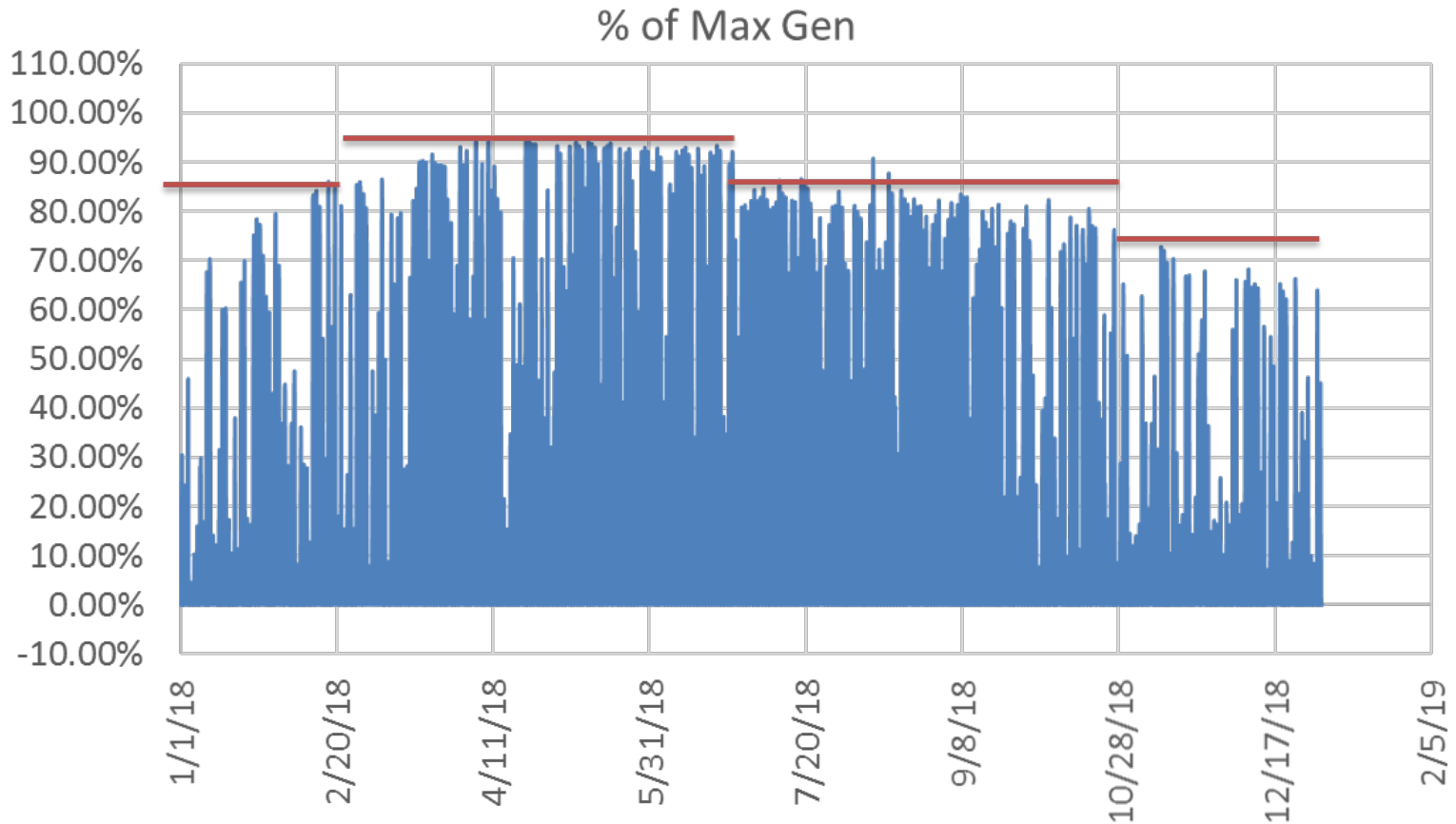


# Substation Generation Constraints

