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Holland & Knight Comment Letter

This letter will be followed by a set of uploaded attachments, with references. Per a conversation with agency staff, we have been directed to upload the references in 11 separate pdfs directly to the Docket.

Additional submitted attachment is included below.

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Via Electronic Submission

David Hochschild, Chair
California Energy Commission
Docket Unit, MS-4
Docket No. 21-BSTD-02
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments in Response to the Draft Environmental Impact Report for the 2022 Energy Efficiency Standards (TN # 237853)

Dear Mr. Hochschild:

Holland & Knight, LLP appreciates the opportunity to comment on the Draft Environmental Impact Report ("DEIR") for the California Energy Commission's ("CEC") proposed 2022 amendments to the California Building Efficiency Standards (the "Project") contained in Title 24, Part 6 of the California Code of Regulations. We offer these comments to ensure a thorough analysis of the Project's potential impacts to the environment and public health, as required by the California Environmental Quality Act ("CEQA") (Pub. Res. Code § 21000 *et seq.*).

These comments are submitted in furtherance of Holland & Knight's commitment to the social and economic equity of California's working families who will be disparately impacted by the Project. When confronted with the disparate racial impacts of California's climate policies, regulators often tokenize California's working class communities of color as though such policies are being adopted in their best interests. But in practice, these regressive environmental policies impose much higher cost burdens on residents and businesses in areas of the state with less costly housing (and less temperate climates) than coastal areas. When confronted with the disparate racial impacts of their policies, these regulators often point to limited economic assistance programs reserved for the poorest Californians, and endorse raising taxes or undertaking other measures outside the jurisdiction and control of their agency as the appropriate solution for helping people to pay the ever increasing climate regulatory costs for housing and

energy. These regulators routinely point to ratepayer subsidized measures – like rooftop solar, home-based batteries, and community aggregators – as solutions to these increased regulatory costs, measures which are disproportionately accessible to wealthier and whiter Californians, including single-family home owners.[1] In fact, a 2021 study published by the Lawrence Berkeley National Laboratory found that the average household median income for solar-adopters in 2019 was $113,000,[2] nearly 34 percent higher than the state average median income of $75,235.[3]

Holland and Knight respectfully submits these comments to ensure the Project analysis reflects a robust and complete examination of the direct and reasonably foreseeable indirect impacts as required by CEQA in order to achieve the state's climate goals.

I. General Comments

The purpose of CEQA is to inform the public and decisionmakers alike of the environmental impacts resulting from a proposed project.[4] However, the DEIR fails to thoroughly analyze and quantify all of the direct and reasonably foreseeable indirect environmental impacts associated with the Project. CEQA specifically prohibits a lead agency from deferring the analysis of "reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration."[5]

The Project proposes a broad range of new energy efficiency standards and updates to California's Building Code and Energy Efficiency standards. The Project would require certain commercial and residential buildings to incorporate various electric-based technologies. The Project also requires specific buildings to be "electric-ready," meaning they must have installed electrical connections and other features at the time of initial construction. The Project also proposes updated standards for solar photovoltic ("PV") systems, including battery requirements, and proposes prescriptive standards for new construction of buildings including: high-rise multifamily, hotel/motel, tenant-space, office, medical office or clinic, restaurant, grocery store, retail store, school, and theater/auditorium/convention center buildings.[6]

The DEIR contains a number deficiencies, but most importantly is missing critical details that would give readers a full understanding of the Project's scope and the full multitude of potential direct and reasonably foreseeable indirect impacts resulting from Project implementation. Further, most of the DEIR's impact determinations are not supported by

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[1] *See, e.g.,* Borenstein, S., *Rooftop Solar Inequity,* Energy Institute at Haas: Rooftop Institute Blog (June 1, 2020), https://energyathaas.wordpress.com/2021/06/01/rooftop-solar-inequity/.
[2] Barbose, G., et al., *Residential Solar-Adopter Income and Demographic Trends: 2021 Update*, at 5 (Apr. 2021), https://eta-publications.lbl.gov/sites/default/files/solar-adopter_income_trends_final.pdf.
[3] U.S. Census Bureau, Quick Facts: California: Median Household Income (in 2019 dollars), 2015-2019, https://www.census.gov/quickfacts/fact/table/CA/INC110219, accessed June 28, 2021.
[4] Cal. Code. Regs., tit. 14, § 15121(a), hereinafter "CEQA Guidelines."
[5] CEQA Guidelines § 15152(b).
[6] CEC, Notice of Preparation of an Environmental Impact Report for the 2022 Amendments to the Energy Code, at 2 (Mar. 18, 2021) hereinafter "NOP," https://efiling.energy.ca.gov/GetDocument.aspx?tn=237212&DocumentContentId=70393.

substantial evidence, or are supported by evidence that fails to take into account all direct and reasonably foreseeable indirect impacts.

- First, the DEIR contains an inadequate Project Description that is overly vague and lacks sufficient detail to understand the actions being proposed and their true environmental impacts.[7] While the Project would apply new regulations statewide, the Project Description in the DEIR fails to adequately describe which regions of the state would be subject to specific standards and requirements, and which building projects would be required to install specific equipment, such as heat pump technology, solar PV equipment and battery storage systems. The information is provided in an extremely inaccessible manner in the DEIR, requiring the reader to click on several hyperlinks and search several other documents in order to even attempt to decipher the actual Project scope and its potential environmental impacts.

- The DEIR also impermissibly uses hypothetical future conditions as the baseline for the Air Quality, Greenhouse Gas ("GHG"), Energy, Utilities and Service Systems, and Biological Resources analyses.[8] Even if the DEIR could validly use a "future projected conditions" baseline, the DEIR fails to provide sufficient justification for the deviation from the requirement that baseline conditions are typically the physical existing conditions at the time the Notice of Preparation ("NOP") is drafted. <u>The use of an improper baseline casts a serious question on the reliability of any of the analyses or conclusions that relied on this baseline throughout the DEIR</u>.

- Like the Project Description, the DEIR also fails to provide sufficient information regarding the assumptions relied upon in its baseline calculation, leaving the reader to sift through thousands of pages of documents in order to attempt to understand the Project impact analyses. This does not meet CEQA's requirement for a clear and understandable analysis.[9]

- As it relates to the Air Quality analysis, the electric grid's current capacity to serve the Project is doubtful, and the DEIR fails to provide substantial evidence that there is sufficient capacity to serve the anticipated increased electricity demand from Project implementation. Additionally, the analysis fails to account for all direct and reasonably foreseeable indirect air quality impacts resulting from the Project, including impacts resulting from construction of new renewable energy projects to supply the increased

[7] *Laurel Heights Improvement Association v. Regents of University of California* (*"Laurel Heights I"*) (1988) 47 Cal.3d 376, 405 (holding that an EIR must contain sufficient detail to enable those who did not participate in the process to meaningfully understand the issues raised by a proposed project).
[8] CEQA Guidelines §15125(a)(3); *see also, Environmental Planning & Information Council v. County of El Dorado* (1982) 131 Cal.App.3d. 350 (holding that a lead agency's analysis of a proposed plan's environmental impacts against the existing plan, as opposed to the existing environmental, was illusory and misled the public).
[9] CEQA Guidelines § 15151 ("An EIR shall be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences."); *see also Dry Creek Citizens Coalition v. County of Tulare* (1990) 70 Cal.App.4th 20, (if a project description is inadequate, the environmental analysis will probably fail to analyze the complete project).

electricity required by the Project and impacts from the use of diesel generators during Public Safety Power Shut-offs ("PSPS") Events.

- Similarly, the DEIR fails to account for the impacts to Biological Resources associated with the reasonably foreseeable impacts of the Project, which would result in the need to construct, install, operate and maintain utility-scale renewable energy source infrastructure, transmission and distribution facilities and lines, and their potential impacts to wildlife habitats, linkages, and rangelands.

- Additionally, in the Energy analysis, the Project fails to analyze impacts related to the Project's effects on peak and base load demands, which would likely result in an inefficient or wasteful consumption of energy. Because the DEIR purports to analyze peak and base load demand, but instead only evaluates the Project's impacts on a seasonal basis, the DEIR misleads the reader. The analysis also overstates the efficiencies associated with heat pump technologies, which are likely to result in a wasteful or inefficient consumption of energy in certain circumstances.

- The GHG analysis is insufficient because it only assesses direct emissions and fails to account for indirect and lifecycle emissions resulting from the Project. The DEIR also overstates the reach and relevancy of proposed regulations for the future use of refrigerants and fails to explain assumptions made in the GHG impact analysis.

- The DEIR analysis fails to adequately analyze and disclose impacts related to Hazards and Hazardous Materials by artificially limiting the discussion to impacts associated with lithium-ion ("Li-ion") technologies without explaining the reason for excluding other potential technologies from the analysis. Additionally, the analysis fails to adequately disclose the direct and reasonably foreseeable indirect impacts related to the operation of battery storage systems including risks associated with thermal runaway and fires, mining activities, and end-of-life activities.

- The DEIR improperly concludes that there would be less than significant impacts to Utilities and Service Systems despite substantial evidence that the current electric grid is strained and that increased electricity consumption would require the construction of more energy projects and supporting infrastructure.

- The DEIR also fails to analyze the direct and reasonably foreseeable indirect impacts from Wildfires and increased occurrence of PSPS Events, including public safety impacts.

- The DEIR prematurely brushes off impacts to California's low-income and disadvantaged communities as purely economic impacts. This analysis is flawed because it ignorantly assumes that California's impoverished families can absorb the exorbitant energy costs resulting from the Project, and fails to acknowledge the serious public health impacts associated with energy poverty.

- The cumulative impacts associated with the Project are downplayed by the DEIR's failure to account for and analyze the Project's impacts together with a litany of other

local ordinances, including local Reach Codes, that have recently been adopted or are currently under consideration that would, cumulatively with the Project, result in significant impacts in multiple impact areas, including but not limited to Air Quality, GHGs, Hazards and Biological Resources.

- Lastly, the DEIR fails to recognize that Alternative 6.4.4 is able to meet the Project's first objective (Objective 1) that aims to deploy technically feasible and cost-effective technologies and measures. The DEIR thus must accurately analyze the Project's project-level and cumulative impacts and conduct a new comparison of those likely significant impacts with the reduced impacts likely to occur under Alternative 6.4.4 and then determine whether Alternative 6.4.4 presents an environmentally superior alternative to the Project.

II. General Defects and Inconsistencies

Procedural Defects. The NOP encouraged commenters to submit comments using the electronic filing system through a link provided in the NOP.[10] However, the link led commenters to a separate docket for the Rulemaking Process. While this deficiency was pointed out when submitting comments on the NOP, it is unclear whether CEC staff took any action to ensure that all comments that were intended for the CEQA Docket were correctly submitted and considered by staff when drafting the DEIR.

Use of Undefined Terms to Describe Project Impacts. The DEIR uses the term "no significant impacts" in several areas of the DEIR, including to describe the Project's impacts to Air Quality and GHGs.[11] Because "no significant impact" is not a defined term in the DEIR, this term has the potential to confuse readers regarding the Project's environmental impacts. It is unclear whether the term is intended to mean "No Impact" or "Less than Significant Impacts." This should be clarified.

Relevancy of SB 100 and SB 100 Joint Agency Report. In multiple places the DEIR vastly overstates the relevance of SB 100, and cites to both SB 100 and the SB 100 Joint Agency Report ("SB 100 Report"), which are referenced in the Regulatory Setting for both the Energy Resources, GHG, and Utilities and Service Systems chapters. The DEIR consistently relies on both sources to provide substantial evidence that SB 100 objectives will offset increased electricity demand resulting from the Project, and that therefore the Project would not result in the construction, operation, and maintenance of utility-scale energy projects.[12] As explained in further detail below, the DEIR's reliance on SB 100 and the SB 100 Report as substantial evidence that the Project would not result in the need to construct energy projects and supporting infrastructure is speculative and should be removed from the DEIR.

- SB 100. SB 100 requires utilities to procure a minimum quantity of eligible renewable energy resources, but does not provide a failsafe route to statewide decarbonization. Nor does the legislation mandate the construction, operation,

[10] NOP at 2.
[11] *See* DEIR at 60, 102.
[12] *See e.g.,* DEIR at 138, 143, and 199.

and maintenance of any energy projects or infrastructure to support the increased electrical demand resulting from the Project. Further, SB 100's requirements can be waived if a utility can establish that there "is inadequate transmission capacity to allow for sufficient electricity to be delivered from eligible renewable source projects."[13]

- SB 100 Report. The DEIR mischaracterizes the relevancy of the SB 100 Report to the Project's environmental analysis by stating that the report performs a "robust analysis of the massive grid improvements that will be necessary"[14] to meet the goals of SB 100, and purporting that the SB 100 objectives will offset near-term increased electricity consumption. However, the SB 100 Report actually concludes that in order to achieve carbon neutrality, there would need to be a significant increase in the development of renewable generation projects, including utility-scale projects. The Report recognizes that in order to meet the anticipated increase in demand, the state would need to accelerate the pace of renewable energy projects from an average of 1 GW of utility-scale solar and 300 MW of wind each year to 2.8 GW of solar, 1 GW of wind, and 2.0 GW of battery storage systems per year in order to meet SB 100. This exceeds even historic single-year build rates, a maximum of 2.7 GW of utility scale-solar and 1 GW of wind.[15] The SB 100 Report also states that build rates are critical to determining whether there will be bottlenecks in the supply chain or regulatory and permitting processes.[16] Thus, contrary to the DEIR's assertion, nothing in the SB 100 Report would offset the increase in demand for electricity resulting from the Project. In fact, the Report recognizes that there is currently insufficient capacity to accommodate increased demand.

