

Capacity Procurement Mechanism Soft Offer Cap Straw Proposal: Supplemental Comments by Department of Market Monitoring

September 10, 2019

Overview

In prior comments on the ISO's Capacity Procurement Mechanism Soft Offer Cap Straw Proposal, the Department of Market Monitoring (DMM) expressed concerns about data in the CEC report which the ISO was relying upon to set the CPM soft offer cap. DMM recommended that the ISO perform additional verification and/or an independent assessment of the actual going forward costs (GFFC) of gas-fired generating units.¹

DMM has performed additional research on this issue, which provides further indications that the CEC report data used by the ISO significantly overestimates the actual going forward costs of gas-fired generating units. These supplemental comments summarize the results and highlight potential implications of DMM's review of this issue.

Background

The ISO intends for the CPM soft offer cap to be "a proxy for the system marginal capacity cost."² The ISO proposes to continue to set the soft offer cap "as a subset of the fixed costs, representing going forward fixed costs, for a new resource. These costs include insurance, ad valorem, and fixed operations and maintenance costs, but not capital and financing costs or taxes."³

The ISO proposes to set the CPM soft offer cap "based on figures from the 2014 draft CEC report for Estimated Cost of New Renewable and Fossil Generation in California."⁴ Specifically, the ISO proposes to add a 20% adder to the CEC report's values for insurance, ad valorem, and fixed operations and maintenance for a hypothetical new advanced combined cycle resource to determine the soft offer cap.

The ISO indicated that the first item in the scope of the current initiative was to "update the soft offer cap for the CPM competitive solicitation process, including selection of the appropriate resource type and size that best reflects the system marginal capacity cost."⁵ In DMM's initial comments on the ISO's Straw Proposal, DMM expressed concern that the CEC report was not designed to provide an estimate of GFFC and was not intended to be used for the kind of rate-making that occurs when these data are being used for setting the soft cap. Specifically,

¹ *Comments on Capacity Procurement Mechanism Soft Offer Cap*, Department of Market Monitoring, August 20, 2019: <http://www.caiso.com/Documents/DMMComments-CapacityProcurementMechanismSoftOfferCap-StrawProposal.pdf>

² *Capacity Procurement Mechanism Soft Offer Cap Straw Proposal*, CAISO, July 24, 2019, p. 6: <http://www.caiso.com/Documents/StrawProposal-CapacityProcurementMechanismSoftOfferCap.pdf>

³ The ISO also continues to propose that the reference resource used to determine these costs be a "mid-cost 550 MW advanced combined cycle resource with duct firing capability. *CAISO July 2019 Straw Proposal*, pp. 6-7.

⁴ *CAISO July 2019 Straw Proposal*, p. 9.

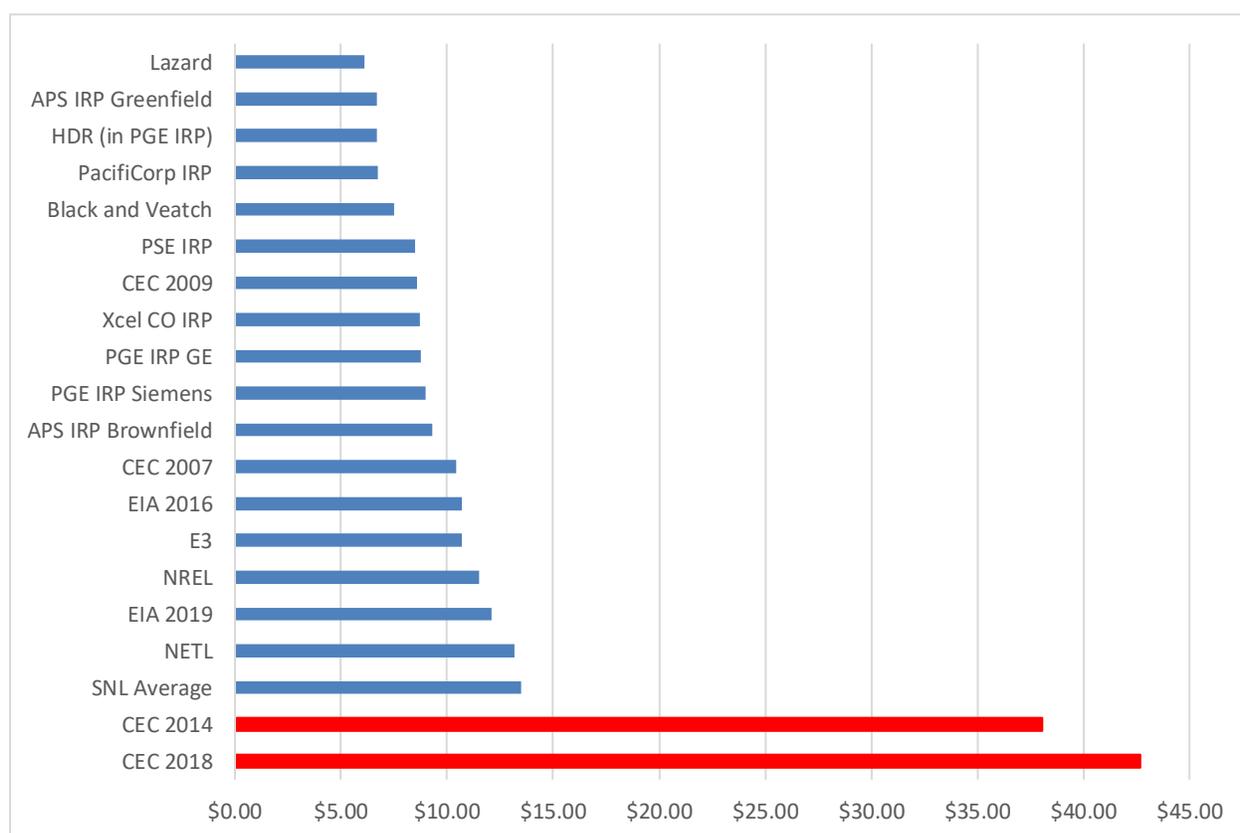
⁵ *Capacity Procurement Mechanism Soft Offer Cap Issue Paper*, CAISO, May 30, 2019, p. 6: <http://www.caiso.com/Documents/IssuePaper-CapacityProcurementMechanismSoft-OfferCap.pdf>

