UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator, Inc.	**)** **)**	**Docket No. ER11-2760-000**

PROTEST OF CALPINE CORPORATION, THE DYNEGY COMPANIES, AND THE NRG ENERGY COMPANIES

Pursuant to Rule 211 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (the "Commission"),[1] and the Commission's January 27, 2011 "Combined Notice of Filings #1," Calpine Corporation, the Dynegy Companies,[2] and the NRG Companies[3] (collectively, "California Generators") protest the California Independent System Operator's ("CAISO") proposal to implement daily bidding of minimum load and start-up costs, but then to cap those bids at significantly below levels previously approved by the Commission. We request that the Commission accept the CAISO proposal to allow for daily bidding of minimum load and start-up costs, but reject the accompanying mitigation proposal

I. INTRODUCTION

This filing involves the somewhat abstruse question of how much freedom a market participant should have when placing bids on its generation assets to provide minimum load and start-up energy into the day-ahead market. The transition to daily

[1] 18 C.F.R. § 385.211 (2010).

[2] For purposes of this filing, the Dynegy Companies are Dynegy Morro Bay, LLC and Dynegy Moss Landing, LLC and Dynegy Oakland, LLC.

[3] For purposes of this filing, the NRG Companies are NRG Power Marketing LLC, Cabrillo Power I LLC, Cabrillo Power II LLC, El Segundo Power, LLC, Long Beach Generation LLC and NRG Solar Blythe LLC.

bidding of minimum load and start-up costs in California is long overdue, and the California Generators support this move. However, the accompanying mitigation measures proposed by the CAISO render this new market feature effectively worthless.

Two years ago the Commission approved a CAISO proposal to allow monthly bidding of minimum load and start-up cost bids at either the Registered Cost or Proxy Cost bidding option:[4]

- The Proxy Cost option is intended as an approximation of a unit's daily minimum load and start-up costs and includes a fuel cost component that is updated each day based on the prior day's published spot market index for natural gas.

- The Registered Cost option is a market-based recovery option under which a resource submits start-up and minimum load bids limited to 200 percent of a unit's projected costs. (Registered Cost will be more fully described below.)

The CAISO tariff currently allows generators to bid their minimum load and start-up costs at *either* Registered Costs or Proxy Costs, but must choose which option to use on a month-ahead basis. The Commission found that allowing units to bid in at either cost balanced the need to protect against seller market power with the need to protect generators from operating at a loss.[5] The CAISO now proposes to upset this careful balance by allowing daily bidding of commitment costs only under the Proxy Cost option.[6]

Proxy Costs are not suitable as a price cap on minimum load and start-up costs, as Proxy Costs often understate the actual costs of committing units into the market. As

[4] *See California Independent System Operator Corp.*, 128 FERC ¶ 61,282 (2009) ("2009 Commitment Cost Order"), for additional discussion of the Proxy and Registered Cost options.

[5] *Id.* at P 26.

[6] While monthly Registered Cost bidding remains an option, it puts generators electing such an option at a severe competitive disadvantage versus units able to bid on a daily basis.

explained below, the Proxy Cost option produces only a rough estimate of actual commitment costs, and is based on a series of often incorrect assumptions regarding the delivered cost of natural gas, the effective tax rate on that gas, and a unit's variable operations and maintenance ("VOM") costs. The Proxy Cost methodology in fact ignores a number of factors that must be addressed in any just and reasonable calculation of minimum load and start up costs, including:

- Ignoring local taxes imposed on natural gas purchases by affected generators;
- Ignoring the high costs of intra-day gas purchases, which expose affected generators to large price swings, pipeline gas balancing charges, and Operational Flow Order ("OFO") penalties;
- Denying generators the ability to justify unit-specific VOM costs for minimum load and start-up costs;
- Providing no method of recovering lost opportunity costs, including costs incurred due to environmental limitations and wear and tear on units from frequent start-up;
- Providing a "true up" option that would allow generators to demonstrate their actual delivered natural gas costs when those costs diverge wildly from the Proxy Cost index; and
- Providing a Frequently Mitigated Unit Bid Adder that would apply to units frequently dispatched at minimum load.

These factors present particular problems for units operating at low capacity factors. As a result of the simplified assumptions going into the Proxy Cost calculation, the methodology significantly understates the actual costs of producing minimum load and start-up energy for many units.

