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Re: Earthjustice, Union of Concerned Scientists, California Environmental Justice Alliance, Sierra Club, and Environmental Defense Fund Support for PG&E Advice Letter 5322-E

In Resolution E-4909, the California Public Utilities Commission ("Commission" or "CPUC") authorized Pacific Gas & Electric Company ("PG&E") to solicit energy storage and preferred resources to meet local area deficiencies following a retirement announcement and subsequent reliability must-run ("RMR") designation for three Calpine Corporation ("Calpine") gas-fired power plants: Metcalf (580 MW, South Bay-Moss Landing sub-area), Yuba City (47.6 MW, Pease sub-area), and Feather River (47.6 MW, Bogue sub-area). Environmental and environmental justice stakeholders strongly supported Resolution E-4909, stating:

> Resolution E-4909 will result in improved air quality, reduced greenhouse gas pollution, and significant ratepayer savings through targeted preferred resource

> procurement that will displace the need for costly contracts with fossil-fueled resources. More broadly, in using the RMR contracts as an opportunity to pivot from continued reliance on fossil fuels, Resolution E-4909 is promising coda to a year where the devastating impacts of climate change could not be more evident. Resolution E-4909 is a strong reflection of California's climate leadership and the rapid progress California has achieved in meeting reliability needs with preferred resources.[1]

Pursuant to Resolution E-4909, PG&E now seeks approval through Advice Letter ("AL") 5322-E of four energy storage projects totaling 567.5 MW of capacity. The proposed projects mitigate the risk of costly capacity contracts with existing gas-fired generation, provide needed additional flexible capacity to the system, and will result in significant air quality and climate benefits. Resolution E-4909 and AL 5322-E are a model for how ratepayer investments can be redirected, from maintaining fossil-fueled generation to deploying new clean energy resources critical to achieving California's aggressive decarbonization objectives. Earthjustice, Union of Concerned Scientists, California Environmental Justice Alliance, Sierra Club, and Environmental Defense Fund urge Commission approval of AL 5322-E.

The Proposed Energy Storage Procurement Provides Ratepayer Benefits

Each of the four proposed energy storage projects will be located in the South Bay-Moss Landing sub-area, part of the Greater Bay Area local area.[2] As AL 5322-E notes, the South Bay-Moss Landing sub-area is highly constrained, with the California Independent System Operator's ("CAISO") 2018 Local Capacity Technical Analysis indicating a local need of 2,221 MW and only 2,408 MW of available generation.[3] Due to this lack of surplus resources in the sub-area, Calpine's announcement that it would retire the 580 MW Metcalf gas plant created a local area deficiency that resulted in an RMR designation for the facility. Calpine originally sought $10.41 kW/month for an RMR contract for Metcalf.[4] The cost was ultimately settled at $6.18 kW/month provided Metcalf retains its RMR status through 2020.[5] In contrast, 85 percent of capacity in the Greater Bay Area local area is at or below $3.00 kW/month.[6]

Following Calpine's retirement announcement for Metcalf, CAISO approved transmission projects to reduce Local Capacity Requirement ("LCR") need in the South Bay-

[1] Letter to Energy Division, Re: Sierra Club, Earthjustice, California Environmental Justice Alliance and Environmental Defense Fund Support for Resolution E-4909, p. 1 (Dec. 29, 2017).
[2] Local need in the Pease sub-area as a result of the RMR for Yuba City and Bogue sub-areas as a result of the RMR for Feather River were addressed through transmission improvements.
[3] PG&E, AL 5322-E, p. 13 (June 29, 2018).
[4] *See Metcalf Energy Center, LLC*, 162 FERC ¶ 63,028, ¶ 10 (Mar. 27, 2018) (converting to $ per kW/month ($72,460,702/(580 MW * 1,000)/12 months)).
[5] *Id.* (converting to $ per kW/month ($43,000,000/(580 MW * 1,000)/12 months)).
[6] CPUC Energy Division, Multi-Year Resource Adequacy Retirements/Central Local Capacity Procurement/RA Reform Buyer Presentation, Slide 46 (Feb. 22, 2018).

