

Power Supply Dynamics in the Southwest Power Pool

LES Administrative Board
November 16, 2018

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Vice President, Power Supply

Load Factor Overview

Load Factor:

A metric (%) that compares

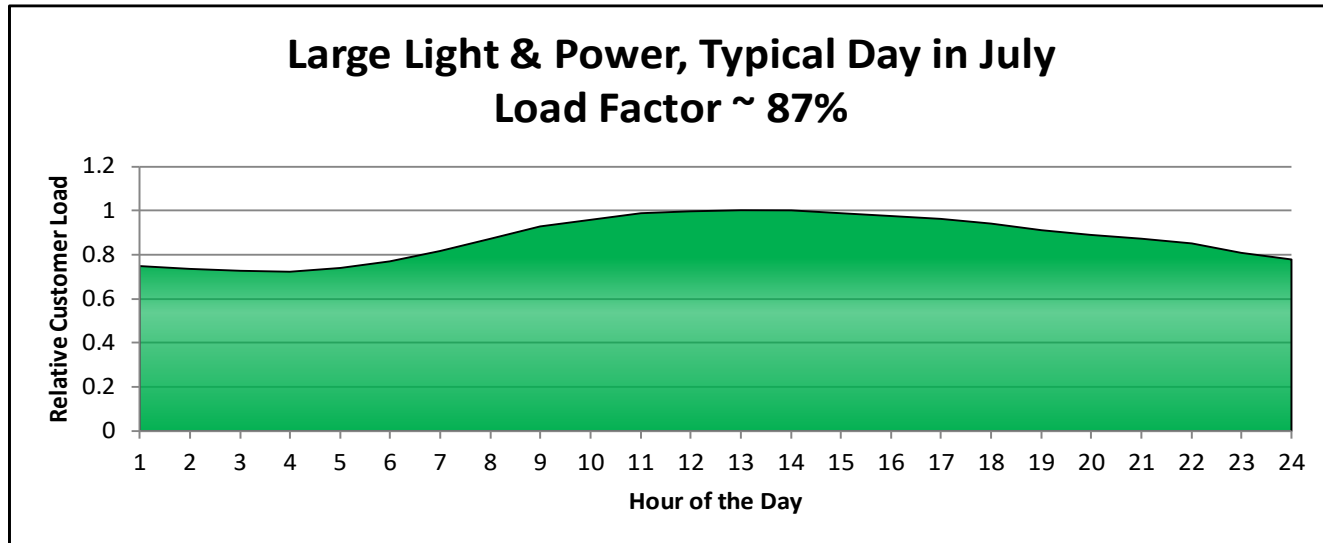
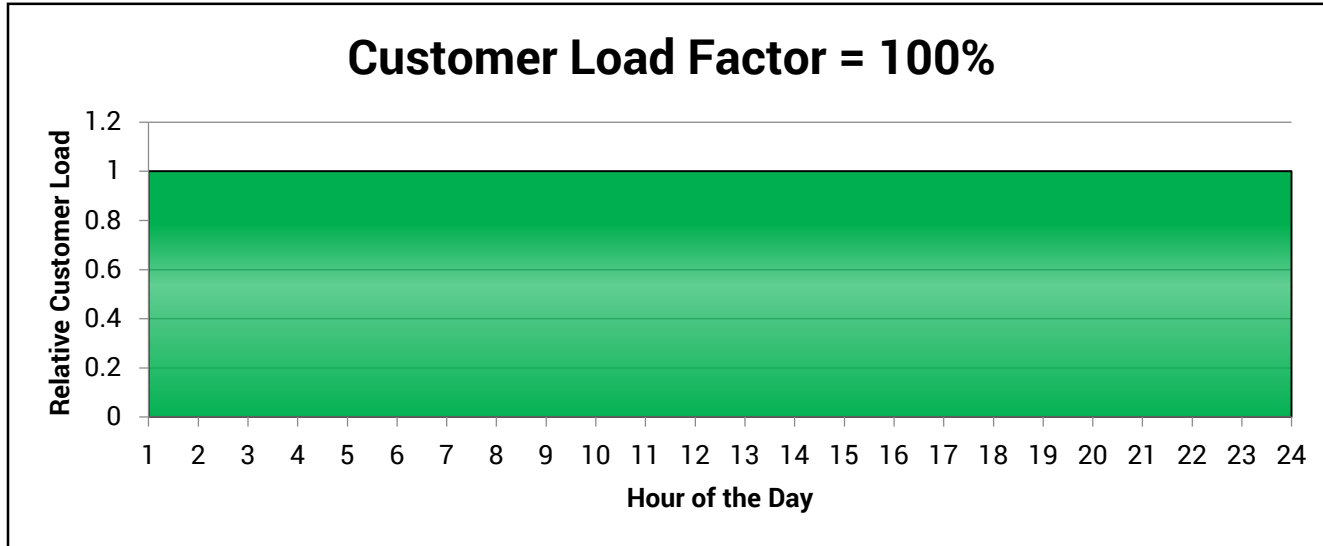
a.) How much electricity a load actually consumed over a specific period of time

to

b.) The maximum amount it is able to consume over that same period of time.

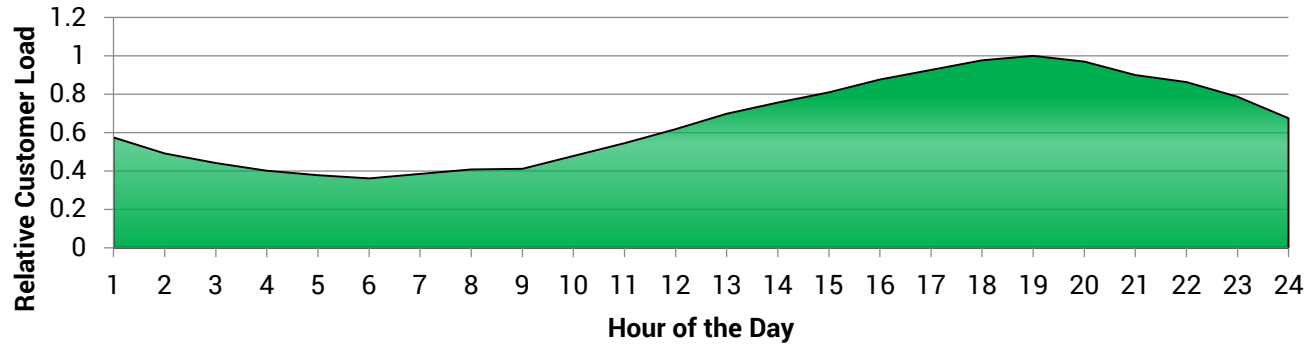
.....So, what does this look like?