Fortunately, the CAISO tariff already contains the Commission-approved "Registered Cost" option that provides additional bidding flexibility for the low capacity factor units most adversely affected by the Proxy Cost option. The Commission held that

the Registered Cost option was a "just and reasonable measure[] that will provide resource owners the needed flexibility to choose the option that best enables recovery of their start-up and minimum load costs, including costs incurred due to environmental limitations and wear and tear on units from frequent start-ups."[7] The Commission specifically recognized the importance of allowing generators to select between the two options.[8] Further, the Commission found that the existing Registered Cost option provides "sufficient safeguards to ensure that such costs are not over-compensated" and thus does not present seller market power abuse issues.[9]

Every other organized market in the country has developed market rules that protect generators from being forced to offer minimum load and start-up energy at a loss. We provide a short survey of the rules in ERCOT, ISO New England, Midwest ISO and New York later in this pleading. Generally, however, the other ISOs/RTOs permit: (a) a generator that demonstrates that it was mitigated below its actual cost to then receive a make-whole payment for the loss, and (b) a generator to include unit-specific bid adders designed to control for volatility in delivered gas prices, unit-specific VOM costs, and other factors. These unit-specific costs are subject to a price cap and market monitor review, protecting the generator against excessive mitigation while limiting the exercise of seller market power. The CAISO proposal, however, denies generators either of these options.[10]

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[7] 2009 Commitment Cost Order at PP 26 and 27.

[8] *Id.*

[9] *Id.*

[10] At a minimum, the Commission must direct the CAISO to provide for a workable mechanism for a generator to recover the cost of such things as late day or intra-day dispatches; dispatches over weekends and holidays; and recovery of costs associated with balancing and operational flow orders on a case-by-case basis.

We respectfully request that the Commission accept the modest improvements proposed by the CAISO in this filing to allow generators to place daily minimum load and start-up bids, but to reject the CAISO's proposal to mitigate those bids to its rough estimate of Proxy Costs. Instead, the Commission should direct the CAISO to permit market participants to bid in, on a daily basis, to the Registered Cost option, when capping daily unit commitment bids.

II. BACKGROUND

Generators typically divide their bids into three pricing segments – a price for the energy a generating unit produces at each point along its dispatch curve, a price reflecting the cost of starting the unit from off-line, and a price for operating the plant at minimum load. This pleading deals with the second and third pricing segments, which represent the cost of committing a unit into the market.

Under the existing tariff, minimum load and start-up costs are mitigated using either the Proxy Cost option or the Registered Cost option. In approving the currently-effective provisions, the Commission clarified that the purpose of allowing generators to choose between the two mitigation options was to provide generators "the option that best enables recovery of their start-up and minimum load costs."[11] As the Commission recognized, the Proxy Cost option does not generally include opportunity costs related to environmental limitations, unit-specific VOM costs, does not reflect gas risk, or other factors.[12] The CAISO calculates Proxy Cost for startup based on the unit's observed fuel consumption during startup and the CAISO's gas price index, together with the amount of auxiliary power it will consume during startup. The CAISO calculates minimum load

[11] 2009 Commitment Cost Order at P 26.

[12] *Id.* at PP 27 – 28.

Proxy Cost based on the unit's observed heat rate at minimum load level multiplied by the CAISO's gas price index; plus either $2 or $4 in VOM, depending on technology. The Registered Cost option allows a generator to bid a fixed price for startup and minimum load for the month which can be no more than two-times the closing price of the prompt month gas market (both NYMEX and basis) as reported for the first 21 days of the prior month. In other words, the calculated Registered Cost for February equals the average of the daily closing price of the February gas futures contract (plus associated basis) traded during the first 21 days of January. The Registered Cost Cap is simply two-times (200%) this figure.[13]

Because the Proxy Cost option provides only a crude estimate of actual unit costs, the Registered Cost option protects generators against having to offer into the market at less than their actual costs. However, because a generator that elects the Registered Cost option must use that option for all hours in the months, generators using this option are prohibited from reducing their bids if gas prices decrease during the month, (which leads to a unit being uneconomic).

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[13] The following excerpt is from Attachment G of the CAISO's Business Practice Manual for Market Instruments, and discusses how Registered Cost is calculated.

