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Memorandum

To: Joseph Larmour, County Counsel, County of Shasta
Adam Fieseler, Assistant Director, Department of Resource Management
Ryan Baron, Partner, Best Best & Krieger, LLP

From: Gary Saleba, Strategic Energy Experts

Date: May 23, 2025

Subject: **Evaluation of CEC Staff Assessment for the Fountain Wind Project –
Project Alternatives and Public Convenience & Necessity**

Introduction

At the request of the County of Shasta, Strategic Energy Experts has prepared an evaluation of the California Energy Commission's (CEC) *Fountain Wind Project Staff Assessment*, dated March 25, 2025.¹ The purpose of this evaluation is to provide comments on the adequacy of the Staff Assessment on behalf of the County to file in the written proceeding. We have also reviewed the applicant's statements on the Staff Assessment made at the public meeting held on May 20, 2025 and provide additional comments thereon.

County Comments on Project Alternatives

In addition to reviewing the Staff Assessment, we have reviewed the docket for the proceeding including the County's comments on various project alternatives. We note that the Staff Assessment references the County's comments filed on November 15, 2024.² It appears that the County included a comment summary in this filing on project alternatives, but did not attach the actual comments. The County's comments on project alternatives and the public convenience and necessity were filed in detail on December 13, 2024 in TN 260646.³ The Staff Assessment should be revised then to cite to this document and TN number.

We have independently reviewed the County's comments and agree that they are still valid for comments on the Staff Assessment, and are incorporated herein by reference.

Staff Assessment: Section 8 Alternatives

Project Objective: Assist California in meeting renewable energy generation or zero carbon targets set forth in Senate Bill 100.

The Staff Assessment provides an evaluation of whether the BESS Alternative would achieve the project objective of assisting California in meeting renewable energy generation or zero carbon

¹ TN 262350.

² TN 260101.

³ TN 260646; Cover Letter, pp. 3-4; PDF pp. 12-15.

targets set forth in SB 100.⁴ The general assessment that energy storage is an important tool to support grid reliability and reduce dependence on fossil fuel generation to meet peak loads is correct. However, energy storage does not just complement the state's abundance of renewable energy resources, as suggested in the Staff Assessment. Adding energy storage to the system enables the state to increase its supply of variable renewable energy resources like solar and wind while maintaining reliability. Otherwise, without additional storage, the state would reach a cap on its ability to integrate new renewable resources and would need to continue to rely on gas-fired resources for a greater portion of its energy supply.

The Staff Assessment rightly focuses on the contribution of the Project and the BESS Alternative to reducing CO₂ emissions from gas-fired generation. The Staff's analysis identifies key assumptions required when estimating the quantity of emissions that would be avoided by adding generation from wind power or from the discharge of batteries. These assumptions include:

- The capacity factor of the wind farm and thus its total generation,
- Whether there are curtailments in the wind farm's generation,
- The efficiency of the fossil power plant generation being displaced by the wind power or battery discharge, and
- The source of the electricity to charge the battery.

In addition to these key assumptions, it is also necessary to estimate the discharge pattern of the battery to determine the total annual discharge (e.g., 4-hrs per day for 365 days, or some other pattern).

Section 5.3 Climate Change and Greenhouse Gas Emissions provides the Staff's calculation of the project's avoided CO₂ from electricity generation of over 214,000 MTCO₂e per year. To perform this calculation, Staff assumes a capacity factor of 32%, zero curtailments⁵, and displacement of natural gas combined-cycle generation with an emissions rate of 0.373 MT CO₂e/MWh (822.5 lb per MWh, based on a conventional combined-cycle plant heat rate of 7,030 Btu/kWh).⁶

When describing these calculations on page 8-45 in its Alternatives discussion, Staff refers to the 0.373 MT CO₂e/MWh emissions rate as being for natural gas peaking plants.⁷ This is misleading, since natural gas peaking plants are typically less efficient combustion turbine plants which would have a higher CO₂e emissions rate. The word "peaking" should be replaced with "combined-

⁴ Staff Assessment, pp. 8-44 – 8-46.

⁵ Not explicitly stated but implied by the results of the calculation.

⁶ Staff Assessment, p. 5.3-13, which cites the CEC staff report "Estimated Cost of New Utility-Scale Generation in California: 2018 Update." CEC-200-2019-500. Using the heat rates and emissions factors results in the calculation of a CO₂ emissions coefficient for natural gas of 53.06 kg CO₂e/MMBtu (0.373 MT CO₂e/MWh / 7030 Btu/kWh * 10⁶). This value is slightly higher than the coefficient of 52.91 kg CO₂e/MMBtu currently reported by the US Energy Information Administration at https://www.eia.gov/environment/emissions/co2_vol_mass.php.

