



**California ISO Payment Acceleration Project  
Feasibility Analysis  
October 8, 2008**

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## Executive Summary

The California ISO (CAISO) recognizes that the current payment calendar takes too long between trade dates and market clearing. This time delay presents undue credit risk to market participation. This increased risk may hinder resource availability from out-of-state resources, challenges credit management, and exposes market participants to additional risk in the event of defaults or bankruptcies. The CAISO has identified the need for an efficient cash clearing timeframe and to reduce the settlement statement timeframe from 38 business days to nine as part of Strategic Objective 1.0, Excellence in Grid & Market Operations in *CAISO's Five-Year Strategic Plan 2008-2012*<sup>1</sup>.

On May 30<sup>th</sup>, CAISO published a Discussion Draft paper containing a Payment Acceleration proposal. Market Participants have reviewed the paper, participated in stakeholder meetings, and provided feedback on CAISO's initial proposal.

The objective of this paper is to address stakeholder feedback and give details on the feasibility of recommended alternatives. It is an initial revision and further feedback and study is required to come to a final Payment Acceleration design.

## Summary - Initial CAISO Payment Acceleration Proposal

CAISO proposed the following in a May 30<sup>th</sup> Payment Acceleration Discussion Paper and reviewed/discussed with stakeholders during 8/19/08 Stakeholder meeting. The following chart summarizes the proposal and includes selected stakeholder feedback requiring further analysis by CAISO.

Please reference section Comments on Payment Acceleration at <http://www.caiso.com/docs/2005/03/23/2005032307323521863.html> for complete record of all Stakeholder submitted comments.

Summary of CAISO Initial Proposal		
Subject	Scope	Selected Stakeholder Feedback
Settlement Timeline	T+9B (initial) T+50B, T+100B (True-ups) T+18M, T+36M (Sunset)	General agreement with proposed timeline.  Requested CAISO to investigate accelerating settlements of DAM closer to a T+0 timeframe.  Concern expressed that proposed timeline would create long intervals between settlements & cash clearing.
Meter Data Estimation	Will use market schedules where meter data is not available at T + 5B. If SC does not submit, or polled meter data is unavailable by T+5B, CAISO will estimate meter data values based on available schedules.	Support and agreement of using schedules where meter data is not available at the proposed T+5B timeline.  Held separate Stakeholder meeting to discuss estimation options. If estimation is used, interest payments should be applied to difference between estimation (initial) and actual (true-up).  With an accelerated DAM settlement process, meter data estimation is not required.

<sup>1</sup> The CAISO's Five Year Strategic Plan 2008-2012 can be located at <http://www.caiso.com/1fa4/1fa4c0d125c80.pdf>

Invoicing Date	3rd Tuesday of each month	Concern expressed over the mixing of initial and true-up statements from previous accounting months on the same invoice. The monthly invoice should only include trade dates that encompass a full month rather than individual trade dates from various months. In addition, some preferred a fixed invoice date (i.e. 20 <sup>th</sup> of month).
Invoicing Frequency	Monthly	Monthly Invoicing is consistent with MRTU and current Market Participant accounting processes. Opinion expressed that Monthly invoicing does not meet the objective of Payment Acceleration. In order to accelerate cash clearing, the end goal should be weekly invoicing. Request made for CAISO to investigate an accelerated invoicing schedule.  Some preferred month-end + 10days to reduce impact on current accounting processes/systems.
Sunset Provision & Transition Period	Sunset Provision at T+36M. 90 Day Transition period.	General Agreement CAISO recognizes need to change final true-up to T+35M to allow time between final statement and sunset provision.
Deployment Schedule	Six months after MRTU go-live.	General agreement that MRTU is top priority. Any payment acceleration plan should not interfere with MRTU's deployment schedule.  Request for CAISO to explore a more aggressive implementation schedule (closer to MRTU go-live).

