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California Energy Commission
Docket Office, MS-4
Re: Docket No. **09-IEP-1A**
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DOCKET

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Re: California Energy Commission (Energy Commission)
Docket No. 09-IEP-1A: Draft 2009 IEPR

To Whom It May Concern:

Southern California Edison (SCE) appreciates the opportunity to provide comments on the Draft 2009 Integrated Energy Policy Report (IEPR). SCE would like to acknowledge the Energy Commission Staff for completing this large undertaking encompassing a wide breadth of issues. In this cover letter, SCE summarizes its most significant policy concerns with the Draft 2009 IEPR. Attachment 1 to this letter identifies specific areas of concern in greater detail. The State of California's electricity sector has a significant task ahead in working to meet its current energy policy goals and a well-crafted 2009 IEPR can further the State's efforts to meet those goals.

SCE supports the State's goals to reduce Greenhouse Gas (GHG) emissions through a variety of strategies, including increasing Energy Efficiency (EE) and Demand Response (DR), increasing the amount of electricity from renewable resources, and through electrification efforts, including transportation. These are all worthy goals. SCE is the nation's leading purchaser of renewable energy, having purchased 12.6 billion kWhs in 2008 alone. Last year 16% of the power SCE delivered to customers came from renewable resources. SCE is also a pioneer in its research, development, and deployment efforts for Smart Grid. Additionally, SCE continues to be a leader in the development of EE, and is a leader in the development of electric transportation. To further those efforts, the Draft 2009 IEPR should be modified to take into account some additional complexities in furthering the State's goals. SCE's suggested modifications will help provide a more accurate assessment of current progress towards the State's goals and practical, cost-effective methods to continue and accelerate that progress.

First, the Draft 2009 IEPR should emphasize the importance of equal rules, treatment, and enforcement of procurement obligations for all California Load Serving Entities (LSEs). Providing for equal rules, treatment, and monitoring of procurement obligations is not only required by existing law, but is good public policy because it provides appropriate incentives to all LSEs in California to support the State's goals. Yet, the Draft 2009 IEPR appears to endorse disparate treatment among LSEs. For example, the Draft urges the California Public Utilities Commission

(CPUC) to penalize only the CPUC-regulated IOUs for non-compliance with Renewable Portfolio Standard (RPS) goals, but is silent as to other LSEs that are subject to the same compliance requirement. It is simply poor public policy to penalize the IOUs, who have made meaningful progress towards the RPS goals, and ignore the other LSEs who have not. Without all LSEs making progress towards renewable energy goals, the State will never meet a target of 20%, much less 33%, of energy deliveries. Moreover, imposing penalties will not eliminate the causes for not being able to meet the goals. The transmission needed to deliver renewable energy to the load center is the primary barrier. Renewable facility siting and interconnection is another. To date, these and other problems in achieving higher renewable energy goals are primarily the result of federal, state, and local siting restrictions and cumbersome and overlapping regulatory processes—not the efforts of the IOUs to develop and contract for new renewable resources.

Similarly, the Draft 2009 IEPR should support equal rules, treatment, and enforcement obligations for all other programs aimed at advancing the State's public policy goals, including feed-in tariffs, Resource Adequacy requirements, combined heat and power goals, and EE savings accounting. This equal rules approach would promote equitable treatment of all LSEs and ensure that all LSEs work to meet the State's energy policy goals.

Second, SCE urges the Energy Commission to recognize the importance of maintaining electric system reliability. For example, the Draft 2009 IEPR urges the establishment of "fixed deadlines" for retirement of certain once-through-cooling (OTC) generating facilities. Instead, the Energy Commission should support flexible deadlines, particularly in light of the inability to replace retiring generating facilities in the LA Basin because of the present lack of Emission Reductions Credits (ERCs) from the South Coast Air Quality Management District. New generation cannot be built to replace retiring generation without ERCs to offset emissions in the South Coast Air Basin. If this issue is not resolved, it could lead to significant lapses in electric system reliability.

Third, the Draft IEPR should recommend specific approaches for State agencies and key stakeholders to work together to meet California's energy policy goals. Streamlining processes and minimizing redundancy through collaboration will support the State's efforts to implement goals as quickly as possible. Clearly, the State agencies recognize the benefits of collaboration because they have chosen to work together in planning for OTC reduction and statewide transmission planning. SCE urges the Energy Commission to include stakeholders within these processes and encourage further agency collaboration in the areas of Long-Term Procurement Planning (LTPP), implementation of AB 32, analysis of a 33% Renewable Portfolio Standard (RPS), and implementation of Smart Grid standards and research activities.

Fourth, SCE urges the Energy Commission to remove from the Draft 2009 IEPR the recommendation that it seek legislative authority for an explicit "need conformance/ need assessment" process for the power plants that it licenses. Sufficient incentives already exist for the development of renewable and other lower emitting resources. This "need conformance/ need assessment" recommendation is unnecessary and runs the risk that over-regulation will be counterproductive and impede, rather than encourage, the development of needed generation resources in California. SCE supports the recommendation of the Independent Energy Producers

(IEP) to create a working group of regulators, utilities, and non-utility entities to develop an appropriate process for generation additions.

Moreover, before the Energy Commission can make an informed decision related to “need assessment,” the Commission must address challenges associated with the models used by Energy Commission staff to forecast Energy Efficiency and generation costs in developing the Draft 2009 IEPR. Although some progress has been made since the 2007 IEPR, the models that forecast committed and uncommitted EE are producing results that are incomplete and, therefore, unreliable. This leads to a demand forecast in the Draft 2009 IEPR that is unreliable. SCE urges the Energy Commission to complete the EE accounting analysis as recommend in Attachment 1.

In evaluating new supply additions for its need assessment, the Draft Report appears to assume that cost alone, without regard to other resource attributes such as operating characteristics, drives resource selection. Because cost is only half the story, this assumption is flawed. In order to more accurately assess future needs, the Draft Report must take into account resource attributes in addition to cost. Furthermore, with regard to the cost of generation model, although SCE has obtained and reviewed the most recent version of the cost of generation model, it is unable to replicate the results reported by the Energy Commission. The cost of generation model results reported in the Draft IEPR are counter-intuitive and inconsistent with results reported about the cost of generation in the 2007 IEPR. For example, for parabolic solar trough generation, when the costs of storage are added to the costs of the generation, the capital costs of the generation rise, and the energy costs fall. This is a counter-intuitive result. In addition, the costs of nuclear generation appear to have gone up dramatically since the 2007 IEPR—inconsistent with SCE’s studies of nuclear generation costs. As a result, the Draft 2009 IEPR should refrain from making judgments about the relative costs of different types of generation until the problems with the cost of generation model are remedied.

