

### Considerations for reviewing and providing comments on PA Business Plan Chapters

Please consider the following questions as you review the Business Plan chapters. The second page provides a template into which your feedback may be captured.

Prior to reviewing and commenting on the Business Plan drafts, a reviewer may wish to review the updated “NRDC Compilation of CPUC Business Plan Guidance and PA Consensus Outline” found on the CAEECC [Guidance webpage](#). That document merges a number of sources of guidance to PAs into a convenient outline format that the PAs have collectively agreed to leverage as they draft their documents. The following areas of review are intended to highlight those items that would be helpful in updating the business plans before the next draft. We do not expect stakeholders to answer all questions. Please choose those that are relevant to your interests. There is also an open row for additional comments that might not fit into the following format.

#### **1. Structural Review**

- a. Do the chapter layout and order of topics comply with NRDC compiled guidance document “outline”?
- b. Does the stylistic/visual presentation allow for easy navigation through the chapter (i.e., allowing easy comparison of the chapter against the NRDC compilation)?
- c. What examples from other PA chapters (whether same PA different sector or different PA all together) would you suggest be considered for this document

#### **2. Content-Related Review**

- a. Are all key pieces of information, tables, graphics, and supporting documents called for in the NRDC Compiled guidance document present in the Chapter?
- b. Are your previous comments and input addressed in the document?
- c. Is the overall sector plan coherent and clear?
- d. Are proposed activities (intervention strategies) sufficiently justified by the market assessment and other data analyses presented?
- e. Are substantive assertions and conclusions supported with clear reasoning and adequate citations?
- f. Are metrics relevant, representative, and associable with future IPs and PIPs?
- g. Is material presented at the right level of detail for a Business Plan?

On the next page, please find the comment template in which substantive comments can be recorded and then submitted to [facilitator@caeccc.org](mailto:facilitator@caeccc.org). If you have any questions about using this form or the review process, please contact the facilitator by phone or email. Caution: this form is set up as an 8.5 X 14 inch document and will not properly print on 8.5 X 11 paper.

Instructions: Please make comments specific, reference pages where appropriate, and be focused on Business Plan level strategies.

Commenter: Please Fill In This Part Of The Form					For PA Use	
Comment #	Sector	Page #	Comment	Rationale for Comment (include references to evaluations, studies, etc., if applicable)	Integrated (Y/N)	Rationale for Y/N
TURN-1	Statewide Program Administration	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>The October draft BPs do not present or discuss the PAs' proposed statewide program administration leads. TURN appreciates that the PAs provided two versions of their proposal through the CAEECC process, September 20, 2016, and October 19, 2016, and may present further variations in their Jan BP filings.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that the PAs jointly sponsor their proposed statewide program administration leads in one exhibit (or BP chapter) developed collaboratively.</li> </ul>	<ul style="list-style-type: none"> <li>D.16-08-011, p. 52, provides two options for presenting the BPs for each statewide program or subprogram: "This also means that the business plans shall be presented in one of two ways: 1) the lead program administrator could present a business plan for the statewide programs and/or subprograms in which it will be the lead administrator, on behalf of all of the administrators, or 2) all program administrators could present identical business plans developed collaboratively for each statewide program or subprogram.</li> <li>TURN believes Option 2 is preferable in that it more readily demonstrates collaboration and agreement among the PAs, and would facilitate regulatory and stakeholder review and analysis.</li> </ul>		
TURN-2	Statewide Program Administration	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>In revisiting the September proposed Statewide Lead Administrators, the PAs' October 19, 2016 CAEECC powerpoint presentation, slide 3 states: "In revisiting Statewide Lead Administrators, we took into consideration:                     <ul style="list-style-type: none"> <li>Overall portfolio approach with logical groupings to drive program strategy with an emphasis on:</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Providing this information and data is consistent with the Commission's basis for the directive regarding statewide programs in D. 16-08-019. pp. 50-51: "The purpose of our emphasis on this type of program was to take advantage of uniform opportunities across the state for</li> </ul>		

			<ul style="list-style-type: none"> <li>○ Increasing the effectiveness of energy efficiency</li> <li>○ Improving cost-effectiveness</li> <li>○ Balancing localized considerations</li> <li>○ Providing the most value for our customers</li> <li>• Marketplace factors such as regional, climate, and locational resource constraints which could have a bearing on the relationship with major customers, vendors, and suppliers.</li> <li>• Program Administrator capabilities and timing as this new structure and process may require shifting significant work across administrators with a short transition time.”</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• TURN recommends that the jointly sponsored exhibit suggested in TURN-1 provide the information and data considered by the PAs in their assessment of the 3 primary and 4 secondary bullet points identified in their CAEECC presentation, as reproduced above.</li> </ul>	<p>customers or market actors whose operations do not vary significantly geographically within California. In part, we wanted to <u>prioritize easy program access to customers, and in part, lower transaction costs for administrators and implementers.</u>” (emphasis added)</p>		
TURN-3	Statewide Program Administration	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• In response to ORA DR_Q01 (provided to TURN by PG&amp;E as TURN_001), in which ORA requested all analysis performed that demonstrates how the proposed structure provides administrative cost savings over the status quo, PG&amp;E stated:                  “It would be have been difficult to undertake a rigorous quantitative analysis to address ORA’s considerations in time for the September 21, 2016 CAEECC presentation due to the disparity between the program design of sub-programs within the statewide categories. These differences tend to result in <u>different units and methodologies for the measurement of costs and benefits and require additional work to normalize costs and benefits for consistent comparison.</u> For instance, PAs categorize programs differently (e.g., PG&amp;E’s Res HVAC program</li> </ul>	<ul style="list-style-type: none"> <li>• See TURN-2 rationale above.</li> </ul>		

