



**Commitment Cost Enhancements
Issue Paper & Straw Proposal**

April 30, 2014

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I. Background

During the winter season of 2013-2014, the ISO energy market experienced abnormally volatile and high natural gas price spikes. For example, on February 4, 2014 at 9:50 p.m., the natural gas index prices applicable to resources in the ISO markets ranged from \$7.63/MMBtu to \$8.62/MMBtu. But by February 5, 2014 at 10:01 a.m., those prices had increased to a range of \$12.29/MMBtu to \$23.53/MMBtu.

In light of the sudden increase in gas prices, the ISO was not able to reflect the gas price spike in its resource commitment decisions. The ISO calculates the start-up and minimum load costs for resources under either the “proxy cost” or “registered cost” option selected by the resource. For resources under the proxy cost option, the ISO is required to rely on at least two natural gas price indices published the day prior to running the day-ahead market, per tariff section 39.7.1.1.1.3. For the registered cost option, the gas price is based on a monthly forward projection and the total registered cost is limited to no more than 150% of the projected proxy costs. Resources selecting the registered cost option must remain under that option for 30 days, unless the proxy costs are higher than registered. Lastly, the ISO tariff specifies, per section 30.4.1.2, that a registered cost option resource that switches to the proxy cost option must remain under the proxy cost option for the remainder of the 30-day period.

To address the potential for additional natural gas price spikes for the duration of the winter season, on March 6, 2014 the ISO filed with the Federal Energy Regulatory Commission (FERC) a proposed tariff waiver of the above referenced two sections until April 30, 2014. In the tariff waiver filing, the ISO also committed to commence a stakeholder process in April to address the issues raised by gas market conditions and to more comprehensively develop an interim solution that can be implemented in the fall if such solutions do not require substantial system changes. FERC granted the ISO’s tariff waiver on March 21, 2014.¹

There are two additional processes that deserve mention here:

- First, the ISO has existing board-approved policy to specifically address inclusion of operational flow order penalties under specific circumstances. The ISO has not yet submitted tariff changes to FERC to implement that policy because it needs to clarify the definition of operational flow orders covered by the policy. The ISO will do that as part of the tariff development process for the operational flow order policy concurrent with this stakeholder initiative.
- Second, on March 20, 2014, the FERC released a notice of proposed rulemaking (NOPR) to address coordination and scheduling practices of the interstate natural gas pipeline companies and the electricity industry.² The NOPR provides the natural gas and electricity industries six months to reach a consensus. While the NOPR is not directly related to commitment cost pricing in the ISO market, issues discussed there may overlap with the proposal in this initiative.

¹ *California Indep. Sys. Operator Corp.*, 146 FERC 61,218 (2014).

² <http://www.ferc.gov/whats-new/comm-meet/2014/032014/M-1.pdf>

II. Schedule for policy stakeholder engagement

The proposed schedule for the policy stakeholder process is listed below.

Date	Event
Wed 4/30/14	Issue paper/straw proposal posted
Wed 5/7/14	Stakeholder call
Wed 5/21/14	Stakeholder comments due
Tue 6/10/14	Revised straw proposal posted
Tue 6/17/14	Stakeholder call
Tue 7/1/14	Stakeholder comments due on revised straw proposal
Wed 7/23/14	Draft final proposal posted
Wed 7/30/14	Stakeholder call
Wed 8/13/14	Stakeholder comments due on draft final proposal
Thu/Fri 9/18-9/19/14	Board of Governors meeting

III. Initiative scope

Under this initiative, the ISO intends to adopt more updated natural gas costs in resources' minimum load and start-up costs prior to the 2014-2015 winter season. Accordingly, the ISO is proposing a straightforward means to achieve this solution but the ISO will still need to assess whether it can implement the proposal before next winter.

For more comprehensive, long-term solutions with greater implementation impacts, the ISO will commence the bidding rules initiative in the third quarter of 2014. This future initiative will explore a broader array of bidding rules in the ISO market including for energy and commitment costs.

IV. Proposal

In 2012, the ISO conducted the *Commitment Cost Refinements, 2012* stakeholder process³ and consequently implemented the following changes:

1. Reduced the registered cost option cap from 200% to 150% of the calculated proxy cost; and
2. Included the following costs into the proxy cost calculation: major maintenance, greenhouse gas (GHG), and components of the grid management charge.