Fifth, although SCE is committed to the safe and reliable operation of the San Onofre Nuclear Generating Station (SONGS), the Draft 2009 IEPR should be modified to remove any recommendation that AB 1632 studies be completed prior to CPUC and Nuclear Regulatory Commission (NRC) filings for the license renewal for SONGS. Sufficient progress will be made on these studies such that all necessary information for the CPUC to make a fully informed decision on the costs and benefits of SONGS License Renewal for California ratepayers will be available prior to the CPUC filing, but the studies may not be final.

Sixth, the Energy Commission should focus additional attention on the development and deployment of Smart Grid technologies and the associated communications architecture, which are essential to achieving California’s visionary energy goals. Additional short and medium-term research is needed if technologies, products and services are to be developed and deployed prior to policy deadlines set within the 2020 timeframe.

Finally, SCE urges the Energy Commission to review and adopt all of the detailed changes to the Draft 2009 IEPR discussed in Attachment 1.

October 30, 2009

SCE appreciates the willingness of the Energy Commission staff to work collaboratively with us during the development of the Draft 2009 IEPR. If you have any questions or need additional information about these written comments, please contact me at 916-441-2369.

Very truly yours,

/s/MANUEL ALVAREZ

Manuel Alvarez

Enclosure

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SCE's 2009 Draft IEPR Comments

I. Introduction

Southern California Edison (SCE) appreciates the opportunity to review and comment on the California Energy Commission's (Energy Commission) 2009 Integrated Energy Policy (IEPR) Draft Report (Draft Report) and commends Energy Commission staff for completing this large undertaking, which encompasses an analysis of numerous complex issues.

As demonstrated in the Draft Report, the State's electricity sector is facing the significant challenge of meeting customer demand and maintaining system reliability while working to meet ambitious energy policy goals. Below, SCE provides detailed comments on the Draft Report in three main areas:

1. Coordinating with Other Agencies and Key Stakeholders
2. Planning for Resource Additions
3. Meeting State Energy Goals

While the Energy Commission Staff's efforts in completing the Draft Report are commendable, SCE believes that the Draft Report can be further refined and improved upon in these three main areas.

II. Coordinating with Other Agencies and Key Stakeholders

The Energy Commission is poised to play a major role in enabling the achievement of California's energy policies. A key component of this role is coordinating with other State and Federal agencies to better understand and shape the State's energy landscape. There are many efforts under way and limited funding and human resources need to be optimally leveraged to balance competing policies and reach established targets. Collaboration will greatly reduce the amount of overlap and make the most efficient use of limited resources.

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An example of where coordination and collaboration can facilitate goal achievement is the Energy Commission's efforts to develop a short-term (2013-2020) and a long-term (post-2020) "blueprint" for generation technologies that support the implementation of State policy goals.¹ Close coordination with other State and Federal agencies and key stakeholders is clearly essential to achieving consensus while optimizing resources.

There are a number of other ongoing efforts where coordination, collaboration or adoption can provide similar benefits:

- The California Public Utilities Commission (CPUC) staff proposes to pursue an Indicative Resource Plan (IRP) as part of its Long-Term Procurement Proceeding (LTPP).
- The California Air Resources Board (CARB) is implementing its AB 32 Scoping Plan across various sectors and is also studying 33% Renewables Implementation
- The National Institute of Standards and Technology (NIST) is developing Smart Grid interoperability and cyber security standards in the area of demand response and load control, including emerging energy smart consumer devices, plug-in electric vehicles and appliances.
- Federal agencies, such as the Department of Energy, are planning to use American Recovery and Reinvestment Act funding to conduct many studies related to implementation of the Smart Grid and other initiatives.

In facing statewide challenges, State agencies and utilities recognize the need to collaborate to resolve specific issues. For example, the CPUC, the Energy Commission, and the California Independent System Operator (CAISO) formed the "Joint Agencies"

¹ Draft Report, p.223.

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to evaluate implementation of the State Water Resources Control Board (SWRCB) Draft Policy on the Elimination of Once-Through Cooling (OTC). Similarly, the CAISO is collaborating with the State's Investor Owned Utilities (IOUs) and Publicly Owned Utilities (POUs) to form the California Transmission Planning Group (CTPG) to work with the Energy Commission to develop future projects and strategies for transmission infrastructure development. The Joint Agencies and CTPG Participants expect their efforts to result in:

- Streamlining of analysis requirements,
- Minimization of redundant activities, and
- Provision of results in a timely manner.

Going forward, the Energy Commission will need to rely on collaborations, such as CTPG and similar statewide efforts, throughout the IEPR process, if California is expected to meet its ambitious energy goals. Accordingly, SCE urges the Energy Commission to work with other State agencies and key stakeholders to assess the work requirements for planned activities and develop a division of labor to accomplish them, especially in the areas outlined above.

III. Planning Resource Additions

The planning of future resource additions, which has always been a complicated process, is much more complicated today than ever before. New and evolving statewide energy policies, such as greenhouse gas (GHG) reduction goals, OTC reduction goals and renewable portfolio standard (RPS) targets, will be challenging to achieve at reasonable costs while maintaining grid reliability. Moreover, these goals are sometimes in conflict (*e.g.*, conventional non-OTC units tend to be less efficient and to emit greater quantities of GHG) and may have a variety of adverse environmental impacts (*e.g.*, land use implications of new renewable resource development). Fashioning energy policies that

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support appropriate resource development thus requires a comprehensive and holistic assessment of resource choices. The planning processes must evolve as policy requirements evolve, a process that in some cases must take place rapidly to keep pace with the State's ambitious energy goals. Different procurement methods, reliability issues, emission requirements, and so forth must all be balanced to meet demand, maintain reliability, and meet State energy goals. In addition, it is essential that the Energy Commission develop the proper tools for accurate analysis results. Specifically, the Commission should complete its work on the accounting of Energy Efficiency (EE) in the Demand Forecast and refine the Cost of Generation Model so they are able to accurately inform the resource selection process.

A. Need Assessment and Conformance

1. Demand Forecast

As noted in the Draft 2009 IEPR, a need assessment is a “process of quantitatively evaluating the state’s blueprint or vision using current and expected electricity demand, new supply additions, possible retirements of existing power plants, operating requirements, and necessary transmission to guide decisions about future energy system mix to determine the necessary attributes and locations of needed power plants, and in what time frame.”²

Because an accurate demand forecast is an essential component of a need assessment, in order to perform a reliable need assessment, the Energy Commission must first complete its analysis of EE accounting in the demand forecast. The Energy Commission model results include considerable overlap between energy savings from the committed programs and the savings from the uncommitted programs. This issue was first noted during the 2007 IEPR cycle, but has yet to be resolved. To date, for the 2009

² *Id.*, pp. 207-208.

