

Stakeholder comments and questions on 2016 Cost of Service Study and 2018 GMC Update meeting held on May 24, 2017.

COST OF SERVICE STUDY SUMMARY

The triannual cost of service study (COSS) uses activity based costing (ABC) to determine the percentages used to allocate the annual revenue requirement into the grid management charges (market services, system operations, and CRR services). The COSS also tracks the shift in time and resources associated with the cost categories (also referred to as grid management charges) between studies.

GMC Percentages			
Cost Category	2013 Study Effective for 2015	2016 Study Effective for 2018	Amount Over / (Under) Since Last COSS
Market Services	27%	32%	5%
System Operations	70%	66%	-4%
CRR Services	3%	2%	-1%

The 2016 COSS results indicated a shift in time and expense from system operations and congestion revenue rights (CRR) services to market services.

The new percentages will be used to determine the 2018 grid management charges (GMC) rates, which will become effective January 1, 2018. In addition to impacting the GMC rates, the new percentages will impact the EIM fee and TOR fee.

Evolution of the GMC Rates						
Triannual Cost of Service Study's New GMC Percentages	X	Annual Revenue Requirement	/	Estimated GMC Volumes	=	GMC Rates

The development of the 2018 revenue requirement (RR) kicks off in July and concludes when the Board approves the RR in December. The 2018 RR Stakeholder kickoff meeting (on-site) is scheduled for July 25th.

STAKEHOLDER: Meg McNaul with Thompson Coburn LLP on behalf of the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside California

1: On slide 11 of the May 24, 2017 briefing on the Cost of Service Study and at page 3 of the CAISO's report, the percentage for CRR Services is shown as reduced to 2% from 3%. What is the reason for the change?

RESPONSE: The decrease is related, in part, to the shift in time and expense to market services.

Another reason for the decrease is the absence of the 2008 bonds (and the related allocation to the operating reserve adjustment¹). The 2008 bonds included in the 2013 COSS² were classified directly to the cost categories. The net amount of the 2008 bonds and operating cost reserve adjustment allocated to CRRs in the 2013 COSS was \$912 thousand. The 2008 bonds have since been retired. The 2013 bonds included in the 2016 COSS were categorized as indirect as they were used to fund the Folsom headquarters. Indirect costs are allocating based on percentages of direct costs.

2: Also on slide 11 of the May 24, 2017 briefing and at pages 3-4 of the CAISO's report, the CAISO explains that the percentage change for the CAISO System Operations category is reduced by 4%, from 70% to 66%, due to "process efficiencies." Please specify and explain the "process efficiencies" that result in the revised percentage for CAISO System Operations.

RESPONSE: The most impactful process efficiency was the improved overtime management, which resulted in a substantial reduction in hours and dollars associated with system operations.

The absence of the 2008 bonds (and the related allocation to the operating reserve adjustment) is another reason for the percentage change. The net amount of the 2008 bonds and operating cost reserve adjustment allocated to system operations in the 2013 COSS was \$9.6 million. As previously mentioned, the 2013 bonds included in the 2016 COSS were categorized as indirect as they were used to fund the Folsom headquarters. Indirect costs are allocating based on percentages of direct costs.

3: On slide 15 of the May 24, 2017 briefing, the CAISO explains that the change in the cost allocation for the EIM System Operations charge is also due to "process efficiencies." Are these the same process efficiencies that produce the revised percentages for the CAISO System Operations charge? If they are different, please specify and explain the process efficiencies that result in the revised amount for the EIM System Operations charge?

RESPONSE: The system operations (real time dispatch) percentage decrease is primarily driven by the decrease in costs and time recorded due to the reallocation of system operations' resources to create a new real time market desk as well as improved overtime

¹ The operating cost reserve adjustment takes into consideration 25% debt service collected in the previous year.

² The 2013 cost of service study can be found here, http://www.aiso.com/Documents/DiscussionPaper2-Cost-ServiceStudy-2015GMC_Update.pdf.

management. The absence of the 2008 bonds, as previously mentioned, is another reason for the percentage change.

- 4: For the System Operations cost category, the percentage resulting from the 2016 Cost of Service Study is decreased relative to the prior cost of service study by 4% (see slide 11), but the decrease is shown as 6% for EIM System Operations (see slide 15). Why are the percentages different for CAISO System Operations versus EIM System Operations?
- 5: Similarly, the percentage for the CAISO Market Services charge is shown as increasing by 5% (see slide 11), while the percentage for the EIM Market Services charge is increasing by 19%. Why are the percentages different?