The registered cost option exists in order to strike a balance between allowing more accurate cost recovery and limiting potential market power abuse. The original proposal in the 2012 stakeholder process would have reduced the cap to 125%. This was subsequently raised to

³ <http://www.caiso.com/informed/Pages/StakeholderProcesses/CommitmentCostsRefinement2012.aspx>

150% out of concerns such as the potential volatility and illiquidity in the nascent GHG market, the use of futures gas prices averaged over each month rather than a more variable daily price, and natural gas balancing charges that are not included in the cost categories. On the other hand, the cap was reduced from 200% and the 30-day hold for the registered cost option was retained to mitigate market manipulation, such as the potential to inflate bid cost recovery payments by strategic behavior designed to operate resources at minimum load.⁴ In addition, the ISO currently does not have a market power mitigation methodology explicitly for start-up and minimum load costs other than this 150% cap. As the Department of Market Monitoring notes:

Another option that has been discussed in the past has been to automatically apply mitigation only when it is determined that a unit may have local market power – such as the ISO’s automated procedures for energy bid mitigation. In practice, however, units may have market power as a result of various capacity constraints that require units to be committed and operating at least at minimum load. These constraints include the minimum online constraints (MOCs) and new constraints being added through the flexible ramping product and the contingency modeling enhancements. Unlike transmission constraints used to determine if energy bid mitigation should be triggered, these other constraints are much more complex and may not be binding when market power may occur.⁵

In the 2012 stakeholder process and in recent comments to the FERC regarding the ISO’s tariff waiver, numerous stakeholders have voiced a preference to bid in their start-up and minimum load costs in order to better reflect daily natural gas prices and other costs. The ISO agrees that to the extent practical, market participants should be allowed to reflect and manage their costs through bidding. The ISO wants more up-to-date gas prices reflected in the market optimization to ensure market efficiency. For example, on February 6th, the price differential between commitment costs and incremental energy bids committed a number of resources to minimum load in lieu of dispatching them for incremental energy. However, this flexibility needs to be balanced against robust bidding rules and implementation and monitoring burden. In order to maintain this balance but provide greater flexibility, the ISO proposes to increase the proxy cost option bid cap and eliminate the registered cost option.

a. Increase proxy cost option cap

The ISO proposes to retain the proxy cost option, but modify it, because it already has the daily bidding functionality that stakeholders have requested and better reflects more current natural

⁴ See “Chapter 7: Market Competitiveness and Mitigation” in Department of Market Monitoring, *2013 Annual Report on Market Issues & Performance*, April 2014.

⁵ Department of Market Monitoring, *2013 Annual Report on Market Issues & Performance*, April 2014, page 262.

