



**California ISO Payment Acceleration Project
Straw Proposal
November 3, 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 as part of Strategic Objective 1.0, Excellence in Grid & Market Operations in *CAISO's Five-Year Strategic Plan 2008-2012*¹.

CAISO published a Discussion Draft paper containing an initial Payment Acceleration proposal. Market Participants have reviewed the paper, participated in stakeholder meetings, and provided feedback. In addition, CAISO published a Feasibility Analysis paper in response to participant feedback and held a stakeholder meeting to review and discuss. CAISO has evaluated all stakeholder feedback, comments, and proposals in creating this Payment Acceleration Straw Proposal.

The objective of the Straw Proposal is to present CAISO's position after a comprehensive evaluation of participant feedback through the Stakeholder Process. Market Participants will have the opportunity to comment on the Straw Proposal prior to development of the final proposal.

Straw proposal recommendation comprises of an increased settlement calculation and invoice timeline that reduces the current (MRTU) average cash clearing time from 56 to 17 business days. In addition, initial statement publication timeline decreases to 7 business days from 38 in the MRTU implementation.

Payment Acceleration Implementation Options

CAISO conducted a comprehensive stakeholder process, evaluated all stakeholder feedback, and reviewed Payment Acceleration objectives. CAISO determined the following three options (Table 1.0) meet the overall sentiment of participants, while best meeting the objectives of payment acceleration.

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

Table 1.0 – Payment Acceleration Options

	Statement Timeline	Bifurcation of DA/RT	Meter Data Substitution	Credit Run	Interest	Invoicing *	Sunset Provision
Option #1	T+7B T+38B T+76B T+18M T+35M	No – T+7B includes all Charge Codes.	Yes – for data not available at T+5B. Reflected on T+7B initial statement.	T+7B settlement statement also acts as Credit run.	With or without. If with Interest, between initial (T+7B) and 1 st true-up (T+38B)	Fixed Date Semi-monthly Monthly CCs remain on a monthly schedule.	Yes – 35M
Option #2	T+2B T+9B T+50B T+100B T+18M T+35M	Yes – T+2B includes DA only charges.	Yes – for data not available at T+5B. Reflected on T+9B statement.	T+9B settlement statement also acts as Credit run.	With or without. If with Interest, between initial (T+9B) and 1 st true-up (T+50B)	Fixed Date Semi-monthly Monthly CCs remain on a monthly schedule.	Yes – 35M
Option #3	T+2B T+7B (Credit) T+38B T+76B T+18M T+35M	Yes – T+2B, but only includes Charge Codes 6011 & 6301.	Not needed, due to T+38B using SQMD, and T+2B only DA charge codes.	T+7B is a credit run.	No, since Meter Data substitution is not required.	Fixed Date Semi-monthly Monthly CCs remain on a monthly schedule.	Yes – 35M

* Any of the three options can be accomplished with monthly or weekly invoicing.

Settlement Timeline

The Payment Acceleration settlement timeline of the initial statement must improve on the current MRTU timeline of T+38B. An improved initial statement timeline is essential in meeting the primary Payment Acceleration objective of shortening the payment calendar and reducing undue credit risk to market participation. In determining a reduced timeline, statement accuracy must be considered.

In addition, the gap between an initial and the first true-up must take into consideration credit exposure. This is particularly significant if the initial statement only includes Day Ahead charges and the first true-up is the earliest introduction of Real Time charges. A delay in the settlement between the Day-Ahead and Real-Time markets could impact market participants' behavior and market performance. Actual trading in the Day-Ahead and the Real-Time markets occur only one day apart, therefore, a long delay in the financial settlement between these two markets create incentives for market participants to behave differently than if they are settled together or not too far apart. The longer the time span between the financial settlement of the Day-Ahead and the Real-Time markets, the greater the incentive for market participants to adjust their bidding and scheduling strategy. This could have a significant impact on market prices and market performance. As such, to minimize the impact on market performance, it is recommended that the Day-Ahead and the Real-Time markets settle as closely as possible to one another.