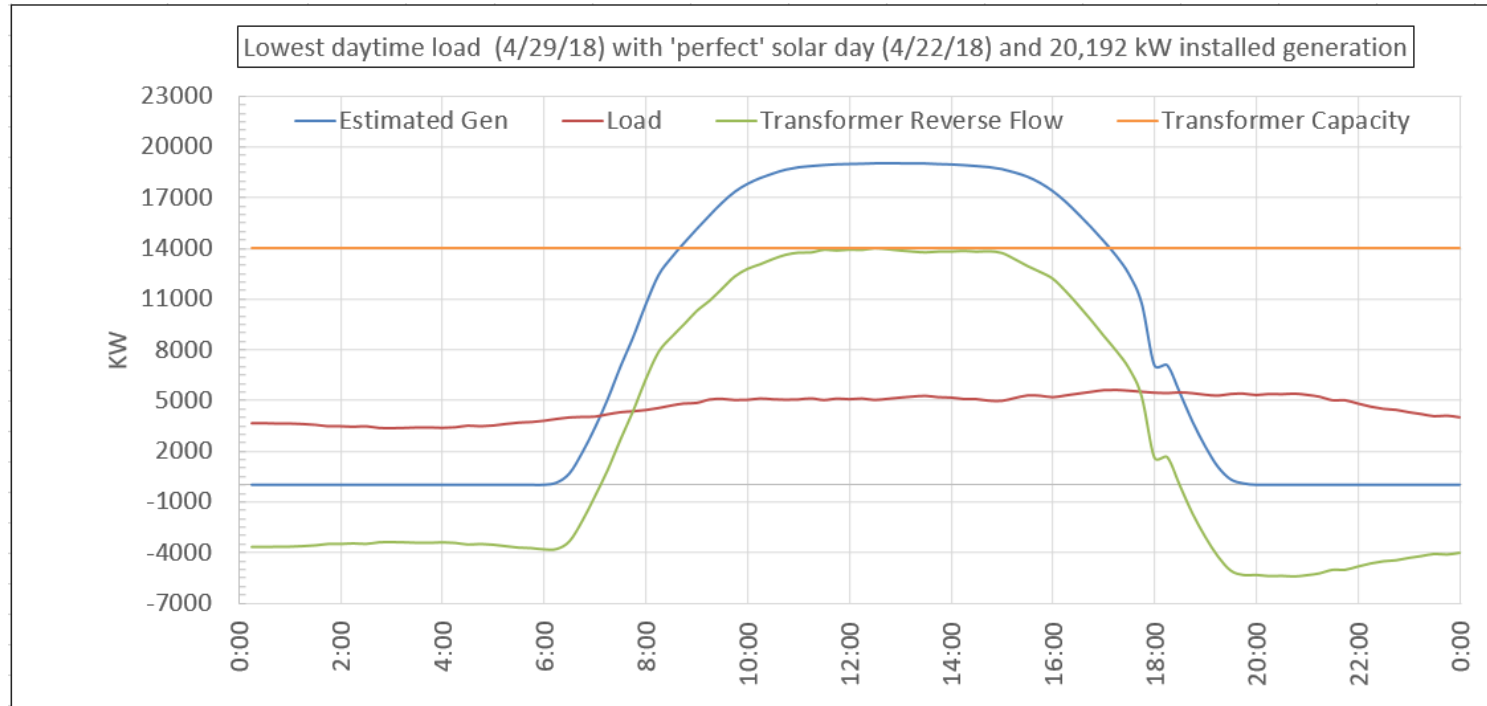
Hypothetical Constraint Review  
VSPC Generation Constraint Sub-Committee