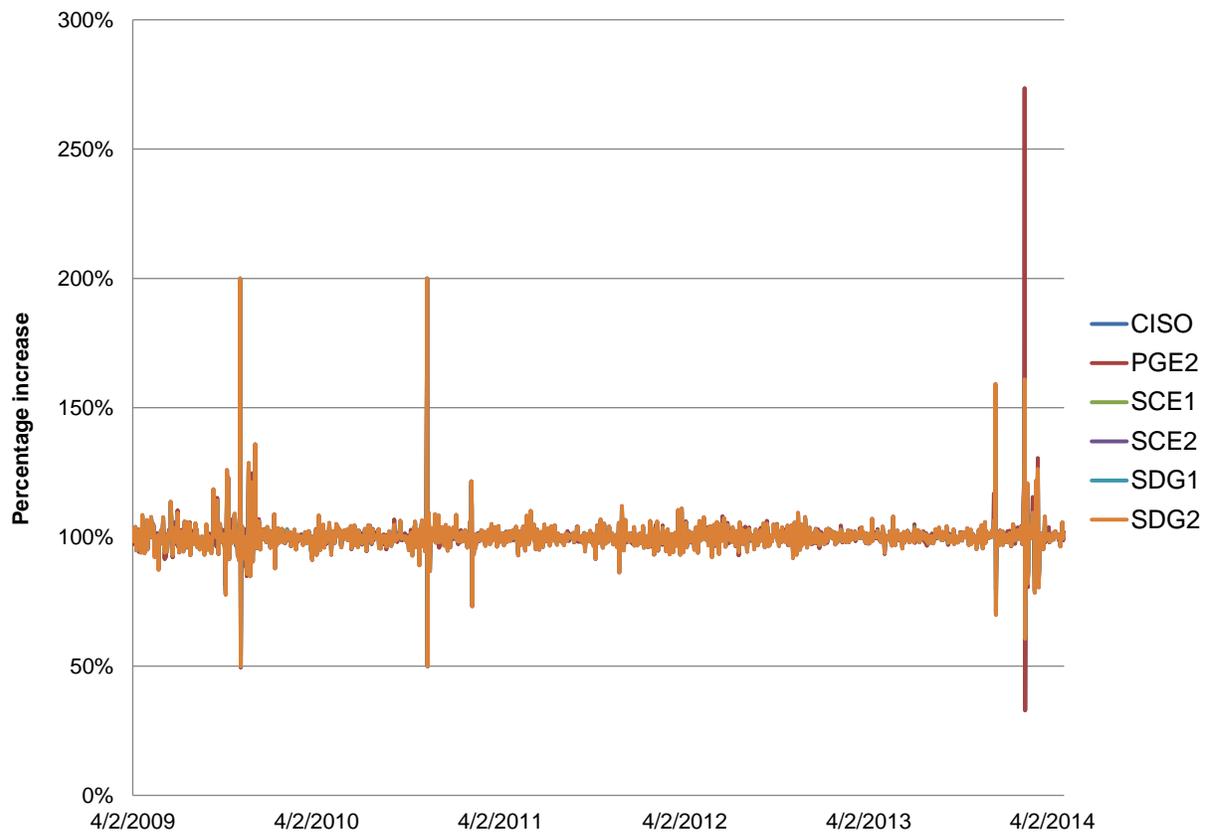
gas costs. The proxy cost option is based on at least two daily gas price indices rather than a fixed projected price under the registered cost option. The ISO proposes to retain the use of gas price indices because it helps to mitigate market power abuse and provides consistency with other ISO market process such as generated bids for physical resources and the calculation of default energy bids. Therefore, modifying the proxy cost option to allow for added flexibility would have fewer implementation impacts than modifying the registered cost option.

The ISO proposes to increase the proxy cost option cap from 100% of the daily calculated cost to 125% as explained below. All other characteristics of the proxy cost option would remain the same, including no change of bids between the day-ahead and real-time and using the current process for updating the natural gas price indices. Though we propose to increase the cap, the ISO does not believe there is a need at this time to require any additional *ex post* cost verification. We believe that market participants can effectively manage their costs by bidding in their appropriate minimum load and/or start-up costs on a daily basis. A daily *ex post* cost verification regime would also create a greater monitoring burden and be potentially disruptive if submitted costs are not accepted and market resettlement is required. For example, the Department of Market Monitoring notes that “if rules are modified to allow participants to submit their own start-up and minimum load bids without any specific limits, some form of mitigation will still be needed. After the fact review of bids would be very administratively burdensome, and would not mitigate the distortion in the market that would have already occurred due to use of the unmitigated bids.”⁶

An increase in the bid cap will provide flexibility to account for a variety of costs such as normal gas price volatility and the one day lag in the gas price indices used in the day-ahead market. The figure below shows the day-over-day percentage increase in natural gas prices for each of the ISO gas regions. The figure shows that gas price volatility has been rare in the ISO market since the beginning of0 MRTU.

⁶ Department of Market Monitoring, *2013 Annual Report on Market Issues & Performance*, April 2014, page 262.

Figure 1
Day-over-day percentage increase in natural gas price (April 2009 - April 2014)



The table below is derived from the figure above and only shows the trade dates when the day-over-day percentage increase exceeds 120% in any gas region. The increase is not necessarily uniform over the entire ISO. Overall, there have been seven instances where the increase exceeded 125% (shown in light blue) but only two instances of extreme price spikes of over 200%, including the February 6th event (shown in darkest blue with white font).