RESPONSE: This response applies to both question 4 and question 5.

The EIM fee is calculated using the real time activities of the market services and system operations cost categories (also referred to as GMC).

GMC Percentages			
Cost Category	2013 Study Effective for 2015	2016 Study Effective for 2018	Amount Over / (Under) Since Last COSS
Market Services	27%	32%	5%
System Operations	70%	66%	-4%
CRR Services	3%	2%	-1%

As previously noted, the 2016 COSS results indicated a shift in time and resources from system operations and congestion revenue right (CRR) services to market services. In addition, there was a shift within the market services' activities and system operations' activities as noted below.

Cost Category	Activity	2013 Study Effective for 2015	2016 Study Effective for 2018	Amount Over / (Under) Since Last COSS
Market Services	Real Time Market	61%	79%	19%
Market Services	Day Ahead Markets	39%	21%	-19%
System Operations	Real Time Dispatch	45%	39%	-6%
System Operations	Balancing Authority Services	55%	61%	6%

- 6: With respect to page 29 of the CAISO's report, please provide a breakdown of the Estimated Volumes that are used as the billing determinants to derive each GMC rate. Will the Estimated Volumes be revised at some point prior to the 2018 rates taking effect, or will these be the volumes that are used for purposes of setting the GMC rates during 2018? Are any EIM transactions included in the volumes that are used to establish the CAISO Market Services or CAISO System Operations charges?

RESPONSE: The volume break down used to calculate the 2016 GMC rates is as follows: market services 552,607,979 MWh; system operations 461,616,533 MWh; and CRR services

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838,190,699 MWh. The volumes used as part of the annual GMC rate calculations are revised annually and published in the Budget and GMC Rates Book which is posted on the CAISO website. The volumes indicated above are volumes through those specific charge codes and therefore, do not include any EIM transactions, which have their own charge code.

7: Please explain how the revenues from the EIM Market Services charge and the EIM System Operations charge offset the CAISO Market Services and System Operations charges. Does the CAISO reflect the revenues resulting from these charges as offsets to the respective revenue requirements in each of these categories as part of its annual budgeting process? Are actual revenues received during the prior budget year used for this purpose?

RESPONSE: EIM fees are recorded as an “other revenue”, which serves as an offset to total revenue requirement amount. There are five main components of the CAISO’s annual revenue requirement: 1) operations & maintenance budget, 2) debt service, 3) cash funded capital, 4) other costs and revenues, and 5) operating cost reserve adjustment. The last two are typically offsets to the first three uses. Assuming no change in the other components, as other revenues increase due to more participants in the energy imbalance market, the net revenue requirement decreases, which in turn reduces the amount used to calculate the grid management charges. Any actual amounts over collected or under collected in any given year are included in the following 2nd year’s operating cost reserve adjustment. There is a two year lag between finalizing a year’s activity and creating the following year’s revenue requirement. For example, the true-up of revenues and expenses for 2016 will be used in the calculation of the 2018 revenue requirement.

8: The CAISO’s workpapers accompanying its report show a composite “EIM Rate” of \$0.1901. Similarly, slide 16 from the CAISO’s briefing shows a composite EIM rate for 2017 of \$0.1882, versus the EIM pro forma 2016 rate (which we understand to represent the rate that will be effective in 2018), of \$0.1901. Is it correct that the results of the CAISO’s 2016 Cost of Service Study and 2018 GMC Update provide for an increase in the composite EIM rate of \$0.0019?

RESPONSE: The pro-forma rates referenced in the COSS and related documentation are intended to show what the 2016 rates would have been using the new percentage allocations. Assuming the 2018 revenue requirement is similar to the 2016 amount, than the pro forma 2016 rate is an approximation of what the 2018 rates will be. And, yes, if the components are added together, the composite rate shows a \$0.0019 increase. The new percentages will be used to determine 2018 rates, which will be developed as part of the annual budget process later this year.

STAKEHOLDER: Suzy Niederkorn with NV Energy

1: I agree with the current 2017 rates below but I could not find the 2018 updated rates.

RESPONSE: The 2018 rates are not yet determined. The process to develop those rates begins in July and concludes when the Board approves the rates in December. The 2018 Revenue Requirement (RR) Stakeholder kickoff meeting (on-site) is scheduled for July 25th. As stated earlier, the pro forma 2016 rates shown in the paper and presentation were intended to approximate the 2018 rates assuming stable revenue requirements.