September 9, 2020

# Highest % production is from March to June



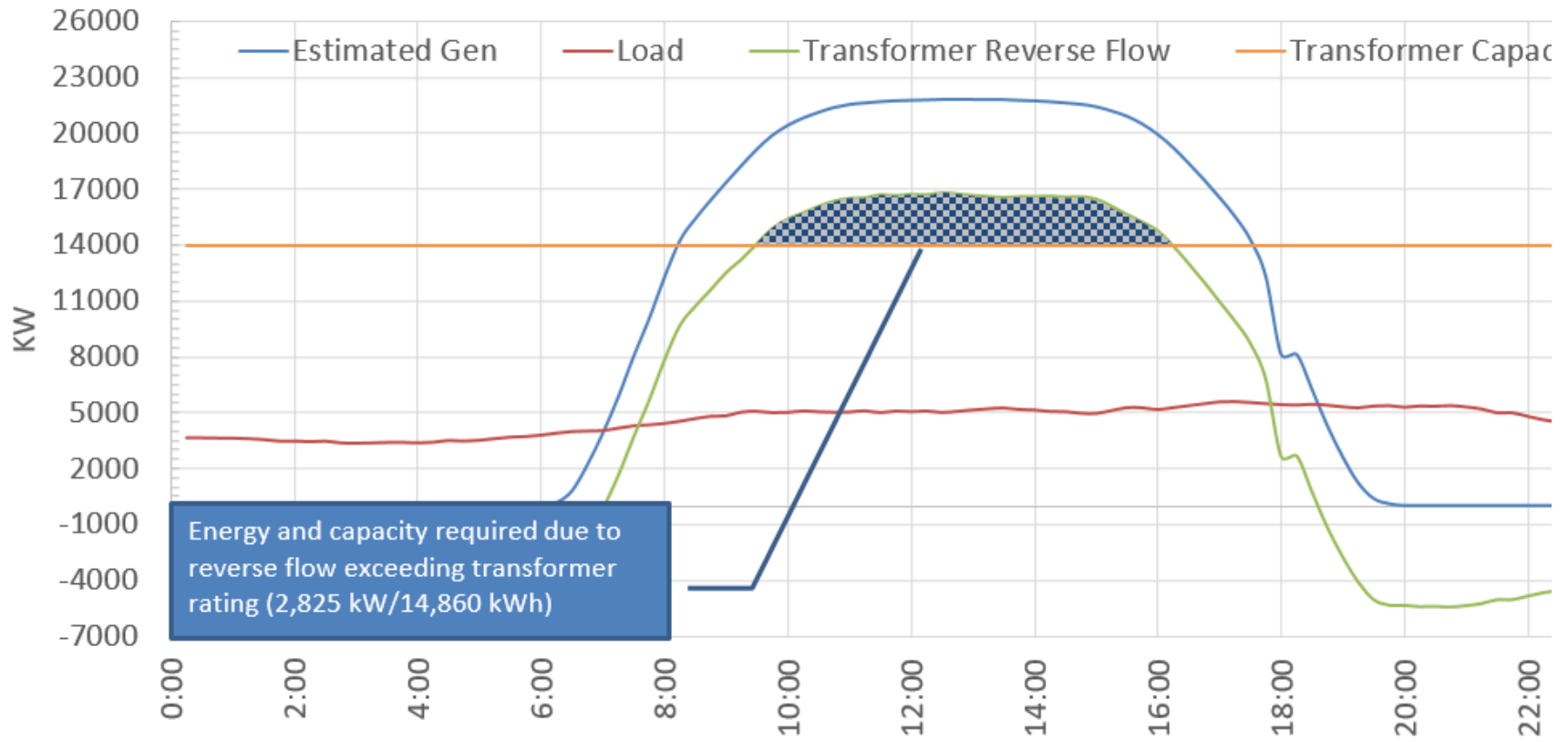
- 95% of installed capacity from March to June
- 85% of installed capacity from January to February and July to October
- 75% of installed capacity from November to December