			<p>includes up/midstream and downstream elements. SDG&amp;E has a stand-alone Res HVAC upstream), which makes it challenging to compare costs and performance. PG&amp;E recognizes that additional analysis is needed, which the Business Plan process should likely facilitate.” (emphasis added)</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• TURN appreciates the difficulty in normalizing the costs and benefits for statewide subprograms under the current configuration. For that reason, TURN recommends that the PAs focus on statewide program-level (not subprogram-level) costs and benefits in demonstrating how the proposed structure provides administrative and other cost savings over the status quo.</li> <li>• TURN recommends that the jointly sponsored exhibit in TURN-1 provide a rigorous quantitative analysis of the projected costs and energy savings similar to that requested by TURN in its November 9, 2016 Joint IOU Data Request, DR-2. That is: the current and projected statewide programs costs for each IOU and statewide aggregate totals. The comparison of current and proposed costs and energy savings on a statewide aggregate total basis should provide an initial, reasonable, high level demonstration of how the proposed structure provides administrative and other cost savings over the status quo.</li> </ul>			
TURN-4	Statewide Program Administration	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• The October draft BPs do not present or discuss whether the PAs conducted or intend to conduct a “bottom up review” of the existing statewide</li> </ul>	<ul style="list-style-type: none"> <li>• See D.16-08-019, p. 66: “In response to comments from TURN on the proposed decision, <u>we also clarify</u></li> </ul>		

			<p>program and subprogram <u>structures</u> to determine whether to propose new statewide program configurations in response to the requirements for statewide programs in D.16-08-019.</p> <ul style="list-style-type: none"> <li>• TURN notes that the term structure or structures is generally understood to refer to the arrangement or interrelation of all the parts of a whole, the way many parts are put together, the way something is organized.</li> <li>• TURN wishes to clarify our understanding that such analysis had not been conducted when the utility PAs responded to ORA’s data request on 9/20/2016. Specifically, SCE’s response to ORA-DR-2 states: “SCE has not performed, to date, an analysis related to the proposed structure and potential administrative cost savings.”</li> <li>• The most detailed analysis we are aware of to date is provided in SCE “Question 3- Master SW Scorecard”, but that analysis does not qualify as an analysis of program and subprogram <u>structures</u>. The Master SW Scorecard provides the scoring of statewide program and subprogram administrative skills by the categories of “innovation, potential, resources, experience, geographical advantage; 2015 costs and savings kWh, 6 years savings, 2015 expenditures.” To TURN, costs and savings per kWh are not on the face of it a reasonable basis or criteria for statewide administration designations. For instance, the 2015 Primary Lighting scorecard shows SCE with 347 GWh savings with a first year cost of \$0.096 kWh, relative to PG&amp;E’s 67 GWh savings and first year cost of \$0.0240, based on the IOUs’ monthly reports, gross reported. TURN’s understanding is that SCE’s 2015 lighting savings</li> </ul>	<p>that the program administrators are <u>not required to continue to operate their existing statewide programs and subprograms according to their current organization</u>. PG&amp;E supported this point in its reply comments on the proposed decision as well. Program administrators are encouraged to <u>conduct a bottom-up review of the program and subprogram <b>structures</b></u> in order to rationalize and optimize program activities into the most effective and cost-effective possible configurations.” (emphasis added)</p> <ul style="list-style-type: none"> <li>• CEC “AB 758 Existing Buildings EE Action Plan,” September 2015, CEC-400-2015-013-F, September 2015, Strategy 1.6 Efficiency of Plug-in Loads, 1.6.7 Purchase Agreements, advocating the use of “large organization purchasing power”.</li> </ul>		
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			<p>are dominated by CLFs and linear fluorescents, relative to PG&amp;E’s increased emphasis on LEDs.</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that the jointly sponsored exhibit suggested in TURN-1 include the results of that “bottom up review”, if conducted.</li> </ul>			
TURN-5	Statewide Program Administration	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>Some stakeholders in comments through the CAEECC process recommended that the IOUs consider assigning the same lead administrator to the upstream/midstream Plug Load and Appliances, Lighting, and HVAC program areas. The October 19, 2016 revision to the PAs’ proposed statewide lead administrators did not address or adopt this recommendation. The draft BPs also do not address this recommendation (because they do not address statewide lead administrators).</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that the jointly sponsored exhibit suggested in TURN-1 provide any analysis conducted in determining whether or not to propose this configuration in the final BPs.</li> </ul>	<ul style="list-style-type: none"> <li>See TURN-4 above.</li> </ul>		

