

DOCKETED

| | |
|-------------------------|---|
| Docket Number: | 19-ERDD-01 |
| Project Title: | Research Idea Exchange |
| TN #: | 235381 |
| Document Title: | William G. Bertain Comments - Using Rail Right-of-Way for OSW Energy Transmission - Plus other Subjects |
| Description: | N/A |
| Filer: | System |
| Organization: | William G. Bertain |
| Submitter Role: | Other Interested Person |
| Submission Date: | 10/21/2020 3:23:02 PM |
| Docketed Date: | 10/21/2020 |

*Comment Received From: William G. Bertain
Submitted On: 10/21/2020
Docket Number: 19-ERDD-01*

Using Rail Right-of-Way for OSW Energy Transmission - Plus other Subjects

Additional submitted attachment is included below.

Humboldt Eastern Railroad LLC.
1310 Sixth Street
Eureka, CA 95501
(707) 443-5078 · fax (707) 443-4998
e-mail: bbertain@suddenlink.net
humboldt Easternrr@gmail.com

Comments for California Energy Commission **Scoping Workshop**

October 22, 2020

1. On August 5, 2020 during a Offshore Wind California webinar, Walter Musial of the National Renewable Energy Lab was asked which of the two call areas, i.e. Morro Bay, or Humboldt Bay, did he believe would be the first to proceed with OSW permitting and construction. Much to the delight of locals in Humboldt County, Mr. Musial stated that the North Coast would proceed first. In a further comment worthy of note, he indicated that a pilot project on the North Coast could well be unnecessary because of the knowledge, experience, and advances in technology that will be gained and shared from the major deep water project under way now off the coast of South Korea, that by the time the North Coast could proceed, a pilot project, off the coast of Humboldt County, would be unnecessary.
2. Are all members of the California Energy Commission fully aware of the \$2.5 billion Siemens Engineering/Soo Rail Project for transmitting 2.1 gigawatts of energy produced by the wind turbines in Western Iowa via a railroad right-of-way containing two five inch HVDC conduits 350 miles to the Plano, Illinois area to connect with the major regional grid? This project was announced in the Wall Street Journal in March of 2019 and hearings for permits commenced in Iowa in May of 2020 (articles attached). The Siemens/Soo Rail Project may well suggest an answer to the problem frequently pointed out by Commissioner Karen Douglas regarding transmission to the state grid of the energy produced offshore of Humboldt's Coast. A green two track freight rail has been proposed by Pacific Northwest Railroad Corporation for construction between the Port of Humboldt and the national rail network near Red Bluff. The proponent is Pacific Northwest Railroad (PNR). The green aspect of the proposed railroad includes hydrogen fueled locomotives and miles and miles of trails. Query: Would it be inappropriate for the California

Energy Commission or any commissioners to note, explore, engage with, and perhaps even encourage, the proposal by PNR?

3. If the green container freight railroad that is proposed to connect Humboldt Bay to the Central Valley near Red Bluff proceeds as intended, most of the electricity produced by the offshore wind turbines could not only be transmitted as direct current within the railroad's right-of-way to the state grid in the Central Valley, but additionally, some of the electricity produced by the offshore wind turbines could be utilized to create hydrogen fuel in Humboldt County and provide substantial impetus to the new eco-friendly hydrogen energy industry by shipping the hydrogen fuel in tank cars via the railroad for use in the greater California and U.S. markets.
4. Robert Collier's most recent (August 2020) update on OSW entitled "Deep water on the Road to 100" presents two important points. First at page 8 it he sets forth the Humboldt Bay call area of 207 square miles and the Del Norte areas as discussed by the California Energy Commission, at 850 square miles, with a combined potential output of 8,211 megawatts. And second, on page 15 he notes that the North Coast "has the States strongest winds and about 14GW in estimated potential offshore wind capacity." (!!!) That is roughly 28% of the 50 GW flowing through California's grid. It would appear that the gigawatts produced in the Del Norte "wind resource area" could likely be conveyed by subsea conduit to the Humboldt "call area" and thereafter be connected to the transmission base that will be developed near or on Humboldt Bay and thereafter could be transmitted east to the State grid.
5. There is a substantial but not unlimited amount, of land zoned Coastal Dependent Industrial acreage on the Samoa Peninsula. In order to assist the PNR's efforts to finance construct three new green marine terminals on Humboldt Bay to provide sufficient cargo to "pencil out" the two-track railroad to Red Bluff, sufficient acreage with deep water access will be needed. The east west railroad, with its right-of-way, is likely to be the "linch pin" that makes the OSW project feasible.
6. The OSW project should also consider using the 80+ acres of CDI at Fields Landing. Deeper Channels to Fields Landing may need to be dredged, but the cost would clearly be justified from the benefit to be derived.
7. It is clear that the State grid has severe problems. But some members of the public are wondering whether part of the solution to strengthening the State grid may well be found by entering into discussions with the various railroads

that already operate within California and negotiate the right to place conduits underground in the railroad right-of-ways where appropriate and feasible thereby hopefully providing a more economic solution to solving the grid problems. Perhaps the California Energy Commission and the PUC have already undertaken efforts to examine that possibility in light of the Siemens/Soo Rail effort in Iowa and their 350-mile conduit.