> First, daily closing prices for monthly NYMEX Natural Gas Futures contracts at Henry Hub for the next month are averaged over the first twenty one days of the month, resulting in a single average for the next calendar month. Closing prices for only the first twenty-one days of the month are used in order to allow at least one week for the calculations to be completed and posted on the CAISO website by the end of each month... Second, the average monthly price for NYMEX futures contracts for basis swaps for the SoCal Border and PG&E Citygate delivery points in California are calculated, using data for the first 21 trade dates in the month.… The next step is to combine the average NYMEX Henry Hub price and the average basis swap price for each of these two delivery points for each month.

II. PROTEST

There are a number of problems with the CAISO's proposal that decrease flexibility for generators while increasing costs to ratepayers. Further, it ignores prior Commission orders directing the CAISO to allow generators to bid in their commitment costs at either the Proxy Cost option or the Registered Cost option, as well as comparable rules in organized markets across the country.

A. Denying Generators the Opportunity to Bid in Minimum Load and Start-Up Costs Would Likely Require Units to Sometimes Operate at a Loss or Operate at a Competitive Disadvantage.

Without the ability to include minimum load and start-up costs in its daily energy bids at a reasonable level, market participants may be forced to purchase natural gas at one price and sell it – in the form of energy – to the market at a lower price. Experience has shown that this happens all too often in the California markets over the past several years, as many units are committed at minimum load and committed for brief periods of time, increasing the total number of starts and stops.

As the CAISO itself has recognized, the Proxy Cost option may be appropriate for units with high capacity factors, but likely under-compensates units dispatched less frequently, or ones with environmental restrictions that limit the number of starts and stops a unit may undergo in a given year. As the Commission explained:[14]

> [R]esources electing the proxy cost option often have lower start-up and minimum load costs than resources electing the Registered Cost option. According to the CAISO, because resources in its markets are committed based in part on start-up and minimum load costs, the lower values of those costs under the proxy cost option, along with the fact that many resource owners have elected the proxy cost option, has led the CAISO to frequently commit resources subject to that option as "quick-start" resources at minimum output for a short period of time in the real-time

[14] 2009 Commitment Cost Order at PP 8 – 9.

> market, and then to de-commit them more frequently than occurred prior to MRTU.
>
> The CAISO states that owners of these quick-start resources have voiced concerns that this practice makes it difficult to recoup operating costs, due to increased wear and tear on their units that they claim is not accounted for under the proxy cost option, as well as environmental restrictions on the annual or seasonal number of starts for certain quick-start resources. According to the CAISO, the opportunity cost of starting a resource subject to these environmental restrictions is not incorporated into the proxy cost option. . . . According to the CAISO, providing scheduling coordinators with the ability to choose more frequently between these two options provides increased flexibility to select the option that better represents a resource's start-up and minimum load costs in light of the way that the resource is actually being committed under MRTU.

Despite a plain awareness of our concerns, and its prior commitment to the Commission to implement meaningful flexibility into its commitment cost bidding restrictions,[15] the CAISO proposal addresses none of these problems. Instead, it proposes to limit the advantages of daily bidding only to units electing the Proxy Cost option.[16]

It is axiomatic that a just and reasonable rate cannot require a generator to operate at a loss. Similarly, the Commission cannot approve rules that would result in undue discrimination between similarly situated parties.[17] Yet this is exactly what would happen under the CAISO's proposal to limit daily bidding only to units bidding Proxy Costs. Daily bidding increases a generator's ability to reflect the costs of committing the unit and allows the generator to respond to changing conditions in the delivered price of natural gas. Units required to lock in a given price for a month lack that flexibility, and

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[15] 2009 Commitment Cost Order at P 9 ("The CAISO further states that this proposal is an interim measure, pending stakeholder discussion and development of more comprehensive modifications to the CAISO software.")

[16] Restricting daily bids to Proxy Costs or *less* only allows daily bidding of less than a generator's actual costs. This is not a meaningful market enhancement.

[17] *See, e.g.*, *Dynegy Midwest Generation v. FERC*, No. 09-1306 (D.C. Cir. Feb. 11, 2011) (finding that a rate causing "arbitrary differences in the competitive position of generators in different zones, and is thus unduly discriminatory under § 205(b) of the FPA.")

would find themselves at an impermissible competitive disadvantage because they would be denied the ability to respond to changing market conditions, unlike their Proxy Cost brethren.