<p>TURN-6</p>	<p>Statewide Program Administration</p>	<p>N/A</p>	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• The PG&amp;E, SCE, and SCG draft residential chapter BPs identify a handful of possible challenges, opportunities and benefits in modifying the current statewide UP- and MID-stream programs and subprograms, and in transitioning some downstream programs and measures to UP- and MID-stream. For example:</li> <li>• PG&amp;E p. 7: “Some residential sectors, such as plug load, would benefit from a transition from traditional downstream rebate programs to market transformation-centered programs that more effectively address plug load barriers. One such program that embodies this approach is the Retail Products Platform (RPP) midstream incentive market transformation program.”</li> <li>• PG&amp;E p. 14. “PG&amp;E will continue to develop its partnerships with upstream and midstream actors to encourage efficient plug-in equipment, offer financial solutions that enable the greater adoption of these technologies, and use outreach and education campaigns to promote more energy efficient behaviors.”</li> <li>• PG&amp;E p. 35. Intervention Strategy 7 – Upstream and Midstream Partnerships</li> </ul> <p>The CEESP identifies the need to improve Title 20 compliance by “working directly with manufacturers and distributors to improve appliance and equipment.” Through partnerships with manufacturers, distributors, retailers, and other market actors in the supply chain, this intervention strategy will enable PG&amp;E to increase the availability and stocking of LED lighting, EMTs, and plug load-related equipment. The Environmental Protection Agency (EPA) finds upstream and midstream incentives “can affect larger</p>	<ul style="list-style-type: none"> <li>• See TURN-4 above.</li> <li>• See also D.16-08-011, p. 62: “Some, but not all, downstream (at the customer level, or via contractors or installers) approaches are also appropriate for statewide administration.”</li> </ul>		
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			<p>markets than direct incentives targeted to individual customers, because upstream and midstream players are able to offer the desired products or service to all the customers they serve, not just those who learn about direct customer rebates.... However, due to the relatively small savings offered by each plug load device, PG&amp;E finds it can be difficult to keep administrative costs low and achieve market transformation through a downstream rebate program. In these cases, upstream and midstream approaches may be more effective at increasing customer adoption.... As part of AB 793 implementation, upstream and midstream partnerships will also be tapped to increase the availability and ultimately the cost of EMTs.”</p> <ul style="list-style-type: none"> <li>• SCE p. 3 “In order to achieve the residential sector's goals, the sector portfolio's composition will change dramatically...To do so, SCE will utilize these overarching strategies to enhance the current portfolio:</li> </ul> <p>Strategy 2: Streamline program offerings by increasing the utilization of up/mid-stream or self-service delivery channels and reducing the number of customer touch points.”</p> <ul style="list-style-type: none"> <li>• SCE p. 24 Strategy 2. “Simplify offerings by increasing the utilization of up/mid-stream or self-service delivery channels and reducing the number of customer touch points:</li> <li>• Statewide Administration of mid/upstream programs</li> <li>• Shift from downstream to alternative delivery channel paths. “</li> <li>• SCG p. 16: “Energy efficient gas equipment and appliance retailers are withdrawing support for point-of-sale rebate program offering due to growing hassle costs...The reasons for declining retailer participation are due to retailer’s internal</li> </ul>			
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			<p>costs and costs for implementing the POS program. In the early stages of the POS program, the measures and retailer stock keeping units (SKUs) related to eligible measures were small enough for the retailers to manage. As the measure mix grew, so did the number of transactions and this has become costly, especially the costs of monitor and manage have increased substantially. Bar codes not matching eligible SKUs, invoicing of non-qualifying measures, and inability to track manual discounts resulted in financial losses which have become significant over time. Many of the large retailers are not willing to participate for these reasons.</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that the jointly sponsored exhibit suggested in TURN-1 consolidate and harmonize these challenges and opportunities, and discuss potential benefits of modifying the current statewide UP- and MID-stream programs and subprograms, and in transitioning some downstream programs and measures to UP- and MID-stream programs. We see these issues as germane to the bottom-up review discussed in TURN-4.</li> </ul>			
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TURN-7	Residential		<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>In response to ORA DR_Q01 (provided to TURN by PG&amp;E as TURN_001), in which ORA requested all analysis performed that demonstrates how the proposed structure provides administrative cost savings over the status quo, PG&amp;E stated:                      “As a first step to determine statewide programs and leads PG&amp;E used the list of statewide programs that were defined in the Decision. In its comments on the proposed decision, PG&amp;E had urged the Commission to clarify that the list of statewide programs was illustrative, as PG&amp;E was aware that through the Business Plan process, the IOUs may re- envision existing programs to align with new/modified intervention strategies. TURN provided similar comments on the proposed decision, which PG&amp;E supported in its reply comments. <u>While the Decision clarified that PAs were not required to continue to operate the existing statewide programs under their current construct, Ordering Paragraph (OP) 8 included the full list of existing statewide programs.</u> (emphasis added).</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>The above underscored statement appears to imply that PG&amp;E is concerned about its discretion to significantly modify the programs and subprograms on a going forward basis. If this is the case, and if that concern is shared by other PAs, TURN recommends that the jointly sponsored exhibit we suggest in TURN-1 acknowledge this concern, while also presenting recommendations to change the existing construct to the extent supported by the</li> </ul>	<ul style="list-style-type: none"> <li>See TURN-4 above</li> </ul>		
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			<p>PAs' analysis, including but not limited to the "bottom up review" urged by the Commission in D.16-08-019. Parties could then opine on the meaning of D.16-08-019 in either supporting or opposing the PAs' proposal.</p>			
<p>TURN-8</p>	<p>Residential</p>	<p>PG&amp;E p. 22; SCE pp. 3 &amp; 34; SDG&amp;E p. 32.</p>	<p><u>Observations</u></p> <ul style="list-style-type: none"> <li>PG&amp;E's, SCE's, and SDG&amp;E's Residential Chapter BPs appear to place increasing reliance on the intervention strategy direct install (DI).</li> </ul> <p><u>PG&amp;E references</u></p> <p>p. 22. Intervention Strategy 1 –Data Analytics ...In the mid-term, PG&amp;E's targeting strategies will select customers who stand to benefit the most from specific programs and offer the most savings per program dollar. For example, targeting should increase the effectiveness of programs such as the <u>Middle Income Direct Install program (MIDI)</u>, which currently sends contractors into the field to assess the eligibility of residential homes for direct install measures, such as showerheads, aerators, heating system, and indoor lighting.</p> <p><u>SCE References</u></p> <p>p. 3. A challenge will be the need to deliver a more cost-</p>	<ul style="list-style-type: none"> <li>The use of existing conditions baseline (ECB) opens up new opportunities for the direct install intervention strategy. Using DI to promote early retirement of equipment and appliances to capture otherwise stranded savings may make sense, depending on the circumstances. However, there is also a risk of stranding achievable, above-code, savings over the life of the new measure if to-code measures are installed. Given the high cost of DI as a strategy, TURN recommends that the PAs take care to avoid stranding above-code savings, and also to avoid simply</li> </ul>		