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IEPR cycle, uncommitted EE estimates have not been provided. As the Energy Commission is aware, the CPUC requires the IOUs to use the demand forecast from the IEPR in the Long-Term Procurement Plan (LTPP) proceeding as the basis for setting procurement limits and determining resource needs. For purposes of incorporating the 2007 IEPR demand forecast into their current procurement plans, each utility was given an estimate of the amount of overlap between the committed EE embedded in the forecast and the uncommitted EE to apply to the forecast to ensure appropriate accounting.

The Energy Commission Staff continues to study this issue. While progress has been made in the analysis and accounting of committed EE, Staff's forecast of uncommitted EE is not yet available. In fact, the forecast of uncommitted EE is not scheduled for completion until late January 2010, more than a month after the scheduled adoption date of the 2009 IEPR.³ The unresolved state of Staff's EE forecasting work leads to a demand forecast in the Draft 2009 IEPR that is unfinished and difficult to interpret. This problem will be compounded if the IOUs are once again compelled to rely on this forecast for purposes of determining their procurement limits and resource needs for their 2010 LTPPs.

In addition to the demand forecast, there are other factors that must be taken into account in developing accurate need determinations, such as the need for more resources to assist in the integration of higher levels of renewable resources. Certain renewable resources (solar and wind) operate intermittently, and therefore additional resources may be needed (e.g., dispatchable resources capable of following system demand) to accommodate the generation variations and ensure system reliability. Furthermore, in light of the enactment of SB-695, the Energy Commission must also attempt to segment

³ Incremental, Uncommitted Project Status Report, Demand Forecasting Energy Efficiency Quantification Project, Mike Jaske and Chris Kavalec, October 21, 2009.

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an estimate of direct access loads and demands out of the overall forecast. These types of issues ought to be accurately reflected in the need assessment.

2. Cost of Generation Model

In evaluating new supply additions for a need assessment, accurate resource costs are crucial. In addition, resource performance characteristics must also be considered when filling system needs. The Draft IEPR Report draws a number of conclusions on pages 85 - 86, presumably in reliance on the Energy Commission's 2009 Comparative Cost of California Central Station Electricity Generation Technologies Report (2009 COG report), including:

1. "wind and solar technologies show a significant cost decline," and
2. "Solar photovoltaic technology has shown dramatic cost changes since 2007 and is expected to show the most improvement of all the technologies evaluated in the model, bringing its capital cost within range of that of natural gas fired combined cycle units."

SCE is concerned that these conclusions give the impression that cost is the only consideration in selecting resources and that "bringing [solar photovoltaic] capital cost within range of that of natural gas fired combined cycle units" means that they are interchangeable.⁴ Cost is only half the story. For example, wind and solar resources do not provide load following capability (ramping and minimum load), or inertia to stabilize the system. Using these resources without accounting for these system requirements will reduce system reliability. As requirements for renewable energy increase, more and more accommodations must be made to satisfy the system reliability needs. Higher costs will be incurred for the additional resources. Direct resource cost comparisons will not reflect the total cost for equivalent resource attributes.

⁴ Draft Report, pp. 85-86.

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Moreover, levelized costs can be misleading when used to compare resources with different capacity factors and different operating characteristics. For instance, solar resources tend to be more valuable than levelized cost statistics would indicate, and wind resources less valuable, because solar output is more concentrated in on-peak periods than wind output. Similarly, \$/MWH statistics have little meaning for peaking resources, since their primary function is to meet capacity needs, not to supply energy. Finally, SCE observes the substantial variation in levelized costs between assumed cost structures for merchant, IOU and POU. These differences do not, on their face, appear reasonable.

a) Calculated Resource Cost Results

SCE has a number of issues with the calculated resource cost results included in the *2009 Comparative Cost of California Central Station Electricity Generation Technologies Report* and the most recent Excel-based model distributed by the Energy Commission staff. The levelized cost analyses appear to be inaccurate.

1. The levelized cost of solar generation is lower than the levelized cost of conventional generation
2. When the additional capital costs for energy storage are added to solar parabolic trough the levelized costs go down and
3. Some instant cost estimates appear to be incorrect

The analyses show that solar resources have a lower levelized cost than conventional generation resources using natural gas. Most comparative cost studies show that solar resources are more costly than natural gas resources. Even Figure 3 of the COG report shows that solar resources are among the most costly resources when ranked by instant costs (2010). Yet, their levelized cost is below both conventional and simple cycle resources. This result is counterintuitive and misleading.

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Other issues have surfaced regarding the model calculation results. An example, included in the table below, may help illustrate the need for Energy Commission staff to revise and vet the COG report using a corrected model.

Technology	COG Report		Instant Cost	Comments
	\$/kW-year	MWh	\$/kW	
Solar Parabolic Trough (IOU)	399.04	238.27	3687	
Solar Parabolic Trough w/ storage (IOU) ⁵	454.32	123.86	4187	The increase in capital cost for the addition of storage is reflected in the capacity value but the levelized cost result is lower than without storage added, which is counterintuitive.

The parabolic trough solar with an in-service date of 2009 and utility ownership provide the same outcomes between the most recent model and the COG report. In the current model and the COG report, the cost values are \$399.04/kW-year and \$238.27/MWh. When storage is added to the parabolic trough solar, the results from the model are \$454.32/kW-year and \$123.86/MWh, a very unlikely outcome. It is difficult to imagine how storage could both increase the cost per kW-year and at the same time decrease the cost of energy, when storage, by definition, incurs thermal or electrical losses and consequently, the total output in MWh would necessarily be reduced. There does not appear to be any mention of solar with storage in the draft report.

Another example is advanced nuclear. The COG report states that the 2018-levelized IOU cost of advanced nuclear is \$273.07/MWh from Table 5, page 18 based on the Energy Commission model. SCE's subsequent runs using the model supplied by the Energy Commission, without modification, show that the 2018-levelized IOU cost is \$192.38/MWh. The net result is a decrease in estimated cost of approximately 30%. It is

⁵ Estimates made using the COG Model Beta 2_37 provided by Energy Commission.

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not clear what corrections or modifications were made to the model or underlying data by the Energy Commission. At the cost above, as computed using the Energy Commission's revised model, advanced nuclear is less costly than wave, solar and offshore wind options as presented in Table 5, page 18 of the COG Report.

In addition to problematic issues with the cost of generation model, there are also some instant cost estimates that appear to be either in error, or at best, counter to common multi-plant cost experience. For example, on page 6, Figure 3 of the COG Report, the instant cost of advanced nuclear is estimated to be approximately \$6500/kW in 2018 (based on visual inspection), which would represent a more than 50% increase in the cost of advanced nuclear from the 2010 base-year instant cost of \$3950. The precise nature of this estimate is unknown. It is widely believed, however, that plants constructed after initial plants are completed would have a reduced cost, not an increased cost. Other technologies in Figure 3, such as wind and solar, demonstrate the typical cost reduction behavior for later constructed plants.

Technology	2009 \$/kW (Real \$2009)	2018 \$/kW (Real \$2009)	Comments
Advanced Nuclear Instant Costs	3950	6500 ⁶	This indicates a more than 50% increase in cost.