Load Factor Overview

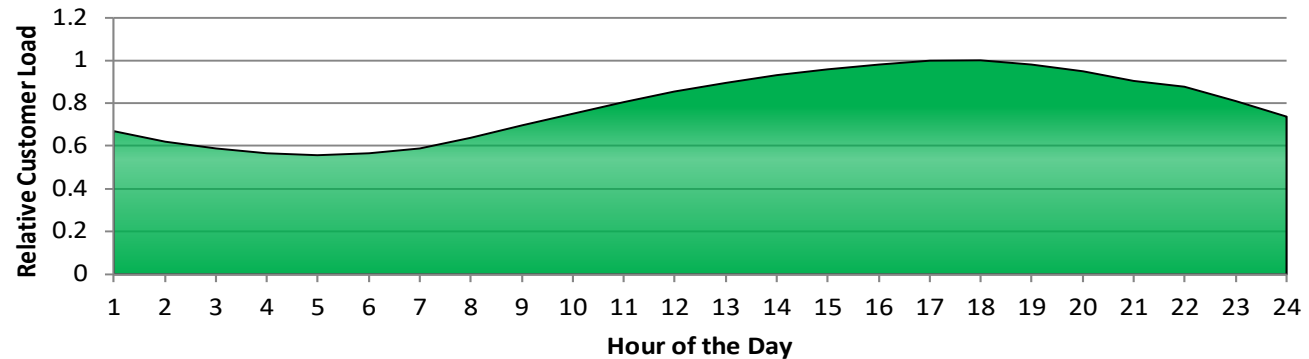


Load Factor Overview

Residential Customer, Typical Day in July
Load Factor ~ 66%



Overall System, Typical Day in July
Load Factor ~ 79%



Capacity Factor Overview

Capacity Factor:

A metric (%) that compares

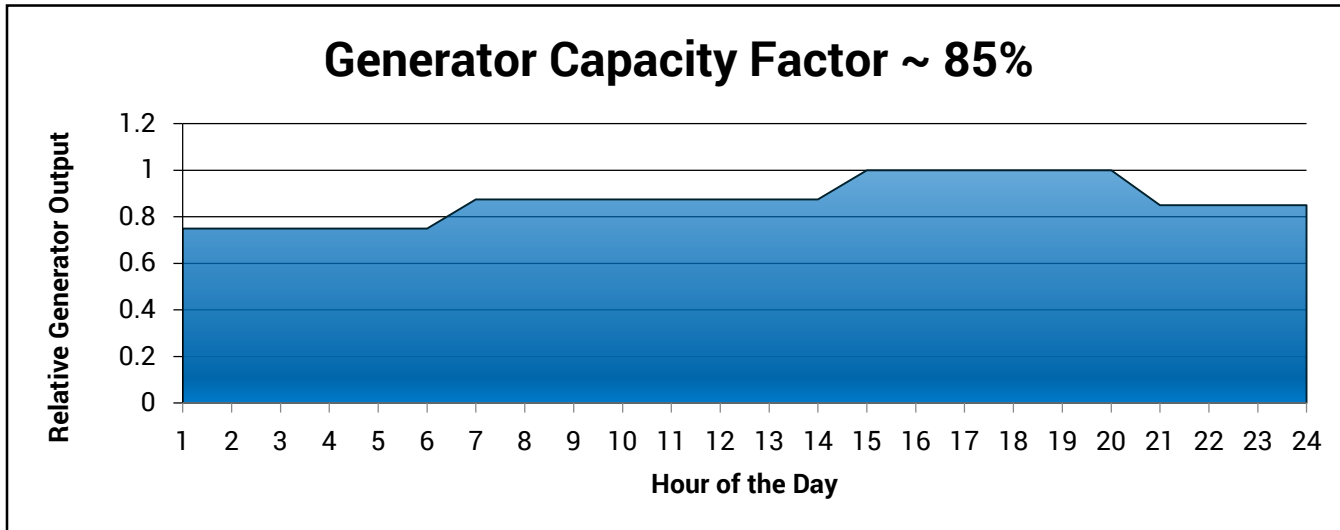
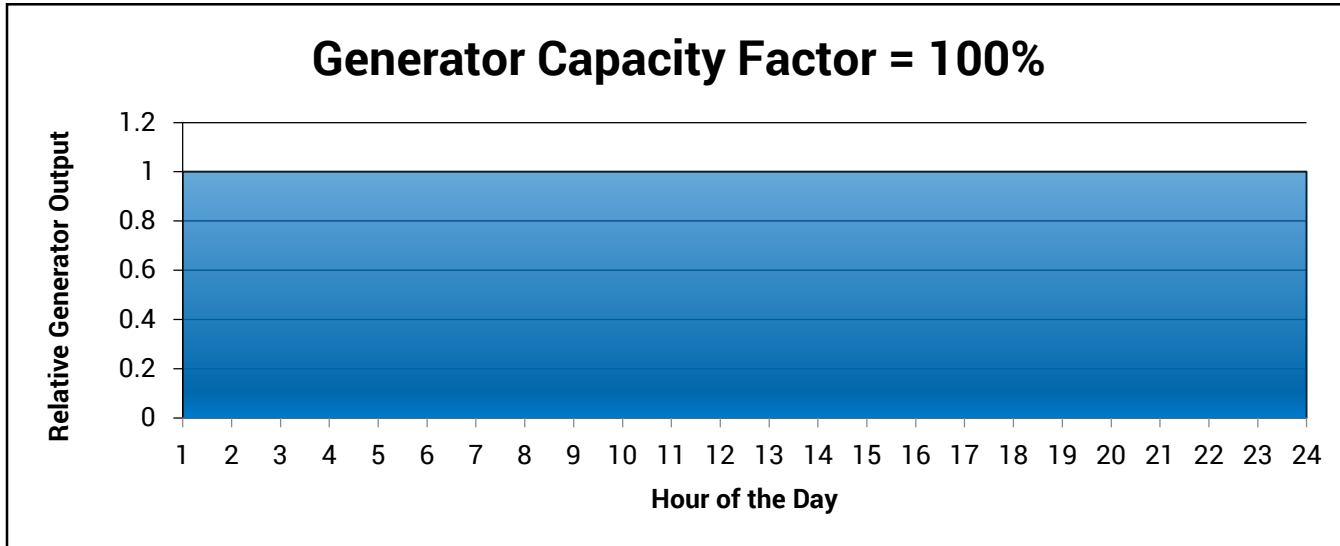
a.) How much electricity a generator actually produced over a specific period of time