Table 1
Day-over-day gas prices increases over 120% (April 2009 - April 2014)

Trade Date	CISO	PGE2	SCE1	SCE2	SDG1	SDG2
10/6/2009	119%	119%	124%	126%	124%	126%
10/8/2009	123%	123%	121%	123%	121%	123%
11/1/2009	198%	198%	200%	200%	200%	200%
11/18/2009	127%	127%	127%	129%	127%	129%
11/24/2009	125%	125%	120%	121%	120%	121%
12/1/2009	122%	122%	134%	136%	134%	136%
11/7/2010	200%	200%	200%	200%	200%	200%
2/3/2011	102%	102%	120%	122%	120%	121%
12/10/2013	120%	120%	156%	159%	156%	159%
2/5/2014	126%	126%	118%	119%	118%	119%
2/6/2014	274%	274%	159%	121%	159%	121%
3/1/2014	105%	105%	121%	122%	121%	122%
3/4/2014	130%	130%	125%	126%	125%	126%

Instances:

>=125%	7	7	7	7	7	7
>=150%	3	3	4	3	4	3
>=200%	2	2	2	2	2	2

In addition to gas price spikes, there may be other costs that are not perfectly accounted for under the proxy cost option. For example, the increased cap can account for variations in the standard resource-specific costs that are used in the Master File, such as the variable O&M. The increased bid cap will allow participants to capture the vast majority of observed natural gas price volatility and additional costs.⁷ This meets the ISO objective to ensure on the whole that resources are appropriately compensated for their costs and aligns with other market design changes. For the reasons stated above, the ISO proposes to revert to the cap as originally proposed in the 2012 commitment cost initiative of 125%.

The cap need not be as high as the registered cost cap because that option relied on a fixed natural gas forecast and required the resource to remain with the same cost for at least 30 days. Furthermore, increased bidding flexibility should be considered in the context of other market changes. On May 1, the ISO will implement bid cost recovery changes, including the separation of day-ahead and real-time bid cost recovery which is expected to attract more real-time economic bids by providing more cost recovery in the day-ahead. While there are some new safeguards in the recently approved bid cost recovery tariff amendments, they do not expressly create a market power mitigation methodology for commitment costs or an uninstructed deviation penalty. It will be important to see the market impacts of these changes.

Though the increased proxy cap will be effective on most days, it would not be able to capture extreme price spikes like those observed on February 6th. Therefore, the ISO proposes to retain

⁷ Note that a 125% increase in natural gas prices will result in a total cost increase of less than 125% because of other costs included in the start-up and minimum load cost calculations.

the manual operations as described in the tariff waiver to update the natural gas price index using the single ICE index, which is published at approximately 10 am. This would potentially delay the close of the day-ahead market.⁸ It would follow that the manual operation could be triggered at a natural gas price increase lower than the 150% threshold discussed in the waiver. Ultimately, the ISO would prefer a non-manual solution but may not be able to implement one before the next winter season. We continue to explore options to automate this process or implement a superior option. In the next section, we discuss the proposed elimination of the registered cost option. If this occurs, then the manual process developed to implement the requirements under the tariff waiver obtained earlier this year to switch eligible resources from registered to proxy would not be needed.

