BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	R. 10-05-006 (Filed May 6, 2010)

TRACK 1 REPLY BRIEF OF CALPINE CORPORATION

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Pursuant to the procedural schedule set during the evidentiary hearings,[1] Calpine Corporation ("Calpine") submits this reply to the Track 1 opening briefs of Pacific Gas and Electric Company ("PG&E"), Southern California Edison Company ("SCE"), The Utility Reform Network ("TURN") and the Division of Ratepayer Advocates ("DRA").

I. INTRODUCTION

As discussed in Calpine's opening brief, the record demonstrates an immediate need for the California Public Utilities Commission ("Commission") to adopt an interim procurement requirement to ensure the continued availability of uncontracted existing resources[2] while uncertainty regarding long-term renewable integration requirements is resolved. Specifically, investor-owned utilities ("IOUs") should be directed to hold intermediate term (3-5 years) resource solicitations to procure flexible capacity from existing resources.[3] None of the parties opposing Calpine's proposal have shown that, absent such action by the Commission, the amount of flexible capacity assumed to be available in the renewable integration modeling performed to date will, in fact, remain available during the planning period.

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[1] *See* ALJ Allen, Tr. at 892.

[2] "Uncontracted existing resources" refers to existing resources that are not under contracts to, or owned by, load serving entities ("LSEs") during the planning period.

[3] *See* Calpine Opening Brief at 9-10, Calpine/Barmack, Exh. 601 at 16-18 (describing how the resource solicitations can be structured).

The record in this proceeding demonstrates that:

- The modeling performed to date assumes that uncontracted existing resources will remain available to help meet renewable integration needs through 2020.[4]

- Net revenues for combined cycle gas turbine ("CCGT") units have been declining in recent years and, for 2010, are estimated to be less than one-half of the five year average.[5]

- The California Independent System Operator ("CAISO") projects that net revenues for conventional generation resources could decline further as additional renewable resources come on-line.[6]

- Sensitivity studies show that if existing resources assumed to be available in the renewable integration modeling shut down, substantial amounts of new replacement resources will be necessary to satisfy reliability and renewable integration needs, with a potential cost to ratepayers in the billions of dollars.[7]

In their respective opening briefs, PG&E, SCE, TURN and DRA demonstrate a complete lack of appreciation for the significant consequences should existing resources assumed to be available shut down. Instead, they ask the Commission to rely on tools ill-equipped to address the current uncertainty associated with renewable integration needs under a 33% Renewables Portfolio Standard ("RPS") and posit alternatives that are not viable. These parties rely on rhetoric to divert the Commission's attention and mischaracterize Calpine's proposal. They make wild allegations but are surprisingly unfamiliar with the record and basic facts.

For instance, TURN argues that Calpine's proposal should be rejected because it would result in procurement above the current planning reserve margin ("PRM") notwithstanding that it testified during hearings that it has no idea how the current PRM relates to renewable integration needs. SCE claims that Calpine "chose not to enter into the Track I Settlement Agreement, but to propose, instead, that the [Commission] order the IOUs to immediately commence

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[4] Calpine/Barmack, Exh. 601 at 2.

[5] *See* Calpine Opening Brief at 5 (citing CAISO *Market Issues and Performance Annual Report 2010* at 53).

[6] Calpine/Barmack, Exh. 601 at 9 (*quoting* CAISO *Integration of Renewable Resources; Operational Requirements and Generation Fleet Capability at 20% RPS* at v (August 31, 2010)).

solicitations for generation."[8] Calpine, however, *is* a party to the Track 1 Settlement Agreement and the potential need to procure uncontracted existing resources was specifically excluded by the Settling Parties (which includes SCE) from the settlement.

The CAISO agrees with Calpine that the Commission should direct the IOUs to undertake intermediate term procurement as a means to ensure the continued availability of uncontracted existing resources as the system approaches a 33% RPS. The IOUs already conduct intermediate term resource solicitations and the Commission can review the results of such solicitations to ensure that the process was fair and that the prices are reasonable. Given the consequences to ratepayers should existing resources shut down and replacement resources become necessary to integrate renewable generation going forward, intermediate term solicitations represent a reasonable "least regrets" approach for preserving the *status quo* of resource flexibility until uncertainty about future need is resolved.