⁷ Staff Assessment, p. 8-45.

cycle,” which would be consistent with its use in section 5.3 and more appropriate given the wind generation profile that includes both peak and non-peak hours.

The Staff Assessment then presents an estimate of the potential GHG emissions offset from a 250 MW BESS of between 96,986 and 133,644 metric tons of CO₂e.⁸ To make this calculation, the Staff Assessment states it is reasonable to assume the BESS would charge with renewable energy and that BESS discharge would displace some mix of combined-cycle and combustion turbine peaker plants with average heat rates of 7,310 Btu/kWh and 10,073 Btu/kWh, respectively. These assumptions are reasonable. The Staff Assessment does not state the annual number of MWh the BESS is assumed to discharge, but that number can be derived as being equal to 250,757 MWh/yr based on the information provided and assuming a natural gas emissions coefficient of 52.91 kg CO₂e/MMBtu. A 250 MW BESS that discharges four hours per day would deliver 365,000 MWh/yr. The Staff Analysis assumes that the BESS would perform at 69% of that potential. While it would be expected for a BESS to operate at less than its theoretical maximum due to planned and forced maintenance outages and economic dispatch, the Staff Assessment may be conservative by discounting the BESS’s capability by more than 30%. If the Staff Assessment instead assumed that the BESS Alternative would achieve 85% of the potential discharge of four hours per day, the estimate of avoided emissions would increase to 120,000 - 165,000 MMT per year.

On page 8-47, the Staff Assessment describes the BESS Alternative as an approximately 200 MW BESS located at the proposed project site. This is 50 MW or 20% less than the 250 MW BESS used in the above calculations of avoided CO₂ emissions. The Staff Assessment should be revised to either correct the BESS Alternative description to be consistent with the 250 MW used in the avoided CO₂ analysis, or the avoided CO₂ analysis should be performed assuming a 200 MW BESS. In that case, the avoided emissions would be 20% lower, ranging from 96,000 – 132,000 MMT per year.

There is also a discrepancy in the calculations of avoided CO₂ emissions for the wind and BESS projects, where the avoided emissions for the wind project are calculated assuming a combined-cycle heat rate of 7,030 Btu/kWh and the low end of avoided emissions of a BESS are calculated using a combined-cycle heat rate of 7,310 Btu/kWh. Since the higher number is based on recent QFER data, the two calculations should be reconciled by updating the wind avoided emissions calculation. This would increase that estimate from 214,000 MMT to 222,000 MMT.

Even with the recommended adjustments to the calculations, the conclusion stated in the Staff Assessment is still true: the BESS Alternative would contribute to a reduction in CO₂ emissions by offsetting the need for generation from fossil fuel power plants and would be a superior alternative.

Project Consideration: Impacts on Grid Reliability

The Staff Assessment is correct that there is no indication that the region around the project has a reliability issue addressed by the project nor is the proposed project located in a transmission constrained local area. The Staff Assessment cites the Power Systems Benefits Report (TN 254714), which summarized the CAISO interconnection studies, to support these conclusions:

⁸ Staff Assessment, p. 8-46.

“Furthermore, the Power System Benefits Report (TN 254714) for the proposed project states, “...[t]he interconnection studies performed by CAISO for the Fountain Wind Project did not identify any overloaded facilities that the Fountain Wind Project would be required to mitigate” (GridBright 2024). While the statement is true, it is not relevant to the issue of whether the proposed project addresses a reliability need because the studies specifically address the question of whether interconnecting the proposed project to the existing transmission system would result in overloads that would then need to be mitigated. That sentence could be removed from the draft Staff Assessment without changing the conclusions.

Staff Assessment: Section 11 Override Findings and Recommendations

11.9 Stated Goals and Policies of the Warren-Alquist Act

The Staff Assessment lists examples of wind projects in the CAISO interconnection queue.⁹ Examples of wind projects under active development should also be cited:

1. 147.5 MW Gonzaga Ridge wind and storage project: Wind repower and 50 MW/200 MWh BESS project in Merced, CA contracted with SFPUC with an expected online date of May 2026. The project being replaced had a capacity of 18 MW.

<https://www.cleanpowersf.org/news/2024/10/23/sfpuc-commits-to-largest-wind-development-in-cleanpowersf-history>

2. 80 MW Mulqueeney wind project: Wind repower in Altamont Pass with an expected online date in 2026.