SCE recommends that the Energy Commission staff revisit the COG Report to check for additional errors/changes/corrections to the cost of generation model, make the forecasting model and methods transparent, and develop a cost forecast for later-constructed plants that conforms with typical later-constructed plant cost experience, as staff did with wind and solar technologies.

⁶ Based on visual inspection.

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3. Legislative Authority

The Energy Commission indicates that it seeks legislative authority for 1) an explicit need conformance process for the power plants it licenses directly; and 2) its need assessment conclusions to be used by local and regional environmental agencies with final approval over power plants that the Energy Commission does not license.⁷ SCE urges the Energy Commission to remove this recommendation from the Draft 2009 IEPR. Rather than fostering the development of needed infrastructure and resources, the notion that “explicit legislation and regulatory agency decisions must guide investors to make decisions compatible with the vision that the state has for the electricity grid”⁸ will lead to increased regulatory oversight that may or may not achieve desired results. Government and regulatory agencies cannot anticipate and manage all of the investment challenges and risks associated with infrastructure development, particularly for non-utility entities, and therefore may inadvertently thwart required investment or impose laws and regulations that do not achieve the desired result. Indeed, one of the significant barriers that power plant developers face in California is regulatory uncertainty, which raises the risks already inherent in project development investment. A better approach would be to work with the stakeholders, especially the non-utility entities, to develop a streamlined and more certain process to develop necessary resources. To that end, SCE supports the Independent Energy Producers (IEP) recommendation to set up a working group comprised of regulators, utilities, and non-utility entities to “develop a process to bring generators on-line.”⁹

⁷ Draft Report, pp. 13, 224.

⁸ *Id.*, p.198.

⁹ October 14, 2009 Workshop Comments delivered by Steve Kelly.

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B. Reliability

1. Capacity Market

SCE supports the development of a multi-year forward, centralized capacity market. A forward capacity market will ensure that the CAISO identifies, in sufficient time to construct, capacity needed for reliable operations. This market will also fairly allocate costs to all beneficiaries.

2. Implementation of OTC Policy

The State Water Resources Control Board's (SWRCB) policy on the elimination of OTC could have a significant effect on future system reliability. The SWRCB's draft policy includes specific dates when the specified plants must retire. The Joint Agencies developed a draft implementation plan that includes analyses to determine the reliability impact of plant retirements. SCE recommends that the Joint Agencies continue to work with key stakeholders to ensure that analysis is completed and the results are used to address the reliability concerns in a commercially reasonable manner and in conjunction with other state policy efforts (OTC mitigation is dependent upon transmission upgrades, retirement of aging plants, emission credits for new generation, integration of renewable resources, etc.). The implementation plan for the SWRCB policy must protect electric system reliability. It should acknowledge that OTC generation capacity cannot be retired until the replacement capacity needed for reliability is operational and in many instances, located at or near the load center to support grid reliability and integration of remote imports. Also, the plan should allow for realistic relief when compliance cannot be implemented successfully given physical and/or regulatory constraints. Although SCE supports the concept of the Joint Agencies performing a long-term (10-year) Local Capacity Requirement (LCR) assessment, further work is required to determine how this long-term LCR assessment will be integrated into other CAISO processes and

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requirements.¹⁰ The affected utilities should be able to provide input to these studies so that when results are available they can inform the LTPP proceeding and the annual transmission planning process, as appropriate, with the objective of issuing procurement guidance and identify specific transmission projects. Procurement to support grid reliability needs associated with OTC policy compliance is the responsibility of all benefiting customers, not just the IOUs. Therefore, the Energy Agencies must also address broader cost allocation issues.

3. Priority Reserve Emission Reduction Credits

A significant issue that further complicates the retirement of OTC plants is the inability of new replacement plants trying to locate in the Southern California Air Quality Management District (SCAQMD) to obtain sufficient emission reduction credits to operate. In the Draft report Table 9: Staff Planning Assumptions and Reserve Margin Results for Southern California Using High Retirements¹¹ shows an OTC retirement scenario which, if implemented, would leave Southern California with inadequate resources to meet reliability standards. Clearly, that scenario highlights how important it is to develop a coordinated, phased schedule for power plant retirement. The alternate version included in the draft report is Table 10: SCAQMD Impacts on Southern California Planning Reserve Margins¹² is based on the plant retirements as outlined in the SWRCB Draft Policy. Provided below is SCE's estimation of the future reserve margins over a more extended period of time than shown in Table 10.

¹⁰ LCR requirements are governed by the CAISO Tariff and the CPUC's RA rules. The current LCR requirement is a year-ahead demonstration. There is no plan to extend the LCR RA requirement out to 10 years. Although the Joint Agencies may perform an analysis that looks 10 years out, this should not be misconstrued to imply that there is a 10-year LCR RA requirement.

¹¹ Draft Report, p. 176.

¹² *Id.*, p. 177.

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SCE's SP 26 Supply Demand Balance Analysis											
	MW										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Peak Demand	29,360	29,635	30,138	30,695	31,254	31,735	32,199	32,805	33,426	34,057	34,716
Existing Generation	22,927	22,927	22,927	22,927	22,927	22,927	22,927	22,927	22,927	22,927	22,927
Net Imports	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100
DR & Interruptible	2,011	2,422	2,681	2,843	2,952	3,076	3,140	3,182	3,223	3,264	3,305
New Thermal	995	1,751	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036
New Renewable	200	350	550	800	1,100	1,250	1,350	1,450	1,600	1,700	1,900
Retirements			(708)	(708)	(708)	(708)	(708)	(708)	(708)	(708)	(708)
Net Peak Load	27,349	27,213	27,457	27,852	28,302	28,659	29,059	29,623	30,203	30,793	31,411
Total Generation	34,222	35,128	34,905	35,155	35,455	35,605	35,705	35,805	35,955	36,055	36,255
Planning Reserve Margin	25%	29%	27%	26%	25%	24%	23%	21%	19%	17%	15%
Surplus over 15%	2,770	3,833	3,329	3,126	2,907	2,647	2,287	1,738	1,222	643	132
SWRCB Retirements						(670)	(670)	(1,620)	(1,620)	(1,620)	(7,953)
Reserve Margin						22%	21%	15%	14%	12%	-10%
Surplus over 15%						1,977	1,617	118	(398)	(977)	(7,821)

While the recent economic downturn has helped to lessen the immediate pressure that OTC unit retirement would have on grid reliability, without an ability to build new power plants in the southern California region, the loss of almost 8,000 MW of OTC units by 2020 will result in insufficient generation to meet load. The assumption that the value of “Net Imports” will stay constant at 10,100 MWs over the analysis period is also a concern, since there is the potential that load growth or generation impacts associated with GHG regulation could result in import market changes. Finally, it should be recognized that older plants tend to provide greater grid stability than more modern plants, because they have heavy rotors that provide inertial mass. Eliminating certain older plants will reduce the inertia they provide to the grid, and thus reduce the ability to import power within stability limits. If the emission reduction credits were available to allow new generators to be constructed in the LA basin, they would supply less the half of the inertia of older steam turbine plants. The reduced inertia could potentially reduce the net import capability causing a lower reserve margin in earlier years.