Allowing market participants to bid in these minimum load and start-up costs enhances economic efficiency and allows the market participants to accurately reflect daily fluctuations in natural gas costs into its daily bids. It also allows the generator to accurately price opportunity and performance risks into their daily minimum load and start-up bids. The Proxy Cost option does not permit bids that reflect any of these legitimate costs. There is no justification for denying generators the option of selecting between the Proxy Cost or Registered Cost options when they place their daily bids.[18]

B. The CAISO's Calculation of Proxy Costs Should not be the Sole Basis for Mitigating Daily Start-Up and Minimum Load Bids.

As the Market Surveillance Committee explained in its analysis of the proposed rule, the goal of an "economically efficient" rule for minimum load and start-up costs requires that "suppliers should be allowed to express all verifiable SU and ML costs in their cost-based offers."[19] Yet the inaccuracies in the existing calculation of a generator's Proxy Cost makes it unsuitable as the basis for mitigating a generator's minimum load and start-up bids.

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[18] California Generators note that the Market Surveillance Committee suggests that generators could avoid this catch-22 situation by electing the Negotiated Cost option, whereby the generator and the Independent Market Monitor jointly develop a cost option that reflects known costs. The Negotiated Cost option, however, applies only to energy curves, and is not currently allowed for minimum load and start-up costs. *See* Market Surveillance Committee *Opinion on Changes to Bidding and Mitigation of Commitment Costs*, June 4, 2010 at pp. 4 - 7, included in the CAISO Filing (hereinafter, "MSC *Opinion*").

[19] MSC *Opinion*, at p. 5.

As mentioned above, a unit's Proxy Cost is only a rough approximation of the unit's actual costs of producing minimum load and start-up energy. The CAISO estimates Proxy Costs based on what natural gas *should* cost under perfect circumstances, and includes a rough estimate of a unit's VOM costs, without consideration of the age or efficiency of the specific generating unit. During actual operations, generating units often experience actual costs in excess of the CAISO's rough Proxy Cost estimate. This is particularly true for low capacity factor units receiving dispatch orders after the close of the day-ahead gas markets (the energy market in California closes after the gas market closes),[20] units subject to environmental restrictions that limit their run hours or starts, or units located in jurisdictions that impose additional taxes on gas deliveries, or on units that have VOM costs in excess of the CAISO's estimate of those costs. These additional costs can dwarf the 10 percent adder that the CAISO includes in its Proxy Cost estimate, and the CAISO provides no mechanism for generators to demonstrate legitimate increases in the cost of delivered gas procured in response to a CAISO dispatch.

Several examples demonstrate how relying on the the CAISO's calculation of Proxy Costs would over-mitigate generation resources.

[20] End of month balancing penalties are particularly onerous on low capacity factor units, and can result in large increases to the delivered cost of gas. For example, the SoCal gas system requires generators to nominate at least 50% of any gas they consume every five day period (i.e. the 1st through the 5th; the 6th through the 10th etc.) during the months of November – March. Any generator who does not meet these requirements for any given five day period is assessed an imbalance penalty by the pipeline. The penalty is calculated as the higher of: (i) 1.5 times the highest daily indexed gas price during the calendar month, or (ii) the highest price SoCal gas transacted at for the calendar month. A similar monthly calculation is performed which requires a generator to purchase and nominate at least 90% of the amount of gas consumed during each calendar month.

Example 1: City Gate Gas Taxes. The CAISO's Proxy Cost calculation does not include gas taxes imposed by the City of El Segundo. These taxes account for an additional 3 percent increase in the cost of natural gas.[21]

Example 2: Intra-Day Gas Dispatches.