DMM expressed concern the ISO’s estimates of fixed annual O&M derived in the CEC study were unreasonably high.

Review of Cost Studies

DMM has further examined this issue by reviewing estimates of fixed O&M cost estimates for combined cycle units from a range of publicly available sources. These sources include analysis by expert consultants (Lazard, Black and Veatch, HDR, E3), government agencies (EIA, CEC, NREL, NETL), integrated resource plans (PSE, PGE, PacifiCorp, APS, Xcel) and specific generator estimates from SNL. All cost estimates from these various studies were adjusted to 2019 dollars. Figure 1 below compares the fixed O&M estimates from these sources.⁶

Figure 1. Estimates of fixed O&M costs of combined cycle resources (\$/kW-year)



As shown in Figure 1, in comparison with the 18 other sources DMM found for estimates of combined cycle fixed O&M costs, the CEC’s 2014 and 2018 estimates are clearly extreme outliers. Fixed O&M estimates from the CEC data were \$38.06/kW-year for 2014 and \$41.77/kW-year in 2018. However, estimates from other sources range from \$6.12 to \$13.49/kW-year. Thus, the recent CEC estimates are about three times higher than the next highest estimate.

⁶ For citations to each source shown in Figure 1, see Appendix I.

Discussion of Results

Figure 2 shows the implications of different estimates of fixed O&M costs in terms of the total annualized costs and potential net market revenues of a relatively new combined cycle unit.

- The dark blue bar in Figure 2 is the estimate of net market revenues for a hypothetical combined cycle generator in SP15 provided in DMM's 2018 annual report (\$38.85/kW-year).⁸
- The light blue bar stacked on top of the net market revenue is the ISO's proposed CPM soft offer cap of \$75.67/kW-year.
- The sum of these two numbers (\$114.52/kW-year) is an estimate of the total net annual revenue of a combined cycle resource being compensated at the ISO's proposed CPM soft offer cap.