C. Nuclear Power Plants

SCE submits comments on the Draft Report's treatment of nuclear power plants concerning the following issues: (1) the recommendation that the AB 1632 studies be completed prior to SCE's CPUC and Nuclear Regulatory Commission (NRC) applications; (2) the SWRCB's Draft OTC policy as it relates to the San Onofre Nuclear

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Generating Station (SONGS); (3) the new generation and/or transmission facilities needed in the event of an extended shutdown of SONGS; (4) membership on the seismic advisory board; (5) an independent safety committee; (6) emergency evacuation studies, and (7) land use restrictions governing SONGS. SCE addresses each of these topics below.

1. AB 1632 Studies

The Draft Report discusses issues related to SCE's completion of AB 1632 studies and recommends that those studies be completed prior to SCE submitting an application to the CPUC (CPUC Application) requesting funding necessary to prepare and file an application for license renewal at the NRC. The Draft Report suggests that SCE does not intend to complete the AB 1632 studies or provide relevant substantive information to support its CPUC Application. To the contrary, SCE intends to either have completed the AB 1632 studies or have sufficient, substantive results from the studies to support the CPUC Application. For example, several studies will be completed and included in the CPUC Application, such as the study of alternative power generation options, assessment of evacuation time, and an update on SCE's efforts to continue improving its safety culture at SONGS. Other studies, such as the work currently underway on the seismic and tsunami studies and the lessons learned from the effect of the 2007 Japanese earthquake on the Kashiwazaki-Kariwa plant, will have sufficient and substantive results available and included in the CPUC Application so that the CPUC can reach an informed decision. This information may take the form of study plans or preliminary results. In either case, the CPUC will have sufficient information to assess the application.

Moreover, as the AB 1632 studies are completed, SCE intends to make the studies available to the Energy Commission and CPUC. Some of the studies may result in the

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development of projects and/or programs. For example, addressing the AB 1632 Report's recommendation to develop an active seismic research program involves not only the initial assessment of the current seismic hazard at SONGS, but also the on-going review of the seismic setting for SONGS over the remaining years of plant operation. These will be ongoing efforts after completion of the AB 1632 studies and submission of the CPUC application. The CPUC application will request funding for these efforts.

Based on the foregoing, the recommendation to require that the AB 1632 studies be completed before SCE files its CPUC Application is unnecessary, and should be removed from the final IEPR.

2. Considerations regarding implementation of the SWRCB's Draft OTC Policy at SONGS

The Draft Report recommends that the options and costs for complying with the SWRCB draft OTC policy should be assessed and included in the cost-effectiveness assessment as a part of SCE's CPUC Application. SCE opposes this recommendation.

First, SONGS employs state-of-the-art engineering and operational measures to minimize impingement and entrainment of marine organisms. In addition to the engineering and operational measures, SONGS has already performed mitigation measures that restore any remaining adverse impact on marine organisms caused by the plants operation, with an added margin. These mitigation measures include: (1) construction of the largest artificial reef in California, the 170-acre Wheeler North Artificial reef; (2) restoration of over 160 acres of wetlands in San Dieguito; (3) funding for the white sea bass hatchery in Carlsbad; and (4) funding for on-going independent monitoring of the mitigation measures.

Second, the SWRCB's current draft OTC policy requires plants utilizing OTC to reduce their intake of cooling water by installing closed-cycle wet cooling systems, or by reducing intake to a commensurate level by alternative means. Implementing closed-

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cycle cooling or its equivalent is simply not feasible at SONGS. A retrofit with a closed-cycle cooling system at SONGS would face unparalleled and one-of-a-kind engineering challenges, insuperable permitting obstacles, and adverse environmental impacts likely greater than those associated with OTC. SCE refers the Energy Commission to its comprehensive comments on the SWRCB draft OTC policy.¹³

Third, SONGS was already subjected to numerous studies by the California Coastal Commission concerning the feasibility of cooling towers at SONGS. SCE's ratepayers should not be required to fund the same studies and analyses again in connection with SCE's CPUC Application.

3. Need for new generation and/or transmission facilities in the event of an extended shutdown of SONGS

The Draft Report states that to support the State's long-term energy planning, SCE and Pacific Gas & Electric (PG&E) should report, as part of the 2010 IEPR, what new generation and/or transmission facilities would be needed to maintain voltage support and system and local reliability in the event of a long-term outage at Diablo Canyon, SONGS or Palo Verde. The Draft Report also seeks to have the utilities develop contingency plans to maintain reliability and grid stability in the event of an extended shutdown at one of these plants.

As previously identified in data request responses, for extended summer outages at both SONGS units, the CAISO would most likely need to rely on generation that is in close proximity to the SONGS plant. The CAISO would need to determine how to dispatch existing units in the Southern California area, as new units and/or new transmission cannot be constructed quickly enough to meet grid operational needs. These existing units would provide some of the replacement energy, but more economical

¹³ See SCE's Comment Letter on OTC Policy, September 20, 2009 (posted at http://www.swrcb.ca.gov/water_issues/programs/npdes/cwa316comments2009sept30.shtml).

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choices for energy would most likely be purchased from the market for the remainder of the needed energy. Depending on system conditions, the long term unavailability of both SONGS units would require significant mitigation such as construction of new transmission lines and voltage support equipment to prevent potential negative effects to the grid that include line overloads, low voltages and system instability that could lead to rotating blackouts and other service reductions in the region. The CPUC Application will also include a cost-effectiveness analysis including replacement generation and transmission additions needed for the SONGS “shutdown” scenario where the SONGS license renewal is not obtained.

In contrast, Palo Verde is a remote resource. As a result, a summer outage at Palo Verde is unlikely to cause grid stability issues in Southern California. Such an outage may change import limits but SCE is not aware of any regional or WECC studies that have studied an outage of all the Palo Verde units simultaneously and the effects of such an outage. To replace Palo Verde energy and capacity, SCE would most likely purchase the required capacity and energy from the market.

4. Membership on the SONGS' Seismic Advisory Board

The Draft Report recommends that the SONGS' Seismic Advisory Board should include greater representation from independent seismic experts. SCE believes that the current membership of the SONGS Seismic Board is appropriate. The SONGS' Seismic Advisory Board currently consists of seismic experts who have knowledge about the seismic hazard at the SONGS site. Information and data are being gathered from other seismic experts in order to provide a seismic hazard analysis that considers all relevant information concerning the seismic setting at SONGS. University and government scientists have been contacted for the latest information concerning Southern California

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seismic geology. Thus, the current membership of the SONGS Seismic Board is suitable and effective.

