



**COUNTY ADMINISTRATIVE OFFICE
MANAGEMENT & BUDGET TEAM
COUNTY OF HUMBOLDT**

825 5th Street, Suite 112, Eureka, CA 95501-1153
Telephone (707) 445-7266 Fax (707) 445-7299
cao@co.humboldt.ca.us

October 22, 2018

Deborah Halberstadt, Executive Director
California Ocean Protection Council
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Re: Letter of Support for Humboldt County Off-Shore Wind Feasibility Study

Dear Deborah Halberstadt,

I am writing on behalf of the Humboldt County Board of Supervisors in support of the Schatz Energy Research Center's proposal to the California Ocean Protection Council to study the feasibility of off-shore wind electricity generation in Humboldt County. We recognize that this project will investigate the potential benefits, costs, and feasibility of an off-shore wind power industry in Humboldt County.

The wind resource off the coast of Humboldt County is among the best in the nation and can play an important role in helping California meet its renewable energy targets and greenhouse gas emission reduction goals. While California has not yet seen any off-shore wind development, there is a growing interest due to the recent development of floating foundations that allow wind turbines to be deployed in the deep waters off the California coast. An off-shore wind industry in Humboldt County has the potential to create local jobs, support infrastructure development, improve the resiliency of the electricity grid, and produce clean, renewable electricity.

The Schatz Center's proposed study will evaluate several aspects of off-shore wind energy development including the technical potential, environmental impacts, required infrastructure modifications, policy recommendations, and stakeholder benefits and impacts. The study will evaluate the feasibility of three scales of wind development from a pilot-scale project to a large development required to export electricity outside of Humboldt County. We expect that the final report from this study will be valuable input for us to understand the potential for off-shore wind development in Humboldt County.

We strongly recommend that the Ocean Protection Council support the Schatz Center's proposal. This important project will help the county and the state understand the feasibility for developing off-shore wind power off the coast of Humboldt County.

Sincerely,



Amy Nilsen
Humboldt County Administrative Officer

cc: Senator Mike McGuire
Assemblymember Jim Wood
Rural County Representatives of California
California State Association of Counties



**Pacific Gas and
Electric Company**

Mark Esguerra
Director, Integrated Grid Planning
415-973-0358
mark.esguerra@pge.com

77 Beale Street
San Francisco, CA 94105

Date: October 12, 2018

To: Schatz Energy Research Center
Humboldt State University
Arcata, CA 95521
Attention: Dr. Peter Lehman

From: Pacific Gas & Electric Company

Subject: Letter of Commitment for the Humboldt Off-Shore Wind Feasibility Study

Pacific Gas & Electric Company (PG&E) is pleased to support Schatz Energy Research Center's (SERC's) proposal in assessing the feasibility of interconnecting off-shore wind generation near Humboldt Bay. Performing this feasibility study is in response to the Bureau of Ocean Energy Management's request to better understand the feasibility and potential off-shore wind generation, including the potential electric grid impacts. PG&E has been an active partner in grid planning and will support study task items pertaining to assessing the electric grid's performance under increasing levels of off-shore wind generation development.

If this study is funded, PG&E commits to working with SERC in developing a high-level assessment of grid infrastructure impacts and potential grid requirements to enable scalable off-shore wind generation near Humboldt Bay. The following tasks provide an in-kind value of \$125,000. Specifically, PG&E would support the following tasks:

- Load Characterization:
 - Provide historical aggregated electric demand information for PG&E System
 - Provide aggregated forecast electric demand through year 2030 for PG&E System
 - Provide advisory support on SERC's work in characterizing California's electric demand projections for year 2030
- Generation and Demand Profile Compatibility Check
 - Collaborate with SERC to clarify how the existing PG&E Humboldt Bay Power Plant would operate in parallel with varying amounts of off shore wind generation
- Using the most up-to-date transmission planning power flow models for use in a high-level analysis of off shore wind feasibility scenarios:
 - 50-150 MW interconnected into Humboldt Bay Power Plant
 - 1500 MW interconnected via:
 - Connection on 500kV near COI/Round Mountain
 - Overland connection along the coast into the Bay Area
 - Undersea cable connection into the Bay Area
- Consultation with SERC and other project team members to provide cost estimate rounded to the nearest \$0.5 billion



REDWOOD COAST Energy Authority

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Dwight Miller
CITY OF TRINIDAD

Date: October 17, 2018

To: Deborah Halberstadt, Executive Director
California Ocean Protection Council
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Re: Letter of Support for North Coast Offshore Wind Feasibility Analysis

Dear Deborah Halberstadt,

The Redwood Coast Energy Authority (RCEA) is pleased to support the Schatz Energy Research Center's proposal to the California Ocean Protection Council titled "North Coast Offshore Wind Feasibility Analysis." We recognize that this project will investigate the potential benefits, costs, and feasibility of an offshore wind power industry in California's North Coast. RCEA is very interested in this project as we are actively pursuing offshore wind development in this region.

