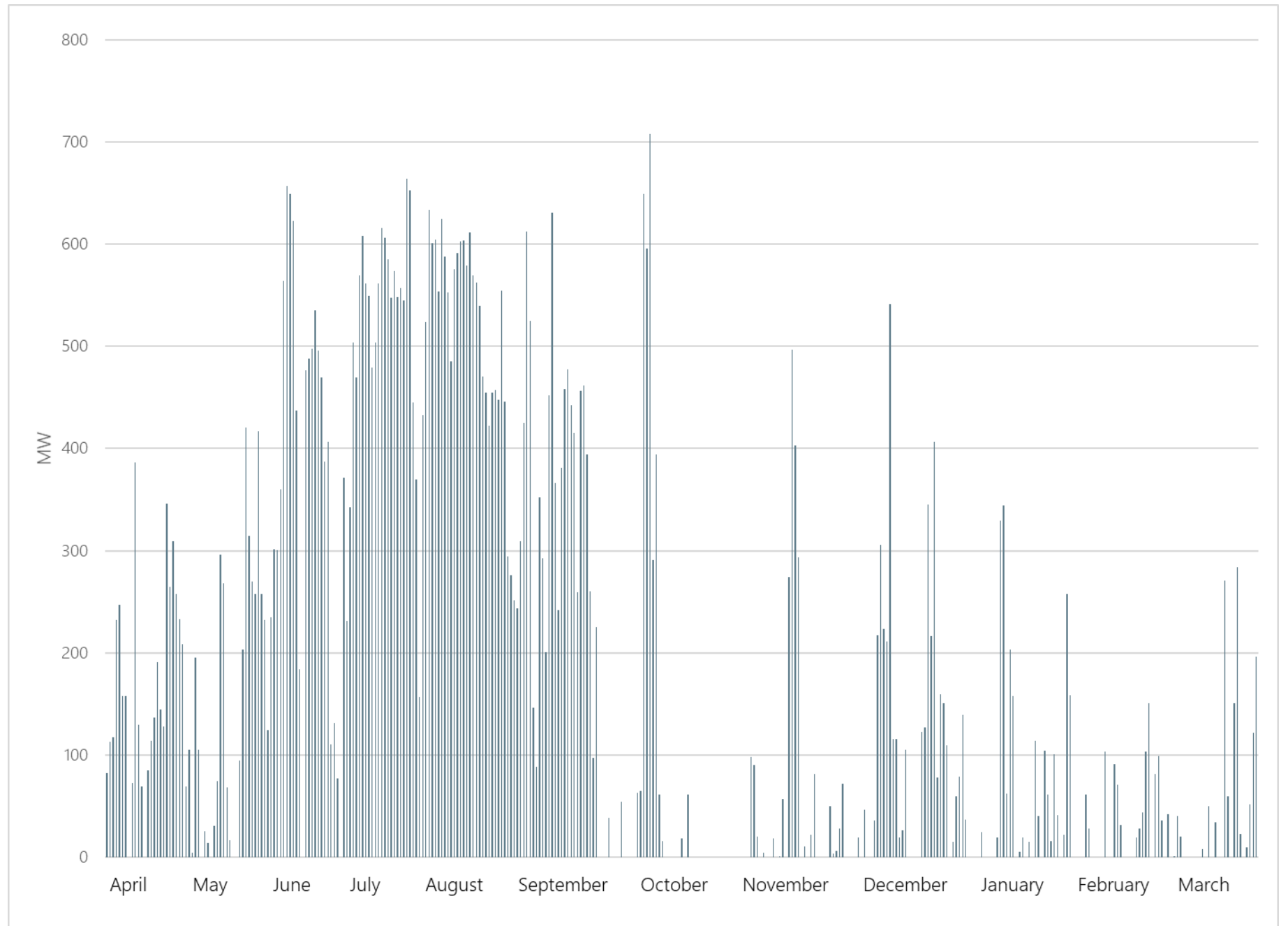
Monthly CUFs for the contracted capacity of 400 MW