			<p>effective approach for customers to perform retrofits by pursuing new approaches such as a meter based, pay-for-performance and residential <u>direct install</u> offerings</p> <p>p. 34, Table 8. MF Bldg Retrofits: Short Term Strategy / Tactic: “<u>Direct Install</u>: Provide no cost measures for MF residents to overcome upfront cost barriers for EE adoption to support all occupants and leverage customer touchpoint. <u>SDG&amp;E References</u></p> <p>p. 32: “Sample Tactics: Provide direct install at little cost for customers of moderate to higher income. Potential integration of DR in the midterm to ensure the solutions are holistic.”</p> <p><u>Recommended Action</u></p> <p>TURN recommends that the IOUs enhance their discussion of their plans to expand the use of DI as a strategy to promote early retirement by adding more explanation and support, given the relatively high cost of this intervention strategy. Related, we recommend that they (1) specify the types of measures that are appropriate to target through DI, and (2) clarify whether DI will be used to promote above-code and/or to-code measures and why.</p>	<p>paying higher incentives through ECB for savings that could be captured through the same number of upgrades at burnout through presumably much lower cost upstream/midstream interventions.</p>		
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TURN-9	Residential	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>PG&amp;E’s, SCE’s, and SDG&amp;E’s Residential Chapter BPs discuss the ongoing opportunities for lighting efficiency. It appears that PG&amp;E and SCE consider it reasonable to incent and otherwise promote CFLs in competition with LEDs. SDG&amp;E makes no mention of lighting specific technologies in its Residential BP chapter.</li> <li>TURN understands that as the IOUs proceed with the changes in statewide program administration and competitive bid out of programs and activities, the emphasis on lighting technologies may change. Depending on the timeline for the transition of statewide program administration and implementation, we anticipate that the IOUs may continue to have significant control over the incenting and promotion of lighting products over the next couple of years.</li> </ul> <p><u>PG&amp;E References</u></p> <p><u>P. 7.</u> Lighting accounts for a significant percentage of residential energy consumption, 17% according to recent estimates. With more than half of residential sockets in California still containing inefficient incandescent or halogen lamps, residential lighting still represents a major savings opportunity.</p> <p>p. 13. The 2015 Potential Study provides measure-level forecasts of savings and is used to define utility savings goals. Figure X highlights how PG&amp;E program savings compare to the Potential Study. For the most part, PG&amp;E residential programs have delivered fewer savings compared to energy efficiency potential, particularly in lighting. The remaining savings potential in lighting is further supported by a recent analysis which finds that residential lighting use must decline by 19% from 2015-</p>	<ul style="list-style-type: none"> <li>The CPUC first directed the IOUs to phase out of CFLs in D.09-09-047. That general guidance has been reiterated by the CPUC in subsequent decisions, including but not necessarily limited to D.12-05-015 and D.14-10-046.</li> <li><i>See, e.g.,</i> D.09-09-047 (addressing the 2012-2012 portfolios) Finding of Fact 52- 54; Conclusion of Law 33-36; Ordering Paragraph 22.</li> </ul>		
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		<p>2018 to meet AB 1109’s goal of reducing residential lighting energy usage by 50% from 2007-2018</p> <p>p. 75. “To mitigate the trend of increasing halogen purchases, PG&amp;E will continue to offer incentives for CFLs in hard-to-reach markets that target low income customers. PG&amp;E will also continue to offer rebates for high lumen output CFLs for product categories not affected by EISA or AB 1109 and for which no current LED products are manufactured. PG&amp;E also plans to encourage development of LED products in the non-EISA categories (less than 310 lumen and greater than 2600 lumen) through its relationships with manufacturers.”</p> <p><u>SCE References</u></p> <p>p. 19. “The lighting market in the residential sector has been rapidly changing over the past 10 years with the introduction of Compact Fluorescent Lamps (CFLs) and then Light Emitting Diodes (LEDs), through advancements in technologies as well as increases in codes and standards specifications. Primary considerations for characterizing the lighting market include technology type saturation or adoption of new and highly efficient technologies, as well as the price point as an indicator of the market's maturation as a part of a product's adopted life cycle. In many cases, CFLs and LEDs are competing technologies aimed at driving efficiency over more traditional lighting solutions. The Navigant report demonstrated a few significant lighting market characterizations as well as trends within the end-use itself, including:</p> <ol style="list-style-type: none"> <li>1. Within California, CFL shares have decreased, while halogen shares have increased.</li> <li>2. Consumers are also purchasing more LEDs in 2014 than 2012.</li> <li>3. Incandescent lamps continue to be available in California and in the U.S., and purchased by California customers,</li> </ol>			
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			<p>despite the new lighting requirements."</p> <p>An additional challenging characterization within the end-use is maintaining high-efficacy lamps on shelves in particular retail channels. For example, high-efficacy lamps comprised over 50% of lamps on shelves in Discount and Grocery stores in 2012, but only 16% in Discount and 29% in Grocery in 2014, demonstrating that delivery channels matter.</p> <p>LEDs have realized an increase in market share and have experienced significant declines, 16% per year, in cost supporting their "uptake" according to a Navigant study.<sup>33</sup> These characterizations and trends in the marketplace demonstrate that progress has been realized in the lighting sector but will face significant changes post-2017 with impending legislation, efficacy standards, and attribution of savings shifting to Codes &amp; Standards."</p> <p>AL 2017 EE Budget: SCE response to a TURN verbal clarification request regarding their AL 2017 EE Budget Filing, projected composition of lighting savings for LEDs and CFLs, SCE provided a table showing CFLs as 70% the projected residential lighting savings, (and 32% of nonresidential). Also, SCE projects \$30 M in incentives (\$19.2M res; \$10.6 M nonres).</p> <ul style="list-style-type: none"> <li>• TURN finds the apparent continued reliance on CFLs to be counter to market trends and market transformation efforts, and counter to the CPUC Strategic Plan and D.09-09-047 (see TURN rationale)</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• PG&amp;E and SCE should modify their primary lighting strategies to not incent or otherwise promote CFLs</li> </ul>			
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			<p>in lieu of LEDs (for product categories in which LEDs are commercially available). If applicable SDG&amp;E should also adjust accordingly. These changes should be explicitly called out in the BPs.</p>			
TURN-10	Residential	<p>PG&amp;E Appendix F Comprehensive HVAC pp. 78-83, SCE p. 19.</p>	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>TURN’s understanding is that the IOUs recently made changes to their residential HVAC replacement activities to limit higher efficiency incentives to the HU-EUC program.</li> <li>TURN understands that the summer daily peak has shifted from late afternoon to early evening, coinciding with residential space cooling loads.</li> <li>Per recent CEC communication, the residential energy demand end-use model shows HVAC replacement on burn out for 2014 to be around 268,000 units.</li> <li>There are a considerable number of low efficiency, older HVAC units in California. SCE cites at BP p. 19.under the section heading Trends Driving the Residential Sector: “The residential HVAC market has seen 16% increases in</li> </ul>	<ul style="list-style-type: none"> <li>Per the California Long Term EE Strategic Plan, Chapter 6. HVAC, September 2008: “One of the Big/Bold Strategies adopted by the Commission in October 2007 is to “reshape residential and small commercial HVAC to ensure optimal equipment performance.” This initiative targets a <u>50 percent improvement in efficiency in the HVAC sector by 2020</u>, and a 75 % improvement by 2030. The rapid growth in air conditioning in California’s commercial buildings and homes has made it one of the state’s largest energyconsuming</li> </ul>		