<b>Additional Stakeholder Proposals / Feedback</b>		
<b>Subject</b>	<b>Feedback</b>	<b>Proposed by</b>
Bifurcation-DA/RT Settlements	All data required for settling the DA exists at the close of DAM. In addition, estimation of meter data is not required to settle DA. Would greatly improve cash clearing timelines.	Calpine
Interest Payments	Any settlement proposal based upon estimated data must reflect interest payments.	SCE
Invoicing	Monthly invoicing does not meet the objective of Payment Acceleration. In order to accelerate cash clearing, invoicing should be more frequent (i.e. weekly, semi-monthly).  Mixing of initial and true-up statements from previous accounting months on the same invoice would be problematic to existing accounting systems. The monthly invoice should only include trade dates that encompass a full month rather than individual trade dates from various months. In addition, a fixed invoice date (i.e. 20 <sup>th</sup> of month) is preferred.	Calpine  SCE
Cash Flow Analysis	Cash flow analysis of the Day Ahead market valuation in MRTU.	NCPA

## Bifurcation of DA/RT Settlements

Modifying settlements to meet the proposed PA settlement timeline would require modifications to the current settlement business processes and procedures. In addition, an initial settlement run containing only the DAM (bifurcation of DA/RT settlements) is feasible in the following proposed timeline:

- T+2B (DA only)
- T+50B (RT/final)
- T+100B (true-up)
- T+18M (true-up) - if necessary
- T+35M (sunset) – if necessary

By modifying internal operational processes, the current SaMC system supports a 'DAM only' settlement run. However, system changes are required to deploy a permanent solution.

A DAM settlement solution has the following additional advantages:

- Complexity of Meter Data Estimation is eliminated.
- Greatly decreases settlement timeline for large portion of market
- Does not require separate invoicing
- No legal or policy issues exist that would prevent a DA/RT market settlement bifurcation.

However, the bifurcation proposal also presents a set of challenges that will need to be evaluated further prior to finalizing a Payment Acceleration solution. Some of these challenges were raised by SCE in stakeholder comments and are outlined below:

1. How will the CAISO address large deviations in generation and load between Day-Ahead and the Real-Time markets? For example, if a generator trips off-line between Day-Ahead and Real-Time will the CAISO still provide an initial payment to the generator even though they didn't produce?
2. Bid Cost Recovery payments to Generators and Bid Cost Recovery charges to Demand and how the CAISO will settle these charges Day-Ahead? Bid Cost Recovery payments to Generators are calculated by netting shortfalls and revenues across the trading day across all three markets including the Real-Time Market to determine whether the generating resource is eligible for Bid Cost Recovery. The uplift charge for RUC Bid Cost Recovery even though it is a Day-Ahead charge, is allocated to SCs with a net negative demand deviation and therefore is dependent upon Real-Time meter data to do the calculation. Since both of these charges require Real-Time data, the CAISO will need to determine whether or not these charges can be settled Day-Ahead. In addition to some of the Bid Cost Recovery charges there may be other Day-Ahead charges that are reliant on Real-Time meter data that the CAISO should evaluate and discuss with stakeholders when considering this proposal.
3. The impact of implementation of Convergence Bidding (also known as virtual bidding) one year after MRTU start-up should also be evaluated and discussed further with stakeholders in reference to the bifurcation proposal.

Convergence Bidding provides a financial tool for the physical hedging of production by suppliers of energy as well as the arbitrage of prices between the Day-Ahead and Real-Time markets. Convergence bidding allows buyers and sellers to purchase or sell energy in the forward spot market, with the explicit requirement that they sell or buy back the same energy in real time as a price taker. The term "Convergence" refers to the convergence of energy prices in the two spot markets, which is an intended outcome of the underlying bidding practice.

A long delay in the settlement between Day-Ahead and Real-Time markets may impact the liquidity of the market especially for smaller players bidding virtual demand who will have to wait a long time between paying Day-Ahead and receiving payment in the Real-Time market. Since virtual bids are purely financial and are not dependent on meter data, this problem could be remedied if virtual bids could be settled immediately based in the known Real-Time prices. However, since it is proposed that virtual bids will also pay a portion of Bid Cost Recovery uplift charges and some of those charges are dependent on Real-Time data the CAISO will need to determine how these uplift costs will be settled if virtual bids are to be part of the Day-Ahead settlement. If interest is charged and paid between the Day-Ahead and Real-Time settlement period this could also provide a sufficient remedy to the problem for virtual bidders.

