

Appendix D

Transmission Economic Assessment Methodology (TEAM) Member Notification List

February 3, 2004 – Transmission Economic Assessment Methodology Stakeholder Meeting

- Agenda
- Market Notice (2)
- TEAM Stakeholder Meeting Sign In Sheet
- TEAM Stakeholder Meeting Conference Call Participant Report
- Notice to participate in TEAM Sub-committee's

NOTE: Presentations available at:

<http://www1.caiso.com/docs/2003/03/18/2003031815303519270.html>

March 16, 2004 – Transmission Economic Assessment Methodology Stakeholder Meeting

- Agenda
- Market Notice
- TEAM Stakeholder Meeting Sign In Sheet
- TEAM Stakeholder Meeting Conference Call Participant Report
- TEAM Stakeholder Meeting Conference Call Playback Information
- TEAM Stakeholder Meeting Conference Call Playback Information Participant Report

NOTE: Presentations available at:

<http://www1.caiso.com/docs/2003/03/18/2003031815303519270.html>

April 28, 2004 – Transmission Economic Assessment Methodology Stakeholder Meeting

- Agenda
- Market Notice
- TEAM Stakeholder Meeting Sign In Sheet
- TEAM Stakeholder Meeting Conference Call Participant Report
- TEAM Stakeholder Meeting Conference Call Playback Information
- TEAM Stakeholder Meeting Conference Call Playback Information Participant Report

NOTE: Presentations available at:

<http://www1.caiso.com/docs/2003/03/18/2003031815303519270.html>

May 17, 2004 – Market Surveillance Committee Meeting

- Agenda
- Public Notice
- Market Notice (2)
- Market Surveillance Committee Meeting Sign In Sheet
- Market Surveillance Committee Meeting Conference Call Participant Report

NOTE: Presentations available at:

<http://www1.caiso.com/docs/2003/03/18/2003031815303519270.html>

Transmission Economic Assessment Methodology Stakeholder Meeting Base Case Subgroup

- Base Case Subgroup Member Distribution List
- February 9, 2004
 - Agenda/Attachments
 - Attendance List
- February 13, 2004
 - Agenda/Attachments
 - Attendance List
- February 23, 2004
 - Agenda
- February 24, 2004
 - Conference Call Discussion Topics and Issues
- March 10, 2004
 - Agenda
 - Attendance List
 - Summary of Conference Call

Transmission Economic Assessment Methodology Stakeholder Meeting Extreme Events Subgroup

- Extreme Events Subgroup Member Distribution List
- February 17, 2004
 - Agenda
 - Attendance List
- March 8, 2004
 - Agenda
 - Attendance List

Transmission Economic Assessment Methodology Stakeholder Meeting Market Power Subgroup

- Market Power Subgroup Member Distribution List
- February 24, 2004
 - Agenda
- March 9, 2004
 - Agenda

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Agenda
Stakeholder Meeting on Transmission Economic Assessment Methodology
February 3, 2004
CA ISO Board Room
101 Blue Ravine Road
Folsom, CA 95630

Dial-In Info (LISTEN ONLY):

Call-in Number: 800/341-6239
Company: California ISO
Leader: Jeff Miller
Meeting Name: TEAM Stakeholder Meeting

- 10:00 A.M. Introduction, Background & Schedule – Anjali Sheffrin
- 10:20 A.M. Major Issues – Jeff Miller
- 10:30 A.M. What are the options for modeling market power? What are the relative advantages and disadvantages of each? How would appropriate bidding strategies be determined for simulating the future value of potential upgrades? Dr. Frank Wolak (MSC Chairperson)
- Noon Working Lunch
- 12:20 P.M. What benefit tests should be considered when evaluating potential transmission upgrades? How are these tests calculated? -- Mingxia Zhang (CA ISO staff)
- Societal
 - Modified Societal
 - Participant (competitive and market power)
 - Producer
 - Consumer
 - Transmission / Congestion-Right Owner
- 1:20 P.M. What are the assumptions for the base case (nodal, cost-based simulation)? Mohamed Awad (CA ISO staff)
- 1:40 A.M. What tool(s) are being used to implement the CA ISO methodology? What is the current status of that work? Anna Geevarghese (CA ISO staff)
- 2:00 P.M. What is the purpose of sensitivity cases? How many should be modeled and under what conditions? How can these cases be appropriately weighted to derive an expected value? Dr. Ben Hobbs (MSC Member)
- 3:00 P.M. Scope of Next Meeting / Conclusion – Anjali Sheffrin

**REMINDER: Please remember to RSVP
for this important meeting.**

Market Notice
Stakeholder Process and Meeting to Develop
Transmission Economic Assessment Methodology (TEAM)

ISO Market Participants and entities/individuals on the official service list in CPUC Docket #I.00-11-001:

The ISO is initiating a new stakeholder forum to assist in the development of a comprehensive methodology to assess the economic benefits of potential transmission facility upgrades. Staff from the CPUC is expected to participate fully and, where feasible, to co-facilitate the forum. The new economic methodology is the subject of a pending proceeding before the CPUC and intends to serve as the basis to justify new transmission upgrades proposed primarily on economic, rather than reliability, benefits. If you would like to be a member of the stakeholder group, please e-mail Deborah Vanda at dvanda@caiso.com with your name, the entity you represent, your e-mail address, and your phone number.

The first meeting of this stakeholder group is scheduled for February 3rd from 10:00 to 3:00 at the California ISO's offices in Folsom. The draft agenda for the meeting is attached. If you would like to attend this meeting, please RSVP to Deborah Vanda at dvanda@caiso.com. Lunches will only be provided for those that RSVP.

If you have any questions regarding this meeting, please contact Eric Toolson at (916) 608-7156, Email: etoolson@caiso.com

**REMINDER: Please remember to RSVP
for this important meeting.**

Market Notice
Stakeholder Process and Meeting to Develop
Transmission Economic Assessment Methodology (TEAM)

ISO Market Participants and entities/individuals on the official service list in CPUC Docket #I.00-11-001:

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The following number has been set up for those unable to attend that wish to listen in. Please note that those listening in will be unable to participate in the discussions.

| | |
|-----------------|--------------------------|
| Call-in Number: | 800/341-6239 |
| Company: | California ISO |
| Leader: | Jeff Miller |
| Meeting Name: | TEAM Stakeholder Meeting |

If you have any questions regarding this meeting, please contact Eric Toolson at (916) 608-7156, Email: etoolson@caiso.com

TRANSMISSION ECONOMIC ASSESSMENT METHODOLOGY (TEAM) STAKEHOLDER MEETING
CALIFORNIA INDEPENDENT SYSTEM OPERATOR

3-Feb-04

Public Session: 10:00 a.m. - 3:00 p.m.

Offices of the California ISO, Lake Tahoe Conference Rooms

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Feb. 3, 2004

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Conference Participant Report
 Conf. Date: 02/03/2004
 Conf. Time: 10:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 5258843

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|------------------|------------------------|--------|--------------|
| 12:54:41 | 18:31:15 | MARYANNE CAUSLEY | RUMLA INC. | | CALIF\MILLER |
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| 12:57:30 | 15:46:51 | TIM EUONG | CITY OF AZUSA | | CALIF\MILLER |
| 12:58:22 | 13:26:46 | LINDA BROWN | SDG&E | | CALIF\MILLER |
| 12:58:42 | 16:34:39 | MANUEL ALVAREZ | SOUTHERN CA EDISON | | CALIF\MILLER |
| 12:59:20 | 18:31:15 | LARRY LUNA | NEVADA POWER | | CALIF\MILLER |
| 12:59:58 | 18:31:15 | ROBERT DELGADO | CITY OF RIVERSIDE | | CALIF\MILLER |
| 13:00:16 | 17:26:11 | MORTEZA SABET | WAPA | | CALIF\MILLER |
| 13:00:22 | 18:08:33 | KEN SIMS | SILICON VALLEY POWER | | CALIF\MILLER |
| 13:00:54 | 17:19:30 | JENNIFER JENSEN | NRG ENERGY | | CALIF\MILLER |
| 13:01:13 | 18:31:04 | JOHN BURNETT | LADWP | | CALIF\MILLER |
| 13:01:15 | 15:20:39 | BRUCE MCLAUGHLIN | BRAUN AND BLAISING | | CALIF\MILLER |
| 13:01:36 | 13:09:25 | MR J MILLER LDR | | | LDR\MILLER |
| 13:01:46 | 14:15:27 | SHAUNA O'DONNELL | CA ENERGY MARKETS | | CALIF\MILLER |
| 13:01:48 | 17:31:42 | WES WILLIAMS | SOUTHERN CA EDISON | | CALIF\MILLER |
| 13:01:49 | 15:16:00 | BERNIE LESIEUTRE | LAWRENCE BERKLEY | | CALIF\MILLER |
| 13:02:38 | 15:50:40 | KAREN GRIFFIN | CA ENERGY COMMISSION | | CALIF\MILLER |
| 13:02:49 | 15:18:20 | PAUL STECKELEY | TRANSENERGY | | CALIF\MILLER |
| 13:02:51 | 14:18:16 | BARRY FLYNN | FLYNN RCI | | CALIF\MILLER |
| 13:02:57 | 13:31:35 | MICKEY SIEGEL | EPG | | CALIF\MILLER |
| 13:03:18 | 18:02:50 | ZORA LAZIC | BLG | | CALIF\MILLER |
| 13:03:22 | 14:30:30 | ROBERT SPARKS | CALIFORNIA ISO | | CALIF\MILLER |
| 13:03:25 | 17:37:32 | TOD O'CONNOR | SOLARGENICS ENERGY | | CALIF\MILLER |
| 13:03:26 | 13:26:46 | DAVID CLARK | ECONOMIC PLANNING RES. | | CALIF\MILLER |
| 13:03:27 | 14:33:00 | JOHN SEELKE | NEW ENERGY ASSOCIATES | | CALIF\MILLER |
| 13:03:35 | 15:09:36 | HELEN VESSER | INPOWER CORP. | | CALIF\MILLER |
| 13:04:23 | 15:20:07 | JESSICA BERTHOLD | DOW JONES | | CALIF\MILLER |
| 13:05:38 | 15:16:23 | JIMAL JAFFARY | SOUTHERN CA EDISON | | CALIF\MILLER |
| 13:05:46 | 14:54:00 | KATHLEEN WRIGHT | CDWR | | CALIF\MILLER |
| 13:06:23 | 18:30:59 | ROBERT JENKINS | MIRANT | | CALIF\MILLER |
| 13:06:40 | 15:16:22 | MATT LOWRY | WESTERN INTERSTATE | | CALIF\MILLER |
| 13:06:43 | 14:49:59 | SCOTT LOGAN | ORA | | CALIF\MILLER |

Conference Participant Report
 Conf. Date: 02/03/2004
 Conf. Time: 10:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 5258843

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|--------------------|------------------------|--------|-------------|
| 13:07:09 | 17:32:16 | KEN KOHTZ | SILICON VALLEY POWER | | CALIFMILLER |
| 13:08:07 | 13:27:24 | KATIE KAPLAN | IEP | | CALIFMILLER |
| 13:09:21 | 18:30:48 | FARROKH RAHIMI | CALIFORNIA ISO | | CALIFMILLER |
| 13:09:25 | 18:31:15 | MR J MILLER LDR | | | CALIFMILLER |
| 13:10:55 | 13:26:46 | RICHARD O'NEIL | FERC | | CALIFMILLER |
| 13:18:23 | 15:55:41 | YVONNE WALKUP | SOUTHERN CA EDISON | | CALIFMILLER |
| 13:23:19 | 18:30:33 | DENNIS PHILLIPS | BONNEVILLE POWER ADMIN | | CALIFMILLER |
| 13:24:02 | 14:46:44 | DARRELL ANTRICH | ENERGY CORP. TRADING | | CALIFMILLER |
| 13:28:20 | 18:31:15 | LINDA BROWNJR | SDG&E | | CALIFMILLER |
| 13:29:16 | 15:23:19 | RICHARD O'NEILJR | FERC | | CALIFMILLER |
| 13:33:47 | 15:15:20 | LON PETERS | PUBLIC GENERATING | | CALIFMILLER |
| 13:49:33 | 15:09:33 | SAM KWONG | WILLIAMS | | CALIFMILLER |
| 13:59:34 | 14:34:02 | MIKE BROZO | TANC | | CALIFMILLER |
| 14:09:17 | 16:28:57 | CHAD WOZNIAK | SILICON VALLEY POWER | | CALIFMILLER |
| 14:17:05 | 15:18:14 | RICH LAUCKHART | HENWOOD | | CALIFMILLER |
| 14:23:22 | 16:22:55 | BARRY FLYNNJR | FLYNN RCI | | CALIFMILLER |
| 14:36:54 | 14:44:27 | JIM BRYNE | RMATS | | CALIFMILLER |
| 14:39:14 | 18:31:15 | MIKE EVANS | CORAL POWER | | CALIFMILLER |
| 14:50:04 | 18:30:40 | MICKEY SIEGELJR | EPG | | CALIFMILLER |
| 15:13:43 | 17:32:54 | SAM KWONG | WILLIAMS | | CALIFMILLER |
| 15:21:44 | 16:32:59 | JIM HICKS | PACIFIC CORP | | CALIFMILLER |
| 15:27:55 | 15:36:34 | MATT LOWRYJR | WESTERN INTERSTATE | | CALIFMILLER |
| 15:30:43 | 16:22:36 | BRUCE MCLAUGHLINJR | BRAUN AND BLAISING | | CALIFMILLER |
| 15:30:56 | 16:05:42 | BARRY FLYNNJR | FLYNN RCI | | CALIFMILLER |
| 15:36:12 | 15:46:49 | THOMAS FLINN | CA POWER AUTHORITY | | CALIFMILLER |
| 15:37:19 | 17:24:34 | RICHARD O'NEILJR | FERC | | CALIFMILLER |
| 15:37:45 | 16:17:24 | MATT LOWRYJR | WESTERN INTERSTATE | | CALIFMILLER |
| 15:46:57 | 15:58:42 | BERNIE LESIEUTREJR | LAWERENCE BERKLEY | | CALIFMILLER |
| 15:47:14 | 15:58:13 | THOMAS FLINNJR | CA POWER AUTHORITY | | CALIFMILLER |
| 15:50:36 | 18:31:15 | ROBERT SPARKSJR | CALIFORNIA ISO | | CALIFMILLER |
| 15:51:57 | 18:31:13 | RICH LAUCKHARTJR | HENWOOD | | CALIFMILLER |
| 16:09:06 | 18:31:14 | CHARLES FAUST | FERC | | CALIFMILLER |

Conference Participant Report
 Conf. Date: 02/03/2004
 Conf. Time: 10:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 5258843

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|--------------------|------------------------|--------|-------------|
| 16:14:04 | 18:30:43 | HELEN VESSERJR | INPOWER CORP. | | CALIFMILLER |
| 16:14:47 | 16:36:15 | DON GARBER | SEMPRA | | CALIFMILLER |
| 16:25:28 | 17:39:45 | BRUCE MCLAUGHLINJR | BRAUN AND BLAISING | | CALIFMILLER |
| 16:27:30 | 18:31:14 | JAMAL JASARI | SOUTHERN CA EDISON | | CALIFMILLER |
| 16:32:28 | 18:31:11 | KATHLEEN WRIGHTJR | CDWR | | CALIFMILLER |
| 16:36:08 | 18:02:25 | MATT LOWRYJR | WESTERN INTERSTATE | | CALIFMILLER |
| 16:37:27 | 18:07:24 | BARRY FLYNNJR | FLYNN RCI | | CALIFMILLER |
| 16:41:00 | 18:29:46 | CHAD WOZNIAKJR | SILICON VALLEY POWER | | CALIFMILLER |
| 17:10:27 | 18:31:14 | MARY JOE HANNAN | BONNEVILLE POWER ADMIN | | CALIFMILLER |
| 17:19:04 | 17:56:11 | THOMAS FLINNJR | CA POWER AUTHORITY | | CALIFMILLER |
| 17:52:19 | 18:06:14 | SCOTT LOGANJR | ORA | | CALIFMILLER |
| 17:55:02 | 18:20:21 | JESSICA BERTHOLDJR | DOW JONES | | CALIFMILLER |
| 17:58:35 | 18:30:43 | BRUCE MCLAUGHLINJR | BRAUN AND BLAISING | | CALIFMILLER |
| 18:19:26 | 18:31:15 | MATT LOWRYJR | WESTERN INTERSTATE | | CALIFMILLER |

If you are interested in participating in one of the sub-committee's listed below, please Email the Chairperson of that committee by the end of this week.