to

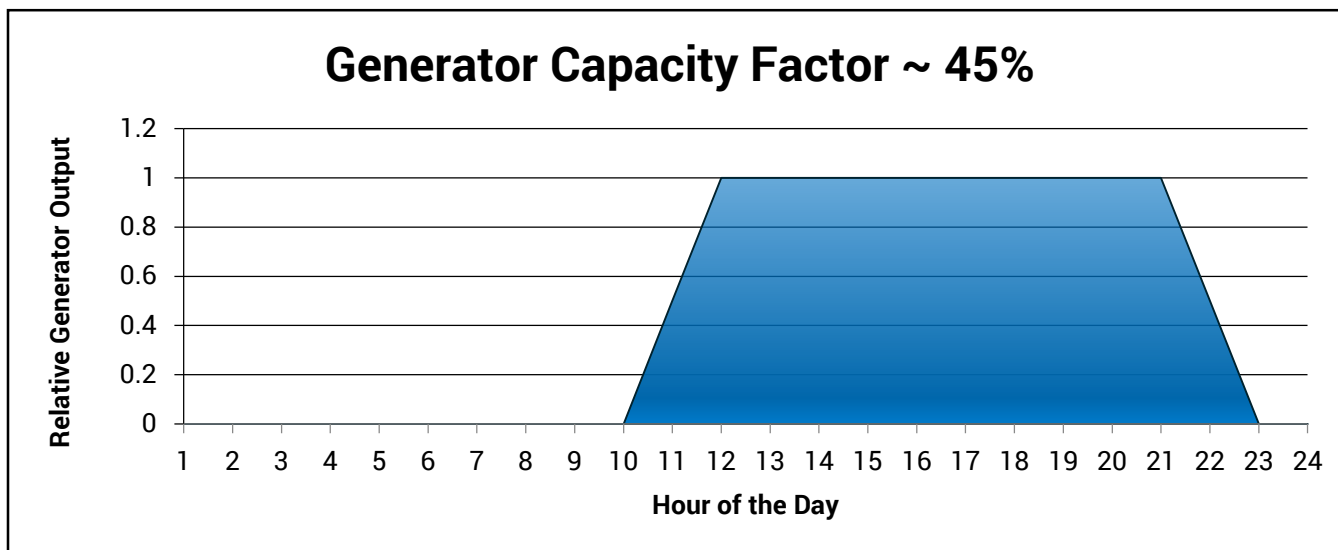
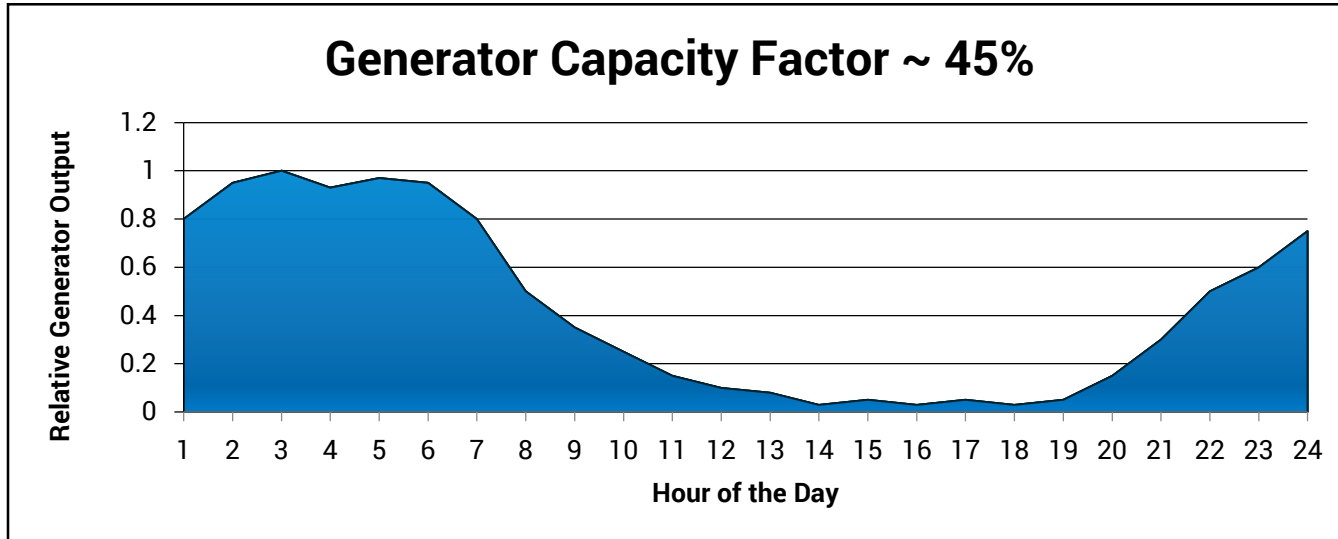
b.) The maximum amount it is capable of producing over that same period of time.

.....And what does this look like?

