

**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.

Rulemaking 12-03-014  
(Filed March 22, 2012)

**OPENING BRIEF OF THE INDEPENDENT ENERGY  
PRODUCERS ASSOCIATION ON TRACK 4 ISSUES**

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Dated: November 25, 2013

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## SUMMARY OF RECOMMENDATIONS

The Independent Energy Producers Association makes the following recommendations for Track 4 of this Long-Term Procurement Plan proceeding. IEP respectfully urges the Commission to:

- Endorse the California Independent System Operator's conclusion that load shedding as a mitigation for an N-1-1 contingency is inappropriate and imprudent for the densely populated San Diego coastal area that would bear the brunt of these blackouts.
- Authorize Southern California Edison Company to consolidate an interim Track 4 procurement authority of at least 706 MW into its existing Track 1 solicitation, provided that Track 1 procurement is not unduly delayed as a result of this consolidation.
- Authorize San Diego Gas & Electric Company to undertake an expedited Track 4 all-source solicitation for at least 820 MW.
- Re-evaluate the need for a supplemental procurement after the results of the 2013-2014 Transmission Planning Process become available.

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**OPENING BRIEF OF THE INDEPENDENT ENERGY  
PRODUCERS ASSOCIATION ON TRACK 4 ISSUES**

One of the Commission’s primary responsibilities as it oversees the activities of electric utilities is to ensure reliability—to keep the lights on. This proceeding presents the Commission with a choice with widespread implications: Should the Commission (1) affirm its policy of promoting the reliability of electric service to the maximum extent feasible, or instead (2) approve the use of blackouts as a regular, planned response to certain contingencies? In the context of this Long-Term Procurement Plan (LTPP) proceeding, the choice becomes whether the Commission will authorize the investor-owned electric utilities to procure the output of sufficient physical resources to meet forecasted demand and manage contingencies that might arise without resorting to blackouts, or will it instead decide to plan on blacking out significant blocks of customers when certain contingencies arise?

Track 4 of this proceeding was designed to resolve the local reliability implications of the unexpected retirement of Units 2 and 3 of the San Onofre Nuclear Generation Station (SONGS) for the two most directly affected utilities, Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E).

As this proceeding progressed, however, a surprising amount of time was spent on the technical details of transmission planning and its influence on long-term resource planning. As a result, the Commission and the parties may tend to get distracted by the fine points of Category C versus Category D contingencies, by the differences between N-1, N-1-1, or G-1/N-1 criteria, and by the details and interpretation of the reliability standards of the North American Electric Reliability Corporation (NERC) and the Western Electricity Coordinating Council (WECC). To some extent, delving into the technical details of transmission planning may be necessary, but the proceeding's focus on technical details should not mask the underlying policy debate that ultimately has significant implications for the reliability of electric service in California.

The two main dimensions of this issue, cost versus reliability, have long been part of the Commission's balance in authorizing the procurement of additional resources. Only recently, however, has the Commission been asked to reverse its existing policy and to include blackouts as an integral component of a long-term resource plan, rather than as an exigent, temporary, last-resort measure to address grid reliability threats.

The evidence in this proceeding establishes that the potential cost to customers of blackouts (or dropping firm load,<sup>1</sup> also referred to more euphemistically as "load shedding" or "load drops"), even as a planned response to what is presumed to be a low-probability contingency, far outweighs the cost of procuring the additional resources that will eliminate the need to rely on blackouts to address the contingency. In this brief, the Independent Energy

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<sup>1</sup> Some customers opt for nonfirm or interruptible service. Dropping the interruptible load of customers who agree in advance to be interrupted is an existing tariff option that is not at issue here. Similarly, load reductions of customers who agree to reduce load voluntarily as part of a demand response program are not at issue here. These service options are far different from the involuntary interruption of firm load (blackouts).

Producers Association (IEP) will urge the Commission to continue its historical and statutory commitment<sup>2</sup> to ensuring the highest practical level of reliability at the lowest feasible cost.

Once the proper approach to reliability in the long-term resource plan is decided, the amount and location of resources procured to maintain reliability in the SONGS study area can be determined. Based on the studies performed by the California Independent System Operator (CAISO), SCE, and SDG&E, IEP recommends that the Commission should authorize an interim procurement of at least 706 MW for SCE and 820 MW for SDG&E<sup>3</sup> and should reevaluate the need for additional procurement when the results of the CAISO's 2013-2104 Transmission Planning Process (TPP) are available early next year.

As in other recent procurement proceedings, the Commission is again urged by certain parties to favor certain technologies over others or to kick-start an emerging technology into commercial applications. IEP urges the Commission, in consultation with the CAISO, to focus on defining the attributes of the resources needed for reliability, and to direct each utility to conduct an all-source solicitation to procure the resources able to provide those attributes. Neither reliability nor public policy goals are furthered by selecting technologies that are unable to perform as required to meet the needs of the electric grid.

IEP also comments on proposals for contingent contracts, the role of the loading order and preferred resources in all-source solicitations, and SCE's and SDG&E's proposals to acquire sites and secure permits for future power plant development.

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<sup>2</sup> *E.g.*, Public Utilities Code § 362(a) (When considering out-of-service facilities, sales of utility assets, or mergers involving public utilities, the Commission "shall ensure that facilities needed to maintain the reliability of the electric supply remain available and operational."). Unless indicated otherwise, all statutory references in this brief are to the Public Utilities Code.

<sup>3</sup> Exh. IEP-1, p. 30 (Monsen).



I. BLACKOUTS ARE NOT AN APPROPRIATE PLANNED RESPONSE TO CERTAIN CONTINGENCIES

The most hotly contested and significant issue in Track 4 concerned a relatively esoteric part of the long-term resource planning process. This controversy arose from the Revised Scoping Ruling and Memo of the Assigned Commissioner and Administrative Law Judge, dated May 21, 2013, which asked the CAISO to use its standard models to assess the local capacity requirements of the SONGS study area, defined as the Los Angeles (LA) Basin sub-area and the SDG&E local reliability area, in the absence of SONGS. The Revised Scoping Ruling also specified certain assumptions the CAISO and others were to use in their analyses.

Long-term resource planning is an effort to foresee what resources will be needed to meet forecasted demand at some point in the future, and one of the first steps in that process is to identify the contingencies that might be encountered that could affect the system's ability to meet demand. To determine the reliability needs of a local reliability area (LRA),<sup>4</sup> an initial step is defining the events, *e.g.*, a loss of a transmission line or the loss of a generation unit, that need to be addressed as part of the resource plan. For a specified contingency, the planners determine how the grid can respond to the contingency or what additional resources are needed to allow reliable service to continue to customers until the contingency can be resolved.

For this proceeding, the CAISO, the entity with the statutory responsibility to maintain the reliability of the grid,<sup>5</sup> studied all the contingencies the NERC planning standards require to be analyzed, including all Category C contingencies, in the SONGS study area.<sup>6</sup> In addition to analyzing how the grid would respond to the absence of the SONGS units, the

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<sup>4</sup> Local reliability areas are areas that are to some extent dependent on power imported over transmission lines to meet demand within the area. LRAs lack sufficient internal resources to meet expected demand, so the grid operator relies on certain transmission resources to import enough energy to meet expected demand.

<sup>5</sup> *E.g.*, § 345 (“The Independent System Operator shall ensure efficient use and reliable operation of the transmission grid . . .”).

<sup>6</sup> Reporter's Transcript (RT) 1558-1559 (Sparks).

CAISO also considered the effects of the retirement or repowering of once-through cooled (OTC) units in the study area.