Moss Landing sub-area to 1,653 MW.[7] However, CAISO's 2023 Local Capacity Technical Analysis forecasts an increase in local area need to 1,977 MW, resulting in continued constraints in the sub-area and market power for sub-area resources.[8] Notably, gas-fired generation in this sub-area will roll off their existing contracts in the near future. For example, PG&E's contract with the Gilroy Energy Center peaker facility, which provides 141 MW of local capacity to the South Bay-Moss Landing sub-area, ends in 2021.[9] PG&E's contract with the Los Esteros combined-cycle plant, which provides 294 MW of local capacity to the South Bay-Moss Landing sub-area, ends in 2023.[10] It is also unclear whether the Moss Landing Once-Through-Cooling Units, totaling over 1,000 MW of capacity, will continue to operate after their December 2020 State Water Resources Control Board compliance deadline.[11] Absent additional resource procurement in the sub-area, existing generators will remain in a position to leverage capacity constraints to obtain elevated capacity payments. Approval of the proposed energy storage contracts will protect ratepayers by mitigating the exercise of market power by local gas-fired generation.

Importantly, the ratepayer benefits of the proposed projects extend beyond the provision of local capacity. Because storage resources can charge and discharge, storage's flexibility is twice its nameplate capacity. The procurement of 567.5 MW of storage will provide over 1,100 MW of non-fossil flexible capacity to the system. Deployment of additional energy storage is both timely and needed given that "[t]he ramps up in the evening and down in the morning ('the tail of the duck') have become more pronounced and steeper than the California ISO anticipated, largely due to faster-than-anticipated growth in rooftop solar PV and progress toward the 2030 RPS goal."[12] Not only are additional highly responsive flexible resources helpful for system reliability, but as described by AL 5322-E's Independent Evaluator Report, the value of storage resources includes increased system efficiency because "[e]nergy storage resources can provide

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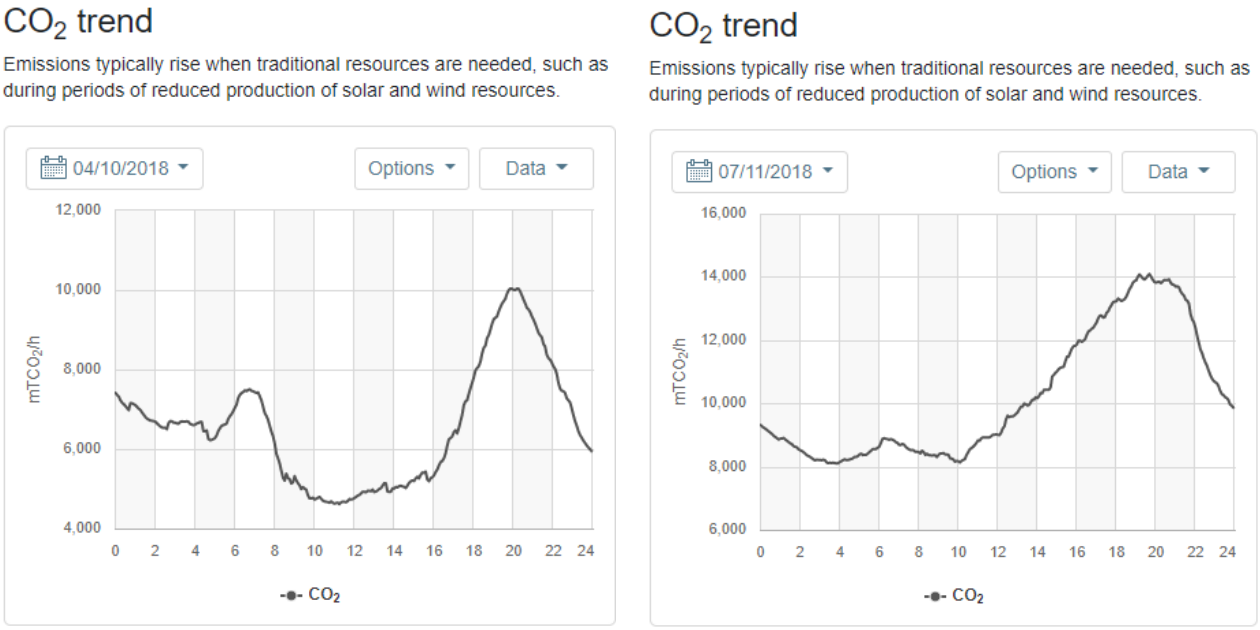
[7] PG&E, AL 5322-E, p. 13 (citing CAISO, 2019 Local Capacity Technical Analysis, p. 42 (May 15, 2018)).
[8] CAISO, 2023 Local Capacity Technical Analysis, p. 39 (May 15, 2018), http://www.caiso.com/Documents/Final2023Long-TermLocalCapacityTechnicalReport.pdf.
[9] California Energy Commission ("CEC"), Electricity Resource Supply Plans, 17-IEPR-02, TN 217851, PG&E Supply Forms S1, S2, and S5 Revised, Table S-5, Line 35 (June 5, 2017), https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-IEPR-02; CAISO, 2023 Local Capacity Technical Analysis, p. 71 (Unit ID for Gilroy Energy Center is GILRPP).
[10] CEC, Electricity Resource Supply Plans, 17-IEPR-02, TN 217851, PG&E Supply Forms S1, S2 and S5 Revised, Table S-5, Line 43, https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-IEPR-02; CAISO, 2023 Local Capacity Technical Analysis, p. 72 (Unit ID for Los Esteros is LECEF_1_Units).
[11] CAISO's 2023 Local Capacity Technical Analysis assumes these units will continue to provide 78 percent of their net qualifying capacity. The basis for this assumption is not stated. CAISO, 2023 Local Capacity Technical Analysis, p. 73 (Unit ID for the Moss Landing Once-Through-Cooling Units is MOSSLD_2).
[12] CEC, Tracking Progress, Resource Flexibility, p. 1 (Dec. 2017), https://www.energy.ca.gov/renewables/tracking_progress/documents/resource_flexibility.pdf.