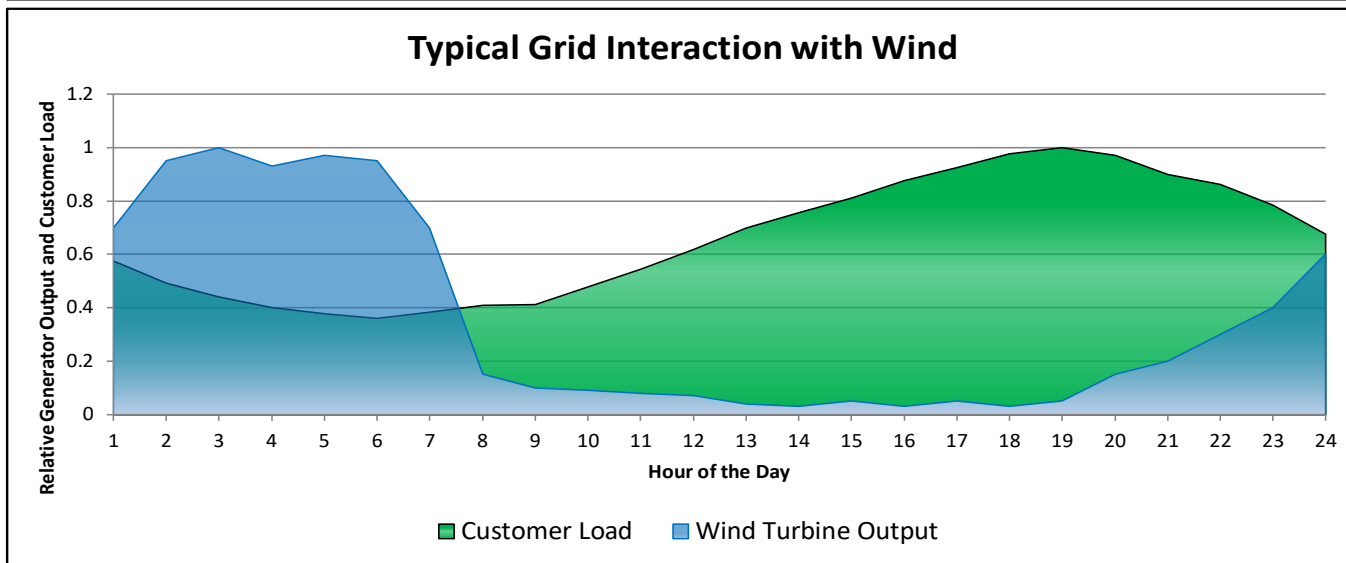
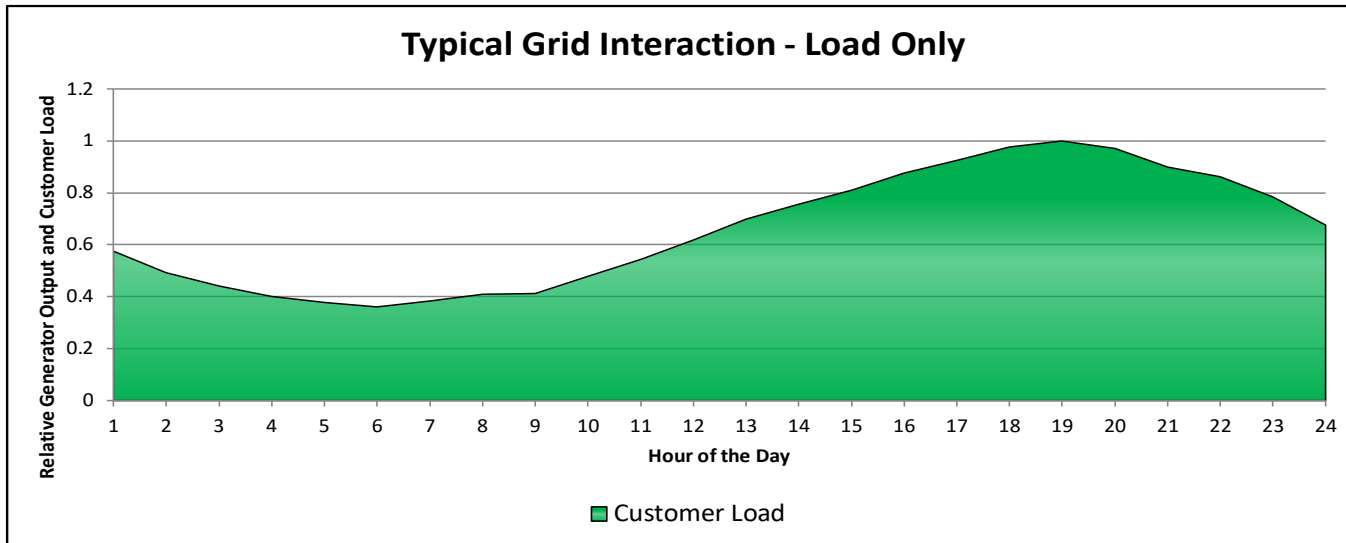
Capacity Factor Overview