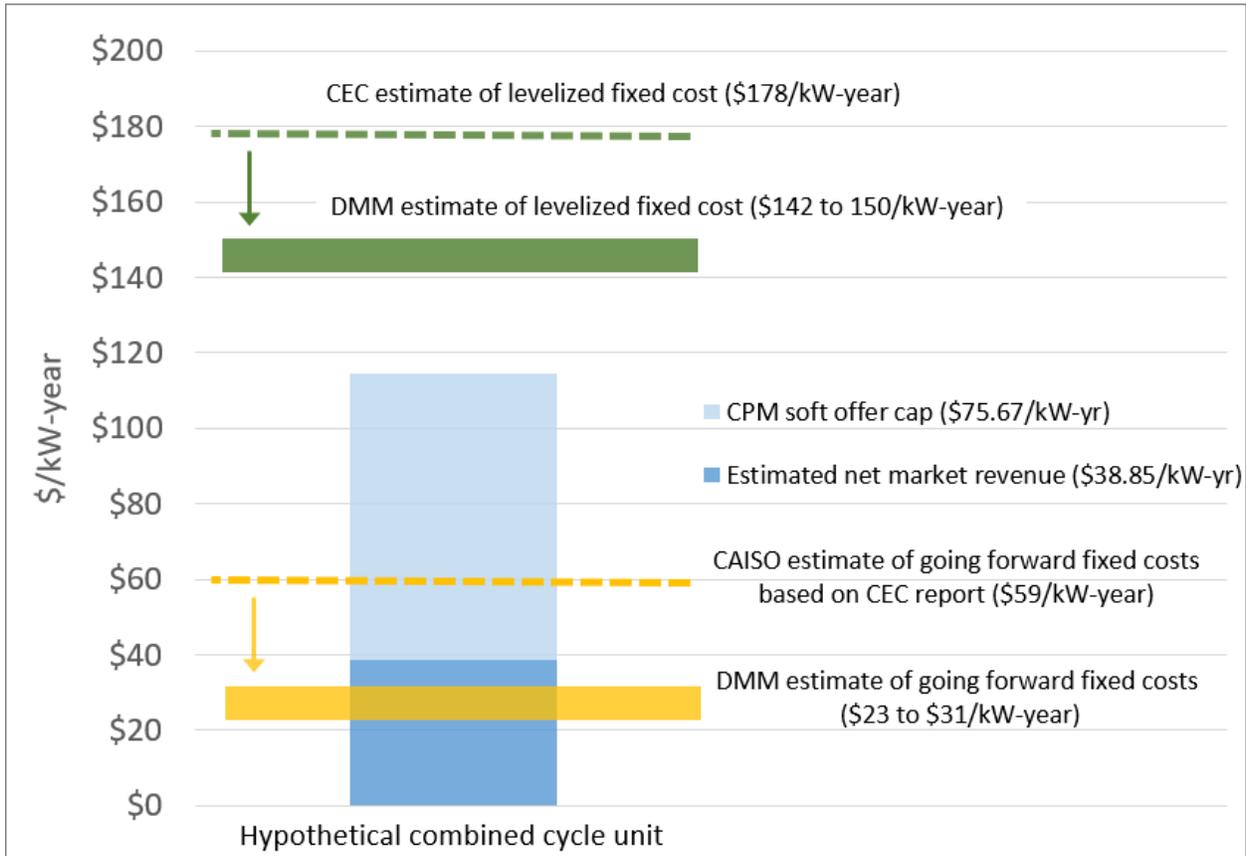
The dotted yellow line in Figure 2 shows the ISO's current estimate of going forward fixed costs (GFFC) derived from CEC data (\$59/kW-year). The horizontal yellow band in Figure 2 shows the range of going forward fixed cost estimates based on the fixed O&M estimates in Figure 1 (excluding the two recent CEC outliers). The low end of the GFFC range is \$23.25/kW-year and the high end is \$30.62/kW-year. These GFFC estimates include the same values for insurance and ad valorem from the ISO's Straw Proposal, which are in turn based on the 2018 CEC study (\$7.10/kW-year and \$10.03/kW-year, respectively).

The dotted green line in Figure 2 shows the total estimated leveled fixed costs of a new merchant combined cycle unit based on the 2018 CEC report.⁹ These costs include the CEC's fixed O&M estimate of \$41.77/kW-year. The horizontal green band in Figure 2 shows the range of leveled fixed cost estimates for a merchant unit after replacing the CEC fixed O&M value with the high and low fixed O&M estimates from the other sources displayed in Figure 1.

⁸ 2018 Annual Report on Market Issues and Performance, Department of Market Monitoring, May 2019, p.59: <http://www.caiso.com/Documents/2018AnnualReportonMarketIssuesandPerformance.pdf>

⁹ Neff, Bryan. 2019. Estimated Cost of New Utility-Scale Generation in California: 2018 Update. California Energy Commission. Publication Number: CEC-200-2019-500. <https://ww2.energy.ca.gov/2019publications/CEC-200-2019-005/CEC-200-2019-005.pdf>

Figure 2. Estimates of Potential Annual Cost and Revenues for Combined Cycle Resources



Appendix I. References with Estimates of Fixed O&M Costs

APS IRP Brownfield. (2017). *APS Integrated Resource Plan 2017*. Average of brownfield natural gas plants greater than 400 MW taken from generation technologies assumptions table in attachment D3.

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NREL. (2019). *Annual Technology Baseline: Electricity*. Retrieved on 9/4/2019 from the NREL website: <https://atb.nrel.gov/electricity/2019/index.html?t=cg>

PacifiCorp IRP. (2019). *PacifiCorp Integrated Resource Plan 2019*. Gas Fueled Supply Side Resource Table Update. Average of combined cycle options in table 7-1. https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2019-irp/2019-irp-support-and-studies/Gas-Fueled_Supply_Side_Resource_Table_Update_for_the_2019_Integrated_Resource.pdf

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