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SMUD Comments on Setting Greenhouse Gas Targets for Integrated Resource Plans

Thank you for the opportunity to submit comments concerning setting electric sector and individual utility greenhouse gas (GHG) targets for use in utility integrated resource plans (IRPs). Senate Bill (SB) 350 required certain utilities (IOUs and larger POUs) to adopt an integrated resource plan (IRP) that ensures these utilities meet GHG “targets” established by CARB that are consistent with achieving a 40% economy-wide reduction in GHG below 1990 levels by 2030.

Electric Sector GHG Planning Target Ranges

SMUD supports the CARB development of a range of electric sector GHG targets for the planning purpose of IRPs, as described in Board Resolution 17-46 and covered in the March 2 workshop. SMUD appreciates CARB’s recognition that there are substantial sources of uncertainty in electric supply and demand, including sources that act to decrease electric sector GHG such as energy efficiency programs and sources that act to increase electric sector GHG, such as additional load for electric vehicles (noting that transportation sector emissions are dramatically decreased with this source). SMUD agrees with the statement on page 8 of the March 2 CARB presentation: “*An acceptable electricity sector GHG emissions planning target range can accommodate an uncertain future for the sector and individual entities.*”

SMUD understands that CARB desires a range for the sector that does not need to be modified frequently as the uncertainties and circumstances in the electric sector change over time and affect the expected amount of GHG emissions from the sector. For this to occur, a broad enough range must be established so that the endpoints encompass most planning scenarios of electric sector GHG emissions, accounting for uncertainties amplified by the long planning horizon.

The range of modeled electric sector GHG emissions in the 2017 Scoping Plan Update varies from a low of 30 MMT of CO₂e to 53 million metric tons of CO₂e. In percentage terms, this is a reduction in sector emissions of between 51% and 72% from 1990 levels, well beyond the 40%-below-1990 overall goal for the State established by SB 32, and well beyond the expected reductions from any other sector. The 53 MMT “top” of the range assumes achievement of a 50% RPS, doubling of energy efficiency, and other existing state policies aimed at reducing GHG in the sector. The 30 MMT “bottom” of the range is derived from modeling where utilities procure renewable power well beyond the 50% RPS, and reduce generation from fossil sources commensurately.

SMUD encourages CARB staff to continue to ensure that the electric sector planning targets have minimal impact on the broader Cap and Trade marketplace. Establishing a target range rather than a specific target (and similar ranges rather than specific single numbers for the apportioned utility level targets) signals that the electric sector is still a full participant in the Cap and Trade market, with the ability to both procure and sell compliance instruments with other sectors. Additionally, CARB should continue to make clear that the SB 350 IRP planning target ranges are just that – planning targets – rather than binding levels of emissions for the electric sector or for the individual utilities that are required to develop IRPs, to avoid disrupting the efficient operation of the economy-wide Cap and Trade program.

CARB Sector Target Questions

Slide 40 from the March 2nd workshop requests stakeholder input on four questions. SMUD’s responses follow.

1. Does this range reflect the appropriate breadth for planning purposes given the factors affecting electricity demand and supply?

SMUD believes that the range developed by CARB is not broad enough. The range captures the uncertainties in electric supply and demand that act to reduce sector GHG emissions, such as additional renewable procurement. However, the range does not capture well the uncertainties that act to increase sector emissions – robust load growth, less than expected performance of efficiency programs and renewable procurement, and higher than expected electrification.

Many utilities, both POUs and IOUs, have adopted specific renewable procurement goals that go beyond the required RPS level or have adopted specific, long-run GHG goals for 2030 or 2050, signaling more GHG reductions than implied by the SB 350 mandated RPS levels and IRP exercise. CARB and the collaborating energy agencies should understand that utilities will plan to meet the specific goals that they have

adopted, even if these imply GHG emissions at the lower end of the official range, or even below that. SMUD believes that there is little danger of submitted IRPs all “clustering” at the high end of any planning target range.

With respect to how the varied individual EDU IRPs compare to the sector range after submittal, CARB and collaborating energy agencies can analyze the results of the first IRP submittals pursuant to SB 350, and determine based on that analysis whether more specific or alternative target setting protocols are necessary for future IRPs.

2. How and on what basis might a more fine-tuned range be developed?

SMUD believes that CARB should develop a new higher end to the range, to reflect better those uncertainties that act to increase sector GHG. CARB could use the uncertainty analysis from the 2017 Scoping Plan Update that reflects uncertainty of emission reductions from efficiency programs, the RPS, and other electric sector programs. As the Draft 2017 Climate Change Scoping Plan acknowledged, the prescriptive measures have the “... potential to underperform ...” leading to a range of plus or minus 50 MMT compared to the modeled total. CARB could derive a higher range endpoint for the electric sector by reflecting this increased GHG emissions assuming that the electric sector prescriptive measures underperform, and by assuming higher than modeled load growth. Alternatively, CARB could include a high range endpoint that assumes the electric sector achieves GHG reductions equal to the overall State 40% goal, yielding about 65 MMT for the sector.

3. What factors should be considered in picking a point estimate within the range for implementation purposes?

SMUD does not believe that choosing a point estimate for implementation purposes is necessary. IRP-obligated entities can be provided a planning target range for their IRPs, and can then plan to develop IRPs that yield an estimated GHG emission level for the utility that is within or even below the range, without being constrained to plan for a particular point estimate. Each procurement scenario modeled will result in GHG level (perhaps with uncertainty sensitivities up and down). As long as at least one scenario is within or below the target range for the utility, no specific point estimate is needed.