Capacity Factor Overview

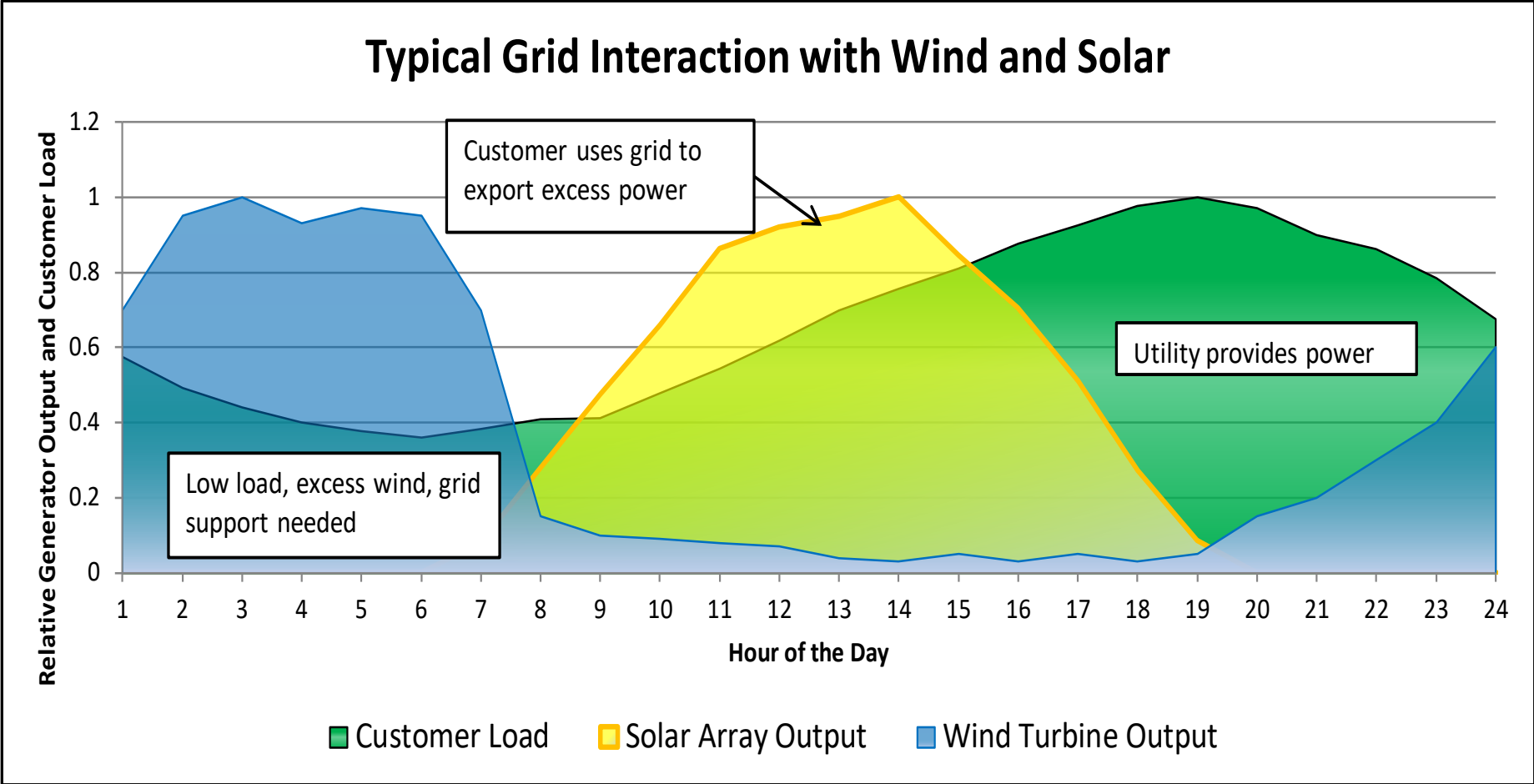


Load and Capacity Factor Interaction



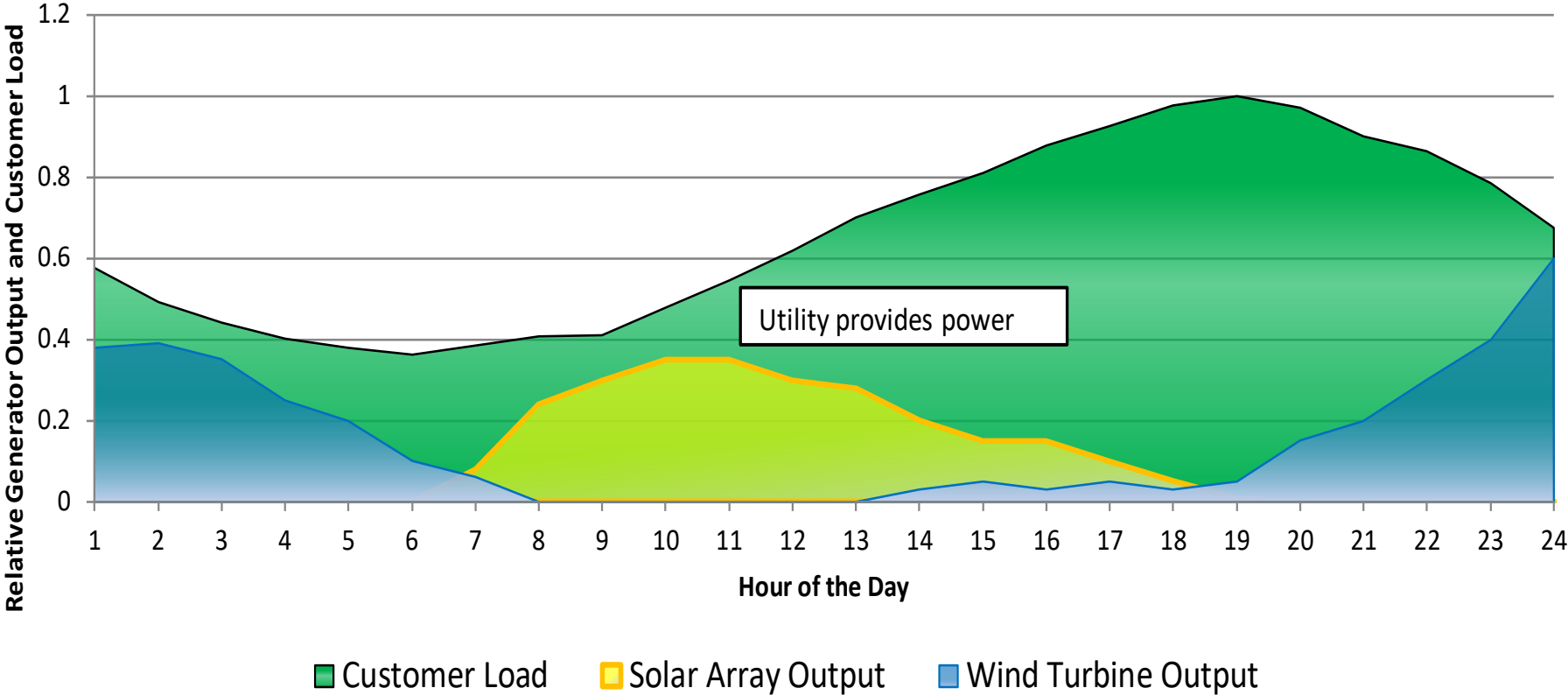
Load and Capacity Factor Interaction