8. In light of the urgency posed by the global warming threat, is there sufficient will within the leadership of California (and federally) to cast the full development of OSW capabilities on the North Coast as a “Manhattan Project” - type of project and greatly accelerate the effort to actually realize the tremendous opportunity that exists off our North Coast and still adequately address the environmental, social, humane, and cultural challenges?
9. We at Humboldt Eastern Railroad LLC support Pacific Northwest Railroad’s proposal to build a two-track, green, container railroad from the natural deep-water Port of Humboldt Bay to the national railroad network near Red Bluff, along with 3 modern green non-diesel container terminals. Cost: \$12 to \$15 billion. This project will be an economic "game-changer" for UpState California and is not only compatible with the proposed North Coast OSW project but may well be its “linch pin.” Our website is at humboldt easternrailroad.com and contains a 9-minute informational video.

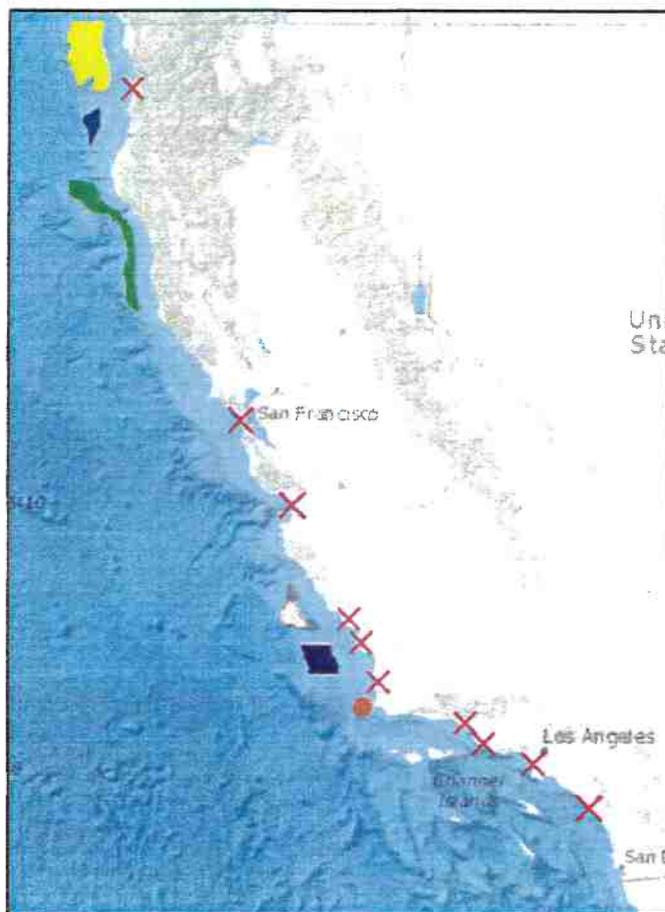
October 21, 2020



William G. Bertain, President

As shown in Exhibit 1, six offshore wind zones have been proposed in federal waters – the Humboldt, Morro Bay and Diablo Canyon Call Areas as formally outlined by BOEM; the Del Norte and Cape Mendocino areas as discussed by the California Energy Commission; and the Navy proposal in February 2020 – and one in state waters – the Vandenberg pilot proposal.

Exhibit 1: California's proposed offshore wind areas



| Wind resource area | Area (sq. mi.) | Potential output (MW) |
|-------------------------|----------------|-----------------------|
| Del Norte | 850 | 6,604 |
| Humboldt Bay Call Area | 207 | 1,607 |
| Cape Mendocino | 800 | 6,216 |
| Navy proposal Feb 2020 | 192 | unknown |
| Morro Bay Call Area | 311 | 2,419 |
| Diablo Canyon Call Area | 556 | 4,324 |
| Vandenberg pilot | 5 | 60 |

X COASTAL GRID CONNECTIONS

Sources: California Offshore Wind Energy Gateway, Collier et al 2019⁸

California's North Coast has some of the nation's most optimal wind resources, with steady offshore winds averaging over 23 mph.⁹ Wind speeds on the Central Coast are only somewhat less strong, and that area's closer proximity to the state grid and to major population centers, as described later in this report, is a major advantage.