2: Does Congestion Revenue Rights Services apply to EIM Entity? I understand our EIM Entity receives Market Services and System Operations charges in GMC. What is the 2016 and 2017 rates on CRR?

RESPONSE: The CRR services' GMC does not impact the EIM rate nor is it included in the development of the EIM rate. The EIM fee is derived from the real time activities of the market services and system operations GMC.

The 2017 CRR services rate is \$.0059/MWh.

STAKEHOLDER: David Cohen with Navigant Consulting

1: In 2016 how many total FTE positions were in CAISO? What was the Direct Salary & Benefit dollars associated with those FTE?

RESPONSE: The 2016 operations and maintenance budget included budget for 593 FTE with a salaries and benefits budget of \$121.6 million.

2: In 2016 how many dollars of Total Revenue Requirement were associated with "Contractors" or non -CAISO FTEs?

RESPONSE: The 2016 operations and maintenance budget for consultants and contract staff was \$11.9 million.

3: In all the Tables presented in the Report [cost of service study] please insert a Column identifying where the Dollars came from earlier Tables. It would help the understanding of the process of computations.

RESPONSE: The source of the data used in the tables is often referenced in the relevant section's write up. In addition, the cost of service study work papers were posted to the ISO website to allow for a broader view of the flow data.

4: Table 8 Please add two column2 to the table and summarize Labor & Non-labor dollars for each line item.

RESPONSE: The O&M budget is the only component of the RR in which this request is applicable. Only the O&M contains labor expense (driven in part by FTE hours) and non-labor expense. However, the COSS does not require labor and non-labor expense broken out in order to reach its results. Rather the expense categories used in the study include direct and indirect activity based costing (ABC) costs and non-ABC costs. The FTE reported hours are used to determine the ABC costs.

Revenue Requirement	2016 Budget (in thousands)
Operations and Maintenance	\$ 169,340
Debt Service	\$ 16,900
Cash Funded Capital	\$ 24,000
Other Costs and Revenues	\$ (10,800)
Operating Costs Reserve Adjustment	\$ (4,100)
Total Revenue Requirement	\$ 195,340

A breakdown of the O&M budget broken out by those categories as well as the hours reported by division is as follows:

		2016 Operations and Maintenance Budget (amounts in thousands)					
Code	Division	Number of Non- Administrative 2016 Hours Reported	DIRECT ABC Activity Costs	INDIRECT ABC Activity Costs	ABC Activity Costs	Non-ABC Activity Costs	Total Budget
2100	Chief Executive Officer	99,533	\$ 1,305	\$ 11,103	\$ 12,408	\$ 5,355	\$ 17,763
2200	Market and Infrastructure Development	119,735	\$ 14,487	\$ 632	\$ 15,119	-	\$ 15,119
2400	Technology	370,582	\$ 2,588	\$ 37,610	\$ 40,198	21,951	\$ 62,149
2500	Operations	368,852	\$ 37,736	\$ 4,155	\$ 41,891	-	\$ 41,891
2600	General Counsel and Chief Compliance Officer	66,649	\$ 716	\$ 9,128	\$ 9,844	3,000	\$ 12,844
2700	Market Quality and Renewable Integration	48,026	\$ 4,709	\$ 1,524	\$ 6,233	2,235	\$ 8,468
2800	Customer and State Affairs	66,155	\$ 8,004	\$ 441	\$ 8,445	-	\$ 8,445
2900	Regional and Federal Affairs	16,212	\$ 2,066	\$ 595	\$ 2,661	-	\$ 2,661
Total		1,155,742	\$ 71,611	\$ 65,188	\$ 136,799	\$ 32,541	\$ 169,340

5: Using Time Cards how do employees know how and when to split their time between Direct ABC codes and Task Codes and what could be support or indirect codes?

RESPONSE: Employees are instructed by their managers as to which ABC codes and tasks to use according to the work completed.

6: What are the internal processes to verify Time Cards are reported correctly? Do Supervisors check the subordinate employee's time entry?

RESPONSE: Managers are responsible for reviewing and approving time cards weekly.

7: What type of monthly reports are generated to compare budgeted FTE Staff time versus what is reported?

RESPONSE: Manager time and labor reports as well as ABC reports are available to managers to review time reported and codes used.

8: Table 9 insert a column identifying the CAISO FTE associated with the column Total Budget by Code number.

