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CALIFORNIA ENERGY COMMISSION

In the matter of:

California Offshore Wind Development	Docket No. 17-MISC-01

ASSEMBLY BILL 525:

CALIFORNIA OFFSHORE WIND DEVELOPMENT

REMOTE VIA ZOOM

FRIDAY, MARCH 29, 2024

10:00 A.M.

Reported by:

Martha Nelson

APPEARANCES

COMMISSIONER

Siva Gunda, Vice Chair

CEC STAFF

Jim Bartridge, Siting, Transmission, and Environmental Protection Division

Elizabeth Huber, Siting, Transmission, and Environmental Protection Division

Danielle Mullany, Siting, Transmission, and Environmental Protection Division

Eli Harland, Siting, Transmission, and Environmental Protection Division

Lorelei Walker, Siting, Transmission, and Environmental Protection Division

Jack Bastida, I.T.

ALSO PRESENT

John Reynolds, CPUC Commissioner

Matthew Baker, CPUC Commissioner

Neil Millar, CAISO, Vice President, Infrastructure and Operations Planning

PRESENTERS

Jennifer Lucchesi, California State Lands Commission

Abigail Ryder, Bureau of Ocean Energy Management

Matthew Blazek, Bureau of Ocean Energy Management

APPEARANCES

ALSO PRESENT (cont'd.)

Holly Wyer, California Coastal Commission

Cyndi Dawson, California Department of Fish and Wildlife

Phillip Crader, State Water Resources Control Board

Arne Jacobson, Schatz Energy Research Center

Jim Zoellick, Schatz Energy Research Center

Jeff Billinton, California Independent System Operator

PUBLIC COMMENT

Sheri Hafer, Morro Bay Commercial Fishermen's Organization

Theral Golden

Andrea Lueker, REACT Alliance

Cathie Buchanan, Bear River Band of the Rohnerville Rancheria, California

Molly Croll, American Clean Power Association

Dan Jacobson, Environment California

John Reed, Channel Wind

Ken Bates, California Fishermen's Resiliency Association

Pauline Seales, Santa Cruz Climate Action Network

Azsha Hudson, Environmental Defense Center

Steve Scheiblauer

Nancy Kirshner-Rodriguez, Oceantic Network

Sarah Xu, Brightline Defense

APPEARANCES

PUBLIC COMMENT (cont'd.)

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Matt Simmons, Environmental Protection Information Center

Alison Hahm, Natural Resources Defense Council

Mike Okoniewski, West Coast Pelagic Conservation Group

Alan Alward

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P R O C E E D I N G S

10:00 a.m.

FRIDAY, MARCH 29, 2024

MR. BARTRIDGE: Well, good morning. I'm Jim Bartridge with the Energy Commission's Siting, Transmission, and Environmental Protection Division. Welcome to today's workshop, the second of two workshops on the AB 525 Draft Strategic Plan for Offshore Wind. In today's workshop, we'll cover suitable sea space, the permitting processes, and transmission.

But before we begin, go over a few housekeeping items.

First, this meeting is available and being recorded. The workshop recording will be made available on the Energy Commission's website.

Please note that to make the Energy Commission's workshop more accessible, Zoom's closed captioning has been enabled. Attendees can use the service by clicking on the live transcript icon and then choosing either show subtitle or view full transcript. The closed captioning service can be stopped by exiting out of the live transcript or selecting the hide button.

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Today's agenda will begin with an overview of 525 draft Strategic Plan. Then we'll hear about sea space from

Chapter 5 of the Strategic Plan, followed by a presentation for the Bureau of Ocean Energy Management. Thereafter, we'll discuss offshore wind permitting from Chapter 10 with presentations on agency roles from the California State Lands Commission, the California Coastal Commission, the California Department of Fish and Wildlife, and the State Water Resources Control Board. We'll close the morning with public comments and then a lunch break.

And then after lunch in our afternoon session -- next slide, there it is -- we'll discuss transmission technologies and planning from Chapter 8 and 9 of the Strategic Plan. We'll also have presentations from the Schatz Energy Research Center on the Northern California and Southern Oregon Offshore Wind Transmission Study, and from the California Independent System Operator on transmission planning.

Next slide, please.

Before we begin, I'll turn it over to Vice Chair Gunda for some opening comments, followed by any brief opening comments and introductions from our state agency partners.

Next slide.

Go ahead, Commissioner.

VICE CHAIR GUNDA: Thank you, Jim.

I just want to begin by welcoming everybody who's

joining us today to this workshop. Your time is extremely valuable to all of us as we continue our work on offshore wind.

I also want to thank our staff at CEC, Jim, who is moderating today, but also Melissa Jones, Rachel MacDonald, Elizabeth Huber, who oversees the Division.

I'm here in place of the chair today. Chair's in travel, Chair Hochschild, but we do have his Chief of Staff Kat Robinson on the call. And also want to commend Kat for her contributions in helping complete the Strategic Plan.

As it was probably mentioned last week, the development of the draft Strategic Plan was a multi-agency effort, representing an all government approach to making offshore wind a reality in California. Just want to acknowledge and thank the State Lands Commission, Coastal Commission, Department of Fish and Wildlife, Ocean Protection Council, California Labor and Workforce Development Agency, and California Public Utilities Commission. And we always look to our quasi-state agency, our entity, Neil, who is here with CAISO, as an important part of our planning exercise.

To just reiterate a couple of points, California, as a state, has committed to 100 percent zero-carbon electricity by 2045 to really underpin our climate strategy, which is broadly based on electrification of the

large swaths of the economy. And this will require a historic build-out of renewable resources over the next 20 years.

Achieving 100 percent clean energy goals will be done most cost-effectively if we can have geographic and technologically diverse resources. That was the insight and takeaway from the first SB 100 analysis, and we continue to update that to look at the contribution and value of these diverse resources.

Offshore wind was recognized as a good complement to land-based wind and land-based solar because of its generation profile and how it can complement, especially in terms of net peak period and its ability to potentially displace the thermal resources that we rely on today.

Offshore wind, like every other resource that we expect to plan and develop in California, will have impacts, both benefits and impacts. And, you know, the cost and impacts of inaction is also seen to be much higher than the cost of moving forward with the best ability to move forward with the resources we need.

Some of the things we are beginning to see, whether it's fires, floods, acidification of our oceans, impact of public health, air quality, we are beginning to see them already. And, you know, moving swiftly towards our zero-carbon resources is extremely important and vital

not only for California, but the globe as a whole and our ability to help foster a global transition.

So in closing, again, I want to thank everybody who's here. I want to commend our interagency staff and other principals who are available on the dais to make brief comments.

With that, Jim, I'll pass to Commissioner Reynolds.

COMMISSIONER REYNOLDS: Thank you, Vice Chair Gunda. It's wonderful to be here with you this morning on the dais.

And I want to offer, first off, my appreciation and commendation to the CEC for hosting this forum and for all the thoughtful work in the Strategic Plan for Offshore Wind. I strongly echo your comments and I would double-click on the recognition that offshore wind as a resource is particularly exciting because it balances really well with our tremendous onshore wind and solar resources that we've been able to successfully develop.

But as I think we'll talk about further today and as the report discusses more broadly, there are real challenges in developing offshore wind, challenges that we will have to tackle diligently and collaboratively. And as with any resource that is going to help us get to our long-term goals, we are going to have to find solutions to

problems that maybe we have not addressed in the past since we're dealing with the new technology. That is inherently the case.

But we're also looking at a tremendous scale of resource development. And one of the tremendous advantages that I think offshore wind presents is that it doesn't have the same land use impacts as many of the onshore resources we've historically developed. As we will talk about this afternoon, there will be onshore components to offshore wind projects. And there are, of course, environmental and sea space impacts that need to be mitigated with the development of this resource.

So I look forward to this conversation, really appreciate being here. And thanks again to the CEC team for all the effort and all the leadership that has been displayed by the CEC and state partners.