<https://www.acgov.org/cda/planning/landuseprojects/documents/MulqueeneyRanch/FinalSignedBOSresoforMulqueeney10-7-2021.pdf> <https://renews.biz/97765/vestas-secures-86mw-us-order/>

The Staff Assessment cites an outdated value of the amount of utility-scale battery storage that has been installed to date. Rather than 8 GW, the current value is 13 GW.¹⁰

11.12 Reliability

The discussion of reliability issues, and the conclusion that the proposed project provides modest reliability benefits, is well supported.

11.17 Proposed Findings of Fact for More Prudent and Feasible Alternatives

As noted above, California has installed more than 13 GW of energy storage facilities. The following proposed findings of fact should be updated to reflect that information:

⁹ Staff Assessment, p. 11-10.

¹⁰ Staff Assessment p. 11-10. For update, see <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-storage-system-survey>.

3. The 2021 SB 100 Joint Agency Report estimates the need for an additional 9,500 MW of energy storage by 2030, with a total by 2045 of 52,000 MW of energy storage by 2045. ~~The state will likely exceed the 9,500 MW of additional energy storage capacity from the baseline 2019 capacity in advance of 2030.~~ As of April 2025, the state has installed over 13 GW of utility-scale energy storage capacity, 30% of the 2045 target.
4. A BESS would contribute to the ~~2030 and~~ 2045 energy storage capacity targets.

Fountain Wind Staff Assessment Public Meeting, May 20, 2025

We have reviewed portions of the video for the Fountain Wind Staff Assessment Public meeting held on May 20, 2025¹¹ and fact checked statements by the Applicant at the meeting. We assume that these statements will also be included in the Applicant's comments on the Staff Assessment, so we address them here.

Statement at 1:12:50. To meet these goals, the CPUC concluded that California will need to add an additional 12,000 megawatts of wind energy in or near California by 2045.

This statement is false. The 12,000 MW target was for out-of-state wind only. The target for in-state wind is 3,074 MW. CAISO, 2024 20-Year Transmission Outlook.

<https://www.caiso.com/documents/2024-20-year-transmission-outlook-jul-31-2024.pdf>.

Statement at 1:18:55. Fountain wind is the only project that is currently being considered to be built in California that is a new wind energy project.

This is a difference without a distinction and there is no explanation why new wind is superior or the preferred option. Repowers have significant value in adding new wind capacity. They involve contracts for new wind turbines replacing older, less efficient ones at established projects, posing a more superior alternative to new projects. See the Gonzaga Ridge Wind project and the Mulqueeny Wind project, above.

Statement 1:20:10. This project has access to transmission, and that transmission is not readily available to other projects. In other words, it's stranded.

This statement is false. The transmission is available to other projects that go through the CAISO interconnection process. While that may take additional time, the transmission access is not stranded.

¹¹ https://energy.zoom.us/rec/play/cDTR7KVqgyN26lVd6zf5g62iwQZyPc87WS4XnnOUMyAT8tqG0-Vyd370PBfJieFestYeA_8NRMAH4hs0.QvRLMMFaUL9dHV4n?eagerLoadZvaPages=sidemenu.billing.plan_management&accessLevel=meeting&canPlayFromShare=true&from=share_recording_detail&startTime=1747764245000&componentName=rec-play&originRequestUrl=https%3A%2F%2Fenergy.zoom.us%2Frec%2Fshare%2FU_uYiFS8IFbWm3B1-uCR38rC7b-2_cCmzogjYdCa0ANOQNcOljuV2AOJKHhTM8Co.OmPn_Ut465T-gf4Z%3FstartTime%3D1747764245000

PROFESSIONAL EXPERIENCE AND BACKGROUND OF

GARY S. SALEBA AS A TECHNICAL EXPERT

EDUCATION

MBA, Finance
Butler University
Indianapolis, Indiana

BA, Economics and Mathematics
Franklin College
Franklin, Indiana

EMPLOYMENT

May 2023 to Present

Strategic Energy Experts, LLC, Principal
7002 Soundview Drive
Gig Harbor, Washington 98335

February 2020 to
April 2023

GDS Associates, Inc, Executive Consultant
16701 NE 80th Street
Redmond, Washington 98052

October 1978 to
February 2020

EES Consulting, Inc.
570 Kirkland Way, Suite 100
Kirkland, Washington 98033
Registered Professional Engineering and Management
Consulting Firm

Position:

President/CEO

Responsibilities:

Overall supervision for all of EES Consulting's electric, water, wastewater and natural gas engagements in the areas of strategic planning, financial analysis, cost of service, valuations, mergers and acquisitions, rate design, engineering, load forecasting, load research, management evaluation studies, bond financing, integrated resource planning and overall utility operations. Overall responsibility for firm's quality assurance/quality control.

