

Comments of Pacific Gas and Electric Company
Local Market Power Mitigation (LMPM) Enhancement Straw Proposal

Submitted by	Company	Date Submitted
Sergei Kotsan 415-973-2578	PG&E	12/22/2015

Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Local Market Power Mitigation (LMPM) Enhancement December 4th Straw Proposal. PG&E strongly supports CAISO to have proper tools and capability to mitigate the market power. However, PG&E wants to ensure smooth implementation of the enhancement that does not interfere with existing market solutions.

PG&E's main points are:

1. CAISO should provide additional technical details regarding the performance of the existing the LMPM process, including execution time, failure rate and follow-up outcomes.
2. CAISO should set a maximum amount of time after which optimization should run without additional mitigation.
3. CAISO should develop a study that would demonstrate the potential gains of the new tools prior to its implementation
4. CAISO should consider deployment of the tool when market runs are stable and no market enhancements are under way.

I. CAISO should provide additional technical details regarding the performance of the existing the LMPM process, including execution time, failure rate and follow-up outcomes.

CAISO should evaluate performance of the existing tools, prior to planning its enhancement and implementation of a tariff change. PG&E recommends looking at the historic execution time duration, failure rate and follow-up market outcome prior to transferring LMPM from advisory to binding intervals. Historic CAISO's implementations were accompanied by an elevated frequency of missing data, and price corrections. PG&E suspects that benefits from the improved accuracy in the long run might be hard to evaluate, if the existing tool performs poorly. In the existing straw proposal, CAISO assumes flawless execution of the LMPM with no further risk of complications which PG&E considers an unlikely scenario.

II. CAISO should set a maximum amount of time dedicated for the enhanced LMPM.

In the Fifteen Minute Market (FMM), CAISO proposes to move the LMPM process from the first advisory interval to the binding interval. This may increase the execution time of

the optimization for the FMM. In the Real-Time Dispatch, CAISO proposes to add mitigation in the first advisory five minute interval. Today, no additional mitigation is done in Real-Time Dispatch. This will also likely increase solution times. Increasing solution times may increase the difficulty of producing a market solution based on a full AC power flow. When optimization is unable to deliver a full AC solution on time, a simplified DC solution is published. The DC solution disregards losses, voltage constraints and reactive power. In order to eliminate this risk, the CAISO should determine a time limit for the enhanced LMPM run.

The market optimization should use LMPM results from today's process if the enhanced LMPM takes too long to execute. CAISO should determine appropriate execution timing and make sure that this time will not impact further enhancements of the full network model. PG&E recommends that CAISO determine a time limit for the execution of the enhanced LMPM. An alternative advisory LMPM should apply if the enhanced LMPM takes too long to execute.

If the time limit for enhanced LMPM is exceeded in the Real-Time Dispatch, the market optimization could be run without further mitigation. That is, the mitigation determined for the corresponding fifteen minute period in the Fifteen Minute Market should be used in the Real-Time Dispatch.

If the enhanced LMPM in the Fifteen Minute Market exceeds the time limit specified, CAISO could consider two options. In one option, CAISO could run today's mitigation process for the first advisory interval in parallel. If the enhanced LMPM exceeds the time limit, CAISO could employ the mitigation determined for the advisory interval. Alternatively, if the enhanced LMPM exceeds the time limit, CAISO could employ the mitigation determined for the corresponding hour in the Day-Ahead Market.

III. CAISO should develop a study that would demonstrate the potential gains of the new tools prior to its implementation

CAISO summarized the differences in congestion megawatts between advisory and the binding run to evaluate potential accuracy gains from LMPM enhancement. Since, the frequency and magnitude of mitigation bids were 0.5 units per hour averaging 23 megawatts in 2014¹, the accuracy gain in dollar terms might be insignificant under current market conditions.

PG&E recommends that CAISO develops a study that can demonstrate that the benefits of the LMPM enhancement will significantly improve performance of the existing LMPM tool.

IV. CAISO experience performance issues of the optimization software, judging by high frequency of the DC solution published and price corrections.

¹2014 Annual Report on Market Issues and Performance page 9.

When CAISO publishes a real-time solution with system losses set to zero at all nodes, it suggests that there are performance issues and an inability to publish full AC solution on time. In the last quarter, we observed more than 15 percent of all real-time solutions had system losses set to zero. In addition, numerous data input errors are a prevailing cause of the price corrections². PG&E recommends to schedule LMPM enhancement when the frequency of the DC solution is low.

PG&E recommends that CAISO determine a set of basic criteria that determine stable market performance prior to implementation of a tool that might add complexity to the existing optimization run.

Conclusion:

PG&E thanks CAISO for their continued work to improve market function and mitigation role. PG&E requests additional analysis relating to technical details and market readiness to implement this enhancement effectively.

²Weekly price correction reports published at
<http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=979411B7-C6A1-4B9D-AE2A-870F64DF86F1>