VICE CHAIR GUNDA: Thank you, Commissioner Reynolds.

Commissioner Baker?

COMMISSIONER BAKER: Thank you. Thank you. I am Matt Baker, Commissioner at the Public Utilities Commission. I'm really happy to be here to share this with my colleagues, especially Commissioner Reynolds.

I want to thank the Energy Commission for today's workshop and its work on the draft plan. I'm really

looking forward to the discussion.

Thank you.

VICE CHAIR GUNDA: Thank you, Commissioner Baker, and welcome to the Commission team. Thank you.

I'm going to go to Neil Millar from CAISO.

VICE PRESIDENT MILLAR: Good morning, Vice Chair Gunda. Thank you. I do just want to echo the comments you've already heard about our appreciation for the work to this point and for being included in today's session.

I should mention, as well, this is particularly timely for us as we will be -- the ISO will be issuing our draft Transmission Plan on Monday. That will actually include the first phase of development seeking to access North Coast offshore wind.

At the same time, Jeff Billinton, our Director of Transmission Infrastructure Planning is speaking later today on transmission. He will be a bit constrained about what he can talk about in plan until it's actually released, but I'm sure he'll be able to give an excellent overview of the transmission challenges.

So we're really looking forward to the day and thank you very much.

VICE CHAIR GUNDA: Thank you so much, Neil.

I know we have Jennifer Lucchesi, so go ahead, please.

MS. LUCCHESI: Good morning, everyone. My name is Jennifer Lucchesi. I'm the Executive Officer of the California State Lands Commission.

I also want to align myself with the comments already made and the gratitude expressed, and I look forward to the discussion and learning from the comments made later today.

Thank you so much.

VICE CHAIR GUNDA: Thank you so much, Jennifer.

I don't think there's any other right now.

I do want to recognize that Chair Hochschild has called in and he's listening. Thank you, Chair.

And I think I just want to close by saying, before I pass it to Jim, you know, we as a state team is absolutely committed in developing this resource and carefully monitoring the impacts and learning and adapting as we move forward. It's extremely important.

And also, I think we'll continue to consult with all important stakeholders, but also tribal nations, fisheries, community groups to ensure that the feedback is well understood in the development of this critical resource.

So with that, looking forward, the rest of the workshop back to you, Jim. Thank you.

MR. BARTRIDGE: Thank you, Vice Chair, and thank

you all for your remarks.

I'll reiterate, AB 525 was an extensive effort that included participation from multiple state agencies, and we certainly appreciate all of their contributions to date and going forward.

So next slide, please.

Okay, and with that, I'll turn it over to Elizabeth Huber, Director of the CEC's Siting, Transmission, Environmental Protection Division for an overview of the draft AB 525 Offshore Wind Strategic Plan.

Next slide, please.

MS. HUBER: Thanks Jim, and good morning everyone and welcome to the California Energy Commission's workshop on offshore wind energy. We appreciate all of you being here today because this public process would not work if you weren't engaged in participating and sharing your input, thoughts, and recommendations back to us.

So with that, we will be presenting the chapters within the draft Assembly Bill 525 Offshore Wind Strategic Plan and updates on those ongoing efforts, next steps, and additional public input opportunities as the CEC works to meet statutory requirements of AB 525 toward a safe and reliable offshore wind energy in and federal waters offshore California.

For those of you who do not know me, my name is

Elizabeth Huber and I am the Director of the CEC's Siting, Transmission, and Environmental Protection Division. This team is assigned to work on offshore wind and those that will present today are part of the STEP Division's Climate Initiatives Branch. Their efforts in coordination with several state agencies have led to the draft AB 525 Strategic Plan being published on January 19th, and it sets the analytical framework for offshore wind energy development off the California coast.

Next slide, please.

In enacting AB 525, the legislature found and declared many things as they relate to offshore wind. The findings shown on this slide are just some of the findings underlining the statutes of AB 525, including providing economic environmental benefits, advancing progress towards California's renewable energy and climate goals, and increasing the diversity and lowering overall costs of the state's resource portfolio, among many other things.

Next slide, please.

AB 525 tasks the CEC, in coordination with an array of specified local, state, and federal partners, tribal governments, and with input from stakeholders to develop a Strategic Plan for offshore wind development.

The legislation further identifies priority considerations in developing that Strategic Plan. The

legislation states that,

"The Strategic Plan shall emphasize and prioritize near-term actions, particularly related to port retrofits and investment, the workforce, and to accommodate the probable immediate needs for jobs and economic development."

In considering port retrofits, the Strategic Plan is supposed to strive for compatibility with our harbor tenants and ocean users to ensure that the local benefits related to offshore wind energy construction complement other local industries.

The Strategic Plan emphasizes and prioritizes actions that will improve port infrastructure and support land-based work for the local workforce. And the development of the Strategic Plan regarding workforce development includes consultation with representatives of key labor organizations, apprenticeship programs, and other academia opportunities that would involve the dispatching and training of a construction workforce.

The statutory language of AB 205 requires a Strategic Plan shall also include five chapters. So at minimum, you will find in the draft Strategic Plan the identification of suitable sea space to meet our 2045 wind goals of 25 gigawatts, the development of a plan for port infrastructure and workforce development, an assessment of

transmission needs to meet overall offshore wind goals, and an establishment of a coordinated and efficient permitting process. And finally, identification of the potential impacts and how we're going to mitigate and minimize those impacts through strategies on coastal resources, fisheries, Native American indigenous peoples, our national defense, and strategies for addressing all of them.

Next slide, please.

In addition to developing the Strategic Plan, AB 525 included a number of interim work products that will inform the 2023 Plan. These include evaluating and quantifying the maximum feasible capacity of offshore wind to achieve reliable rate payer employment and decarbonization benefits and establishing the offshore wind goals for 2030 and 2045. The work resulted in goals of 2 to 5 gigawatts of offshore wind in 2030 and 25 gigawatts in 2045.

The legislation also required the CEC to complete and submit to CNRA and the California legislature a preliminary assessment of economic benefits of offshore wind as they relate to seaport investments and workforce development needs and standards, as well as a permitting roadmap, which were all presented earlier this year -- or I should say in 2023, oh my goodness, we're in 2024 already.

And then finally, AB 525 also prioritized

engagement and made it clear that all stakeholders and tribal governments should be invited to participate in the process. The legislation defines stakeholders, stating that,

> "For purposes of AB 525, the term stakeholders includes, but not limited to, fishery groups, labor unions, industry, environmental and environmental justice organizations, and the ocean users."

These interim reports are located on the CEC website, and the link is on the bottom left of this slide.

Next slide, please.

As been articulated from the Vice Chair and from Jim and others in the first workshop and today's workshop already, the CEC consulted and coordinated with an array of state agencies and would not be able to have posted a draft Strategic Plan without their collaboration.

The first is the State Lands Commission. They are the CEQA lead agency for environmental review and permitting. The Ocean Protection Council, among other things, leads on environmental monitoring for the state. The California Coastal Commission, who executes the coastal planning and regulatory activities for the Federal Coastal Zone Management Act and State Coastal Act. The Department of Fish and Wildlife, who among other provisions, implements the California a threatened and endangered

species impact and mitigation requirements. And regarding transmission infrastructure and technology, the CEC consulted with the California Public Utilities Commission and the California Independent System Operator.

With regards to the plan to develop California's workforce, we consulted with the Labor and Workforce Development Agency and the Workforce Development Board, the Department of Industrialization and the Employment Development Department, to name a few.

The CEC, in collaboration with these multiple state agencies, held more than 200 meetings, workshops, tribal listening sessions and intergovernmental roundtables, biweekly and monthly working group meetings, and one-on-one conversations to develop the Strategic Plan.

Next slide, please.