Neither SB 100 nor the SB 100 Report provide a commitment to build any new necessary renewable energy projects or "provide a prescriptive roadmap" that would meet the increased electricity demand created by the Project. For these reasons, the DEIR's reliance on SB 100 and the SB 100 Report to somehow prove that an increase in electricity demand would be met without the need to construct additional renewable energy projects is erroneous.

III. Inadequate Project Description and Baseline

Project Description. The Project Description does not provide a sufficient level of specificity to allow a reader to understand when a specific building would be subject to the Project's requirements or standards, how to comply with the requirements or standards, or understand the Project's environmental consequences.[17] The DEIR contains an inadequate Project Description that provides minimal detail, leaving the reader in the dark as to the Project scope and any direct and indirect impacts resulting from the Project. The Project is highly

[13] Stats 2018, ch. 312 (S.B. 100).
[14] DEIR at 90.
[15] SB 100 Report at 11.
[16] *Id*.
[17] CEQA Guidelines § 15151 ("An EIR shall be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences"); *see also Dry Creek Citizens Coalition,* 70 Cal.App.4th 20.

technical, complex, and imposes varying standards depending on the type of development and project location (climate zones), and provides both prescriptive and performance standards. The Project Description does not provide a level of detail that allows a reader to meaningfully assess Project impacts.[18] In fact, the level of detail is so insufficient that a reader would not even be able to tell that there may be differing standards that apply to particular developments. Instead the reader is expected to click through a number of hyperlinks to other documents and rifle through a separate 571 page technical document (the Express Terms), which contains no contextual information and is replete with technical terms and acronyms, in order to understand the Project. This is not the clear and understandable Project Description that CEQA mandates.[19]

For example, the Project proposes to "[r]evise the prescriptive measure-based compliance path available for building projects to include only heat pump technology in specific circumstances."[20] This description does not allow a reader to understand which building projects would trigger the requirement for a heat pump (commercial vs. residential, minimum square footage requirements, whether specific heat pump technology is required, or whether such technology would be required for new construction only or also include alterations) or how the requirements change depending on the climate zone, much less understand any potential environmental impacts associated with the use of heat pump technology. Without this information, neither the reader nor the decisionmakers can accurately assess the Project's environmental impacts.[21]

In another example, the Project Description proposes to "[r]evise residential energy efficiency requirements for solar PV systems, including battery storage, and associated compliance options."[22] The Project Description does not explain the current requirements and associated compliance options and thus it provides no meaningful information for the reader to be able to determine what environmental impacts may result from the change in requirements with Project implementation.

In fact, all of the summarized bullet points in the Project Description fail to provide a level of detail adequate to enable a reader to understand the Project scope, much less understand the environmental impacts that may occur or are reasonably foreseeable with Project implementation.[23]

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[18] *See* CEQA Guidelines § 15124; *see also County of Inyo v. City of Los Angeles,* (1977) 71 Cal.App.3d 185, 198 ("A curtailed, enigmatic or unstable project description draws a red herring across the path of public input.").
[19] CEQA Guidelines § 15151 (requiring adequacy, completeness, and a good faith effort at full disclosure.); *see also Dry Creek Citizens Coalition,* 70 Cal.App.4th 20, 26 (holding that failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting CEQA's statutory procedural goals).
[20] DEIR at 41.
[21] *Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1391 ("[T]he failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process."); *County of Inyo v. Yorty,* (1973) 32 Cal.App.3d 795, 810 (the EIR serves as an "environmental alarm bell" whose purpose is to alert the public and its responsible officials to the environmental impacts associated with a proposed project.).
[22] DEIR at 42.
[23] *See County of Inyo,* 71 Cal.App.3d at 192-93 ("Only though an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider

Baseline. The DEIR attempts to impermissibly use hypothetical future conditions as the baseline for the analysis for the Air Quality, Energy Resources, GHG, Utilities and Service Systems, and Biological Resources sections. CEQA Guidelines § 15125(a) generally requires baseline conditions to be described as the existing physical conditions at the time the NOP was published. In particular, CEQA Guidelines § 15125(e) requires that, when a proposed project is compared to an adopted plan, like a regulatory regime, the analysis must examine existing physical conditions at the time the NOP is published.[24] The DEIR tries to skirt this requirement by attempting to differentiate the application of the 2019 Energy Code from a general, specific, or regional plan. However, any perceived differences between these documents is inconsequential as they are all regulatory frameworks that future projects must follow. Instead of using the CEQA mandated baseline, the DEIR attempts to use a convoluted "modeled date-of-implementation" baseline, another way of saying "hypothetical future conditions," in order to avoid or mask true impacts from Project implementation.

The DEIR describes the baseline as an incorporation of "the impacts of the 2019 Energy Code in 2023, when the new requirements of the 2022 Energy Code go into effect."[25] This baseline calculation creates a hypothetical baseline which constitutes what the CEC believes will have occurred in 2023 given the impacts of the 2019 Energy Code. This future baseline is prohibited by CEQA Guidelines § 15125(a)(3). CEQA requires an EIR to analyze a proposed project's impacts on the existing environment, rather than an existing regulatory plan.[26] This was pointed out in our comment letter on the NOP (the "NOP Comment Letter"), which stated "CEQA reaches beyond the mere changes in the language in the agency's policy to the ultimate consequences of such changes to the physical environments" and therefore recognizes that regulations adopted by public agencies have the *potential to guide virtually all future growth and development.*[27]

Nor would the attempt to use a "modeled baseline" pass muster as a "projected future conditions" baseline permitted under CEQA Guidelines § 15125(a)(2). Such a projected future conditions baseline is only allowable if the lead agency can establish: (1) that use of existing conditions would be misleading or without informational value supported by substantial

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mitigation measures, assess the advantage of terminating the proposal (i.e., the 'no project' alternative), and weigh other alternatives in the balance.").

[24] *See Environmental Planning & Information Council v. County of El Dorado* (1982) 131 Cal.App.3d. 350.

[25] DEIR at 48.

[26] *Environmental Planning & Information Council,* 131 Cal.App.3d 350 (holding that a lead agency's analysis of a proposed plan's environmental impacts against the existing plan, as opposed to the existing environment, was illusory and misled the public); *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310, 315 (analysis that compares impacts with conditions that may be allowed rather than with existing environmental conditions results in misleading comparisons, rather than an informed decisionmaking process).

[27] *See, e.g., City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398 (holding that a lead agency failed to accurately provide a project description when adopting a regulatory document that deferred the full environmental analysis of the consequences of such action, when it could be reasonably inferred from the adopted regulatory language that the project would result in environmental impacts); *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713 (requiring the project description to include the construction of offsite infrastructure within the project description).

evidence and (2) the projected future conditions baseline is supported by reliable projection based on substantial evidence in the record.[28] The DEIR fails on both accounts.

As to (1), the DEIR claims that the use of a future conditions baseline would provide the "most accurate picture" and that "it is not always possible to use actual historical data to establish existing conditions."[29] The DEIR attempts to justify the use of future conditions by explaining "2020 is the first full year for which the 2019 Energy Code was in effect, and the applicable Energy Code to a building project is determined at the time a building permit is issued, many buildings completed in 2020 would have been built in accordance with the 2016 Energy Code or earlier codes, rather than the 2019 Energy Code."[30] This statement fails to provide substantial evidence that the use of existing conditions would be misleading or without informational value. Additionally, the claim that historical data cannot be used to establish existing conditions is without merit. At the time the NOP was published on March 18, 2021, the 2019 Energy Code had been in effect for over 15 months, meaning there were 15 months of building permits issued that were subject to the 2019 Energy Code. Historical statewide data is also publicly available at the Legislative Analyst's Office website and is regularly updated.[31]

As to (2), the DEIR attempts to show support that the baseline is supported by reliable projections based on substantial evidence in the record by stating "the 2023 date-of-implementation methodology applied in these sections is supported by data from reports submitted to the CEC as part of the rulemaking proceeding for the proposed 2022 amendments (**see Appendices B and D**). Building construction starts were determined following a methodology described in a memo to the CEC (Case Memo, 2021)."[32] However, this statement fails to establish what data is contained in those reports and whether the data and assumptions are consistent with and comply with CEQA.[33] The modeled date-of-implementation baseline explanation provides readers with no meaningful information as to the assumptions made in the hypothetical baseline, nor is the calculation supported by substantial evidence in Appendices B and D, as claimed. Appendix D is a listing of hyperlinks to 36 separate documents that have been considered by the CEC in a separate rulemaking process pursuant to Gov. Code 11340 *et seq*. The DEIR text contains no information as to what information was relied upon in those documents to create the modeled baseline. Appendix B "provides an overview of the workbook of spreadsheets used to compute the values reported in Tables 4.2- 2, 4.2-3 and 4.2-4 in Chapter 4.2 and Tables 4.5-1 and 4.5-2."[34] While the document provides some information as to the assumptions made, it fails to provide a source for the information relied upon. Similarly, the "Case Memo" referenced in the DEIR describes changes made to the construction estimates from

[28] *See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.
[29] DEIR at 28.
[30] DEIR at 28, n.29.
[31] *See, e.g.,* Legislative Analyst's Office. California Economy & Taxes: Building Permits Update May 2021 webpage, https://lao.ca.gov/LAOEconTax/Article/Detail/673, accessed June 28, 2021.
[32] DEIR at 49 (emphasis in original).
[33] *California Oak Foundation v. City of Santa Clarita,* (2005) 133 Cal.App.4th 1219, 1239 (quoting *Santa Clarita Organization for Planning and Environment v. County of Los Angeles* (2003) 106 Cal.App.4th, 715, 772 that "information 'scattered here and there in EIR appendices,' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis in response.'").
[34] DEIR at 245.

the Energy Commission, but is extremely vague and difficult to follow. In this way, the DEIR presents only an invalid hypothetical future baseline that is not allowed under CEQA.[35]

Nowhere does the DEIR provide the necessary substantial evidence to prove that an existing conditions baseline is misleading or without informational value, or support the future conditions baseline with reliable projections based on substantial evidence. A reader should not be expected to rifle through dozens of documents with incomplete information, or very little context, in order to understand the Project baseline.[36] Nor does the Project Description make any effort to provide any of the key assumptions utilized to create the tables or to synthesize the information that went into creating the future baseline in a way that is digestible to the average reader. Based on the information provided, the DEIR fails to establish that there are unusual circumstances present that would justify the use of a projected future conditions baseline. The confusing and misleading use of an unjustified future conditions baseline undermines the analysis in every impact area in the DEIR and causes the entire document to fail.[37]

Lastly, the DEIR inconsistently states which sections are analyzed using the impermissible modeled date-of-implementation baseline. One section of the Project Description states the baseline is used in the analysis for Air Quality, Energy Resources, GHG Emissions, Utilities and Service Systems.[38] The next page of the Project Description purports that the baseline only used in the Air Quality, Energy Resources, and GHG Emissions - omitting Utilities and Service Systems.[39] The Project Description also fails to mention that the analysis for Biological Resources also relies on the use of this baseline, because it on the analysis in Section 4.4 Energy Resources to conclude the Project will not likely "result in the development of future utility-scale renewable projects either directly or indirectly.[40] Failure to provide a consistent Project Description is misleading, and prevents a meaningful public participation process.[41]

Project Impacts. As discussed in the Project Description, the Energy Efficiency standards are updated every three years.[42] Due to the confusing language used to describe the Project, the baseline, and Project impacts, it appears that the DEIR only analyzes Project impacts after one year of Project implementation. The DEIR states that it uses "a full calendar year to demonstrate

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[35] *Communities for a Better Environment,* 48 Cal.4th at 315 (analysis that compares impacts with conditions that may be allowed rather than with existing environmental conditions results in misleading comparisons, rather than an informed decisionmaking process).
[36] *See Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova,* (2007) 40 Cal.4th 412, 442 (holding that data in an EIR must be presented in a manner calculated to adequately inform the public and decisionmakers who may not be previously familiar with the project).
[37] *Laurel Heights Improvement Association v. Regents of University of California* (1988) 47 Cal.3d 376, 405 (holding that an and EIR "must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project."); *Neighbors for Smart Rail,* 57 Cal.4th at 463 (holding that a "prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public process, thereby thwarting the statutory goals of CEQA.")
[38] DEIR at 48.
[39] *Id.* at 49.
[40] *Id.* at 82.
[41] *County of Inyo,* 71 Cal.App.3d at 197; *see also San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.Ap.4th 645, 655 (a shifting project description can be indicative of an attempt to minimize a project's impacts by failing to discuss reasonably foreseeable project impacts).
[42] DEIR at 37.

the effects of the 2022 Energy Code relative to the continuation of the 2019 Energy Code [to provide] an accurate assessment of the project potential environmental impacts because construction, energy production, meteorological and climatological conditions fluctuate over the course of a year, with corresponding effects on air quality, energy resources and greenhouse gas emissions."[43] Additionally, in the Air Quality analysis, the DEIR explains that the air quality impacts compare the modeled baseline (the number of anticipated construction starts for the year 2023, "which would be subject to the 2019 Energy Code if the project is not approved") against impacts "from the new buildings that would be constructed in 2023 under the 2022 amendments."[44] This suggests that the analysis is limited to Project impacts occurring after only one year of implementation. However, nowhere does the DEIR explain this or explain why it limits the analysis to only one year. Because the Energy Code has a three-year life cycle, analyzing Project impacts after only one year provides an incomplete picture of the direct and reasonably foreseeable indirect impacts of the Project, particularly the cumulative impacts of the Project. This choice filters through every impact analyses in the DEIR and makes each of them invalid and inadequate under CEQA.