One of the studied combinations of outages concerned the contingency in which a large transmission resource goes offline, followed by 30 minutes to respond to the loss of that line and to attempt to stabilize the system, followed by an outage of another major transmission line. This sequence of outages is referred to as an N-1-1 contingency. The CAISO identified the most critical N-1-1 contingency for the SONGS study area as an outage of the Ocotillo-Suncrest segment of the Sunrise Powerlink, followed by a 30-minute period when the system attempts to adjust to the outage, followed by an outage of the ECO-Miguel segment of the Southwest Powerlink.<sup>7</sup>

The CAISO concluded that an N-1-1 planning criterion was appropriate for resource planning for the SONGS study area, in part because of the critical importance of two major transmission lines that run in close proximity for several miles. Other parties argued that more relaxed criteria, such as N-1 (an outage of a single transmission line) or G-1/N-1 (the outage of a large generation unit and a transmission line), were more appropriate (and resulted in a lesser need for additional resources).

For diligently responding to the Assigned Commissioner's request and performing its standard transmission planning studies using the assumptions prescribed in the Revised Scoping Memo, the CAISO was rewarded with a hailstorm of criticism. Much of the criticism was in reaction to the fact that the CAISO's Track 4 study found that additional resources would be needed to maintain reliability and avoid blackouts to the extent possible. The CAISO concluded that without SONGS, 1820 MW of additional capacity would be needed in

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<sup>7</sup> Exh. CAISO-1, p. 6 (Sparks); Exh. CAISO-2, p. 10 (Sparks); RT 1402-1403 (Sparks).

2018, and an additional 2822 MW would be needed in 2022.<sup>8</sup> Certain parties oppose the construction of any more gas-fired power plants in California and feared that the CAISO's findings would lead the Commission to authorize procurement that would be met by new gas-fired resources.

What drew the most pointed comments was the CAISO's determination that the mitigation for its identified N-1-1 contingency should **not** include load shedding. Because blackouts in a urbanized area like coastal San Diego County would impose enormous costs on customers and be extremely disruptive to the local economies and the public health and safety, the CAISO's analysis did not rely on blackouts to ensure acceptable system performance following the N-1-1 contingency. Instead, the CAISO recommended that the Commission should authorize procurement of additional resources, including some of the resources needed to respond to the N-1-1 contingency without cutting off electricity to customers.

The testimony about how the CAISO should respond to an N-1-1 contingency raised the policy issue of whether the Commission should ratify the use of blackouts in long-term procurement plans as an appropriate planned response to certain contingencies. Several parties argued that the Commission should endorse the use of blackouts, rather than authorize the procurement of additional resources, as the appropriate planned response to what they claim are low-probability contingencies.<sup>9</sup> These parties argue, among other things, that NERC's reliability standards allow the use of load shedding to mitigate an N-1-1 contingency and that the cost of new resources required to mitigate the contingency outweigh the risk of blackouts.

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<sup>8</sup> Exh. CAISO-1, p. 23 (Sparks). The CAISO also noted that these amounts might be reduced by projects selected in its 2013-2014 Transmission Planning Process, the results of which will be available early next year.

<sup>9</sup> Exh. CEJA-1, p. 36 (May); Exh. ORA-3, p. 11 (Fagan); Exh. SC-1, p. 1 (Powers); Exh. TURN-1, p. 3 (Woodruff). Cutting off power to customers in one area can allow the remainder of the grid to survive a contingency. When a large generation unit or transmission line is lost, voltage can be maintained if sufficient load is dropped to match the loss of generation or transmission resources.

Other parties, including IEP, urge the Commission to continue its commitment to maintaining the reliability of the grid and to authorize the utilities to procure the level of additional resources needed to mitigate the identified N-1-1 contingency. These parties point out that the magnitude of the total social and economic costs of blackouts and the threat to the public health and safety justify a relatively modest investment in the resources needed to address the planning contingencies without blacking out broad areas of Southern California.

**A. Using Blackouts as a Planned Response to N-1-1 Contingencies Runs Counter to California's and the Commission's Commitment to Reliability**

**1. History**

Events of the past 15 years have made California more aware of the importance of reliable electric service and the challenges of maintaining electric reliability. When electric industry restructuring was instituted in the late 1990s, much of the responsibility for maintaining a reliable electric grid shifted from the utilities to the CAISO. The West-wide blackout of August 10, 1996, reinforced the understanding that the restructured electric industry needed mechanisms to ensure the reliability of the grid. The extended blackouts during 2000-2001 provided a painful reminder of the severe economic and other costs consumers bear when electric service is interrupted. When the utilities returned to financial health and resumed the procurement function following the Energy Crisis, the Commission was quick to adopt mechanisms like Resource Adequacy requirements for load-serving entities (with effective enforcement) and a planning reserve margin of 15-17% of peak load as the first steps toward ensuring that California had enough resources available so that the grid could endure unexpected events.<sup>10</sup> High demand in 2006 tested the reliability of the system, but refinements in the

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<sup>10</sup> Decision (D.) 04-01-050; D.04-10-035, pp. 9, 37.

Resource Adequacy program (combined with relatively cool summers) have allowed Californians to enjoy highly reliable electric service in recent years.

## 2. The Legislature's Emphasis on Reliability

In this proceeding, some parties propose to employ blackouts as a planned response to certain contingencies as a component of long-term resource planning. This proposal runs directly counter to the Legislature's consistent emphasis on reliability and the Commission's concerted efforts to "keep the lights on."

The Legislature has repeatedly emphasized the importance of maintaining the reliability of the electric grid. For example:

- "Reliable electric service is of *utmost importance* to the safety, health, and welfare of the state's citizenry and economy." (§ 330(g) (emphasis added).)
- "It is important that sufficient supplies of electric generation will be available to maintain the reliable service to the citizens and businesses of the state." (§ 330(h).)
- "Reliable electric service is of *paramount importance* to the safety, health, and comfort of the people of California." (§ 334 (emphasis added).)
- The CAISO "shall *ensure* efficient use and reliable operation of the transmission grid" (§ 345 (emphasis added)) and shall "*ensure* the reliability of electric service and the health and safety of the public." (§ 345.5(b) (emphasis added).)

- The Commission “shall *ensure* that facilities needed to maintain the reliability of the electric supply remain available and operational.”  
(§ 362(a) (emphasis added).)

In this LTPP cycle, some parties have argued that load shedding is an acceptable planned response to certain planning contingencies. Arguments similar to those made in this phase were advanced in Track 1 of this proceeding and in the proceeding evaluating SDG&E’s local capacity requirement (Application (A.) 11-05-023). In the SDG&E proceeding, for example, the Commission rejected a proposal to use load shedding as a mitigation scheme in the modeling to determine SDG&E’s local capacity requirement.<sup>11</sup> In the Track 1 decision, the Commission emphasized the need to continue to provide reliable electric service:

[T]he Commission must ensure the system will be reliable under a variety of possible future states, including a high load stress condition. While the circumstances underlying the methodology are (hopefully) rare, *the consequences of not having sufficient resources in such a rare situation would be extremely serious.*<sup>12</sup>

The consequences of not having sufficient resources have not changed since the Commission issued the Track 1 decision in February. The Commission should continue to uphold this principle in this portion of the LTPP proceeding.

### **3. Load Shedding Is Not an Appropriate Tool for Long-Term Resource Planning**

Consistent with the practice of other ISOs in the United States and Canada, the CAISO has not historically planned to rely on large blocks of urban load shedding to meet local capacity needs,<sup>13</sup> and it continues to resist calls to drop firm loads as a planned response to

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<sup>11</sup> D.13-03-029, p. 7, fn.5; see Exh. IEP-2, pp. 11-12 (Monsen).

<sup>12</sup> D.13-02-015, p. 40.

<sup>13</sup> Exh. CAISO-7, p. 8 (Millar).

anything other than the most severe contingencies. Recently, the CAISO articulated its position on load shedding as a long-term planning tool:

The ISO's position is that load shedding in the densely populated San Diego area should not be used as a transmission planning tool for the N-1-1 [contingency]. This is due to the significant amount of load that would be subject to load shedding, the sensitivity of urban loads to large blocks of shedding, the complexity of operating arrangements in the area, and the proximity of the particular transmission lines.<sup>14</sup>

The CAISO affirmed this position in Track 4.<sup>15</sup> The CAISO noted that the risk of wildfires is relatively high in the area where the Southwest Powerlink and the Sunrise Powerlink are only four to eight miles apart, and a fire could lead to the outage of both lines and an N-1-1 contingency. With the retirement of SONGS, the Imperial Valley substation, with major transmission lines connecting to three utility systems, has become particularly critical for reliability. Because the Imperial Valley substation is also “vulnerable to human coordination errors due to miscommunication and inconsistent practices for taking clearances and designing protection systems,”<sup>16</sup> the potential for an outage of both transmission lines is increased in an area already at risk from wildfires.