			<p>average efficiency in the market place, but 42% of homes with central systems still have a home with an SEER rating less than 12. Nearly 50% of homes with Central A/C have a unit more than nine years old and 28% more than 3 years old. Average Central A/C units are getting older, increasing from 11 years to 15 years old between 2005 to 2012 while the average space cooling systems are newer than in previous studies.</p> <ul style="list-style-type: none"> <li>• PG&amp;E’s Appendix F Comprehensive HVAC, p. 78, lists the specific barriers that must be addressed. The first among them is: “Lack of enforcement has spawned a largely unregulated market,” As PG&amp;E explains :             <ul style="list-style-type: none"> <li>○ A significant percentage of HVAC contractors in California operate without a license.</li> <li>○ A very small fraction of new HVAC installations are permitted, as is required by law.</li> <li>○ A link between permitting and code compliance is tenuous and even permitted jobs often fall well short of code compliance.</li> </ul> </li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• TURN recommends that PG&amp;E, SCE, and SDG&amp;E propose in their BPs strategies to increase the penetration of above-code HVAC units in the residential ROB market. Such descriptions should describe the strategies to be pursued through statewide program(s), as well as any anticipated non-statewide strategies, and provide associated performance metrics.</li> <li>• TURN recommends that SCE and SDG&amp;E explain their strategies to target the early retirement of inefficient and older HVAC units in their BPs, and indicate whether they intend to promote to-code or above-code replacements through early</li> </ul>	<p>end uses and the single largest contributor to peak demand—and a leading opportunity to improve energy efficiency and reduce peak power demand. In 1976, 25 percent of new California homes had central air conditioning. Today, it is 95 percent: new home size has increased by more than 50 percent and new homes are concentrated in hot inland communities. These increases have resulted in a greater than seven-fold increase in the electricity capacity to meet this load. By 2006, peak demand for residential air conditioning units was 14,316 MW. When small commercial air conditioning is added to the residential share, air conditioning loads cause over 30 percent of California’s total peak power demand in the summer—with an enormous and costly impact on the need for generation, transmission, and distribution resources and a concurrent lowering of utility load factors.”</p>		
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			<p>retirement interventions. .</p> <p>TURN recommends that PG&amp;E, SCE, and SDG&amp;E explain how they expect to support the enforcement of HVAC-related code requirements, including but not limited to, incorporating the permit-related requirements of SB 1414 (Wolk), and participating in the development of the CEC’s plan and associated regulations to increase code compliance in the installation of central HVAC and heat pumps, per SB 1414.</p>			
TURN-11	Residential	<p>PG&amp;E p. 41 and Appendix F Comprehensive HVAC pp. 78-83, SCE p. 19 &amp; 50.</p>	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• PG&amp;E’s Appendix F Comprehensive HVAC, pp. 78-83, recommends a strategy to renovate residential HVAC programs going forward that would target customers through AMI data, and through participating contractors, and depending on the individual situation, recommend one of the following: <ul style="list-style-type: none"> <li>i. Service packages and maintenance contracts that include the option for duct sealing, duct insulation, duct repair and building shell measures, in addition to the standard unit maintenance measures currently offered.</li> <li>ii. Quality installation of a new energy efficient unit, including options for split system variable refrigerant charge technologies. For all new unit installations, contractors should right-size the system. Oversized systems are common and result in a high degree of energy waste.</li> <li>iii. Installation of a Smart Thermostat or other energy management system as well as customer education on scheduling, connectivity and usage.</li> <li>iv. A financing package for the customer to ensure that the most extensive retrofit possible is completed with the least financial burden possible and minimized incentive spend.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• See TURN-10</li> </ul>		

