



**GMC Unbundling Steering Committee  
Meeting Agenda  
July 19, 1999  
10:00 a.m. – 3:00 p.m. in 101A-1a**

- |                         |   |
|-------------------------|---|
| 10:00 a.m. – 12:30 a.m. | Discuss Project Calendar.<br>Develop action plan to present<br>Unbundling Proposal at April 2000<br>Board Meeting with implementation by<br>Jan. 1, 2001. |
| 12:00 p.m. – 1:00 p.m.  | Lunch   |
| 1:00 p.m. – 2:00 p.m.   | Cost Allocation (Unbundling) behind the<br>Section 205 GMC filing on April 30,<br>1999.   |
| 2:00 p.m. – 3:00p.m.    | Discussion of Billing Determinants.   |

Open discussions of any additional comments are welcome

**GMC Unbundling Steering  
Committee Meeting  
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**Sign-in Sheet**

*add in god her signature*

Michelle Wynne	706	MZA Grid Svc.
Scott Klurke	706	Swisher Berlin Shereff Friedman, LLP
Cathy Hood		ISO
Phil Leiber	X2168	ISO
		ISO
ED		SINTRA ENERGY
Barbara Bankovich		B&I/Industrial
Jim Price		CPUC OFFICE OF RATEMAKERS ADVOCATES
TONG WU		PG & E
Tony Lam		CDWR
Mike Brozo		TANC
Ellen Banaghan		TCA Gr Enron
MICHELLE WINDMILLER		ISO
Bill Regan		ISO
Nick Henery		SINUD
Michael Epstein		ISO
Charlotte Martin		ISO
ROBERT BERRY		APX b.m.p.x.c.
Steve Franklin		ISO



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**RSVP's for Meeting**

✓ Ellen Banaghan	Tabors Caramanis... <i>TCF for Enlow</i>
✓ Barbara Barkovich	Barkovich & Yap / <i>Industrials</i>
✓ Jim Price	<i>CPUC office of Ratepayer Advocates</i>
✓ Robert Berry	APX - <i>berry@apx.com</i>
✓ Mike Brozo	Resource Management - <i>TRNC</i>
✓ Nick Henery	SMUD
✓ Carolyn Kehrein (Call In) ?	Energy Management
✓ Tony Lam	CDWR
✓ Ed Lucero	Sempra
✓ Tong Wu	PG & E
✓ Michele Wynne - <i>call in</i>	MZA Grid Services
✓ Scott Klurfield - <i>call in</i>	
✓ Steve Greenleaf	CAISO
✓ Deanne Nelsen	CAISO
✓ Michelle Windmiller	CAISO
✓ Cathy Hood	CAISO
✓ Phil Leiber	CAISO
✓ Michael Epstein	CAISO
✓ Charlotte Martin	CAISO
✓ Bill Regan	CAISO
✓ Tony Braun	CMUA
✓ Farook Nakhuda	ISO
✓ Fred LCC	ISO

*email list of people*

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Jim Price	
Robert Berry	APX
Mike Brozo	Resource Management
Nick Henery	SMUD
Carolyn Kehrein (Call In)	Energy Management
Tony Lam	CDWR
Ed Lucero	Sempra
Tong Wu	PG & E
Michele Wynne	MZA Grid Services
Steve Greenleaf	CAISO
Deanne Nelsen	CAISO
Michelle Windmiller	CAISO

## GMC Unbundling Steering Committee 7/19/99 Meeting Notes

### Present:

Michelle Wynne (Conference Call)	MZA Grid Services
Scott Klurfeld (Conference Call)	Swidler Berlin Shereff
Ed Lucero	Sempra Energy
Barbara Barkovich	Barkovich & Yap/ Industrials
Jim Price	CPUC Office of Ratepayer Advocates
Tong Wu	PG & E
Tony Lam	CDWR
Mike Brozo	TANC
Ellen Banaghan	Tabors Caramanis & Assoc. for Enron
Nick Henery	SMUD
Robert Berry	APX
Tony Braun	CMUA
Bill Regan	CAISO
Cathy Hood	CAISO
Phil Leiber	CAISO
Deanne Nelsen	CAISO
Michelle Windmiller	CAISO
Mike Epstein	CAISO
Charlotte Martin	CAISO
Steve Greenleaf	CAISO
Farouk Nakhuda	CAISO
Fred Lee	CAISO
Don Fuller	CAISO

### Review of Calendar

Discussed policy calendar from June Board Meeting. Proposal is due to Board by April of 2000. Consensus to review calendar after issues.