The proximity of the Southwest Powerlink and Sunrise Powerlink and the vulnerability of the Imperial Valley substation increase the probability that an N-1-1 contingency will arise in this area. An N-1-1 contingency can also arise when one line is on a scheduled outage for maintenance and the other line goes down due to lightning strikes, high winds, wildfires, or other reasons.<sup>17</sup> Based on all these considerations, the CAISO recommends that the Commission should authorize procurement that allows the CAISO to address the N-1-1

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<sup>14</sup> Exh. IEP-2, p. 13 (Monsen). In Application (A.) 13-06-015, SDG&E asks the Commission to approve a tolling agreement with the 305 MW Pio Pico Energy Center. The quoted statement responded to testimony presented in that case that proposed the use of load shedding to mitigate N-1-1 contingencies.

<sup>15</sup> Exh. CAISO-2, p. 2 (Sparks); Exh. CAISO-7, p. 8 (Millar).

<sup>16</sup> Exh. CAISO-2, p. 6 (Sparks); see RT 1417-1418 (Sparks).

<sup>17</sup> RT 1779-1780 (Jontry)

contingency without load shedding. The CAISO concludes that “load shedding in the San Diego local area is not a reasonable or prudent long-term mitigation solution for the N-1-1 contingency.”<sup>18</sup>

SDG&E concurs with the CAISO and concludes that “load shedding is not a proper or prudent mitigation for the contingency event in this proceeding.”<sup>19</sup> In SDG&E’s view:

Under present conditions, a long-term transmission plan relying on load shedding to mitigate an N-1-1 outage . . . would be inconsistent with prudent transmission system planning. Accordingly, CAISO and SDG&E have determined as a policy matter that the public interest is best served by development of a long term transmission plan that does not rely on a load-shedding SPS to mitigate the N-1-1 of the ECO-Miguel and Ocotillo Express-Suncrest 500 kV lines.<sup>20</sup>

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Given the significant negative impact on customers, communities and the region’s economy, it is not acceptable for the State’s long-term transmission planning process to rely on a major disruption of electric service to customers as a solution, when in fact there are alternate solutions, including preferred and conventional resources and transmission infrastructure, that can help to ensure a reliable grid.<sup>21</sup>

Thus, the CAISO and SDG&E oppose the use of load shedding as a planned response to the N-1-1 contingency because it is contrary to prudent transmission planning and would have a “significant negative impact on customers.” By contrast, the proponents of load shedding ignore or downplay these known risks and the significant impacts on customers whose firm electricity supply is cut off with no notice.

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<sup>18</sup> Exh. CAISO-2, p. 6 (Sparks).

<sup>19</sup> Exh. SDG&E-4, p. 1 (Jontry).

<sup>20</sup> Exh. SDG&E-4, p. 5 (Jontry).

<sup>21</sup> Exh. SDG&E-4, p. 6 (Jontry).



**B. The Direct and Indirect Costs of Blackouts Are Enormous**

**1. The Decision of Whether to Procure Additional Resources to Ensure Reliability Should Also Consider the Cost of Blackouts**

Parties who recommend accepting a higher risk of blackouts claim that the cost of procuring additional generation resources to address the N-1-1 contingency is too great because the risk that load shedding would be triggered is small. Even the witnesses for these parties, however, acknowledge that the cost of blackouts for customers should also be part of the Commission's consideration.<sup>22</sup> A cost-benefit analysis that weighs only the cost of additional resources against the cost of not adding additional resources (*i.e.*, load shedding) will necessarily be incomplete and misleading. The analysis of the choice between adding resources and blacking out customers must include all relevant costs, including the full direct and indirect costs that customers, the local economy, and local communities incur and the effect on public health and safety when electric service is cut off unexpectedly.

As a general principle, the CAISO and others have recognized that risks associated with the procurement of needed resources are asymmetrical—that is, the cost of procuring more resources than needed is far less than the costs of procuring fewer resources than needed.<sup>23</sup> Moreover, resources that are originally procured as mitigation for a low-probability event will likely be used more often than narrowly required to address the contingency. In addition, growing demand and retirements will increase the need for resources like those that were initially procured for the limited purpose of mitigating a contingency, and these resources will become part of the resource base that is regularly relied on to meet normal customer demand.

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<sup>22</sup> RT 1838-1839 (Fagan); RT 2265 (Woodruff).

<sup>23</sup> Exh. IEP-1, p. 15 (Monsen).

Procuring the resources needed to meet conservative projections of supply and demand is like insuring against catastrophes. The cost of the insurance or hedge can be known every year, but the full benefit of the hedge or insurance will be known only when a catastrophic event occurs. A prudent planner would buy insurance to hedge against the financial and economic hardships that result when a catastrophic event actually occurs.<sup>24</sup>

## **2. The Total Cost of Load Shedding Far Exceeds the Cost of Additional Resources**

The proponents of load shedding may understate the cost of blackouts because they have a Pollyannaish view of how the load shedding would be implemented. In part, this view is cultivated by ignoring the link between planning and real-world consequences. Extrapolating from the fact that including blackouts in resource planning does not mean that blackouts will actually happen, these parties jump to a hopeful but invalid conclusion that blackouts will *never* occur even if they are included in resource planning as a planned response to contingencies.<sup>25</sup> Some of the witnesses for these parties suggest that blacking out a 500 MW block of firm load in San Diego can somehow be accomplished without cutting off any critical facilities like hospitals, police stations, and fire stations and can be limited to only customers that have been told in advance that their electric service may be interrupted temporarily.<sup>26</sup>

However, actual implementation of load shedding will be considerably messier than these parties imagine. In response to a question from Commissioner Florio, the CAISO's witness described the process:

We are not talking about a gradually ramp-down. We are talking about systems that should have the load dropped from the system

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<sup>24</sup> Exh, IEP-1, p. 25 (Monsen).

<sup>25</sup> *E.g.*, RT 1839 (Fagan) (“But just keep in mind, putting -- considering the use of load shedding SPS as part of the mitigation plan does not by no stretch of the imagination turn into there’s going to be load shedding if we use this as a planning tool at this point in time.”).

<sup>26</sup> RT 1949-1950 (Powers).

in under a quarter of a second. So that also sets up impacts on the system that at times are not without consequence. And it is also happening at a time when the system has already been weakened by the initial disturbances.<sup>27</sup>

SDG&E's current Path 44 safety net is designed to shed load in two 500 MW blocks.<sup>28</sup> When a specified contingency occurs, 500 MW of load will be dropped immediately.

Q: And has SDG&E designed such schemes to avoid to the maximum extent possible outages to critical public safety and infrastructure facilities?

A: What would happen initially was we would simply be shedding large blocks of load. It's difficult to shed that much load, for want of a better word, surgically. So what would happen is in the initial contingency event, we would shed 500 to a thousand megawatts of load. As our operators got a handle on the situation, we would restore sort of the critical infrastructure and service to hospitals and police stations, and then rotate those outages to other parts of the service area.<sup>29</sup>

As the system attempts to recover from the contingency, the 500 MW load shed will evolve into smaller rolling blackouts to the extent conditions permit. However, if the problem is not resolved quickly, another 500 MW block of load will be dropped.

[L]oad shedding in the event of a contingency, severe contingency like that, is sort of a blunt instrument to start with and it has to happen very quickly. So we have to make sure that we are shedding not just enough load, but we're basically dropping enough customers to ensure that we have shed enough load to avoid the voltage collapse.