So the structure of the Strategic Plan is laid out in three volumes. Volume I is an overview of the actual Strategic Plan. It's kind of the high-level executive summary if you will. Volume II is the full comprehensive Strategic Plan. And Volume III are the technical appendices. So we tried to put together all of the reference material studies and work that was used to develop the Strategic Plan and that's found in appendices three. The Main Report, as I said, addresses the 525 required chapters, as well as the additional chapters on

the history of offshore wind development, floating offshore wind technology, and the industry that supports it, and a section on impacts and strategies to mitigate those impacts to our underserved communities in California. In the following slides, I will provide a short highlight of each chapter.

Next slide, please.

Chapter 3 addresses economic and workforce benefits. At a high level, offshore wind presents the opportunity to realize economic and workforce benefits and attract investment capital to California. Benefit key takeaways include direct, indirect, and induced economic benefits that are expected from activities like construction and maintenance, increased demand regionally for components, creation of small businesses and expansion of existing businesses, and ultimately increasing spending back into the local community, developing and preserving a local skilled and trained workforce, and long-term job creation, as shown in this slide, by job and sector specific to supply chain, construction, and operations and maintenance.

Ports and waterfront facilities will be an important driver of potential economic benefits and are essential to developing a local supply chain that is estimated to provide the majority of workforce benefits.

And of course, community benefits agreements are important tools to ensure that our California Native Americans and underserved communities are involved early and often in the state and federal permitting processes and receive benefits that are truly realized.

Next slide, please.

So Chapter 4 addresses potential impacts of offshore wind on coastal resources, fisheries, Native American and indigenous peoples, and our national defense and strategies for addressing those impacts. Additionally, the chapter discusses impacts to underserved communities.

While the chapter evaluates numerous potential impacts for various tribal governments and local groups, this image is a good example of potential impact and mitigation strategies specific to marine life, which is a concern for all of us.

I encourage all of you to go to our website. We will, throughout today's workshop, we will be posting the link and that is where you will find more details on this chapter as presented in part one of this two-part workshop that was held last Wednesday.

Next slide, please.

Potential impacts and strategies updated. So this chapter goes into greater detail about potential impacts and strategies. During last week's workshop, there

was an extensive discussion of impacts covered by the specific lead agencies regarding their topic areas. We also received comments throughout the workshop from California's native tribes, fisheries community representatives and other concerned stakeholders.

Again, I want to remind you to please see our event page for the presentation from last week.

Next slide, please.

Today, you'll hear more, but AB 525 Chapter 5 on sea space required the CEC to work with specific agency stakeholders, state, local, and federal agencies, and the offshore wind industry to identify suitable sea space for wind energy areas in federal waters sufficient to accommodate the offshore wind goals for California.

Key takeaways related to sea space are that the CEC identified six areas in federal waters that are sufficient sea space to meet the 2045 25 gigawatt goal. I want to note that up to 50 percent of the sea space may not be suitable due to conflicts, which is why we set the goal at 25 in the areas that are suitable. And I want to note that the development needs to occur at least 20 miles offshore to avoid any such conflicts.

Ocean use, species, and ecosystem conflicts will require additional evaluation to determine the long-term suitability. And again, Danielle Mullaney from the STEP

Division will be discussing this further later this morning.

Chapter 6, Port and Waterfront Infrastructure chapter, addressed port needs and costs, port sites by activity and environmental considerations and challenges. Key takeaways from that -- next slide, please -- key takeaways from the chapter include the Humboldt Bay Harbor Recreation Conservation District which received $425 million grant for the construction and maintenance of offshore wind infrastructure provided by the U.S. Department of Transportation. and this was in addition to a $10.5 million California grant that was initiated by the CEC.

Again, key takeaways are listed on the slide there for you, but again, more detail is on our March 20th workshop event page, including presentations and the actual recording.

Next slide, please.

Workforce development. Chapter seven on Workforce Development addresses workforce needs and standards, workforce training programs and apprenticeships, and various types of jobs that are expected to support offshore wind development.

Next slide, please.

Key takeaways from this chapter includes most

needed near-term skills, such as in the trades, technician, and construction sectors. Long-term jobs are in the supply chain and manufacturing sector. And we need a workforce with the right skill sets that require specialized training for different types of workers.

Recommendations included identifying workforce needs, establishing equitable hiring standards, funding training and education, and recruiting entry-level and experienced workers. We also need to coordinate to create career opportunities, workforce training, and economic development benefits. And we also need to support project labor agreements that provide local communities and tribal governments with meaningful economic benefits.

Again, for more detail, go back to our March 20th workshop event page.

Next slide, please.

AB 525 also required the CEC to assess transmission investments and upgrades to support the 2030 and 2045 offshore wind planning goals.

MR. BARTRIDGE: One more slide, please.

MS. HUBER: And that was in consult -- thank you, Jim -- in consultation with the CPUC and California ISO.

Chapter 8 covers the Transmission Technology and Alternative Assessments and discusses the transmission infrastructure needed to bring the generation to shore,

including existing and emerging transmission technology and interconnection.

Key takeaways from this chapter include, transmission technology is still emerging, including dynamic and higher capacity cables and floating substations. We also need large investments to deliver electricity to local communities and the larger grid. Potential transmission pathways for the North Coast will require additional detailed corridor planning. On our staff, Lorelei Walker will be going into this a little later in the workshop.

Next slide, please.

Chapter 9 addresses transmission planning processes, corridor planning, and interconnection issues, including process enhancements.

Key takeaways from this chapter include proactive planning. And innovative interconnection approaches will be needed for timely transmission development. We need to landscape level planning for transmission corridors that can provide a smoother path for transmission projects from planning to permitting. And we need to continue assessing transmission needs for host communities and other rural communities along transmission routes that can help address reliability and equity issues. Again, Lorelei will discuss that in her presentation later this afternoon.

Next slide, please.

So Chapter 10 provides an overview of the permitting roadmap, which identifies several approaches for coordinated or consolidated permitting of offshore wind projects.

Key takeaways from this chapter include the permitting process for any large infrastructure, such as offshore wind, is complex and involves numerous state, federal, and local agencies. To condense or streamline the permitting for large renewable projects in the California desert, a coordinated multi-agency permitting approach was developed. The permitting approach created the Renewable Energy Action Team, known as the REAT, and a Renewable Energy Policy Group by principals in the state of California, representing multiple agencies to ensure proper coordination for permitting. Eli Harland and the STEP Division will be discussing the permitting chapter in greater detail this morning.

And then I want to conclude again by showing the links to our AB -- next slide, please -- I want to conclude by sharing the links to our AB 525 Strategic Plan webpage, where you can find the draft Strategic Plan, the multiple consultant reports led by our partner agencies and our interim reports that I mentioned earlier, as well as all the workshop event information from last week and today's

workshop.

Again, within the CEC's workshop notice, there is information about public participation, including signing up for the LISTSERV, as well as links to file public comments. You are also can go directly to the comment link provided and file comments there as well.

Again, all comments for both workshops and draft Strategic Plans are due by close of business on April 22nd.

Again, thank you all for being here today and look forward to the conversations as we delve more into our permitting, sea space and transmission work that's been done over the last 18 months.

And this concludes my presentation, and I'll pass it back to Jim.

MR. BARTRIDGE: Great. Thank you, Elizabeth.

And next, we'll begin our presentations on sea space, first, with a presentation from Danielle Mullaney from the Energy Commission on Chapter 5, Sea space for Offshore Wind Development.

Danielle? Thank you, Jim.

MS. MULLANY: Good morning. I'm Danielle with the Energy Commission Siting, Transmission, and Environmental Protection Division, where my role is sea space identification for offshore wind energy planning. And today I'm going to give a brief overview of the sea

space identification process and results as required by AB 525.

Next slide, please.

I want to start by outlining what AB 525 asks us to do in regards to sea space identification, and that is to first identify the sea space established by BOEM in its 2018 Call for Nominations to achieve 2 to 5 gigawatts by 2030, and second, to identify sea space for a future phase of offshore wind leasing to achieve 25 gigawatts by 2045.

AB 525 asks us to look for areas with the best wind resource and least conflicts to existing ocean users and marine resources, and to assess the potential impacts and identify strategies to mitigate those impacts.