Intra-day dispatches in California (where dispatch occurs long after the close of the day-ahead gas market) are routine and create special problems for units with low capacity factors. Procuring intra-day gas can be an extremely expensive undertaking. A low capacity factor unit cannot predict with any certainty when it will run, and thus procuring gas ahead of time can be prohibitively expensive. For example, NRG's El Segundo units (two units 335 MW each) received a series of dispatches during the week of Thanksgiving 2009. The dispatches were a combination of economic market clearing dispatches (Integrated Forward Market) and reliability dispatches (both Exceptional Dispatches and Residual Unit Commitment). Over the 4-day Thanksgiving Day weekend, there was limited space available on the gas pipeline which meant that NRG would need to procure same-day gas, in order to avoid the steep penalties associated with a potential Operational Flow Order on the pipeline, for any dispatches it received. Exacerbating the situation was the fact that November 30th was the end of the 5-day and monthly balancing cycles on the Southern California gas system. NRG's weighted-average price of gas procured over the weekend was $4.80 / MMBtu. This compared to the CAISO's Proxy Cost option, which calculated gas at $3.40 / MMBtu (both figures omit transportation adders). Since NRG had no way of knowing how long the units would run, or at what dispatch levels, NRG only procured 65,000 MMBtu over the

[21] NRG raised the city gate tax issue during the stakeholder process, and the CAISO ignored our concerns.

weekend. When it received greater than expected dispatches, it was forced to enter into what is known as an imbalance trade for gas at $6.18 / MMBtu to bring its total volume purchased in line with what was burned (140,000 MMBtu). Thus, in one admittedly non-typical weekend, the CAISO's Proxy Cost calculation deviated from the actual delivered price of gas by almost $3 / MMBtu.

While holiday weekends present unique problems, limited versions of this story occur every day, with unanticipated dispatches on weekends and holidays presenting major problems. In each case, the early close of the day-ahead gas market makes intra-day gas purchases an everyday reality that needs to be addressed in any commitment cost bid caps.

Example 3: VOM Expenses. The CAISO's Proxy Cost formula assumes a VOM cost that bears little if any relation to the actual VOM costs experienced at any given power plant. For combustion turbines, the VOM costs are assumed to be $4.00 / MWh. For non-peaking steam units, the VOM costs are assumed to be $2.00 / MWh. Comparable VOM costs from other markets suggest that these costs flagrantly underestimate actual VOM costs. For example, ERCOT assumes VOM costs of between $3.19 to $7.08 per MWh, depending on technology and vintage.

Example 4: Environmental Opportunity Costs. The Proxy Cost option provides no recovery of lost opportunity costs due to environmental restrictions that limit the number of times a unit is allowed to start up over the course of a year, as both the CAISO and the Commission have acknowledged.[22] Such costs are well recognized, and included

[22] *See* 2009 Commitment Cost Order at P 10 ("According to the CAISO, the opportunity cost of starting a resource subject to these environmental restrictions is not incorporated into the proxy cost option.")

in the minimum load and start-up costs available to generators in New York, Midwest ISO, ERCOT and ISO New England. The Market Surveillance Committee likewise notes that:[23]

> The opportunity cost of a start due to environmental or other restrictions on the total annual number of starts is, in general, a legitimate reason for setting higher cost-based SU offers. An extra start early in the summer when prices are low could mean that a unit is unavailable during the peak summer weeks when prices are much higher, if it has used up all of its starts by that point.

In sum, the CAISO proposal to only allow daily bidding of startup and minimum load if those bids are capped at Proxy Costs over-mitigates generators, or denies them the benefits of daily bidding. Every other market permits generators to determine unit-specific and even dispatch-specific costs, and to recover those legitimate costs. In the absence of providing a generator the right to accurately state its costs, the CAISO must allow market participants to bid in their daily commitment costs, capped at the Registered Cost option.

C. Capping Daily Bids at Proxy Cost Increases Costs to Ratepayers.

Providing generators the ability to bid equal to, or less than, their actual costs plus 10 percent, on a daily basis does nothing to improve the functioning of the CAISO markets. It is important to recognize that the proxy cost figure calculated by the CAISO is just 10% above the absolute ***minimum*** that the CAISO estimates it should cost to make minimum load or start-up electricity. It assumes that there are no substantial fluctuations in the two-day lagging Gas Daily index, no intra-day gas procurement costs, no

[23] MSC *Opinion*, at p. 5.

Operational Flow Orders, no city gate taxes, and that the CAISO's estimation of the unit's VOM costs is accurate.