flexibility to the system so that the rest of the generation can be run at less cost by helping to reduce the magnitude of evening ramp."[13]

The Proposed Energy Storage Procurement Provides Environmental Benefits

The flexible attributes of energy storage that provide ratepayer value also confer significant environmental benefits. By providing system flexibility and reducing ramping needs, energy storage decreases cycling of gas-fired generation and corresponding air quality impacts. Given that conventional power plants are disproportionately located in disadvantaged communities, reductions in cycling through increased deployment of energy storage should result in air quality benefits to disadvantaged communities. Similarly, as illustrated in CAISO's tracking of CO_2 emissions, the carbon intensity of energy generation is at its highest in the evening when solar resources are no longer producing energy.[14]

FIGURE 1: CO_2 Emission Trends on April 10, 2018 and July 11, 2018



By discharging during periods when peak demand is predominately met by gas-fired generation, storage reduces the carbon intensity and air emissions of energy production when pollution would normally be at its apogee.

Finally, while the proposed storage procurement may seem large when viewed in the context of past storage procurement, the Commission must continue to look to the future. Achievement of California's 2030 aggressive greenhouse gas reduction requirements will require

[13] PG&E, AL 5322-E, Appendix F2, Independent Evaluator Report, p. 45.
[14] CAISO, Historical CO_2 Emissions, http://www.caiso.com/TodaysOutlook/Pages/Emissions.aspx.

action at far greater scale and ambition. "To dramatically reduce GHG emissions from the power grid, non-fossil resources will need to gradually replace contributions to the flexibility and reliability of the power system now provided by natural gas plants."[15] Not only will the deployment of energy storage beyond minimum requirements be necessary to meet California's decarbonization objectives,[16] but also the importance of California as a climate leader cannot be overstated. Commission approval of AL 5322-E would set a welcome new standard of both what is possible and what is needed to achieve the deep decarbonization necessary to avoid catastrophic climate impacts.

Thank you for your consideration of these comments.

Respectfully submitted,

/s/

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[15] James H. Nelson and Laura Wisland, *Achieving 50 Percent Renewable Electricity in California*, Union of Concerned Scientists, p. 5 (Aug. 2015), https://www.ucsusa.org/sites/default/files/attach/2015/08/Achieving-50-Percent-Renewable-Electricity-In-California.pdf.

[16] For example, in the Integrated Resource Plan proceeding (R.16-02-007), the RESOLVE model selected 2,000 MW of additional battery storage beyond the baseline 1,325 MW storage requirement. D.18-02-018, p. 79 (Feb. 13, 2018), http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M209/K771/209771632.PDF. However, given that PG&E is still close to 200 MW short of its transmission-level storage requirement when accounting for storage projects from its 2016 storage Request for Offers (and over 300 MW short if 80 percent of its distribution-level storage requirement were moved to its transmission-level requirement), much of the proposed storage procurement would count toward existing requirements. *See* A.18-03-001, PG&E 2018 Energy Storage Procurement and Investment Plan, Prepared Testimony, Chapter 2, Report on Existing and Eligible Energy Storage Resources (Mar. 1, 2018) (listing approved and pending storage projects).

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Parties to Service Lists of R.15-03-011 and R.17-09-020