IV. Air Quality Impacts

The DEIR concludes that the Project would result in less than significant impacts to air quality, however, the analysis fails to account for all direct and reasonably foreseeable indirect air quality impacts associated with the Project, including:

- impacts from fires stemming from battery storage systems installed as a result of the Project;
- impacts resulting from the construction, operation, and maintenance of energy projects due to an increase in electricity demand, including renewable energy facilities and transmission and distribution projects; and
- impacts resulting from an increased demand for electricity which will result in increased reliance on diesel generators during PSPS Events and power outages.

A. Inadequate Disclosure of Impacts Related to Building Operations

The Project must analyze the direct and reasonably foreseeable indirect impacts related to the release of toxic air contaminants that may result from the installation of battery storage systems. As discussed in further detail in Section VIII below, Li-ion battery storage systems may result in thermal runaway, leading to fires and the release of toxic air contaminants ("TACs") into the air, including, but not limited to, hydrogen flouride ("HF"), ethyl methyl carbonate ("EMC"), diethyl carbonate ("DEC"), ethylene carbonate ("EC"), carbon monoxide ("CO"); and carbonyl sulfide ("COS"). The DEIR limits its analysis of criteria pollutants and TACs to NO_X and SO_X, without providing any explanation as to why the discussion is limited or any substantial evidence that these are the only TACs that may be emitted with Project

[43] DEIR at 49.
[44] DEIR at 68.

implementation. The impacts from thermal runaway can be significant given the difficulty in fighting these types of fires. Li-ion fires are different than typical fires due to their extremely high temperatures, leading to rapid spread and making them more difficult to extinguish.[45] The DEIR cannot wholesale ignore a potentially significant impact of the Project when it is clear that the Project will lead to the installation and operation of more battery storage systems.

B. Inadequate Disclosure of Impacts Related to the Construction of Renewable Energy Projects and Infrastructure

As more buildings are constructed and more electricity is required, it is reasonably foreseeable that renewable energy projects would need to be constructed to meet the increased demand. The DEIR repeatedly attempts to avoid the analysis of the Project's indirect impacts by stating that the Project does "not approve any construction" projects, including the construction of infrastructure, such as utility-scale solar and wind facilities and transmission and distribution lines.[46] Regardless of whether the Project approves specific construction, a lead agency is required to analyze a project's direct and reasonable foreseeable indirect environmental impacts. It is reasonably foreseeable that the Project would result in the construction of buildings that are subject to the Project's requirements, therefore increasing overall electricity demand.

The DEIR analysis anticipates increased electricity use due to the increased prevalence of electric heat pumps, especially during cooler months. The DEIR further purports that the increase in demands would be met by "existing in-state under-utilized electric sector capacity," but fails to quantify or provide substantial evidence to support the argument that the electric sector is "under-utilized" or has sufficient capacity to meet increased demand, but fails to provide substantial evidence to support this claim. While the DEIR describes the capacity for natural gas power plants in California, this fails to prove up how the Project's increased daily demand will be met by existing utility facilities and infrastructure, and attempts to categorize any analysis of potential impacts as speculative. While the DEIR points to reports summarizing renewable energy portfolio progress, this does not amount to substantial evidence that quantifies how the state's current electric capacity can meet future increased demand due to Project implementation. And, as further described in more detail in Section IX below, the DEIR and other informational sources emanating from the California Public Utilities Commission ("CPUC"), CEC, and the California Independent System Operator ("CAISO"), have indicated that the current electric grid is already strained.

In our NOP Comment Letter, we noted that increased electricity consumption due to Project implementation would foreseeably result in the construction of renewable energy projects (e.g., solar and wind facilities), as well as transmission and distribution projects, the impacts of which must be analyzed under CEQA. In Section 4.7 (Utilities and Service Systems) the DEIR states that "[t]ransmission expansion plays a vital role in enabling the interconnection and deliverability of renewable energy to meet demand and support load-serving entities in meeting the state's RPS requirements. The California ISO conducts its transmission planning process

[45] *See, e.g.,* Diaz, L., et al., *Review - Meta-review of Fire Safety of Lithium-ion Batteries: Industry Challenges and Research Contributions,* Journal of Electrochemical Society (Aug. 17, 2020), hereinafter "Diaz - *Meta-review of Fire Safety of Lithium-ion Batteries*," https://iopscience.iop.org/article/10.1149/1945-7111/aba8b9.
[46] DEIR at 75, 76, 77.

annually to identify system upgrades needed to meet grid reliability requirements, projects that could bring economic benefits to consumers, and projects needed for policy reasons, such as to meet California's renewable and clean energy goals."[47] While CAISO may determine exactly when and where future projects may be required, it does not absolve the DEIR from analyzing the Project's reasonably foreseeable indirect environmental impacts, even if the lead agency does not know exactly when and where these projects will be developed. CEQA requires an analysis of all potential Air Quality impacts from future construction, operation, and maintenance of energy projects, including but not limited to, impacts from fugitive dust and exhaust occurring from the use of heavy equipment, support vehicles, and other internal combustion engines during construction. The DEIR fails to provide substantial evidence that there are enough planned energy projects to meet the increased electricity demand resulting from the Project and that no future renewable energy projects will need to be developed to meet Project increased demand. This analysis thus cannot be ignored under CEQA.

C. Inadequate Disclosure of Impacts Related to PSPS Events and Power Outages

Wildfires and planned power outages PSPS Events) have become a part of the new norm in California.[48] As more homes and businesses rely on electricity to fulfill energy needs, they will become more susceptible to power outages. Evidence shows that PSPS Events result in the increased use of personal diesel generators which can create significant air quality impacts, particularly in areas of high population that are already nonattainment for Particulate Matter ("PM"). In March 2021, the SB 100 Report reported issues with grid reliability and stated that achievement of a 100 percent clean energy target would require the identification of options for "clean backup power when there are disruptions to the grid" which have been recognized to "degrade air quality and emit greenhouse gases."[49]

The use of diesel generators as a result of PSPS Events is not attenuated. Guidelines for PSPS Events require IOUs to "assess the need for backup generation and determine whether additional equipment is needed, including providing generators to facilities or infrastructure that are not well prepared for a power shut off."[50] The role of diesel fuel generators during PSPS Events is especially significant due to the fact that PSPS Events are typically long term events that can last for several days. As pointed out in the NOP Comment Letter, a recent California Air Resources Board ("CARB") report analyzing the GHG and air quality impacts of the October 2019 PSPS Events found that they resulted in reliance on approximately 125,000 generators statewide. As stated in the CARB report "[g]enerators used during the power outage will

[47] DEIR at 145.
[48] Blunt, K., *PG&E Warns of More Blackouts During California's Wildfire Season*, The Wall Street Journal (June 11, 2021) https://www.wsj.com/articles/pg-e-warns-of-more-blackouts-during-californias-wildfire-season-11623414658.
[49] CARB, CPUC, and CEC, SB 100 Report, Publication No. CEC-200-2021-001, at 19 (Mar. 2021), https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349.
[50] CPUC, Decision Adopting De-energization (Public Safety Power Shut-Off) Guidelines (Phase 1 Guidelines), Rulemaking.18-12-005, Decision 19-05-042, at A12, (May 30, 2020) https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M296/K598/296598822.PDF ; *see also,* CPUC, Resolution ESRB-8 (July 16, 2018), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M218/K186/218186823.PDF.

increase emissions compared to an average day."[51] CARB estimates that during this time, the use of diesel-powered generators resulted in 6,026 tons of NOx emissions.[52] NOx emissions from diesel combustion are important because they can result in chemical reactions in the atmosphere leading to the formation of PM2.5 and ozone.[53]

The use of diesel generators and their impacts are also recognized in a reference cited in the Wildfire analysis (Section 4.8), but conveniently left out of the Air Quality analysis:

- "[O]lder, larger industrial diesel generator[s] spew as much in an hour as driving a truck from Sacramento to Salt Lake City."[54]

- In some instances, generators are even offered by insurance companies as a way to deal with the unreliability of electricity.[55]

The DEIR analysis must account for and analyze the reasonably foreseeable air quality impacts resulting from PSPS Events, given an increased electricity use and thus increased number of people who will face loss of power during these events.

V. Biological Resources Impacts

The DEIR concludes that the Project would have no or less than significant impacts on biological resources. However, this determination is based on an erroneous narrowing of the Project as "not likely to result in the development of future utility-scale renewable projects either directly or indirectly."[56] As previously explained, there is no evidence in the record that this is accurate, and, in fact, evidence presented in this letter and the NOP Letter determinatively prove the opposite; that increased demand in electricity due to Project implementation will result in the development of energy projects to ensure that demand is met. The DEIR cannot based a less than significant finding on a scoping out of major parts of a Project.

The construction of energy projects, including renewable energy facilities, transmission and distribution facilities, and transmission lines, have been found to have significant environmental impacts on biological resources. In fact, the DEIR recognizes this and states that the Project would result in increased electricity consumption and that "utility-scale projects are

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[51] CARB, *Potential Emissions Impact of Public safety Power Shutoff (PSPS) Emission Impact: Additional Generator Usage Associated with Power Outage* (Jan. 30, 2020), at 1, https://ww2.arb.ca.gov/sites/default/files/2020-01/Emissions_Inventory_Generator_Demand%20Usage_During_Power_Outage_01_30_20.pdf; *see also,* CPUC, Decision Adopting De-energization (Public Safety Power Shut-Off) Guidelines (Phase 1 Guidelines), Rulemaking.18-12-005, Decision 19-05-042, at B4 (identifying the need to address increased emissions resulting from PSPS Events).

[52] CARB, *Potential Emissions Impact of Public safety Power Shutoff (PSPS) Emission Impact: Additional Generator Usage Associated with Power Outage*, at 1.

[53] CARB, Overview: Diesel Exhaust & Health webpage, https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health, accessed June 30, 2021.

[54] Moench, M., *During PG&E outages, generators caused fires, carbon monoxide poisoning, San Francisco Chronicle* (Nov. 14, 2019), https://www.sfchronicle.com/california-wildfires/article/During-PG-E-outages-generators-caused-fires-14833601.php.

[55] *Id.*

[56] DEIR at 82.

well documented to have various adverse impacts on biota."[57] Despite this admonition, the DEIR only analyzes impacts related to rooftop solar, not any potential impacts from utility scale solar, wind, or battery projects. The incorrect conclusion that "the beneficial changes in energy demand attributable to the project are not likely to result in the development of future utility-scale renewable projects either directly or indirectly"[58] relies upon the Energy analysis in Section 4.4. However, as discussed in further detail in Section VI below, the energy analysis is flawed not only because it uses an impermissible baseline (explained in Section III above), but also because it fails to account for the inefficient use of energy during peak load times.

There is substantial evidence pointing to the impacts on biological resources resulting from the construction of utility-scale renewable energy projects and supporting infrastructure. In 2019, the Nature Conservancy issued a study based on the modeling developed for the CEC's 2018 Deep Carbonization in a High Renewable Future study, which also takes into account SB 100's renewable energy goals.[59] The study concluded that in order to meet the state's climate change goals, construction of renewable energy project would significantly overlap (more than 50 percent) with land with high conservation value, creating significant environmental impacts that must be analyzed under CEQA.[60] The study found that "ecological impacts due to wind and solar generation infrastructure and additional transmission requirements are significant. These impacts include loss of Important Bird Areas, Eagle Habitat, Big Game Habitat, and Wildlife Linkages."[61] In particular:

- transmission projects were found to potentially have impacts on Wildlife Linkages;[62]
- solar infrastructure would have significant impacts on Important Bird Areas;[63] and
- wind generation facilities and transmission corridor projects would need to be sited on rangeland habitats, which have high biodiversity values, provide significant habitat connectivity, and form the foundation for a number of ecosystem services.[64]

As we have previously explained, the Project would result in the need to construct, operate, and maintain energy projects and infrastructure to support the increased electricity demand resulting from the Project. The DEIR must analyze these potential biological resources impacts, in addition to the impacts related to rooftop solar PV equipment.