4. The August 18<sup>th</sup> FERC order addressing under scheduling of load in the Day-Ahead market imposes hourly charges on SC's whose actual demand exceeds demand cleared in the day-ahead market by greater than 15 percent. In conjunction, FERC approved the exemption for small LSE's with peak load of 500MW or less in a particular LAP in any given trading hour from being assessed these charges SCE raised concern in comments that as a result of this exemption there is the potential for a non-trivial amount of load being cleared in the real-time instead of the day-ahead market. In particular, SC's that are exempt from under scheduling charges have the ability to schedule their entire load (up to 500 MW per hour) in the real-time market. Under Calpine's proposal to bifurcate day-ahead and real-time settlements, small SC's would be able to purchase load from the CAISO on credit until T+50 business days. This scenario could increase the credit exposure to the market instead of decreasing it. Under the Calpine proposal, how does the CAISO intend to address the issue where SC's can move a sizable portion, if not all, of their load purchases to the real-time market and in essence purchase load on credit for 3 months? In addition, under the Calpine proposal, does the CAISO intend to perform some type of an Uninstructed Imbalanced Energy (UIE) calculation for the incremental amount of load that shows up in real-time?

#### Settlement Statements with DA/RT Bifurcation

Under a potential DA/RT Bifurcation solution, the initial statement would contain only a set of pre-determined DAM charges based on actual schedules submitted and cleared in the DA IFM. Initial statement publishing could occur at two (2) business days after each trade date (T+2B). SCs would be able to submit billing inquiries identifying discrepancies based on this initial statement until T+28 business days for any item. The CAISO will make corrections on the next true up statement at T+50B for the impacted trade date for any valid issues identified in billing inquiries received before the predefined deadline. If an SC disagrees with the CAISO's resolution of its billing inquiry, that SC has 3 months from the CAISO response to initiate a good faith negotiation (GFN).

The second statement ("First True Up") would contain the remaining charge codes (i.e. RT, DA requiring RT data, etc.) using actual SQMD submitted no later than *T+45 calendar days*, as well as SQMD for CAISO polled meter data, and will publish 50 business days after the trade date (T+50B). The T+50B timeframe allows enough time for SCs to submit actual SQMD. Any discrepancies from the T+2B initial statement for DA charges are also included on this statement. The first true up statements will be reflected on the next invoice published. SCs would be able to submit billing inquiries to the CAISO on or before T+74B, and the CAISO will make corrections, if possible, on the next true up statement at T+100B. If an SC disagrees with the CAISO's resolution of its billing inquiry, that SC has 3 months from CAISO response to initiate a good faith negotiation (GFN).

The third statement ("Second True Up") would include any changes to SQMD, and any corrections due to valid issues identified through the billing inquiry process. This statement will publish 100 business days after the trade date (T+100B), and will act as the final statement for purposes of

RMR invoicing. The second true up statements will be reflected on the next invoice published. SCs can submit billing inquiries based only on incremental changes between the T+50B and T+100B statements, and these must be submitted by T+12M. Valid billing inquiries will be included on the next true up statement at T+18M. If a participant disagrees with the CAISO's resolution of its billing inquiry, that SC has 3 months from CAISO response to initiate a GFN.

The fourth statement ("Third True Up") would be generated only if there were changes due to billing inquiries filed based on the second true up statement, if corrected SQMD is submitted by a SC, or if other errors were caught by the CAISO. It will publish 18 months after the trade date (T+18M), and the statements will be reflected on the next invoice published. Based on this statement, SCs can submit billing inquiries based only on incremental changes between the T+100B and T+18M statements, and these must be submitted by T+19M. The CAISO must respond to billing inquiries no later than T+20M. Valid billing inquiries will be included on the next true up statement. If a participant disagrees with the CAISO's resolution of its billing inquiry and wishes to pursue it further that participant must file a GFN within 1 month of the CAISO response.

