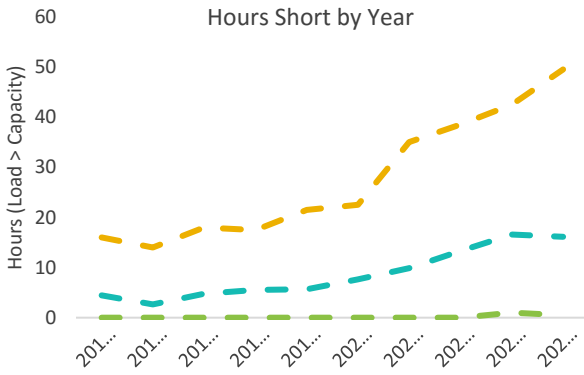
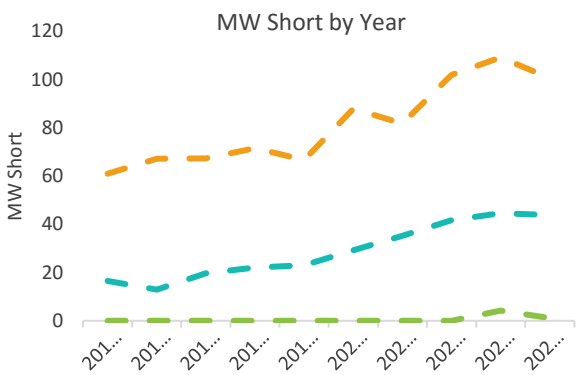
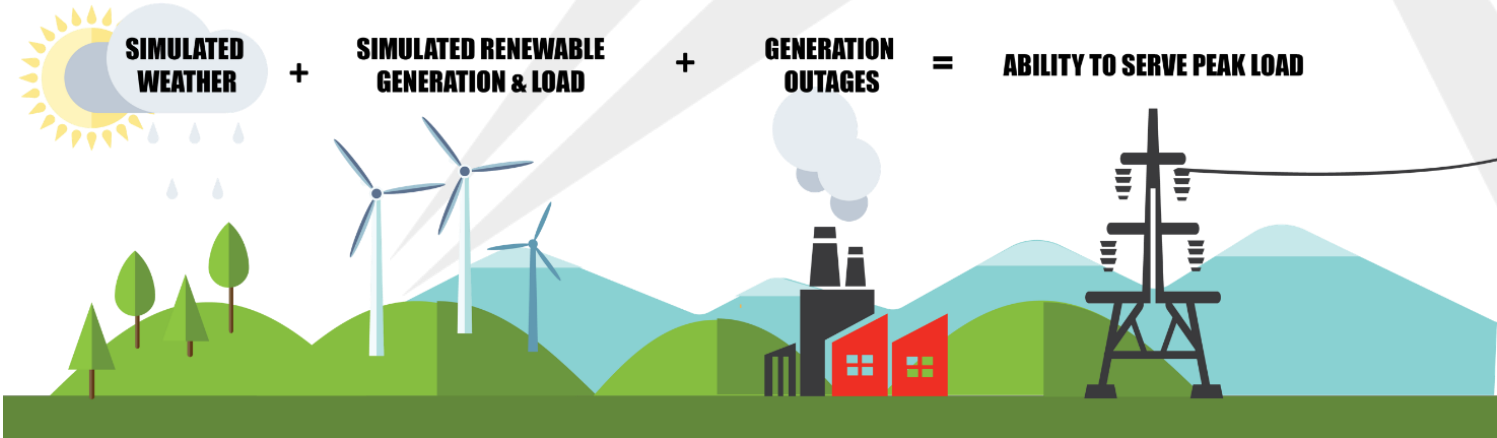


PowerSimm RA

A PowerSimm module for resource adequacy

PowerSimm RA™ provides system operators and resource planners with the information they need to determine whether resource portfolios will reliably serve peak load under the full range of possible weather conditions. Using stochastically simulated weather, PowerSimm RA™ captures the nuanced relationship between weather, renewables, generation outages, and load to quickly calculate resource adequacy metrics, including loss of load probability, MW short, expected unserved energy, and renewable capacity credit.



— mean — 5th percentile — 95th percentile

PowerSimm RA™ enables planners and grid operators to make the best-informed resource adequacy decisions by accounting for the uncertainty in weather and generation outages.

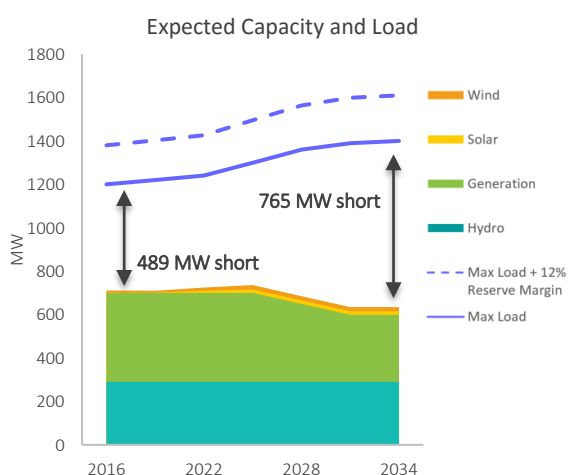
PowerSimm RA Modeling Features

As renewables become increasingly integrated into power systems, planners need to understand how weather drives both load and generation and what that mean for resource adequacy. PowerSimm RA™ realistically simulates weather, renewable generation, load, and the unpredictable nature of generation outages to characterize resource adequacy under real-life conditions.

Reserve Margin (%)	MW Additions	Expected LOLH in 10 years	Expected LOL Days in 10 years
-28%	0	21,020	1,752
-26%	25	17,382	1,449
-24%	50	14,075	1,173
-22%	75	11,167	931
-20%	100	8,692	724
-18%	125	6,618	551
-16%	150	4,921	410
-14%	175	3,608	301
-12%	200	2,571	214
-10%	225	1,804	150
-7%	250	1,236	103
-5%	275	833	69
-3%	300	532	44
-1%	325	332	28
1%	350	202	17
3%	375	116	10
5%	400	63	5
7%	425	36	3.0
9%	450	20	1.7
12%	475	10	0.8
14%	500	5	0.4
16%	525	1.2	0.1
18%	550	0.4	0.0

PowerSimm RA™ is a stand-alone software application that focuses specifically on calculating resource adequacy metrics such as loss-of-load probability (LOLP) and loss-of-load expectation (LOLE) to guide decisions on resource capacity needs. For example, the table on the left is a PowerSimm RA™ output that tells planners how much additional firm capacity is needed to achieve an acceptable LOLH or reserve margin.

PowerSimm RA™ can also calculate how much renewables can be relied on to meet peak demand under realistic simulated weather conditions (such as long stretches of low wind or cloudy days) versus simply average weather conditions and output. The graphic on the lower left shows an example PowerSimm RA™ chart demonstrating renewable contribution to resource adequacy requirements.



Ascend Analytics Customer Support

Ascend Analytics provides dedicated analytic resources to every client.

Reach out today to start using PowerSimm RA™ as on-line software or on a consulting basis.

Interested in more information?

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