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[57] DEIR at 82.
[58] *Id.*
[59] *See* Energy and Environmental Economics, *Deep Decarbonization in a High Renewables Future: Updated Results from the California PATHWAYS Model*, CEC, Publication No. CEC-500-2018-012, (Jun. 2018), https://efiling.energy.ca.gov/GetDocument.aspx?tn=223785.
[60] Wu, G. et al, The Nature Conservancy, The Power of Place: Land Conservation and Clean Energy Pathways for California (June 2019), at 38 https://www.scienceforconservation.org/assets/downloads/Technical_Report_Power_of_Place.pdf.
[61] *Id.* at 40.
[62] *Id.* at 39.
[63] *Id.* at 36.
[64] *Id.* at 39.

VI. Energy Impacts

The DEIR Energy analysis fails to account for:

- the reasonably foreseeable impact that an increased electricity demand would likely result in the construction of more energy projects and supporting infrastructure;
- impacts related to peak and base load demands; and
- the nuances of heat pump technologies and their efficiencies, thus resulting in an overstated efficiency of such technologies and an undercounting of electrical demand.

A. Inadequate Disclosure of Impacts Related to Existing Energy Capacity

The Project will lead to the construction of homes and commercial buildings that will be subject to the requirements of the 2022 Building Code. It is reasonably foreseeable to conclude that construction of these homes and commercial buildings will result in an increased demand for electricity, thereby straining existing supply and resulting in the need to construct additional energy projects and supporting infrastructure, including renewable energy projects and transmission and distribution lines, to meet demand. However, the DEIR relies on the use of an impermissible baseline to determine Project impacts, thereby calling into question the entire analysis of Energy impacts and the conclusion that there are adequate facilities to accommodate the increased demand.

B. Inadequate Disclosure of Impacts Related to the Effects of the Project on Peak and Base Load Period Demands

Rather than analyzing Project impacts throughout all times of the day, including peak and base load period demands, as required by Appendix F, the DEIR analyzes Project impacts on a seasonal basis.[65] Providing a seasonal analysis of energy masks the true impacts and energy inefficiencies potentially presented by the Project. An analysis of the Project's energy impacts must account for the realistic daily peak loads anticipated by an increased electricity consumption, primarily caused by the Project's heat pump installation requirements. An analysis of the anticipated seasonal impacts masks the Project's impacts as described below.

Base load is defined as the minimum amount of electrical power delivered or required over a given period of time at a steady rate (usually a 24-hour period),[66] whereas a peak load is defined as the maximum load required during a specific period of time (usually a smaller timeframe).[67] As shown in Figure 1 below, energy use increases in morning and in the evening hours (generally the peak usage) when renewable energy sources are no longer available. A

[65] *See* DEIR at 96.
[66] U.S. Energy Information Administration, Glossary webpage (B), https://www.eia.gov/tools/glossary/index.php?id=B (Accessed June 30, 2021).
[67] U.S. Energy Information Administration, Glossary webpage (P), https://www.eia.gov/tools/glossary/index.php?id=P (Accessed June 30, 2021).

recent study conducted by the UCLA Institute of Environment and Sustainability concluded "that aggressive electrification of residential end-use appliances has the potential to exacerbate daily peak electricity demand"[68] and that, even if additional intermittent wind and solar generation capacity is deployed, "[u]nder best case efficiency assumptions, full electrification is expected to increase daily peak loads, on average throughout the year, by 80%. Conversely, under worst case assumptions, daily peak loads are estimated to increase by an average of 265%."[69] Thus, even with the potential for energy efficiency stemming from the switch from natural gas to electricity, *potential energy impacts are likely to be wasteful and inefficient* because they would result in massive overbuilding of energy projects to support the increased energy consumption, particularly during peak load periods.

A 2018 study found that as the percentage of intermittent renewable power sources services a community increases, the amount of energy that is "curtailed" or wasted because it is not produced when it is needed (e.g., peak load periods) can reach up to 40 percent of total generation.[70] Due to the timing mismatch between the availability of intermittent sources and peak load demands, solar and wind would be unable to meet approximately 30 percent of the state's annual demand.[71] As a result, overbuilding massive amounts of electrical battery storage would be required to capture the surplus power generation and make it available when needed. Estimates by the Clean Air Task Force, a nonprofit organization committed to reducing climate change risks, conclude that California's energy storage needs would require batteries with an instantaneous capacity "larger than the generating capacity of the entire U.S. electric grid."[72] Alternatively, the state's hydrological storage capacity and build new or expanded reservoirs with 100 times the state's current capacity.[73]

Due to the low energy density of solar and wind generation, the deployment of renewable energy projects would result in much greater land and biological resource impacts and "significantly increases the land use consequences of power systems dominated by variable renewable sources." If California were to meet its climate goals based on solar and wind energy sources alone, the state would been to deploy new energy generation projects at five times the state's historical rates every year for the next 25 years and install "the equivalent of nearly ten of the world's largest onshore or offshore windfarms every year."[74]

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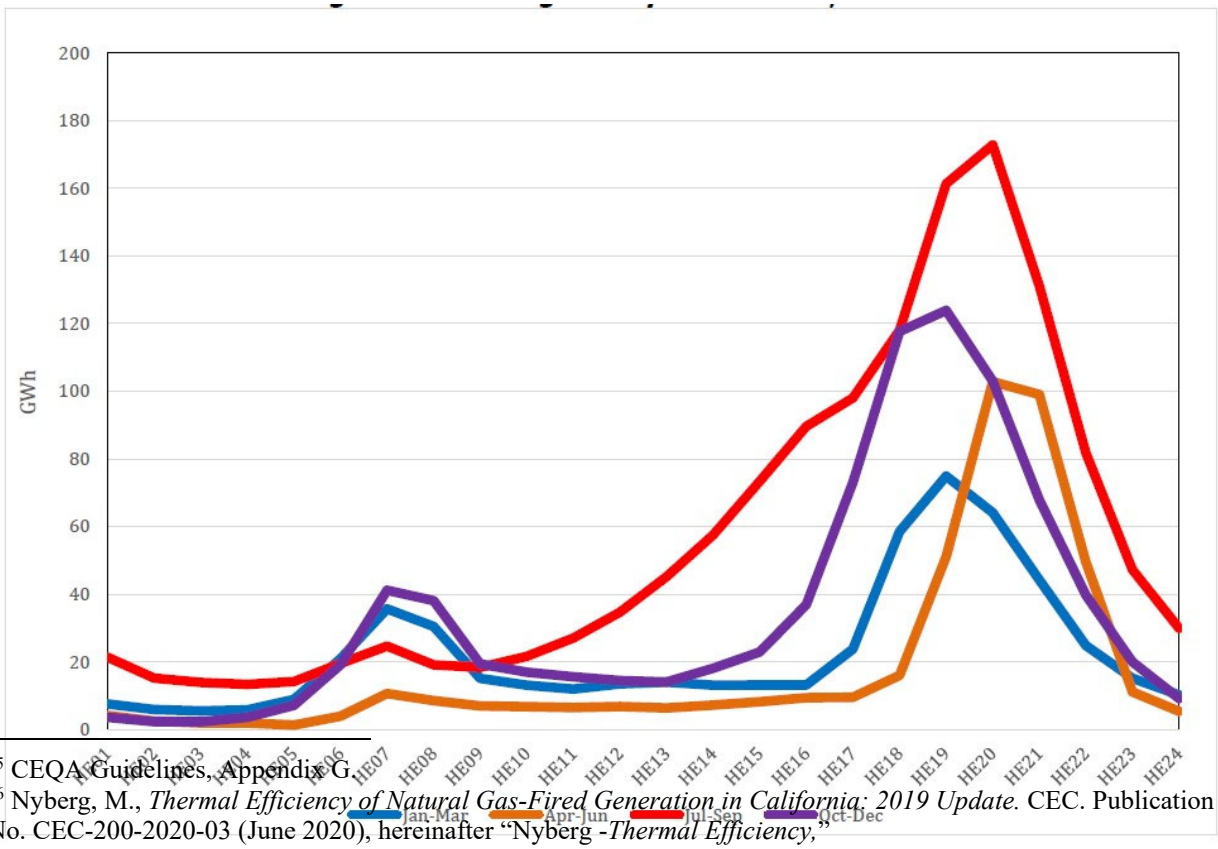
[68] Fournier, D., et al., *Implications of the timing of residential natural gas use for appliance electrification efforts, Environmental Research Letters 15*, no. 12, UCLA Institute of Environment and Sustainability, at 1 (Nov. 2020), https://iopscience.iop.org/article/10.1088/1748-9326/aba1c0/pdf
[69] *Id.* at 5.
[70] Jenkins, J., et al., *Getting to Zero-Carbon Emissions in the Electric Power Sector,* Joule (Dec. 19, 2018) https://www.sciencedirect.com/science/article/pii/S2542435118305622.
[71] Clean Air Task Force, Comment re SB 100 Joint Agency Report: Charting a Path to a 100% Clean Energy Future, Docket No. 19-SB-100, (Sept. 19, 2019) https://efiling.energy.ca.gov/GetDocument.aspx?tn=229800&DocumentContentId=61244..
[72] *Id.*
[73] Brick, S., *Charting Pathways to Deep Decarbonization: Challenges for Analysts, Policymakers, Advocates and Public: Presentation to the UCSD Deep Decarbonization Initiative* (Jan. 2018) https://deepdecarbon.ucsd.edu/_files/01312018_brink_presentation.pdf.
[74] Clean Air Task Force, Comment re SB 100 Joint Agency Report: Charting a Path to a 100% Clean Energy Future, Docket No. 19-SB-100, (Sept. 19, 2019), https://efiling.energy.ca.gov/GetDocument.aspx?tn=229800&DocumentContentId=61244.

The underestimation of the Project's energy impacts, specifically the increased electricity demand during peak load hours, results in a "wasteful, inefficient, or unnecessary consumption of energy resources"[75] because there is substantial evidence that indicates that an increased reliance on electricity significantly increases daily peak loads, thereby resulting in inefficient and wasteful energy impacts. While the DEIR attempts to explain that PV and battery storage, energy efficiency measures, and reductions in process loads would offset the overall increase in electricity demand due to heat pump requirements, it is unclear from the analysis what assumptions underscore this conclusion. This conclusion is questionable given that there is substantial evidence indicating the most significant daily peak loads take place during the evening hours when people have returned home from work and are tending to their daily household tasks, such as cooking and laundry. Here, the analysis fails to explain how the Project's battery storage requirements for commercial buildings, will meet daily peak energy demands in the evenings when most people are in their homes, thereby masking a wasteful and inefficient use of intermittent energy sources. Further, there is substantial evidence indicating that an increased reliance on renewable intermittent energy sources, such as solar and wind, would require massive overbuilding of energy projects to support an increased demand.

By looking at only seasonal peak demands, rather than the daily peak demands, the analysis masks the Project's potentially significant impact as wasteful and inefficient because a seasonal analysis fails to capture the true energy consumption patterns which alter significantly throughout the day.

Figure 1. Peaking Hourly Generation (2018)[76]



[75] CEQA Guidelines, Appendix G.

[76] Nyberg, M., *Thermal Efficiency of Natural Gas-Fired Generation in California: 2019 Update.* CEC. Publication No. CEC-200-2020-03 (June 2020), hereinafter "Nyberg -*Thermal Efficiency,*" https://efiling.energy.ca.gov/GetDocument.aspx?tn=233380&DocumentContentId=65895.

C. Overstatement of Heat Pump Technology Efficiencies

The DEIR also overstates the purported efficiencies from heat pump technologies due to the fact that their efficiency varies depending on a number of factors, including the temperature of water adjacent to the condenser, ambient air temperature and humidity, set point temperature, hot water draw profile, and operating mode.[77] It is unclear whether the DEIR accounted for these factors, given the little detail provided in the analysis. While all of these factors impact efficiency, ambient air temperatures, or colder climates, can have major efficiency implications. This is because, rather than generating heat, heat pump technologies use electricity to move heat from a cool space to a warm space, much like a refrigerator. For this reason, heat pump water heaters ("HPWH") will only operate in heat pump or hybrid mode if the ambient temperature of the air is between approximately 45°F and 110°F. When the temperature of the incoming air drops below 45°F, the HPWH will switch into electric resistance mode which greatly reduces the efficiency of the unit.[78] California is home to no less than half a dozen climate regions in which temperatures fall below 45°F during winter months.[79] Given the state's climate diversity, which ranges from dry desert, mild coastal, to cold mountainous regions, it would be unreasonable to assume that energy efficiency rates for HPWH would be consistent statewide or that such technologies would necessarily be energy efficient in colder regions.