- I. Base case assumptions for network and production costs
Chairperson: Eric Toolson Email: Etoolson@caiso.com

- II. Choice of extreme events and choice of weights
Chairperson: Mingxia Zhang Email: Mzhang@caiso.com

- III. Approach to quantifying market power benefits and appropriate benefits tests
Chairperson: Mingxia Zhang Email: Mzhang@caiso.com

Agenda
Stakeholder Meeting
Transmission Economic Assessment Methodology (TEAM)
March 16, 2004
10:00 a.m. – 3:00 p.m.
CA ISO Board Room
101 Blue Ravine Road, Folsom, CA 95630
Dial-In Number: (800) 341-6239
Conference ID #: 5980781

- 10:00 A.M. Overview of Agenda and Methodology – Anjali Sheffrin
- Introductions
 - Purpose of methodology
 - Review of methodology
 - Progress since last meeting
 - Phase I and II
 - Purpose of today's meeting
 - Questions
- 10:30 A.M. Base Case Assumptions Subgroup Report – Eric Toolson
- Loads and fuel prices
 - Renewable portfolios standards
 - Planning reserve margins
 - Economic entry
 - Resource additions / retirements
 - Potential Phase II enhancements
 - Questions
- 11:15 A.M. Market Price Subgroup Report – Keith Casey
- Review of RSI methodology
 - Current implementation status
 - Potential Phase II enhancements
 - Questions
- 12:00 P.M. Working Lunch – Status Report from Regional Transmission Forums (SSG-WI, STEP) – Jeff Miller

- 12:45 P.M. Extreme Events Subgroup Report – Mingxia Zhang
- Sensitivity identification
 - Sensitivity weighting
 - Subjective contingencies
 - Prioritization of sensitivities
 - Potential Phase II enhancements
 - Questions
- 1:30 P.M. Modeling of the Path 26 Upgrade Project – Mohamed Awad
- Definition of upgrade case
 - Questions
- 1:45 P.M. Initial Base Case Results – Mohamed Awad and Anna Geevarghese
- Annual results
 - Monthly results
 - Source of benefits – description
 - Selected flow duration curves
 - Overall economics of initial studies
 - Questions
- 2:15 P.M. Stakeholder Input – Eric Toolson, Moderator¹
- 2:45 P.M. Project Schedule / Conclusion – Anjali Sheffrin
- 3:00 P.M. Adjourn

¹ Please notify Linda Wright (lwright@caiso.com, 916-351-4470) in advance if you would like to make a presentation to the group so that all logistical details can be worked out in advance. To facilitate as many presentations as possible, presentations will be limited to 5 minutes. If you would like to distribute copies of your presentation, please prepare 40 copies in advance of the meeting and coordinate with Linda Wright so that the materials can be posted on the website (<http://www1.caiso.com/docs/2003/03/18/2003031815303519270.html>) and the participants listening in can have access to your material during the meeting.

Market Notice
Transmission Economic Assessment Methodology (TEAM)
Stakeholder Meeting - March 16, 2004

ISO Market Participants/TEAM Stakeholders:

The next meeting of this stakeholder group is scheduled for Tuesday, March 16th from 10:00 to 3:00 at the California ISO's offices in Folsom. The agenda for the meeting will follow later this week. If you would like to attend this meeting, please RSVP by noon on March 15th to Linda Wright at <mailto:lwright@caiso.com>. Lunches will only be provided for those that RSVP.

A number for those unable to attend that wish to listen in will be included on the agenda. Please note that those listening in will be unable to participate in the discussions.

If you have any questions regarding this meeting, please contact Eric Toolson at (916) 608-7156.

Client Relations Communications.0725
CRCommunications@caiso.com

**TRANSMISSION ECONOMIC ASSESSMENT METHODOLOGY (TEAM) STAKEHOLDER MEETING
CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

March 16, 2004

Public Session: 10:00 a.m. - 3:00 p.m.

Offices of the California ISO, Lake Tahoe Conference Rooms
MEETING SIGN-IN

| INITIAL | NAME | COMPANY | EMAIL ADDRESS | PHONE NUMBER |
|---------|---------------------|---|--|---------------------------|
| | Amirali, Ali | Calpine | aamirali@calpine.com | 415-703-1487 |
| | Benjamin, Rich | CEC | Rbenjamin@energy.state.ca.us | 916-654-4809 |
| | Bracht, Kirk | CPUC | kwb@cpuc.ca.gov | 415-703-2868 |
| | Brown, Linda | San Diego Gas & Electric | lpbrown@semprautilities.com | 858-654-6477 |
| | Bucaneg, Demetrio | CEC | dbucaneg@energy.state.ca.us | 916-654-4723 |
| | Burnett, John | LADWP | john.burnett@ladwp.com | 213-367-1744 |
| | Causley, Marianne | CEC | Mcausley@energy.state.ca.us | 916-657-3773 |
| | Chang, Ed | Flynn Resource Consultants, Inc. | edchang@flynnrci.com | 925-634-7500 |
| | EI-Gasseir, Mohamed | CERS | mel@water.ca.gov | 916-574-0294 |
| | Falls, Chuck | SRP | czfalls@srpnet.com | 602-236-0965 |
| | Filippi, Jim | Pacific Gas & Electric | JLFa@pge.com | 415-973-6530 |
| | Flynn, Tom | California Power Authority | thomas.flynn@dgs.ca.gov | 916-651-9756 |
| | Gokbudak, Brent | So. Calif. Edison | Brent.Gokbudak@sce.com | 626-302-8694 |
| | Henery, Nick | SMUD | nhenery@smud.org | 916-723-5699/732-5689 |
| | Hunt, Randall | Navigant Consulting, Inc. | rhunt@navigantconsulting.com | 616-631-3276 |
| | Jenkins, Robert | Mirant Corporation | robert.jenkins@mirant.com | 925-287-3124 |
| | Kraska, David | PG&E | dk5@pge.com | 415-973-0328 |
| | Kritikson, Jim | KTA-Kritikson & Assoc. | jdritiksin@yahoo.com | 510-480-7284/909-480-1028 |
| | Lam, Tony | EOB | Tlam@eob.ca.gov | 916-322-8632 |
| | McCluskey, James | CEC | jmccuskey@energy.state.ca.us | 916-654-3911 |
| | McLaughlin, Bruce | Braun Legal (represent Ca. Municipal Utilities Assoc) | mclaughlin@braunlegal.com | 916-326-5812 |
| | Mi, Jingchao | CDWR | | |
| | Pereira, Les | No. Calif. Power Agency | L.es.Pereira@ncpa.com | 916-781-4218 |
| | Rader, Nancy | California Wind Energy Association | nrader@calwea.org | 510-845-5077 |
| | Roberts, Ted | SDG&E | troberts@sempra.com | |
| | Rochlin, Cliff | So. Calif. Gas Company | crochlin@semprautilities.com | 213-244-8222/213-244-2451 |
| | Romanowitz, Hal | | hal@rwitz.net | |
| | Rupp, Steven | R.W. Beck | srupp@nwbeck.com | 916-614-8246 |
| | Schilberg, Gayatri | JBS Energy, Inc. | Gayatri@JbsEnergy.com | 916-372-0534 X104 |
| | Schneider, Susan | Phoenix Consulting | schneider@phoenix-co.com | 916-797-3106 |
| | Skowronski, Mark | Solargenix at Inland Energy Group | miskowronski@inlandenergy.com | 949-856-2200 |

| Status | Last Name | First Name | Representing | Sponsor or Host | Date In | Time In |
|--------|------------|------------|-------------------------|-----------------|----------|---------|
| Active | Amirali | Ali | Calpine | Linda Wright | 03/16/04 | 10:04 |
| Active | Benjamin | Rich | CEC | Linda Wright | 03/16/04 | 10:04 |
| Active | Bracht | Kirk | CPUC | Linda Wright | 03/16/04 | 10:05 |
| Active | Falls | Chuck | SRP | Linda Wright | 03/16/04 | 09:49 |
| Active | Fillippi | Jim | PG & E | Linda Wright | 03/16/04 | 10:51 |
| Active | Flynn | Tom | CPA | Linda Wright | 03/16/04 | 10:49 |
| Active | Gokbudak | Brent | SO. California Edison | Linda Wright | 03/16/04 | 10:05 |
| Active | Henery | Nick | SMUD | Linda Wright | 03/16/04 | 10:50 |
| Active | Hunt | Randall | Navigant Consulting, In | Linda Wright | 03/16/04 | 10:05 |
| Active | Jenkins | Robert | Mirant Corporation | Linda Wright | 03/16/04 | 10:10 |
| Active | Kritikson | Jim | Kritikson & Associates | Linda Wright | 03/16/04 | 09:48 |
| Active | Lam | Tony | EOB | Linda Wright | 03/16/04 | 10:58 |
| Active | McCluskey | James | CEC | Linda Wright | 03/16/04 | 10:05 |
| Active | McLaughlin | Bruce | Braun Legal(CMUA) | Linda Wright | 03/16/04 | 09:48 |
| Active | Pereira | Les | NCPA | Linda Wright | 03/16/04 | 10:10 |
| Active | Rader | Nancy | CWEA | Linda Wright | 03/16/04 | 11:50 |
| Active | Roberts | Ted | SDG & E | Linda Wright | 03/16/04 | 10:50 |
| Active | Rochlin | Cliff | SoCal Gas Company | Linda Wright | 03/16/04 | 09:48 |
| Active | Romanowitz | Hal | | Linda Wright | 03/16/04 | 10:49 |
| Active | Schilberg | Gayatri | JBS Energy, Inc. | Linda Wright | 03/16/04 | 10:05 |
| Active | Schenider | Susan | Phoenix Consulting | Linda Wright | 03/16/04 | 10:05 |
| Active | Skowronski | Mark | Solargenix at IEG | Linda Wright | 03/16/04 | 09:48 |
| Active | Tanghetti | Angela | CEC | Linda Wright | 03/16/04 | 10:41 |
| Active | Xuguang | Leng | CPUC | Linda Wright | 03/16/04 | 10:07 |
| Active | Mi | Jingchao | CDWR | Linda Wright | 03/16/04 | 10:12 |
| Active | Werner | Michael | CDWR | Linda Wright | 03/16/04 | 10:06 |
| Active | Williams | Weston | SCE | Linda Wright | 03/16/04 | 09:44 |
| Active | Arnold | Shaune | LADWP | Linda Wright | 03/16/04 | 09:31 |
| Active | SILSBEE | CARL | SoCal Edison | Linda Wright | 03/16/04 | 09:41 |
| Active | Patel | Kishore | SDG & E | Linda Wright | 03/16/04 | 09:42 |
| Active | Olsson | Ray | EOB | Linda Wright | 03/16/04 | 09:47 |
| Active | Sandhu | Paul | PG & E | Linda Wright | 03/16/04 | 09:56 |
| Active | Hitson | Brian | PG&E | Linda Wright | 03/16/04 | 09:56 |
| Active | Griffin | Karen | CEC | Linda Wright | 03/16/04 | 09:57 |
| Active | Richardson | Gary | Pegasus Consulting | Linda Wright | 03/16/04 | 09:59 |
| Active | Ghadiri | Steve | EOB | Linda Wright | 03/16/04 | 09:59 |
| Active | Turnbull | Jane | LOWV | Linda Wright | 03/16/04 | 10:41 |

**Transmission Economic Assessment Methodology (TEAM)
Stakeholder Meeting**

March 16, 2004

Encore (Playback) Information

Encore Dial-In #: (800) 642-1687

Conference ID #: 5980781

Fast Forward options are:

Press "1" to fast forward 5 seconds

Press "2" to fast forward 30 seconds

Recording available through 9:00 p.m. PST on March 23, 2004

Contact Linda Wright at (916) 351-4470 with any questions.