4. What other assumptions about future electricity demand and supply should be considered?

SMUD believes that the IRP target setting process should fully consider the interaction between the electric sector and the transportation and building sectors as electrification of those sectors proceeds. SB 350 does not require those sectors to develop IRPs, nor to set GHG targets. The electric sector, however, is actively engaging in policies and programs that will decrease GHG in those sectors, in some cases substantially, while tending to increase GHG emissions in the electric sector. Some method of accounting for the entire GHG “impact” of the measures being pursued in the electric sector should be included in the GHG target setting process.

SMUD also suggests that electric sector GHG emissions associated with wholesale sales should not be included in the GHG planning targets on the seller’s side. These emissions are the responsibility of the entity that procures the power, whether through a specified or unspecified transaction. CARB’s Mandatory Reporting data cannot then be used as a “metric” for tracking progress toward planning GHG targets without adjusting for emissions that are not associated with the utility’s retail load.

Finally, focusing on procurement for retail customers should mean that the IRP GHG planning target ranges reflect planned procurement from a contractual perspective, not the perspective of the GHG signature of electricity delivered to customers on an hourly or even annual basis. In the interconnected electricity grid real world, entities procure electricity from a variety of zero to high GHG sources, and while customer dollars are spent on that procurement, actual green or brown electrons do not flow from source to customer. Physically, in an alternating current system, electrons vibrate back and forth but do not “flow” along power lines. The electromagnetic field produced by power generation travels nearly instantaneously through the grid, without following a specific physical path. So source electricity goes into the grid but is not “pipelined” directly to a customer meter.¹ Delivered electricity comes from the grid as a whole, not from any specific source. Contractual procurement is the link between source and end user.

¹ Even in the natural gas pipeline system, where molecules of natural gas do flow from sources to end uses, the designation of a source and sink for the gas is contractual, not physical. Gas flows into a pipeline from a source, is mixed with molecules of gas from other sources, and this mixture flows through the pipeline to a variety of end users. The designation of a particular source of gas for a specific end-user through a pipeline is entirely contractual.

For example, CARB's allowance allocation methodology recognized that some renewable procurement, while reducing GHG overall in the system, would not necessarily yield GHG reductions for the specific utilities that procured that renewable energy. CARB's Cap and Trade regulations do as well, as evidenced by the "RPS Adjustment", whereby utilities that procure firmed and shaped renewables (either Product Content Category 2 or Product Content Category 0) can reduce their Cap and Trade obligation to reflect the zero-GHG nature of the underlying procurement, even as substitute power is delivered to the State.

Apportionment of Sector Targets to Individual Electric Distribution Utilities

SMUD believes that CARB's methodology for EDU allocations of allowances in the Cap and Trade program does provide a "... transparent and "consistent" methodology as the basis for apportioning ..." the sector 2030 planning target ranges down to individual EDUs. That methodology is based on an estimate of individual utility retail loads and resources, for the most part, so should, with modifications as proposed, yield a reasonable apportionment, particularly with a broad target range.

The loads and resources of any individual EDU are likely to change more from a fixed historical estimate than the aggregated sector loads and resources. Hence, an individual EDU planning target range for GHG emissions, based on a percentage of the aggregate, may need modification if significant changes have developed for that EDU from the historical information used to develop allocations. SMUD supports the CARB staff proposal that individual EDU ranges can be changed due to material circumstances without triggering a change in the sector planning ranges. Realistic target ranges will lessen the need for such modifications.

SMUD also suggests that CARB and the collaborating energy agencies make two things clear as the GHG target setting process is completed:

- 1) GHG planning target ranges for individual EDUs are not binding requirements like the mandatory RPS regulations, but rather are guideposts for utility planning, encompassing and reflecting the renewable procurement, efficiency programs and other requirements in the State's complementary policies.
- 2) The IRP target ranges, based on CARB's Cap and Trade allocation methodology for EDU allowances, in no way impacts or is intended to impact those EDU allocations. For example, if the low end of the IRP target range represents an emission level below the 2030 allocation of allowances for an EDU, this does not signify that those allocations are "too high" or otherwise not calculated appropriately.

SMUD believes that CARB's proposed five-year cycle for updating the electric sector GHG planning target is reasonable. This cycle matches the expected IRP cycle for POU's.

CARB Apportionment Questions

Slide 40 from the March 2nd workshop requests stakeholder input on two questions with respect to the apportionment of the sector planning target ranges. SMUD's responses follow.

1. Is there a need to apportion the GHG planning target to CEC and to CPUC as well as to LSEs and POU's?

SMUD does not believe that an apportionment between the CEC (16 POU's aggregated) and the CPUC (IOU's, other LSE's) jurisdictions is necessary. The sector planning target ranges and the proposed apportionment methodology is sufficient to establish the individual EDU planning target ranges, without the higher level targets agency target ranges.

2. How should the electricity sector GHG target be evaluated with respect to the entities not subject to SB 350 IRP requirements (i.e., 1.7% of sector emissions)?

SMUD does not believe that the electricity sector GHG target needs to be evaluated or modified to reflect the entities not subject to SB 350 IRP requirements. A modification of the sector target to reflect these unobligated entities is really false precision when talking about 2030 and all the uncertainties in the electric sector. These entities are subject to the same RPS, efficiency program, and other State policies, so will likely reduce emissions similarly to the obligated utilities.

/s/

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cc: Corporate Files