Typical Grid Interaction with Wind and Solar



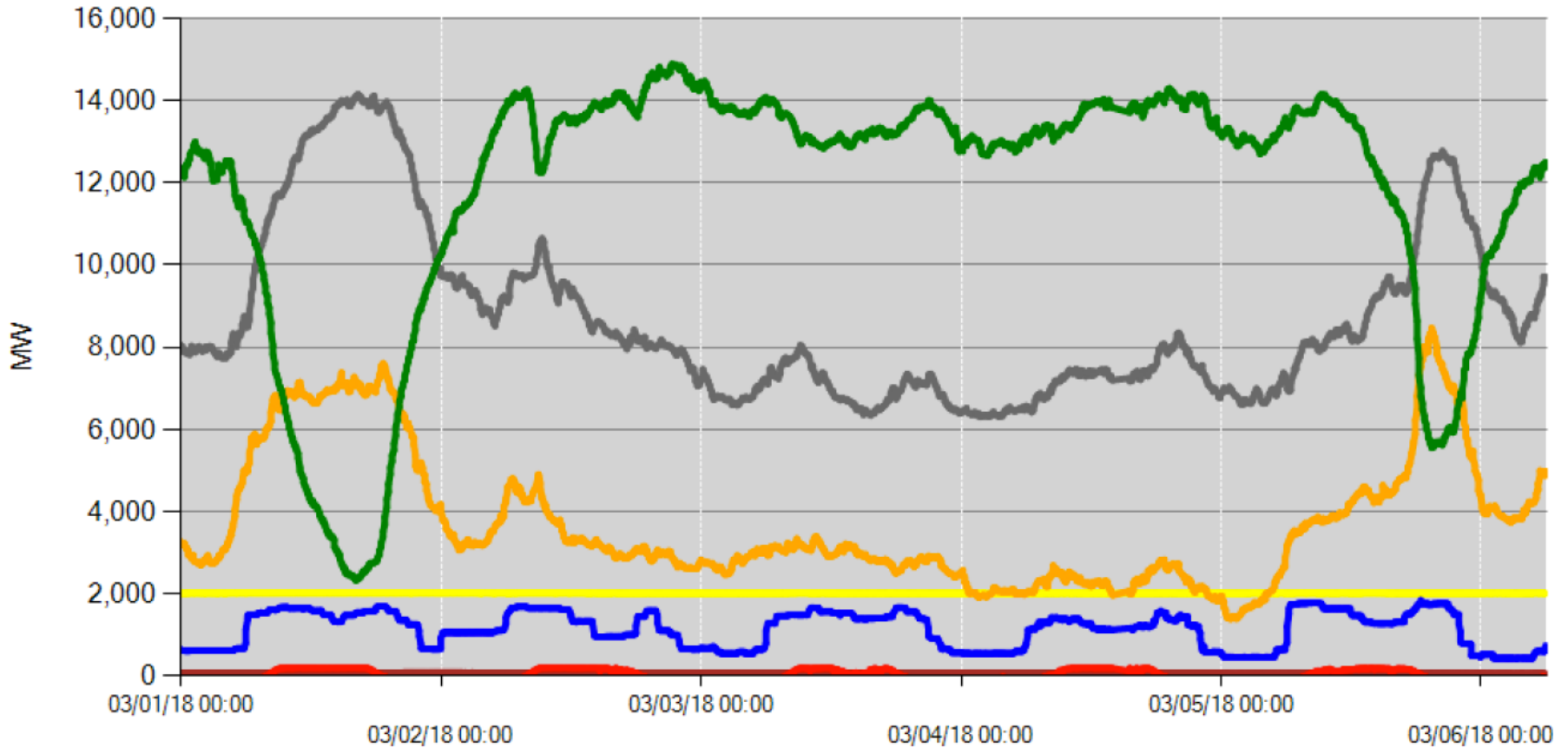
Load and Capacity Factor Interaction

Typical Grid Interaction with Wind and Solar (Cloudy, Low Wind Day)