Conference Participant Report
 Conf. Date: 03/16/2004
 Conf. Time: 10:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 5980781

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|----------------------|------------------------|------------|--------------|
| 12:52:05 | 13:05:29 | MR J MILLER LDR | | | LDR\MILLER |
| 12:57:42 | 18:42:07 | LARRY LUNA | NEVADA POWER COMPANY | 7023675465 | CALIF\MILLER |
| 12:57:51 | 13:14:46 | JOHN BURNETT | LADWP | 2133671744 | CALIF\MILLER |
| 12:58:49 | 18:43:00 | ENCORE RECORD\MILLER | | | CALIF\MILLER |
| 12:58:50 | 17:18:29 | RICHARD TORRES | CITY OF AZUSA | 6268125214 | CALIF\MILLER |
| 12:58:58 | 15:58:55 | ROBERT DELGADO | CITY OF RIVERSIDE | 9093516312 | CALIF\MILLER |
| 13:00:59 | 13:07:49 | HAL ROMANOWITZ | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 13:01:32 | 14:16:08 | DARRELL HOLMES | SOUTHERN CA EDISON | 6263026498 | CALIF\MILLER |
| 13:01:59 | 13:13:56 | SCOTT LOGAN | CALIFORNIA PUC | 4157031418 | CALIF\MILLER |
| 13:05:29 | 18:43:00 | MR J MILLER LDR | | | CALIF\MILLER |
| 13:07:46 | 15:47:47 | RICH LAUCKHART | HENWOOD | 9166097769 | CALIF\MILLER |
| 13:08:33 | 13:28:55 | HAL ROMANOWITZJR | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 13:11:43 | 15:42:47 | KERRY HATTEVIK | CALIFORNIA PUC | 5105261082 | CALIF\MILLER |
| 13:12:03 | 14:13:50 | MARYANNE MIRZADEH | WAPA | 9163534552 | CALIF\MILLER |
| 13:12:26 | 15:03:22 | KRAIG CAMERON | SMUD | 9167325363 | CALIF\MILLER |
| 13:15:54 | 15:29:10 | DILIP MAHERANDA | SMUD | 9167326180 | CALIF\MILLER |
| 13:19:02 | 13:19:57 | JOHN BURNETTJR | LADWP | 2133671744 | CALIF\MILLER |
| 13:23:00 | 14:00:02 | TONY LAM | EOB | 9168347196 | CALIF\MILLER |
| 13:28:14 | 16:28:48 | CHARLES FAUST | FERC | 9162940163 | CALIF\MILLER |
| 13:28:18 | 15:44:21 | JOHN BURNETTJR | LADWP | 2133671744 | CALIF\MILLER |
| 13:28:28 | 16:10:34 | MIKE EVANS | CORAL POWER | 8585262103 | CALIF\MILLER |
| 13:29:30 | 13:31:18 | HAL ROMANOWITZJR | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 13:32:35 | 13:50:09 | HAL ROMANOWITZJR | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 13:43:55 | 18:42:10 | MARYANN CAUSLEY | RUMLA INC | 9166573773 | CALIF\MILLER |
| 14:18:01 | 15:14:10 | DON WINSLOW | PPM ENERGY | 5037967088 | CALIF\MILLER |
| 15:00:22 | 17:21:52 | OSCAR ALVAREZ | LADWP | 2133670677 | CALIF\MILLER |
| 15:45:49 | 18:42:03 | KERRY HATTEVIKJR | CALIFORNIA PUC | 5105261082 | CALIF\MILLER |
| 16:17:27 | 16:34:08 | RICH LAUCKHARTJR | HENWOOD | 9166097769 | CALIF\MILLER |
| 16:20:29 | 18:42:12 | JOHN BURNETT | LADWP | 2133671744 | CALIF\MILLER |
| 17:01:11 | 17:07:31 | RICH LAUCKHARTJR | HENWOOD | 9166097769 | CALIF\MILLER |
| 17:05:53 | 18:42:12 | MIKE EVANSJR | CORAL POWER | 8585262103 | CALIF\MILLER |

| Conf ID | Call Date | Call Time | Duration | Phone # | Name | Company Name |
|---------|-----------|-----------|----------|------------|----------------|-------------------|
| 5980781 | 03/17/04 | 10:37:27 | 00:17:14 | 9093581227 | ROBERT DELGADO | CITY OF RIVERSIDE |
| 5980781 | 03/17/04 | 13:55:58 | 00:01:27 | 6263028694 | NO MESSAGE | |
| 5980781 | 03/18/04 | 18:33:01 | 00:12:22 | 6263028694 | NO MESSAGE | |

Agenda
Stakeholder Meeting
Transmission Economic Assessment Methodology (TEAM)

April 28, 2004

Stakeholder Meeting 9:00 A.M. – 3:00 P.M.

Technical Session 3:15 P.M. – 6:00 P.M.

CA ISO Board Room

101 Blue Ravine Road, Folsom, CA 95630

Dial-In Number: (800) 341-6239

Conference ID #: 6968028

- 9:00 A.M. Welcome and Overview – Jeff Miller
- Progress and schedule
 - Example application of economic methodology
 - The evolving grid planning process and CA regulatory process
- 10:00 A.M. Process for MSC Opinion – Jim Bushnell, MSC Member
- 10:15 A.M. Assumptions Update – Steven Broad
- 10:45 P.M. Summary of Results-to-Date – Anna Geevarghese & Jing Chen
- 11:45 P.M. Lunch Break
- 12:15 P.M. Summary of Results-to-Date (continued) – Anna Geevarghese & Jing Chen
- 1:15 P.M. Plexos Model -- Glenn Drayton¹
- Overview
 - Questions
- 2:45 P.M. Conclusion – Anjali Sheffrin
- 3:00 P.M. Adjourn Stakeholder Meeting
- 3:15 P.M. Technical Session – Plexos Discussion and Demonstration
- 6:00 P.M. Adjourn Technical Session

¹ Dr. Glenn Drayton is the founder of Drayton Analytics Pty Ltd and the developer of the Plexos software model. Drayton Analytics is located in Adelaide, South Australia. Additional information on Drayton Analytics and Plexos can be found at: <http://www.draytonanalytics.com>

MARKET NOTICE
April 15, 2004

Transmission Economic Assessment Methodology (TEAM)
Stakeholder Meeting - April 28th, 2004

ISO Market Participants/TEAM Stakeholders:

The next meeting of the Transmission Economic Assessment Methodology (TEAM) stakeholder group is scheduled for Wednesday, April 28th from 10:00 to 3:00 at the California ISO's offices in Folsom. The agenda for the meeting will follow early next week. If you would like to attend this meeting, please RSVP by noon on April 22nd to Linda Wright at <mailto:lwright@caiso.com>. Lunches will only be provided for those that RSVP.

A number for those unable to attend that wish to listen in will be included on the agenda. Please note that those listening in will be unable to participate in the discussions.

If you have any questions regarding this meeting, please contact Eric Toolson at (916) 608-7156.

Client Relations Communications.0724
CRCommunications@caiso.com <<mailto:CRCommunications@caiso.com>>

(Sign-in PLEASE)

Transmission Economic Assessment Methodology (TEAM) Stakeholder Meeting
April 28, 2004 9:00 a.m. - 3:00 p.m.
California ISO North and South Lake Tahoe Conference Rooms

| NAME | COMPANY | EMAIL ADDRESS | PHONE NUMBER |
|-------------------------------|------------------------------------|---------------------------------|-----------------------|
| Ackerman, Gary <i>GA</i> | | foothillservices@mindspring.com | |
| Altman, Art | EPRI | aaltman@epri.com | 650 855 8740 |
| Amirali, Ali <i>Ali</i> | Calpine Corporation | aamirali@calpine.com | 925-570-4256 |
| Anderson, Stan | Power Value, Inc. | sia2@pwrval.com | 925-938-8735 |
| Arnold, Shaune <i>Shaune</i> | Alvarado Smith & Sanchez for LADWP | shaunearnoldesq@cs.com | 213-229-2400 X2438 |
| Bracht, Kirk <i>Kirk</i> | CPUC | kwb@cpuc.ca.gov | 415-703-2868 |
| Brown, Linda | San Diego Gas & Electric | lpbrown@semprautilities.com | 858-654-6477 |
| Causley, Marianne <i>MC</i> | CEC | Mcausley@energy.state.ca.us | 916-657-3773 |
| Chang, Ed | Flynn Resource Consultants, Inc. | edchang@flynnrci.com | 925-634-7500 |
| EI-Gasseir, Mohamed <i>MO</i> | CERS | mel@water.ca.gov | 916-574-0294 |
| Elliott, Robert <i>RE</i> | CPUC | rae@cpuc.ca.gov | |
| Falls, Chuck <i>CF</i> | SRP | czfalls@srpnet.com | 602-236-0965 |
| Filippi, Jim <i>JF</i> | Pacific Gas & Electric | JLFa@pge.com | 415-973-6530 |
| Flynn, Tom | California Power Authority | thomas.flynn@dgs.ca.gov | 916-651-9756 |
| Ghadiri, Steve <i>SG</i> | Electricity Oversight Board | sghadiri@eob.ca.gov | 916-322-8690 |
| Hattevik, Kerry <i>KH</i> | CPUC | kth@cpuc.ca.gov | 415-703-1114 |
| Henery, Nick <i>HN</i> | SMUD | nhenery@smud.org | 916-723-5699/732-5689 |
| Hesters, Mark <i>MS</i> | CEC | Mhesters@energy.state.ca.us | 916-654-5049 |
| Hunt, Randall <i>RS</i> | Navigant Consulting, Inc. | rhunt@navigantconsulting.com | 616-631-3276 |
| Johannis, Mary <i>MJ</i> | BPA | mjhohannis@bpa.gov | |
| Johnson, Keith | CAISO | kjohnson@caiso.com | 916-608-7296 |
| Kehrein, Carolyn <i>CK</i> | Energy Management Services | cmkehrein@ems-ca.com | 707-679-9506 |
| Kondragunta, Mohan <i>MK</i> | SCE | mohan.kondragunta@sce.com | 626 302 4725 |
| Kritikson, Jim <i>JK</i> | Kritikson & Associates, Inc. | jkritikson@yahoo.com | 909-480-1028 |
| Lam, Bernard <i>BL</i> | Pacific Gas & Electric | bxlc@pge.com | 415-973-4878 |
| Lam, Tony <i>TL</i> | EOB | tiam@eob.ca.gov | 916-322-8601 / 8632 |
| Landauer, Marv <i>ML</i> | BPA | mlandauer@bpa.gov | 360 418 8637 |
| McCluskey, James <i>JM</i> | CEC | jmccclusk@energy.state.ca.us | 916-654-3911 |
| Mi, Jingchao <i>JM</i> | CA. Dept. of Water Resources | imi@water.ca.gov | 916-574-0669 |
| Patel, Kishore <i>PK</i> | San Diego Gas & Electric | Kpatel@semprautilities.com | 858-654-8231 |
| Pereira, Les <i>LP</i> | No. Calif. Power Agency | Les.Pereira@ncpa.com | 916-781-4218 |

(191)

Visitor Log For Building 101

Date: 4-28-04

| Name | Company | Reason For Visiting ISO | Driver License No. | Time In | Time Out |
|--------------------|-----------------|-------------------------|--------------------|---------|----------|
| P. Calytry | PG&E | TRAINING | W5362270 | 0716 | |
| M. Maffei | PG&E | TRAINING | R0363205 | 0748 | |
| K. Mosier | SCE | TRAINING | R0158556 | 0750 | |
| J. Godiner | | | N0584525 | | |
| G. Sheeran | SCR | TRAINING | N944847 | 755 | |
| J. Regan | PG&E | TRAINING | A000124 | 0750 | |
| Private | PG&E | CLASS | CW2516 | 0800 | |
| Bob | PG&E | TRNG | K0681432 | 0800 | |
| Bob | SDGE | TR | Robert | 0800 | |
| Rich Benjamin | CEC | TEAM | | 8:15 | 1:50 |
| Don Fiedler | TISCO | WORK | | 8:30 | |
| Chuck Falls | Salt River Proj | TEAM | | | |
| Carolyn Kehren | ENS | TEAM | | 8:45 | 3:50 |
| B. James Bushnell | MSC | TEAM | | 8:45 | 3:30 |
| Sherman Chan | PG&E | TEAM | | 8:45 | |
| Walter Chen | CPUC | TR | 11:20 | 8:45 | |
| Mike Mcbuffin | ISO | | #102 | | |
| Manuel | | | | | |
| JEFF ELLIS | USE | TEAM | A7126245 | 8:56 | |
| BRENT COOPER | SCE | TEAM | C2023322 | 8:58 | |
| Michael Werner | CDWR | TEAM | N0310156 | | |
| Kishore Patel | SDGE | TEAM | | | |
| KAREN GALLIN | CEC | TEAM | | | |
| Russ McRae | ARQVE | Settlements | | 9:00 | |
| Fong | | | | | |
| Kevin | | | | | |
| Steve Ghadiri | EOB | TEAM | N5209757 | 9:20 | |
| G. McArthur | CEC | " | | | |
| MARK SKORONSKI | SUBARLENIX | " | P0110667 | 10:15 | |
| Chris King | SDGE | TEAM | B41203763 | 11:00 | |
| Jason Oslow | Summit | service | B6122945 | 11:50 | 1:20 |
| Justin Jaramillo | Summit | serv/maint | B7523730 | 11:50 | 1:20 |



CALIFORNIA ISO

Conference Participant Report
 Conf. Date: 04/28/2004
 Conf. Time: 09:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 6968028

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|----------------------|------------------------|------------|--------------|
| 11:52:51 | 12:11:28 | MR J MILLER LDR | | | LDR\MILLER |
| 11:58:58 | 16:54:03 | ROBERT DELGADO | CITY OF RIVERSIDE | 9093516312 | CALIF\MILLER |
| 11:59:15 | 18:28:26 | ENCORE RECORD\MILLER | | | CALIF\MILLER |
| 11:59:17 | 15:03:08 | THOMAS FLYNN | CA POWER AUTHORITY | 9166518756 | CALIF\MILLER |
| 11:59:20 | 15:07:06 | RICH LAUCKHART | HENWOOD | 9166097769 | CALIF\MILLER |
| 11:59:32 | 15:02:14 | BRUCE MCLAUGHLIN | CA MUNICIPAL UTILITY | 9167211959 | CALIF\MILLER |
| 11:59:54 | 13:26:17 | SUSAN SCHNEIDER | PHOENIX CONSULTING | 9167973106 | CALIF\MILLER |
| 12:00:02 | 15:07:36 | JOHN BURNETT | LADWP | 2133671744 | CALIF\MILLER |
| 12:01:16 | 12:59:00 | ED CHANG | FLYNN RCI | 9169417271 | CALIF\MILLER |
| 12:01:41 | 14:51:39 | KATHLEEN WRIGHT | CDWR | 9165740346 | CALIF\MILLER |
| 12:01:42 | 12:31:08 | GARY ACKERMAN | WESTERN POWER | 6504442706 | CALIF\MILLER |
| 12:02:25 | 13:54:04 | GRACE ANDERSON | CA ENERGY COMMISSION | 9166544999 | CALIF\MILLER |
| 12:05:49 | 16:32:02 | HEDY BORN | ASPEN ENVIRONMENTAL | 4159554775 | CALIF\MILLER |
| 12:11:28 | 20:32:41 | MR J MILLER LDR | | | CALIF\MILLER |
| 12:18:06 | 12:32:04 | HAL ROMANOWITZ | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 12:24:59 | 20:30:06 | MIKE EVANS | CORAL POWER | 8585262103 | CALIF\MILLER |
| 12:31:00 | 13:17:32 | KEITH CASEY | CALIFORNIA ISO | 9166087125 | CALIF\MILLER |
| 12:32:02 | 13:26:37 | JERRY ACKERMANJR | WESTERN POWER | 6504442706 | CALIF\MILLER |
| 12:32:25 | 13:08:46 | HAL ROMANOWITZJR | OAK CREEK ENERGY | 6617470990 | CALIF\MILLER |
| 12:47:10 | 13:41:10 | DILIP MAHENDRA | SMUD | 9167429670 | CALIF\MILLER |
| 12:52:13 | 15:00:27 | RICHARD TORRES | CITY OF AZUSA | 6268125138 | CALIF\MILLER |
| 12:58:43 | 15:02:29 | DARELL HOLMES | SOUTHERN CA EDISON | 6263026498 | CALIF\MILLER |
| 13:05:27 | 14:48:59 | MASOUD SHAFI | CALIFORNIA ISO | 9163512216 | CALIF\MILLER |
| 13:08:48 | 15:03:26 | ERIC WOYCHIK | STRATEGY INTEGRATION | 5106352359 | CALIF\MILLER |
| 13:09:38 | 15:21:29 | PUSHKAR WAGLE | LSG CONSULTING | 6509629672 | CALIF\MILLER |
| 13:20:43 | 13:49:26 | ARLIN TRAVIS | CORAL POWER | 8583201520 | CALIF\MILLER |
| 13:24:04 | 13:56:11 | KEITH CASEYJR | CALIFORNIA ISO | 9166087125 | CALIF\MILLER |
| 13:24:50 | 13:48:41 | SUSAN SCHNEIDERJR | PHOENIX CONSULTING | 9167973106 | CALIF\MILLER |
| 15:20:28 | 18:11:18 | RICH LAUCKHARTJR | HENWOOD | 9166097769 | CALIF\MILLER |
| 15:30:07 | 16:49:46 | BRUCE MCLAUGHLINJR | CA MUNICIPAL UTILITY | 9167211959 | CALIF\MILLER |
| 15:33:06 | 16:17:27 | RICHARD CLARK | LSG CONSULTING | 4049481135 | CALIF\MILLER |
| 15:36:27 | 18:24:51 | ERIC WOYCHIKJR | STRATEGY INTEGRATION | 5106352359 | CALIF\MILLER |