Another consideration is the current MRTU timeline; in order to reduce intrusiveness to current processes & procedures, an effort should be made to stay in-line with current timelines where possible. Lastly, the number of settlement calculations must be controlled to allow for statement manageability by both CAISO and Market Participants.

Bifurcation of DA/RT

The concept of bifurcating the Day Ahead and Real Time settlements was introduced by Calpine in the Aug. 18th, 2008 Stakeholder meeting. Benefits of bifurcation have been clearly stated in Calpine's proposal and CAISO's feasibility study. These documents can be found at

<http://www.caiso.com/docs/2005/03/23/2005032307323521863.html>. However, bifurcation also introduces software complexities to split the Day Ahead (DA) and Real Time (RT) charge codes, credit exposure due to the delay of RT settlements, and potential issues with the future implementation of virtual bidding. Increasing the settlement statement timeline, together with more frequent invoicing will meet the objectives of bifurcation as defined in Calpine's proposal while avoiding some of the identified issues.

Under all Options listed in Table 1, Day-Ahead and Real-Time virtual bids are proposed to be settled together to ensure efficient performance of Convergence Bidding. 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 will impact the liquidity of the market when traders 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 on the known Real-Time prices.

Meter Data Substitution Methodology

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).
- Hourly Forecasts and Real Time schedules

Meter data estimation, since it is never 100% accurate, has the potential of creating challenges to an accelerated settlement and payment that may not be resolved with any estimation methodology. The following challenges were considered in determining the estimation methodology of choice:

- Need to minimize deviation of Real-Time calculations due to differences between expected energy and Day-Ahead schedules for generators
- Need to minimize impact of Day-Ahead charges, such as Bid Cost Recovery payments to generators and Bid Cost Recovery Uplift charges due to their reliance on Real-Time data.
- Need to minimize imbalances between payments made to suppliers and charges to Demand due to estimations.
- Increase incentive for Scheduling Coordinators to accelerate submittal of accurate meter data.

Credit Run

In order to provide transparency on credit liabilities, a credit calculation must be executed on a regular basis. This can be a separate run, or combined with a regularly scheduled settlements calculation.

Interest

In the case meter data is estimated, interest payments would provide a mechanism to ensure that there are no financial incentives to submit unreasonable estimates of load or generation. Interest applied between the initial and first true-up statements will serve as a deterrent for any SCs obtaining 'interest free loans'.

Invoicing

Market (cash) Clearing is directly related to Invoicing. Therefore, a more frequent invoice schedule must be executed in order to gain large improvements in the payment calendar. Keeping the invoice frequency at monthly limits the average cash clearing to 25 days (assuming a T+7B initial statement). CAISO's goal is to be a leader in the area of cash clearing and can improve greatly by exploring increased invoicing options. Improved invoicing, in conjunction with an accelerated settlement timeline, will greatly reduce credit risk to the market.

Table 1.1 shows average cash clearing timelines with different invoice frequency options.

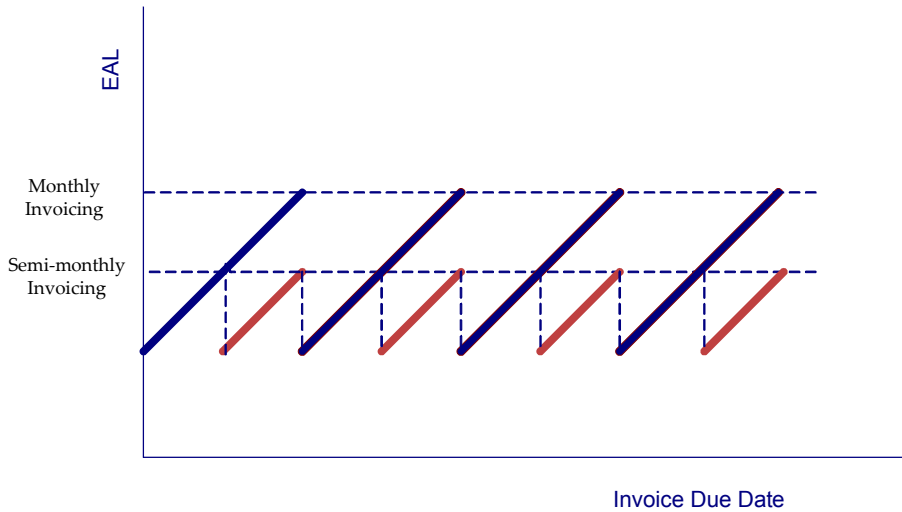
Table 1.1 – Average Cash Clearing

Initial Statement	Monthly	Semi-Monthly	Weekly
T+2B*	20 days	12 days	8 days
T+7B	25 days	17 days	13 days
T+9B	27 days	19 days	15 days
T+38B	56 days	48 days	44 days