Paradoxically, in order to avoid running at a loss, the CAISO proposal likely encourages generating units to *increase* the price of the minimum load and start-up energy they provide. The end result of the CAISO's proposal is that generators will be more likely to lock in the Registered Cost option index for an entire month at up to two-times the moving gas index price. A generator that would prefer to improve its competitiveness by bidding into the market at less than the full Registered Cost, but more than the Proxy Cost, would be unable to do so. It makes no sense to a allow a unit to bid under the Registered Cost cap for an entire month, but not allow the same unit to bid less than the Registered Cost option during a month when it is confident that it will be able to secure natural gas at a reasonable price. The CAISO's proposal thus creates a perverse incentive for generators to elect the higher priced Registered Cost option for the whole of the month, rather than vary their bids at less than the Registered Cost cap. Instead, the CAISO should permit generators the flexibility to bid *up to* the Registered Cost cap on a daily basis, which would save ratepayers a considerable amount of money versus locking in a more expensive Registered Cost option for the entire month. Notably, the Commission approved just this option in its 2009 Commitment Cost Order.

The CAISO appears unable to explain why a generator that bids 200 % (for in-basin generation) of its proxy costs on a month-ahead basis is okay, but a generator attempting to bid less than 200 % of the calculated Registered Cost index on a daily basis needs to be mitigated. In every other market, each generator is allowed to establish unit-specific "Verifiable Costs" or "Reference Prices." So long as the generator's start-up and

minimum load costs remain below the Verifiable Costs/Reference Prices, the generator's bids are assumed to be acceptable. Should the unit bid above their Verifiable Costs/Reference Prices, then they are mitigated, absent a showing that their actual costs exceeded those referents.

A generator would typically add appropriate risk premiums associated with fuel procurement into its energy curve (i.e. above its minimum load or PMin). Since units in the CAISO are routinely dispatched and held at their PMin, pricing in this risk into the energy curve is often a useless exercise. Further, many units (including NRG's El Segundo facility) typically has its energy curve mitigated by the CAISO to the calculated proxy cost for the unit plus ten percent. Many units find themselves in similar circumstances, because of the CAISO's overly aggressive Competitive Path Assessment mitigation scheme. The CAISO, in fact recognized these problems in its 2009 filing in Docket No. ER09-1529-000, as discussed in Section A of this pleading.

In short, bidding at Proxy Cost exacerbates a generator's exposure to fluctuations in natural gas prices, and does nothing to compensate units for pipeline balancing restrictions, OFO's, or intra-day gas charges they may experience. On the other hand, Registered Cost more often than not forces a generator to appear uneconomic to the market because its start-up and minimum load costs are based on a higher price. The correct manner of balancing these concerns is to allow a generator to price in these risks (capped at Registered Cost), which provides the party who wears the risk (the generator) the ability to manage the risk.

D. Generator Losses Do Not Average Out Over Time, as Suggested by the CAISO.

The CAISO's position appears to be that gas volatility is likely to benefit generators on some occasions, and harm them on others, but that in the end, the costs and the benefits will average out. There are two fundamental problems with the CAISO's "you win some, you lose some" philosophy. *First*, the CAISO provides no empirical evidence that this is true. *Second*, the CAISO's falls apart for resources that are:

i. Dispatched infrequently and on a non-predictable basis;

ii. Issued an out-of-merit dispatch notices such as an Exceptional Dispatch or Residual Unit Commitment late in a day; or

iii. Peaking resource exclusively committed intra-day.

Each of these situations exposes the generator to intraday gas prices, gas balancing charges, and Operational Flow Orders that result in difficult to predict spikes in delivered natural gas prices. These issues are exacerbated during (1) weekend or Monday dispatches (given the disparity of Monday only versus. weekend gas); (2) holiday periods, where gas prices can change significantly over the course of three or four days and (3) dispatches which occur during November through March when the Southern California Gas is operating under its 5-day balancing requirement. As a result, almost any dispatch on Day 5 of the balancing period will incur gas penalties.

The CAISO provides no substantive justification for why it is necessary to cap a market participant's start-up and minimum load at (or sometimes below) their minimum operating costs. There are legitimate costs – particularly relating to changes in gas costs – that should be reflected in a unit's minimum load and start-up costs. These costs are real, and the Commission has recognized their existence in every other market where this issue has been considered.