The loss of efficiency in cooler climates is demonstrated by a 2013 study conducted by the National Renewable Energy Laboratory ("NREL"), which highlights the fact that areas such as the Pacific Northwest are particularly susceptible to higher energy impacts resulting from heat pump technologies. The report concluded that in homes in cooler climate zones, it "can take up to three times as much energy for the [electric resistance] heating equipment to meet the space heating load imposed by HPWH on the conditioned space."[80]

In addition, hot water demand also affects heat pump energy efficiency. As common sense would dictate, electricity consumption increases with overall water consumption. However, as demonstrated in Figure 2 below, if the hot water demands are intense, a hybrid

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[77] U.S. Department of Energy Office of Energy Efficiency & Renewable Energy, *Energy Savings and Breakeven Cost for Residential Heat Pump Water Heaters in the United States* (July 2013), at 12, hereinafter "U.S. Dept. of Energy - *Energy Savings,*" https://www.nrel.gov/docs/fy13osti/58594.pdf.

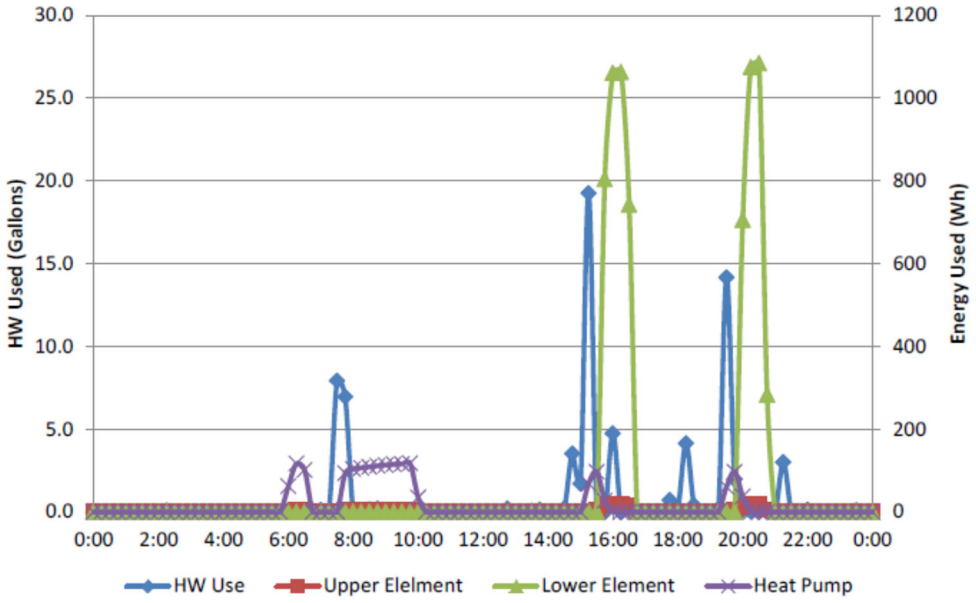
[78] U.S. Department of Energy Office of Energy Efficiency & Renewable Energy, *Measure Guideline: Heat Pump Water Heaters in New and Existing Homes* (Feb. 2012), at 8, hereinafter "U.S. Dept. of Energy -*Measure Guideline,*" https://www.nrel.gov/docs/fy12osti/53184.pdf.

[79] These regions include 2, 11, 12, 13, 14, and 16. Pacific Energy Center, *Guide to California Climate Zones and Bioclimatic Design* (Oct. 2006), https://www.pge.com/includes/docs/pdfs/about/edusafety/training/pec/toolbox/arch/climate/california_climate_zones_01-16.pdf.

[80] U.S. Dept. of Energy - *Energy Savings*, at 27.

HPWH will revert into electric resistance mode, which consumes at least twice as much electricity as heat pump mode and would therefore greatly exacerbate energy impacts.[81]

Figure 2. Electricity Demand for HPWHs Relying On Electric Resistance[82]



VII. Greenhouse Gas Emissions Impacts

The DEIR impermissibly concludes that the Project would result in "no significant" impacts to GHG emissions, based on an invalid hypothetical future baseline and flawed analysis. The DEIR analysis fails to adequate analyze and disclose the Project's impacts as it relates to GHG emissions for energy sources that provide electricity and contains an inadequate disclosure of impacts related to Global Warming Potential ("GWP") refrigerants.

A. Inadequate Disclosure of Impacts Related to Energy Sources that Provide Electricity

The Comment Letter on the NOP urged the DEIR analysis to account for the variation in GHG emissions throughout the day because buildings rely on different energy sources throughout the day. It appears that the DEIR fails to account for GHG emissions, or any other environmental impacts, stemming from the particular energy source utilized to meet demand at any given time. This omission is significant because intermittent renewable energy sources, such as solar power, have the capability of producing lower levels of GHG emissions, but are only useful during midday hours, when energy demands are lowest and most people are not in their homes.[83] A 2019 article published in the Journal of Building Engineering found that a shower

[81] U.S. Dept. of Energy -*Measure Guideline*, at 5.
[82] U.S. Dept. of Energy -*Measure Guideline,* at 7.
[83] *See, e.g.*, Smith, O. *The Dark Side of the Sun: Avoiding Conflict Over Solar Energy's Land and Water Demands*

that takes place between the hours of 7:00 p.m. and 7:00 a.m. that relies on an electric water heater would likely rely on a natural gas power plant to heat the water, and likely produce up to three times as much GHG emissions compared to a water heather that is directly powered by natural gas.[84] As explained above, because of time of day energy use, electricity demand is high when renewable sources are not available. Thus, in order to meet demand, stored power must be utilized from batteries (which California does not have currently have in sufficient quantity), power must be generated from non-renewable sources, such as natural gas-fired peaker plants, or power can be imported from other states and less environmentally friendly and less efficient plants. All three options create potentially significant impacts which the DEIR must consider.

The impacts of GHG emission for electricity generation are significant. Emissions from electricity generation is the third leading source of GHG emissions in the state of California,[85] yet the DEIR does not appear to account for such emissions. The DEIR provides one short statement regarding GHG impacts for electricity generation: "on-site electricity use can result in the generation and distribution of electricity at renewable and fossil-fuel power plants, resulting in GHG emissions."[86] However, Table 4.5-1 (Typical Greenhouse Gas Emissions from California's Building Sector for 2019 (BAU) and 2022 Energy Code) does not provide meaningful information related to the assumptions made in the GHG analysis, including whether the analysis took into consideration any GHG emissions resulting from power plants when intermittent (renewable) sources of energy are not available. These impacts can be significant, given that in 2018 natural gas made up 34.9 percent of the state's electric generation, followed by large hydroelectric (10.7 percent), and nuclear (9.1 percent).[87] In order to comply with CEQA, the Project must analyze the reasonably foreseeable impacts from the Project, which include energy supplied from peaker plants during times in which intermittent energy sources are not available.

A 2019 study published by the U.S. Department of Commerce, National Institute of Standards and Technology ("NIST") that analyzed energy use, environmental impacts, and economic performance of residential buildings in Maryland using either electricity or natural gas for space and domestic water heating concluded that a natural gas-heated home is more economical, results in "lower environmental impacts across numerous impact categories," including lower GHG emissions, has a faster heating response time, and generates a greater level of indoor comfort than an all-electric residence. GHG emissions were found to be higher in an all-electric home because of the greater amount of fuels required to produce electricity for use in the home as compared with the use of natural gas equipment in a residence.[88]

(Oct. 2, 2018) https://www.newsecuritybeat.org/2018/10/dark-side-sun-avoiding-conflict-solar-energys-land-water-demands/.

[84] O'Rear, E., et al., *Gas vs. electric: Heating system fuel source implications on low-energy single-family dwelling sustainability performance*. Journal of Building Engineering. (Sept. 2019), hereinafter "O'Rear - *Gas vs. Electric,*" https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=926046.

[85] *See* DEIR at 103; CARB. 2000-2018 California Greenhouse Gas Emission Inventory (2020), https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf.

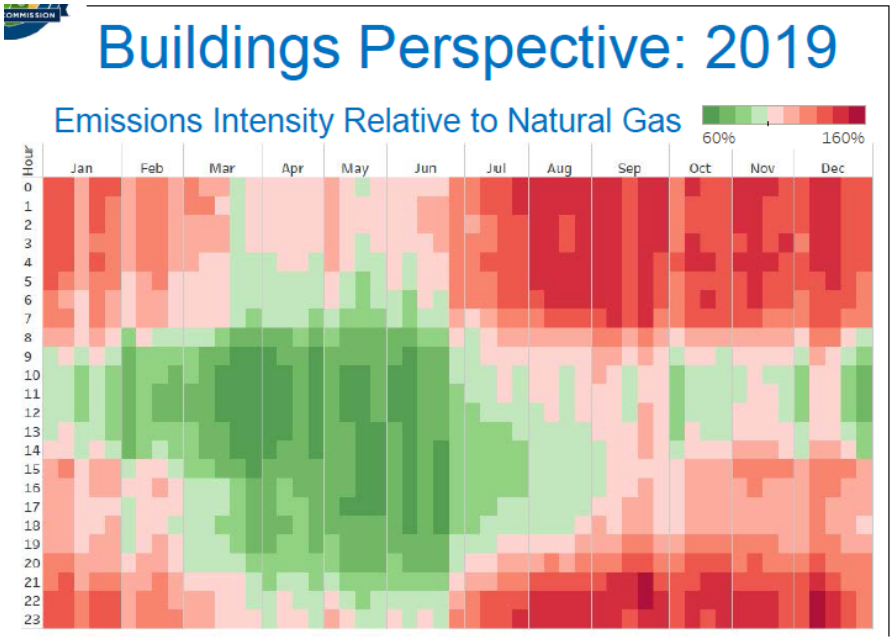
[86] DEIR at 108.

[87] Nyberg -*Thermal Efficiency,* at 17.

[88] O'Rear - *Gas vs. Electric.*

Although California has a larger proportion of renewable utility-scale energy than Maryland, the CEC has shown that in California, consistent with the NIST study, buildings that rely on natural gas generate substantially lower GHG emissions on average than buildings that rely on electricity. As shown in Figure 3 below, in 2018 the *CEC estimated that electricity use in buildings produces a greater level of GHG emissions than natural gas use for approximately 60 percent of the year*.[89] This is because natural gas results in lower GHG emissions during a significant majority of the morning and evening hours in all months, which are the periods of highest residential energy demand. The significantly lower GHG emissions in California buildings that rely on natural gas reflects the fact that, except during daytime hours from about March to June, intermittent solar and wind is insufficient to meet in-state building energy demand. When intermittent renewable energy is not available, electrical generation is less efficient and produces higher GHG emissions than if buildings were relying on natural gas.

Figure 3. Emissions Intensity Relative to Natural Gas[90]



Additionally, the DEIR erroneously claims that both in-state *and out-of-state* electricity generation combined, is the third leading contributor to GHG emissions. However, the report only accounts for in-state GHG emissions. This misstatement is significant because it misleads readers about the actual GHG impacts emanating from in-state resources. Therefore, the statement contained on page 102 should be edited to read:

[89] CEC, Building Decarbonization, 2018 Update – Integrated Energy Policy Report, IEPR Workshop Presentation by M. Brook, at 16 (June 14, 2018), hereinafter "CEC - 2018 Building Decarbonization Update," https://efiling.energy.ca.gov/GetDocument.aspx?tn=223817.
[90] CEC -2018 Building Decarbonization Update, at 16.

> The largest source of GHG emissions in California is transportation, followed by industrial activities and in state ~~and out of state~~ electricity generation (CARB 2018).

B. Inadequate Disclosure of Impacts Related to High GWP Refrigerants

The analysis of refrigerants and end-of-life leakage, is also flawed because it fails to account for and quantify any annual or end-of-life leakage once heat pumps are replaced with new technologies; and overstates the reach and relevancy of proposed regulations, currently under consideration by CARB, for the use of refrigerants.

All refrigerants are prone to leakage during their lifetime and at end-of-life. The 2018 Building Decarbonization Update found that "HFCs, a common class of refrigerants, make up 17 percent and 6 percent of all commercial and residential building GHG emissions (in CO2 equivalent), respectively. *These percentages are expected to increase with the transition to electrification.* HFC refrigerants are a fast-growing source of GHGs in California and nationally; without action to curtail them, the emissions from these refrigerants could more than double by 2030."[91] The DEIR analysis must account for these leakages in its GHG analysis.