However, the task of researching these impacts has been hindered by the lack of data: Commercial fishing groups have claimed they are unable to provide detailed locations of their own fishing grounds or quantitative catch data for areas near the potential wind farm sites, and the state government does not compile this information either.³⁴

One environmental impact that is not expected to be a significant problem is the issue of viewsheds. Because most offshore wind farms are expected to be at least 20 miles offshore – except in the Navy-backed proposal mentioned below – they will be virtually invisible from the coast and thus are likely to escape the sort of opposition from local property owners and environmental groups that often befall land-based wind farms, utility-scale solar plants, and pumped storage projects.

While research work into some of the abovementioned issues is ongoing, the state budget cuts in 2020 prompted by the COVID-19 crisis could hinder future funding for this work. High-level attention from state decisionmakers may be required to ensure adequate funding for research to identify and resolve any environmental problems within an accelerated timeline.

Transmission

Getting the generated electricity from California's offshore wind farms to shore will require undersea cables, and once at shore the power will need to connect to the state grid. That's a significant problem on the North Coast, which has the state's strongest winds and about 14 GW in estimated potential offshore wind capacity.³⁵ Any large-scale build-out of the North Coast's wind potential would require construction of major, high-voltage transmission lines to connect to the state grid. Several routes have been discussed – east or southeast over the mountains, or underwater southward to the Bay Area.³⁶ The latter routes would cross into the Greater Farallones National Marine Sanctuary, in what could be a dangerous, national precedent for industrial encroachment on federally protected areas. Each of these routes is expected to cost well over \$1 billion and would require complex environmental permitting.

The Central Coast, in contrast, is a "plug and play" scenario because large-scale wind farms in this area could easily connect with existing coastal infrastructure: the 3.9 GW transmission nexus at Diablo Canyon nuclear power plant, which is planned for closure in 2024-25, and the 668 MW interconnection at Morro Bay Power Plant, which closed in 2014.³⁷

Port infrastructure

The manufacture, assembly, operations and maintenance of offshore wind turbines will require specialized port facilities in several locations, using considerable acreage because of the large size of the turbine components.³⁸ The Port of Humboldt Bay near Eureka has unique advantages for this purpose. Abandoned by the area's once-dominant pulp and lumber industry, the port has vast expanses of vacant land alongside a little-used, deep-water harbor. But it could require

Renewable Power Line Is Set for Midwest

By RUSSELL GOLD

Two European firms are backing an ambitious \$2.5 billion project to carry renewable electricity underground through the American heartland.

Siemens AG is joining with a Danish investment fund to build and operate a 349-mile-long, electrical-transmission line that would carry wind and solar energy from Iowa into the Chicago area, according to the project's developer.

The link would allow renewable energy from the Upper Midwest to travel all the way into the eastern U.S. by hooking up to the PJM Interconnection, the power grid that serves all or part of 13 states, including Illinois, Ohio and Pennsylvania.

Renewable Power Line Is Planned

Continued from page B1

long-distance, direct-current power lines in the U.S. So far, the aboveground efforts have been delayed or derailed by permitting delays as well as local and political opposition.

Building a belowground line is nearly twice as expensive per mile as an aboveground line on towers.

Developers have been trying to move electricity from one large regional grid to another, to take advantage of electricity price arbitrage, as well as abundant renewable energy in the Upper Midwest and Great Plains.

This project is the second large renewable-energy investment that Copenhagen Infrastructure Partners has made in the U.S. It also has a 50% stake with Avangrid Renewables in Vineyard Wind, an offshore wind farm off the coast of Massachusetts.

Christian Skakkebaek, a se-

Called the 500 Green Renewable Rail, the project is a giant extension cord designed to carry electricity on buried direct-current lines. The fund, called Copenhagen Infrastructure Partners, and Siemens are purchasing the project from its developers, a group that includes several private investors and the U.S. subsidiary of Canadian Pacific Railway Ltd. The terms of the deal weren't disclosed.

The vast majority of the line will run in a Canadian Pacific railroad corridor. The project's developers expect that going underground on an existing railroad right-of-way will make it easier to obtain permits and local permission, a strategy that they say was used before in expanding high-speed internet networks. It is using direct-current technology, instead of the more widely deployed alternating current, because it doesn't interfere with railroad signals.

"The fact is that going underground, you don't have wires rubbing up against trees. You are not going to have tornado impacts. It is safer and more resilient," said Joe DeVito, president of Direct Current Development Co., which has developed the project.