II. DISCUSSION

A. PG&E and TURN fail to appreciate the significant risks and consequences associated with the uncertainty raised by the modeling to date

PG&E and TURN believe that the Commission should not take any action to ensure the continued availability of uncontracted existing resources until further renewable integration modeling has been completed. According to PG&E, "resource need has not been determined. . ., and [] further analysis is needed before any renewable integration resource need determination is made."[9] TURN similarly states that the modeling done to date "cannot be relied upon to authorize any additional procurement at this time."[10] PG&E and TURN confuse the lack of

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[7] Calpine Opening Brief at 7-8.

[8] SCE Opening Brief at 6. .

[9] PG&E Opening Brief at 13.

[10] TURN Opening Brief at 1.

certainty associated with the need for *new* resources with the present need to ensure *existing* resources remain available to satisfy flexibility and capacity-related reliability requirements during the planning period.

In their desire for a more perfect model, PG&E and TURN fail to grasp the significant risks presented by the current modeling results and neither seems to appreciate the potential consequences if existing resources assumed to be available in modeling shut down. The results of the renewable integration modeling show that the flexibility requirements necessary to integrate renewable generation under a 33% RPS range from 8,200 MW of additional *new* resources to no need for new resources.[11] In all of the scenarios modeled, however, uncontracted existing resources are assumed to remain available through the 2020 planning period.[12] Both PG&E and TURN ignore this fact in their opening briefs.

Sensitivity studies have further identified the contribution of existing resources to satisfying the flexibility requirements under a wide range of scenarios.[13] The results of these sensitivity studies demonstrate that the removal of uncontracted existing CCGT capacity creates a need for significant amounts of replacement capacity during the planning period at a potential

[11] CAISO/Rothleder, Exh. 2400 at 43-44; Joint IOU Supporting Testimony, Exh. 106 at 3-3 (Table 3-1).

[12] Calpine/Barmack, Exh. 601 at 2.

[13] Calpine/Barmack, Exh. 601 at 4.

cost to ratepayers in the billions of dollars. This is true even under a scenario that does not otherwise show a need for *new* resources:

Scenario	Existing Uncontracted Resources Assumed Retired[14]	Replacement Resources Needed to Integrate Renewable Generation	Cost of Replacement Resources[15]
Trajectory High Load[16]	3,200 MW	2,600 MW[17]	$3.12 – 5.52 billion
Trajectory[18]	3,200 MW	1,400 MW	$1.68 - 2.97 billion

While the sensitivity studies do not identify a specific quantity of uncontracted existing resources that should be procured, the studies demonstrate the potential consequences and risk to ratepayers should uncontracted existing resources shut down and replacement resources become necessary to integrate renewable generation going forward. In light of the risks and potential consequences, the CAISO agrees that intermediate term procurement requirement is necessary:

> The [CA]ISO agrees that a 'gap' currently exists between the [CA]ISO's renewable study assumptions that existing resources modeled in the 2011-2020 time period will actually still be part of the fleet when needed as the system approaches 33% renewables, and the reality that some, or many, of these units could face economic retirement if not procured under long-term contracts. Clearly this gap must be addressed and the *Commission in this proceeding* has the opportunity to design a flexible solicitation process and intermediate term procurement directive as suggested

[14] The resources used in the sensitivity studies were selected because some of the units do not currently have contracts and none of the units have contracts that extend beyond 2013 (*i.e.*, they will be exposed to short-term markets in the near future). The units were also selected because they are generally similar to other units (both Calpine and non-Calpine) that were built in the past 10 years and are not under long-term contracts. *See* Calpine/Barmack, Exh. 601 at 5.

[15] The range in the cost of replacement capacity was calculated using publicly available estimates of the cost of new capacity from the California Energy Commission and other public sources. *See* Calpine/Barmack, Exh. 601 at 13.

[16] The renewable integration modeling results for the "Trajectory High Load" scenario show a need for 4,600 MW of new resources to satisfy reliability and renewable integration needs. CAISO/Rothleder, Exh. 2400 at 43.