You don't want to drop insufficient amount of load and then wind up going into voltage collapse anyway because we haven't targeted enough customers.<sup>30</sup>

To put this load shedding mechanism into perspective, 1 MW is frequently equated to the capacity needed for roughly 750 residential households. By this rule of thumb, a

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<sup>27</sup> RT 1681 (Millar).

<sup>28</sup> RT 1443 (Sparks).

<sup>29</sup> RT 1741 (Jontry).

<sup>30</sup> RT 1742 (Jontry).

500 MW blackout would affect about 375,000 households. If on average a household consists of 2.5 persons, then a 500 MW blackout would directly affect roughly 937,500 people.<sup>31</sup> Put another way, shedding 500 MW of firm load is equivalent to shedding almost 10 percent of SDG&E's maximum recorded peak demand.

If only residential households were affected by a planned blackout, as some of the proponents seem to assume,<sup>32</sup> then perhaps the costs would be tolerable. A 500 MW blackout, however, would also affect hospitals, police stations, fire stations, schools, water and waste treatment facilities, military bases, traffic signals, business operations, manufacturing processes, banks, and governmental services, among many other impacts.<sup>33</sup> At a more detailed level, businesses would be unable to process payments, and workers would be dismissed and lose pay for the lost hours. Waste treatment facilities may shut down, and untreated sewage may collect or worse, be spilled. People would be stuck in elevators until they could be manually retrieved, and large traffic jams would develop.<sup>34</sup> Individuals dependent on home medical devices would have to hope that their backup batteries outlasted the outage.

An additional element should be considered in the cost-benefit analysis of load shedding. Because load varies throughout the day, planners design load shedding schemes to be big enough to ensure that the targeted level of dropped load is actually dropped.<sup>35</sup> In other words, a blackout designed to shed 500 MW at peak may result in only 150 MW of actual load

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<sup>31</sup> The CAISO's witnesses estimated that load shedding of 500 MW would affect "about half a million customers." (RT 1418 (Sparks); RT 1615 (Millar).)

<sup>32</sup> Sierra Club's witness, for example, seemed to view blackouts as a minor inconvenience: "So that if what we're cutting is -- in high demand conditions what you're cutting is air conditioning load. If people have to be somewhat uncomfortable for four hours, that's unfortunate, but it does not necessarily impose any economic hit on the economy or their businesses." (RT 1949 (Powers).)

<sup>33</sup> See Exh. IEP-1, p. 15 (Monsen); Exh. SDG&E-4, pp. 2, 8 (Jontry); RT 1476 (Sparks); RT 1889-1890 (Nelson).

<sup>34</sup> See RT 1739-1740 (Jontry).

<sup>35</sup> RT 1443-1444 (Sparks).

reduction during off-peak hours.<sup>36</sup> By contrast, other mitigation measures more directly produce the desired result, and procuring 150 to 300 MW of additional generation capacity or similar resources would be as effective in mitigating a target contingency as 500 MW of load shedding.<sup>37</sup>

The Legislature has recognized that the cost of outages is significant, and has even codified that recognition: “The economic cost of extended electricity outages, such as those that occurred in California and throughout the Western Electricity Coordinating Council on July 2, 1996, and August 10, 1996, to California’s residential, commercial, agricultural, and industrial customers is significant.”<sup>38</sup>

It is difficult to quantify the total costs of an outage, but some have tried to develop reasonable estimates. A consultant who frequently advises the Commission, for example, determined that the average financial cost of an outage of the electric system was \$40,000/MWh.<sup>39</sup> Using that estimate, a 500 MW blackout lasting only one hour would impose a financial cost of about \$20 million. The cost of a 12-hour outage, like the one San Diego experienced in September 2011, would approach a quarter of a billion dollars.

However, the full impacts of the widespread loss of service across 500 MW of load go beyond the financial impacts. The social costs of blacking out 500 MW of customer load, including the disruptions to transportation, traffic control systems, and waste management systems, would be substantial, if difficult to quantify.

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<sup>36</sup> See RT 1743 (Jontry) (“We are going to shed twice to three times [150 MW] to make sure that we have enough load shed ready to be triggered in the event that contingency occurs.”).

<sup>37</sup> RT 1444 (Sparks).

<sup>38</sup> § 334.

<sup>39</sup> Exh. IEP-1, p. 15, fn.14 (Monsen).

### 3. Load Shedding as a Temporary Measure until Infrastructure Improvements Are in Place

Proponents of blackouts as a long-term resource planning tool point out that load shedding has played a role in managing the potential for grid failure under certain circumstances. In fact, load shedding has been incorporated in the remedial action schemes that have been created to plan for a response to unexpected developments affecting the grid's operations.

There are two basic types of protective schemes. Special Protection Systems (SPSs) are typically automated systems that monitor the transmission grid and can automatically take action to mitigate a contingency. SPSs must be reviewed and certified by the WECC.<sup>40</sup> In most cases, SPSs will interrupt generation, rather than load, to mitigate potential system problems.<sup>41</sup> SPSs installed on the sub-transmission system or to address extreme Category D contingencies<sup>42</sup> will sometimes include small amounts of load shedding.<sup>43</sup> The CAISO has 34 SPSs that include load shedding, of which 18 are on the sub-transmission system and include the potential to drop only small amounts of load, including pump load, in low population density areas.<sup>44</sup> Seven of the 34 SPSs are in place to address extreme Category D contingencies.<sup>45</sup>

Safety nets, the second type of protection scheme, are typically created to address extreme Category D contingencies. Safety nets are similar in most respects to SPSs, but they

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<sup>40</sup> RT 1704 (Jontry).

<sup>41</sup> RT 1403-1405 (Sparks).

<sup>42</sup> Category D contingencies are more extreme than Category C contingencies like N-1-1. For example, an N-2 contingency (*e.g.*, the simultaneous outage of two major transmission lines) is classified as a Category D contingency, while an N-1-1 contingency (the sequential outage of two major transmission lines, separated by 30 minutes to allow for readjustment of the grid) is classified as a Category C contingency.

<sup>43</sup> Exh. CAISO-2, p. 5 (Sparks).

<sup>44</sup> RT 1582 (Sparks).

<sup>45</sup> RT 1583 (Sparks).

have not yet been certified by the WECC.<sup>46</sup> Safety nets may not have as stringent requirements as SPSs, and may not be available after a single contingency occurs.<sup>47</sup>

Load shedding has at times been incorporated into these schemes as a potential response to a grid-threatening situation. For example, SDG&E has a Path 44 safety net in place for an N-2, Category D contingency, namely, the simultaneous outage of both SWPL and the Sunrise transmission lines.<sup>48</sup> In SCE's territory, the CAISO also has relied on two SPSs that include limited amounts of load shedding as interim, last-resort arrangements until transmission upgrades could be completed.<sup>49</sup>

What the proponents of blackouts obscure, however, is that load shedding to support grid reliability is currently used only as a temporary, stop-gap, last-resort response that needs to be in place, and will be in place, only until necessary transmission fixes can be completed.<sup>50</sup> In these schemes, blackouts are not contemplated as an enduring element of a resource plan; they are temporary, expedient measures that are available only until the underlying problem is fixed.

What some parties propose in Track 4 is something different. None of the CAISO's existing SPSs that include load shedding are comparable to the proposals to blackout 500 MW of load in response to an N-1-1 contingency. In Track 4, some parties are urging the Commission to make a conscious change to long-term resource planning policy to incorporate blackouts as a standard, planned response to N-1-1 contingencies, a response on par with supply or demand-side additions, to avoid procuring the resources needed to reduce the risk of blackouts.

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<sup>46</sup> RT 1704 (Jontry).

<sup>47</sup> RT 1405-1406 (Sparks).

<sup>48</sup> Exh. CAISO-2, p. 7 (Sparks).

<sup>49</sup> Exh. CAISO-2, p. 5 (Sparks); RT 1413-1416.

<sup>50</sup> RT 1412-1413 (Sparks).