E. Other Markets have Solved the Minimum Load and Start-Up Cost Conundrum.

The CAISO is not the first market to grapple with how to allow market participants to bid their start-up and minimum load costs into the jurisdictional energy markets. Yet instead of taking the lead from ISO New England, NYISO, or ERCOT – all of which allow units to flexibly bid in their start-up and minimum load costs on a daily basis – the CAISO continues to effectively prohibit generators from managing their own start-up and minimum load costs. The CAISO proposal in the instant proceeding, sadly, does not comport with best practices seen in other markets, and falls woefully short of providing generators with any meaning way of bidding their minimum load and start up costs on a daily basis.

The Commission should accept the CAISO's filing, and direct a comprehensive fix to its existing bidding structure, that would allow generators to daily bid in their minimum load and start up costs up to their Registered Costs, within 90 days of issuing an order in this proceeding. We briefly describe several alternative models that the CAISO could use in developing such a program.

a. The ERCOT Experience.

The ERCOT market protects generators from losing money on their minimum load and start costs (known as minimum energy and start-up costs in ERCOT) via several methods. First, ERCOT establishes a series of "standard costs" that represent ERCOT's estimate of such costs. These standard costs are considerably more than the comparable costs adopted by the CAISO and are backed with significant engineering and economic analysis, unlike the CAISO's estimate of VOM costs, which is based on a series of assumptions. Specifically, the ERCOT standard costs are as follows:

Resource Category Start Year = 2009	**Cold Startup ($/start)**	**Intermediate Startup ($/start)**	**Hot Startup ($/start)**	**Variable O&M ($/MWh)**
Aeroderivative simple cycle commissioned after 1996	1,000.00	1,000.00	1,000.00	3.94
Reciprocating Engine	487.00	487.00	487.00	5.09
Simple cycle ≤ 90 MW	2,300.00	2,300.00	2,300.00	3.94
Simple cycle ≥ 90 MW	5,000.00	5,000.00	5,000.00	3.94
Combined cycle: for each Combined-Cycle Configuration, the Startup Cost for that configuration is the sum of the Startup Costs for each unit within that configuration as follows:				3.19
Combustion turbine < 90MW	2,300.00	2,300.00	2,300.00	
Combustion turbine ≥ 90 MW	5,000.00	5,000.00	5,000.00	
Steam turbine	3,000.00	2,250.00	1,250.00	
Gas-steam non-reheat boiler	2,310.00	1,732.50	866.25	7.08
Gas-steam reheat boiler	3,000.00	2,250.00	1,125.00	7.08
Gas-steam supercritical boiler	4,800.00	3,600.00	1,800.00	7.08
Nuclear, coal, lignite and hydro	7,200.00	5,400.00	2,700.00	5.02
Renewable	Not Applicable	Not Applicable	Not Applicable	5.50

Second, ERCOT allows a generator to apply for unit-specific minimum energy and start-up costs, a process known as filing for "Verifiable Costs," based on the unit's actual, historic costs and actual fuel flows. In every case, the fuel costs for natural gas generators are yesterday's gas price ($ / MMBtu) + ~$0.50. If a generator has filed for Verifiable Costs, then it is guaranteed not to make less than its Verifiable Costs if dispatched, known in ERCOT as the "RUC Guarantee." If the generator receives less

energy revenue than the RUC Guarantee, then the Generator receives a make-whole payment equal to the difference between the Guarantee and the energy revenue. If it receives more energy revenue than the RUC Guarantee, then its net revenue is subject to clawback.

Third, in addition to the two options described above, ERCOT also has a fail-safe that if a unit's actual fuel costs exceed prior day's gas prices + $0.50, then the generator can show ERCOT an invoice for its actual spot gas prices, including gas swing costs or other delivered gas costs, and ERCOT will increase the generator's RUC Guarantee to be used in the next true-up settlement of that operating day.

b. The ISO New England Experience.

ISO New England establishes a "Reference Level" for each unit's start-up and no-load costs, as well as incremental energy.[24] Start-up and no-load costs are both biddable parameters, meaning that the market participant can offer at levels higher than the Reference Level, subject to potential mitigation if doing so violates both the conduct and market impact tests.[25]

> A level negotiated with the Market Participant submitting the bid or bids at issue, and intended to reflect the Resource's marginal costs, provided such a level has been negotiated prior to the occurrence of the conduct being examined by the Internal Market Monitor, and provided that the Market Participant has provided data on the Resource's operating costs in accordance with specifications provided by the Internal Market Monitor. The Internal Market Monitor's determination of a generating unit's marginal costs shall include an assessment of the unit's incremental operating costs in accordance with the following formula, and such other factors or adjustments as the Internal Market Monitor shall reasonably

[24] Market Rule 1, Appendix A, Section 5.6.1(a)(iii) (http://www.iso-ne.com/regulatory/tariff/sect_3/mr1_app_a.pdf).

