Marginal Loss Surplus Allocation Study
(Progress Report)

Farrokh Rahimi

Principal Market Engineer

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Overview

- Market Initiatives Stakeholder Meeting of July 18-19:
  - Agreed upon study objective and scope
  - Agreed upon study framework and approach
  - Agreed upon study bookends
  - Did not specify threshold parameter for "significant impact" outside bookends
- Study Progress
  - Doing the study as specified requires more time than initially anticipated
  - Made short cuts and simplifications to get initial indications of the level of impact
- Objective of Today's Meeting
  - Discuss interim results
  - Decide if CAISO should devote more time to do the study as initially proposed

Agreed Upon Scope of the Study

- Determine the impact of regional vs system-wide allocation of MLS to Measured Demand.

- Only two Regions will be considered in the study: Northern Region (NP15 plus ZP26) and Southern Region (SP26)

Accounting for Impact of Path 26 Flow

- To address uncertainty regarding cause of losses in each region for each hour:
  - If Path 26 flow is N-S, allocate Path 26 losses and marginal losses and a fraction (P26 NS Factor) of Northern Region losses and marginal losses to the Southern Region

    P26 NS Factor = (Path 26 Flow)/(NR Load + Path 26 Flow)

  - If Path 26 flow is S-N, allocate Path 26 losses and marginal losses and a fraction (P26 SN Factor) of Southern Region losses and marginal losses to the Northern Region

    P26 SN Factor = (Path 26 Flow)/(SR Load + Path 26 Flow)

- Use two bookends for P26 Factors: One bookend as above; the other bookend 0.

Agreed Upon Study Framework

- For each hour of the year use the LMP study results to:
  - Determine marginal cost of losses to serve the demand in each region (two bookends).
  - Determine the actual cost of the losses (MWh) to serve the demand in each region (two bookends).
  - Compute the hourly MLS for each region as the difference of the above (two bookends).
  - Compute the "Demand" in each region

- Compute average annual regional MLS rebate rate as follows:
  - Compute the annual MLS for each region by adding hourly MLS for that region (two bookends).
  - Compute the annual Demand for each region by adding hourly Demand for that region
  - Compute a MLS rebate rate ($/MWh) for each region by dividing the annual MLS by the annual Demand for the region (two bookends).

Study Framework (Cont'd)

- For each hour of the year use the LMP study results to:
  - Determine marginal cost of losses to serve the Demand system-wide.
  - Determine the actual cost of the losses (MWh) to serve the Demand system-wide.
  - Compute the hourly MLS system-wide as the difference of the above.
  - Compute the system-wide Demand. [Note: This is the sum of the regional Demands for the hour]

- Compute average annual system-wide MLS rebate rate as follows:
  - Compute the annual MLS system-wide by adding hourly system-wide MLS
  - Compute the annual Demand system-wide by adding hourly system-wide Demand [Note: This is the sum of the annual regional Demands]
  - Compute a system-wide MLS rebate rate ($/MWh) by dividing the annual system-wide MLS by the annual system-wide Demand.

Study Framework (Cont'd)

- Thresholds:
  - The difference between the two bookend annual MLS rates for each region represent the uncertainty in the regional MLS rebate rate
  - If the average annual MLS rebate rate falls within the average annual regional bookend rates, it substantiates that the filed Tariff regarding MLS rebate is just and reasonable.
  - If the average annual MLS rebate rate falls outside the average annual regional bookend rates by a threshold (x/MWh; with x to be pre-specified by stakeholder agreement), it is an indicator that a regional based MLS cost allocation to Measured Demand would be an appropriate replacement for the method in the filed Tariff.
  - What should the x threshold be?

Simplifications

- Used 5 months of historical data instead of a year
  - LMPs with distributed load reference available only for May-September 2004
  - Need more time to supplement with prior 7 months, since LMP references are different
- Used "Load" instead of "Demand":
  - Used "net import" per region (with plus minus sign as relevant)
  - Identification of and accounting for exports by tie and corresponding adjustments requires more effort
- Back computed Path 26 Flows and used Path 26 Flow (with plus or minus sign) to adjust Inter-regional loss allocation
  - Using directly computed Path 26 Flow and adjusting inter-regional loss allocation based on the source Region would improve results, but needs more time
- Ignored impact of inter-regional marginal loss shifts based on Path 26 Flow direction

Interim Results
Table 1A - Summary Marginal Loss Surplus (MLS) Amounts ($) for May-Sep. 2004
(Preliminary Results with Simplifications)

Month	System Wide MLS	System Load Ratio Method (Filed Methodology)		No Path 26 Adjustment Bookend		Path 26 Adjustment Bookend	
		NP15 Allocation of Total MLS Based on Ratio of Load	SP15 Allocation of Total MLS Based on Ratio of Load	NP15 Regional MLS with No Path 26 Adjustment	SP15 Regional MLS with No Path 26 Adjustment	NP15 Regional MLS with Path 26 Adjustment	SP15 Regional MLS with Path 26 Adjustment
May 04	$22.2 M	$9.9 M	$12.3 M	$11.2 M	$11.0 M	$10.0 M	$12.2 M
June 04	$25.4 M	$11.8 M	$13.6 M	$14.7 M	$10.7 M	$12.7 M	$12.7 M
July 04	$29.6 M	$13.6 M	$16.0 M	$17.8 M	$11.8 M	$14. 9 M	$14.7 M
Aug. 04	$28.8 M	$13.3 M	$15.5 M	$17.1 M	$11.7 M	$14. 6 M	$14.2 M
Sept. 04	$22.7 M	$10,2 M	$12.5 M	$12.4 M	$10.3 M	$9. 6 M	$13.1 M
Total	$128.7 M	$58.8 M	$69.9 M	$73.2 M	$55.5 M	$61.8 M	$66.9 M

Interim Results

Table 1B - Summary Marginal Loss Surplus (MLS) Rebate Rates ($/MWh Load)
(Preliminary Results with Simplifications)

Month	System Wide MLS	System Load Ratio Method (Filed Methodology)		No Path 26 Adjustment Bookend		Path 26 Adjustment Bookend	
		NP15 Allocation of Total MLS Based on Ratio of Load	SP15 Allocation of Total MLS Based on Ratio of Load	NP15 Regional MLS with No Path 26 Adjustment	SP15 Regional MLS with No Path 26 Adjustment	NP15 Regional MLS with Path 26 Adjustment	SP15 Regional MLS with Path 26 Adjustment
May 04	$1.13	$1.13	$1.14	$1.27	$1.02	$1.14	$1.13
June 04	$1.26	$1.26	$1.26	$1.58	$0.99	$1.36	$1.18
July 04	$1.31	$1.30	$1.31	$1.71	$0.97	$1.43	$1.21
Aug. 04	$1.29	$1.29	$1.29	$1.65	$0.98	$1.41	$1.18
Sept. 04	$1.07	$1.07	$1.07	$1.30	$0.88	$1.01	$1.12
Total	$1.22	$1.21	$1.22	$1.51	$0.97	$1.28	$1.16

Next Steps ?