Parties with the greatest responsibility for maintaining system reliability oppose using load shedding in this way. As SDG&E’s witness explained:

We don’t feel that [load shedding]’s acceptable as a long-term mitigation. We feel that we should plan to serve -- ultimately plan to serve all of our load and not allow some of it to be at risk in the ten years because we don’t have sufficient resources of sufficient transmission.<sup>51</sup>

At its core, the proposal to rely on blackouts as part of the “resource” mix is a radical proposal. At a time when the economic and physical health of Californians is more dependent than ever on reliable electric service, some parties are urging the Commission to take a riskier approach to long-term resource planning and to consciously increase the risk of blackouts. These parties are urging the Commission to conclude that the risk of disruptions and enormous social and economic costs of blackouts are acceptable if the costs of additional needed resources can be avoided. Under these parties’ logic, however, there is no reason to limit blackouts to a response to N-1-1 contingencies. The procurement of *any* resources is more expensive than doing nothing, and the state can save the cost of procuring resources merely by tolerating increasing levels of blackouts. Many third-world countries follow this strategy and avoid the cost of new generating resources by limiting electric service to a few hours a day.

**II. ENSURING RELIABILITY IN THE SONGS STUDY AREA REQUIRES A REALISTIC AND CONSERVATIVE ASSESSMENT OF THE RISKS AND UNCERTAINTIES INHERENT IN THE STUDIES**

**A. Ensuring Local Reliability Requires a Conservative Approach**

Planning for local reliability areas requires a conservative approach grounded in a realistic assessment of potential contingencies—what could go wrong?—rather than wishful thinking that everything will go right. Decisions that affect the reliability of the grid and the reliability of service to local areas should be based on conservative assumptions and a realistic

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<sup>51</sup> RT 1710 (Jontry).



understanding of the risks and uncertainties that are inherent in attempts to foresee the balance of electric demand and supply in 2022.

The use of conservative assumptions is particularly important for decisions affecting the reliability of the grid. As noted above, the risks associated with the procurement of needed resources are asymmetrical—that is, the costs of procuring more resources than needed are far less than the costs of procuring fewer resources than needed.<sup>52</sup> As the Commission evaluates the studies submitted by the CAISO, SCE, and SDG&E, it should be aware that uncertainty and risk can enter the studies from several sources, prominently including the forecasts of demand and supply and some of the assumptions specified in the Revised Scoping Memo.

#### **1. Forecasting Uncertainties Require a Conservative Approach**

Forecasting is central to resource planning but is necessarily fraught with uncertainty. The only certainty about forecasts of demand for 2018 and 2022 is that they will be wrong. Resource planning requires forecasting, and the LTPP requires a forecast out ten years to 2022. Uncertainty in resource planning is inevitable, but that means that reliance on forecasts must be tempered with a candid recognition of these uncertainties.

The uncertainties inherent in forecasting have a critical impact on grid reliability. If the demand for electricity is underforecast, then the future need for resources will also be underestimated, and underprocurement will result. In an area that is short on resources, like the SONGS study area, underforecasting demand and the need for resources can exacerbate existing problems and require extreme measures to maintain grid reliability.<sup>53</sup>

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<sup>52</sup> Exh. IEP-1, p. 15 (Monsen).

<sup>53</sup> Exh. IEP-1, p. 11 (Monsen).

**a. Uncommitted Resources**

Uncommitted resources, *i.e.*, programs that have not been funded, codes or standards that might be adopted in the future, or transmission lines that have not been approved, are less certain to be available to serve customers than committed resources. The CEC has confronted the difficulty of forecasting the extent to which uncommitted energy efficiency will actually be put into effect in future years. The 10-year forecast required for the LTPP proceedings would likely overforecast demand unless some level of as-yet uncommitted resources (including energy efficiency, demand response, and distributed generation) is included, so the challenge is developing a forecast of uncommitted resources that is not swayed by policy preferences for or against certain technologies and is not based on unrealistic hopes.

The net load forecasts of incremental energy efficiency, demand response at the most effective locations, and distributed generation used in the Track 4 analyses of the CAISO, SCE, and SDG&E total about 1600 MW in the SONGS study area.<sup>54</sup> If these resources fail to materialize as assumed, actual load will be higher than planned, and reliability in the densely populated SONGS study area could be affected.

The Natural Resources Defense Council (NRDC) claims that the amount of uncommitted energy efficiency included in the assumptions of the Revised Scoping Memo was erroneous and understated. NRDC proposes to update a single assumption, the amount of uncommitted energy efficiency, and to increase the amount of uncommitted energy efficiency in the demand forecast, *i.e.*, to reduce the demand forecast, by 543 MW in the LA Basin and 342 MW in the San Diego local area.<sup>55</sup>

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<sup>54</sup> Exh. IEP-1, pp. 13-14 (Monsen).

<sup>55</sup> Exh. NRDC-1, p. 4 (Martinez).

NRDC's proposal is based on a California Energy Commission (CEC) staff draft forecast of uncommitted energy efficiency that came out in September 2013, well after the assumptions of the Revised Scoping Memo were established, and that has not yet been adopted by the CEC. The California Environmental Justice Alliance (CEJA) and Sierra Club join NRDC in urging the Commission to revise its net demand assumption to reflect the uncommitted energy efficiency estimates in the CEC staff draft forecast.<sup>56</sup>

The Commission should reject these parties' proposals, for at least four reasons.

1. **Selective updating of key assumptions is inappropriate.**<sup>57</sup> Because the Commission's proceedings often stretch over many months, the Commission is frequently confronted with proposals to update data that is central to a proceeding. However, the Commission should be reluctant to revise one assumption without simultaneously revising all of the other assumptions that were used in the modeling forecasts. Changing only one assumption that in isolation has the effect of reducing forecasted net demand, without simultaneously considering changes that might *increase* forecasted demand, could create a distorted picture that may result in underprocurement and system reliability problems.
2. **Updating all of the Revised Scoping Memo's assumptions to avoid a distorted forecast that considers only changes to the projections for energy efficiency would delay this proceeding.** It is not reasonable, at this point in this proceeding, to delay the Track 4 decision until all of the assumptions prescribed in the Revised Scoping Memo can be restudied

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<sup>56</sup> Exh. CEJA-1, p. 42 (May); Exh. SC-1, p. 1 (Powers).

<sup>57</sup> Exh. IEP-2, p. 18 (Monsen).

and updated.<sup>58</sup> At some point, the evidentiary record must be closed and the Commission must render its decision based on that record. Further delay might leave SCE and SDG&E without adequate time to procure needed resources in the SONGS study area.

3. **The Commission should be particularly wary of increasing its reliance on uncommitted resources, which may or may not enter the resource base as scheduled.** NRDC's proposal would reduce forecasted demand in the SONGS study area by nearly 900 MW, an amount that would have a significant effect on reliability if even half of the assumed energy efficiency does not actually occur.
4. **Increases in uncommitted energy efficiency do not result in a one-to-one reduction in resource need.** NRDC seems to assume that each MW of reduction of load due to additional energy efficiency will reduce the need in the SONGS study area by one MW. However, it is extremely unlikely that nearly 900 MW of uncommitted energy efficiency would just happen to be installed at the most effective locations in the local areas that define the SONGS study area.<sup>59</sup> Even if all 900 MW are actually installed, the reduction in resource demand would be considerably less than 900 MW.

For these reasons, IEP recommends that the Commission should base its decision on the results of the studies that used the assumptions set forth in the Revised Scoping Memo. The demand forecast included in those assumptions is based on the CEC's projections of

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<sup>58</sup> See Exh. IEP-2, pp. 18-20 (Monsen).

<sup>59</sup> Exh. IEP-2, pp. 21-22 (Monsen).

uncommitted energy efficiency, demand response, and distributed generation that were available when the Revised Scoping Memo was issued. The Commission should not increase reliance on uncommitted resources in isolation.