RESPONSE: The data used in the COSS does not take into consideration the number of FTEs but the hours reported by the FTEs. A breakdown of the hours reported by division is referenced in the response to number 4.

9: Table 11 insert a row above ABC Code and identify the CAISO FTE numbers for each of the columns.

RESPONSE: The data used in the COSS does not take into consideration the number of FTEs but the hours reported by the FTEs. A breakdown of the hours reported by division is referenced in the response to number 4.

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10: Table 13 insert a row above ABC Code and identify the CAISO FTE numbers for each of the columns.

RESPONSE: The data used in the COSS does not take into consideration the number of FTEs but the hours reported by the FTEs. A breakdown of the hours reported by division is referenced in the response to number 4.

11: Table 22 – The row Non-ABC Costs =\$29.582 million come from?

RESPONSE: See table 10 – Allocation of Non-ABC Support Costs to Cost Categories.

12: Refer to Table 43 [Comparison of EIM Percentages and Costs],

a) Explain why Market Service 2013 Study Effective for 2015 rose by \$16.571 million in the 2016 Study? Provide the 2013 and 2016 Market Service “real time” billing units that support the increase.

RESPONSE: The market services (real time market) percentage increase is primarily driven by the additional costs and time recorded in order to implement and manage additional 15-minute market as well as the additional a real time market desk (24x7) since the last COSS.

b) Explain why System Operations 2013 Study Effective for 2015 declined by (\$11.170 million) in the 2016 Study? Provide the 2013 and 2016 System Operations “real time” billing units that support the reduction.

RESPONSE: The system operations (real time dispatch) percentage decrease is primarily driven by the decrease in costs and time recorded due to the reallocation of system operations’ resources to create a new real time market desk as well as improved overtime management. The absence of the 2008 bonds, as previously mentioned, is another reason for the percentage change.

Revenue Requirement (amounts in thousands)	Market Services Real Time Market			System Operations Real Time Dispatch		
	2013	2016	Change	2013	2016	Change
	Cost of Service Study	Cost of Service Study		Cost of Service Study	Cost of Service Study	
Non-ABC O&M Support Costs	\$ 553	\$ 1,337	\$ 784	\$ 1,653	\$ 1,407	\$ (246)
Direct ABC O&M Costs	\$ 8,075	\$ 13,966	\$ 5,891	\$ 14,093	\$ 15,257	\$ 1,164
Debt Service	\$ 3,152	\$ -	\$ (3,152)	\$ 10,555	\$ -	\$ (10,555)
Other Costs and Revenues	\$ (544)	\$ (1,394)	\$ (850)	\$ (1,878)	\$ (1,635)	\$ 243
Operating Costs Reserve Adjustment	\$ (708)	\$ -	\$ 708	\$ (2,462)	\$ -	\$ 2,462
Subtotal	\$ 10,528	\$ 13,909	\$ 3,381	\$ 21,961	\$ 15,029	\$ (6,932)
Indirect Costs	\$ 19,525	\$ 33,014	\$ 13,489	\$ 39,964	\$ 35,408	\$ (4,556)
Revenue Requirement Before Fees	\$ 30,053	\$ 46,923	\$ 16,870	\$ 61,925	\$ 50,437	\$ (11,488)
Less Fees	\$ (1,142)	\$ (1,441)	\$ (299)	\$ (993)	\$ (675)	\$ 318
Revenue Requirement	\$ 28,911	\$ 45,482	\$ 16,571	\$ 60,932	\$ 49,762	\$ (11,170)
Percentage applicable to EIM Activities	61%	79%	18%	45%	39%	-6%

Note: For both the 2013 and 2016 cost of service studies cash funded capital is categorized as indirect and is included in the Indirect Costs. For the 2016 cost of service study debt service is categorized as indirect and is included in the Indirect Costs.

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13: In 2016 how many dollars of EIM fees and TOR fees are credited against the CAISO Revenue Requirement? In what table, can we trace the amounts?

RESPONSE: The 2016 RR included \$2.5 million in EIM fees and \$675 thousand in TOR fees.

For EIM fees, see table 20 – Allocating Other Revenue to Cost Categories for more information.

For TOR fees, see table 23 – Estimation of Fee Revenue and Mapping of Fees to Cost Categories for more information.

14: Table 45, please identify from which Table the Total System Operations Indirect Cost of \$90.790 million are shown?

RESPONSE: See table 22 – Allocating Revenue Requirement to Cost Categories.