* A T+2B timeline would not include RT charges

Impact of Invoicing Frequency on EAL

Market Participants' Estimated Aggregated Liability (EAL) will be affected by invoicing frequency. In general, more frequent invoicing reduces EAL. With semi-monthly invoicing, the first invoice will include daily charge codes for the first half of the month, and the second invoice will include daily charge codes for the second half of the month as well as monthly charge codes. The following chart shows that semi-monthly invoicing significantly reduces EAL compared to monthly invoicing.



EAL & Collateral Improvements

Payment Acceleration greatly reduces Estimated Aggregated Liability (EAL) and Collateral requirements. Under MRTU, average cash clearing of the initial statement occurs at approximately 3 months following the statement publishing date. Table 1.2 compares average cash clearing timelines for each proposed option versus MRTU.

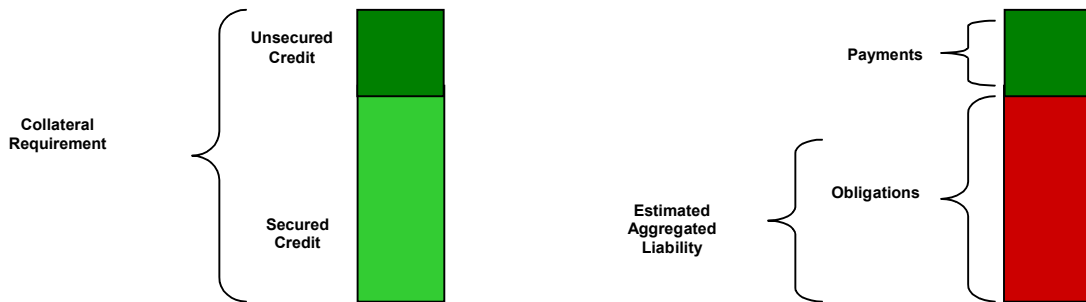
Table 1.2 - Average Cash Clearing* - by Option**

	Initial Statement	1st True-up w/SQMD	Comments
Option #1	17 days	48 days	Initial includes all Charge Codes (DA & RT)
Option #2	12 days	60 days	Initial includes only Day Ahead Charge Codes.
Option #3	12 days	48 days	Initial includes only DA Charge Codes 6011 & 6301.
MRTU	56 days	69 days	Initial at T+38B and 1 st true-up at T+51B

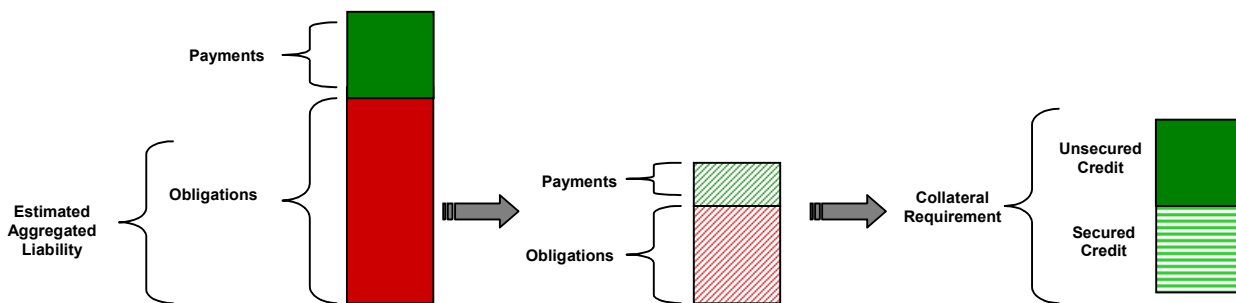
* Average days are calculated using calendar days following the statement publishing timeline of business days.