## Maxed Transformer Scenario

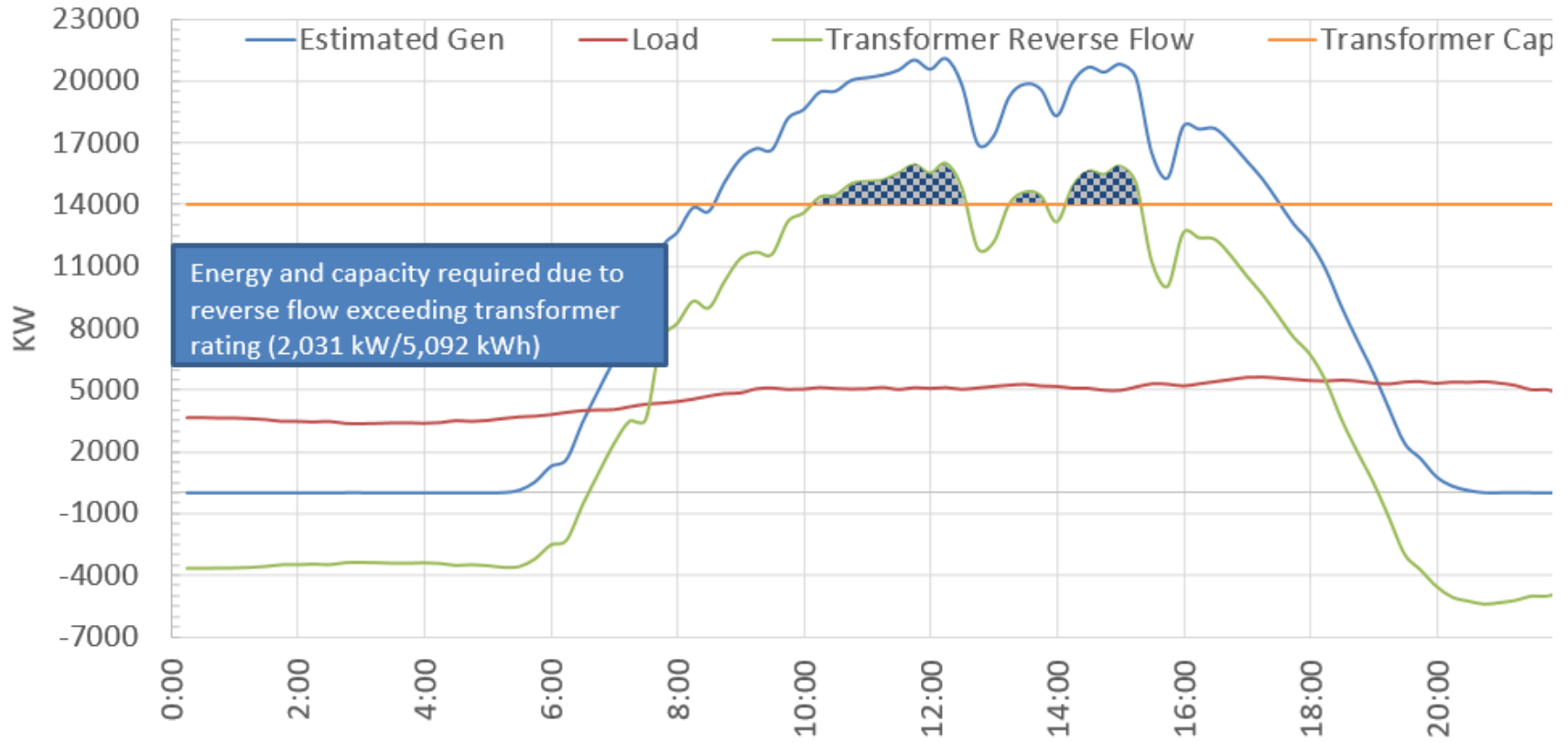
- The max generation, minus the daytime load equals the nameplate of the transformer
- Any additional generation, or a reduction in load will exceed the transformer nameplate
- Following slides look at this scenario along with varying types of solar days

Lowest daytime load (4/29/18) with 'perfect' solar day (4/22/18) and 23,192 kW installed generati