[17] The amount of replacement resources is less than 1-for-1 because on the day of the simulation in which the greatest amounts of new generic resources are needed to serve load and satisfy flexibility requirements, 600 MW of the resources that were modeled as retired in the sensitivity analysis are forced out. Because the 600 MW are forced out, removing them as part of the sensitivity analysis does not increase need. *See* Calpine/Barmack, Exh. 601 at 12, note 18.

[18] The renewable integration modeling results for the "Trajectory" scenario do not show a need for new resources to satisfy reliability and renewable integration needs. Calpine/Barmack, Exh. 601 at 5.

> by Calpine. The ISO urges the Commission to take these steps in the decision to be issued by the end of 2011.[19]

PG&E and TURN ask the Commission to ignore the risks and consequences of uncontracted existing resources shutting down because the modeling results to date are inconclusive. However, it is precisely because future needs have not yet been conclusively determined that the Commission must take steps to ensure existing resources remain available to satisfy flexibility and capacity-related reliability requirements.

B. The current planning reserve margin is not an effective tool for determining the amount of resources needed to reliably integrate renewable generation during the planning period

TURN argues that the Commission should reject the Calpine proposal because it would result in procurement above the current PRM of 15-17 percent. According to TURN, "[a]bsent any broader Commission revision of the planning reserve margins, there is no basis to adopt policies requiring the IOUs to procure additional resources for the purposes of retaining a planning reserve margin for the overall system."[20] TURN's notion that the PRM should be used to determine the amount of flexible resources needed to satisfy renewable integration needs is misguided and puts reliability at risk.

The PRM is a tool that predates the current 33% RPS requirement and was not developed to ensure the integration of such a massive amount of intermittent renewable generation. Both PG&E and SCE agree that the Commission needs to look beyond the current PRM when determining renewable integration needs:

> Evaluating operating requirements in the face of significant intermittent renewable generation makes long-term resource

[19] CAISO Opening Brief at 8 (emphasis added).

[20] TURN Opening Brief at 5.

> planning considerably more complex than checking whether the reserve margin equals or exceeds the required PRM.[21]
>
> * * * * *
>
> Existing procurement processes have been focused on system capacity needs under a [PRM] construct and associated issues such as cost responsibility. A new process will need to be developed to handle this changing landscape in which new generation is required despite sufficient overall capacity to meet the PRM.[22]

Although TURN asks the Commission to rely on the current PRM, it admitted during the evidentiary hearings that it has no idea how the current PRM relates to renewable integration needs:

> Q [Calpine] Is it your testimony that satisfying a 15 to 17 percent planning reserve margin will assure the procurement of sufficient flexible resources necessary to integrate renewables at a 33 percent RPS?
>
> A [TURN] I'm not addressing that issue.
>
> Q Do you know if satisfying a 15 to 17 percent planning reserve margin will ensure the procurement of sufficient flexible resources necessary to integrate renewable generation in a 33 percent RPS?
>
> A *No, I don't know. I don't think anyone knows*.
>
> Q Do you know the amount of existing resources needed to support renewable integration at a 33 percent RPS?
>
> A No.[23]

The Commission cannot rely on the current PRM to determine whether to adopt an interim procurement requirement as TURN suggests. The PRM will not ensure the continued availability of uncontracted existing resources and, as a result, reliance on it will put ratepayers at risk for the cost of replacement resources should existing resources shut down.

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[21] PG&E Opening Brief at 8.

[22] SCE/Brady, Exh 211 at 4.

[23] Woodruff/TURN, Tr. at 458 (emphasis added). PG&E similarly acknowledged that it does not know the amount of existing resources needed to support renewable integration at a 33 percent RPS. PG&E/Strauss, Tr. at 796.

C. The Calpine proposal will preserve the *status quo* until uncertainty about future need is resolved

TURN, DRA and SCE make unsubstantiated claims that the purpose of the Calpine proposal is to obtain contracts for Calpine power plants. For instance, SCE warns that "[t]he Commission should be wary of Calpine's determination to obtain additional revenues for its generating facilities at the expense of utility customers."[24] TURN asserts that an interim procurement requirement could result in Calpine "being the sole bidder (*by design*) with resulting prices that are neither just nor reasonable by any standard."[25] These parties knowingly mischaracterize Calpine's proposal and their gratuitous attempt to ascribe some improper motive to Calpine has no basis in fact.