So the map on the right is showing one of our starting point maps which is finding where the best wind is. You can see the darker red is higher annual average wind speed and the lower -- and the yellow color is lower wind speed.

So you can see the area off the North Coast of California has some of the best wind and that's averaging about ten meters per second or greater. Also shown on the map is the current Humboldt and Morro Bay wind energy areas in blue, and the designated National Marine Sanctuaries are displayed in green. And the sanctuaries are marine protected areas and they are not in BOEM's jurisdiction, to

be least, so these areas were removed from the sea space analysis. So this map was really a starting point for identifying sea space.

Next slide, please.

This slide is to give a high-level overview of the basic process that was followed for Sea space identification. And this process can be broken down into three steps.

First, identify wind potential and technical characteristics where deployment would be feasible. This would be looking at data on wind speed, wind consistency, ocean bottom depth, ocean bottom slope, and distance to transmission and ports.

And then once those areas are identified, the second step would be to screen those areas for potential conflicts. And this would be looking at data on ocean uses such as commercial fishing, commercial shipping, military operations, and cultural and historical resources, as well as looking at marine resource data such as benthic habitats, marine mammals, marine birds, and marine turtles.

And finally, the third step is to summarize these results, which is what we have done in the Strategic Plan report. So the report has more details on this process and also lists all the data sets used throughout this analysis.

Next slide.

So as I was explaining previously, the first step in our process resulted in these sea space areas that you're seeing in gray on the map on the right. And so this map is showing the AB 525 suitable sea space overlaid on the sea space areas of interest, which are denoted by large hatched ovals. And also displayed is the Humboldt and Morro Bay lease areas, transmission lines, and electric substations and it's closest to the sea space areas.

It's important to note that these six sea space areas were formed exclusively from four constraints which affects technology deployment, and those constraints are an annual average wind speed of seven meters per second or greater, average water depth of 2,600 meters or less, ocean bottom slope of ten percent or less, and a minimum distance of 20 miles from shore.

And these areas were not shaped in response to conflict screening other than siting them 20 miles from shore. And this distance was identified as the minimum distance for sea space because throughout spatial data analysis we found that concentrations of existing ocean use and marine biological resources occur nearer to shore. So ocean use activity including commercial and recreational fishing, vessel traffic, and cultural resources, those are all highest in waters within 20 miles from shore. And so sea space identified 20 miles from shore is considered

lower conflict or least conflict for shore wind development. However, there are still coastal resource and ocean use conflicts to consider. And my next slides will give a brief overview of some of these potential conflicts.

Next slide, please.

So commercial fisheries, the commercial fishing industry an existing ocean user that may be impacted by offshore wind development. Fishermen in the North and Central Coast provided input on species distribution to help inform sea space identification. The fishing areas mapped by the fishermen represent where fishing for that species would occur. And the map on the left shows North Coast fisheries data. The map on the right shows Central Coast fisheries data.

These maps provide a historically informed snapshot of the area's fishing grounds. And both maps demonstrate that higher fishing activity takes place closer to shore. So by identifying sea space further from shore, most of the fisheries in the North and Central Coast are voided. However, the fisheries that operate closer to shore may still be impacted by the transmission cables coming to shore and the increased vessel traffic associated with offshore wind energy.

Next slide.

The commercial shipping industry was not listed

as a stakeholder in AB 525, but analysis of ocean use data shows commercial shipping as a large ocean user, and therefore it's an important consideration.

This map displays the AB 525 sea space with the U.S. Coast Guard proposed shipping lanes overlaid in yellow from the Pacific Coast Port Access Route Study, also referred to as PACPARS. The proposed shipping lanes are 15 nautical miles wide and pass through the middle of the largest sea space areas of Humboldt and Mendocino counties. The proposed fairways occupy a significant amount of sea space, so further collaboration and discussion are needed between the shipping industry and government.

Next slide, please.

This is a map resulting from the 2018 call for information by BOEM that designates areas of DoD military activity off the California coast to determine potential compatibility with offshore wind energy development. The yellow area is designated as site-specific stipulations, which means DOD may recommend additional measures, but does not presently deem offshore wind to be incompatible with its options.

The salmon colored area towards the south is designated as incompatible with wind energy development due to the wide array of critical DoD activities taking place. So the area south of San Francisco Bay is heavily utilized

by DoD, making sea space off the central and southern coasts of California likely to be in conflict with DoD military activity. And these areas will need to go through a review process by DoD to determine compatibility.

Next slide, please.

This slide is showing AB 525 sea space in gray with the benthic habitats and protected areas off the North Coast and Central Coast of California. Benthic habitat refers to seafloor habitat such as corals and sponges. Both maps display spatial data related to models predicting the distributions of deep sea corals and sponges offshore of the West Coast. And these maps show a higher number of coral species have high habitat suitability within the sea space areas, particularly off of Del Norte County. Further data and information is needed to better map these benthic habitats on a finer scale.

Also shown on this map is the Pacific groundfish protected areas. These are areas designated by NOAA and represent important biological areas that should be taken into consideration when siting in shoreland infrastructure since they are necessary to the species for important biological functions.

Next slide, please.

This is a map of marine mammal occurrence off of the California coast, where the darker green color

indicates there is higher marine mammal presence, and the yellow color indicates lower marine mammal presence. And this data is from the California Offshore Wind Energy Modeling Platform, which is a publicly-available set of spatial models to assess information on offshore wind energy development.

And this specific model estimates marine life presence by considering the occurrence, activity, density, and habitat of marine species. In this case, marine mammal is referring to whales and pinnipeds, also known as sea lions and seals. And as you can see areas closer to shore have higher marine mammal density and there's generally higher activity with the Central Coast.

Next slide, please.

So this map is from the same California Offshore Wind Energy Modeling Platform, where darker green indicates a higher species occurrence, in this case, a higher marine bird presence. Similar to marine mammals, higher bird activity takes place closer to shore. In this case, you can pretty clearly see that identifying sea space 20 miles from shore avoids those higher activity areas, in the dark green, and that helps to reduce or mitigate some of those potential impacts.

This brings us to the leatherback sea turtle map, again from the same Offshore Wind Energy Modeling Platform

where the dark green indicates higher species presence. In this case, you are seeing just the leatherback turtle because based on available data, this was the only turtle species with a potentially significant presence in the sea space areas. And you can see they have a low presence off the North Coast and a considerable density off of the Central Coast. So that is definitely a conflict with the Central Coast sea space and something to consider when conducting research.

Next slide, please.

So this table is included to provide an overview of our energy generation estimates from the sea space areas identified. Because floating offshore wind technology is so new and has not been built to scale yet, we have a wide range of generation potential.

It is expected that the 2030 goal of 2 to 5 gigawatts can be accommodated from the existing lease areas in Humboldt and Morro Bay, which we're estimating could yield 4.5 to 7.6 gigawatts of offshore wind energy. And these estimates could turn out to be conservative estimates since industry is predicting higher energy capacity for those areas. And if all of the AB 525 sea space was developed, the energy generation would range from about 31 to 52 gigawatts. However, it's not expected all of these areas will need to be developed to reach the 2045 goals,

and they also won't likely all be suitable.

So the sea space identified throughout this analysis is intended as areas to focus further research on to determine which is most suitable for a potential next round of offshore releases.

Next slide, please.

This slide is a high-level summary of the conclusions from the sea space analysis, and I will highlight some of the main points, and those are, in the near term, a water depth of 1,300 meters is more feasible for development of offshore wind technology, and identifying sea space a minimum distance of 20 miles from shore avoids the greatest degree of conflicts, and large-scale conflicts that could reduce the size of sea space include benthic habitats, shipping lanes, and military activity.

And all of this information is detailed in the Sea Space chapter in Chapter 5 in the Strategic Planning Report.

Next slide, please.

And finally, the sea space Recommendation is to continue sea space identification, research analysis and refinement and coordination with BOEM, underserved and tribal communities, and stakeholders to inform the feasibility of offshore wind development that minimizes

impacts to California's coast and ocean resources.