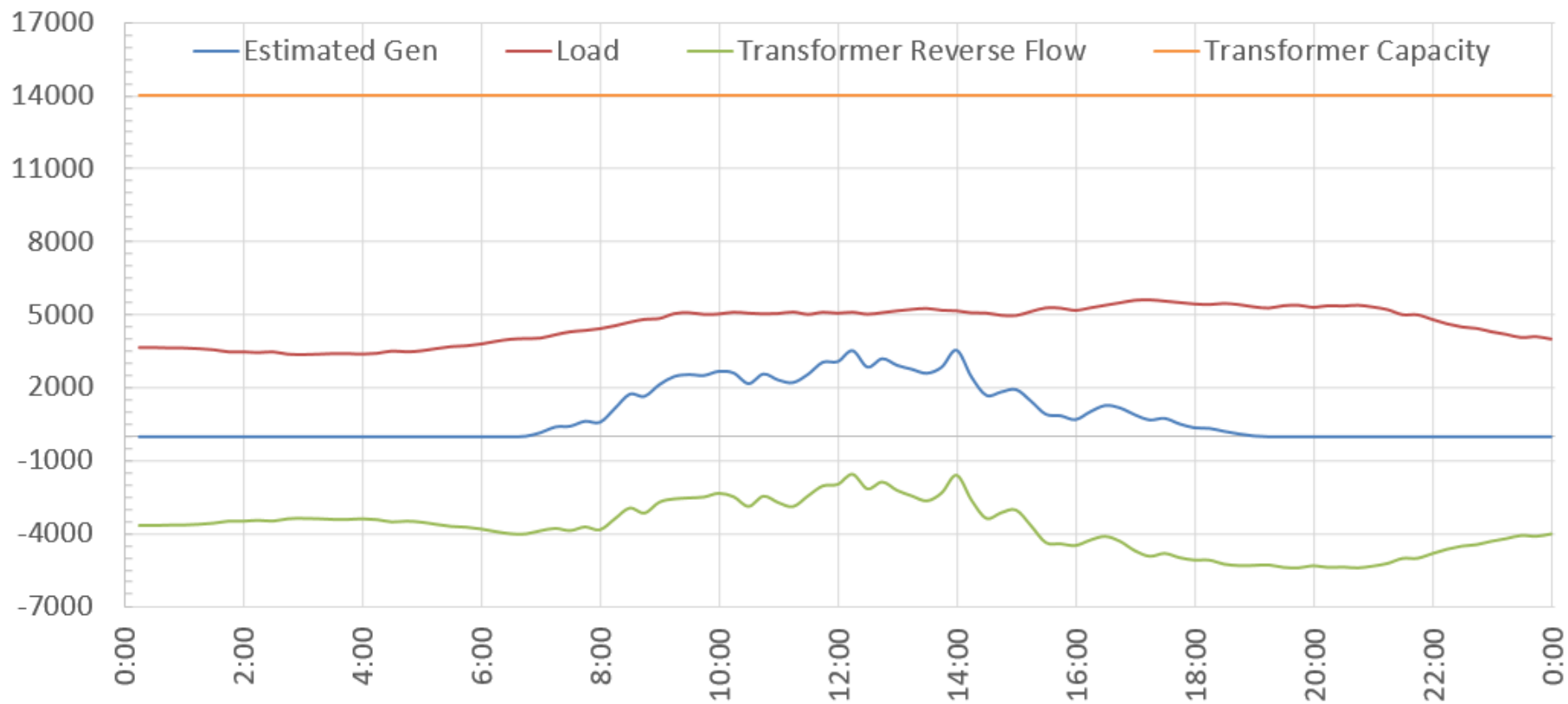
# Perfect Solar Day | Overload Scenario

Lowest daytime load (4/29/18) with intermittent solar day (6/9/18) and 23,192 kW installed gen



# Intermittent Solar Day | with Overload

Lowest daytime load (4/29/18) with poor solar day (4/15/18) and 23,192 kW installed generation



Poor Solar Day Scenario

# Probability of Generation Levels

## Number of Days in Each Month with at least one 15-minute interval reading greater than X% of Connected Generation

% of Connected Generation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>100</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>90</b>	0	0	6	8	19	14	0	1	0	0	0	0	<b>48</b>
<b>75</b>	4	9	18	15	23	22	25	19	17	8	0	0	<b>160</b>
<b>50</b>	13	13	25	21	29	26	30	27	25	17	10	14	<b>250</b>

## Number of Days in Each Month with Generation within X% of 2018 Max Generation Day (proxy for # of good solar days)

Max Generation Day: 138,108 kWh on 2020-06-11

% of Max Gen Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>100</b>	0	0	0	0	0	1	0	0	0	0	0	0	<b>1</b>
<b>90</b>	0	0	0	4	9	7	7	0	0	0	0	0	<b>27</b>
<b>75</b>	0	0	7	6	17	17	17	8	2	0	0	0	<b>74</b>
<b>50</b>	2	5	13	12	21	22	25	20	19	8	0	0	<b>147</b>