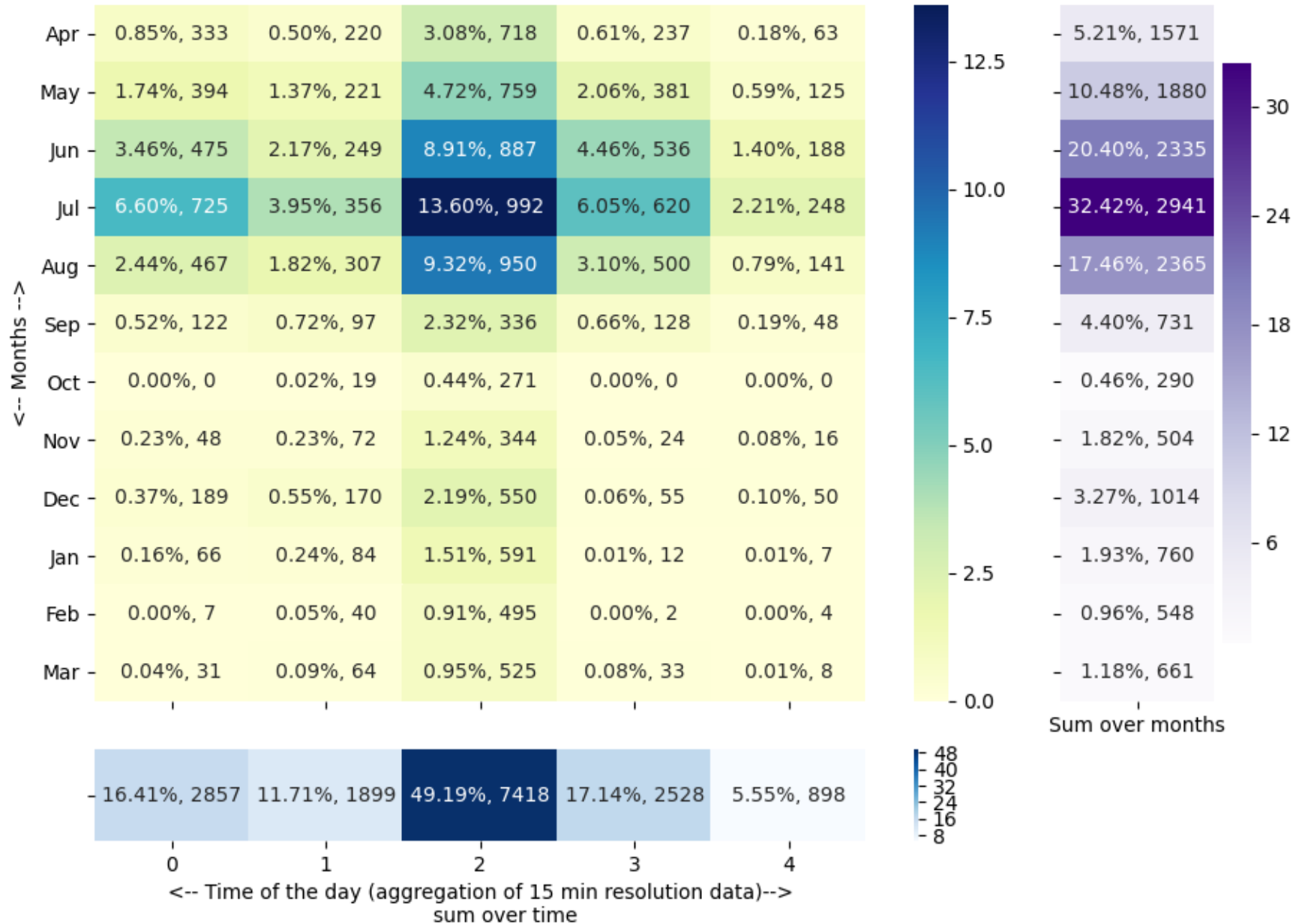
Load Duration Curve for unconstrained generation and generation capped at 400 MW



Curtailment in each 15-min time block during morning peak hours (6-9 am) and evening peak hours (5-10 pm)



Month-wise and time-wise excess generation as a percentage of total excess generation and number of time blocks with excess generation



Comparison of the three scenarios

	Scenario	Units	1	2	3
Tender design features	Minimum Annual Capacity Utilisation Factor (CUF)	%	80%	70%	60%
	Minimum Monthly Capacity Utilisation Factor (CUF)	%	70%	60%	50%
	Contracted Capacity	MW	400	400	400
Inputs / Assumptions	Wind Capacity	MW	1500	1050	800
	Solar Capacity	MW	850	550	400
	Assumed price of solar or wind power	Rs/kWh	2.6	2.6	2.6
	Levelised RTC winning bid for scenario 1 / Hypothetical levelised RTC winning bid assumed for scenario 2,3.	Rs/kWh	3.6	3.4	3.2
Outputs	Annual CUF of hybrid project with 400 MW contract cap	%	88%	82%	75%
	Excess generation as a fraction of unconstrained generation	%	56%	40%	27%
	Percentage of hours with full 400 MW supply	% of annual hours	71%	60%	42%
	Average market price needed for total excess power to achieve financial viability of the project	Rs/kWh	1.81	1.40	0.96
	Excess generation in evening peak (5-10 pm) as fraction of total excess generation	%	16%	17%	18%
	If excess during evening peak is sold to DISCOM at same RTC rate, what is the market price needed for remaining excess, for the project to be financially viable	Rs/kWh	1.47	0.99	0.47
	Excess in evening peak (5-10 pm) and morning peak (6-9 am) as fraction of total excess	%	30%	30%	31%
	If excess during evening and morning peak is sold to DISCOM at same RTC rate, what is the market price needed for remaining excess, for the project to be financially viable	Rs/kWh	1.03	0.43	-0.23



P O W E R P E R S P E C T I V E S



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<https://bit.ly/powerperspectives>

Or at:

<https://prayaspune.org/peg/resources/power-perspective-portal>

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