To evade disclosing the Project's immediate impacts, Table 4.5-2 (Changes in Gross Greenhouse Gas Emissions From California's Building Sector) shows GHG emissions beginning in 2025 not in 2023. The DEIR fails to explain why it does not analyze the Project's near term impacts, but this is likely because the analysis relies on the implementation of a set of proposed regulations that are not yet adopted to help demonstrate a reduction in potential GHG impacts from Project implementation. While not contained in the main text of the DEIR, Appendix B states that the analysis for air conditioning and space heating considers an effective date of January 1, 2025 for the CARB Refrigerant Regulations."[92] This statement is a misrepresentation of the significance of these proposed regulations, as they have not yet been submitted to the Office of Administrative Law ("OAL") as of the date of publication of the DEIR, and may still be subject to modifications, based on the rulemaking process pursuant to Gov. Code § 11340 *et seq*. Because these regulations have not been adopted, and are not expressly included as a part of the Project scope, the DEIR's reliance on these assumptions is speculative, improper, and must be excluded from the analysis. In any event, it is improper for the GHG analysis to use a horizon year of 2025, waiting specifically for that date to mask true GHG emission impacts, when other impact sections utilize 2023 as the Project year for impact analysis.

VIII. Hazards and Hazardous Materials Impacts

The Hazards and Hazardous Materials analysis concludes that the Project would have less than significant impacts. However, the DEIR studies only one type of battery storage technology, and fails to adequately analyze and disclose direct and reasonably foreseeable indirect impacts related to:

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[91] CEC, *Toward A Clean Energy Future, 2018 Integrated Energy Policy Report Update, Vol. II,* Publication No. CEC-100-2018-001-V2-CMF (Feb. 2019), at 43, https://efiling.energy.ca.gov/getdocument.aspx?tn=227391.
[92] DEIR at 248-49.

- the operation of battery storage systems and associated risks;
- exposure of risk, injury or death involving wildland fires;
- impacts related to end-of-life activities; and
- impacts related to mining activities.

A. CEQA Requires a Complete Analysis of the Available Battery Storage Technologies and Their Potential Environmental Impacts

The Project would impose battery storage system requirements into specific nonresidential buildings, high-rise residential buildings, hotels, and motels.[93] However, the DEIR analysis is premised exclusively on the environmental impacts associated with Li-ion batteries, though there is no express requirement to utilize Li-ion technology.[94] If Li-ion technology is the only type of technology that can meet the Project's performance and energy requirements, it is not made clear with the text of the Express Terms nor within the DEIR's discussion. Instead, there are several different types of battery storage technology options available on the market. Options for residential battery storage systems include but are not limited to: Lithium NMC, Lithium LFP, Lithium Titanate, Redox, and Sodium-ion.[95] Because the Project does not mandate a particular type of technology for battery storage, the DEIR must analyze potential impacts associated with other types of battery storage technology systems that can meet the same power capacity and energy capacity mandated by the Project.

B. Inadequate Disclosure of Impacts Related to the Operation of Battery Storage Systems

Even assuming the Project mandates Li-ion technology, or that Li-ion technology is the only type of technology that satisfies Project requirements, the DEIR fails to account for the risks associated with the use of Li-ion technologies, including the significant risks associated with thermal runaway by dismissing it as a rare occurrence, without providing substantial evidence to support its conclusion, despite the DEIR's recognition that Li-ion fires can rapidly reach temperatures of 932 degrees Farenheit (500 degrees Celcius).[96]

Li-ion fires are not novel. Li-ion technologies are well-known to "spontaneously combust" due to thermal runaway, and it is not unusual to see an evening news story highlighting another Li-ion product that has caught fire. Thermal runaway can be caused by a number of contributing factors including: physical, electrical and thermal factors, manufacturing defect and

[93] DEIR at 114.
[94] *See* CEC, Draft 2022 Energy Code Express Terms, Table 140.10-B Battery Storage Capacity Factors (Feb. 22, 2021).
[95] Clean Energy Reviews, Solar Battery Comparison Chart webpage, https://www.cleanenergyreviews.info/hybrid-solar-battery-energy-storage-system-review, accessed June 28, 2021; U.S. Department of Energy, Energy Storage: Types of Batteries webpage, (Mar. 2020) https://energystorage.pnnl.gov/batterytypes.asp.
[96] DEIR at 116.

even battery aging.[97] The impacts of these fires are amplified when associated with large scale battery storage systems as opposed to common consumer products like cell phones. This is due to the fact that large scale Li-ion batteries, including building storage systems, contain more energetic materials and flammable chemical electrolytes, thus thermal failure becomes "more vigorous and fierce"[98] and leads to extreme fire danger.[99]

The issue with "[l]ithium ion battery fires [is that they are] notoriously challenging to fight. Gaseous suppression and water systems simply are not effective… The most effective method of extinguishing these fires requires large amounts of water applied for many hours or even days. In many locations, especially those that are remote or where water is scarce, this is not desirable or even achievable."[100] "In November of 2017, a fire at a Belgium grid-connected lithium-ion battery energy storage site near Brussels resulted in a cloud of toxic fumes that forced thousands of residents to stay at home. In April of 2019, a lithium-ion battery system exploded at an Arizona Public Service site, severely injuring eight firefighters... And between 2017 and 2019, there were 28 [Energy Storage System ("ESS")] fires in Korea, resulting in the suspension of 522 ESS facilities."[101]

Lithium-ion fires are also associated with the release of toxic substances. Due to the chemical composition inside of the batteries, toxic emissions including: hydrogen flouride ("HF"), ethyl methl carbonate ("EMC"), diethyl carbonate ("DEC"), ethylene carbonate ("EC"), carbon monoxide ("CO"); and carbonyl sulfide ("COS"), can be released, which may result in severe health impacts, including death.[102]

Despite the popularity of lithium-ion technology, experts have not yet determined a singular approach to mitigate fire risks and therefore, " a wide range of different safety strategies are combined to achieve a sufficient level of safety." [103] Additionally, with the increasing prevalence of battery storage systems comes increased risk and occurrence of fires associated with such systems.[104] A 2020 article published in the Journal of Electrochemical Society concluded that "containing any fire or explosion within the battery case during failure is still a

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[97] Ouyang, D., et al. *A Review on the Thermal Hazards of the Lithium-Ion Battery and the Corresponding Countermeasures,* Applied Sciences (June 18, 2019) https://res.mdpi.com/d_attachment/applsci/applsci-09-02483/article_deploy/applsci-09-02483-v2.pdf.

[98] Wang, J., *Evaluating the thermal failure risk of large-format lithium-ion batteries using a cone calorimeter,* J. of Fire Sci., at 82 (2019) https://journals.sagepub.com/doi/pdf/10.1177/0734904118816616.

[99] Li, W., et al., *Fire Boundaries of Lithium-ion Cell Eruption Gases Causes by Thermal Runaway,* iScience (May 21, 2021) https://www.cell.com/iscience/pdf/S2589-0042(21)00369-2.pdf.

[100] Energy Storage News, Preventing Thermal Runaway in Lithium-ion Energy Storage Systems webpage, (May 10, 2021) https://www.energy-storage.news/blogs/preventing-thermal-runaway-in-lithium-ion-energy-storage-systems.

[101] *Id.*

[102] Nedajalkov, A., et. al., *Toxic Gas Emissions from Damaged Lithium Ion Batteries - Analysis and Safety Enhancement Solution,* MDPI, (March 7, 2016); *see also,* Center for Disease Control, Facts About Hydrogen Fluoride (Hydrofluoric Acid) webpage, (April 5, 2018) https://emergency.cdc.gov/agent/hydrofluoricacid/basics/facts.asp (Hydrogen flouride can easily penetrates the skin, resulting in severe burns and even death upon skin contact. Inhalation can result in lung damage and swelling, fluid accumulation, and chronic lung disease).

[103] Diaz - *Meta-review of Fire Safety of Lithium-ion Batteries* at 5.

[104] S&P Global Market Intelligence, *Burning Concern: Energy Storage Industry Battles Battery Fires,* (May 24, 2019) https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/burning-concern-energy-storage-industry-battles-battery-fires-51900636.

challenge for most industries that operate with large format cells (e.g. EVs, HVs, aerospace, manufacturing or stationary grid). Specific research on what energy needs to be contained in the battery case, how to calculate it, and thus what thickness of material to use for the case, is still required."[105] The DEIR must analyze all direct and reasonably foreseeable indirect impacts related to the operation of battery storage systems, including the potential for fires resulting from thermal runaway.

C. Inadequate Disclosure of Impacts Related to Exposure of Risk, Injury, or Death Involving Wildland Fires

While the Project does not incentivize building in areas that are more susceptible to wildland fires, the DEIR's finding of a "less than significant risk" for wildland fires caused by transmission lines fails to account for the potential of other kinds of fires due to Project implementation. For example, the Project presents an increased risk of wildfires resulting from a malfunctioning batter or thermal runaway and could present an increased risk of severe wildfire if such an event were to combine with an already-existing wildfire.[106]

The DEIR dismisses such risks because "industry standards and fire code compliance that would be required to install and operate the systems required by the Energy Code updates would ensure that this risk is minimized and that there is an insignificant resulting likelihood of harm to the environment and public safety." To support this claim, the DEIR cites to Table 4.6-1 (Standards and Codes That May Apply to Lithium Ion Battery Storage Systems). However, it is unclear exactly which of these safety measures and precautions are required to be implemented, when these standards and codes apply to a large scale battery storage system, and how they would lessen the risk of wildfire. Nor is it clear that any of the standards and codes provided in Table 4.6-1 actually minimize the risks associated with large format cells.

Finally, the Federal Emergency Management Agency ("FEMA") has conducted studies that indicate that the DEIR overestimates the knowledge and capability of utility companies and other regulators, including fire fighters to deal with such risks: "Although the fire service routinely responds to explosive scenarios, such as those associated with natural gas leaks, standard operating procedures do not exist for scenarios like a battery energy storage system for which there is no way to cut off the gas supply. The fire service is unaware and inexperienced with the fire and explosion hazards of [battery storage systems]."[107] This clearly significant impact cannot be ignore and must be analyzed and disclosed in the DEIR.

D. Inadequate Disclosure of Impacts Related to End-of-Life Activities

The Project will result in an increased utilization of battery storage systems which will eventually reach end-of-life stages and need to be disposed of in some manner. Battery storage systems, and Li-ion batteries, contain toxic and hazardous materials that pose significant environmental impacts if not properly disposed. However, the DEIR's analysis fails to discuss the life span of batteries, how much lithium or other hazardous materials are present in the

[105] *See* Diaz - *Meta-review of Fire Safety of Lithium-ion Batteries*.
[106] DEIR at 134.
[107] Federal Emergency Management Agency, Emerging Hazards of Battery Energy Storage System Fires webpage, (Oct. 27, 2020) https://www.fema.gov/case-study/emerging-hazards-battery-energy-storage-system-fires.

batteries and need to be disposed of once the battery's life span is over, or the environmental impacts associated with improper disposal. As stated in the DEIR, current research and product data shows grid connected batteries could have a life of 7 to 10 years, depending on how well the battery is maintained. Presuming buildings have a lifespan of 30 years (using the same methodology as the GHG analysis), a battery could potentially be changed 3-4 times during a building's lifespan. Therefore, the DEIR must analyze the impacts associated with a high turnover rate of batteries.

The DEIR attempts to downplay the environmental impacts associated with end-of-life activities, by making broad assumptions that batteries will be adequately disposed, recycled, or repurposed, when in actuality substantial evidence indicates that these assumptions are not reasonable (largely due to lack of regulation and impractical technologies). For example, the DEIR states "It is anticipated lithium ion batteries will be repurposed for a second life."[108] However, the DEIR fails to provide substantial evidence to support this conclusion. It is unreasonable to assume that all batteries would be repurposed, when there is no regulatory or statutory requirement to do so. Instead, the DEIR relies on a 2020 Markets and Markets report to demonstrate that there will be sufficient recycling facilities to accommodate demand. However, the DEIR provides no specific details about the assumptions made in the report, including the number of recycling facilities required to meet anticipated demand, and whether any facilities are planned for or anticipated within the state of California. Additionally, the report is not readily available to the public, nor is it provided on the CEC's Docket, and is only available for purchase at the exorbitant cost of $4,950, before which a prospective reader must first share their objectives or purpose for requesting the report.[109] While we have requested a copy of this report from the CEC, they have responded that they do not have possession of the report.[110] This raises the question as to whether the DEIR has truly provided the public and decisionmakers with the information necessary to understand Project impacts.