The project still needs to obtain certain state and federal permits, and needs to sign up shippers to contract for capacity on the line. It will be capable of carrying 2,100 megawatts, the equivalent of a large nuclear-power plant.

Developers said they hope to have the project operational by 2024.

Investors have tried to build more than a half-dozen

Please turn to page B4



The project would help supply energy to Chicago, as well as to states like Ohio and Pennsylvania.

nior partner at Copenhagen Infrastructure Partners, said the project fits into his fund's focus on "critical energy infrastructure assets."

A spokesman for Siemens said the German company's financing arm was backing the project to help "meet the many challenges associated

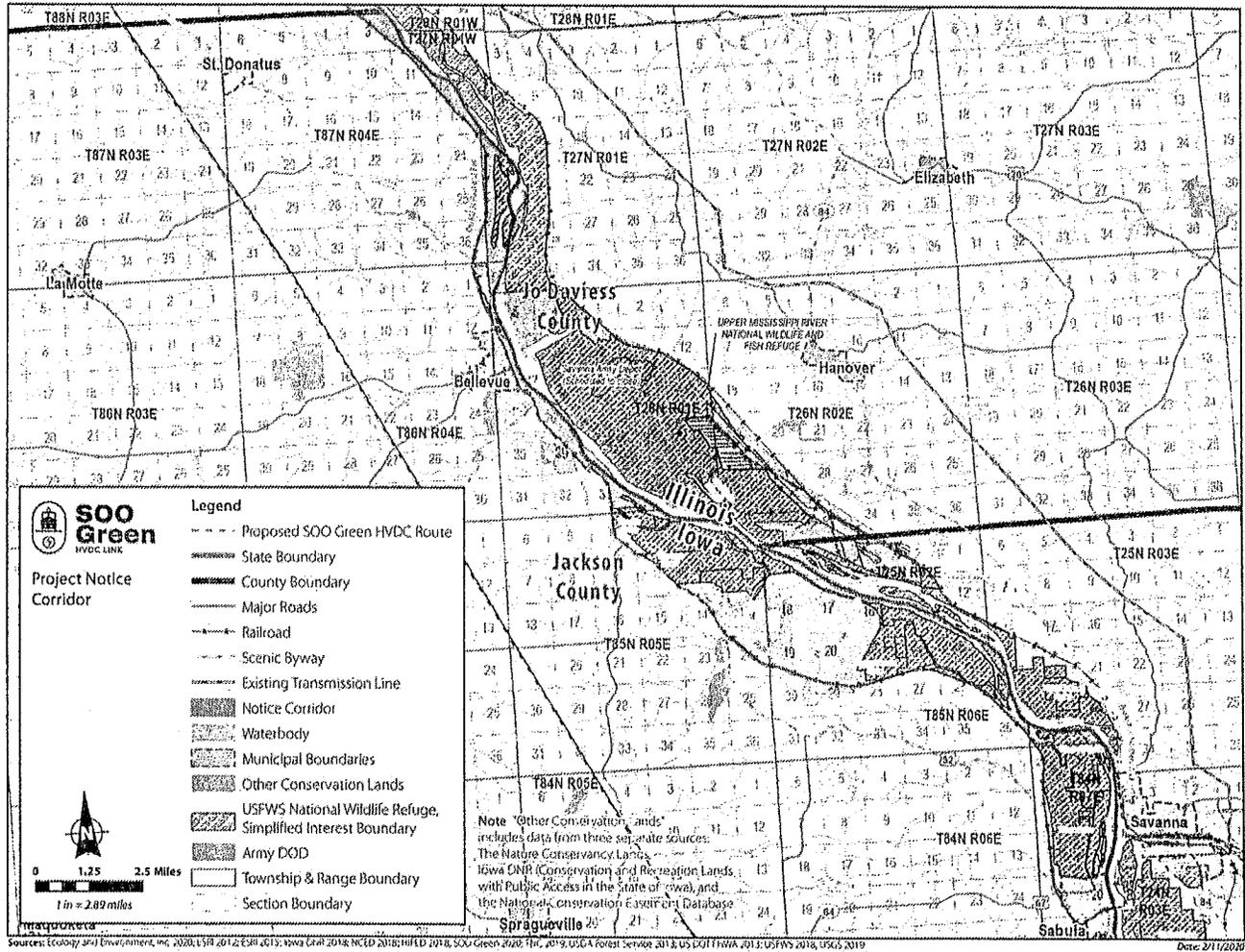
with bringing complex infrastructure projects online." Siemens's high-voltage, direct-current technology will be used in the project.

https://www.bellevueheraldleader.com/news/iub-holds-public-hearing-for-power-line/article_e74817be-9456-11ea-a976-3f8fa8dd39f1.html

IUB holds public hearing for power line

Underground line could run along railroad through Bellevue

By DAVID NAMANNY Bellevue Herald-Leader
May 13, 2020



The Iowa Utilities Board conducted a public informational meeting last week about the proposed underground transmission line for renewable wind and solar power that, if approved, would run right through the middle of Bellevue.