As an initial matter, the record is clear and unambiguous that Calpine's proposal is not specific to Calpine generation resources:

> Q [Calpine] Is it your understanding that Calpine's procurement proposal only addresses the procurement of Calpine generation resources?
>
> A [TURN] It's not limited to Calpine's resources. . . .[26]

The interim procurement requirement proposed by Calpine is designed to address a simple but critical market issue facing all uncontracted existing resources. Specifically, in light of existing procurement policies which preclude existing generation resources from participating in long-term resource solicitations, if compensation from the available markets is not sufficient and stable enough to recover going forward costs (including major maintenance costs), uncontracted existing resources will be at risk for economic retirement.

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[24] SCE Opening Brief at 41.

[25] TURN Opening Brief at 4 (emphasis added).

[26] Woodruff/TURN, Tr. at 454.

The record demonstrates that compensation from the markets currently available to uncontracted existing resources has been declining[27] and is expected to drop even further as more renewable resources come on-line.[28] TURN, DRA and SCE, however, ignore this market data and instead point to Calpine's reluctance to publicly disclose highly confidential Calpine-specific market information (a position likely shared by every independent generator) as grounds for rejection.[29] Such Calpine-specific information, however, is not needed for the Commission to take action in this case.

This economic retirement of uncontracted existing resources is a broad market issue that has significant implications for system reliability and renewable integration. To address the risk of economic retirement, Calpine proposes that the Commission direct the IOUs to hold intermediate term resource solicitations to procure flexible capacity from existing uncontracted resources.[30] The purpose of these solicitations would be to preserve the aggregate resource flexibility assumed available from the existing fleet in the renewable integration modeling. Thus, these solicitations would simply maintain the *status quo* of resource flexibility for a 3-5 year period:

> I think the general principle is if you're counting on capacity to be there, it should have a contractual commitment to be there. And what we're proposing is to set up a solicitation where suppliers could enter into those contractual commitments. . . .[31]

The IOUs already conduct intermediate term resource solicitations on behalf of bundled customers and it should be relatively easy to incorporate additional procurement into such

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[27] Calpine Opening Brief at 4-5 (*citing* CAISO *Market Issues and Performance Annual Report 2010* at 53); *see also* Calpine/Barmack, Exh. 601 at 6-9.

[28] Calpine Opening Brief at 5-6 (*quoting* CAISO *Integration of Renewable Resources; Operational Requirements and Generation Fleet Capability at 20% RPS* at v (August 31, 2010)).

[29] *See* TURN Opening Brief at 3; DRA Opening Brief at 10; SCE Opening Brief at 40.

[30] *See* Calpine/Barmack, Exh. 601 at 14-15.

[31] Calpine/Barmack, Tr. at 852.

solicitations.[32] Furthermore, the Commission can review the results of such solicitations to ensure that the process was fair and that the prices are reasonable. Thus, the assertion that Calpine's proposal will somehow saddle ratepayers with unreasonable costs ignores reality. For these reasons, intermediate term solicitations represent a reasonable "least regrets" approach for preserving the *status quo* of resource flexibility until uncertainty about future need is resolved.

D. CAISO initiatives do not obviate the need for Commission action

PG&E and DRA ask the Commission to defer to the CAISO in lieu of taking direct action to ensure uncontracted existing resources remain available to satisfy renewable integration needs. For instance, PG&E refers to the CAISO's tariff authority "to issue a 'risk of retirement' designation" as grounds for Commission inaction.[33] DRA believes there is no need for the Commission to act because there are "regulatory initiatives underway at the CAISO that would help increase compensation for existing generation."[34]

The "risk of retirement" designation referred to by PG&E is a short term solution to address reliability needs and it is unclear whether such a designation can or would ensure the availability of uncontracted existing resources until further renewable integration modeling has been completed. Furthermore, the regulatory initiatives referred to by DRA are "still in their infancy" or have been deferred by the Commission.[35] Thus, these initiatives do not address the potential consequences and risks to ratepayers should uncontracted existing resources shut down in the near term and replacement resources become necessary to integrate renewable generation going forward.