**b. Energy Storage**

The assumptions required by the Revised Scoping Memo did not include any energy storage resources. At the time testimony was submitted for Track 4, a proposed decision had been issued that included energy storage procurement targets for SCE of 580 MW by 2020 and for SDG&E of 165 MW by 2020. Some parties argued that these amounts should be included in the Track 4 analysis and, if included, they would eliminate or significantly reduce the need for additional resources for these utilities.<sup>60</sup>

As it turned out, the actual energy storage decision approved by the Commission allowed the utilities up to four years, until the end of 2024 (two years beyond the period considered in Track 4), to install the storage that had been procured.<sup>61</sup> In addition, the Commission's decision does not require energy storage resources procured by the utilities to be installed in the local reliability areas or at the locations that are most effective in reducing demand for other resources. Most importantly, the assumptions required by the Revised Scoping Memo do not include any storage resources. Under these circumstances, it is not appropriate to consider the procurement required by the storage decision as part of the Track 4 resource assessment.

On the other hand, it may be appropriate to consider the 50 MW of energy storage that the Commission authorized SCE to procure in the Track 1 decision when and if the Track 4 assumptions are revised and to the extent that SCE is able to procure storage resources at a

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<sup>60</sup> *E.g.*, Exh. SC-1, p. 24 (Powers).

<sup>61</sup> D.13-10-040, pp. 2, 26, 76, 77.

reasonable price.<sup>62</sup> Energy storage resources may also be procured through the Track 4 all-source solicitations recommended by IEP.<sup>63</sup>

**c. “Missing” Resources**

CEJA makes an all-out, if indirect, attack on the assumptions prescribed by the Revised Scoping Memo by claiming that the assumptions the CAISO used in its study (which were based on the Revised Scoping Memo’s assumptions) left out thousands of MW of “missing” resources.<sup>64</sup> Ignoring the Revised Scoping Memo’s instruction that its assumptions “shall” be used in modeling local reliability needs, CEJA attacks nearly every assumption listed in Attachment A to the Revised Scoping Memo, including use of the 1-in-10 peak demand forecast for the local areas,<sup>65</sup> use of consistent assumptions for uncommitted energy efficiency (discussed above), and incorporation of only those transmission changes that have been approved by the CAISO, including those approved in the 2012-2013 Transmission Planning Process.<sup>66</sup>

CEJA has disregarded the instructions of the Revised Scoping Memo, and its recommendations should be given no weight in this proceeding.

**2. Conclusion**

For all these reasons, the Commission should take a reasonably conservative approach to resource planning for the SONGS study area over the 10-year planning horizon and should reject parties’ efforts to re-litigate the assumptions prescribed by the Revised Scoping Memo. Resource planning is not a place for wishful thinking. Failing to authorize procurement of sufficient local resources in hope that uncommitted resources will show up at the right time

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<sup>62</sup> See D.13-02-015, pp. 88-89.

<sup>63</sup> Exh. IEP-2, p. 23 (Monsen).

<sup>64</sup> See Exh. CEJA-1, p. 3 (May).

<sup>65</sup> Revised Scoping Memo, Attachment A, p. 3.

<sup>66</sup> Revised Scoping Memo, Attachment A, p. 13.

and place or that an N-1-1 contingency will not actually happen will increase the risks to grid reliability and the probability that expensive and disruptive blackouts will occur.

**III. TO MAINTAIN GRID RELIABILITY, THE COMMISSION SHOULD AUTHORIZE TRACK 4 PROCUREMENT OF RESOURCES**

Resolving the issues raised by the CAISO's evaluation of need in the SONGS study area brings the Commission only halfway to resolving the issues in Track 4. Track 4 is part of the long-term *procurement* proceeding, and the Commission has the unique responsibility to decide what level of procurement to authorize, and in particular whether to authorize the level of procurement that the CAISO concludes is needed to avoid blackouts in response to the N-1-1 contingency.

In short, the Commission in this proceeding must translate the results of the CAISO's local capacity requirements study for the SONGS study area into a long-term resource plan and authorize procurement consistent with that resource plan. For the reasons stated below, IEP recommends that the Commission should authorize an immediate procurement of the resources needed to respond to the SONGS retirement and the retirements of OTC units, followed by a second, supplemental procurement to meet any remaining need identified after the results of the CAISO's 2013-2014 Transmission Planning Process become available.

**A. Coordination Between the CAISO and the Commission**

Both the CAISO and the Commission play important roles in the Track 4 planning process. The CAISO has the obligation to maintain the reliability of the grid. In that role, it studies the transmission system and local reliability areas, determines the proper reliability criteria that should be applied, and makes its recommendation for the level of resources that should be procured to meet its reliability goals. The Commission's role is to consider the recommendations of the CAISO and others, determine the amount of need that is

reasonable under the circumstances, and authorize the utilities to procure the resources to meet the need.

Ultimately, the CAISO is dependent on the Commission to authorize procurement of the resources needed to maintain grid reliability. If the Commission fails to authorize sufficient procurement, the CAISO can exercise its backstop procurement authority to maintain the reliability of the grid. But even the CAISO's backstop procurement authority is ultimately dependent on the Commission's actions. The interplay between the Commission's and the CAISO's roles was summed up in the CAISO's witness's response to Commissioner Florio's questions:

The ISO has backstop capability, but if resources aren't caused to be built in the first place, there wouldn't be anything for that backstop capability to draw on. So clearly the Commission's decisions on procurement are something we hope everyone is aligned on.<sup>67</sup>

The Commission is not obliged to be aligned with the CAISO and it is not required to accept the CAISO's recommendations. Nevertheless, in this case, there are good reasons, supported by substantial evidence in the record, to authorize a level of procurement that reflects the CAISO's goal of avoiding blackouts in urban areas, even when faced with an N-1-1 contingency.

The ultimate result of Track 4 should be a Commission order authorizing SCE and SDG&E to procure the additional resources needed to maintain grid reliability in the SONGS study area. Equally important is for the Commission to authorize the needed procurement in a timely and effective manner designed to ensure that the resources needed to maintain the reliability of the grid can be constructed and available when they are needed.

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<sup>67</sup> RT 1683-1684 (Millar).



**B. The Commission Should Authorize Procurement of Resources Needed to Ensure Reliability in the SONGS Study Area**

The CAISO has stated that “it is urgent for the Commission to authorize an all-source procurement for SCE and SDG&E for the amounts requested”<sup>68</sup> (*i.e.*, 500 MW each for SCE and SDG&E) and recommends “moving forward with additional procurement on an all-source basis.”<sup>69</sup> and The Utility Reform Network joins in this recommendation.<sup>70</sup> Despite the urgency reflected in these statements, some parties have asked the Commission to delay a decision authorizing procurement of additional resources until some uncertainties are cleared up. In particular, some parties suggest that the Commission should defer any action until the modeling results of the CAISO’s 2013-2014 (TPP are available in the first or second quarter of 2014.

However, the Commission is often in a situation where it must make decisions even when key uncertainties about the future remain unresolved. The point of scheduling a new LTPP proceeding every two years is to allow the authorized resource plans to evolve and respond as uncertainties are resolved with passing time.

This proceeding, nominally designated as the 2012 LTPP proceeding, is already about to encroach on time designated for the next LTPP. Delaying a procurement decision while awaiting the results of the 2013-2014 TPP might resolve some uncertainties, but new uncertainties will undoubtedly arise in the meantime. At some point, the Commission needs to make its decision and move on to the next proceeding, where it can review and incorporate a new set of recorded results, assumptions, and projections.

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<sup>68</sup> Exh CAISO-7, p. 6; RT 1639-1640 (Millar).

<sup>69</sup> RT 1671 (Millar).

<sup>70</sup> Exh. TURN-1, p. 9 (Woodruff).