The fifth statement ("Fourth True Up") would be generated 35 months after the trade date (T+35M) only if there were changes due to valid billing inquiries from the T+18M statement, meter data issues identified through the audit process, or any GFN or ADR settlements. The fourth true up statements will publish to the T+35M invoice cycle. If a participant disagrees with the CAISO's resolution of its billing inquiry, that participant must follow the alternative dispute resolution (ADR) process to pursue the matter further.

#### Charge Code Analysis for DA Only Settlements

CAISO has done a preliminary analysis on which charge codes would be considered 'DA only' for potential inclusion into initial DAM settlements. The analysis included executing a trade date with MRTU Market Simulation data, directly following the completion of DAM. In addition, further analysis on payload content and timelines were also conducted. The results are listed below, however; this is an initial assessment and additional analysis is required to finalize the list.

CC Classification	CC	CC Name	DA or RT
Voltage Support	302	Long Term Voltage Support Stmt.	Independent
HVAC	372	High Voltage Access Charge Alloc.	Independent
HVAC	374	High Voltage Access Revenue Pmt.	Independent
Wheeling	382	High Voltage Wheeling Alloc.	Independent
Wheeling	383	Low Voltage Wheeling Alloc.	Independent
Wheeling	384	High Voltage Wheeling Revenue Pmt.	Independent
Wheeling	385	Low Voltage Wheeling Revenue Pmt.	Independent
FERC Fee	525	FERC Fee Over / Under Recovery	Independent
FERC Fee	550	FERC Fee Stmt. due Monthly	Independent
FERC Fee	551	FERC Fee Stmt. due Annually	Independent
Emissions	591	Emissions Cost Recovery	Independent
Emissions	691	Emissions Cost Pmt.	Independent
PIRP	701	Forecast Service Fee	Independent
PIRP	711	Intermittent Resources Net Deviation Stmt.	RTM
PIRP	721	Intermittent Resources Net Deviation Alloc.	RTM
PIRP Export Energy	741	Quarterly PIR Export Energy Process Fee	Independent
PIRP Export Energy	751	Monthly PIR Export Energy Stmt.	Meter Data
PIRP Export Energy	752	Monthly PIR Export Energy Alloc.	