### GMC Cost Allocation Methodology: Presented by Phil Leiber (See slides)

Billing Determinants need to be defined to see how much some of the figures could sway.

Questions:

Michelle Wynne: What about the wheeling option? She will provide a paragraph to Mike Epstein so that this can be discussed in detail at another meeting

The five buckets and their approximate percentage of the GMC were discussed:

Control Area Operations	35%
Scheduling	11%
Congestion Management	7%
Market Operations	23%
Billing & Settlements	24%

Operating Costs were broken into buckets by:

Directly chargeable departments (estimates by each director with a write up of rationale)  
Overhead departments (allocated based on percentages of direct costs)

Significant Item: discussion of MCI Telecommunications Costs

6% assigned to Market Operations

Remainder allocated based on ISO headcount

There was a long discussion of how this \$30 million should be allocated.

What is the cost of communications for each bucket, then spread "premium"

**Debt Service:**

Infrastructure, Phase II costs and Capital expenditures allocated to buckets based on software, remaining Startup Costs and Working Capital allocated based on operating expense allocation. Percentages applied to annual debt service payments. (See slides)

Consensus that five buckets are adequate.

**Billing Determinant Discussion (In detail – see flip chart):**

**Control Area Operations**

Policy - Narrowly defined list that ALL should pay for.

Metered Load and exports - Most favored billing determinant

Issues for further discussion: Net vs. Gross, Exports, and Control Area vs. Controlled Grid

Participant Charge - Distortion if not volumetric

Generation - Should both generation and load be billed?

Deviation - Discourages Real Time Market

**Scheduling - (has manual processing)**

Policy - Clear rule on what operational scheduling should be charged

Metered Load – Question Is scheduling 1000MW more expensive than scheduling 100MW?

Scheduled Load – Most favored billing determinant

Issues for further discussion: Net vs. Gross, Exports, and Control Area vs. Controlled Grid

Number of Schedules - Disincentive to submission of data

**Congestion Management**

Policy - Are FTR & Congestion both included

Metered load

MWh of new firm uses

Total MW of metered demand

Interzonal scheduled load – Most favored billing determinant

Include existing contracts

Would still have congestion issue even with 100% FTR's

Question – This bucket amounts to only 7% is this a necessary bucket to bill?

**Market Operations**

Total MWh sold and MWh bought-

Billing on gross units purchased and sold in A/S and real time market

Should this include the day-ahead, hour-ahead and real-time markets?

Exclude involuntary charge types like Neutrality & UFE

Billing on dollars or MWh transacted?

This would exclude self provisions and inter SC trades

Metered Load

Number of Schedules

This determinant could lead to distortion

Question of how Market Surveillance and Public information are billed in this area

All vs. only buyers

**Billing, Metering & Settlements**

Number of statements – Could lead to distortion

Charge per item - May lead to distortion

Metered Load

Flat fee number of scheduling statements

Questions - Is a fixed charge appropriate?

Should metering be billed separately?

**MCI Cost Allocation discussed:**

Costs to build separate systems then allocate "premium".  
Reliability of grid vs. market  
Possible litigation with vendor restricting information and comparability

**Next Steps:**

ISO to send out today's topics  
GMC Unbundling Steering Committee Members to get input back to ISO by Thursday, August 12, 1999.  
Tentative GMC Unbundling Steering Committee Meeting scheduled for Thursday, August 19 1999  
(Week before Board Meetings).  
½ day for Input by Committee Members on Billing Model.  
½ day on Topics.