			<p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• TURN assumes PG&amp;E’s proposal summarized above is essentially an early retirement intervention strategy. TURN recommends that PG&amp;E explain in its BP whether it intends to promote to-code or above-code replacements through these early retirement interventions.</li> <li>• TURN recommends that SCE and SDG&amp;E consider adding to their BPs PG&amp;E’s proposed strategy to renovate residential HVAC programs going forward that would target customers through AMI data, and through participating contractors, recommend a suite of HVAC efficiency options or packages.</li> </ul> <p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• SCE cites at BP p. 19.under the section heading Trends Driving the Residential Sector: “In summary, new unit sales are highly efficient units; however, permitted, quality installation are still low and exisitng efficiency potential in the market residences in older units and ensuring their proper installation and maintainence.”</li> <li>• SCE’s apparent solution is contractor education and training. See BP p. 50 under the section heading Key Take-Away for Homeowners, Renters, and Consumers,subsection b. HVAC, Home Cooling: “The aggressive Title-24 ratchet for HVAC systems in California has left little room for programmatic energy savings, but the market transformation goals are not yet reached. Codes and standards are positively influencing the sale of high-efficiency units but permitting remains a</li> </ul>			
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			<p>large challenge. More can be done to support this market, <u>an indirect impact program approach using education and training as intervention is a good option.</u> (emphasis added).”</p> <ul style="list-style-type: none"> <li>• Similarly, PG&amp;E proposes increased contractor training and support., p. 41:                  “In addition, WE&amp;T will support <i>Intervention Strategy 9: Midstream Training</i>. WE&amp;T will provide training and support for contractors to right-size HVAC installations and complete proper permits as required by the recent approval of SB 1414. WE&amp;T will also use existing partnerships with organizations such as the Sheet Metal and Air-Conditioning Contractors National Association (SMACNA) and the California Building Industry Association (CBIA) to develop the appropriate training programs and promote their availability throughout their memberships.” <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>• TURN recommends that PG&amp;E, SCE, and SDG&amp;E provide additional detail in their BPs regarding their plans to provide training and support for contractors to prevent oversizing in HVAC installations and promote the completion of permits, and indicate if they are considering providing incentives to contractors, at least initially, to promote and reward compliance, only education and training.</li> </ul> </li></ul>			
TURN-12	Residential (Plug Load and Appliances)	PG&E p. 17; SCE p. 19; SDG&E p. 21.	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• PG&amp;E, SCE, &amp; SDG&amp;E discuss increasing plug load and appliances.</li> <li>• The electric IOUs have cancelled the refrigerator recycling program that focused on the primary</li> </ul>	<ul style="list-style-type: none"> <li>• The initial focus of the now decades-old core EE refrigerator recycling program was on the removal of second</li> </ul>		