Conference Participant Report
 Conf. Date: 04/28/2004
 Conf. Time: 09:00 am PT

Company: California ISO
 Leader: Jeff Miller
 Conference ID: 6968028

| Start Time | End Time | Name | Additional Information | Number | Co/Leader |
|------------|----------|-------------------|------------------------|------------|-------------|
| 15:40:31 | 20:32:41 | PUSHKAR WAGLEJR | LSG CONSULTING | 6509629672 | CALIFMILLER |
| 16:14:37 | 18:11:10 | RICHARD TORRESJR | CITY OF AZUSA | 6268125211 | CALIFMILLER |
| 16:15:11 | 18:34:16 | DARELL HOLMESJR | SOUTHERN CA EDISON | 6263026498 | CALIFMILLER |
| 16:29:15 | 18:23:31 | KATHLEEN WRIGHTJR | CDWR | 9165740346 | CALIFMILLER |
| 16:49:15 | 19:10:00 | JOHN BURNETTJR | LADWP | 2136130063 | CALIFMILLER |
| 17:49:37 | 18:07:15 | CAROLYN KEHREIN | EMS | 9165015891 | CALIFMILLER |
| 18:21:50 | 20:24:11 | BARRY FLYNN | FLYNN RCI | 9169417038 | CALIFMILLER |

**Transmission Economic Assessment Methodology (TEAM)
Stakeholder Meeting**

April 28, 2004

Encore (Playback) Information

**Encore Dial-In #: (800) 642-1687
Conference ID #: 6968028**

Fast Forward options are:

**Press "1" to fast forward 5 seconds
Press "2" to fast forward 30 seconds**

Recording available through 9:00 p.m. PST on May 5, 2004

Contact Linda Wright at (916) 351-4470 with any questions.

| Conf ID | Call Date | Call Time | Duration | Phone # | Name | Phone Number | Company |
|---------|-----------|-----------|----------|------------|----------------|--------------|----------|
| 6968028 | 04/29/04 | 16:07:20 | 00:41:40 | 6263024725 | MOHAN JUNTA | 6263024725 | |
| 6968028 | 04/29/04 | 16:27:27 | 00:48:42 | 6263028604 | BRENT GOKBUDAK | 6263028494 | HBC |
| 6968028 | 04/29/04 | 18:20:17 | 00:10:28 | 6263023134 | NO MESSAGE | | |
| 6968028 | 04/30/04 | 10:05:19 | 00:00:48 | 9164523211 | NO MESSAGE | | |
| 6968028 | 04/30/04 | 12:29:37 | 00:00:07 | 7702707638 | NO MESSAGE | | |
| 6968028 | 04/30/04 | 12:31:37 | 00:07:10 | 7702707638 | NO MESSAGE | | |
| 6968028 | 05/03/04 | 13:17:41 | 02:56:28 | 4805059076 | NO MESSAGE | | |
| 6968028 | 05/03/04 | 14:58:33 | 00:07:26 | 4157031418 | SCOTT LOGAN | | RAY PIER |
| 6968028 | 05/03/04 | 16:32:15 | 00:00:41 | 4805059068 | NO MESSAGE | | |
| 6968028 | 05/03/04 | 16:34:06 | 02:54:52 | 4805059069 | NO MESSAGE | | |
| 6968028 | 05/03/04 | 19:48:33 | 00:08:39 | 4805059070 | NO MESSAGE | | |

CAISO MARKET SURVEILLANCE COMMITTEE MEETING AGENDA

General Session

May 17, 2004 9:30 AM – 4:00PM

California ISO

101 Blue Ravine Road, Folsom, CA

| | | | | <u>For Internal Use</u> |
|-----------------------|--|--|---|---------------------------------|
| | | | | <u>Time keeper: Brad Barber</u> |
| | <u>Item</u> | <u>Presenters/Attendees</u> | <u>Action Requested</u> | <u>Time</u> |
| Board Room – Bldg 101 | | | | |
| I | General Session | | | 9:30 AM – 4:00 PM |
| | <i>Public Comments</i> | | | 9:30 AM – 10:00 AM |
| Tab 1 | 1. Market Update | Doug Bergman (DMA) | <ul style="list-style-type: none"> Update on the market performance of March-April 2004. | 10:00 AM – 10:30 AM |
| Tab 2 | 2. Overview of Transmission Evaluation Methodology | Frank Wolak Anjali Sheffrin (DMA) | <ul style="list-style-type: none"> Update the MSC on the topic | 10:30AM – 11:00 AM |
| Tab 3 | 3. Review of Input Assumptions | Frank Wolak Steven Broad (DMA) | <ul style="list-style-type: none"> Update the MSC on the topic | 11:00 AM – 11:30 AM |
| Tab 4 | 4. Cost based Pricing Results | Jim Bushnell Anna Geevarghese (DMA) | <ul style="list-style-type: none"> Update the MSC on the issues related to the topic and solicit their input | 11:30 AM – 12:30 PM |
| II | Lunch | | | 12:30 PM – 1:15 PM |
| Tab 4 | 5. Market Pricing Results | Ben Hobbs/Brad Barber Jing Chen (DMA) | <ul style="list-style-type: none"> Update the MSC on the topic and solicit their input | 1:15 PM – 2:00 PM |
| Tab 5 | 6. MSC Opinion on Transmission Methodology | Frank Wolak Ben Hobbs | <ul style="list-style-type: none"> Provide a draft outline of the opinion. | 2:00 PM – 3:00 PM |
| Tab 6 | 7. Zonal Distribution of A/S Procurement – Splitting the Markets by Zone | Frank Wolak Jeff McDonald (DMA) | <ul style="list-style-type: none"> Update the MSC on the issues related to the topic and solicit their input | 3:00 PM – 4:00 PM |
| | <i>Meeting Adjourned</i> | | | 4:00 PM |



PUBLIC NOTICE: MARKET SURVEILLANCE COMMITTEE MEETING

The Market Surveillance Committee of the California Independent System Operator will meet:

Date: May 17, 2004
Time: 9:30 a.m. to 4:00 p.m. PDT
Location: Offices of the California ISO, Lake Tahoe Conference Room
(Previously named 101A-1A&1B)

During the above-noticed meeting, the Market Surveillance Committee, an Advisory Committee to the Board of Governors and ISO management, will discuss the following agenda items:

GENERAL SESSION

9:30 a.m. to 4:00 p.m.

*** Call in Number (Listen Only)

(877) 417-9307, Conference ID#: 7270604

- 1) Public Comments
- 2) Market Update
- 3) Overview of Transmission Evaluation Methodology
- 4) Review of Input Assumptions
- 5) Cost Based Pricing Results
- 6) Lunch (Please RSVP to canderson@caiso.com by 5/13/04 if you are planning to attend the meeting in person. This will enable us to provide you with adequate seating and lunch during the meeting.)
- 7) Market Pricing Results
- 8) MSC Opinion on Transmission Methodology
- 9) Zonal Distribution of A/S Procurement- Splitting the Markets by Zone

Note that this call-in number is available for convenience purposes only. The MSC encourages the public to attend the meeting in person to best promote a direct dialogue on key issues. Listeners should not rely on listening to meetings as a means to glean the final MSC opinion on any topic. MSC discussions are fast-paced and listening to only a portion of the meeting may leave the wrong impression on the position of any MSC member on a discussion topic. Only final MSC opinions which are published represent the position of the MSC.

The meeting documents are posted to the Web site. The California ISO Web site address is: <http://www.caiso.com>

Market Notice

May 3, 2004

Market Surveillance Committee Meeting – May 17, 2004

ISO Market Participants:

The CAISO will be hosting a Market Surveillance Committee meeting on May 17, 2004. The General Session will be held from 9:30am to 4:00pm. Lunch will be provided. The meeting will take place at the CAISO headquarters, 101 Blue Ravine Road, Folsom, CA, in the Lake Tahoe Conference Room (previously known as the 101 1A/1B Conference Room).

If you are planning to attend this meeting, please R.S.V.P. to Cheryl Anderson at 916-608-7080 or canderson@caiso.com by May 13, 2004. This will enable us to provide you with adequate seating and lunch during the meeting.

For your convenience a **listen only** conference call number has been arranged for the General Session. The dial-in number is (877) 417-9307.

The agenda is posted at <http://www.caiso.com/meetings/>. The relevant documents will be posted on the CA ISO meeting calendar at the following link <http://www.caiso.com/pubinfo/BOG/documents/market/msc/> by noon on May 14, 2004.

Note that this call-in number is available for convenience purposes only. The MSC encourages the public to attend the meeting in person to best promote a direct dialogue on key issues. Listeners should not rely on listening to meetings as a means to glean the final MSC opinion on any topic. MSC discussions are fast-paced and listening to only a portion of the meeting may leave the wrong impression on the position of any MSC member on a discussion topic. Only final MSC opinions which are published represent the position of the MSC.

Market Notice

May 13, 2004

Market Surveillance Committee Meeting – May 17, 2004

****** THE MSC IS SOLICITING STAKEHOLDER INPUT ON THE ISO'S ****
PROPOSED TRANSMISSION EXPANSION METHODOLOGY**

If you wish to make a public statement please email Anna Geevarghese at ageevarghese@caiso.com or Cheryl Anderson at canderson@caiso.com by close of business Friday, May 14, 2004.

ISO Market Participants:

The CAISO will be hosting a Market Surveillance Committee meeting on May 17, 2004. The General Session will be held from 9:30am to 4:00pm. Lunch will be provided. The meeting will take place at the CAISO headquarters, 101 Blue Ravine Road, Folsom, CA, in the Lake Tahoe Conference Room (previously known as the 101 1A/1B Conference Room).

If you are planning to attend this meeting, please R.S.V.P. to Cheryl Anderson at 916-608-7080 or canderson@caiso.com by May 13, 2004. This will enable us to provide you with adequate seating and lunch during the meeting.

For your convenience a **listen only** conference call number has been arranged for the General Session. The dial-in number is (877) 417-9307. The conference ID is **7270604**.

The agenda is posted at <http://www.caiso.com/meetings/>. The relevant documents will be posted on the CA ISO meeting calendar at the following link <http://www.caiso.com/pubinfo/BOG/documents/market/msc/> by Noon on May 14, 2004.

Note that this call-in number is available for convenience purposes only. The MSC encourages the public to attend the meeting in person to best promote a direct dialogue on key issues. Listeners should not rely on listening to meetings as a means to glean the final MSC opinion on any topic. MSC discussions are fast-paced and listening to only a portion of the meeting may leave the wrong impression on the position of any MSC member on a discussion topic. Only final MSC opinions which are published represent the position of the MSC.

**MARKET SURVEILLANCE COMMITTEE MEETING
CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

May 17, 2004

General Session: 9:30 AM – 4:00 PM
Offices of the California ISO, North & South Lake Tahoe Conference Rooms

MEETING SIGN-IN

| Initials | NAME | COMPANY | EMAIL ADDRESS | PHONE NUMBER |
|----------|----------------------------|------------|------------------------------|----------------|
| | Frank Wolak <i>FW</i> | MSC Chair | [wolak@zia.stanford.edu] | (650) 723-3944 |
| | Brad Barber <i>BMB</i> | MSC Member | [bbarber@ucdavis.edu] | (530) 752-0512 |
| | Jim Bushnell <i>JB</i> | MSC Member | [bushnell@haas.berkeley.edu] | (510) 642-7316 |
| | Ben Hobbs <i>BH</i> | MSC Member | [bhobbs@jhu.edu] | (410) 516-4681 |
| | Anna Geevarghese <i>AG</i> | CAISO | [ageevarghese@caiso.com] | (916) 608-7072 |
| | Farrokh Rahimi | CAISO | [frahimi@caiso.com] | (916) 608-7128 |
| | Dan Shonkwiler | CAISO | [dshonkwiler@caiso.com] | (916) 608-7015 |
| | Sidney Jubien | CAISO | [sjubien@caiso.com] | (916) 608-7144 |
| | Keith Casey <i>KC</i> | CAISO | [kcasey@caiso.com] | (916) 608-7125 |
| | Greg Cook <i>GC</i> | CAISO | [gcook@caiso.com] | (916) 608-7202 |
| | Eric Hildebrandt | CAISO | [ehildebrandt@caiso.com] | (916) 608-7123 |
| | Jeff McDonald | CAISO | [jmcdonald@casio.com] | (916) 608-7236 |

Angela Shuffin and

**MARKET SURVEILLANCE COMMITTEE MEETING
CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

May 17, 2004

General Session: 9:30 AM - 4:00 PM

Offices of the California ISO, North & South Lake Tahoe Conference Rooms

MEETING SIGN-IN

| Initials | NAME | COMPANY | EMAIL ADDRESS | PHONE NUMBER |
|----------|-----------------|-----------|------------------------------|----------------|
| | Doug Bergman | CAISO | (dbergman@caiso.com) | (916) 608-7276 |
| | Lorenzo Kristov | CAISO | [lkristov@caiso.com] | (916) 608-7129 |
| | Brian Theaker | CAISO | [btheaker@caiso.com] | (916) 608-7282 |
| | Brett Franklin | CEOB | bfranklineob.ca.gov | 916.233.9275 |
| | Tomy Lam | CEOB | tlam@eob.ca.gov | 916-322-8632 |
| | Charles Faust | FERC | charles_faust@ferc.gov | 916 - 294-0163 |
| | Jing Chen | CAISO | jchen@caiso.com | 916-608-7009 |
| | Mingyic Zhang | CAISO | mzhang@caiso.com | 916-608-7054 |
| | JINGCHAO MI | CDNR | jmi@water.ca.gov | 916-574-0669 |
| | KISHORE PATEL | SDG&E | KPATEL@SEMPRAUTILITIES.COM | 858-654-8231 |
| | CLIFF ROCHLIN | SOCAL GAS | CROCHLIN@SEMPRAUTILITIES.COM | 213-244-2451 |
| | JIM FILIPPI | PG&E | JLFO@pge.com | (415) 973-6530 |