And that concludes my presentation, and I will turn it to -- back to Jim.

MR. BARTRIDGE: Great. Thank you, Danielle.

And, again, folks, just to reiterate that all of the graphics and otherwise that you saw in that slide is available in Chapter 5 of the Strategic Plan.

So next up, we'll have a presentation from Abigail Ryder and Matthew Blazek from the Bureau of Ocean Energy Management.

Go ahead, Abigail and Matt.

MS. RYDER: If you could bring our slide up?

MR. BARTRIDGE: Next slide, please. Excellent.

MS. RYDER: Hello, my name is Abigail Ryder and I'm a Program Analyst at the Bureau of Ocean Energy Management. Today I'm presenting on the California Programmatic Environmental Impact Statement, or PEIS.

Next slide, please.

So I'd like to start with some background about the federal law, NEPA, that requires home to prepare environmental analyses.

The federal government prepares an Environmental Impact Statement, or EIS, to provide full and public discussion of significant environmental impacts of an action for decision makers and the public. In addition to

the proposed action, the EIS also considers reasonable alternatives. A Record of Decision, or ROD, is prepared after an agency issues a final EIS. The ROD states the agency's environmental decision.

Next slide, please.

There are several rounds of environmental review during the leasing and development process. And one round is already done. Environmental assessments for leasing-related activities were completed in 2022. These covered one, the issuance of commercial wind energy leases, two, site characterization activities, and this is biological, geotechnical, geophysical, and archaeological surveys, and three, site assessment activities, and this is the deployment of one or more buoys to gather oceanographic and meteorological data.

So we're now in the middle column of this chart. The leasing has been completed and the developers are preparing their constructions and operations plans. Lease site assessment is estimated to finish in late 2025 but this date is driven by developer for activities, so there's no hard timing for completion. We are concurrently doing a high level or programmatic review to better understand potential project impacts at a larger regional scale.

Later, once BOEM has received and reviewed constructions and operations plans from the developers,

there will be project-specific environmental reviews of the constructions and operations plans, what we call COPs. That's where more specific information, such as turbine types, locations and landfills will be available.

So to reiterate, the PEIS adds an additional review step. It does not replace the review that occurs if and when lessees submit constructions and operations plans.

The programmatic, what we are doing now, is more regional and broad in nature. It still allows us to conduct a robust analysis and examine the collective effect of the development of wind energy areas and other past, present, and future planned projects in the vicinity. It's helpful for efforts like offshore wind in California, where there are clustered project areas that will eventually undergo project level review.

Project-specific EISs, which will be done later, is probably what more people are familiar with. These will include project-specific details such as the specific number of turbines of a certain height at a defined spacing with a clear picture of where cables will travel and land, and what onshore facilities are needed, and so on.

Next slide, please.

So why are we doing this programmatic analysis? BOEM's goal is to conduct a regional programmatic analysis to help us identify, analyze, and adopt potential

mitigation measures. The programmatic EIS includes a high-level analysis of potential impacts that are not project-specific and consider mitigation measures that could be applied across all five leases.

For orientation, we are focusing on two groups of lease areas. Two are in the far north of the state off the coast of Humboldt County, and three are off the San Luis Obispo County coast. We refer to these by the closest large city, in this case, Moro Bay.

Next slide, please.

We are starting the programmatic EIS with three main alternatives. Alternative A is no action, no offshore wind development in the California lease areas. Alternative B is offshore wind development in the lease areas without any mitigation measures. And alternative C is the proposed action of the PEIS, offshore wind development in the lease areas with programmatic mitigation measures. And it is possible that BOEM may identify or consider one or more additional alternatives.

Next slide, please.

So to summarize and reiterate, the PEIS will identify programmatic mitigation measures which may be incorporated directly into constructions and operations plans by lessees or may be required by BOEM as conditions of approval for their constructions and operations. This

will enable projects proposed within lease areas to use a tiered environmental review process that builds on the outcome of the PEIS in the later project-specific analyses. However, the ROD for this programmatic EIS will not approve any activities.

Next slide, please.

So here's an overview of the PEIS timeline. Public scoping has already occurred. We published a Notice of Intent to prepare the PEIS in December with a 60-day comment period, and we received 187 comments.

So we're now in the second column as outlined in yellow, and we're working to write the draft PEIS, which we hope to publish this fall. This will be announced with a Notice of Availability in the Federal Register, along with a public comment period and public meetings. We will incorporate the feedback we receive and hope to finalize the PEIS by summer 2025, issuing a Record of Decision in late 2020.

To repeat, the ROD for the California Offshore Wind PEIS will not approve any activities. BOEM will conduct project-specific environmental impact statements on constructions and operations plans if and once we receive them.

For more information about the PEIS, please go to www.boem.gov/caoffshorewindPEIS, and the address is on the

bottom of the slide.

Thank you for listening, and next slide. Thank you.

MR. BLAZEK: Welcome. My name is Matt Blazek and I will talk to you briefly about the renewable energy process that BOEM employs, as well as we'll talk about our task force that we have.

Next slide, please.

First, this chart shows the wind energy authorization process broken down into four phases. And as you can see, each phase ranges from one to five years. And so it can be a long time from planning to potential construction of an offshore wind farm. During each phase, BOE coordinates and consults with tribal, federal, state, and local partners. And there are multiple stages of environmental review and public opportunities for comment.

Looking at the first column, this is the planning and analysis phase. And here, BOEM will establish an intergovernmental renewable energy task force. It will also publish a Call for Information and Nominations, and identification demo, as well as conduct environmental reviews, such as what we've seen previously with the BOEM's Morro Bay and Humboldt's environmental assessments. This phase can last from one and a half years.

And then next, in the second column, we enter the

releasing phase, which can typically last one to two years, and here this includes the publication of leasing notices, conducting an auction, as well as lease issuance if companies secure any bids.

And if companies do acquire the leases after the auction, they then enter the next phase, the third column, which is the site assessment phase. And this can take up to five years, maybe shorter. So here, especially in California, leaseholders or lessees submit fisheries, agency, and tribal communication plans, survey plans, and assessment plans for volunteer review. After those reviews, then lessees can then begin their site characterization surveys. And again, this phase, this is where the current lessees are, Morro Bay and Humboldt.

The final phase, the construction and operations phase, which is our last column. And this includes a Construction and Operations Plan, or we just call it COP, that lessees would submit. And they'll also submit facility design reports, fabrication, and installation reports. The construction and operations phase also includes multiple environmental and technical reviews, monitoring, and reporting, in addition to permitting from many state and federal agencies.

And then lastly, if a COP is approved, and only then can the installation of an offshore wind farm begin.

Next slide, please.

So we're going to look a little bit more closely into that very first column, that planning and analysis phase, and specifically talk about the establishment of the California Intergovernmental Renewable Energy Task Force. So the purpose of this task force is to serve as one of several tools for coordination with tribal, federal, state, and local government partners. So through task forces and task force meetings, there will be updates, issues, and concerns pertaining to offshore wind were discussed in a more formal manner. And then information regarding projects, resources, policy, and process updates, priorities, and other notable items are shared to help inform BOEM on our renewable energy decisions.

A few things to note. Task force meetings do not replace other consultation mechanisms specified in your existing penal laws and regulations, and task force meetings are not chartered under the Federal Advisory Committee Act.

A brief history on the task force here in California. It was formally established in 2016 per request from former Governor Jerry Brown, and five meetings have been held since in 2016, 2018, 2020, 2021, and 2022. And the (indiscernible) of attendees and presentations from all these previous task force meetings can be found on

Bowdoin's website, just go to boem.gov/California.

And if the State of California finalizes the AB 525 Strategic Plan, BOEM intends to hold a sixth task force meeting sometime in the future to discuss updates on existing leases and possible future offshore wind energy lease planning.

Next slide, please.