			<p>unit on the basis that the market is transformed. TURN understands the historical impetus for the refrigerator recycling program to have been the removal of second refrigerators, rather than primary units, which had an 18% statewide saturation rate over a decade ago. More recent saturation data indicates an increase in the rate of second refrigerators to 25%.</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>To the extent that PG&amp;E, SCE, and/or SDG&amp;E intend to target second refrigerators – not just primary units -- in residential dwelling units for early retirement and/or replace-on-burnout as part of promoting appliance EE, TURN recommends that the BPs make this objective explicit.</li> </ul>	<p>refrigerators, which in the early 2000's had a saturation of about 18%. Over the years, the refrigerator recycling program has shifted its focus to recycling primary units in instances of new purchases. Recent 2010-2012 EM&amp;V results from the Appliance Recycling Program Impact Evaluation show that from 2005 to 2012, the saturation of second refrigerators has increased from 19 to 25%. See <a href="http://www.energydataweb">www.energydataweb</a>. June 2014 Quarterly Workshop. PPT Presentation: WO21: 2012 California Lighting and Appliance Saturation Study (CLASS) Public Webinar, Slide 21.</p> <ul style="list-style-type: none"> <li>The UECs for second refrigerators for single-family and mobile homes is 55% and 75% greater, than the UECs for first units: 2<sup>nd</sup>: 1,286 kWh and 1,123 kWh, respectively; 1<sup>st</sup>: 827 kWh for single-family homes to 643 kWh, respectively. See 2009 California Residential Appliance Saturation Study, Volume 2: Results, October 2010, CEC- 200-2010-00 <a href="http://www.energy.ca.gov/appliances/ass/">http://www.energy.ca.gov/appliances/ass/</a></li> </ul>		
TURN-13	Residential	PG&E p. 19, Table 3, Key Barrier #4 & p. 30.	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>PG&amp;E and SCE discuss the Home Upgrade-Energy Upgrade Program lack of cost-effectiveness. TURN appreciates that the HU-EUC program</li> </ul>	<ul style="list-style-type: none"> <li>D.14-10-046, p. 100</li> </ul>		

		<p>Intervention Strategy 5 – New Program Models ; SCE p. 11.</p>	<p>struggles to be even marginally cost-effective. However, TURN believes that some portion of the challenge is associated with current cost-effectiveness methods, which create distortions to the extent that non-efficiency-related costs of EE measures are captured by the incremental measure cost.</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that PG&amp;E, SCE, &amp; SDG&amp;E consider proposing changes to the cost-effectiveness methodology applied to the Home Upgrade Program to remove “project-related, non-efficiency related costs” from total project costs, as invited by the Commission in D.14-10-046 at p. 100. Such a proposal could be referenced in the BP and presented in the accompanying application.</li> <li>Because there has been some confusion over this matter when TURN has raised it in CAEECC meetings, we clarify that the proposal in D14-10-046 was to remove non-energy related costs included in incremental measure costs of the EE measure (such as costs of aesthetics in a “boutique” higher efficiency product) . It did not seek to include non-energy related benefits.</li> </ul>			
<p>TURN-14</p>	<p>Residential</p>	<p>PG&amp;E p. 51</p>	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>PG&amp;E proposes metrics based on savings per GWh, MW, MM therms.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that savings metrics also address net lifecycle savings to comport with the</li> </ul>	<ul style="list-style-type: none"> <li>D.16-08-019, p. 20</li> </ul>		

			Commission's interest in cumulative savings to support the State's EE goals.			
TURN-15	Residential	PG&E pp. 27, 28, 32, 35, 38, 59, 93 & 94; SCE: pp. 3, 4, 25, 28, 30, 32, 42, 47 SDG&E: pp. 10, 13, 16, 19, 21, 22, 25, 26, 27, 36 SCG: 5, 11, 14, 18, 19, 22, 25, 28, 29, 31, 41, 44, 45	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>PG&amp;E's, SCE's, SDG&amp;E's, and SCG's Residential Chapter BPs appear to place increasing reliance on behavior programs and activities.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that PG&amp;E, SCE, SDG&amp;E, and SCG include in their BPs a discussion of the changing role of behavior programs and activities, including high level changes in budgets and savings, and reasoning behind this evolution.</li> </ul>	<ul style="list-style-type: none"> <li>See for example TURN Response to PG&amp;E AL 3753-G/4901-E (2017 EE Annual Budget Advice Letter), September 21, 2016, p. 4. "PG&amp;E forecasts that 12% of total portfolio gross GWh, 12% of total portfolio gross MW, and 13% of total portfolio gross therm savings will come the Residential Energy Advisor Program in 2017. The Residential Energy Advisor program has an EUL of 1.0 and a TREC of 0.89, meaning these are expected to be very short lived savings that don't help the portfolio cost-effectiveness challenge. Will PG&amp;E need to purchase the same savings again in 2018, when avoided costs are lower? TURN does not question the reasonableness of including EA in PG&amp;E's portfolio, but only the extent to which PG&amp;E is proposing to rely on it to achieve its energy savings goals cost-effectively. This is a risky strategy." TURN understands that the EA program includes some amount of non-resource behavior related costs that are included in the cost-effectiveness calculation and that EM&amp;V efforts are underway to separate out EA-resource and other</li> </ul>		

				behavior-non-resource costs.		
TURN-16	Residential	N/A	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>The January BPs are to include projected portfolio, and in some cases sector, cost-effectiveness, with explanation as to how the cost effectiveness was derived and discussion of key parameters.</li> <li>TURN expects that the basis of projected portfolio and customer sector costs and benefits will be derived from the assumptions regarding the mix of efficiency measures and activities.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that PG&amp;E, SCE, SDG&amp;E, and SCG provide in their BPs a high-level roadmap from their current 2016 portfolios, through their 2017 portfolios (as assumed in their 2017 Budget Advice Letter), to their portfolios as envisioned in your Business Plan through 2020, which shows the evolution in the top 10 measure groupings expected to drive portfolio savings, with that ranking determined by percentage of portfolio GWh, MW, and/or therm savings provided by each measure grouping (gross and net). "Measure grouping" refers to groups of measures such as</li> </ul>	<ul style="list-style-type: none"> <li>See "BP Staff Review Checklist" <a href="http://www.caecc.org/business-plan-guidance">http://www.caecc.org/business-plan-guidance</a>. Under Portfolio Summary, Bullet 4 Proposed Portfolio Budget, Projected savings (resource programs) and Cost effectiveness, Sub bullet 1 Howbudgets/savings/CE are derived at portfolio, sector and in some cases program level, and Bullet 6 Discussion of Cost Effectiveness Parameters (addressed for portfolio, Sector and special programs).</li> </ul>		