5. Independent Safety Committee

SCE is committed to the safe and reliable operation of its nuclear plants. SCE's nuclear plants have provided safe, reliable, low cost, electric power to Southern California for many years. The Draft Report suggests that the CPUC should assess the need to establish a SONGS "Independent Safety Committee" patterned after the Diablo Canyon Independent Safety Committee. However, the Draft Report does not substantiate the need for an Independent Safety Committee, and SCE does not agree with the Draft Report's implication that the presence of an Independent Safety Committee is necessary for a strong nuclear safety culture. In fact, other than PG&E's Diablo Canyon facility, SCE is not aware of any U.S. nuclear plant with a strong nuclear safety culture rating that makes use of such a committee. To the contrary, the industry has found that safety culture improvement must be led from within to ensure sustainability.

6. Emergency Evacuation Studies

The Draft Report identifies a concern with SCE's plans concerning emergency evacuation studies. In particular, the Draft Report states that SCE did not indicate whether it plans to conduct a study on SONGS' access roads and evacuation times. To be clear, SCE performs an annual review of the evacuation time study. If there are significant changes related to population or construction of roads and highways that would affect the evacuation time estimates, the Emergency Plan must be changed. The evacuation time estimate includes updates, reviews and integration of population data, transportation facilities, schools and special institutions and the emergency response of the various entities. The latest annual review will be included in the CPUC Application.

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7. Land Use Restrictions Governing SONGS

The Draft Report states that in the case nuclear plant licenses are not renewed, on-site Independent Spent Fuel Storage Installations (ISFSIs) would not necessarily restrict the decommissioning of the rest of the site and its conversion to commercial, retail, or other industrial purposes. SONGS is located on land owned by the U.S. Department of the Navy (U.S. Navy). SCE leases the land from the U.S. Navy for the purpose of constructing and operating a nuclear generating facility. Once SCE terminates the NRC licenses, the lease stipulates that the land will be returned to the U.S. Navy. The U.S. Navy controls any conversion of the portion of SONGS not being used for the on-site ISFSI to other purposes.

D. Smart Grid

Developing and deploying Smart Grid technologies and the associated communications architecture are essential to achieving California's visionary energy goals. Additional short and medium-term research is needed if technologies, products and services are to be developed and deployed prior to policy deadlines set within the 2020 timeframe. While the 2009 IEPR discusses transmission issues and the integration of renewable generation, it contains relatively little discussion of the electric distribution system. With the State's emphasis on the California Solar Initiative, feed-in tariffs, and distributed energy resources (including storage and renewables), the distribution system, which was designed for one-way power flows, will significantly impact existing and potential State policies. As such, both Smart Grid and the distribution system should receive much more emphasis and PIER resources. Moreover, because of the breadth and complexity of the subjects, the Energy Commission should consider creating both an "Electric Distribution System" chapter and a "Smart Grid" chapter or specific recommendations, rather than discussing them within the context of many other issues. This approach and focus will help to prioritize initiatives, allocate resources and inform

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policymakers. As the critical path to success, the Smart Grid should have appropriate visibility and the electric distribution system impacts should also have a greater presence.

In general, SCE agrees with the Energy Commission in its plan to support research and development for mitigating the negative impact of renewable intermittency.¹⁴ However, SCE proposes a more holistic approach to Smart Grid by preparing for deployment of advanced, intelligent distribution/transmission grid technologies and adoption of customer smart energy solutions (inclusive of energy efficiency and demand response). SCE recommends that the Energy Commission establish Public Interest Energy Research (PIER) funding for research, development, and demonstration of technologies that may mitigate or resolve intermittency and other system impacts (*e.g.*, continued research in advanced energy storage systems, wide area controls, Flexible Alternating Current Transmission Systems (FACTS) devices, voltage and VAR control, etc.). SCE also recommends utilizing the Distribution and Transmission Research Policy Advisory Committees (PAC) in the process of identifying and prioritizing the study areas. For additional, specific recommendations, please refer to “SCE Smart Grid Recommendations for Draft IEPR, filed October 12, 2009.

IV. Meeting the State's Energy Goals

A. Equal Treatment

1. Renewable Portfolio Standard Penalties

The Energy Commission's recommendation to support renewable resources is for the CPUC to commit to penalizing IOUs for non-compliance with RPS goals. However, no evidence has been presented that IOUs have been out of compliance. Indeed, every compliance filing submitted by the IOUs to the California Public Utilities Commission yields no showing of noncompliance in any year. California's RPS program

¹⁴ Draft Report, p.190.

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appropriately recognizes the flexibility needed for new renewable projects to be developed. As such, the California program includes accounting rules that allow for banking and earmarking of renewable delivery to demonstrate compliance. California's program also recognizes the challenges with needed transmission and without this transmission, most of the renewable projects would not be able to be interconnected in timelines consistent with California's goals. Since none of these facts are considered in the IEPR, this recommendation should be removed.

2. Resource Adequacy Accounting

All load-serving entities (LSEs) including POUs, IOUs, Electric Service Providers (ESPs), and Community Choice Aggregators (CCAs) must be held to the same set of resource adequacy rules and counting conventions to measure those achievements. SCE has long advocated that counting conventions (like RPS) should be standardized. We reiterate that here. Providing for equal rules, treatment, and enforcement of all procurement obligations is good public policy because it provides appropriate incentives to all LSEs in California to support the State's goals

3. Energy Efficiency

As noted in the Draft Report, California is a national leader in promoting energy efficiency.¹⁵ Through its highly successful EE programs SCE has been a major contributor to California's leadership in energy efficiency. SCE will continue to work with the staffs of the Energy Commission, CPUC, CARB, and other agencies to reach California's goal of achieving 100% of cost-effective energy efficiency through a comprehensive approach that includes utility programs (IOU and POU), codes and standards, Big Bold Energy Efficiency Strategies, legislative measures, and other delivery mechanisms.

¹⁵ *Id.*, p. 55.

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The Draft report effectively addresses a broad range of issues shaping the future of energy efficiency. While SCE concurs with most of the information presented, some areas warrant additional clarification documentation. For example, the Draft Report states: “Efficiency contributions from utility programs have remained about the same since the mid 1980s, and this pattern needs to change in the next few years, or opportunities to reverse the CO₂ trend will be lost.”¹⁶ While it is true that from the 1980s until approximately 2000 the first year savings of IOU efficiency programs were relatively stable, these savings levels reflect the approved funding levels during these program years. Beginning in 2004, there was a significant increase in EE funding and corresponding increases in savings levels. These increases continue in the IOUs’ 2010 – 2012 program applications which include funding of \$3.1 billion and savings of nearly 7 billion kWh.