So let's see what's going on for ongoing activities involving the leases. So lessees will continue to submit and will continue to review those communication plans and survey plans. Some lessees do aim to start site characterization surveys in 2024, while others will wait for 2025.

BOEM is continuing to collaborate with the state on future potential California leasing areas, and BOEM will continue to perform outreach with tribal, federal, state, and local partners appropriately.

And then, BOEM will also continue to collect data that pertains to offshore wind planning via our existing partnership with the NOAA and COSTS program there.

And next slide.

And again, if you have any questions, feel free to email us. Here's our contact information below, and we thank you for your time.

MR. BUCANEG: Okay. Great. Thank you, Abigail

and Matt.

MR. BARTRIDGE: We're right on time, folks, so next we will move into a discussion of offshore wind permitting and agency roles, beginning with an overview of Chapter 10 by Eli Harland.

Eli, I see you're on, so go ahead, take it away.

MR. HARLAND: Great. Thank you, Jim.

Good morning. My name is Eli Harland, and I work at the California Energy Commission within the STEP Division and with the Offshore Wind Team that you've heard from today. I'm going to present Chapter 10 of the Strategic Plan, which covers permitting.

Before I start the presentation, I wanted to make sure and build upon the acknowledgments we heard at the top of the workshop. This part of the Strategic Plan was a multi-agency and multiyear effort. While the CEC is the agency called on to deliver the Strategic Plan, permitting involves many agencies. So following my presentation of the content of the draft Strategic Plan will be presentations from state agencies with different roles in permitting the development of offshore wind.

Next slide, please.

So the requirements for permitting from AB 525, AB 525 requires the CEC to include a chapter in the Strategic Plan on permitting that includes the findings

from the interim report, the permitting roadmap. Elizabeth covered this in her overview at the top of the workshop. The permitting roadmap, which was adopted by the CEC, was required to describe timeframes and milestones for a coordinated, comprehensive, and efficient permitting process for offshore wind energy facilities.

The permitting roadmap is also required to include a goal for the permitting timeframe, clearly define local, state, and federal agency roles, responsibilities, and decision-making authority, and include interfaces with federal agencies including timing sequence and coordination with federal permitting agencies, and coordination between reviews under the California Environmental Quality Act or CEQA and the Federal National Environmental Policy Act or NEPA.

Next slide, please.

So AB 525 and the permitting roadmap is not the first exploration of permitting offshore wind facilities off the coast of California. As we heard from BOEM, in 2016, the feds in the state entered into an MOU for coordinating planning and development of both land-based and ocean-based renewable energy resources. And really, during the lead up to the original 2018 Call Areas to the first leased auction, the state agencies coordinated to prepare for and support Coastal Commission staff's CZMA

review, which we'll hear more about.

The first AB 525 permitting document was the conceptual permitting roadmap posted for public review in December 2022, and then the final Permitting Roadmap which was completed in May 2023. That roadmap includes a robust discussion of the federal, state, and local permits or authorizations required to develop offshore wind. The roadmap also explores different possible approaches and includes a preference for a coordinated permitting and environmental review approach, with a recommendation that state agencies also have resources and capacity to support that.

The Permitting chapter of the Strategic Plan includes summaries of public comment received on the approaches, which I'll touch on as I describe the coordinated permitting approach and environmental review approach.

Next slide, please.

So the coordinated permitting approach. The logos on the slides are meant to capture a few of the major reasons why a permitting roadmap and strategy make sense.

First of all, BOEM is the lead for this activity and NEPA is what they follow as well as several other for responsible federal agencies. And because projects will need state approval, CEQA is shown here as is CZMA or the

Coastal Zone Management Act. Now, there could be several more logos to truly convey the amount of coordination that's required, but these are some of the major ones and some of the reasons why a roadmap makes sense.

The coordinated approach would involve the creation of a leadership level group and staff coordinating group, what we've called the Ocean Renewable Energy Policy Group and the Ocean Renewable Energy Action Team, or as the draft chapter describes, these would be groups that are based on a similar approach that was taken for land-based projects in California over a decade ago. These would be made up of the federal, state, and local agencies with permitting responsibilities.

Timeframes and schedules, as well as issue resolution, would happen for each project. And the chapter points out that a primary goal for these groups would be to work toward joint environmental review documents for projects.

Chapter 10 of the draft Plan includes a summary of comments received from the offshore wind industry and from a group of environmental organizations. The industry shared many suggestions for how a coordinated group could work within existing authorities, and also perspectives on agency timing and project development timelines. And the environmental groups also shared suggestions for the

coordinated group and, similar to the offshore wind industry, emphasize some immediate first steps that a coordinated group should do.

Next slide, please.

So here's an example of a coordinated approach. There are potential elements of a proposed structure for a coordinated permitting approach applied to the ocean and marine environment for offshore wind, as I said, referred to as the ocean REAT approach.

This schematic is an example graphic of how a coordinated structure could be established. To implement this, it would need to include participation from BOEM and other federal agencies, and California agencies like the Coastal Commission, State Lands Commission, CDFW, and the Energy Commission, as well as potentially other local agencies that have roles in planning, environmental review, and permitting of offshore wind. This graphic is considered just an example to illustrate the structure that's described in the draft chapter.

Next slide, please.

Environmental review approaches. The permitting roadmap presented opportunities for the preparation of joint documents under NEPA and CEQA that could be considered by the various state and federal agencies with permitting responsibilities. Both NEPA and CEQA are

intended to promote coordination, improve public understanding, and lead to more informed decisions. Those laws encourage the development of joint documents, recognizing the efficiencies that can result from the preparation of a single document that can support multiple agency decisions. Joint documents have been commonly prepared for infrastructure projects when the project requires both state and or local and federal permits.

Chapter 10 in the draft Plan includes a summary of comments received on environmental review approaches. In joint comments submitted by environmental organizations, they recommend preparing MOUs, agreements on shared timelines, and relying on the same data for analysis.

As identified also in the permitting roadmap, another approach to facilitating the permitting of complex projects is to develop programmatic environmental documents under both NEPA and CEQA. As we heard from BOEM, under NEPA that would be a PEIS and under CEQA a PEIR. A PEIS or a PEIR is an environmental document that broadly describes the effects of a series of related activities, such as a plan or program with multiple components.

We just heard the update from BOEM about the PEIS they have initiated for the first five lease areas. And chapter 10 in the draft Plan summarizes comments from the offshore wind industry about programmatic reviews. The

industry recommends that state agencies actively participate in the PEIS.

Next slide, please.

The BOEM process is illustrated on the slide here. I think we'll see a similar slide to this throughout the presentations today, and we saw one from BOEM earlier. The purpose of this slide is to show the arrows that are shown across the top of the timeline. So the blue section of the arrow indicates the time period before leases are entered into. And the red section is after leases are executed. And for California this could technically have five lines or one for each of the lease areas.

Chapter 10 in the draft envisions that a coordinated agency approach for an efficient permitting process for offshore wind facilities is anchored to BOEM's four-phase process as BOEM has the primary jurisdiction. BOEM has exclusive authority to grant leases and approve facility construction and operation plans for renewable energy development and in its implementing regulations, and as explained in the permitting roadmap and just by BOEM just before my presentation.

So Chapter 10 of the draft reiterates from the permitting roadmap that because a lessee must submit a COP to BOEM, or a Construction and Operation Plan, it is important that the state is included early and often in the

process to develop a COP. As once deemed complete, the NEPA process begins as phase four.

Further, the chapter explains that phase four is also the point in the process where BOEM and the California State Lands Commission, along with other California agencies, through the Ocean REAT approach, could conduct a coordinated NEPA and CEQA review.

The chapter also explains that the Ocean REAT and Ocean Renewable Energy Policy Group could play a key role earlier BOEM's planning and analysis phase and leasing phases, and that's the blue line that's on the graphic. Obviously, this would have to be done in a way that is consistent with existing law and wouldn't be intended to supplant the BOEM California Intergovernmental Task Force but to help bolster and inform it.