** Assumes semi-monthly invoice schedule.

Each Market Participant's collateral on hand must be greater than the Estimated Aggregated Liability



Payment Acceleration decreases each participant's EAL and subsequently reduces the collateral required.



Sunset Provision

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

Recommendation

After a thorough Stakeholder process, CAISO recommends Option #1 for Payment Acceleration implementation.

Statement Timeline	Bifurcation of DA/RT	Meter Data Substitution	Credit Run	Interest Payments	Invoicing	Sunset
T+7B T+38B T+76B T+18M T+35M	No – T+7B statement includes all Charge Codes.	Yes – for meter data not available at T+5B. Reflected on T+7B statement.	T+7B settlement statement also acts as Credit run.	Yes – between initial and 1 st true-up	Fixed Date Semi-monthly Monthly CCs remain on a monthly schedule.	Yes – at 35M

Statements, Invoicing, and Billing Inquiries

Below is a description of the CAISO proposed statement, billing, and invoice cycles, which are also summarized in Table 1.3 at the end of the section.

Invoices

The CAISO will publish a semi-monthly invoice on the 1st and 3rd Tuesday of each month. Any statements that have published at the time of invoicing will be included in the semi-monthly invoice. This includes not only initial statements, but also any true-up statements that have published. In addition, monthly charge codes will always be invoiced on the 3rd Tuesday and include charges from the previous month. Following current standards, payment of all invoices is due within 5 business days after the invoice publishes.

Introducing semi-monthly invoicing may impact existing process and procedures. The mixing of multiple months on the same invoice is already being introduced in MRTU (T+76 on same invoice as the initial or recalc), however; having partial months (including both initial and true-up dates) will need to be accommodated under Payment Acceleration.

CAISO's future plans are to ultimately invoice on a weekly basis. However, the initial deployment will be semi-monthly and a weekly cycle will be planned after the initial Payment Acceleration implementation.

Initial Statement and Semi-Monthly Invoice

The initial statement will use available Meter Data (ISO polled + SC submitted) at T+5B and estimate remaining obligations based on substitution methodology (defined in section 'Accelerated Meter data Submission and Estimation' below) Initial statement will publish seven (7) business days after each trade date (T+7B). This initial statement will also act as the credit run. SCs can submit billing inquiries identifying discrepancies based on this initial statement until T+28 business days for any item except those specifically dependent upon the meter data that is estimated by the CAISO. The CAISO will make corrections on the next true up statement at T+38B for the impacted trade date, if possible given the complexity of the issue, 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).

First True-Up Statement & Invoice

The second statement ("First True Up") uses actual SQMD submitted by SCs no later than T+43 calendar days, as well as SQMD for CAISO polled meter data, and will publish 38 business days after the trade date (T+38B). This T+38B timeframe allows enough time for SCs to submit actual SQMD and still limits the time gap between the initial statement and the first true up statement. The first true up statements will be reflected on the next

semi-monthly invoice published. SCs can submit billing inquiries to the CAISO on or before T+52B, and the CAISO will make corrections, if possible, on the next true up statement at T+76B. 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).

Second True-Up Statement & Invoice

The third statement ("Second True Up") includes any changes to SQMD, and any corrections due to valid issues identified through the billing inquiry process. This statement will publish 76 business days after the trade date (T+76B), and will act as the final statement for purposes of RMR invoicing. The second true up statements will be reflected on the next semi-monthly invoice published. SCs can submit billing inquiries based only on incremental changes between the T+38B and T+76B 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.

Third True Up Statement (If needed) and Invoice

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 semi-monthly invoice published. Based on this statement, SCs can submit billing inquiries based only on incremental changes between the T+76B 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.

Fourth True Up Statement (If needed) and Invoice

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 monthly 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.

Note about True-Ups

The CAISO seeks to adopt a more orderly true up approach to settlement revisions that will replace the cumbersome and less predictable rerun approach that we currently use. The concept is to collect any changes for a certain trade date and recalculate them according to a predefined calendar as true ups to SC's in an orderly and predictable manner.