			<p>CLFs, linear fluorescents, LEDs, residential HVAC units, small commercial HVAC units, etc.</p> <ul style="list-style-type: none"> <li>• TURN recommends separate roadmaps for gross and net GWh, MW, and therm savings, as applicable to the portfolios, using the same assumptions regarding net savings used in the 2017 Budget Advice Letter (or indicate otherwise if other assumptions are for post-2017 projections of net savings).</li> <li>• For each measure category, it would be very helpful to distinguish between the residential and non-residential customer sectors.</li> <li>• If not already addressed in showing the evolution in the top 10 measure groupings expected to drive portfolio savings, TURN recommends that the utilities indicate whether they expect the percentage of portfolio savings associated with the residential sector to materially change from the 2016 status quo through 2020, as envisioned by their Business Plans.</li> </ul>			
TURN-17	Residential	SCE p. 17; see also SCG p. 335	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>• SCE mentions the decreasing cost in rooftop solar as creating “an alternative DER to reducing GHG”. See p. 17. 2. Market Trends, b. Cost Reduction Associated with Renewable Energy: “In addition to financing, the residential market space has seen a continued decrease in the cost in the renewable energy magnifying an alternative DER to reducing GHG. For example, the average solar system cost, according to the Solar Energy Industry Association,<sup>26</sup> has decreased from \$8.00 per watt in 2008 to less than \$4.00 in 2014.”</li> <li>• TURN notes that the decreasing PV costs, coupled with PV-dominated PACE financing, may put</li> </ul>			

			<p>efficiency, particularly HVAC, at an extreme competitive disadvantage.</p> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that PG&amp;E, SCE, and SDG&amp;E describe in their BPs their plans, if any, to promote the incorporation of cost-effective EE, particularly HVAC, by residential customers who are considering rooftop solar so as to reduce solar system sizing and associated costs, and promote dual-fuel (where appropriate) EE opportunities.</li> </ul>			
TURN-18	Residential	<p>SCE, Supplemental Information: Statewide Program Administration Procurement Strategy Market Transformation High Level Strategies, p. 11.</p>	<p><b>Observations</b></p> <ul style="list-style-type: none"> <li>SCE discusses plans to hold an efficiency solicitation for innovation to capture new innovative and best-practice DSM opportunities through the latest program design and implementation. (See SCE BP volume Supplemental Information: Statewide Program Administration Procurement Strategy Market Transformation High Level Strategies, p.11).</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>TURN recommends that SCE explain in its BP whether the RFP process will be designed to solicit bids that integrate EE and other distributed energy resources (DER), such as demand response, at geographically targeted customer sites to address distribution planning issues and reduce infrastructure costs.</li> <li>If PG&amp;E and SDG&amp;E are similarly considering possible efficiency solicitations in their BPs, TURN recommends that they also explain whether the RFP process will be designed to solicit bids that</li> </ul>			

			integrate EE and other distributed energy resources (DER), at geographically targeted customer sites.			
TURN-19	<p><u>GENERAL COMMENT</u></p> <p><b>Observations</b></p> <ul style="list-style-type: none"> <li>Customer sector goals and program savings, budgets, and cost-effectiveness are forward looking. The BPs are intended to be integral to ramping up energy efficiency in California. Providing some high-level quantitative context to the current portfolios and programs would be very helpful in demonstrating the relationship of the future under the BP vision to the present and past.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>We recommend that all data on projected customer sector goals and program savings, budgets, and cost-effectiveness be given some context relative to ongoing customer sector activities and accomplishments. There needs to be some demonstration as to how the BP will advance savings and improve cost-effectiveness (or at least prevent an erosion in cost-effectiveness).</li> </ul>					
TURN-20	<p><u>GENERAL COMMENT</u></p> <p><b>Observations</b></p> <ul style="list-style-type: none"> <li>It is not clear whether projected savings are gross annual. In D.16-08-019 (at p. 21), the Commission directed a return to net goals and the development of cumulative goals for application in 2018 to support the State’s SB 350 efforts.</li> </ul> <p><b>Recommended Action</b></p> <ul style="list-style-type: none"> <li>If not already included, we recommend that the IOUs provide projected customer sector goals and program savings in gross and net annual and net cumulative form. We suggest that these projections be supported with information in an appendix explaining the basis for net and the calculation of cumulative (e.g., based on estimated average EUL by customer sector and key programs, with the basis – such as end use, measures -- for the estimated average EUL(s) specified).</li> </ul>					

Commenter—please replace **red text** with the information you wish to provide. Please submit completed comments to **facilitator@caeccc.org**