

Memorandum

To: ISO Board of Governors

From: William J. Regan, Jr., Chief Financial Officer
Philip Leiber, Treasurer & Director of Financial Planning

Date: January 18, 2007

Re: Peer ISO 2007 Budget & Rate Comparison

This memorandum is for information only. No Board action is required.

At the December 12, 2006 Board meeting, the Board Chair inquired whether Management had compared CAISO's proposed 2007 budget and rates to peers. Management had compiled such data for 2006 and discussed it with the Board in executive session at the September 6, 2006 meeting, but such information for 2007 was not at that time available. Management has now prepared a high-level comparison of budget and rate information for peer ISO/RTOs as shown below.

	CAISO	PJM	NYISO	NEISO	MISO	O-IESO (Canadian \$)	ERCOT	Median	Average
1 O&M Budget (in '000)	\$143,805	\$173,300	\$113,500	\$87,700	\$163,716	\$103,200	\$87,700	\$113,500	\$124,703
2 Net Collections from Ratepayers (in '000)	189,890	240,000	131,500	115,100	235,246	133,400	130,500	\$133,400	\$167,948
3 Volume (GWh)	250,000	750,000	170,100	133,975	650,847	163,600	312,700	\$250,000	\$347,317
4 Bundled GMC Rate / MWh	\$ 0.76	\$ 0.32	\$ 0.77	\$ 0.86	\$ 0.36	\$ 0.82	\$ 0.42	\$ 0.76	\$ 0.62
5 Total Budgeted Staff	542	600	425	413	646	422	582	542	519
6 Monthly cost to consumers on a 700Kwh monthly bill	\$ 0.53	\$ 0.22	\$ 0.54	\$ 0.60	\$ 0.25	\$ 0.57	\$ 0.29	\$ 0.53	\$ 0.43

Notes:

- * Information has been compiled from publically available sources.
- * Each ISO/RTO uses a differing format for their rate calculations and budget presentations. CAISO staff have attempted to compile information into this common matrix.
- * CAISO and other ISO/RTOs have more complex rate structures than is shown here. A bundled GMC rate / MWh is used for comparative purposes.
- * PJM O&M budget is for 2006, as the 2007 figure was not available.
- * CAISO staff figure includes 5 LGIP, 9 WECC funded outside the GMC, and 9 MRTU funded from the capital budget. Budgeted staff in O&M is 518.

Discussion of Results

While the information in this table presents only a very high-level comparison, some interesting observations can be drawn. First, the overall distribution of ISO/RTO operating costs is relatively narrow. As Line 1 illustrates, the ongoing O&M costs range from a low of \$88 million for New England ISO to a high of approximately \$173 million for PJM (about twice as high). Similarly, the annual total revenue requirement (including O&M, and other items such as debt service and/or depreciation) has a similar range, with a low of \$115 million for NEISO and a high of \$240 million for PJM (again roughly twice as high). A pro-forma GMC rate is obtained by dividing the annual revenue requirement (Line 2) by the annual transmission volume (Line 3). The variance in annual transmission volumes is much wider (PJM has 5.6 times the volume as New England) than the variance in the revenue requirement (with PJM about 2.1 times New England). Accordingly, one can observe that ISO/RTOs with smaller annual transmission volumes are at a significant

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disadvantage in these rate calculations. Costs appear to be “relatively” fixed, which is understandable as operating a grid requires certain infrastructure such as an EMS system and each corporation requires certain operating infrastructure such as an HR and Legal department that are not very scalable based on transmission volume. This is also demonstrated by the relatively tight distribution of staffing figures, which range from about 400-600. Accordingly, entities with significantly higher transmission volumes, such as MISO and PJM, have bundled GMC rates in the top quartile of peers. It is intuitive, and these numbers support the fact that there are significant economies of scale in the ISO/RTO business.

It is also important to recognize that ISO/RTO costs are a very small component (less than 1%) of a typical consumer’s monthly electric bill, or about 22-60 cents per month, as illustrated by Line 6 of the table.

Limitations of this Comparison

The data above does demonstrate that there are cost differences among ISO/RTOs that are significant enough to warrant further consideration. Past benchmarking efforts that CAISO have sponsored or participated in have shown that these differences are due to a variety of factors, including:

- Differences in functionality. While ISO/RTOs are converging in many respects towards a “roughly” similar overall market design, they are moving there at differing paces, and will continue to have differences based on the needs of local participants.
- Different histories and circumstances of startup. Some ISO/RTOs started “from scratch”. Others formed from pre-existing pools and inherited some of their infrastructure. “Pioneers” and those under time pressure paid more to develop systems than those who startup gradually and can use software already developed by vendors for others.
- Footprint/scope has some impact on both startup and ongoing costs.
- Extent of cost subsidization. Some ISO/RTO startup costs were paid for by members rather than by the ISO/RTO. Similarly, some ISO/RTOs pay for costs that are borne directly by members in other ISO/RTOs. For example, CAISO subsidized/paid for the communications infrastructure, and also subsidizes ongoing communications costs).
- Geographic cost differences in salaries and other costs that affect startup and ongoing costs.

CAISO has valued its past participation in more comprehensive benchmarking studies. However, such comparisons require the support of peers and significant staff time and accordingly, are not feasible to prepare on an annual basis. The willingness and ability of other ISOs to participate in such efforts has also varied.

Conclusion

CAISO management has expressed in the past its support for benchmarking and remains committed to such efforts. While both high-level comparisons and more comprehensive studies have their limitations, we recognize the value of understanding where our services and costs stand against peers, and will continue to look for opportunities to conduct and participate in such comparisons.