Formed in 2003, RCEA is a local-government joint powers agency of the County of Humboldt, the Cities of Eureka, Arcata, Fortuna, Rio Dell, Ferndale, Blue Lake, and Trinidad, and the Humboldt Bay Municipal Water District. RCEA operates a community choice aggregation (CCA) program on behalf of its member jurisdictions, as well as implementing a diverse range of energy efficiency and alternative fuels programs.

The purpose of RCEA is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region for the benefit of the Member agencies and their constituents. Recently, RCEA has taken the lead on coordinating the extensive planning process required to develop what we hope to be California's first floating offshore wind project. This offshore wind feasibility analysis aligns with this overall mission and will help frame our understanding of offshore wind on the North Coast.

The Schatz Center's proposed study will evaluate several aspects of offshore wind energy development including the technical potential, environmental impacts, required infrastructure modifications, policy recommendations, and stakeholder benefits and impacts. The study will evaluate the feasibility of three scales of wind development from a pilot-scale project to a large development that would export electricity outside of the North Coast region. We expect that the final report from this study will be valuable input for us to understand the potential for future growth of the off-shore wind industry in the North Coast.

This is an important and valuable project for RCEA, our community, and California and we urge the Ocean Protection Council to fund Schatz Center's proposal.

Sincerely

A handwritten signature in blue ink that reads "Matthew Marshall //".

Matthew Marshall
Executive Director

633 3rd Street
Eureka, CA 95501
(707) 269-1700

info@redwoodenergy.org

www.RedwoodEnergy.org

We look forward to collaborating on this important study.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Esguerra".

Mark Esguerra
Director, Integrated Grid Planning
Grid Integration and Innovation

CALIFORNIA ENERGY COMMISSION

KAREN DOUGLAS, COMMISSIONER
1516 NINTH STREET, MS-32
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



October 24, 2018

Secretary John Laird
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Re: Ocean Protection Council Meeting of October 25, 2018
Marine Renewable Energy Research Projects Items 7a-c – SUPPORT

Dear Secretary Laird,

I am writing in support of the following three research proposals which are to be considered for funding at the Ocean Protection Council's October 25th meeting:

- Item 7a. - Wave Energy Conversion in California under the Present and Future Climate and Economic Feasibility Analysis of Different Technologies
- Item 7b. - California Offshore Wind: Workforce and Grid Integration Analysis
- Item 7c. - North Coast Offshore Wind Feasibility Analysis

As you know, I have been Governor Brown's designated state lead to the Bureau of Ocean Energy Management-California Intergovernmental Renewable Energy Task Force since 2016. In this role, I have collaborated with the Bureau of Ocean Energy Management and state agencies on outreach, data gathering, and setting research priorities.

As California works to meet our climate and renewable energy goals, offshore wind energy generation has the potential to make an important contribution to these goals. However, any development of offshore wind resources must take into consideration the potential impacts to the state's coastline and ocean, and the many and diverse values that they support. The information that would result from the three proposed research proposals would provide scientific based data to help understand the potential of wave energy conversion and offshore wind energy, as well as the impacts and constraints associated with such development. With BOEM's October 19 announcement of offshore wind "Call Areas," this funding would also help ensure that marine renewable energy siting and development off the California coast is based on the best available science and engineering.

In conclusion, I support the three proposals and urge your approval of these items.

Sincerely,

A handwritten signature of Karen Douglas.

Karen Douglas
Commissioner, California Energy Commission

Cc: Deborah Halberstadt, Executive Director, Ocean Protection Council



STATE OF CALIFORNIA
GOVERNOR'S OFFICE



OFFICE of PLANNING AND RESEARCH

EDMUND G. BROWN JR.

KEN ALEX
GOVERNOR

DIRECTOR

October 24, 2018

Deborah Halberstadt
Executive Director
California Ocean Protection Council

Dear Executive Director Halberstadt:

The Governor's Office of Planning and Research would like to provide a letter of support for the Humboldt State University, Schatz Energy Research Center's application to the Ocean Protection Council for funding for the North Coast Offshore Wind Feasibility Analysis. The Office of Planning and Research is a member of the Federal/State Task Force for Off-Shore Wind Energy and information developed by the proposed analysis will benefit both the office and the Task Force's work.