The line would traverse about 350 miles from Mason City, Iowa to the Chicago area along the Canadian Pacific railroad, the very rail line that runs directly down the middle of Second Street.

After the proposed line reaches Sabula, it would be run underneath the Mississippi River to the Illinois side, and would continue on along underground to a power station in the Chicago suburbs.

While the Soo Green Renewable Energy line would run along the railroad's right of way for much of the way, there are places along the route where property owners would be offered about \$8,550 per mile in return for a property easement.

The line itself is about 5 inches in diameter and run through a conduit buried at least five feet underground. It would run a direct current that would be switched to alternating current at a transformer facility in Illinois.

At last Tuesday's webinar with IUB officials and SOO Transmission line experts, a slide show and video were shown for a brief overview of the project and then the event was opened up to the public for questions and objections.

The main topic for Bellevue seemed to be what would happen to the section of line that runs directly through town.

Jim Budde, who lives on south Second Street and owns property near the rail line joined in the meeting to ask about a potential easement. He was told that any property owners along the route would be directly contacted by the company.

Bellevue City Administrator Abbey Skrivseth was also logged into the webinar hearing and responded to questions later.

She said the City has previously met with SOO Green officials a few times at the Bellevue Power Plant to discuss the project going through Bellevue, and plans are to use railroad right-of-way for most of the project.

"However, Bellevue is unique as the railroad does not own property and has no right-of-way through town; the railroad has an easement with the City for the width of the track only," said Skrivseth. "Therefore, the City pointed out our initial concerns with utilities running under the tracks and to make SOO Green aware of this."

She added that SOO Green has continued to maintain good communication with the City and they planned to have already attended a council meeting, but COVID-19 has caused some delays on that process.

"At future council meetings, city leaders will discuss the project more, along with the City approving a franchise agreement," said Skrivseth. "The City is also concerned and is waiting to hear more information on the construction process of the line going through town to minimize disruption to our street and for our citizens."

Sarah Lukan, a spokeswoman for the SOO Green Renewable Rail project, said that the \$2.5 billion 'green underground power line' is only in the proposal and development phase, but SOO Green officials are hopeful about having the development, government regulations, construction and operation sewn up within the next few years. They want to start construction in 2022 and have the project finished by 2024.

Officials from the Direct Connect Development Company (DC DevCo), which is acting as the developer on the project, bill the SOO Green Renewable Rail as a connection between "two of the largest electric power markets" in the United States.

The green energy transmission line route largely would fall in the right of way for the Canadian Pacific line, which locally would take it through Dubuque, Bellevue, Sabula and Savanna.

SOO Green is a proposed 349-mile, 2,100 MW, 525 KV high voltage direct current (HVDC) transmission line that will run underground along the existing railroad line. The majority of the project's route will be located along rail owned by Canadian Pacific.

If successful, SOO Green will be the first to take construction underground and to adopt the rail co-location model used in building America's fiber optic system. The project's construction methods will limit impacts to the environment by boring under sensitive habitat, limiting the impact on birds and other endangered species. Building SOO Green underground and utilizing an existing railroad right of way will also limit impacts to neighboring landowners, say company officials.

According to the American Wind Energy Association: 36 percent of Iowa's electrical production in 2016 was powered by wind and that number is expected to hit 40 percent by 2020.

DC DevCo argues that the project would bring "clean energy from the resource rich Midwest to satisfy the growing demand in Illinois and other eastern markets."

In terms of more material benefits, DC DevCo estimates that "construction of the project will directly create more than 600 temporary jobs in Iowa and Illinois" as well as "indirectly creating more than 200 permanent jobs to maintain and operate the wind farms and the transmission line post-construction."

Spokespeople from the project added that counties that the line goes through (including Jackson County) will receive a payment "for each mile of line."

The DC DevCo is working on the project with investors from Copenhagen Infrastructure Partners, Jingoli Power and Siemens Financial Services.

Siemens will also be responsible for "overall system design, engineering, manufacture, civil works, installation" and helping build converter stations to power the 2,100 megawatt transmission line.

SOO Green's website states that the high voltage direct current (HVDC) line would be superior to an alternating current (AC) line because it would have lower energy costs and a smaller environmental footprint.