[25] The more stringent, 'Constrained Area' conduct test provides for start-up and no-load fees to be offered at up to 25% above Reference Level without prompting the market impact test or mitigation. (Market Rule 1, Appendix A, Section 5.3.3(a)(ii)).

determine to be appropriate based on such data supplied by the Market Participant or otherwise available to the Internal Market Monitor:

(heat rate * fuel costs) + (emissions rate * emissions allowance price) + other variable and operating maintenance costs

Thus, in ISO New England, start-up and no-load costs include emissions costs, as well as a VOM component, and allows these costs to be bid in on a daily basis.[26]

c. The NYISO and Midwest ISO Experience.[27]

NYISO also establishes a reference level for each unit's start-up and no-load costs, as well as incremental energy. Additionally, in the NYISO Start-up and no-load costs are both biddable parameters, meaning that the market participant can offer at levels higher than the Reference Level, subject to potential mitigation if doing so violates both the conduct and market impact tests.

In NYISO, the reference levels are based, in order of declining preference, on:

1. The generators average bid over the previous 90 days, adjusted for fuel prices, during weekday daytime hours when the generator's bid was accepted.

2. The average price at the generator's bus over the previous 90 days, adjusted for fuel prices, during the lowest 25% of the hours when the generator's bid was accepted.

3. A negotiated reference price that covers (heat rate * fuel costs) + (emissions rate * emissions allowance price) + other variable and operating maintenance costs.

When there are not sufficient hours of operation to develop a robust reference price based upon either the generators bid history or the average nodal price during the generator's

[26] Currently, start-up and no-load fees can be entered each day. ISO has proposed to provide additional flexibility such that resources not cleared in the DA market will be able to modify their start-up and no-load fees in the 'Re-offer Period', the two-hour period after the DA market clears and before the ISO enters the RT phase for the next operating day.

[27] The NYISO and Midwest ISO rules governing the bidding of minimum load and start-up costs are similar. For convenience, we focus on the rules in NYISO.

hours of operation, or in instances where the result of those estimates is not representative of the minimum generation or start up costs, then the negotiated reference price is used. When the negotiated reference price is used for start-up and no-load costs, it explicitly accounts for emissions costs, as well as a VOM component, and allows these costs to be bid in on a daily basis. In instances where major maintenance costs are attributable to either the number of unit starts or the hours of unit operation then these cost factors are allocated to the reference price start-up or no-load costs respectively.

F. Claims of Support at the Stakeholder Process are Exaggerated.

In the cover letter submitted by the CAISO in the instant proceeding, the CAISO asserts that stakeholders largely agreed with its proposal. This statement glosses over the serious concerns conveyed by multiple stakeholders that failing to allow for legitimate costs in the Proxy Cost option are not appropriate. These concerns were raised in formal written comments, email correspondence, and in person discussions, as clearly reflected in the CAISO's stakeholder comment template included in its filing. We will not belabor the point, but merely note that we disagree with the CAISO's characterization of robust support for its proposal.

III. Conclusion

The California Generators respectfully request that the Commission accept the CAISO's proposal to allow daily bidding of minimum load and start-up costs, but reject the CAISO's proposal to cap such daily bids at its estimate of Proxy Costs. As demonstrated, capping minimum load and start-up costs at Proxy Costs results in significant losses to generators – particularly low capacity factor units receiving intra-day reliability dispatches. While market participants could instead forgo bidding of these

costs on a daily basis, that would create an inequitable competitive playing field. Instead, the Commission should direct the CAISO to cap daily minimum load and start-up bids at the CAISO's calculation of the Registered Cost cap. At a minimum, the Commission should direct the CAISO to permit generators with documented otherwise unrecovered daily costs of producing minimum load and start-up energy to recover those costs on a case-by-case basis.

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For Calpine Corporation

Certificate of Service

I hereby certify that I have served a copy of the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Princeton, New Jersey this 16th day of February, 2011.

/s/ Gretchen Hunt
Gretchen Hunt