Activities:

Numerous testimony presentations before regulatory bodies on utility economics, strategic planning, finance, utility operations and requests for proposals. Supervised several integrated resource planning studies, average embedded and marginal cost of service studies, RFPs, technical assessments and financial planning studies for electric, water, gas and wastewater utility clients. Participated in comprehensive resource acquisition, strategic planning and demand side management analyses. Developed and verified interclass usage

data. Conceptualized and implemented compliance programs for the Public Utility Regulatory Policies Act and the Energy Policy Act of 1992. Contract negotiation and energy conservation assessments. Presentation of management audit, forecasting, cost of service, integrated resource planning, financial management, and rate design seminars for the American Public Power Association, Electricity Distributors Association of Ontario, American Water Works Association, and Northwest Public Power Association. Past Board member of Northwest Public Power Association and ENERconnect, Ltd. Past Chairman of Financial Management Committee and Management Division of the American Water Works Association. Project manager for construction of 248 MW gas turbine, and acquisition of over \$1 billion of utility service territory and equipment. Supervised engineer's report for over \$5 billion in revenue bonds. Currently on Board of Director's for 3 Rivers Energy Partners, a renewable natural gas project developer.

October 1977 to
October 1978

National Management Consulting Firm

Position:

Supervising Economist

Responsibilities:

Analyzed various energy related topics to determine economic impacts. Reviewed utility financial activities.

Activities:

Participated in several utility rate/financial regulatory proceedings. Provided clients with critique of issues, position papers and expert testimony on the topics of cost of service, rate design, utility finance, automatic adjustment factors, sales perspectives and class load characteristics. Conceptualized load forecasting models and assisted in economic and environmental impact analyses.

June 1972 to
October 1977

Indianapolis Power & Light Company
P.O. Box 1595 B
Indianapolis, Indiana 46206
Investor-owned Utility

Position:

Economist, Department of Rates and Regulatory Affairs

Responsibilities:

Provided general economic and rate expertise in Rates, Regulatory Affairs, Customer Service and Engineering Design Departments.

Activities:

Calculated retail and wholesale electric and steam class revenue requirements and rates. Prepared expert testimony and exhibits for state and federal agencies regarding rate design theory, application of rates and revenues generated from rates. Determined long range revenue and peak demand projections. Supervised comprehensive load research program. Supported thermal plant Environmental Impact Statements. Provided industrial liaison.

**PARTIAL LIST OF CLIENTS FOR WHOM FINANCIAL, OPERATIONAL AND STRATEGIC
PLANNING PROJECTS
HAVE BEEN DIRECTED BY STRATEGIC ENERGY EXPERT PERSONNEL**

UNITED STATES OF AMERICA

Alabama

City of Birmingham Water and Wastewater

Alaska

Alaska Power & Telephone*
Alaska Public Service Commission*
Alaska Village Electric Cooperative
Anchorage School District
City of Barrow
City of Wrangell
Municipal Light and Power*

Arizona

City of Dodge
City of Page
Navopache Electric Cooperative
Tucson Electric Power*

Arkansas

City of North Little Rock

California

Butte Choice Energy
Butte County
California Power Authority
City of Anaheim
City of Burbank
City of Carlsbad
City of Cerritos
City of Chico
City of Chula Vista
City of Coachella
City of Corona
City of Del Mar
City of Encinitas
City of Escondido
City of Glendale
City of Indian Wells
City of Irvine
City of La Mesa
City of Moreno Valley
City of Oceanside
City of Palm Desert
City of Palo Alto

California (cont'd)

City of Pasadena
City of Redding
City of Roseville
City of San Diego
City of San Marcos
City of Santee
City of Vista
Coachella Valley Association of Governments
County of San Diego
East Bay Community Energy
El Dorado Irrigation District
Jefferson JPA
Los Angeles County
Los Angeles County Community Choice Aggregation
Los Angeles Department of Water and Power*
Monterey Bay Community Choice
Nor-Cal Electric Authority
Orange County Power Authority
Sacramento Municipal Utilities Board
San Bernardino County Community Choice Aggregation
San Diego Community Choice
San Jose Clean Energy Choice Aggregation
Santa Clara Valley Water District
South San Joaquin Irrigation District
State of California - Department of Water Resources*
Turlock Irrigation District
West Riverside County Community Choice Aggregation
Yucaipa Valley Water District

Colorado

CFI Steel*
City of Denver - Wastewater
City of Pueblo
Denver Water Board*
LaPlata Electric Cooperative
Moon Lake Electric Association*