**CALIFORNIA ISO**

California Independent  
System Operator

# GMC Cost Allocation Methodology

Presentation to Unbundling Working Group  
July 19, 1999

Phil Leiber



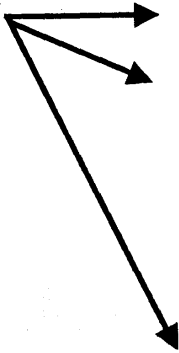
# CALIFORNIA ISO

California Independent System Operator

Single Rate

5 Buckets

All CAISO Services



Control Area Operations

Scheduling

Congestion

Market Operations

Settlements & Billing



# CALIFORNIA ISO

California Independent  
System Operator

## Control Area Operations:

- Grid operations in real time, including real time energy balancing, ancillary services, outage coordination, emergency management.
- Management of the control area activities including must-run units.
- Performing operation studies, system security analyses, transmission maintenance standards and system planning to ensure overall reliability.

Cost Allocation:

35%

Possible Billing Determinants:

- MW hours of metered energy



# CALIFORNIA ISO

California Independent System Operator

## Scheduling:

- Scheduling generation, imports, exports and wheeling in the day ahead and hour ahead of actual operations.

**Cost Allocation:**

**11%**

## Possible Billing Determinants:

- MW hours metered
- Number of schedules



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## Congestion:

- Congestion exists when power flowing on a transmission path exceeds path capacity. Congestion management is conducted by the ISO during the scheduling process, resulting in the economic rationing of transmission service to prevent congestion.

*Cost Allocation:*

*7%*

## Possible Billing Determinants:

- MW hours of new firm transmission
- Firm transmission rights
- Total MW hours of metered demand



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## Market Operations:

- SC Related Market Activity: posting of market information, real time energy balancing, conducting ancillary services auction and market surveillance.
- Issue resolution by SC Client Relations.

**Cost Allocation:**  
23%

## Possible Billing Determinants:

- MW hours sold into market vs. MW hours bought out
- Metered load
- Number of schedules



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## Billing & Settlements:

- Issuance of statements by Billing & Settlements.
- Metering.
- Dispute resolution and client interaction by Client Relations.

**Cost Allocation:**

**24%**

## Possible Billing Determinants:

- Number of statements
- Charge per item



## **Cost Allocation Methodology: Operating Costs**

### *Directly chargeable departments:*

Direct individual ISO Managers & Directors to analyze their activities, and assign their costs to the 5 categories.

### *Overhead departments:*

Assign to 5 categories based on various results of direct assignments.

Example: OSAT Group--Operations Support and Training. Assigned to 5 categories based on headcount allocations of directly chargeable operations groups.

Example: Finance. Assigned based on overall results of allocations of Operations, Client Services, and IT groups.





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## **Cost Allocation Methodology: Operating Costs**

*Significant Item:* MCI Telecommunications Costs

Contract charges for:

- Bandwidth & WAN Infrastructure
- Usage Charges
- Data Premises
- Voice Premises
- Shared Network Services

A Portion (6%) of these costs are directly assigned to Market Operations, based on bandwidth set aside for "Connected Entities".

Remainder allocated based on ISO headcount, either of :

- 1) ISO as a whole, or
- 2) Only areas deemed to significantly use the system



## Cost Allocation Methodology: Debt Service

Approximately 25% of GMC consists of debt service related to 1998 Series ABCD Bond issuance of \$301.4 million (31% including Operating Reserve funding)

Bond issuance provided funds for:

Infrastructure

Startup costs

Capital Expenditures/Phase II

Working Capital



## Cost Allocation Methodology: Debt Service

	<u>% of Total</u>	<u>Allocation Method Used</u>
Infrastructure/Other.	53%	Analysis of contracts for systems built
Startup costs	16%	Results of operating cost allocation
Capital Expenditures/Phase II	23%	Analysis of contracts for systems built/planned
Working Capital	8%	Results of operating cost allocation



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## Cost Allocation Methodology: Debt Service: Infrastructure

- EMS: Direct Assignment to Control Area Operations
- MCI/IBM Contracts: Same as Ongoing MCI/IBM Costs
- MDAS: Same as Metering operating costs
- ISO Alliance (SA/SI/BBS): Analysis of contract milestones and assignment to 5 categories:
  - Two steps:
    1. Milestones to Systems (SA/SI/BBS)
    2. Systems (SA/SI/BBS) to Buckets

Work performed by CAISO Operations personnel.