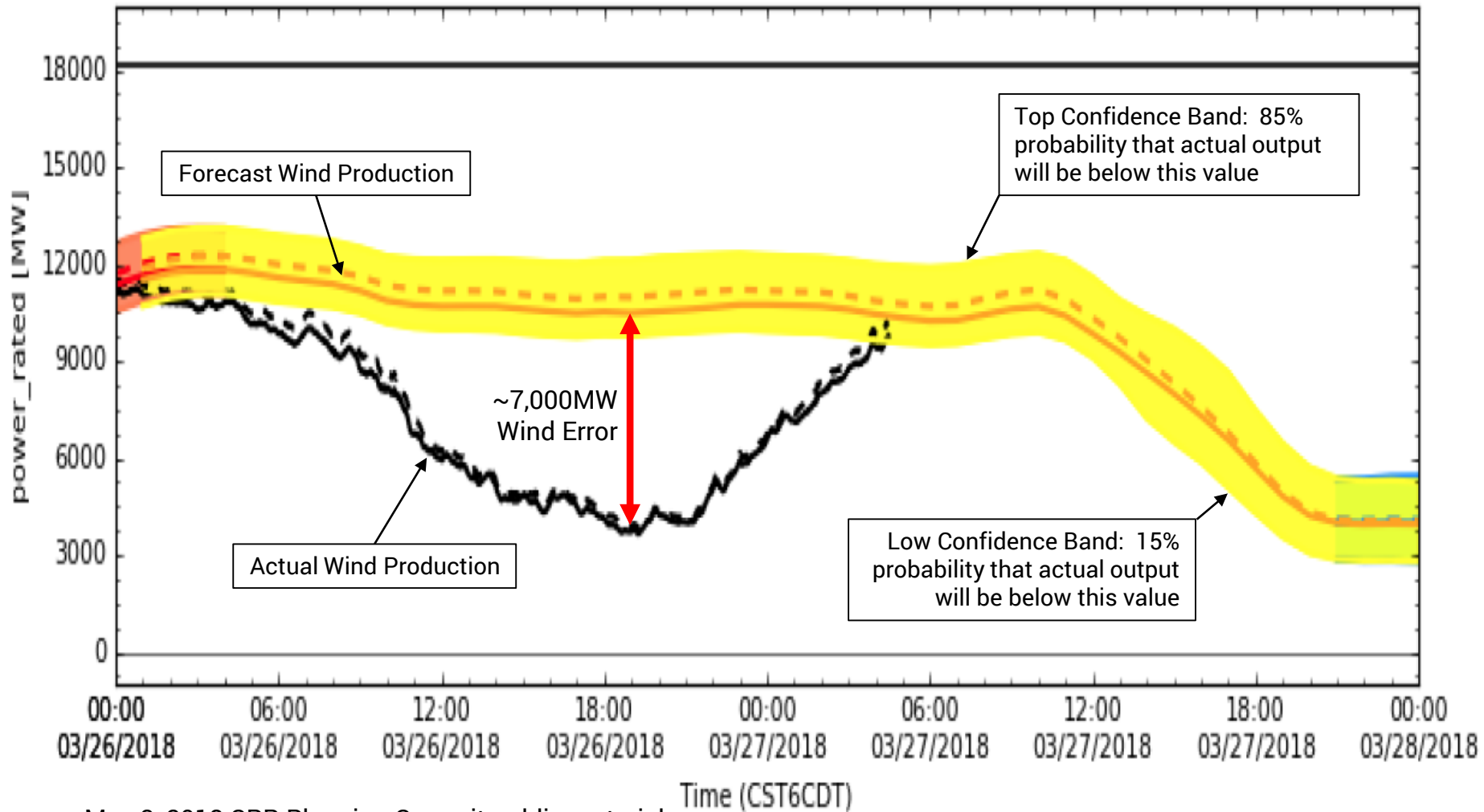
SPP Generation Dispatch Sample

— Nuclear — Coal — Gas — Hydro — Wind — Other — Solar



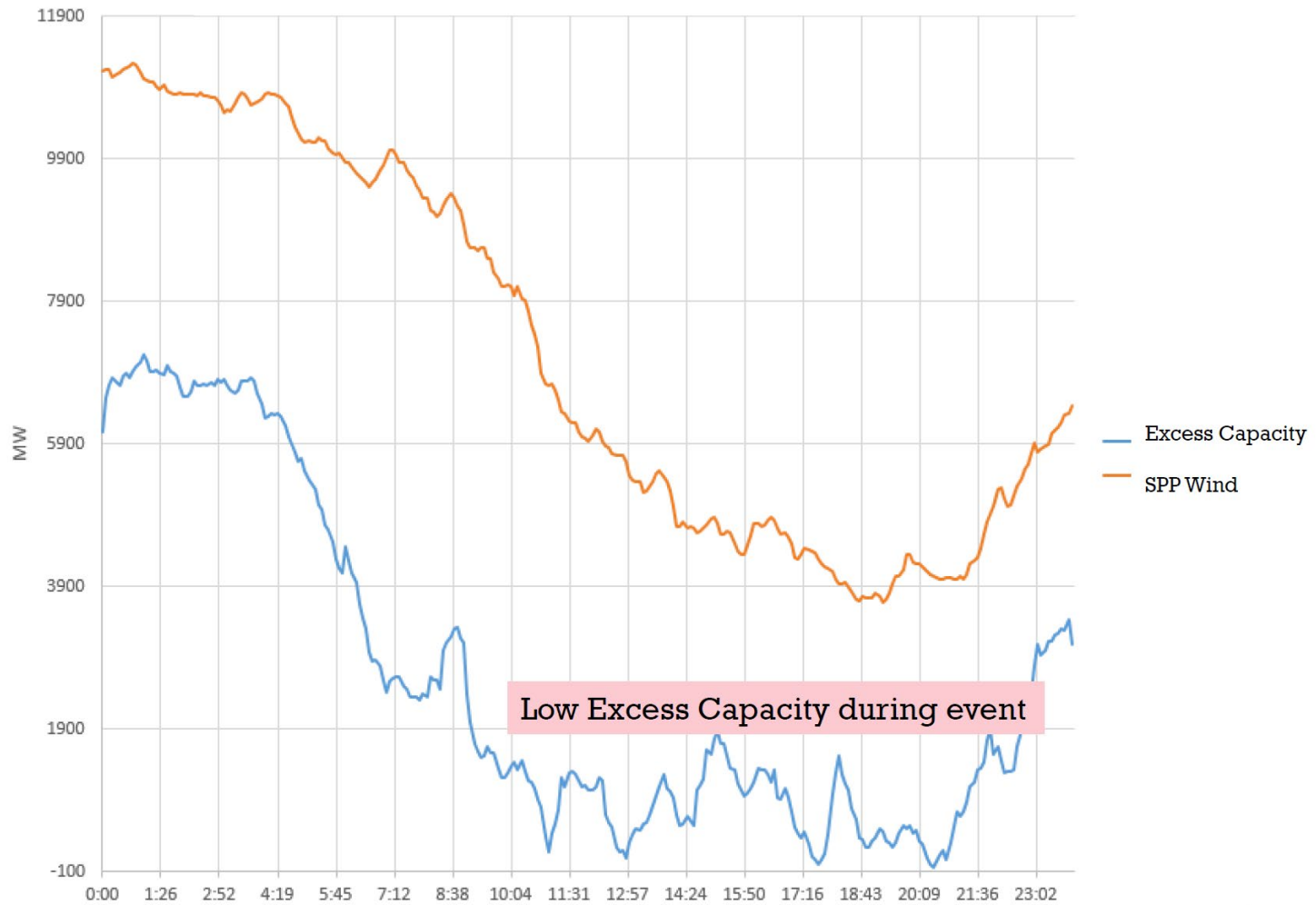
Source: May 3, 2018 SPP Planning Summit public material

SPP Wind Forecast Compared to Actual (3/26/18)