As you know, California has very ambitious renewable energy goals and off-shore wind energy could play an important role in achieving those goals but more information is needed on impacts, infrastructure needs and long term potential. We believe that the analysis proposed by the Schatz Energy Research Center will help support California's efforts to understand the potential of off-shore wind energy while also understanding the impacts and constraints associated with such development.

Please accept this letter of support and feel free to contact us if you have any questions.

Sincerely:

A handwritten signature in blue ink that reads "Scott Morgan".

Scott Morgan
Deputy Director



H.T. HARVEY & ASSOCIATES

Ecological Consultants

Date: October 17, 2018

To: Deborah Halberstadt, Executive Director
California Ocean Protection Council
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

From: Sharon Kramer, Ph.D., Principal

Re: Letter of Support for Humboldt County Off-Shore Wind Feasibility Study

Dear Deborah Halberstadt,

H.T. Harvey & Associates Ecological Consultants supports the Schatz Energy Research Center's (SERC) proposal to the California Ocean Protection Council to study the feasibility of off-shore wind development off the coast of Humboldt County, California. H. T. Harvey supports the proposed project and will be a partner on this project to analyze the environmental impacts associated with off-shore wind development.

Since 1970, the highly-trained ecologists and professionals at H. T. Harvey & Associates have delivered exceptional consulting services to public agencies, private entities, and nonprofit organizations. The expertise of our staff encompasses a wide range of biological and design disciplines required to perform high-quality work on ecological projects. Our senior scientists average 25 years of experience in their respective disciplines, many recognized leaders in their fields. Collectively, we have published more than 500 peer-reviewed scientific research papers on a wide variety of subjects. We apply our expertise in wildlife ecology, restoration ecology, plant ecology, fish and aquatic ecology, and landscape architecture in pursuit of our mission to create ecologically sound solutions to our client's complex natural resource challenges.

As a result of our team members' work as state and federal biologists, as well as on the project development side, we understand a variety of perspectives, which helps us navigate even complex permitting issues successfully. We've completed freshwater, estuarine, and marine permitting projects, from the straightforward to those that require unique permitting solutions to promote aquatic species survival and recovery. We have worked extensively on permitting marine and hydrokinetic projects and associated research along the west coast, including preparation of NEPA documents and ESA Section 7 Biological Assessments.

As part of this project, H. T. Harvey & Associates plans to determine the baseline environmental characteristics, analyze the likely and potential environmental impacts, and assess the regulatory issues associated with federal, state, and local permitting processes.

We strongly recommend that the Ocean Protection Council fund this important project to understand the feasibility and environmental impacts of off-shore wind development in northern California.

Sincerely,



Date: September 27, 2018

To: Deborah Halberstadt, Executive Director, California Ocean Protection Council

From: Aaron Porter, P.E., Coastal Engineer, Mott MacDonald

Re: Letter of Support for Humboldt County Off-Shore Wind Feasibility Study

Dear Deborah Halberstadt,

Mott MacDonald supports the Schatz Energy Research Center's (SERC) proposal to the California Ocean Protection Council to study the feasibility of off-shore wind development off the coast of Humboldt County, California. Mott MacDonald will be a partner on this project to characterize the coastal/port infrastructure and describe the anticipated upgrades required to serve an off-shore wind industry.

Mott MacDonald has extensive experience providing the full spectrum of engineering services required for design and construction of port and coastal projects. They specialize in analyzing coastal physical processes and their effects on coastal zone and waterfront projects. Waves, currents, and sediment transport are analyzed and simulated for assessing project feasibility and for planning, permitting, and design. Mott MacDonald engineers routinely develop, verify and apply sophisticated numerical modeling tools and analysis techniques.

Aaron Porter and Shane Phillips from Mott MacDonald are experts in infrastructure requirements for offshore wind development. They recently completed a 2016 study for BOEM to determine the infrastructure requirements to support off-shore floating wind development on the US Pacific West Coast. Mott MacDonald also has over 20 years of experience helping to develop the off-shore wind market in the Europe, including upgrades of port facilities to serve as off-shore wind enabling works.

As part of this project, Mott MacDonald plans to assess the existing port and harbor conditions and characterize the anticipated changes to coastal infrastructure required for off-shore wind development.

We strongly recommend that the Ocean Protection Council fund this important project to understand the feasibility of off-shore wind development in northern California.

Sincerely,

A handwritten signature in blue ink, appearing to read "Aaron Porter".