The draft IEPR report discusses several challenges publicly owned utilities face in increasing their efficiency savings.¹⁷ Among the stated challenges are that the economic recession is affecting customers’ willingness to participate in efficiency programs, that their smaller customer bases can reach saturation rather quickly, and that small and larger POUs alike are facing staffing and resource constraints.

The draft IEPR also discusses the reasons for “small utilities” efficiency program successes, noting that “...[s]uccess appears to be in large part due to careful consideration of their customers’ needs when designing their efficiency programs. That knowledge, coupled with a commitment to personalized customer outreach and education efforts, has helped some utilities succeed despite challenges.”¹⁸ In fact, all efficiency program administrators whether investor-owned or publicly-owned, large, medium or small face

¹⁶ *Id.*

¹⁷ *Id.*, p. 66.

¹⁸ *Id.*, p. 67.

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challenges and successes for similar reasons. Successful efficiency programs, no matter who administers them, must overcome these and many more challenges. SCE has faced these same challenges and nevertheless achieved significant energy efficiency savings for its customers over the past several years by consistently exceeding the CPUC's EE goals.

The Draft Report recommends that Energy Commission staff work closely with CPUC staff in establishing feasible energy efficiency goals as part of the periodic Assembly Bill 2021 requirements, as well as other forums.¹⁹ SCE supports this recommendation, but notes that utilities should have access to the data, methodologies, and models used for EE goal development. The goals should be developed through a transparent process that provides opportunities for parties to review work-in-progress by Energy Commission and CPUC staff and to provide comments. The need for transparency is accentuated by the recommendation in the CPUC Energy Division's Straw Proposal in Rulemaking 08-02-007 that the IOUs develop the deliverability risk assessments for their EE forecasts included in the 2010 LTPP.²⁰ Unless the IOUs have access to the data and models used by the Energy Commission and CPUC to develop EE goals, it will be difficult for the IOUs to propose specific methodologies to use for their EE deliverability risk assessments.

B. Preferred Resources

1. Renewables

SCE is the nation's leading purchaser of renewable energy, having delivered 12.6 billion kWhs in 2008 alone. Last year 16% of the energy SCE delivered to customers came from renewable resources. To date, SCE has signed close to 50 contracts representing a maximum delivery of approximately 30 billion kWh. SCE believes that

¹⁹ *Id.*, p. 217.

²⁰ Energy Division's Straw Proposal on LTPP Planning Standards, filed in CPUC Rulemaking 08-02-007, July 2009, p. 92.

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while significant progress has been made, more needs to be done to meet the State's aggressive renewable energy goals.

In general, the IEPR comments on out-of-state projects are reasonable. However, there are a few statements that require clarification. According to the draft IEPR; "Firming and shaping may inadvertently allow non-eligible resources to be counted for RPS compliance."²¹ This statement, however, is simply untrue. The Western Renewable Generation Information System (WREGIS) was created to track and assure renewable generation is credited only once, and the Energy Commission intends to use WREGIS as the tracking system for RPS compliance in the future.²² All certificates that WREGIS creates are linked back to actual renewable generation produced by renewable generators. Whether the energy has been firmed or shaped, an RPS-obligated entity will still need to acquire a WREGIS certificate to count that energy toward its RPS compliance goals. The certificate will represent actual renewable generation and will not inadvertently allow any non-eligible resources to be counted toward RPS compliance in California.

Additionally, the draft report includes an analysis of RPS delivery and location requirements in other western states that completely divorces the "delivery" issue from the overall context of any State's complete RPS program.²³ The Draft Report draws the conclusion that some states' policies are more restrictive than California, in terms of geographic scope.²⁴ A more complete review of others states' renewables policies demonstrates that each of the states examined provides retail sellers with greater levels of flexibility for meeting RPS goals than does California. Accordingly, other states' RPS programs are more reasonable, balanced, and flexible than California's program, contrary to what is inferred by the Draft Report.

²¹ Draft Report, p.75.

²² Energy Commission RPS Eligibility Guidebook, Third Edition, CEC-300-2007-006-ED3-CMF, January 2008, p.48.

²³ Draft Report, pp.75-77.

²⁴ *Id.*, p. 75.

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First, Oregon allows retail electricity sellers wide geographic latitude with regard to the location of renewable resources. It allows bundled renewable products to come from facilities located anywhere within the United States portion of the Western Electricity Coordinating Council (i.e., from any one of 11 western states). For these resources, “the associated renewable electricity can be ‘swapped out’ for non-qualifying electricity . . . as it makes its way to its final destination. This allows for non-qualifying electricity to ‘shape’ or ‘firm’ wind power and other intermittent power resources.”²⁵

Second, an analysis of delivery requirements alone gives short shrift to the importance of the RPS rules that complement those requirements. By overlooking other states’ flexible compliance provisions, the table on page 76 does not acknowledge that other states give their retail electricity sellers greater opportunities to meet RPS goals during times when incremental renewable resources are unavailable. For example, although Oregon limits the amount of unbundled RECs that can be purchased for RPS compliance, Oregon has adopted an Alternative Compliance Payment structure. Under such a program, which allows a payment to be made “[i]n lieu of acquiring a REC to comply with a portion of the RPS,”²⁶ parties can take action to achieve compliance even if eligible renewable resources are not available. The availability of such a mechanism broadens retail sellers’ options for meeting RPS goals and balances the effect of any restrictions on out-of-state resources.

Similarly, the Draft Report does not acknowledge that Arizona, which is identified as a state that requires delivery to the utility system, provides RPS flexibility that is absent from both current and proposed California RPS rules. Under Arizona law, various extra credit multipliers are available to retail electricity sellers purchasing certain in-state renewables. For example, there are early installation, in-state power plant

²⁵ Oregon Department of Energy, *Summary of Oregon's Renewable Portfolio Standard*, p.3.

²⁶ *Id.*, p.4.

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installation, in-state manufacturing and installation content, and distributed solar electric generator and solar incentive program extra credit multipliers. The effect of these multipliers is to expand a retail seller's in-state options for achieving RPS goals without the addition of incremental renewable energy.²⁷ Additionally, Arizona allows resources such as commercial solar pool heaters, solar daylighting, solar heating, ventilation, and air conditioning, and other solar processes to count toward that state's RPS program. While these specific options may not make sense in the context of California's current policies, they demonstrate one state's willingness to provide market opportunities to balance out legislative restrictions.

Third, the Draft Report fails to identify provisions in other states that allow for additional flexibility beyond delivery requirements. For example, in Arizona the regulatory agency may waive compliance with any provision of the RPS law for good cause.²⁸ In New Mexico, "any interested person may file an application for exemption or a variance from the requirements of [the RPS] rule."²⁹ In Nevada, the commission shall exempt a party if there is not or will not be a sufficient supply of renewable electricity with just and reasonable terms and conditions.³⁰ Similarly, in Washington, an entity shall be considered in compliance with annual RPS targets if events beyond its reasonable control could not have been anticipated or ameliorated.³¹

For all of the aforementioned reasons, SCE disagrees with the Draft Report's assessment that "delivery" rules in nearby states are more stringent than California RPS rules. As noted herein, mere analysis of portions of individual code sections defining

²⁷ Such multiplier provisions are also available in Nevada. *See* Nev. Rev. Stats. § 704.7822.