**MARKET SURVEILLANCE COMMITTEE MEETING
CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

May 17, 2004

General Session: 9:30 AM - 4:00 PM

Offices of the California ISO, North & South Lake Tahoe Conference Rooms

MEETING SIGN-IN

| Initials | NAME | COMPANY | EMAIL ADDRESS | PHONE NUMBER |
|----------|-----------------|--------------------|-------------------------------|----------------|
| | Bernardo Lam | PG&E | BVL@pge.com | (415) 777-4878 |
| | Tom Miller | PG&E | TEM3@pge.com | 415-973-2070 |
| | Kirk Brachat | CPUC | KWB@CPUC.CA.GOV | (415) 703-2868 |
| | Susan Schneider | Phoenix Consulting | schneider@phoenix-iso.com | 916-797-3106 |
| | Steve Huhman | Mirant | steve.huhman@mirant.com | 925-287-3120 |
| | Dorell Holmes | SCG | holmesd@d.sce.com | 626-302-6498 |
| | Carl Silsbee | SCE | Carl.Silsbee@sce.com | 626-302-1708 |
| | Jane Turnbull | LWVC | jturnbu@ix.intel.com | LSO 559-1766 |
| | Steven Broad | CAISO | sbroad@caiso.com | |
| | Jeff Miller | CAISO | j.miller@caiso.com | 916-351-4464 |
| | Faiyeh Rahimi | CAISO (Consultant) | frahimi@caiso.com | 916-608-7128 |
| | Rich Lauekhart | HENWOOD | R.LAUEKHART@HENWOODENERGY.COM | 916-609-7769 |



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- View completed calls
- Edit owner profile
- Edit assistant profile
- Edit default options
- Edit participant lists
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Tools for phone meetings that work

CONFERENCE BILLING DETAIL
Billing Detail for Conference 7270604

For questions about the invoice information or other billing information, please call 1-800-374-2549.

| Conference | Date | Time | Attendees | Minutes | Charged |
|------------|----------|----------|-----------|---------|------------|
| 7270604 | 05/17/04 | 11:54 AM | 34 | 5538 | \$2,926.90 |

| Attendee | Connect Time | Minutes | Charge |
|--|--------------|---------|--------|
| RAMONA GONZALEZ/EAST BAY MUD (LEG CHARGES) | 6:10 | | 0.00 |
| RAMONA GONZALEZ/EAST BAY MUD (MINUTES CHARGES) | 6:10 | 8 | 2.00 |
| MOHAMED ELGASSIER/RUMLA INC (LEG CHARGES) | 3:20 | | 0.00 |
| MOHAMED ELGASSIER/RUMLA INC (MINUTES CHARGES) | 3:20 | 168 | 42.00 |
| WES WILLIAMS/SOUTHERN CA EDISO (LEG CHARGES) | 4:24 | | 0.00 |
| WES WILLIAMS/SOUTHERN CA EDISO (MINUTES CHARGES) | 4:24 | 33 | 8.25 |
| DILLIP MAHENDRA/SMUD (LEG CHARGES) | 1:05 | | 0.00 |
| DILLIP MAHENDRA/SMUD (MINUTES CHARGES) | 1:05 | 119 | 29.75 |
| ALLEN COMBS/DINDBY (LEG CHARGES) | 11:54 | | 0.00 |
| ALLEN COMBS/DINDBY (MINUTES CHARGES) | 11:54 | 158 | 39.50 |
| HEDY BORN/ASPEN ENVOROMENTAL G (LEG CHARGES) | 12:36 | | 0.00 |
| HEDY BORN/ASPEN ENVOROMENTAL G (MINUTES CHARGES) | 12:36 | 114 | 28.50 |
| ROSE STEAR/PPL MONTANA (LEG CHARGES) | 12:43 | | 0.00 |
| ROSE STEAR/PPL MONTANA (MINUTES CHARGES) | 12:43 | 20 | 5.00 |
| DIANA MAHMUD/METROPOLITAN WATE (LEG CHARGES) | 1:39 | | 0.00 |
| DIANA MAHMUD/METROPOLITAN WATE (MINUTES CHARGES) | 1:39 | 18 | 4.50 |
| RAMONA GONZALEZ/EASTBAY MUD (LEG CHARGES) | 12:45 | | 0.00 |
| RAMONA GONZALEZ/EASTBAY MUD (MINUTES CHARGES) | 12:45 | 116 | 29.00 |
| RAY OLSON/CA ELEC OVERSITE BOA (LEG CHARGES) | 12:46 | | 0.00 |
| RAY OLSON/CA ELEC OVERSITE BOA (MINUTES CHARGES) | 12:46 | 155 | 38.75 |
| CHUCK FALLS/SALT RIVERS PROJEC (LEG CHARGES) | 12:30 | | 0.00 |
| CHUCK FALLS/SALT RIVERS PROJEC (MINUTES CHARGES) | 12:30 | 294 | 73.50 |
| WES WILLIAMS/S.CALFORNIA EDISO (LEG CHARGES) | 6:16 | | 0.00 |
| WES WILLIAMS/S.CALFORNIA EDISO (MINUTES CHARGES) | 6:16 | 2 | 0.50 |
| KATHLEEN WRIGHT/CDWR (LEG CHARGES) | 12:46 | | 0.00 |
| KATHLEEN WRIGHT/CDWR (MINUTES CHARGES) | 12:46 | 68 | 17.00 |

| | | | |
|--|-------|-----|-------|
| SHAUNE ARNOLD/ALVARADO SMITH&S (LEG CHARGES) | 12:47 | | 0.00 |
| SHAUNE ARNOLD/ALVARADO SMITH&S (MINUTES CHARGES) | 12:47 | 330 | 82.50 |
| SHAWN BAILEY/SEMPRA ENERGY (LEG CHARGES) | 1:31 | | 0.00 |
| SHAWN BAILEY/SEMPRA ENERGY (MINUTES CHARGES) | 1:31 | 89 | 22.25 |
| ENCORE RECORD\GEEVAR (LEG CHARGES) | 12:06 | | 0.00 |
| ENCORE RECORD\GEEVAR (MINUTES CHARGES) | 12:06 | 371 | 92.75 |
| ALLAN COMNES/DYNEGY (LEG CHARGES) | 2:32 | | 0.00 |
| ALLAN COMNES/DYNEGY (MINUTES CHARGES) | 2:32 | 226 | 56.50 |
| BOB TANG/CITY OF AZUSA (LEG CHARGES) | 12:47 | | 0.00 |
| BOB TANG/CITY OF AZUSA (MINUTES CHARGES) | 12:47 | 230 | 57.50 |
| MOHAMED ELGASSEIR/RUMLA INC (LEG CHARGES) | 12:48 | | 0.00 |
| MOHAMED ELGASSEIR/RUMLA INC (MINUTES CHARGES) | 12:48 | 136 | 34.00 |
| SUSAN SCHNEIDER/PHEONIX CON SA (LEG CHARGES) | 12:37 | | 0.00 |
| SUSAN SCHNEIDER/PHEONIX CON SA (MINUTES CHARGES) | 12:37 | 19 | 4.75 |
| SHAWN BAILEY/SEMPRA ENERGY (LEG CHARGES) | 12:34 | | 0.00 |
| SHAWN BAILEY/SEMPRA ENERGY (MINUTES CHARGES) | 12:34 | 25 | 6.25 |
| WESTON WILLIAMS/SOUTHERN CA ED (LEG CHARGES) | 12:34 | | 0.00 |
| WESTON WILLIAMS/SOUTHERN CA ED (MINUTES CHARGES) | 12:34 | 28 | 7.00 |
| JEFFERY NELSON/SCE (LEG CHARGES) | 5:04 | | 0.00 |
| JEFFERY NELSON/SCE (MINUTES CHARGES) | 5:04 | 74 | 18.50 |
| MIKE EVANS/CORAL POWER (LEG CHARGES) | 12:31 | | 0.00 |
| MIKE EVANS/CORAL POWER (MINUTES CHARGES) | 12:31 | 347 | 86.75 |
| KATHER BODINE/CAL ISO (LEG CHARGES) | 12:32 | | 0.00 |
| KATHER BODINE/CAL ISO (MINUTES CHARGES) | 12:32 | 95 | 23.75 |
| MS A GEEVARGHESE LDR (LEG CHARGES) | 12:35 | | 0.00 |
| MS A GEEVARGHESE LDR (MINUTES CHARGES) | 12:35 | 343 | 85.75 |
| STEVE DIRI/EOB (LEG CHARGES) | 12:49 | | 0.00 |
| STEVE DIRI/EOB (MINUTES CHARGES) | 12:49 | 328 | 82.00 |
| DAVID KATES (LEG CHARGES) | 4:41 | | 0.00 |
| DAVID KATES (MINUTES CHARGES) | 4:41 | 19 | 4.75 |
| TAPE RECORD\GEEVARGH (LEG CHARGES) | 12:13 | | 0.00 |
| TAPE RECORD\GEEVARGH (MINUTES CHARGES) | 12:13 | 364 | 91.00 |
| SARA TECTOOU/OAK CREEK ENERGY (LEG CHARGES) | 12:30 | | 0.00 |
| SARA TECTOOU/OAK CREEK ENERGY (MINUTES CHARGES) | 12:30 | 348 | 87.00 |
| TIM HANNA/SAMPRA ENERGY TRADIN (LEG CHARGES) | 1:01 | | 0.00 |
| TIM HANNA/SAMPRA ENERGY TRADIN (MINUTES CHARGES) | 1:01 | 317 | 79.25 |
| (MINUTES CHARGES) | 2:04 | 163 | 24.45 |
| (LEG CHARGES) | 2:04 | | 0.00 |
| (LEG CHARGES) | 8:16 | | 0.00 |
| (MINUTES CHARGES) | 8:16 | 340 | 51.00 |
| (LEG CHARGES) | 12:52 | | 0.00 |
| (MINUTES CHARGES) | 12:52 | 73 | 10.95 |

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Vanda, Deborah

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TEAM Subgroup:

I. Base case Assumptions
for Network & Production Cost

1. Eric Toolson

2. Mohamed Awad

3. LUIS PANDU

4. ANITA GEERAR GHESS

Draft Agenda
TEAM Subgroup – Base Case Assumptions
Monday, February 9, 2004
9:00 to 10:30 am
Call-in Number – xxx-xxx-xxxx

Discussion Topics:

1. Should new generation entry be:
 - a. only economically based
 - b. minimum reserve margin
 - c. minimum portfolio standard
 - d. all three above

2. If the new generation entry should include reserve margin and portfolio standards, what should those parameters be in 2008 and 2013? Should the margin and standard be applied at a regional, or sub-regional level?

3. Review renewable percentages and margins in SSG_WI gas and renewable scenarios (see Attachments #1, #2, and #3).

4. Review costs of new entry and application and potential generation expansion methodology (see Attachments #4 and #5).
 - a. build out renewable portfolio to standard
 - b. build out transmission expansion plan to accommodate renewable portfolio
 - c. build out to achieve planning reserve margin with CT's and CC's
 - d. evaluate economic entry of additional CT's or CC's (compare net revenue to annual fixed costs)
 - e. evaluate new transmission additions to accommodate economic entry and iterate until no additional economic entry is feasible

5. Date, time, and potential issues for next meeting
 - a. proposed date and time
 - b. inflation rate
 - c. natural gas forecast
 - d. renewable expansion plan
 - e. 2008 draft cost-based nodal case results
 - f. other

Group Members:

- Mohamed Awad, CAISO – (916) 608-7156
- Linda Brown, SDG&E – (858) 654-6477
- Sherman Chen, PG&E – (415) 973-5268
- Anna Geevarghese, CAISO -- (916) 608-7072
- Mark Hesters, CEC – (916) 654-5049
- Darrell Holmes, SCE – (626) 302-6498
- Mohan Kondragunta, SCE – (626) 302-6498
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- Tom Miller, PG&E – (415) 973-2070
- Luis Pando, So. Cal. Gas – (213) 244-3708
- Les Pereira, NCPA – (916) 781-4218
- Angela Tanghetti, CEC – (916) 654-4854
- Eric Toolson, CAISO consultant – (916) 608-7156

Other Recipients of Meeting Notices:

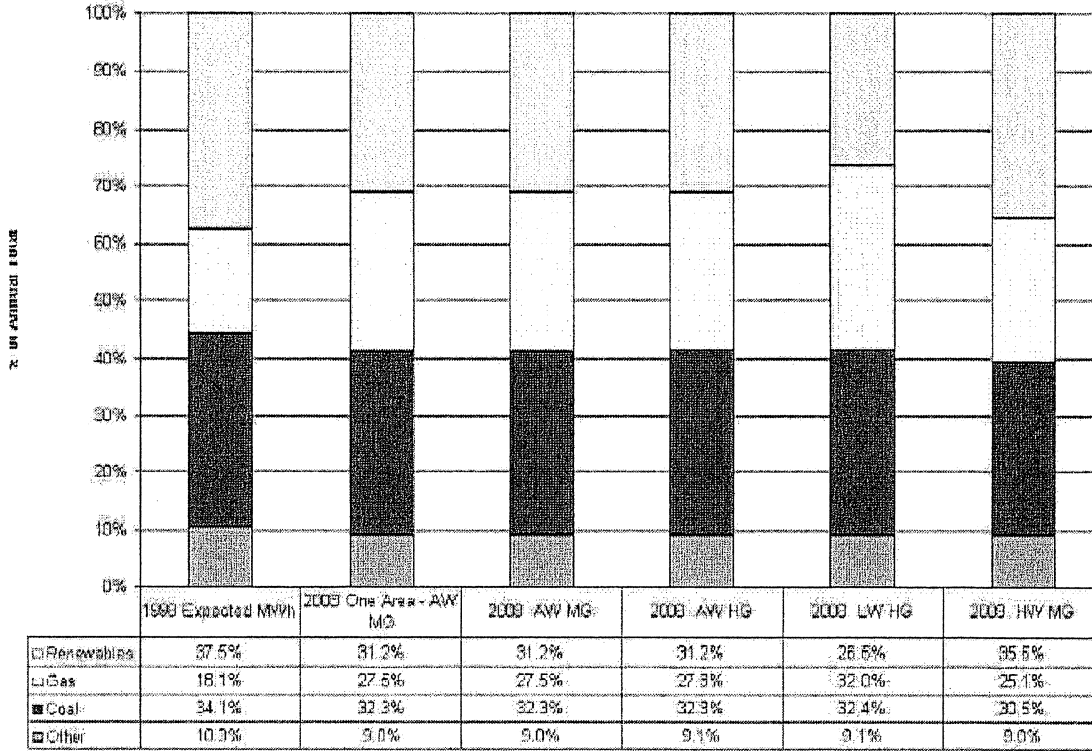
- Brent Gokbudak, SCE
- Jeff Miller, CAISO
- Anjali Sheffrin, CAISO

Attachments:

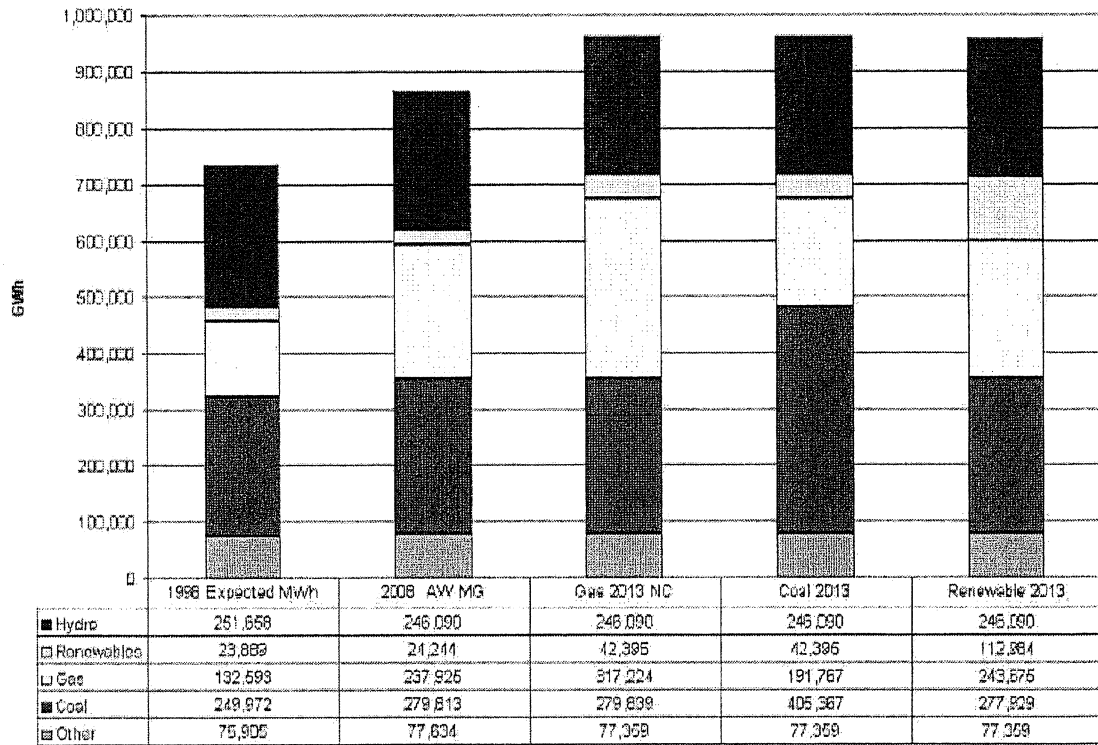
1. “Final SSG-WI Transmission Report – Appendix D1”, table title “Western Interconnection % Energy by Fuel Source”, p. 30, October, 2003. Website is: http://www.ssg-wi.com/documents/317-FERC_Filing_103103_FINAL_Appx_D1_FINAL_103103.pdf
2. “Final SSG-WI Transmission Report”, table title “Figure IV-3: Generation Mix in GWH/year-Western Interconnection”, p. 23, October, 2003. Website is: http://www.ssg-wi.com/documents/316-FERC_Filing_103103_FINAL_TransmissionReport.pdf
3. See Attachment 1, “Renewable Portfolio Energy Percentages From SSG-WI Study”.
4. “Comparative Costs of California Central Station Electricity Generation Technologies”; California Energy Commission; 100-03-001F; June 5, 2003 Table C 10 -- Cost Summary (Combined-Cycle Baseload without Duct Firing). Website is: http://www.energy.ca.gov/reports/2003-06-06_100-03-001F.PDF.
5. Ibid., Table D 10 – Cost Summary (Combustion Turbine).
6. Notes from telephone conversations:

- Avista – Avista’s planning reserve is 10% of peak plus 90 MW which gives them a 15%-16% planning reserve margin (using project dependable capacity, and not nameplate, for hydro). No real renewable standard yet, and none required by the WUTC at this time.
- SRP – SRP uses 12 percent for planning reserve margin. SRP is in process of developing renewable portfolio standard and it will be defined by the Spring. They expect it to be comparable to ACC’s requirement for APS and TEC, which is 1.1 percent renewable. Of that amount, 60 percent must be solar (strong solar lobby). The mandate goes through 2012 and includes only low-head hydro (none existing). He believes that the New Mexico’s standard is much higher.

Attachment 1 WECC Renewable Percentages from SSG-WI Study



**Attachment 2
Breakdown of “Renewables” into “Hydro” and “Other Renewables”**



Attachment 3
Renewable Portfolio Energy Percentages From SSG-WI Study

| | 1998 (gWh) | 1998 (%) | 2008 (gWh) | 2008 (%) | 2013 Gas (gWh) | 2013 Gas (%) | 2013 Renew. (gWh) | 2013 Renew. (%) |
|--------------|----------------|-------------|----------------|-------------|----------------|--------------|-------------------|-----------------|
| Hydro | 251,658 | 34% | 246,090 | 28% | 246,090 | 26% | 246,090 | 26% |
| Renewables | 23,889 | 3% | 24,244 | 3% | 42,395 | 4% | 112,984 | 12% |
| Gas | 135,593 | 18% | 237,925 | 27% | 317,224 | 33% | 243,675 | 25% |
| Coal | 249,972 | 34% | 279,813 | 32% | 279,839 | 29% | 277,929 | 29% |
| Other | 75,905 | 10% | 77,634 | 9% | 77,359 | 8% | 77,359 | 8% |
| Total | 737,017 | 100% | 865,706 | 100% | 962,907 | 100% | 958,037 | 100% |

Attachment 4
CC Annual Fixed Costs

Table C-10
Cost Summary

| | |
|---|--------------|
| Financing Costs (\$/kW-Yr) | 75 |
| Fixed Operational Costs (\$/kW-Yr) | 15 |
| Tax (w/Credits) (\$/kW-Yr) | 1 |
| Fixed Costs | 90 |
| Fuel Costs (\$/kW-Yr) | 307 |
| Variable O&M (\$/kW-Yr) | 19.09 |
| Variable Costs | 326 |
| Total Levelized Costs (\$/kW-Yr) | 416 |
| Capital (\$/MWH) | 11.25 |
| Variable (\$/MWH) | 40.59 |
| Total Levelized Costs (\$/MWH) | 51.84 |
| Capital Costs | |
| Instant Cost (\$/kW) | 542 |
| Installed Cost (\$/MWH) | 592 |
| In-service Cost in 2004 (\$/KW) | 616 |

**Attachment 5
CT Annual Fixed Costs**

**Table D-10
Cost Summary**

| | |
|---|---------------|
| Financing Costs (\$/kW-Yr) | 57 |
| Fixed Operational Costs (\$/kW-Yr) | 20 |
| Tax (w/Credits) (\$/kW-Yr) | 1 |
| Fixed Costs | 78 |
| | |
| Fuel Costs (\$/kW-Yr) | 42 |
| Variable O&M (\$/kW-Yr) | 9 |
| Variable Costs | 51 |
| Total Levelized Costs (\$/kW-Yr) | 129 |
| | |
| Capital (\$/MWH) | 94.99 |
| Variable (\$/MWH) | 62.11 |
| Total Levelized Costs (\$/MWH) | 157.11 |
| | |
| Capital Costs | |
| Instant Cost (\$/kW) | 417 |
| Installed Cost (\$/MWH) | 456 |
| In-service Cost in 2004 (\$/KW) | 475 |

Attendance for Feb. 9, 2004

Linda Brown, SDG&E – (858) 654-6477
Sherman Chen, PG&E – (415) 973-5268
Mark Hesters, CEC – (916) 654-5049
Darrell Holmes, SCE – (626) 302-6498
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Luis Pando, So. Cal. Gas – (213) 244-3708
Les Pereira, NCPA – (916) 781-4218
Angela Tanghetti, CEC – (916) 654-4854
Brent Gokbudak, SCE

Draft Agenda
TEAM Subgroup – Base Case Assumptions
Friday, February 13, 2004
9:00 to 10:30 am
Call-in Number – (888) 261-7938
Conference Code 1251037

Discussion Topics:

1. Review worksheet on renewable percentages and hopefully close on renewable target
 - a. Study is not intended to be evaluation of renewables
 - b. Renewable resources will be held constant for the “without” as well as “with” cases
 - c. Largest question is RPS percentage in those areas where no state-approved RPS is in effect
 - d. Will also discuss proposed new renewables, timing, type, and location for 2008

2. Review gas price worksheet and hopefully close on gas price forecast

3. Review Edison input / comments
 - a. Appropriate capital costs for new CT's and CC's
 - b. Expansion with either CC's w/o duct firing, or CC's w/ duct firing
 - c. Seasonal heat rates for new CC's
 - d. Start-up O&M estimates
 - e. Interconnection cost estimates
 - f. in 2008 and 2013? Should the margin and standard be applied at a regional, or sub-regional level?

4. Date, time, and potential issues for next meeting
 - a. Next Thurs. from 1:30 to 3:00 pm ???
 - b. Continue progress on generation expansion (renewables, reserve margins, and economic entry).

Approximation of Renewable Portfolio Standard for US Portion of WECC

***** Renewable Standards (%) *****

| No. | State | RPS in Place? | 2004 | 2008 | 2013 | 2018 | Source | Notes |
|----------------------|------------|---------------|-------------|--------------|--------------|--------------|--|--|
| 1 | Arizona | yes | 0.8% | 1.1% | 1.1% | 1.1% | ACC Rules R14-2-1618; http://www.ies.ncsu.edu/dsire/li brary/docs/incentives/AZ03R.ht m | 1.1% by 2007-2012 (60% from solar); assume constant after 2012 |
| 2 | California | yes | 12.5% | 16.1% | 19.3% | 19.7% | California Renewables Portfolio Standard (RPS), Senate Bill 1078, http://www.energy.ca.gov/repor ts/2003-07-01_100-03- 009CR.PDF, p. 6. | includes hydro under 30 MW |
| 3 | Colorado | considering | 4.6% | 10.0% | 15.7% | 20.4% | House Bill 1273 (passed House not Senate yet), http://www.solaraccess.com/he ws/story?storyid=6065 | legislature considering state RPS |
| 4 | Idaho | no | 9.5% | 10.0% | 10.0% | 10.0% | see note #1 | assume federal proxy |
| 5 | Montana | no | 6.1% | 8.5% | 10.0% | 10.0% | see note #1 | assume federal proxy |
| 6 | Nevada | yes | 6.0% | 10.0% | 15.0% | 15.0% | Draft "Renewables Resources Development Report", CEC, 500-03-080D, Sept. 30, 2003; p. 21. | at least 5% from solar |
| 7 | New Mexico | yes | 1.0% | 7.0% | 10.0% | 10.0% | Draft "Renewables Resources Development Report", CEC, 500-03-080D, Sept. 30, 2003; p. 21. | assume constant after 2011 |
| 8 | Oregon | no | 5.7% | 8.1% | 10.0% | 10.0% | see note #1 | assume federal proxy |
| 9 | Utah | considering | 2.7% | 5.1% | 8.1% | 10.0% | see note #1, assume federal proxy | legislature considering state RPS, PacifiCorp supports federal RPS |
| 10 | Washington | no | 5.9% | 8.3% | 10.0% | 10.0% | see note #1 | assume federal proxy |
| 11 | Wyoming | no | 9.9% | 10.0% | 10.0% | 10.0% | see note #2 | assume federal proxy |
| WECC Weighted | | | 7.5% | 10.5% | 13.2% | 13.8% | | |

Notes:

1 U.S. Senate version of RPS standard in federal Energy Bill

for 2001-02 session as a proxy for a standard that might ultimately be implemented. Source: "Integrated Resource Plan 2003", PacifiCorp, <http://www.pacifiCorp.com/File/File25682.pdf>. Add 0.6 percent per year until 10 percent target is reached.

| Year | 2004 | 2008 | 2013 | 2017 |
|----------------------------------|----------------|----------------|----------------|----------------|
| <u>LOAD (gWh -- #10):</u> | | | | |
| PG&E | 72,496 | 78,530 | 83,569 | 89,398 |
| SCE | 68,146 | 74,365 | 79,289 | 85,154 |
| SDG&E | 14,947 | 16,348 | 17,541 | 18,913 |
| Total DA | 23,192 | 24,712 | 26,767 | 28,511 |
| Total Rest of State | 67,502 | 74,940 | 78,973 | 82,920 |
| Total State | 246,283 | 268,895 | 286,139 | 304,896 |

| | | | | |
|---|---------------|---------------|---------------|---------------|
| <u>RENEWABLES TARGET (gWh -- #11):</u> | | | | |
| PG&E | 8,665 | 12,527 | 16,714 | 17,880 |
| SCE | 11,601 | 14,873 | 15,858 | 17,031 |
| SDG&E | 410 | 1,103 | 2,060 | 2,978 |
| Total DA | 2,127 | 3,255 | 4,863 | 5,702 |
| Total Rest of State | 8,015 | 11,454 | 15,795 | 16,548 |
| Total State | 30,818 | 43,212 | 55,290 | 60,139 |

| | | | | |
|--------------------------------------|--------------|--------------|--------------|--------------|
| <u>RENEWABLES TARGET (%):</u> | | | | |
| PG&E | 12% | 16% | 20% | 20% |
| SCE | 17% | 20% | 20% | 20% |
| SDG&E | 3% | 7% | 12% | 16% |
| Total DA | 9% | 13% | 18% | 20% |
| Total Rest of State | 12% | 15% | 20% | 20% |
| Total State | 12.5% | 16.1% | 19.3% | 19.7% |

Notes:

10 "Preliminary Renewable Resource Assessment", California Energy Commission, 100-03-009 CR, July 1, 2003; Appendix A "Estimation of Energy Requirements. to meet California's RPS by 2017" (section 1 of table), p. 47.