Next slide, please.

So the permitting process for any large infrastructure such as offshore wind is complex and involves numerous state, federal, and local agencies. A multi-agency permitting approach was developed to coordinate the permitting for large renewable energy projects in the California desert. The REAT, or Renewable Energy Action Team, and the Renewable Energy Policy Group, or REPG, set a stage for coordination where there wasn't previously a stage over a decade ago for those projects in

the desert.

And the recommendations that are in the draft chapter, as well as in the recommendations chapter for permitting, the first one is consider developing a coordinated, comprehensive, and efficient permitting process modeled on a successful REAT approach, called the Ocean REAT, and engage early and consistently with BOEM on its Offshore Wind Programmatic Environmental Impact Statement, or PEIS, to ensure the state's priorities are reflected.

That's the summary of the draft chapter, so I'll turn it back to you, Jim.

MR. BARTRIDGE: Great. Thank you, Eli.

Next, we'll have a presentation -- next slide, there we go -- from Jennifer Lucchesi, the Executive Officer for the California State Lands Commission, which is the lead agency for CEQA for offshore wind energy projects.

Jennifer?

MS. LUCCHESI: Thank you, Jim.

Good morning still. I am here to talk about the State Lands Commission's role in environmental review and permitting of offshore wind energy projects.

Next slide, please.

The State Lands Commission is primarily a land management agency with some narrowly defined regulatory

roles. The Commission is governed by California's Lieutenant Governor, State Controller, and the governor-appointed Director of Finance. All Commission decisions are made at public meetings held approximately every two months.

Next slide, please.

The Commission manages the state's public trust lands, which include tide and submerged lands from the mean high tide line out to three miles, the federal state boundary offshore. It also includes the beds of bays and estuaries and navigable lakes and rivers.

The Commission has the authority to lease state lands for public trust consistent development and uses including commerce, navigation, fisheries, water-dependent recreation, and habitat preservation, and with consideration to what's in the best interest of the state.

Next slide, please.

The Commission has multiple roles in the permitting and review of offshore wind energy projects. During the site assessment phase, federal lessees will need to ensure that any offshore geophysical surveys and geological sampling in state waters is permitted by the State Lands Commission.

Next slide, please.

The Offshore Geophysical Survey Permit Program

and Geological Sampling Permits are issued as non-exclusive permits to qualified operators. The Offshore Geophysical Permit Program authorizes low-energy surveys of the ocean bottom and marine environment using specific types of equipment. The Geological Sampling Permit, which could include authority to conduct sediment pouring, requires project- and site-specific analysis. Both permits contain conditions and terms to minimize impacts to wildlife and the marine environment, and require public notification to minimize conflicts with ocean users, including vessels engaged in fishing, commerce, and navigation.

Next slide, please.

During the construction and operations phase, the Commission will serve as a California Environmental Quality Act, or CEQA, lead agency for review of potential environmental impacts of proposed projects. And lessees will be required to obtain a lease from the Commission for project components that are proposed to be located on state lands.

Next slide, please.

Federal lessees will need to submit an application to the Commission to lease state lands for their project components that cross through state waters, such as export tables that transmit power from the offshore wind farm to shore. That application will trigger an

analysis of project consistency with the public trust doctrine with consideration to what is in the best interests of the state, a review of the potential environmental impacts of the proposed projects under CEQA, and negotiations to establish lease terms and conditions, bonding, and rent prior to consideration of a project approval or denial by the Commission.

Next slide, please.

Senate Bill 286, signed into law in 2023, designates the Commission as the CEQA lead agency for all offshore wind projects. The purpose of CEQA is to inform decision makers and the public about potential environmental impacts of proposed projects, develop measures to mitigate those environmental impacts to the extent feasible, and to consider alternatives -- excuse me -- alternatives to proposed projects that could lessen environmental impacts.

While only certain components of these federal offshore wind projects will be in state waters, CEQA requires that we consider the entirety of the project when assessing potential environmental impacts. The Commission has extensive CEQA experience and often prepares CEQA documentation for projects traversing federal and state waters, such as fiber-optic cables and oil and gas pipelines.

Next slide, please.

A focus of the AB 525 offshore wind permitting roadmap is a coordinated approach to environmental review. During this process, the Commission, as the CEQA lead agency, will work closely with the Bureau of Ocean Energy Management as the federal lead agency under NEPA to jointly review the environmental impacts of proposed offshore wind energy individual projects.

The preparation of a single joint CEQA-NEPA environmental document can create efficiencies by having all the required environmental information and analysis for permitting agencies in one place, consistency in the determination of potential impacts and the development of measures to mitigate those impacts, and will allow for a more simple and straightforward process for public review and comment.

Furthermore, the Commission will partner with BOEM in the analysis of both the big-picture programmatic-level analysis to evaluate broad offshore wind policies and project-specific analyses that will tier from the program-level document.

Next slide, please.

This slide shows the general process for a preparation of an environmental impact report, or EIR, which will include noticing to the public about the start

of the CEQA process to solicit public feedback on the content, scope, and alternatives to be analyzed in the EIR. This is followed by preparation of a draft document that is then available for public review and comment prior to preparation of the final EIR, which includes consideration of and response to public comments. That final document goes before the Commission for certification during a public hearing that again provides for an opportunity for public input.

Next slide, please.

Tribal outreach and consultation will be a critical component of the environmental review process and the Commission's consideration of any offshore wind lease application. This outreach and consultation is above and beyond the outreach and consultation associated with the Strategic Plan.

AB 52, enacted in 2014, established requirements for CEQA lead agencies to engage in early consultation with traditionally and culturally affiliated tribes that have requested project notification.

The State Lands Commission, through its Tribal Consultation Policy, recognizes that tribes have used many of the lands, waterways, and resources that are affected by Commission and actions to support their cultures and ways of life for millennia, and that tribes and their members

have unique and valuable knowledge and practices for conserving and using these resources sustainably that must be considered during environmental review of any proposed projects on state lands.

Next slide, please.

The final components of the Commission's coordinated review and analysis process will be working with our partner agencies in consideration of disproportionate impacts of proposed projects on disadvantaged and underserved communities, the potential for climate change to impact proposed projects, and how the proposed projects will affect ocean users, including commercial fishing and navigation.

Next slide, please.

That concludes my presentation. Thank you so much.

MR. BARTRIDGE: Thank you, Jennifer.

Sorry about the dogs in the background.

Next, we'll have a presentation from Holly Wyer with the California Coastal Commission.

Holly, are you with us?

MS. WYER: I am. Can you hear me?

MR. BARTRIDGE: We can hear you. Take it away. Thank you.

MS. WYER: Thank you. Next slide, please.

Good morning, everyone. Thank you for having me here today. I'm Holly Wyer. I'm a Senior Environmental Scientist in the Energy, Ocean Resources, and Federal Consistency Program at the California Coastal Commission. And I'm also the Commission's lead planner for offshore wind development. Today, I'll be discussing the Commission's role in permitting offshore wind.

Next slide, please. The Coastal Commission has a unique role offshore wind permitting because we implement two laws, the Coastal Zone Management Act and the California Coastal Act. The Coastal Zone Management Act is a federal law that requires federal actions and permits be consistent with state coastal management policies. The California Coastal Act is a state law that requires the Coastal Commission and local governments to regulate development within the state's coastal zone. I'm going to be discussing both of these laws today and our roles in each and I'll start with the Coastal Zone Management Act.

Next slide, please.

The Coastal Zone Management Act creates a partnership between the state and federal government and provides states with decision-making authority over federal actions and permits that impact state waters or state coastal resources. The effects of a proposed project, rather than its location, determine whether federal

consistency review is required. The state has jurisdiction over state waters, as Jennifer just mentioned, which extend up to three nautical miles from shore, and the federal government has jurisdiction beyond that.