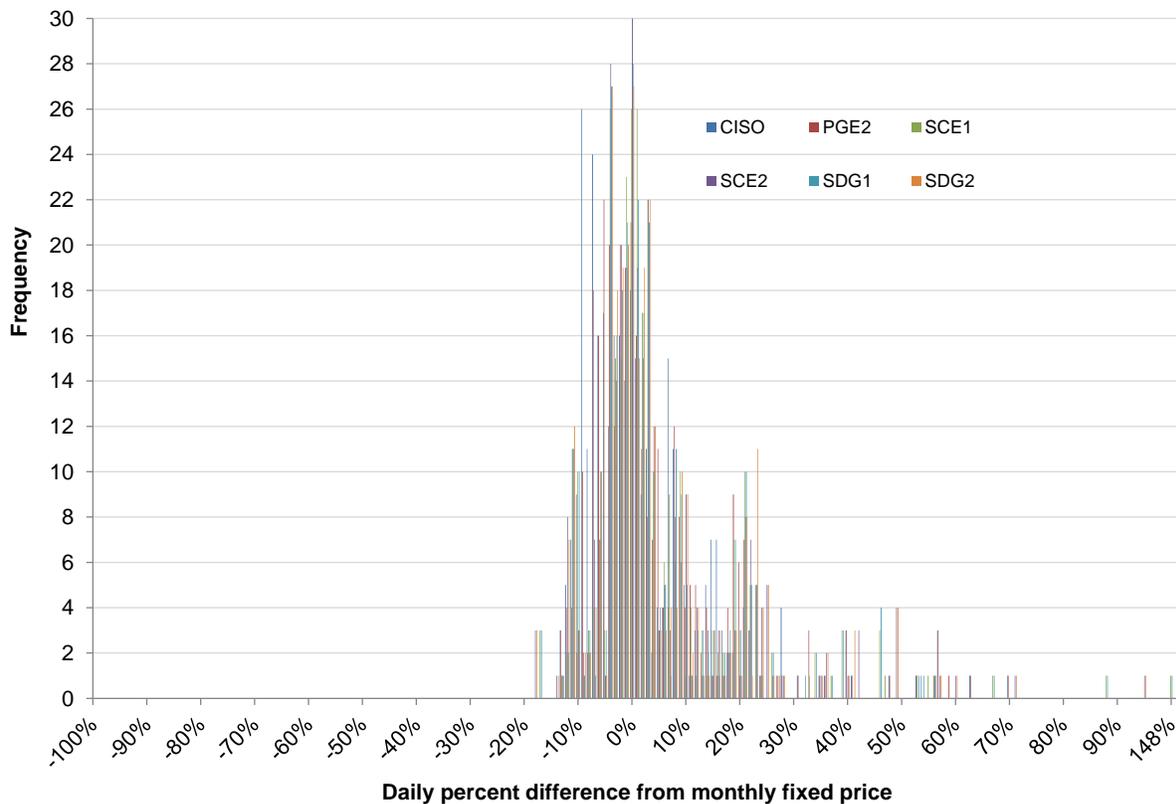
b. Eliminate registered cost option

The 2012 stakeholder initiative also contemplated the elimination of the registered cost option. At the time it was deemed necessary to retain this option in light of the start of the GHG market and the numerous market design changes being discussed (such as separation of the day-ahead and real-time bid cost recovery). As those milestones have passed, it is appropriate now to revisit this issue.

With improvements to the proxy cost option, we view the existing registered cost option to be largely obsolete. Both cost options would have identical inputs except that the proxy cost option has a more updated natural gas price. Figure 2 below counts the number of times the daily gas price was above or below the monthly fixed gas price per region from June 2013 through April 2014. This frequency is distributed along the x-axis based on the percentage increase or decrease. The figure clearly shows that for all regions and for the majority of days, the daily gas price is above the monthly fixed price. In other words, the high bid cap on the registered cost option largely absorbs the upward price volatility that is not reflected on the whole in the monthly fixed price.