Additionally, a 2020 report by the Energy Trade Storage Association highlights the many challenges associated with repurposing large lithium-ion energy storage systems, in part due to unstable markets for collection, transport, and recovered resource sales.[111] Contrary to the DEIR's blanket assertion that many batteries would be repurposed for a second life, the report indicates that there are currently no facilities that fully recycle Li-ion batteries or provide them a second life.[112] Further, a 2019 report indicates that less than 5 percent of lithium-ion batteries are recycled, largely due to lack of uniformity of these battery systems.[113] Manufacturers have been focused on lowering costs, and increasing battery longevity and charge capacity rather than recyclability, making it less than cost-effective to pursue such processes for very small amounts

[108] DEIR at 129.
[109] Markets and Markets, Purchase Report webpage, https://www.marketsandmarkets.com/Purchase/purchase_reportNew.asp?id=153488928, accessed June 28, 2021.
[110] Email from Josephine Crosby, California Energy Commission to Jennifer Hernandez and Paloma Perez-McEvoy, Holland & Knight, dated June 30, 2021.
[111] Energy Storage Association, *End-of-Life Management of Lithium-ion Energy Storage Systems* (Apr. 22, 2020), at 13, https://energystorage.org/wp/wp-content/uploads/2020/04/ESA-End-of-Life-White-Paper-CRI.pdf.
[112] *Id.* at 12; *see also* Climate Central, Climate Central Solutions Brief: Battery Energy Storage webpage (Nov. 13, 2019), https://www.climatecentral.org/news/climate-central-solutions-brief-battery-energy-storage.
[113] Jacoby, M,. *It's Time to Get Serious About Recycling Lithium-ion Batteries,* Chemical & Engineering News, (July 14, 2019) https://cen.acs.org/materials/energy-storage/time-serious-recycling-lithium/97/i28.

of expensive resources like cobalt and nickel.[114] The DEIR cannot ignore these potentially significant impacts and must analyze the direct and reasonably foreseeable indirect impacts resulting from the end-of-life activities related to battery storage systems.

E. Improper Disclosure Regarding Mining Activities

The DEIR also completely ignores mining impacts associated with the anticipated increase in demand for battery storage and rare minerals due to Project implementation. Li-ion technology commonly relies on cobalt, a highly valuable natural resource primarily mined in Congo. An investigative report from the Washington Post estimates that as much as 60 percent of the world's cobalt comes from Congo. Cobalt miners in Congo often suffer from death, injuries, and "mining activities expose local communities to levels of toxic metals that appear to be linked to ailments that include breathing problems and birth defects.[115] The report also found that residents living at or in near proximity to mining areas also have high levels of cobalt, lead, cadium and uranium in their urine, that there are elevated levels of metals in fish swimming in nearby rivers, and that there are increased rates of birth defects if one of the parents works in the mining industry.[116] The Project cannot ignore the broad impacts it causes by pigeonholing itself into a narrow regulatory change to "improve the climate". The DEIR must grapple with, disclose, and analyze all direct and reasonably foreseeable indirect impacts that will occur due to Project implementation, including those related to mining activities necessary to support the increased batter storage that will necessarily occur when the Project is adopted.

IX. Utilities and Service Systems Impacts

The DEIR concludes that the Project would result in no impacts on water, wastewater treatment, storm water drainage, or telecommunication facilities, and would have less than significant impacts on electric power and natural gas facilities. The DEIR's conclusion that there would be a less than significant impact on electric power facilities is grounded on the assertion that "[t]he current capacity of instate electricity generation is expected to meet any near-term potential increase in electrical usage from heat pump technologies with minimal expansion of existing electrical infrastructure."[117] To support this vague statement, the DEIR points to Table 4.7-1 which indicates the Project's expected energy savings. However, reliance on this table is misplaced because it relies upon an improper baseline, as explained above. Further, the Table refers the reader to Appendix B as its source, but it is wholly unclear how the numbers provided in the Table compare with the state's existing grid capacity. The lack of meaningful information contained in the DEIR robs the reader of the ability to understand the Project and its potential environmental impacts and thus violates CEQA central tenants that an EIR must be understandable and clear.[118]

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[114] *Id.*
[115] Frankel, T., *The Colbalt Pipeline: Tracing the Path From Deadly Hand-dug Mines in Congo to Consumers' Phones and Laptops,* The Washington Post (Sept. 30, 2016) https://www.washingtonpost.com/graphics/business/batteries/congo-cobalt-mining-for-lithium-ion-battery/.
[116] *Id.*
[117] DEIR at 142.
[118] *Association of Irritated Residents,* 107 Cal.App.4th at 1391.

The SB 100 Report indicates that the August 2020 rolling blackouts highlighted the state's strained electrical grid, and found that the following factors contributed to the rolling blackouts:

- The extreme, climate change-induced heat wave resulted in electricity demand exceeding supply; the existing resource planning processes are not designed to fully address extreme heat waves.

- Resources planners have not kept pace with the rapid rise of solar and wind power on the grid, resulting in insufficient support to meet the high demand in the early evening in extreme conditions.

- Some practices in the day-ahead energy market exacerbate supply challenges when the grid is under high stress.[119]

In response to the rolling power outages, CAISO wrote to Governor Newsom stating that "[w]e know that capacity shortfalls played a major role in the CAISO's ability to maintain reliable service on the grid."[120] Such impacts would only be exacerbated by an increased reliance on the electrical grid such as that which would occur with Project implementation. Importantly, this letter also contains the signature of the CEC Chair, making it difficult to fathom how the CEC can now allege that increased electricity demand will not further strain the grid.

In 2020, consultants at ScottMadden prepared a report studying key integration issues and resiliency concerns amidst state and local clean energy and GHG reduction policies.[121] The report found that California's clean energy goals and the potential for in-state demand vastly exceed in-state renewables supply, and that resiliency concerns point to the potential need for increased capacity.[122] The report also suggested that "[a]s regions and states develop and communicate clean energy goals, *they should work with the RTO/ISO to understand the degree to which these goals must be facilitated by transmission* (both intra- and interregional)."[123] The DEIR cannot bury these impacts and refuse to address them under vague allegations that current supply is sufficient and that additional energy efficiency will make up for any increase demand. CEQA require more than blind assertions and the DEIR does not provide that.[124]

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[119] SB 100 Report at 44-45.
[120] Letter from Marybel Batjer, President, CPUC, Stehen Berberich, President and Executive Officer, California Independent System Operator, and David Hochschild, Chair, California Energy Commission to Governor Gavin Newsom at 2 (Aug. 19, 2020), https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/News_Room/NewsUpdates/2020/Joint%20Response%20to%20Governor%20Newsom%20Letter%20August192020.pdf.
[121] ScottMadden, *Informing the Transmission Discussion, A Look at Renewables Integration and Resilience Issues for Power Transmission in Selected Regions of the United States, Executive Summary* (Jan. 2020), https://www.scottmadden.com/content/uploads/2020/01/ScottMadden_WIRES_Informing-the-Transmission-Discussion_1-Executive-Summary_2020_0115.pdf.
[122] *Id.* at 15.
[123] *Id.* at 18 (emphasis added).
[124] CEQA Guidelines § 15384 ("Substantial evidence" means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion); *see also Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (an EIR must contain facts and analysis, not just bare conclusions and options).

X. Wildfire Impacts

The DEIR concludes that the Project would result in no or less than significant impacts related to Wildfires. This is because the analysis attempts to limit the discussion of reasonably foreseeable indirect impacts to those "occurring only as a result of buildings being constructed in compliance with the 2022 amendments after they have taken effect."[125] This unreasonable narrowing of the Project masks its true impacts, including those from new utility infrastructure.

Because the Project will result in an increased reliance on electricity, it is reasonably foreseeable that new utility infrastructure will need to be constructed (as discussed in Section IX above), including renewable energy facilities and transmission and distribution lines. This may cause an increase in fire risk because, in an era of increasingly dry and warm climates, California wildfires are occurring at increased frequencies and severities, many of them caused by electric transmission lines.[126] Fires attributable to power lines comprise roughly half of the most destructive fires in the state's history.[127] Therefore, the increased risk of wildfires caused by electric transmission lines must be analyzed in the DEIR.

It is also reasonably foreseeable that the increased presence of these projects, increased wildfires, and increased electricity demand may result in more PSPS events. PSPS events are disruptive and can span large geographic areas for long periods of times. In 2019, a PSPS Event instituted by Pacific Gas & Electric ("PG&E") beginning October 9, 2019 impacted over 732,348 households in 35 counties across the Sacramento Valley, Sierra Foothills, North Bay, South Bay, East Bay, Central Coast, and parts of Southern California.[128] PSPS events also raise a number of significant public safety issues that have not been analyzed in the DEIR. These impacts include loss of power at critical medical facilities (disparately impacting medically vulnerable communities requiring access to medical devices), added strain on first responder services (such as local police departments and EMTs), loss of school days and disruption of critical city infrastructure during emergency responses (such as traffic lights), and an inability to access other necessary services from gas stations and ATMs.[129] Under certain circumstances, PSPS events may even curtail access to critical phone services, inclusive of wireless services,

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[125] DEIR at 155.
[126] Energy and Environmental Economics, Inc., *Decarbonizing Pipeline Gas to Help Meet California's 2050 Greenhouse Gas Reduction Goal,* (Jan. 2015), hereinafter "E3 - *Decarbonizing Pipeline Gas,*" https://www.ethree.com/wp-content/uploads/2017/02/E3_Decarbonizing_Pipeline_01-27-2015.pdf.
[127] CPUC, Public Safety Power Shutoff (PSPS)/De-energization webpage, https://www.cpuc.ca.gov/psps/#:~:text=In%202012%2C%20the%20CPUC%20ruled,order%20to%20protect%20public%20safety.&text=In%202020%2C%20the%20electric%20companies,provisions%20for%20COVID%2D19%20measures, accessed June 28, 2021.
[128] PG&E, *Amended Public Safety Power Shutoff (PSPS) Report to the CPUC Oct. 9-12, 2019 De-Energization Event* (Nov. 8, 2019), https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/News_Room/NewsUpdates/2019/PGE%20Public%20Safety%20Power%20Shutoff%20Oct.%209-12%20Report_Amended.pdf.
[129] *See, e.g.,* CPUC, Frequently Asked Questions about Utility Public Safety Power Shut-off (PSPS) Events webpage, https://www.cpuc.ca.gov/PSPSFAQ/, accessed Apr. 16, 2021; *see also,* Luna, T., *Power shut-off could prevent wildfires, but at what cost to the elderly and disabled?* Los Angeles Times (Aug. 18, 2019), https://www.latimes.com/california/story/2019-08-17/california-utilities-power-outages-wildfires; Pickoff-White, L., et al, *PG&E Shutoffs Are Here Again: What to Know About Power Outages Today*, KQED (September 8, 2020), https://www.kqed.org/news/11836990/pge-shutoffs-are-here-again-what-to-know-about-power-outages-today.

leaving some of the state's most vulnerable populations stranded.[130] Loss of access to reliable phone services would result in an inability to access emergency services, and to access public safety updates related to the PSPS event.[131] The Project analysis must account for the reasonably foreseeable public safety impacts associated with PSPS Events.

It appears that the DEIR attempts to claim that battery storage requirements would "partially supplant more volatile equipment in the absence of battery energy storage, such as fossil fuel backup generators."[132] The DEIR fails to account for the fact that battery storage systems would only serve if a building has not burned down in a fire. The analysis also fails to explain if and how a battery storage system could provide energy for a long duration, as wildfires and PSPS events can leave customers without power for days. Lastly, this statement fails to analyze the air quality impacts associated with other power-generating equipment, such as diesel-fueled generators, in the event of a wildfire or PSPS event, as described in greater detail in Section IV above.

XI. Disparate Impacts on Working-Class and Disadvantaged Communities

The Project would result in an increased demand in electricity and increased electricity costs.[133] The DEIR prematurely concludes that such impacts would be "purely economic effects" because it assumes that low-income households not only have access to electricity, but have the resources to pay for it.[134] The Project must analyze the reasonably foreseeable public health impacts that will result from an increased demand for electricity and rising energy costs that will disproportionately impact California's most vulnerable low-income and working class communities.[135]

California already has the highest poverty rates in the nation[136] and these are the residents who will undoubtedly be impacted by the Project's attempt to increase reliance on electricity. A

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[130] CPUC, Public Safety Power Shutoff(PSPS)/De-Energization: Potential Impacts on Telephone Service during De-Energization webpage, https://www.cpuc.ca.gov/psps/, accessed June 28, 2021.
[131] *See* CPUC, Public Report on the Late 2019 Public Safety Power Shutoff Events, at 18, (Apr. 30, 2020) https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/News_Room/NewsUpdates/2020/SED%20Public%20Report%20On%20The%20Late%202019%20PSPS%20Events.pdf.
[132] DEIR at 156.
[133] *See e.g.,* Murray, B., *The Paradox of Declining Renewable Costs and Rising Electricity Prices,* Forbes (June 17, 2019), https://www.forbes.com/sites/brianmurray1/2019/06/17/the-paradox-of-declining-renewable-costs-and-rising-electricity-prices/?sh=33dded0c61d5, *see also,* Bryce, R. *Department of Energy Price Data Spotlights Regressive Nature of 'Electrify Everything' Effort,* Forbes (Mar. 19, 2021), https://www.forbes.com/sites/robertbryce/2021/03/19/department-of-energy-price-data-spotlights-regressive-nature-of-electrify-everything-effort/?sh=43cdd614574f (finding that on an energy-equivalent basis, electricity will cost more than twice as much as natural gas and propane as energy fuel sources).
[134] Dolsack, N., et al. *Urban Heatwaves Are Worse For Low-Income Neighborhoods,* Forbes (Aug. 14, 2020) https://www.forbes.com/sites/prakashdolsak/2020/08/14/urban-heatwaves-are-worse-for-low-income-neighborhoods/?sh=32ca93319d50.
[135] Nature Energy, *Editorial: Energy Justice Toward Racial Justice*, (Aug. 14, 2020), https://www.nature.com/articles/s41560-020-00681-w (finding African Americans face higher rates of energy poverty than other racial groups).
[136] *See* Downs, R., *Census Bureau: California has the highest poverty rate in the U.S., UPI* (Sept. 13, 2018), https://www.upi.com/Top_News/US/2018/09/13/Census-Bureau-California-has-highest-povertyrate-in-US/1611536887413/.