11 Ibid., (section 4 of table).

| Year | Renew. (MW) | PSCo Peak Load (MW) | West Plains Peak Load (MW) | Renew. % |
|-------------|----------------|------------------------------|--|------------|
| 2004 | 300 | 5,500 | 1000 | 5% |
| 2005 | 400 | 5,599 | 1,018 | 6% |
| 2006 | 500 | 5,700 | 1,036 | 7% |
| 2007 | 600 | 5,802 | 1,055 | 9% |
| 2008 | 700 | 5,907 | 1,074 | 10% |
| 2009 | 800 | 6,013 | 1,093 | 11% |
| 2010 | 900 | 6,121 | 1,113 | 12% |
| 2011 | 1000 | 6,232 | 1,133 | 14% |
| 2012 | 1100 | 6,344 | 1,153 | 15% |
| 2013 | 1200 | 6,458 | 1,174 | 16% |
| 2014 | 1300 | 6,574 | 1,195 | 17% |
| 2015 | 1400 | 6,692 | 1,217 | 18% |
| 2016 | 1500 | 6,813 | 1,239 | 19% |
| 2017 | 1600 | 6,936 | 1,261 | 20% |
| 2018 | 1700 | 7,060 | 1,284 | 20% |
| 2019 | 1800 | 7,188 | 1,307 | 21% |
| 2020 | 1800 | 7,317 | 1,330 | 21% |

| No. | State | Plexos Trans Areas Loads | 2008 TransArea's Load (gWh) | 2002 Load (gWh) | 2002 Renew. (gWh) | 2002 Existing Percent (%) | 2004 (%) | 2004 (gWh) | 2008 (%) | 2008 (gWh) |
|-----|-----------------|---|-----------------------------|-----------------|-------------------|---------------------------|-------------|---------------|--------------|---------------|
| | | | | | | | | | | |
| 1 | Arizona | Arizona PG&E, SCE, SDG&E, LADWP, | 86,822 | 54,713 | 100 | 0.2% | 0.8% | 695 | 1.1% | 955 |
| 2 | California | Imperial Colorado, | 280,028 | | | | 12.5% | 35,041 | 16.1% | 45,001 |
| 3 | Colorado | WAPA RM | 62,777 | 39,560 | 200 | 0.5% | 4.6% | 2,897 | 10.0% | 6,295 |
| 4 | Idaho | Idaho Montana, | 17,296 | 10,899 | 900 | 8.3% | 9.5% | 1,636 | 10.0% | 1,730 |
| 5 | Montana | WAPA UM Nevada, Sierra, WAPA | 12,881 | 8,117 | 400 | 4.9% | 6.1% | 789 | 8.5% | 1,098 |
| 6 | Nevada | LC | 40,673 | 25,631 | 200 | 0.8% | 6.0% | 2,440 | 10.0% | 4,067 |
| 7 | New Mexico | New Mexico 40% of | 21,145 | 13,325 | 100 | 0.8% | 1.0% | 211 | 7.0% | 1,480 |
| 8 | Oregon | Northwest | 67,378 | 42,460 | 1,900 | 4.5% | 5.7% | 3,824 | 8.1% | 5,441 |
| 9 | Utah | 80% of PACE 60% of | 32,702 | 20,608 | 300 | 1.5% | 2.7% | 868 | 5.1% | 1,653 |
| 10 | Washington | Northwest | 101,067 | 63,689 | 3,000 | 4.7% | 5.9% | 5,973 | 8.3% | 8,399 |
| 11 | Wyoming | 20% of PACE | 7,267 | 4,580 | 400 | 8.7% | 9.9% | 722 | 10.0% | 727 |
| | Total | | 730,037 | | | | 7.5% | 55,097 | 10.5% | 76,846 |
| | Weighted | | | | | | | | | |

Notes:
10

| | 2013 (%) | 2013 (gWh) | 2018 (%) | 2018 (gWh) |
|--|--------------|---------------|--------------|----------------|
| | 1.1% | 955 | 1.1% | 955 |
| | 19.3% | 54,109 | 19.7% | 55,234 |
| | 15.7% | 9,870 | 20.4% | 12,790 |
| | 10.0% | 1,730 | 10.0% | 1,730 |
| | 10.0% | 1,288 | 10.0% | 1,288 |
| | 15.0% | 6,101 | 15.0% | 6,101 |
| | 10.0% | 2,115 | 10.0% | 2,115 |
| | 10.0% | 6,738 | 10.0% | 6,738 |
| | 8.1% | 2,634 | 10.0% | 3,270 |
| | 10.0% | 10,107 | 10.0% | 10,107 |
| | 10.0% | 727 | 10.0% | 727 |
| | 13.2% | 96,374 | 13.8% | 101,053 |

Renewable Resource Requirement:

| Year | 2008 |
|-----------------------|------------|
| Starting Amount | 55,097 gWh |
| Ending Amount | 76,846 gWh |
| New Resources -- WECC | 21,749 gWh |
| o CA | 9,961 gWh |
| o NW | 4,137 gWh |
| o RM | 4,496 gWh |
| o SW | 3,156 gWh |

includes CA, excludes CFE
 includes WA, ID, OR
 includes MT, WY, UT, CO
 includes AZ, NM, NV

PDC Assumptions:

| | | |
|--------------|------|-------------------------|
| Geothermal | 100% | percentage of nameplate |
| Biomass | 100% | " |
| Digester Gas | 100% | " |
| Solar | 80% | " |
| Wind | 20% | " |

Capacity Factor Assumptions:

| | | |
|--------------|-----|-------------------------|
| Geothermal | 90% | see source # 31 below |
| Biomass | 80% | " |
| Digester Gas | 85% | " |
| Solar | 35% | assumed to be about 1/3 |
| Wind | 35% | " |

| No. | Renew. Resource Name (region name / type) | General Location | Name-plate Capacity (MW) | Depend. Capacity (MW) | Capacity Factor (%) | Renew. Energy / Year (gWh) | Bus Location | Source |
|--------------------------------------|--|------------------|--------------------------|-----------------------|---------------------|----------------------------|--------------|--------|
| Total for US Portion of WECC: | | | | | | | | |
| | | | 2,600 | 876 | | 10,032 | | |
| California: | | | | | | | | |
| 1 | PG&E-Biomass 1 | PG&E | 25 | 25 | 80% | 175 | | # 30 |
| 2 | PG&E-Wind 1 | Solano | 100 | 20 | 35% | 307 | | # 30 |
| 3 | PG&E-Geothermal 1 | Siskiyou | 100 | 100 | 90% | 788 | | # 30 |

| | | | | | | | |
|----|-----------------------|-------------|--------------|------------|-----|---------------|------|
| 4 | PG&E-Wind 2 | Alameda | 160 | 32 | 35% | 491 | # 30 |
| 5 | PG&E-Digester 1 | PG&E | 40 | 40 | 85% | 298 | # 30 |
| 6 | SCE-Wind 1 | Kern | 1,695 | 339 | 35% | 5,197 | # 30 |
| 7 | SCE-Biomass 1 | Los Angeles | 50 | 50 | 80% | 350 | # 30 |
| 8 | SCE-Geothermal 1 | Mono | 50 | 50 | 90% | 394 | # 30 |
| 9 | SDG&E-Wind 1 | SDG&E | 200 | 40 | 35% | 613 | # 30 |
| 10 | Imperial-Geothermal 1 | Imperial | 180 | 180 | 90% | 1,419 | # 30 |
| | Subtotal CA | | 2,600 | 876 | | 10,032 | |

| | | | | | | | |
|-------------------|--------------------|------------|------------|------------|-----|--------------|------|
| Northwest: | | | | | | | |
| 1 | NW-Geothermal 1 | Idaho | 300 | 300 | 90% | 2,365 | # 32 |
| 2 | NW-Geothermal 2 | Idaho | 40 | 40 | 90% | 315 | # 32 |
| 3 | NW-Wind 1 | Washington | 250 | 50 | 35% | 767 | # 32 |
| 4 | NW-Wind 2 | Washington | 200 | 40 | 35% | 613 | # 32 |
| 5 | NW-Wind 3 | Idaho | 40 | 8 | 35% | 123 | # 32 |
| | Subtotal CA | | 830 | 438 | | 4,183 | |

| | | | | | | | |
|------------------------|--------------------|----------|-------------|------------|-----|--------------|------|
| Rocky Mountain: | | | | | | | |
| 1 | PACE-Geothermal 1 | PACE | 267 | 267 | 90% | 2,105 | # 32 |
| 2 | PACE-Solar 1 | Utah | 40 | 32 | 35% | 123 | # 32 |
| 3 | Colorado-Solar 1 | Colorado | 40 | 32 | 35% | 123 | # 32 |
| 4 | Wyoming-Wind 1 | Wyoming | 700 | 140 | 35% | 2,146 | # 32 |
| | Subtotal CA | | 1047 | 471 | | 4,497 | |

| | | | | | | | |
|-------------------|-------------------------|------------|------------|------------|-----|--------------|--------------|
| Southwest: | | | | | | | |
| 1 | Nevada-Geothermal 1 | SPP | 250 | 250 | 90% | 1,971 | # 32 |
| 2 | New Mexico-Geothermal 1 | New Mexico | 40 | 40 | 90% | 315 | # 32 |
| 3 | Arizona-Solar 1 | Colorado | 150 | 120 | 35% | 460 | # 32 |
| 4 | New Mexico-Wind 1 | New Mexico | 150 | 30 | 35% | 460 | # 32 |
| | Subtotal CA | | 590 | 440 | | 3,206 | 3,156 |

Sources:
30 "Renewable Resource Development Report"; California Energy Commission; Report # 500-03-080D, Sept. 30, 2002; Table 12, p. 94.

31 Ibid., pp. 94-95.

c:\evf\data\path 26 study\gas_prices_1-20-04.xls

Natural Gas Prices for Electricity Generation

| Region # | Region Name | CEC Source (#1) | ** Burner-Tip Prices ** | | ** Wellhead Prices ** | | ***** Trans. Cost ***** | |
|----------|----------------|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| | | | Nominal 2008 (\$/mmbtu) (#1) | Nominal 2013 (\$/mmbtu) (#1) | Nominal 2008 (\$/mmbtu) (#2) | Nominal 2013 (\$/mmbtu) (#2) | Nominal 2008 (\$/mmbtu) (#3) | Nominal 2013 (\$/mmbtu) (#3) |
| 1 | NEW MEXICO | ave. of EL Paso South-NM and El Paso North-NM ave. of EL Paso South-AZ and El Paso North-AZ | 4.51 | 5.54 | 3.41 | 4.27 | 1.09 | 1.26 |
| 2 | ARIZONA | Paso North-AZ | 4.51 | 5.54 | 3.41 | 4.27 | 1.09 | 1.26 |
| 3 | NEVADA | Nevada South | 4.83 | 5.88 | 3.41 | 4.27 | 1.42 | 1.61 |
| 4 | WAPA L.C. | Nevada South | 4.83 | 5.88 | 3.41 | 4.27 | 1.42 | 1.61 |
| 5 | MEXICO-CFE | Rosarito | 4.75 | 5.82 | 3.41 | 4.27 | 1.34 | 1.55 |
| 6 | IMPERIAL | SDG&E | 4.71 | 5.76 | 3.41 | 4.27 | 1.30 | 1.49 |
| 7 | SANDIEGO | SDG&E | 4.71 | 5.76 | 3.41 | 4.27 | 1.30 | 1.49 |
| 8 | SOCALIF | So. Calif Prod | 4.62 | 5.69 | 3.41 | 4.27 | 1.21 | 1.42 |
| 9 | LADWP | SoCal Gas | 4.71 | 5.76 | 3.41 | 4.27 | 1.30 | 1.49 |
| 10 | PG AND E | PG&E | 4.65 | 5.62 | 3.41 | 4.27 | 1.24 | 1.35 |
| 11 | NORTHWEST | ave. of PNW and PNW-Coastal | 4.68 | 5.68 | 3.41 | 4.27 | 1.27 | 1.40 |
| 12 | B.C.HYDRO | British Columbia | 4.29 | 5.22 | 3.41 | 4.27 | 0.88 | 0.95 |
| 13 | AQUILA | Alberta | 3.88 | 4.70 | 3.41 | 4.27 | 0.47 | 0.43 |
| 14 | ALBERTA | Alberta | 3.88 | 4.70 | 3.41 | 4.27 | 0.47 | 0.43 |
| 15 | IDAHO | PNW | 5.00 | 6.02 | 3.41 | 4.27 | 1.59 | 1.75 |
| 16 | MONTANA | Montana | 4.36 | 5.20 | 3.41 | 4.27 | 0.95 | 0.93 |
| 17 | WAPA U.M. | Montana | 4.36 | 5.20 | 3.41 | 4.27 | 0.95 | 0.93 |
| 18 | SIERRA | Nevada North | 5.04 | 6.07 | 3.41 | 4.27 | 1.63 | 1.80 |
| 19 | PACE | Utah | 4.29 | 5.09 | 3.41 | 4.27 | 0.88 | 0.82 |
| 20 | PSCOLORADO | Colorado | 4.31 | 5.11 | 3.41 | 4.27 | 0.90 | 0.84 |
| 21 | WAPA R.M. | Colorado | 4.31 | 5.11 | 3.41 | 4.27 | 0.90 | 0.84 |
| | Average | | 4.53 | 5.49 | 3.41 | 4.27 | 1.12 | 1.22 |

Sources:

- 1 "Electricity and Natural Gas Assessment Report", California Energy Commission, Commission Report, December, 2003, 100-03-014F, Table A-19b, "Natural Gas Prices For Electricity Generation", p. A-25.
- 2 For derivation of Wellhead Prices, see second worksheet.
- 3 The "transportation costs" is intended to include all charges from wellhead to burner-tip such as gathering / conditioning charges, transportation charges, and utility distribution charges.

Wellhead Prices

Assumptions:

| Producing Region (#10) | **** 2000 \$ / mcf **** | | * 2000 \$ / mmbtu ***: | | Nominal \$ / mmbtu | |
|---------------------------|-------------------------|---------------|------------------------|---------------|--------------------|---------------|
| | 2008 (#11) | 2013 (#11) | 2008 (#12) | 2013 (#12) | 2008 (#13) | 2013 (#13) |
| Rocky Mountain | 2.96 | 3.20 | 2.93 | 3.16 | 3.57 | 4.24 |
| San Juan | 3.12 | 3.46 | 3.08 | 3.42 | 3.76 | 4.58 |
| Alberta | 2.41 | 3.02 | 2.38 | 2.99 | 2.91 | 4.00 |
| Average | 2.83 | 3.23 | 2.80 | 3.19 | 3.41 | 4.27 |

Sources:

- 10 According to the CEC's 2003 Electricity and Natural Gas Report, 85 percent of the gas consumed in CA comes from the Rocky Mountain, San Juan, or Alberta basins. These three basins are averaged for purposes of an average WECC wellhead price, p. 110.
- 11 CEC 2003 Report, Table 4-3, "Project Wellhead Prices -- Annual Averages (2000\$ per Mcf)", p. 111.
- 12 Assumed conversion factor of 1 mcf = 1.01157 mmbtu.
http://www.energyshop.com/energyshop/tools/Gj_to_m3.cfm
- 13 For derivation of inflation rates, see third worksheet.

| CED 2003 | | | |
|--|---------------|--------------------|------------------|
| GDP IMPLICIT PRICE DEFLATOR (2001 = 100) | | | |
| 05/15/02 | | | |
| YEAR | Current INDEX | ANNUAL GROWTH RATE | Ratio to 2000 \$ |
| 2000 | 97.87 | 2.3% | 1.00 |
| 2001 | 100.00 | 2.2% | 1.02 |
| 2002 | 101.43 | 1.4% | 1.04 |
| 2003 | 102.78 | 1.3% | 1.05 |
| 2004 | 106.60 | 3.7% | 1.09 |
| 2005 | 110.43 | 3.6% | 1.13 |
| 2006 | 114.25 | 3.5% | 1.17 |
| 2007 | 116.87 | 2.3% | 1.19 |
| 2008 | 119.18 | 2.0% | 1.22 |
| 2009 | 121.39 | 1.9% | 1.24 |
| 2010 | 123.65 | 1.9% | 1.26 |
| 2011 | 126.04 | 1.9% | 1.29 |
| 2012 | 128.62 | 2.0% | 1.31 |
| 2013 | 131.32 | 2.1% | 1.34 |
| 2014 | 134.08 | 2.1% | 1.37 |
| 2015 | 136.93 | 2.1% | 1.40 |
| 2016 | 139.81 | 2.1% | 1.43 |
| 2017 | 142.74 | 2.1% | 1.46 |
| 2018 | 145.74 | 2.1% | 1.49 |
| 2019 | 148.79 | 2.1% | 1.52 |
| 2020 | 151.94 | 2.1% | 1.55 |