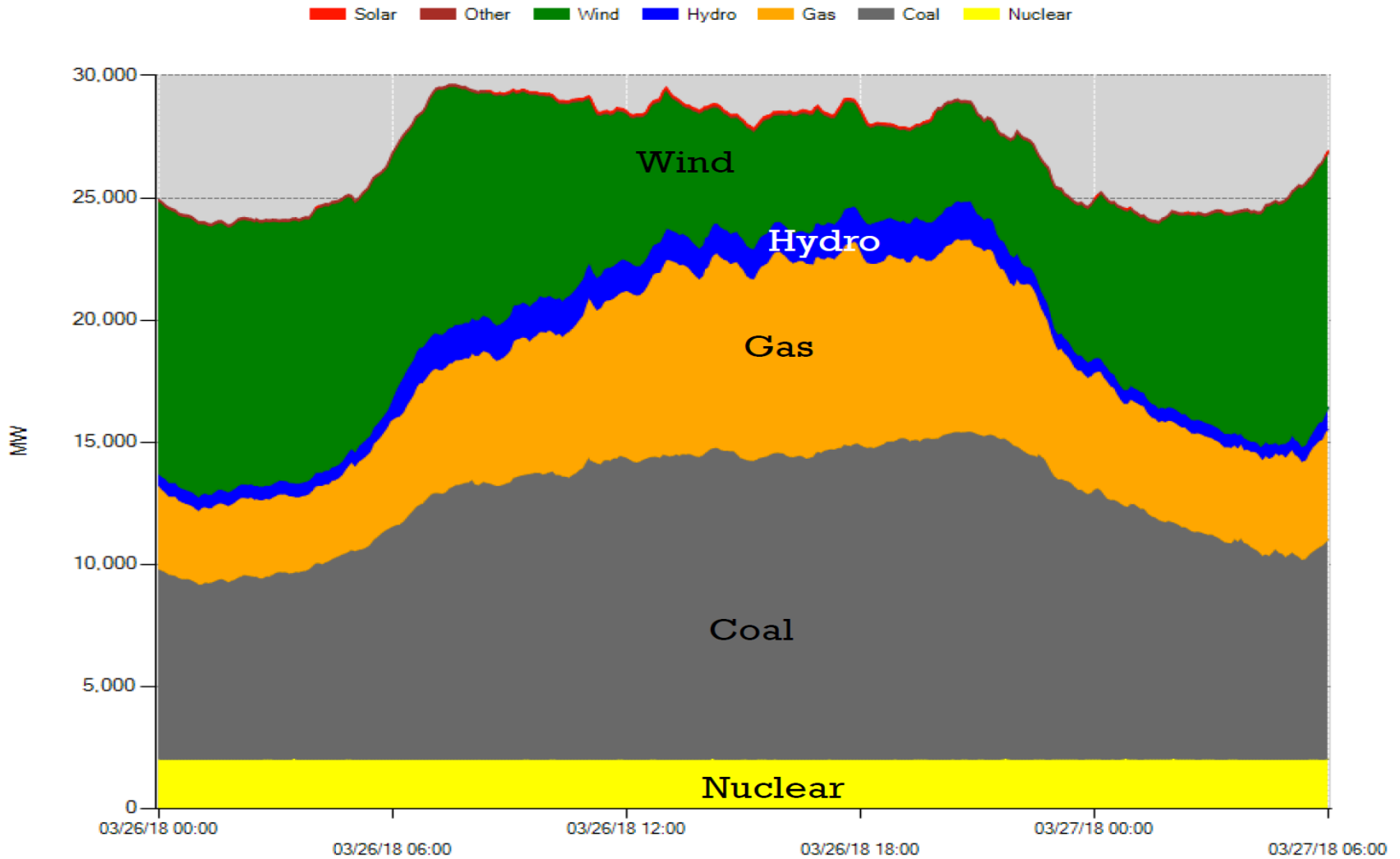
Source: May 3, 2018 SPP Planning Summit public material

SPP Wind Production and Excess Capacity Comparison (3/26/18)



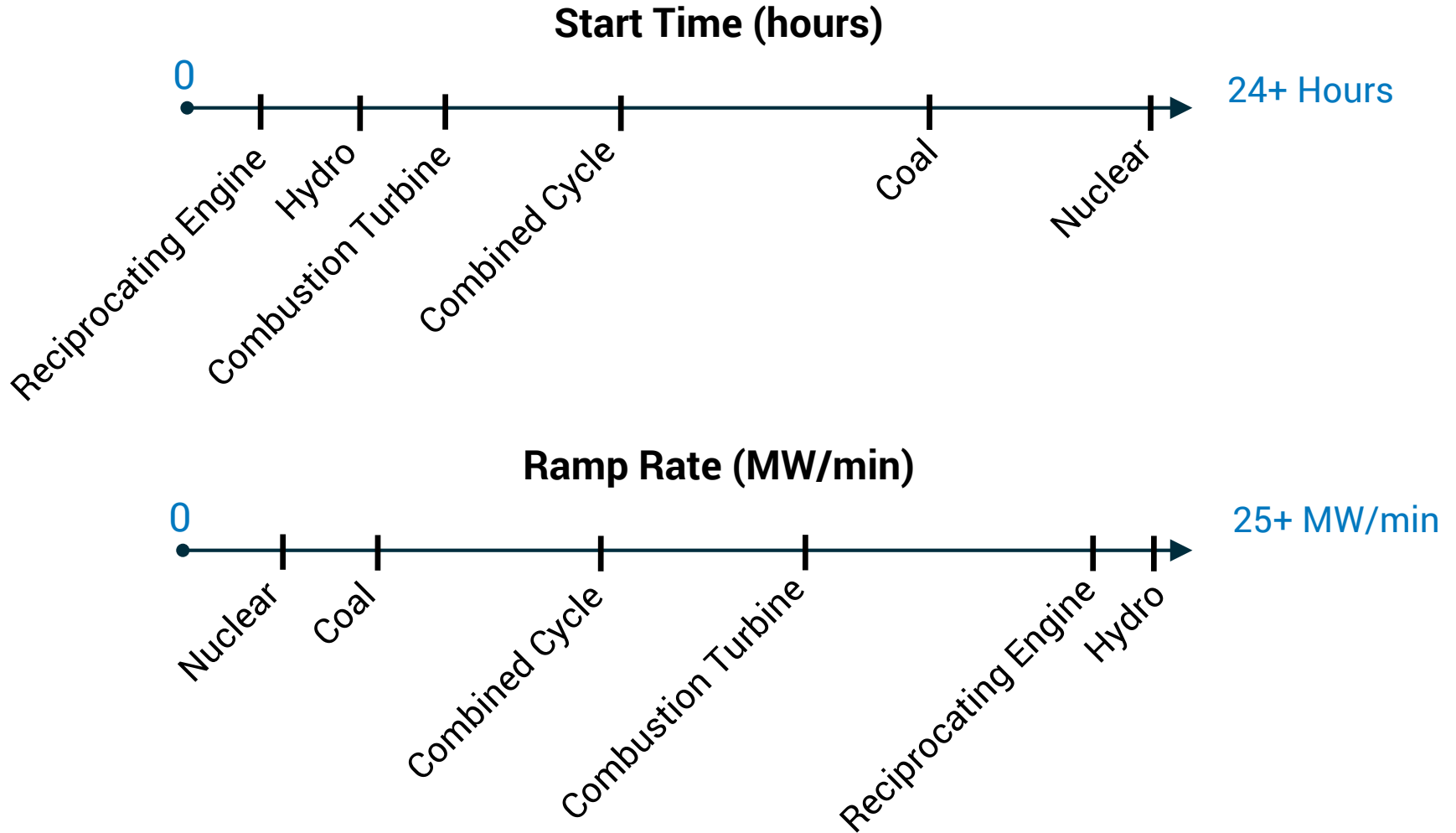
Source: May 3, 2018 SPP Planning Summit public material

SPP Generation Mix (3/26/18)



Source: May 3, 2018 SPP Planning Summit public material

Generating Resource Characteristics



Questions?