2020 report prepared by Next10 and the Energy Institute at UC Berkeley's Haas School of Business ("Next10 Report") found that electricity rates among California's three IOUs are already substantially higher than the national average.[137] Such rates are not likely to decrease as roughly 66 to 77 percent of the costs recovered by the state's IOUs are for fixed operational costs that are independent of customer consumption, to which *"lower- and average-income households bear a greater burden."*[138] In fact, a 2020 study concluded that as many as 12.8 percent of Californians lack enough resources to meet a household's basic needs,[139] leaving the state's most vulnerable populations in a "heat or eat" dilemma.

These high energy burdens can lead to an inability of low-income families to pay their utility bills, thereby exposing them to a high vulnerability of utility shut off or eviction; and negative health impacts, such as thermal discomfort leading to hypothermia or heat stress, respiratory problems like asthma and chronic obstructive pulmonary disease ("COPD"), exposure to lead and carbon monoxide poisoning, and severe mental health problems resulting from the stress of dealing with the threat of disconnection or inability to pay.[140]

The completely unfounded conclusion that such impacts are purely economic and the attempt to tout financial incentive or tax policies that will allegedly ease the burden on low-income households is inadequate.[141] Financial incentives typically require a consumer to commit to high up-front costs, and "[l]ow-income households often cannot afford the up-front financial 'match' required to obtain the rebates and loans available to consumers who buy energy-efficient household appliances."[142] As common sense would dictate, an energy-burdened household that is struggling with the ability to pay for monthly utility costs certainly cannot be expected to pay for even more costly energy upgrades. Similarly, tax credit programs do not provide much financial incentive because low-income households do not have a high tax burden.[143]

There is substantial evidence indicating that the Project would result in increased demand in electricity and increased electricity rates. Such impacts on low-income households are exacerbated by the fact that energy-burdened households suffer from greater health impacts and mental distress resulting from the inability to pay and/or threat of utility disconnection. As such impacts are not purely economic, they must be analyzed in the DEIR.

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[137] Energy Institute at Haas, *UC Berkeley, Designing Electricity Rates for An Equitable Energy Transition*, Executive Summary at 4, (Feb. 23, 2021) https://www.next10.org/publications/electricity-rates.
[138] *Id.*
[139] Bohn, S., et al., *Just the Facts, Poverty in California, Public Policy Institute of California and Stanford Center and Poverty and Inequality* (July 2020), https://www.ppic.org/publication/poverty-in-california/.
[140] Brown, M., et al. *High Energy Burden and Low-Income Affordability: Conclusions from a Literature Review,* Progress in Energy (Oct. 27, 2020), hereinafter "Brown - *High Energy Burden,*" *https://iopscience.iop.org/article/10.1088/2516-1083/abb954/pdf* (finding a direct correlation between household income and rates of utility disconnection); *see also,* Ayala, R., et al. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden Across the United States,* American Council for an Energy-Efficient Economy, at 5 (2020), https://www.aceee.org/sites/default/files/pdfs/u2006.pdf;.
[141] *See, e.g.,* Borenstein, S., *Rooftop Solar Inequity.*
[142] Brown - *High Energy Burden* at 7.
[143] *Id.*

XII. Cumulative Impacts

CEQA Guidelines § 15130(a) requires a discussion of a project's cumulative impacts when the project's incremental effect is cumulatively considerable, meaning the individual project's effects are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. CEQA Guidelines § 15355 also defines the cumulative impact of two or more individual effects that, when considered together, are considerable or that compound or increase environmental impacts. Additionally, cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA requires the DEIR to disclose and analyze the cumulative effects of the Project in conjunction with the multiple legislative and regulatory efforts that are intended to and will result in an increased reliance on electricity. Despite the DEIR's efforts to list all of the energy policies aimed at "decarbonization", the analysis fails to take into account the cumulative impacts of the Project in connection with various policies and programs that will increase electrical demand. For example, the analysis fails consider local building codes, including Reach Codes, which contemplate bans on natural gas, increased reliance on electrical power, and sometimes an all-electric scenario.[144] According to the DEIR, 42 local jurisdictions have adopted policies that are more stringent than the 2019 Energy Code[145] and 37 local codes that exceed the 2019 Energy Efficiency requirements have been approved by the CEC.[146] However, the DEIR fails to analyze the impacts of these policies in conjunction with the Project in its cumulative impacts analysis.

Such efforts are intended to and will result in an increased reliance on electricity. Therefore, it is reasonably foreseeable that the Project, in conjunction with these past, present, and reasonably foreseeable future projects, would result in the construction, operation, and maintenance of more renewable energy facilities, including utility-scale solar and wind facilities, utility-scale battery storage systems, and supporting infrastructure such as transmission and distribution lines, and the various impacts of these activities, as described in general below, must be analyzed in the DEIR.

Additionally, the DEIR fails to take into account that the Diablo Canyon Power Plant, which is responsible for approximately 10 percent of the state's energy, is due to shut down in 2024.[147] The CPUC has not yet approved a plan to replace this lost source of power that looms in the short-term.[148] This raises questions as to the grid's reliability and ability to meet demand, particularly the increased demand that will occur due to Project implementation.

Air Quality. As described in Section IV above, the construction of energy projects would result in fugitive dust and exhaust occurring from the use of heavy equipment. The development

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[144] *See, e.g.,* Gough, M., *California Cities Lead the Way to a Gas-Free Future,* The Sierra Club (June 2, 2021) https://www.sierraclub.org/articles/2021/06/californias-cities-lead-way-gas-free-future.
[145] DEIR at 97.
[146] *Id.* at 91.
[147] Balaraman, K., *California's Last Nuclear Plant is Poised to Shut Down. What Happens Next?* Utility Dive (Mar. 23, 2021) https://www.utilitydive.com/news/californias-last-nuclear-plant-is-poised-to-shut-down-what-happens-next/596970/.
[148] *Id.*

of utility scale projects and increased battery use could also result in other impacts such as increased operational emissions, increased TAC emissions, and health risk from battery disposal.

Biological Resources. As discussed in Section V, the construction of energy projects and supporting infrastructure would have significant impacts on wildlife habitats and rangelands. The cumulative impacts analysis in the DEIR concedes that "utility-scale projects are well documented to have various adverse impacts on biota."[149] Further, a 2019 study conducted by the Nature Conservancy found that in order to meet the state's climate change goals, construction of project areas would significantly overlap (more than 50 percent) with land areas that have high conservation value. To meet future demand in a world where cumulative projects result in significantly increased electrical demand, wind and solar facilities would have to be sited in habitats that have biodiversity and important ecological value, as the scale of land needed to meet such demand is huge. Similarly, wind generation facilities and transmission corridor projects would also likely need to be sited on rangeland habitats. These impacts are likely to be cumulatively considerable in light of the various other policies that encourage the deployment of renewable energy sources and supporting infrastructure that would increase reliance on electricity and require the construction of more projects and infrastructure to support increased electrical demand.

Utilities and Service Systems. The DEIR concludes that the "grid is already transforming to accommodate projects meeting the policies that encourage electrification with renewable energy[,]" and states that "existing powerplant capacity is sufficient to accommodate shifted peaks without the need for additional development."[150] However, as discussed in Section IX, the DEIR overstates existing electric grid capacity and fails to provide any information related to projects that will add capacity to the grid. It is reasonably foreseeable that local policies which are aimed at increasing dependence on electricity, taken together with the Project, would result in cumulatively considerable impacts to Utilities and Service Systems which must be analyzed in the DEIR. The DEIR must take the Project's impacts, along with policies like SB 100 and other local ordinances that exceed the 2022 Energy Efficiency requirements, into consideration to determine whether the Project's impacts are cumulatively considerable.

Hazards and Hazardous Materials. The DEIR fails to account for cumulative impacts associated with an increased reliance on Li-ion batteries. The Project analysis concludes that because the transportation sector makes up the significant majority of the demand for lithium ion batteries, the number of lithium ion batteries resulting from the Project would be "small." However, this fails to quantify the number of batteries used, explain assumptions for determining the Project demand would be small, or provide substantial evidence to support these conclusory statements. As described in fuller detail in Section VIII, fires resulting from thermal runaway in large scale Li-ion batteries present a volatile risk. Additionally, the DEIR overstates the number of lithium-ion technologies that will be recycled. As the popularity of EV vehicles have skyrocketed, regulators and climate activists are ringing the alarm about the lack of preparedness for battery recycling and disposal, finding that recycling has not been widely used due to a number of challenges including cost, difficulty in extracting recyclable resources, and variations

[149] DEIR at 200.
[150] DEIR at 208.

in technology which make it difficult to create efficient recycling systems.[151] Li-ion batteries have a limited lifespan and thus regulators are expecting an influx of dead batteries to enter the market in the coming years. These Project impacts will only be exacerbated by other past, present, and foreseeable future projects that will also increase the use of Li-ion batteries.

XIII. Alternatives

The DEIR concludes that Alternative 6.4.4 – No Changes to Prescriptive Compliance Path Options – would avoid the outcomes in Section 4.4 Energy (increased electricity demand) and Section 4.5 GHG Emissions (increased refrigerant use), but purports that because the Project alternative does not avoid significant adverse impacts (because the DIER analysis does not identify any), the adoption of this alternative is not required.[152] As demonstrated in the discussion in Section III above, the use of an impermissible baseline and failure to properly disclose and analyze the full scope of Project impacts has invalidated the Project analysis for Air Quality, GHG, Energy, Utilities and Service Systems, and Biological Resources. If the proper baseline reflecting existing conditions were used, and cumulative impacts were properly considered, the Project would likely result in significant impacts for all of these areas. Additionally, irrespective of the baseline issue, the DEIR has failed to properly analyze impacts for multiple impact areas, as described above. For this reason, Alternative 6.4.4 may be an environmentally superior alternative to the Project.

In addition, contrary to the DEIR's assertion, the Project would also meet Objective 1 in addition to Objective 3.

- Objective 1 aims at "reducing the wasteful, uneconomic, inefficient, or unnecessary consumption of energy via the deployment of technically feasible and cost-effective technologies and measures." Alternative 6.4.4 would achieve this objective by permitting applicants the flexibility of choosing the most cost-effective and technologically feasible technology for their individual projects. As demonstrated in Section VI above, the increased reliance on electricity may result in an inefficient, wasteful, uneconomic or unnecessary expenditure of energy, especially during peak load times. However, the Energy analysis relies on the use of an impermissible baseline, and further analyzes Project impacts based on seasonal loads, as opposed to peak loads as required by Appendix F. Additionally, the GHG analysis is flawed not only because it uses an impermissible baseline, but fails to account for GHG emissions for energy sources that provide electricity, as well as an inadequate disclosure of impacts related to GWP refrigerants. Further There are a multitude of factors that may impact a an applicant's option for the most technically feasible and cost-effective technologies.

The DEIR thus must accurately analyze the Project's project-level and cumulative impacts and conduct a new comparison of those likely significant impacts with the reduced impacts likely

[151] Oberhaus, D., *The Race to Crack Battery Recycling - Before it's Too Late,* Wired (Nov. 30, 2020) https://www.wired.com/story/the-race-to-crack-battery-recycling-before-its-too-late/; *see also,* Morse, I., *Millions of electric cars are coming. What happens to all of the dead batteries?* Science Mag (May 20, 2021). https://www.sciencemag.org/news/2021/05/millions-electric-cars-are-coming-what-happens-all-dead-batteries (finding that its often cheaper for batterymakers to buy freshly mined materials than to use recycled materials).
[152] DEIR at 224.

to occur under Alternative 6.4.4 and then determine whether Alternative 6.4.4 presents an environmentally superior alternative to the Project.

XIV. Conclusion

While we commend California's goal to increase energy efficiency and address climate change, the Project may not do so at the cost of violating CEQA. The DEIR in its current form does not meet the standards required by CEQA for a number of reasons, including utilizing an invalid baseline which undermines the analyses for Air Quality, Energy, GHGs, Utilities and Service Systems, and Biological Resources; failing to adequate analyze and disclose the project's direct and reasonably foreseeable indirect impacts; and failing to fully address the broad scope of the Project's cumulative impacts. In order to comply with CEQA, the CEC must address the comments and issues raised in this letter and revise and recirculate the DEIR.

Sincerely yours,
HOLLAND & KNIGHT LLP

Jennifer L. Hernandez

Attachments