RMR Impact

Each RMR invoice is for one facility for one entire month and will not change under PA. Estimated RMR invoice timeline will not be impacted by Payment Acceleration. Currently the Estimated RMR invoice is submitted within 14 days after the end of each month and the invoice is paid 30 days later. So payment can be as early as T+31. The Adjusted Invoice timeline will change. Currently the Adjusted invoices are submitted within 7 days of the Final statement for the last day of the month (T+51B). Under MRTU the Adjusted invoices will be submitted within 7 days of the Recalculation Settlement Statement (T+51B). Under Payment Acceleration, the Adjusted Invoice should be submitted after the statement that includes RT charges and has is no longer subject to dispute (T+76B).

Table 1.3 - Payment Acceleration Statement, Billing & Invoice Schedule

SQMD Date	Statement Generated Date	Billing Inquires Due	Data Changes incorporated	Invoice Date
N/A	T+7B	T+21B Anything, but estimated meter data related issues	Meter Data (ISO polled + SC submitted) at T+5B and estimate remaining obligations based on schedules or forecasts applying a pre-determined estimation risk factor.	3 rd Tuesday of each Calendar Month
<i>T+43C (SQMD)</i>	T+38B	T+56B	Actual SQMD, Corrections based on Billing Inquiries, data clean up	Next Semi-Monthly Invoice Cycle
<i>T+61B (SQMD)</i>	T+76B	T+12M (incremental changes)	Corrections based on billing inquiries, SQMD corrections, data clean up	Next Semi-Monthly Invoice Cycle
T+17M (SQMD)	T+18M (if needed)	T+19M (incremental changes)	Corrections based on billing inquiries, SQMD Corrections, GFN, ADR	Next Semi-Monthly Invoice Cycle
T+34M (SQMD)	T+35M (if needed)	N/A	SQMD Corrections based on MDAS Audit findings, GFN, ADR	T+35M Monthly Invoice Cycle

Bifurcation of DA/RT

The initial statement at T+7B will contain all charge codes. The objective of bifurcation is to accelerate payment of the Day Ahead Market (DAM) due to the natural separation of data between the two markets. Option #1 meets this objective by accelerating both the settlement timeline and invoice frequency. Below are explanations on how option #1 resolves issues raised in stakeholder comments and meetings regarding bifurcation DA/RT Bifurcation issues Raised in Stakeholder Comments and Meetings

How will Bid Cost Recovery payments to Generators and charges to load be settled since some of these calculations are reliant on Real-Time data?

The CAISO will use all available Market Data (including both Day-Ahead and Real-Time) to settle at T + 7B. Additionally, metered demand and metered generation submitted, polled and/or estimated will closely reflect actual load and expected energy in Real Time. Therefore, the CAISO will be able to determine Bid-Cost Recovery payments to generators. and initial charges to demand for both RUC and Real-Time Bid Cost Recovery. These charges will be trued up when load metered data is available at T + 38B.

Will the initial settlement statement be revenue neutral?

CAISO recommended implementation proposal uses ISO polled and Schedule Coordinator (SC) submitted meter data that is available at T+5B. If meter data is not available within this timeframe, the CAISO will estimate outstanding metered demand and generation using a methodology to closely reflect Actual Load and Expected Energy in Real Time.

Using polled, submitted and estimated data for the accelerated settlement timeline will more closely reflect actual market activity and will reduce the amount of MW imbalance between what is paid to generators and charged to load. Imports and Exports will be settled on their deemed delivered quantities including real-time adjustments which will be available to settle at T + 7B. Any imbalance that results will be settled through the standard process to ensure revenue neutrality.

A long delay in the settlement between the Day-Ahead and Real-Time markets could change virtual bidding behavior and impact the liquidity of virtual bidding market.

This was a valid concern under the original bifurcation proposal where settlements would occur for Day-Ahead only at T + 2 and then true up using Real-Time data at T + 50. This problem is eliminated under Option #1 by settling both Day-Ahead and Real-Time charges at T+ 7B.