Black Start Energy	1001	Black Start Energy Pmt.	RTM
Black Start Capability	1101	Black Start Capability Alloc.	Independent
Voltage Support	1302	Long Term Voltage Support Alloc.	Independent
Supplemental Energy	1303	Supplemental Reactive Energy Alloc.	Independent
Black Start Energy	1353	Black Start Energy Alloc.	DAM
MSS Deviation Penalty	1407	MSS Positive Deviation Penalty	RTM
Energy Exchange	1487	Emergency Energy Exchange Program Neutrality Adj.	Independent
EP Penalty	1591	EP Penalty Charge due CAISO Trustee	Independent
EP Penalty	1592	EP Penalty Alloc. Pmt.	Independent
EP Penalty	1593	EP Penalty Chrg/Alloc. for Under or Over Reported Load/Generation	Independent
MSS Deviation Penalty	2407	MSS Negative Deviation Penalty	RTM
Interest	2999	Default Invoice Interest Pmt.	Independent
RMR Invoice	3010	RMR Invoice	Independent
Black Start Capability	3101	Black Start Capability Stlmt.	Independent
Supplemental Energy	3303	Supplement Reactive Energy Stlmt.	Independent
Interest	3999	Default Invoice Interest Charge	Independent
UDP	4470	Negative UD Penalty	RTM
UDP	4480	Positive UD Penalty	RTM
GMC - SysRes & MD Dependent	4501	GMC - Core Reliability Services Non-Coincident Peak	DAM
GMC - SysRes & MD Dependent	4502	GMC - Core Reliability Services Non-Coincident Off Peak	DAM
GMC - SysRes & MD Dependent	4503	GMC - Core Reliability Services Export Energy	DAM
GMC - SysRes & MD Dependent	4505	GMC - Energy Trans. Services Net Energy Withdrawals	DAM
GMC - RT Energy Dependent	4506	GMC - Energy Transmission Services Deviations	RTM
GMC for TORs	4508	GMC - ETS for TOR Export Energy	DAM
GMC - AS Dependent	4511	GMC - Forward Scheduling	RTM
GMC - AS Dependent	4512	GMC - Forward Scheduling Inter-SC Trades	RTM
GMC - AS Dependent	4513	GMC - Forward Scheduling Inter-SC Trades-PGAB	DAM
GMC - AS Dependent	4534	GMC - Market Usage AS	DAM
GMC - RT Energy Dependent	4535	GMC - Market Usage Instructed Energy	RTM
GMC - RT Energy Dependent	4536	GMC - Market Usage Uninstructed Energy	RTM
GMC - RT Energy Dependent	4537	GMC - Market Usage Forward Energy	RTM
GMC - RT Energy Dependent	4546	GMC - Energy Transmission Services Uninstructed Energy and Market Usage Uninstructed Energy - PIRP	RTM
GMC - Settlements & CR	4575	GMC - Stlmt.s Metering and Client Relations	Independent
Rounding	4989	Daily Rounding Adjustment	DAM
Rounding	4999	Monthly Rounding Adjustment	DAM
Shortfall	5900	Shortfall Receipt Distribution	Independent
Shortfall	5910	Shortfall Alloc.	Independent
Interest	5999	FERC Mandated Interest on Re-Runs	Independent
DA Energy	6011	Day Ahead Energy, Cong., Loss Stlmt.	DAM
Underscheduling Load Settlement	6044	Underscheduling Load Stlmt	RTM
Imbalance Energy	6051	HASP Energy, Cong. & Loss Predispatched Stlmt.	RTM
AS Neutrality Alloc.	6090	Ancillary Service Upward Neutrality Alloc.	DAM
AS Spin Reserve	6100	Day Ahead Spin Reserve Capacity Stlmt.	DAM