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## Cost Allocation Methodology: Debt Service: Infrastructure

Some direct assignments:

Settlement module testing complete(55) \$911,195  
-->SETTLEMENTS AREA OF ALLIANCE CONTRACT--> SETTLEMENTS BUCKET

Some allocations to multiple buckets:

Individual Energy Imports Build Complete - 71a \$148,213  
50% Settlements, 25% SA, 25% SI OF ALLIANCE CONTRACT-->  
50% Directly assigned to SETTLEMENTS BUCKET  
25% SA/25% SI assigned to: 18% Control Area, 18% Scheduling,  
18% Congestion, 46% Market

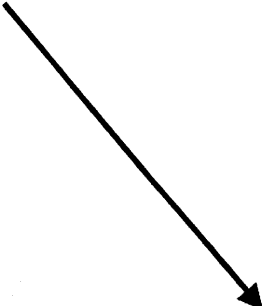


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## Cost Allocation Methodology: Debt Service: Infrastructure

Total	Accounting	Billing	Settlement	SI	SA
54,984,033	2,928,315	6,757,528	13,283,231	16,331,324	15,683,635
TOTAL COSTS TO ALLOCATE					



ALLOCATED TO:				
CONTROL AREA	SCHEDULING	CONGESTION	MARKET	BILLING & SETTLEMENT
9.2%	18.9%	9.8%	24.0%	38.1%



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## Cost Allocation Methodology: Debt Service: Phase II and Capital Expenditures

Phase II: 17% of debt service

Method: Similar process as for ISO Alliance (SA/SI/BBS):

Analysis of contract milestones and assignment to 5 categories by CAISO Operations personnel/Phase II team.

Capital Expenditures: 6% of debt service

Definition: Systems of overall benefit to CAISO. Example: EDMS, facilities, Information Security, Data Warehousing, Computing system upgrades

Method: Based on results of allocations of Operating Costs.



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## Cost Allocation Methodology: Debt Service: Phase II Costs

System	Projected Cost	Grid Ops & Reliability (Control Area Operations)	Scheduling	Congestion	Market Function	Settlement & Billing
<b>Dollars</b>						
BBS	\$ 4,452,831	\$ 50,000	\$ 50,000	\$ 164,048	\$ 547,446	\$ 3,641,337
EMS	\$ 8,458,814	\$ 8,458,814	\$ -	\$ -	\$ -	\$ -
IT Central	\$ 70,000	\$ -	\$ -	\$ -	\$ -	\$ 70,000
M/DAS	\$ 213,000	\$ -	\$ -	\$ -	\$ -	\$ 213,000
Multiple	\$ 13,092,516	\$ 785,094	\$ 515,042	\$ 2,805,072	\$ 4,369,677	\$ 4,617,632
SA	\$ 13,875,601	\$ 3,817,734	\$ 765,938	\$ 3,287,761	\$ 5,752,161	\$ 251,988
SA/Sl	\$ 9,820,376	\$ 2,470,000	\$ 812,259	\$ 513,400	\$ 6,024,718	\$ -
Sl	\$ 5,246,935	\$ 983,446	\$ 1,215,847	\$ 388,742	\$ 2,577,022	\$ 81,879
<b>Total</b>	<b>\$ 55,230,073</b>	<b>\$ 16,565,087</b>	<b>\$ 3,359,105</b>	<b>\$ 7,159,022</b>	<b>\$ 19,271,024</b>	<b>\$ 8,875,837</b>
<b>Total Carried Forward to Cost Allocation Matrix- See Note</b>						
	\$ 52,243,000	\$ 15,669,178	\$ 3,177,431	\$ 6,771,832	\$ 18,228,766	\$ 8,395,794
<b>Percentage</b>						
BBS	100%	1%	1%	4%	12%	82%
EMS	100%	100%	0%	0%	0%	0%
IT Central	100%	0%	0%	0%	0%	100%
M/DAS	100%	0%	0%	0%	0%	100%
Multiple	100%	6%	4%	21%	33%	35%
SA	100%	28%	6%	24%	41%	2%
SA/Sl	100%	25%	8%	5%	61%	0%
Sl	100%	19%	23%	7%	49%	2%
<b>Total</b>	<b>100%</b>	<b>30%</b>	<b>6%</b>	<b>13%</b>	<b>35%</b>	<b>16%</b>