In addition, delaying a decision until the completion of the 2103-2014 TPP will not resolve key uncertainties like future levels of local net loads, the operating characteristics of certain preferred resources, the emergence of new technologies, future fuel prices, and similar issues.<sup>71</sup> On the other hand, delaying procurement of needed resources may increase the risk of outages that long-term planning is meant to minimize. As stated in a ruling in this proceeding, “due to long lead times for new resources, there is an urgency to start moving toward identifying and filling any identified need as soon as possible.”<sup>72</sup>

**1. The Commission Should Immediately Authorize Interim, All-Source, No Regrets Procurements**

The Commission has previously considered SCE’s and SDG&E’s local capacity requirements under an assumption that the SONGS units would remain in operation. In D.13-02-015, the Track 1 decision, the Commission authorized SCE to procure between 1400 and 1800 MW of capacity in the West Los Angeles sub-area of the LA Basin, and in D.13-03-029, the Commission authorized SDG&E to procure 298 MW of local generation capacity beginning in 2018.

The retirement of the SONGS units changed the resource outlook and led to refocusing Track 4 on the need for additional resources to replace SONGS. The loss of over 2000 MW from the retirement of SONGS and the scheduled shut down of roughly 7000 MW of OTC plants requires the Commission to authorize additional procurement as quickly as possible. IEP urges the Commission to authorize SCE and SDG&E to conduct immediate “no regrets” all-source procurements that will ensure future grid reliability while respecting the loading order set forth in the Energy Action Plan.

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<sup>71</sup> Exh. IEP-1, p. 33 (Monsen).

<sup>72</sup> *Assigned Commissioner and Administrative Law Judge’s Ruling Regarding Track 2 and Track 4 Schedules*, p. 3 (Sept. 16, 2013).

The authorized solicitations should be a “no regrets” all-source procurement, and the resulting contracts should be honored even if the TPP or other studies suggest that the procurement of these resources may not have been necessary at this time. Developers of generation who respond to the interim procurement should not be subject to having their contracts cancelled if later events do not turn out exactly as forecasted.

**2. SCE Should Be Authorized to Procure 706 MW to 1106 MW as an Expansion of the Existing Track 1 Solicitation**

SCE seeks interim authorization to procure 500 MW in addition to the 1400 MW to 1800 MW of additional resources for the LA Basin that the Commission authorized in the Track 1 decision. By contrast, the CAISO recommends procurement of an additional 1922 MW. However, in requesting only a modest level of additional resources, SCE assumes that (1) the Mesa Loop-In transmission project will be approved, (2) load shedding will be used to mitigate an N-1-1 contingency involving two SDG&E transmission lines, a response that the CAISO found to be “not prudent,”<sup>73</sup> and (3) aggressive development of preferred resources in strategic locations. Additional resources are needed to mitigate an N-1-1 planning contingency without blacking out customers.

IEP’s recommendation is based on SCE’s conclusion that it will need an additional 2506 MW for local reliability, assuming that the Mesa Loop-in will be approved and completed and no load shedding is authorized for SDG&E in response to the N-1-1 contingency.<sup>74</sup> After taking the authorized Track 1 amounts into account, IEP’s recommended interim Track 4 procurement for SCE falls between 706 MW (if SCE procures the maximum

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<sup>73</sup> See Exh. SCE 1, p. 27 (Chinn).

<sup>74</sup> Exh. IEP-1, pp. 43-44 (Monsen).

1800 MW authorized for Track 1) and 1106 MW (if SCE procures the minimum 1200 MW authorized for Track 1).<sup>75</sup>

IEP agrees with SCE's proposal to implement this additional Track 4 procurement in conjunction with the existing Track 1 solicitation, provided that the Track 1 procurement is not unreasonably delayed by a consolidation with the initial Track 4 solicitation. SCE points out that only 200 MW of the authorized Track 1 solicitation is not reserved for specific generation technologies.<sup>76</sup> Including its requested 500 MW interim Track 4 authorization in the Track 1 solicitation would increase the all-source procurement to 700 MW, a size that should attract additional bidders.<sup>77</sup> IEP's recommended interim authorization would increase the all-source portion of the Track 1 solicitation to 906 MW (*i.e.*, 200 MW + 706 MW), which should attract even more bidders.

However, if adding the interim Track 4 authorization to the ongoing Track 1 solicitation is impractical or would cause an unreasonable delay in the Track 1 procurement, IEP recommends, as an alternative, that the Track 4 all-source procurement should be conducted in a new solicitation, separate from the existing Track 1 solicitation that SCE already has underway.

### **3. SDG&E Should Be Authorized to Procure 820 MW in an Interim All-Source Track 4 Solicitation**

SDG&E's studies modeled three scenarios: a conventional generation scenario that relied on gas-fired additions, a scenario including a new 500kV direct current (DC) from the Imperial Valley to SONGS, and a scenario with a new 500 kV alternating current (AC) from the Devers substation to a new 230 kV substation in north San Diego County. SDG&E also analyzed the scenarios using both an N-1-1 criterion and a less stringent G-1/N-1 criterion

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<sup>75</sup> Exh. IEP-1, p. 48 (Monsen).

<sup>76</sup> RT 1969 (Cushnie).

<sup>77</sup> RT 1969-1972 (Cushnie).

(which reduced need by about 150 MW). Using the N-1-1 criterion, the additional need was 1470 MW for the conventional scenario, 620 MW for the DC line scenario, and 820 MW for the AC line scenario.<sup>78</sup>

Despite the fact that SDG&E identified a minimum need of 620 MW to 1470 MW in addition to the 300 MW requested in its Pio Pico application,<sup>79</sup> it proposes an interim procurement of only 500 MW to 550 MW, to allow for the potential growth of demand response or other preferred resources.<sup>80</sup> SDG&E appears to assume that one of the two transmission lines can be approved by the CAISO, receive approval of environmental permits, be granted a Certificate of Public Convenience and Necessity by the Commission, and be constructed and online by 2022.

IEP takes a slightly more conservative approach. Experience has shown that permitting and siting a new transmission line can be a difficult and drawn-out process. In particular, the DC line from Imperial Valley to SONGS would require a new corridor and would likely face the same strong public opposition that delayed the Sunrise Powerlink project. For that reason, it is prudent to assume that, for purposes of a no-regrets procurement, only the presumably less controversial Devers-North County AC line could be in operation by 2022. Applying the N-1-1 criterion to that scenario results in a need for 820 MW of additional resources by 2022.<sup>81</sup>

Unlike SCE, SDG&E does not have an existing solicitation underway that could incorporate the authorized additional procurement. The Commission should authorize SDG&E to conduct an immediate all-source procurement for 820 MW of additional resources. An all-

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<sup>78</sup> See Exh. IEP-1, p. 53 (Monsen).

<sup>79</sup> Exh. SDG&E-3, p. 2 (Jontry).

<sup>80</sup> Exh. SDG&E-1, p. 12 (Anderson).

<sup>81</sup> Exh. IEP 1, p. 56 (Monsen).

source solicitation allows supply and demand resources to compete on a fair basis and avoids “siloeing” of specific technologies, which can inhibit competition and ultimately raise costs for ratepayers.

C. **Supplemental Procurement May Be Needed After the Results of the 2013-2014 TPP and Other Procurement Activities Become Available**

After the results of the 2013-2014 TPP become available, it may be appropriate for the Commission to authorize additional procurement if the approved transmission projects will not sufficiently reduce the identified need in the SONGS study area. SDG&E, for example, believes that “the need out there is much bigger” than the 500 to 550 MW that it requests for immediate authorization.<sup>82</sup> In addition, if the CAISO does not approve the Devers-North County AC line, contrary to IEP’s assumption, 650 MW of additional resources would be required to maintain reliability. Additional procurement would also appropriately be authorized if SCE fails to procure the full 1800 MW Track 1 authorization. For SDG&E, the supplemental Track 4 procurement could include additional MW if the Pio Pico or Escondido projects are unable to achieve commercial operation.

IV. **OTHER ISSUES**

A. **Contingent Contracts May Be a Creative Way to Address Uncertainty**

If SCE or SDG&E is reluctant to make a commitment to procure additional resources because of uncertainty about the level of future demand, then the possibility of contingent contracts, as described by SCE, may be a convenient option.

