

Record Peak Loads Aug. 6-10, 2001

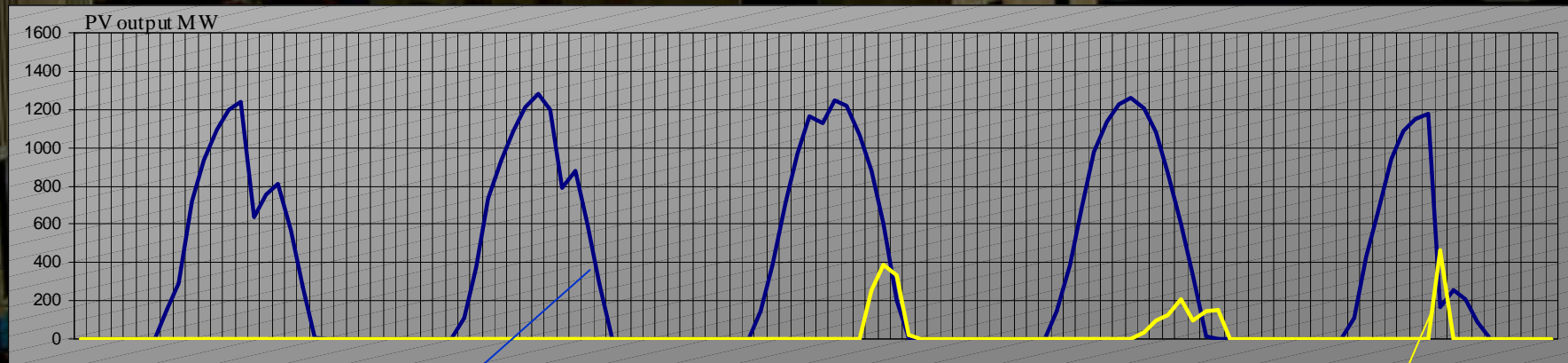
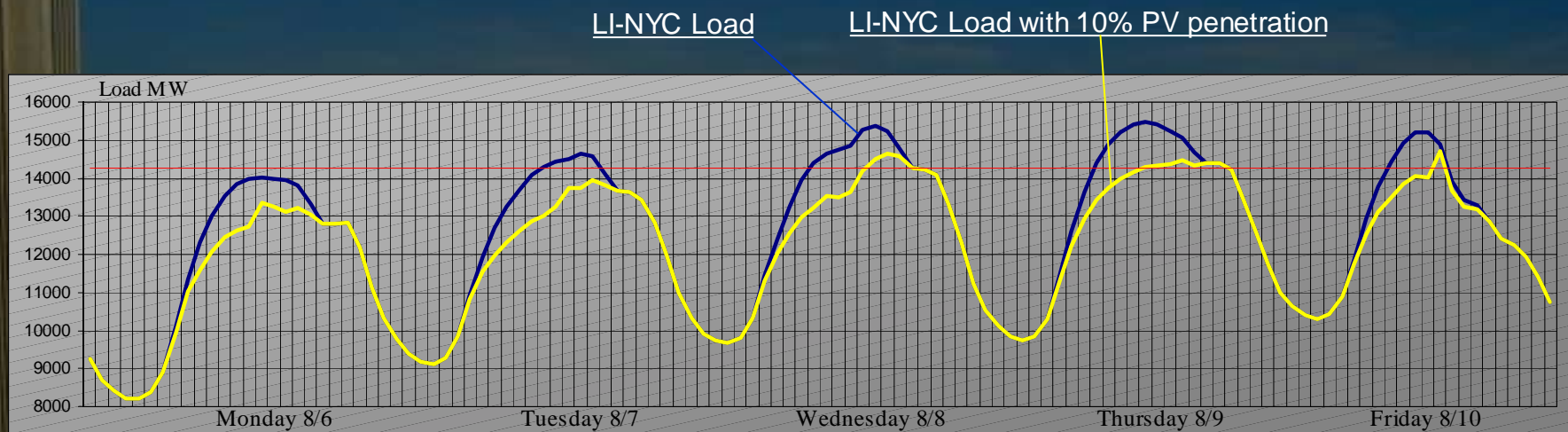
During the week of August 6, 2002, the New York grid was faced with a serious power supply/demand crunch, coming close to a rolling blackout situation particularly downstate. An all time record demand of 30,983 MW was reached on Thursday August 9.

The analysis of previous heat-wave driven peak load situations has consistently shown that a dispersed photovoltaic resource could mitigate high demand by injecting solar electricity on the grid at points and times of highest demand. This question was posed again for the August 6 week.

The following graph shows that PV output (*bottom graph blue line*) was nearly ideal everyday. The top graph shows the actual combined Long Island-New York City load (*blue line*) and the load that that would have occurred, had a dispersed PV resource amounting to 10% of the local peak demand (~1500 MW) been available. The data show that the peak load would have been reduced everyday, even on Friday, when clouds appeared in the afternoon and sharply reduced PV output; at the same time, however, load demand was drastically reduced because its indirect cause -- the sun driven heat wave -- had subsided.

Firm capacity equivalence with minimal load control: The graph reports the amount of load control or storage/backup (*yellow line bottom graph*) that would have been needed to guarantee 80% of the rated PV capacity as firm capacity (*red threshold line*). This amount is very small compared to PV resource. Relying, for instance, on building temperature-based load control, would have led to minimal end-user discomfort. Other methods of control could have included a combination of the latter, plus a “solar smart” activation of existing direct load control customers, plus micro storage utilization, further reducing any noticeable end-use impact.

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PV Output (*fixed arrays*)

Load Control and/or Backup and/or Storage to guarantee firm capacity

Wednesday	2 degree-hours
Thursday	1.7 degree-hours
Friday	0.9 degree hours