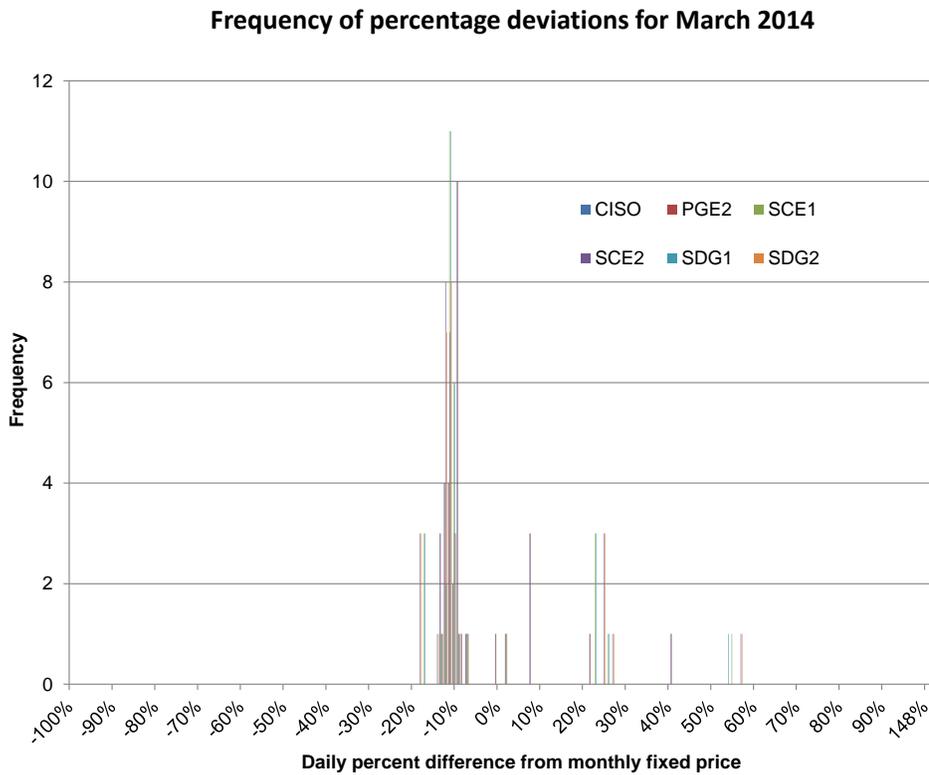
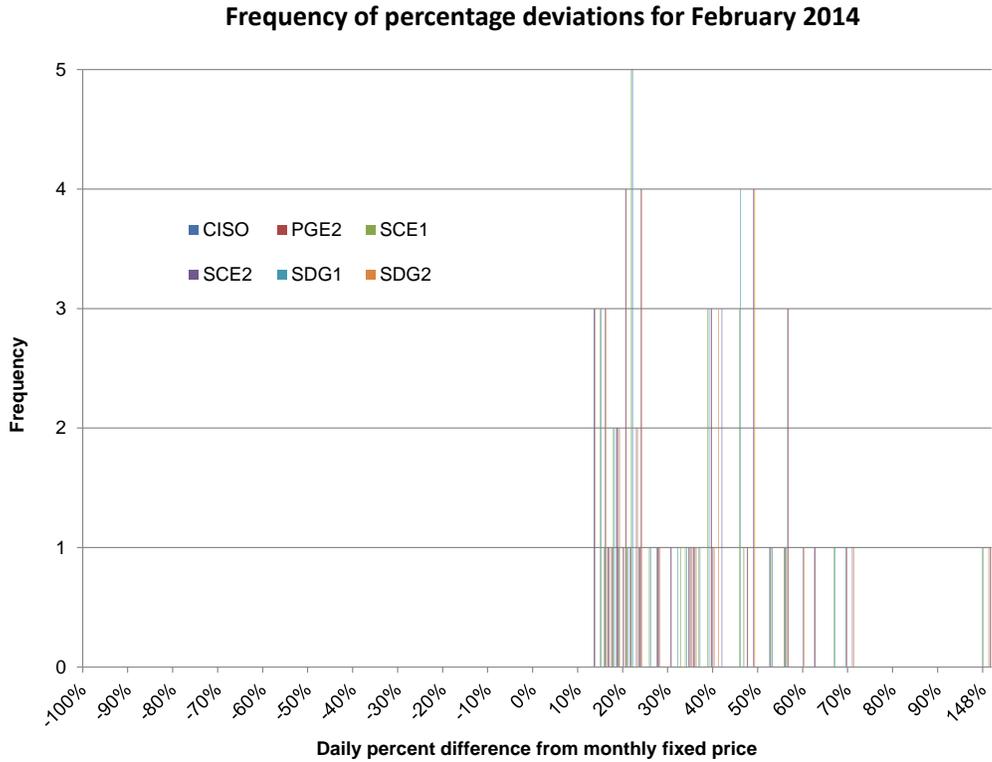
⁸ The FERC NOPR seeks to start the gas day earlier which may allow the gas price indices to publish earlier in the day. On the other hand, the FERC NOPR also seeks to delay the close of the timely nomination cycle which can have the opposite effect.

Figure 2
Frequency of percentage deviations between the daily and monthly fixed gas price
(June 2013 – April 2014)



The following pair of charts in Figure 3 highlights the lag in the monthly fixed price. The chart on top shows that in February 2014, the daily gas prices were *always* higher than the fixed monthly price. For February 6th, the day of the extreme gas price spike, the daily gas price increase over the fixed monthly price was 364% for the CISO and PGE2 gas regions. March 2014 shows the opposite situation. Likely as a result of high gas prices in February, the monthly fixed price for March increased on average by \$1/MMBTU. However, the March 2014 chart on the bottom shows that the daily gas prices trended lower as shown by the cluster of events around the -10% range.

Figure 3
Comparison of February and March 2014 deviation frequency



Implementation-wise, revisions to the registered cost option such as adding a bidding functionality or reducing the 30-day hold will require more systems and process changes. In fact, reducing the 30-day hold may well require a reduction in the current bid cap of 150%, moving the registered cost option closer to proxy.

With the elimination of the registered cost option, all resources will need to use the proxy cost option for minimum load and start-up costs. Providing a single, flexible option will also streamline the ISO's existing processes.

V. Next Steps

The ISO will discuss this straw proposal with stakeholders during a call to be held on May 7, 2014. Stakeholders should submit written comments by May 21, 2014 to ComCosts2@caiso.com.