1.22

1.34

Sources:

21 Received above information from Todd Peterson, CEC Natural Gas Office, January 29, 2004.

Attendance online for Feb. 13, 2004 – Base case Subgroup Meeting

| | |
|------------------|--------------------------|
| Marianne Causley | CEC |
| Karen Griffin | CEC |
| Les Pereira | NCPA |
| Xuguang Leng | CPUC |
| Linda Brown | San Diego Gas & Electric |
| Tom Miller | PG & E |
| Pam Doughman | CEC |
| Jim Hoffsis | CEC |
| Darell Holmes | SCE |

CAISO personnel in attendance:

Eric Toolson
Mohamed Awad
Anna Geevarghese
Jeff Miller
Mingxia Zhang
Keith Johnson

Draft Agenda
TEAM Subgroup – Base Case Assumptions
Tuesday, February 23, 2004
10:00 to 11:30 am
Call-in Number – (888) 261-7938
Conference Code 1251037

Discussion Topics:

1. Review renewable targets
2. Review reserve margin deficiencies
3. Review initial gas-fired resource additions
4. Develop understanding of states using BACT and those that are not (impacts capital and O&M costs of future CC's)
5. Review list of potential CA gas-fired resource additions prior to 2008 (if available)

**Conference Call
February 24, 2004
10:30 – 11:30 AM**

Discussion Topics and Issues yet to be resolved

Review of renewable targets:

There were no concerns noted on the percentages used on the Renewable Percentages Section One of Expansion Plan

On page 9: The review of 2008 Renewables reflected that the California
100 gwh higher than what the CEC has

PDC Assumptions: CEC agrees with the assumptions, the other members as well,
however Edison questions New Solar

Page 11 line 9: Questions surrounding Vincent, initial assumption is to hook wind to
Vincent

Page 13: All agree that since the information is derived from SSGWI that it is reasonably
reliable. PG&E agrees that it is good to go with a proportional approach that has been
started. Edison agrees that the approach seems reasonable

Page 16, 17 and 18: Margins looking at California: CEC stated that the numbers were off
and they will get back to you with some information. PG&E: will also look at the
numbers and get back to you. Edison: stated that they show a few thousand megawatts
higher than what you show for 2008. CPUC: will provide region wide numbers
PG&E: will provide you with a list of resources

Discussion on wheeling rate:

CEC should be able to provide information on this

Question:

Is it possible to do a comparison of load used in this model and the CEC?

Draft Agenda
TEAM Subgroup – Base Case Assumptions
Wednesday, March 10, 2004
10:00 to 11:30 pm
Call-in Number – (888) 261-7938
Conference Code 1251037

Discussion Topics:

1. Review major changes / additions to 2008 case
 - a. Hydro PDC
 - b. Load forecast
 - c. Interruptible and load management resources
 - d. CA additions / retirements
 - e. Transmission expansion plan

2. Review progress on 2013 case
 - a. Renewables – requirements and additions
 - b. Planning reserve requirements
 - c. Resource additions
 - d. Economic entry

Attendance for March 10, 2004 – Base Case Assumptions Subgroup Meeting

IN ATTENDANCE

| | |
|--------------------|------|
| Marianne Causley | CEC |
| Mark Hesters | CEC |
| Mohamed El-Gasseir | CERS |

CAISO personnel in attendance:

Eric Toolson
Mohamed Awad
Anna Geevarghese
Jeff Miller
Mingxia Zhang
Keith Johnson
Anjali Sheffrin

Summary of Conference Call - Team Subgroup - Base Case Assumptions
March 10, 2004

Agenda Items Discussed

The Expansion Plan excel document was referenced and discussed throughout the discussion.

First to be discussed was page 31, there were no differences in opinions here, and information presented was supported by the subgroup.

Page 24

Do they base their assumptions on utility peak or CA peak?

CEC is to provide further information on this

As well as Edison and San Diego

Interruptible and load management resources for 2008

All were in agreement

The group was questioned whether Southwest imports to include Mexico?

Angela Tanghetti, CEC, stated that they don't include interruptible when calculating the planning reserve margin.

Edison and San Diego are expected to provide further expertise on this area

California additions / retirements

The group was questioned whether they were in agreement with the general source of information used or were there any suggestions on a better process.

In looking at Year 2008 Gas Fired Resources page 28, column 16, Mohamad Awad, CAISO, was concern with Mohave

It was then explained that we are only using California's share of Mohave

Transmission Expansion Plan:

Page 12

Mohamad Awad, CAISO, explained that path 15 is an ongoing project and the assumption made is valid.

Other members of the group were in agreement.

Columns 3/14/15/16 upgrades are expected by 2008 to be in placed

Column 3 is the only project that is finalized at this time.

All agreed that the assumptions are reasonable.

Economic Entry Assumptions page 9, 10

It was explained that nothing will be done for the economic entry for 2008

For 2013, comments were that the fixed O&M appeared high.

In review for progress on 2013 it began with a look at page 33 the 2013 Renewable Plan

It was suggested that the group look at page 34 for later discussion

Pam from California Energy Commission commented that the note on page 38 needs to be updated. She will provide the updated information by 3/11/04.

Summary of Conference Call - Team Subgroup - Base Case Assumptions
March 10, 2004

Planning Reserve Requirements, pages 39-42 were then looked at. The group is expected to review these pages for comment within the next two days.

The group was questioned whether the information be based in identified sites it or generics?

Angela Tanghetti, CEC, stated that they create it all generically.

Vanda, Deborah

Distribution List Name: TEAM Extreme Events

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| | |
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| Vanda, Deborah | DVanda@caiso.com |
| Zhang, Mingxia | MZhang@caiso.com |

TEAM Subgroup:

- II. Choice of extreme events
- a choice of weights

1. Ben Hobbs

~~Stephanie Zhang~~
~~Mingxia Zhang~~
~~Mingxia Zhang~~

Mingxia Zhang
Jing Chen

3. CLIFF ROCHLIN

4. Kushone Patel

5. BILL AHERN (C-PMC)

Final Agenda
TEAM Subgroup – Choice of Extreme Events and Weights

Tuesday, February 17, 2004
10:00 to 11:30am
Call-in Number – 888-261-7938
Conference Code - 1251037

Discussion Topics:

1. Variables and Extreme Events Under Consideration:

- (1) Demand Forecast: Very High (VH) and Very Low (VL). These extreme cases are derived based on 90% confidence interval of CEC's demand forecast error (see CAISO's Methodology for more detail).
- (2) Gas Price Forecast: Very High (VH) and Very Low (VL). Again these cases are derived based on 90% confidence interval of CEC's gas price forecast (see CAISO's methodology for more detail).
- (3) Hydro: Dry Year and Wet Year. We are considering using the same hydro scenarios as in SSG-WI's study for the entire WECC region.
- (4) New Generation Entry: +/- 50% of basecase new generation entry developed by Eric.
- (5) Markup: high markup and low markup scenarios derived based on 90% confidence interval of predicted price-cost markups using RSI regression that will be developed by Mingxia.
- (6) Contract Covering: +/- 50% of basecase long-term contract covering. Note that contract covering will not affect the dispatch under competitive run, but will affect the dispatch under market power run since we believe contract covering will affect generators' bidding behaviors. Contract covering will affect benefit calculation and participant test regardless the competitiveness of the market.
- (7) Sitting of New Renewable Resources: People in Eric's subgroup expressed concerns about the sitting of the new renewable resources in Kern County. It is believed that the sitting will greatly affect the economic benefit of Path 26. I'd like to add this as an additional sensitivity we want to perform.
- (8) Generation/Transmission Contingencies: Les Pereira from NCPA suggested considering large contingencies – both generation and transmission – as extreme events. CEC folks also suggested considering availability of existing generation in NP26 versus in SP26 and to consider generation outages as extreme event. They also suggested considering Southwest import availability as one scenario and to consider transmission line outages as one extreme event. I'd like to raise this issue in the subgroup discussion

2. Scenarios: Combinations of Variables Under Consideration:

- (1) ISO's Methodology on selecting combinations of demand forecast and gas price: at least 9 cases of combined demand and gas price required to derive the joint probabilities of demand and gas price (see CAISO's methodology for more details).

Figure 1. Combined Scenario of Demand and Gas Prices

| Scenarios | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------|----|----|----|----|---|----|----|----|----|
| Demand | VH | VH | VH | B | B | B | VL | VL | VL |
| Gas Price | VH | B | VL | VH | B | VL | VH | B | VL |

- (2) How we are going to select the combined scenarios of demand/gas price with other variables such as new generation entry, hydro, markup, and contract covering?
- (3) CEC folks suggested to focus on reserve margin scenarios as the combined scenarios of demand/hydro/new generation, instead of consider many combinations of individual scenarios. I'd like to raise this issue in the discussion.

3. Total Number of Cases Under Consideration

Preferred: more is better. Consider 3 scenarios for hydro, 3 scenarios for new generation entry, 3 scenarios for markup, and 3 scenarios for contract covering, and 9 scenarios of combined demand and gas price forecast, we are talking about 729 cases.

Minimum: 20

Question to the Subgroup: We want to follow the CAISO Scenario Selection and Probability Assignment Methodology in principle, but we also want to get the project done on time. That means a very limited number of scenarios. How are we going to select limited number of scenarios but with wide range representation of the future states so that we can get an unbiased estimate of the expected benefit for Path 26?

4. Any Additional Variables We Should Consider?

5. Any Specific Extreme Events We Should Consider?

Attendance/online for Feb. 17, 2004 – Extreme Events and Weights Subgroup Meeting

ONLINE

| | |
|--------------------|--------------------------|
| Marianne Causley | CEC |
| Les Pereira | NCPA |
| Darell Holmes | SCE |
| Cliff Rochlin | Southern Calif. Gas Co. |
| Darell Holmes | SCE |
| Paul Nelson | SCE |
| Kishore Patel | San Diego Gas & Electric |
| Gayatri Schillberg | JBS Energy |
| Alice Harron | PG & E |

IN ATTENDANCE

| | |
|---------------|-----|
| Karen Griffin | CEC |
| Mark Hesters | CEC |
| David Vidaver | CEC |

CAISO personnel in attendance:

Eric Toolson
Mohamed Awad
Anna Geevarghese
Jeff Miller
Mingxia Zhang
Keith Johnson
Anjali Sheffrin

Draft Agenda
TEAM Subgroup – Choice of Extreme Events and Weights

Monday, March 8, 2004
10:30am to 12:00pm
Call-in Number – 888-261-7938
Conference Code - 1251037

Discussion Topics:

1. Status of CEC Double Checking DMA's Demand Forecasts

See attached spreadsheet for detailed comparison.

2. Finalizing Measurable Events for Path 26 Simulation

See attached document for more detailed discussion and ISO's proposal on minimum number of events.

3. Finalizing High-Risk, Low-Probability Contingency Events for Path 26 Study

We need to select 1 to 2 contingency events from the following list:

- SONGs going down;
- PDCI going down;
- Southwest importing lines to California going down or on outage for a substantial period;
- Path 15 going on outage for substantial period;
- Earthquake in LA or East Bay taking out important substations;
- Extended Western States drought;
- Huge flooding of the LA basin from a tropical storm that stalls at the San Gabriel Mountains for days;
- Another oil/LNG export embargo by producing countries for political reasons.

The chosen contingency events should have the following properties: (1) they should be plausible; (2) we should be able to model their impact in PLEXOS; and (3) they should be anticipated to have a significant impact on transmission benefits. After we select the contingency events, we will combine the contingencies with all base cases of the other five variables.

Attendance for March 8, 2004 – Extreme Events and Weights Subgroup Meeting

IN ATTENDANCE

| | |
|-------------------|------------|
| Gayatri Schilberg | JBS Energy |
| David Vidaver | CEC |
| Mark Hesters | CEC |
| Karen Griffin | CEC |

CAISO personnel in attendance:

Eric Toolson
Mohamed Awad
Anna Geevarghese
Jeff Miller
Mingxia Zhang
Keith Johnson
Anjali Sheffrin

Vanda, Deborah

Distribution List Name: TEAM Market Power

Members:

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| Linda Brown | Lpbrown@semprautilities.com |
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TEAM Subgroup:

III.

Approach to Quantifying
Market Power Benefits / Appropriate
Benefits
Test

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Final Agenda

TEAM Subgroup – Market Power Modeling and Benefit Calculation

Tuesday, February 24, 2004

12:30:00 to 2:00pm

Call-in Number – 888-261-7938

Conference Code - 1251037

Discussion Topic: Market Power Modeling

1. Comments and feedback from Stakeholders

Does anyone have comments on Frank's and Jeff's presentation at the last Stakeholders Meeting? Do we need further discussion on the importance and complexity of market power modeling?

2. Options on modeling market power

- Fix Adder Approach
- Game Theoretical Approach
- Quasi-Game Theoretical Approach
- Empirical Approach

3. ISO's proposal on market power modeling

ISO proposed to focus on the empirical approach for the June 2 deadline Path 26 study (Phase 1). In Phase 2 we will explore the game-theoretical approach and its variants and also enhance the empirical approach.

- (1) Any comments on the variables we use? Any suggestions?
- (2) Any concerns?

4. Specifics of the ISO's proposal

- (1) Derive 3 price-cost markup scenarios based on RSI regression analysis
 - Derive the average level of *dynamic* price-cost markup;
 - Derive the high and low level of *dynamic* price-cost markup.
- (2) Use price-cost markups as generators' bid-cost markups in network simulation
How to use?
 - Use markup uniformly for all strategic suppliers;
 - Use markup according to suppliers' size;
 - Group suppliers to different categories and each category has a different markup.

Draft Agenda

TEAM Subgroup – Market Power Modeling and Benefit Calculation

Tuesday, March 9, 2004

2:00 pm to 3:30pm
Call-in Number – 888-261-7938
Conference Code - 1251037

Discussion Topic: Market Price Modeling, Benefit Calculation, and Tests

1. Comments and feedback from Stakeholders on proposed market price modeling

Does anyone have comments on ISO proposed approach of market price modeling?

2. Status update of RSI regression analysis

ISO staff will give a status update on the RSI analysis.

3. ISO's proposal on benefit calculation and three tests

In the last stakeholders meeting, Mingxia presented ISO proposed methods and criteria for measuring benefits. Does anyone have comments and concerns?

4. ISO's proposal to incorporate state long-term-contract in benefit calculation

Contract covering affects participants' benefits as well as the ISO participant test. See example in Mingxia's memo.

5. ISO's proposal not to incorporate ETC in benefit calculation