As described by SCE, contingent contracts would allow a developer to be compensated for developing a site, but the project would be completed only if a need arose. This concept is an intriguing way of addressing the long lead times associated with the development

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<sup>82</sup> RT 1858 (Anderson).

of power plants in California. Under this proposal, a project could complete permitting, environmental review, and initial engineering, and the utility would make payments at defined points along the permitting and development process to match the seller's expenditures. At a predetermined point in the plant's development, the utility would have the option to terminate its obligation to purchase the output of the facility, provided that it made an agreed-on termination payment. Thus, the project would be well along the development process and could quickly be completed and placed in commercial operation if needed, but it would not proceed to construction unless a need for the additional capacity was foreseen.

At a time when forecasting future demand and the performance of preferred resources is increasingly difficult, the concept of contingent development contracts could be a practical and cost-effective way to insure against future reliability problems while buying time to see how uncertainties about demand and supply are resolved.

Contingent contracts may present some significant challenges, but this approach is far superior to the suggestion of some parties that after having competed successfully in a solicitation and entered into a power purchase agreement, a developer would be deprived of its contract because the level of forecasted need had declined. That is why IEP recommended that the final authorization in Track 4 could go higher but not lower than the amount of MW authorized for the interim procurement.

**B. The Loading Order and Preferred Resources in All-Source Solicitations**

The role of the loading order announced in the Energy Action Plan and the nature of the preference appropriately given to preferred resources was the subject of controversy in the Track 4 hearings. The loading order:

identifies energy efficiency and demand response as the State's preferred means of meeting growing energy needs. After cost-effective efficiency and demand response, we rely on renewable

sources of power and distributed generation, such as combined heat and power applications. To the extent efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, we support clean and efficient fossil-fired generation.<sup>83</sup>

“Preferred resources” generally refer to energy efficiency, demand response, renewable resources, and distributed generation.

Some parties interpret the Energy Action Plan as requiring the Commission to authorize the procurement of *only* preferred resources, with the possible addition of energy storage. According to these parties, any further reliance on natural gas-fired units is inconsistent with the Energy Action Plan.

The Energy Action Plan, however, has two important conditions, as revealed in the quote above. First, even the preferred resources must be cost-effective. The Energy Action Plan does not require the Commission to authorize energy efficiency or demand response programs that are too costly or are not effective in meeting energy and capacity needs. Second, the preferred resources must be capable of meeting energy and capacity needs. It serves neither the public interest nor the goals of the Energy Action Plan if the result of an exclusive reliance on preferred resources to meet customers’ needs is an unreliable electric system.

Furthermore, and contrary to some parties’ assertions, “clean and efficient” gas-fired units are an integral part of the loading order. The agencies joining in the Energy Action Plan recognized that clean and efficient gas-fired units will continue to play an important supporting role as California makes the transition to a greater proportion of preferred resources in the resource base. To cite one convenient example, when the Legislature increased the Renewables Portfolio Standard (RPS) goal to 33%, it implicitly recognized that up to 67% of the state’s energy needs would be met by something other than eligible renewable resources. Gas-

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<sup>83</sup> Exh. IEP 1, Attachment F, p. 2.



fired resources are and will continue to be an important and necessary component of that piece of the resource mix.

IEP's recommendation for an all-source solicitation to meet the needs identified in Track 4 furthers the goals of the Energy Action Plan. In IEP's vision, the Commission, in consultation with the CAISO, would identify the attributes needed to maintain reliability and perhaps the preferred locations for new resources. Any resource that can meet the requirements of the solicitation, *i.e.*, that possesses the identified attributes, would be eligible to bid in the solicitation. The utility conducting the solicitation would need to consider the total costs of acquiring and using the identified attributes for each proposed resource. Different resources and different technologies may have significantly different total costs of providing the needed attributes. The bid evaluation should consider all of the applicable costs to arrive at the least-cost/best-fit solution.

In this all-source solicitation, preferred resources can compete fairly with other resources. One of the primary distinguishing attributes of preferred resources, their ability to supply energy to the grid with little or no emissions of greenhouse gases (GHGs), is already reflected in the structure of an all-source solicitation. The California Air Resources Board's implementation of the Cap and Trade Program for GHG emissions allowances uses market mechanisms to reveal the cost of emission allowances and the value of avoiding GHG emissions. Those costs and values will be incorporated into bids and bid evaluation and will provide differentiation between gas-fired resources and other resources that emit little or no greenhouse gases.

The all-source solicitation also permits the utility to recognize the value of other relevant distinguishing attributes of preferred resources. The utility would reveal in advance of

the bidding, at least in general terms, how it would value relevant additional attributes (*e.g.*, eligibility to count toward RPS goals) of those preferred resources that can provide the defined product sought in the solicitation. The competitive solicitation process would then provide a convenient measure of the cost-effectiveness of a particular bid and would reveal the relative competitiveness of preferred resources.

**C. Utility Proposals to Acquire and Permit Sites for Power Plants**

Both SCE's and SDG&E's Track 4 testimony included proposals that are not part of Track 4 and are not the subject of a request for Commission action.

SCE's testimony presented its initial concept of a Living Pilot, which is primarily designed to test the ability of preferred resources to meet local Resource Adequacy needs. In response, IEP's testimony raised concerns about the assumption that a general proposal that lacked significant details like the amount of preferred resources that would be procured could be relied on to make a significant contribution toward meeting local reliability needs.<sup>84</sup> SCE also proposed to acquire sites for contingent development of generation units if the Living Pilot fell short of delivering the resources needed in the local area, but SCE acknowledged that its proposal was "very early in the game" and lacked detail, and it was unable to explain how it could permit sites without a proposal for a specific project.<sup>85</sup>

SDG&E presented a similar proposal for an energy park. Under this proposal, SDG&E would acquire a site and complete initial permitting for power plants to be located on the site. When a need arose, SDG&E would make the permitted site available to independent power developers through a competitive solicitation. SDG&E's proposal also left significant

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<sup>84</sup> Exh. IEP-1, pp. 49-50 (Monsen).

<sup>85</sup> RT 2072 (Rumble).

questions unanswered, and SDG&E clarified that it was not asking the Commission to act on its proposal as part of Track 4.<sup>86</sup>

To the extent these proposals were floated as trial balloons, IEP has two general responses. First, the proposal for contingent sites or an energy park that could receive significant permits in advance of a specific proposal is unrealistic. Even basic and uncontroversial permits require a specific project and a detailed proposal. Any permits that the utility could obtain in advance of a specific proposal would be permits that are easy to obtain, and no time would be saved by obtaining these permits in advance. In addition, there is no indication that independent generators are unable to find potential sites for proposed units, even in the SONGS study area where permitting and siting can be difficult. Unlike independent power producers, SDG&E has no recent experience in siting power plants.

## V. CONCLUSION

In this proceeding, some parties ask the Commission to relax its diligent commitment to ensuring grid reliability. These parties ask the Commission to expose ratepayers to an increased risk of blackouts, as part of a planned response to certain contingencies. Despite the enormous financial and social cost of blackouts, these parties urge the Commission to roll the dice and join them in assuming that the contingencies that required blackouts will never occur.

The Commission should reject this faith-based approach to long-term resource planning. IEP respectfully urges the Commission to instead:

- Endorse the CAISO's conclusion that load shedding as a mitigation for an N-1-1 contingency is inappropriate and imprudent for the densely populated SDG&E coastal area that would bear the brunt of these blackouts.

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<sup>86</sup> RT 1872 (Anderson).

- Authorize SCE to consolidate an interim Track 4 procurement authority of at least 706 MW into its existing Track 1 solicitation, provided that Track 1 procurement is not unduly delayed as a result of this consolidation.
- Authorize SDG&E to undertake an expedited Track 4 all-source solicitation for at least 820 MW.
- Re-evaluate the need for a supplemental procurement after the results of the 2013-2014 Transmission Planning Process become available.

Respectfully submitted this 25th day of November, 2013 at San Francisco, California

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