How will the CAISO handle small LSE's with peak load less than 500MW that are exempted from the Day-Ahead under scheduling provision?

The CAISO will not impose any additional penalties or provisions on the small LSE's with peak loads less than 500MW. FERC approved the exemption for these small loads from the under-scheduling provision in their July 17th Order. FERC stated the following in their July order in support of the exemption: *"We find the CAISO adequately demonstrates that small LSEs have a minimal impact on day-ahead prices when compared to LSEs with more than 500 MW of demand. Under these circumstances, we find the exemption for small LSEs is necessary because the interim plan was not intended to penalize small LSEs that experience significant deviations based on relatively small changes in demand that cannot affect prices in the day-ahead market"*.

Since the CAISO is proposing to charge interest on the delta between the initial settlement and true up settlement this should provide additional incentive, in addition to the added risk of serving load at Real-Time prices, to schedule accurately in the Day-Ahead market. When convergence bidding is implemented one-year after MRTU start-up, the under scheduling provision will be eliminated for all LSE's.

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?

Under Option # 1, both Day-Ahead and Real-Time data will be used to settle at T + 7B. Therefore the CAISO will adjust settlements based on Real-Time expected energy and will capture adjustments for any generators that may have tripped off-line.

Accelerated Meter Data Submission and Estimation

CAISO will use ISO polled and Schedule Coordinator (SC) submitted meter data that is available within the OMAR application at T+5B. If meter data is not available within this timeframe, the CAISO will estimate outstanding metered demand and generation.

Metered Demand not submitted will be estimated using available Scheduled Demand, the MW of energy of demand cleared through the IFM and set in the Day-Ahead scheduled for the next trading day, and increasing that value incrementally to account for total Actual Load in Real Time (RT) as determined by the CAISO each hour.

Estimated metered generation will be based on Expected Energy, the total energy that is expected to be generated or consumed by a resource, based on the dispatch of that resource, as calculated by the Real-Time Market (RTM) modified by any applicable dispatch operating point corrections, for that resource ID.

The SC will use the same meter data submittal process currently available today, utilizing either OMAR On-line or their FTP functionality, to submit their data files to the CAISO no later than T+5B. Submittal of meter data

anytime after T+5B will not be used in the accelerated payment calculation, but will remain in OMAR until such time that it is updated and/or provided to settlements for the T+38B Settlements Calculation.

It is the SC's responsibility to ensure that submitted meter data for payment acceleration at T+5B reasonably represents the load or generation they serve. This can be accomplished using interval metering when available and sound estimation practices that blend a variety of available information (schedules, forecasts, temperature data, operating logs, recorders and historic data) to make a reasonable representation of the Load used and Generation delivered.

Interest Payments

Interest will be applied to any deviations between the initial (T+7B) and first true-up with SQMD (T+38B). This is due to the use of estimated meter data and since all following true-ups are calculated using SQMD, interest will not apply to subsequent true-ups (T+76B, T+18M, T+35M).

The FERC, on a quarterly basis, publishes interest rates for electricity for determination of refund purposes. These quarterly rates can be obtained from FERC at <http://www.ferc.gov/legal/acct-matts/interest-rates.asp>. These rates will be applied to the difference between the initial and first true-up statements to determine the interest requirements from each SC. The interest charges or refund will be included in the first true-up statement and invoiced on the next published invoice.”

Deployment Schedule

Payment Acceleration will not be implemented until after MRTU go-live; but rather one to six months after MRTU deployment. Upon completion of the final proposal, a detailed project plan will be developed and published. The plan will include both CAISO and Market Participant efforts required to prepare for payment acceleration. CAISO plans to present their final Payment Acceleration proposal to the Board of Governors meeting currently scheduled for December 15th – 16th, 2008 and upon BOG approval file with FERC in early 2009.

Payment Calendar 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 currently under design and will be released at a later date.

Payment Calendar & Sample Invoice under PA

The following is an example of the payment acceleration payment calendar. Holidays are not included in this example. Please click on the following links to view the excel documents from the CAISO website:

Sample Invoice Calendar: <http://www.caiso.com/2074/20748df86c170.pdf>