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[32] SCE asserts that "[i]t would not be in the best interest of SCE's customers to conduct . . . a solicitation for the benefit of all customers." SCE Opening Brief at 40. To the extent that such procurement is viewed as satisfying system rather than bundled needs, cost allocation mechanisms that already exist can be employed to ensure that all load serving entities share in the cost of additional procurement.

[33] PG&E Opening Brief at 14; *see also* DRA Opening Brief at 11.

[34] DRA Opening Brief at 11.

As noted above, the CAISO believes it is important for the Commission to take action "*in this proceeding*" to ensure the continued availability of uncontracted existing resources.[36] The Commission has the authority to direct the IOUs to undertake intermediate term resource solicitations that will secure the availability of existing resources for a multi-year period while remaining uncertainty about the need for renewable integration resources is resolved.

E. The Commission cannot rely on temporary shutdowns and asset sales to ensure uncontracted existing resources will remain available

TURN, SCE, and PG&E do not believe an uncontracted existing resource will shut-down for economic reasons.[37] For instance, TURN suggests that, "[e]ven if the short-term operating economics are unfavorable . . . [generators have] a variety of options including asset sales or temporary shutdown."[38] Temporary shutdowns and/or asset sales, however, are not reasonable alternatives to ensure uncontracted existing resources remain available. On the contrary, in the context of TURN's position, they are indicative of flawed market/procurement policies that should be fixed by the Commission and not relied upon as regulatory tools for meeting renewable integration needs.

Economic realities are that, if the compensation from the markets available to uncontracted existing resources is insufficient and/or unstable to ensure recovery of going forward and major maintenance costs, such resources should be expected to shut down. The fact that the Commission may be unaware of such economic retirements occurring in the past does not mean the Commission can ignore the risk that existing resources assumed to be available will shut down in the future.

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[35] Calpine/Barmack, Exh. 601 at 11.

[36] CAISO Opening Brief at 8 (emphasis added).

[37] *See* TURN Opening Brief at 5; SCE Opening Brief at 40; PG&E Opening Brief at 13.

[38] TURN Opening Brief at 5.

Although TURN suggests that "mothballing" is a viable option for maintaining the availability of a resource in the future, it acknowledged during cross examination that it does not know whether an existing resource can be easily or economically brought back on-line after having been shut down for an extended period:

> Q [Calpine] Are you familiar with the specific steps necessary to mothball a generation resource?
>
> A [TURN] Not in detail. I believe that's a fairly -- I use a fairly generic term there.
>
> * * * * *
>
> Q Do you agree that there are costs associated with mothballing a generation resource?
>
> A Yes, I believe there would be.
>
> Q Do you agree that there are costs associated with restarting a mothballed generation resource?
>
> A I believe there would be.
>
> Q Do you know if mothballing a generation resource would trigger any permitting obligation before the mothballed resource could be restarted?
>
> A It's possible.[39]

There are a number of regulatory and economic unknowns that would need to be resolved before the temporary shut down of an existing resource could be reasonably relied upon as a viable option to ensure the future availability of the resource.

It is also unreasonable to believe, as TURN suggests, that there would be a robust market for buyers of uncontracted existing resources, particularly given that such resources are relegated to short-term markets where compensation has been declining and is expected decline even further in the future. More importantly, however, leveraging flawed market/procurement

[39] Woodruff/TURN, Tr. at 463-64.

policies to force the "fire sale" of existing resources is bad policy, distressing to independent power producers, and should not be relied upon by the Commission to ensure reliability and meet renewable integration needs.

III. CONCLUSION

For the reasons discussed above and in Calpine's opening brief, the Commission should direct the IOUs to hold intermediate term resource solicitations to procure flexible capacity from existing resources. Such procurement represents a "least regrets" approach for preserving the *status quo* of resource flexibility assumed to be available in the renewable integration modeling performed to date until uncertainty about future need is resolved.

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