AS Spin Reserve	6124	No Pay Spin Reserve Stlmt.	RTM
AS Spin Reserve	6150	HASP Spin Reserve Capacity Stlmt.	RTM
AS Spin Reserve	6170	Real Time Spin Reserve Capacity Stlmt.	RTM
AS Spin Reserve	6194	Spin Reserve Obligation Stlmt.	DAM
AS Spin Reserve	6196	Spin Reserve Neutrality Alloc.	RTM
AS Non-Spin Reserve	6200	DA Non-Spin Reserve Capacity Stlmt.	DAM
AS Non-Spin Reserve	6224	No Pay Non-Spin Reserve Stlmt.	RTM
AS Non-Spin Reserve	6250	HASP Non-Spin Reserve Capacity Stlmt.	RTM
AS Non-Spin Reserve	6270	RT Non-Spin Reserve Capacity Stlmt.	RTM
AS Non-Spin Reserve	6294	Non-Spin Reserve Obligation Stlmt.	DAM
AS Non-Spin Reserve	6296	Non-Spin Reserve Neutrality Alloc.	RTM
Inter-SC Trades	6301	Day Ahead Inter-SC Trades Stlmt.	DAM
Inter-SC Trades	6351	HASP Inter-SC Trades Stlmt.	RTM
Imbalance Energy	6470	RT Instructed Imbalance Energy Stlmt.	RTM
Imbalance Energy	6474	RT Unaccounted for Energy Stlmt.	RTM
Imbalance Energy	6475	RT Uninstructed Imbalance Energy Stlmt.	RTM
Imbalance Energy	6477	RT Imbalance Energy Offset	RTM
Excess Cost	6480	Excess Cost Neutrality Alloc.	RTM
Excess Cost	6482	Real Time Excess Cost for Instructed Energy Stlmt.	RTM
Excess Cost	6486	Real Time Excess Cost for Instructed Energy Alloc.	RTM
Exceptional Dispatch	6488	Exceptional Dispatch Uplift Stlmt.	RTM
Exceptional Dispatch	6489	Exceptional Dispatch Uplift Alloc.	RTM
AS Reg Up	6500	Day Ahead Reg Up Capacity Stlmt.	DAM
AS Reg Up	6524	Non Compliance Reg Up Stlmt.	RTM
AS Reg Up	6570	Real Time Reg Up Capacity Stlmt.	RTM
AS Reg Up	6594	Reg Up Obligation Stlmt.	RTM
AS Reg Up	6596	Reg Up Neutrality Alloc.	RTM
AS Reg Down	6600	Day Ahead Reg Down Capacity Stlmt.	DAM
Station Power	6609	Station Power Fee	Independent
BCR Settlement	6620	Bid Cost Recovery Stlmt.	DAM
AS Reg Down	6624	Non Compliance Reg Down Stlmt.	RTM
BCR IFM & RTM Allocation	6636	IFM Bid Cost Recovery Tier 1 Alloc.	DAM
BCR IFM & RTM Allocation	6637	IFM Bid Cost Recovery Tier 2 Alloc.	RTM
AS Reg Down	6670	Real Time Reg Down Capacity Stlmt.	RTM
BCR IFM & RTM Allocation	6678	Real Time Bid Cost Recovery Alloc.	RTM
AS Reg Down	6694	Reg Down Obligation Stlmt.	RTM
AS Reg Down	6696	Reg Down Neutrality Alloc.	RTM
CRR Settlement	6700	CRR Hourly Stlmt.	Independent
Day Ahead AS Congestion	6710	DA Cong. - AS Spin Reserve Import Stlmt..	DAM
HASP & RT Congestion	6711	HASP Cong. - AS Spin Reserve Import Stlmt.	RTM
HASP & RT Congestion	6715	RT Cong. - AS Spin Reserve Import Stlmt.	RTM
Day Ahead AS Congestion	6720	DA Cong. - AS Non-Spin Reserve Import Stlmt.	DAM
HASP & RT Congestion	6721	HASP Cong. - AS Non-Spin Reserve Import Stlmt.	RTM
CRR Prepayment	6722	CRR PrePmt. Stlmt.	Independent
HASP & RT Congestion	6725	RT Cong. - AS Non-Spin Reserve Import Stlmt.	RTM
CRR Prepayment	6727	CRR PrePmt. Remainder Alloc.	Independent

CRR Settlement	6728	CRR Monthly Clearing	Independent
Day Ahead AS Congestion	6750	DA Cong. - AS Reg Up Import Stlmt.	DAM
HASP & RT Congestion	6755	RT Cong. - AS Reg Up Import Stlmt.	RTM
Day Ahead AS Congestion	6760	DA Cong. - AS Reg Down Export Stlmt.	DAM
HASP & RT Congestion	6765	RT Cong. - AS Reg Down Export Stlmt.	RTM
HASP & RT Congestion	6774	Real Time Cong. Offset	RTM
HASP & RT Congestion	6788	RTM Cong. Credit Stlmt.	RTM
CRR Settlement	6790	CRR Balancing Account	Independent
CRR Settlement	6798	CRR Auction Transaction Stlmt.	Independent
BCR RUC	6800	DA Residual Unit Commitment (RUC) Availability Stlmt.	DAM
BCR RUC	6806	DA Residual Unit Commitment (RUC) Tier 1 Alloc.	DAM
BCR RUC	6807	DA Residual Unit Commitment (RUC) Tier 2 Alloc.	DAM
BCR RUC	6824	No Pay Residual Unit Commitment (RUC) Stlmt.	RTM
DA Energy	6947	IFM Marginal Losses Surplus Credit Alloc.	DAM
Transmission Losses Obligation	6976	Trans. Loss Oblig. Chrg for RT Scheds Under Control Agreements	RTM
Transmission Losses Obligation	6977	Alloc. of Trans. Loss Oblig. Chrg for RT Scheds Under Control Agreements	RTM
Imbalance Energy	6984	RTM Net Marginal Loss	RTM
Neutrality	8999	Neutrality Adjustment	Independent

#### Legend

RTM = Real Time Market - cannot be settled in a 'DA Only' settlements

DAM = Day Ahead Market – can be settled in a 'DA Only' settlements

Independent – market independent. Can settle in DAM or RTM.