Connecticut

City of Groton

Florida

City of Pompano Beach
Dade County Water and Wastewater Utilities
Florida Public Service Commission

Idaho

City of Bonners Ferry*
City of Heyburn
City of Moscow
Clearwater Power & Light
Department of Energy*
Fall River Cooperative
Industrial Customers of Idaho Power*
Kootenai Electric
Lower Valley Power & Light
Northern Lights*
Prairie Power and Light
Salmon River Cooperative

Illinois

City of Collinsville
City of Highland
City of Peru
City of Winnetka

Indiana

Indianapolis Power & Light Company*

Iowa

City of Iowa City*

Kentucky

Kentucky-American Water Company*

Minnesota

Polk-Burnett Electric Coop

Missouri

General Motor, Inc.*

Montana

Beartooth Electric Cooperative
Colstrip Community Center
Flathead Electric Cooperative
Glacier Electric Cooperative
Montana Associated Cooperatives
Montana Electric Cooperative Association
Montana Power Company*
Northwestern Energy, Inc.*
PPL Montana*
Sun River Electric Cooperative
Vigilante Electric Cooperative
Western Montana G&T
Yellowstone Valley Electric Cooperative

Nebraska

Omaha Public Power District

Nevada

Nevada Electric Coop

North Dakota

City of Watford City
Garrison Diversion Conservancy District

Oregon

Central Electric Cooperative
Central Lincoln PUD
City of Gladstone
City of Klamath Falls
City of Millersburg
City of Oregon City
City of Portland
City of West Linn
Clackamas Water District
Emerald PUD*
Northern Wasco PUD
Public Power Council*
Springfield Utility Board
Tri-Cities Service District
Warm Springs Energy Cooperative
West Oregon Cooperative

South Dakota

Black Hills Electric Cooperative

Texas

City of Brownsville
City of League City
City of Lubbock
City of San Antonio
Pedernales Electric Cooperative
Texas Municipal Power Agency*

Utah

Moon Lake Electric Association*
Utah Association of Municipal Power Systems

Virginia

Loudoun County

Washington

350 Eastside/East King County PUD
AT&T
Avista Corporation*
Benton REA
Building Management Owners Association*
Cascade Natural Gas
Chelan County PUD

Washington (cont'd)

City of Bellevue
City of Bellingham
City of Blaine
City of Cheney*
City of Ellensburg*
City of Gig Harbor
City of Kennewick
City of Port Angeles*
City of Redmond
City of Richland
City of Shoreline
City of Shoreline
City of Tacoma Electric, Water and Rail Utilities*
City of Toppenish
City of Yakima*
Clallam County PUD*
Clark Public Utilities*
Costco
Cowlitz County PUD*
Daishowa Corporation
Douglas County PUD
Douglas County PUD
Ferry County PUD
Grant County PUD
Grays Harbor County PUD*
Industrial Customers of Grant County
King County*
Klickitat County PUD*
Mason County PUD No. 3*
Microsoft
Pacific County PUD*
Pend Oreille County PUD*
Peninsula Light Company*
Port Townsend Paper
Seattle City Light
Seattle Water Department
Snohomish County PUD*
TrendWest Resorts
US Ecology, Inc.*
Washington Utilities and Transportation Commission
Western Public Agencies Group*
Weyerhaeuser Corporation
WorldCom

Wisconsin

Polk-Burnett Cooperative
Wisconsin Manufacturing Association*

Wyoming

Lower Valley Power and Light*

CANADA

Alberta

Aqualta
City of Calgary—Water and Wastewater Utilities
City of Lethbridge*
City of Medicine Hat
City of Red Deer*
Ocelot Chemicals
University of Alberta*

British Columbia

Alcan, Ltd.
British Columbia Transmission Corporation*
Council of Forest Industries*
Crestbrook Industries
Crows Nest Resources
Fortis, BC*
Highland Valley Cooperative
Joint Industrial Electric Steering Committee*
Ministry of Fisheries*
Princeton Power & Light*
Royal Oak Mines
Terasen Gas*
UtiliCorp Canada
West Kootenay Power*

Manitoba

Manitoba Legal Aid*

Northwest Territories

Northwest Territories Power Corporation*

Ontario

Association of Major Power Companies (AMPCO)*
Electricity Distributors Association
ENERconnect, Inc.
Hydro One
Municipal Electric Association*
North York Hydro
Ontario Energy Board*
Ontario Hydro
Ottawa Hydro*
Toronto Hydro

OTHERS

American Public Power Association
American Water Works Association
California Municipal Utilities Association
Northwest Public Power Association

***Prepared Expert Testimony**