²⁸ *See* Ariz. Admin. Code § R14-2-1816.

²⁹ *See* New Mex. Admin. Code § 17.9.572.19.

³⁰ *See* Nev. Rev. Stats. § 704.7821(4).

³¹ *See* Rev. Code Wash. § 19.285.040(i). Montana law contains similar provisions for short-term waiver from full compliance for lack of procurement or "other legitimate reasons." Mont. Code Ann. § 69-3-2004(10).

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deliverability does not provide a robust enough assessment of other states' RPS rules to allow for a fair judgment on California's delivery rules.

2. Feed-In Tariffs

SCE supports the development of a feed-in tariff program as a supplement to competitive solicitations for renewable power. Feed-in-tariffs can be effective for smaller renewable projects that can interconnect at the distribution level and do not require the completion of new transmission systems for delivery. However, SCE already offers programs that provide these smaller generators a more streamlined way to contract with SCE for renewable deliveries, thereby allowing them to contribute to California's aggressive RPS and environmental goals. For example, SCE currently administers the CREST (California Renewable Energy Small Tariff) tariff in response to AB 1969 (2006) and SB 380 (2008). These bills established a feed-in tariff for eligible renewable generating facilities up to 1.5 MW for a total of 500 MW statewide. The legislature recently expanded this program to projects up to 3 MW in size and a total statewide cap of 750 MW.³² Similar to a feed-in-tariff type program, SCE also voluntarily offers Renewable Standard Contracts for projects up to 20 MW at a fixed energy price and for up to 20 year contract terms. Finally, the CPUC is reviewing an expansion of feed-in tariffs including pricing approaches and structures in its rulemaking 08-08-009 proceeding.

With all of the various feed-in tariff programs, legislation and rulemakings in place, the Draft Report recommendation for the CPUC to immediately implement a technology-specific feed-in tariff for projects less than 20 MW is unfounded. As discussed above, SCE and the State have already begun the process to implement feed-in tariff programs. The CPUC should focus on expanding the current feed-in tariff program

³² See Senate Bill 32 (2009).

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to 3 MW as directed in SB 32 to gain experience and determine whether expanding to larger projects is warranted. Additionally, the Draft Report fails to suggest any size restrictions for the recommended program. This is an important design feature of a feed-in tariff program, which has been addressed in legislation, but is lacking from the Draft Report recommendations. Finally, it is unnecessary for a feed-in tariff to be technology-specific for two reasons. First, California's RPS program does not currently support one technology over another. Second, the CREST and SCE's renewable standard contracts already produce incentives for on-peak generation through time-of-delivery factors applied to the market price referent paid to renewable generators under this program.

Should the CPUC follow the Draft Report's recommendation, SCE submits that delivery and performance standards and equal distribution of costs be key components of any feed-in tariff design. Delivery and performance standards ensure consistency and stability in terms of planning and scheduling energy. Any costs associated with a feed-in tariff program should be distributed equally to all customers receiving the societal benefits of increased renewable power. Broad cost distribution is a feature of the German feed-in tariff program. There, costs were spread evenly to all customers, as opposed to simply to those customers located in areas characterized by a high potential for renewable resources.

3. Combined Heat & Power (CHP)

SCE appreciates the Energy Commission's recognition that "a new generation of highly efficient CHP facilities must be encouraged and supported."³³ CHP systems will only serve as an efficient emissions reduction measure if the average heat rate is below that of the next incremental unit (marginal) heat rate, and the thermal output is more efficient than a premium boiler. While SCE agrees with the Energy Commission's

³³ Draft Report, p. 93.

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assessment that "...efficiencies in the range of 75 to 80 percent can be expected to become standard and cost effective,"³⁴ premium standards must be developed and required for all new installations in order to achieve those expected results.

While SCE also agrees there is opportunity at wastewater treatment facilities and dairies, the Energy Commission should consider the air permitting barriers that currently prevent new system installations. In SCE's experience, the most significant problem encountered in using CHP at wastewater treatment facilities has been securing the necessary air permits. Similarly, dairies face both air permit and wastewater discharge permit challenges. Only once the moratorium on air permits is lifted, as discussed in the Priority Reserve Emission Reduction Credits section above, will there be opportunity for CHP installations at wastewater treatment facilities and dairies in the LA Basin.

Lastly, information about the technical potential for CHP should include the results of the final ICF Consulting report, which has yet to be published. It is SCE's understanding that a final report will be made available sometime in November.

4. Distributed Generation (DG) Expansion and Electric Transportation

Resource additions in the future may well be dominated by DG.³⁵ Although the effects of significant expansion of DG will have far reaching, long-term effects on distribution circuit planning and costs, there is presently no central agency to monitor, license, or analyze new DG. In addition, large scale deployment of DG will affect the large scale system generation and transmission planning studies. A better understanding of distribution system upgrades (*e.g.*, Smart Grid technologies) to support the expansion of DG is needed. SCE proposes that this be highlighted and more fully developed under a dedicated Distribution System section and that this section be expanded to also consider

³⁴ *Id.*, p. 93.

³⁵ *Id.*,

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the impact that growth of electric transportation load will have on the distribution network.

SCE concurs with the Electric Transportation description provided by the California Energy Commission in the 2009 Integrated Energy Policy Report. The Report captures the essence of the issues surrounding the introduction of plug-in electric vehicles. The market projections in the Report appear reasonable based on the information that is prevalent in the market and should convey a sense of urgency to government agencies that provide the State incentives and other recommendations from the State Alternative Fuels Plan that are so critical to achieving a smooth transition to an electric vehicle future.

The CPUC initiated an Alternate Fuel Vehicle rulemaking proceeding and received comments from utilities and other parties on October 5, 2009. The questions posed by the CPUC required a formal response to the very same issues that the Energy Commission raises in the IEPR. SCE concurs with the comments that describe the challenges facing the development of appropriate electric vehicle infrastructure necessitating policy, education, and funding to ensure an appropriate level of in-home, workplace and public charging. SCE recommends that the Energy Commission coordinate with the CPUC and other agencies to develop policies and a funding mechanism to support infrastructure development and other electric transportation policies in the IEPR and State Alternative Fuels Plan.

V. Conclusion

SCE appreciates the opportunity to review and comment on the Draft Report. While SCE commends Energy Commission Staff for completing this large undertaking, which encompasses an analysis of numerous complex issues, SCE believes that the

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Report should be further refined and improved, as set forth herein, before it is formally adopted by the Energy Commission.