#### **Interest Payments**

CAISO has identified potential methodologies for estimating Meter Data at T+5B absent polled or SC submitted data availability. Options are as follows:

- Using only DA IFM Schedules
- Using DA IFM + adjustment based on CAISO Actual Load
- Use current Credit Liability Meter Data estimation (uses the IFM DA schedule and adder of +/- 10% factor (or other % Factor).

Each of these options will provide a suitable solution for meter data estimation. In addition, implementation of each is feasible with the PA solution. However, additional feedback from stakeholders is required to choose a preferred option. Lastly, an agreement on guidelines for submitting T+5B meter data is still required.

Meter data estimation, since it is never 100% accurate, creates a number of settlements challenges that will need to be evaluated and discussed further with stakeholders in order to determine a solution. Some of those challenges could be:

- Large deviations in Real-Time calculations due to differences between expected energy and Day-Ahead schedules for generators
- Some Day-Ahead charges, such as Bid Cost Recovery payments to generators and Bid Cost Recovery Uplift charges to load that rely on Real-Time data would be very difficult to estimate with a high degree of accuracy.
- Imbalances between payments made to suppliers and charges to Demand due to estimations based on combination of polled meter data and estimated data

- Possible financial incentive for SCs to submit inaccurate estimated meter data if interest payments are not included in the proposal

In the case meter data is estimated, CAISO will consider including interest payments on any difference between the initial (estimation) and subsequent true-ups. One thing to note, since the Day Ahead Market is not dependent on meter data, the need to estimate meter data would be eliminated with the DA/RT bifurcation solution discussed above.

## Invoicing

Below is a description of prospective settlement statement and Invoice cycles under a DA/RT bifurcation scenario, as well as various invoice cycles. Scenarios proposed and explained in CAISO's initial proposal are not discussed, but can be reviewed in the May 30<sup>th</sup> Discussion Draft paper.

CAISO's settlements system (SaMC) currently has the capability to invoice at various pre-determined timelines. This includes monthly (i.e. fixed date – 20<sup>th</sup> of each month, floating date – 3<sup>rd</sup> Tuesday, or month-end), semi-monthly (fixed & floating) and weekly. Although SaMC supports these invoice options, anything but a monthly cycle would introduce additional operational complexity. Therefore, if semi-monthly or weekly invoicing is implemented, SaMC would require enhancements to simplify and streamline operations.

Any statements that have published at the time of invoicing can be included in that invoice period. This includes not only initial statements, but also any true up statements that have published. Following current standards, payment of all invoices can continue to be due within 5 business days after the invoice publishes.

Below is additional information on various invoice options:

### Monthly Invoicing

- Average cash clearing at 22 days
- Flexible Invoice date
  - Standing date (i.e. 20th of each month, month-end)
  - Floating day (i.e. 3rd Tuesday)
- If standing month-end invoicing is not chosen, invoice will contain a mix of different trade months (with initial month). True-up months can be kept on same invoice.
- Less intrusive to existing accounting systems

### Semi-Monthly Invoicing

- Average cash clearing at 13 days
- Invoices will contain mix of different trade months
- More frequent invoicing

## Sample Payment Calendar - T+2B & Semi-Monthly Invoicing

Settlement Date	Payment Acceleration -semi monthly invoice				
	T+2B	T+50B	T+100B	T+18M	T+35M
8/19/2009	8/17/2009	6/10/2009	4/1/2009		
8/20/2009	8/18/2009	6/11/2009	4/2/2009		
8/21/2009	8/19/2009	6/12/2009	4/3/2009		
8/22/2009					
8/23/2009					
8/24/2009	8/20/2009	6/13/2009 6/14/2009 6/15/2009	4/4/2009 4/5/2009 4/6/2009		
8/25/2009	8/21/2009 8/22/2009 8/23/2009	6/16/2009	4/7/2009		
8/26/2009	8/24/2009	6/17/2009	4/8/2009		
8/27/2009	8/25/2009	6/18/2009	4/9/2009		
8/28/2009	8/26/2009	6/19/2009	4/10/2009		
8/29/2009					
8/30/2009					
8/31/2009	8/27/2009	6/20/2009 6/21/2009 6/22/2009	4/11/2009 4/12/2009 4/13/2009		
9/1/2009	8/28/2009 8/29/2009 8/30/2009	6/23/2009	4/14/2009		
9/2/2009	8/31/2009	6/24/2009	4/15/2009		

Operating dates in red will be invoiced on 9/2/2009.

Invoices for dates that correspond in color to the dates settled.

### Cash Flow Analysis

At the August 19, 2008 Payment Acceleration meeting, NCPA shared to the forum the fact that the CAISO performed approximately \$2 billion in annual settlement billings to market participants under the current CAISO market structure (as reported in the CAISO's 2007 Annual Report). Within this context, NCPA then inquired to the CAISO panel: What is the CAISO's estimate of annual market charges to market participants under post-MRTU, considering the inclusion of its new Day Ahead forward energy market?

The intent behind this question was to gain perspective of the financial magnitude under the new market structure, which in turn might serve as a useful guide in the development of payment acceleration design elements to cash-clear the market(s) more efficiently and effectively.

To clarify NCPA's request: NCPA is requesting that the CAISO produce a financial estimate for the amounts of settlement billings to market participants (on both a monthly and annual basis) for each major product, such as Ancillary Services Capacity, Real Time Energy, Transmission Access Charges, GMC, and Day Ahead Energy, etc.

The CAISO has evaluated the request for a cash flow analysis of the Day Ahead market valuation in MRTU and has concluded that any result would be speculative and could not be used to determine expected behavior or market results. The CAISO would recommend that the cash flow

analysis be scenario based and can be derived from their own Market Simulation. We have determined that the following assumptions would be valid for Market Participants who are interested in conducting their own cash flow analysis based on their business inputs and bidding patterns.

- Load (in MW) will not change significantly after MRTU is implemented
- The application of the under-scheduling rule as defined by MRTU policy would impact Day Ahead valuation
- LMPs can only be estimated at this point, potentially using study data
- Settlement charges for losses, congestion, GMC, etc. can be calculated based on the above
- AS market volume would not be impacted

### Sunset Provision

CAISO plans to implement a sunset provision policy at T+35M – 4<sup>th</sup> True-up Statement. This policy is in effect post Payment Acceleration go-live and does not include current or MRTU settlement timelines/schedules.

### Deployment Schedule

CAISO continues to focus on a February 1<sup>st</sup>, 2009 deployment of MRTU. Due to system, process, and policy modifications required to implement Payment Acceleration, a deployment with MRTU go-live is not a feasible consideration. Implementing PA & MRTU concurrently will be invasive and a distraction to both internal and external MRTU project teams.

In order to achieve an accelerated payment timeline earlier than the proposed '6 months after MRTU go-live' timeline, a potential phased implementation is being considered. This would include the following phases:

	<b>Phase #1 : 1-3 months after MRTU go live</b>	<b>Phase #2 : 8-12 months after MRTU go live</b>
Timeline	T+2B – DA only OR T+9B T+50B - RT w/actual meter data - DA true-up T+100B – True-up T+18M - optional true-up T+35M - Sunset (optional true-up)	T+2B – DA only OR T+9B T+50B - RT w/actual meter data - DA true-up T+100B – True-up T+18M - optional true-up T+35M - Sunset (optional true-up)
Invoicing Frequency	Monthly – end of month	Semi-monthly or weekly
Credit Run	T+7	T+7
System Impacts	Minimal	Inclusive
Bifurcation solution	Existing SaMC functionality – No Vendor changes.	Integrated into SaMC
Invoice solution	Monthly - Same as MRTU	Integrated into SaMC
Interest	Not Considered	Provide interest payments for difference between initial & true-ups if estimation is used.

## Transition Timeline

The current payment calendar and the payment acceleration payment calendar will overlap for a period of time in 2009. The transition period is estimated at approximately 90 days.