Regardless of the location of an offshore wind farm, whether it's located inside or outside California's coastal zone, it can trigger federal consistency review by the Coastal Commission if it will cause reasonably foreseeable effects on California's coastal resources. For projects that require federal permits or licenses, federal agencies cannot issue their license or permit until the Coastal Commission has concurred with the project or has waived the need for consistency.

Our authority under the Coastal Zone Management Act means that we're the only state agency with an official action at the leasing phase of the Bureau of Ocean Energy Management's process, and we have an additional Coastal Zone Management Act review once construction and operations plans are submitted.

Next slide, please.

So you are seeing this graphic yet again today. And as you know, it provides an overview of BOEM's process and calls out specifically where the Coastal Commission does Coastal Zone Management Act review with those green arrows towards the bottom of the slide.

The first review occurs when BOEM identified the wind energy area and prepares for leasing and analyzes how site assessment activities may impact California's coastal resources. The second review occurs when the lessees submit Construction and Operations Plans to BOEM and those projects undergo a project-specific environmental review, including a review of how the project will affect California's coastal resources.

Next slide, please.

Switching gears to state law, under the Coastal Act, the Commission issues Coastal Development Permits for development within the coastal zone in areas of retained jurisdiction, including state waters.

As an aside, local governments issue Coastal Development Permits in areas where the local government has an approved local coastal program. I'll come back to this in a moment.

The coastal zone has a landward boundary that's defined in the Coastal Act and the seaward boundary of the coastal zone is three nautical miles from shore. This is the area where we have state Coastal Act jurisdiction. Unlike the Coastal Zone Management Act, this is geographically defined.

When reviewing development, the Coastal Commission analyzes the impacts of proposed development on

coastal resources, assesses the proposed development for consistency with Coastal Act policies, and applies conditions to the permit if necessary. Coastal Act policies address resource areas including public access, recreation, the full spectrum of biological resources, habitat protection, fishing activities, visual resources, and cultural resources.

In the context of offshore wind specifically, State Senate Bill 286 requires that the Coastal Commission process Consolidated Coastal Development Permits for any new development that's associated with or necessary for the construction and operation of an offshore wind energy project, transmission facilities needed for those projects that are located in the coastal zone.

Consolidated Coastal Development Permits are used when the project is in the coastal zone jurisdictions of both the Commission and the local government. Without a Consolidated Permit, in these cases, both the local government and the Coastal Commission would issue a Coastal Development Permit for their portions of the project. Issuing a Consolidated Permit eliminates the need for these separate permits and instead results in a single permit for the whole project.

As part of the Consolidated Permit process, SB 286 requires coordination with the local government that

would normally issue a Coastal Development Permit for the project and requires that the Commission incorporate and address the recommendations of the local government in the final Consolidated Coastal Development Permit.

Next slide, please.

So when looking at offshore wind as a whole, the Commission would conduct Coastal Zone Management Act review on the development in the lease areas and on the export cables in federal waters. The Commission would also conduct California Coastal Act review on export cables in state waters and cable landings to shore and any infrastructure onshore in the coastal zone. Projects that qualify for the required Consolidated Permit process in SB 286 would be processed with a Consolidated Permit.

When projects in federal waters also cross into state waters and require a Coastal Development Permit, federal consistency review is typically done concurrent with coastal act review and both of those actions are brought before the Commission in one staff report. We have experience doing this concurrent review for fiber optics cable projects and we anticipate similar concurrent review for offshore wind projects.

Next slide, please.

This concludes my remarks on the Coastal Commission's role on offshore wind permitting and thank you

for your attention.

MR. BARTRIDGE: Thank you Holly. Excellent.

Next, we have a presentation from Cyndi Dawson with the California Department of Fish and Wildlife.

Cyndi, are you with us?

MS. DAWSON: Yeah. Can you hear me okay?

MR. BARTRIDGE: Excellent. We can see you and hear you. Thank you. Go ahead.

MS. DAWSON: Next slide, please.

Hello, everyone. Thank you for attending the workshop today. My name is Cyndi Dawson and I'm a Senior Environmental Scientist with the California Department of Fish and Wildlife, Marine Region and Habitat Conservation Program.

Next slide, please.

I'd like to spend my time today talking to you about the general roles of California Department of Fish and Wildlife and how they're going to intersect with offshore wind permitting.

So the California Department of Fish and Wildlife is a trustee agency with jurisdiction of the conservation, protection, and management of wildlife, native plants, and habitats. We also have regulatory authority under the California Endangered Species Act. This is the California version, similar to the Federal Endangered Species Act.

And then we also have management -- we're also in charge of the management of the Marine Protected Area Network that spans across California, as well as state managed fisheries. We also have joint management authority with the federal government through the Pacific Fisheries Management Council for federally managed fisheries.

So I'm going to go into a little bit more detail about how each of these areas of jurisdiction are going to play out related to offshore wind and the Department of Fish and Wildlife's role.

Go ahead and go forward to the next slide.

So under our jurisdiction and public trustee responsibilities, one of the things that we issue is Scientific Collecting Permits. And the Department issues those when any type of scientific research will result in take. So take is defined as capture or pursue or kill, but it also includes things like collecting, handling, marking, manipulating, or conducting other procedures in group life.

So there are general exceptions associated with our Scientific Collecting Permit authority. So we do not issue permit for things like water samples or coring samples that are looking at the sediment. We are concerned particularly with impacts, potential impacts to marine living resources.

So if you look on the right hand of the slide

there, you can see that's a bottom grab, and that's specifically used to do research on the animals that live inside the sediment. So that would be something that the Department would issue a permit.

So those exceptions related to water quality sampling or water our sediment samples do not fly in our marine-managed areas. The marine-managed areas and the marine-protected areas have higher levels of protection associated with their biodiversity and ecosystem goals. And so pretty much anything that happens in a marine-protected area would need to be permitted under a scientific collective.

Next slide, please.

Under our responsibility under the California Endangered Species Act, one of the things the Department is tasked with is issuing Incidental Take Permits. Those can be considered when a range of conditions are met and there is any take of threatened or endangered species. So this can happen during any phase of the offshore wind development.

And as I said, there's a specific list of conditions that must be met before the Department could issue an incidental take permit. The action needs to be lawful. The impacts need to be fully mitigated and minimized. The applicant has to ensure that they have

adequate funding to carry out those measures. And we have to make the biological determination that the take will not jeopardize the continued existence of the species.

As you heard from other colleagues, there's a lot of interplay between the state regulatory agencies and the federal agencies. And one of the things the Department can issue is a consistency determination related to an Incidental Take Permit.

So, for example, if federal regulators decide to issue an incidental take permit on their side under their authority for something like a California least tern, which is listed both at the federal level and at the state level, the applicant or the person who received the Incidental Permit at the federal level could request that the Department do a consistency determination. And if the stipulations within the ITP at the federal level are found consistent, they would need no further authorization through the state or the Department for that ITP.

Next slide, please.

So there are other points of engagement where the Department may be involved in permitting, and also through our consultation role. As I mentioned, we have a network of marine and protected areas across the state. And we are charged with the management of that. So any direct or indirect impacts on the MPA network would be a place where

the Department would be involved in weighing in.

Another place where the Department could be involved is if there is determined that the project has a substantial impact on any river, stream or lake. We issue an agreement called a Lake and Streambed Alteration Agreement, and that has a public review process associated with that. So potential landfalls of cables or things like that may cross that threshold, and we would have to go through a determination through that process.

There are also protected habitats that are designated by the federal government, including essential fish habitat or eelgrass protections that have a higher level of protection. And then the Department has -- is required by law to bring their biological expertise to the table to assist our sister agencies at both the federal and the state level in their environmental review.

And I just want to re-emphasize with its own bullet that one of the primary roles that the Department is going to play throughout the process of offshore wind development in California is through interagency consultation. You heard from our colleagues at BOEM and colleagues at our state agencies that there will be, likely, joint development of environmental review documents, and the Department will be involved throughout those processes to bring our biological expertise.

Next. Oh, I did want -- I'm sorry, go back one slide.

I do want to also just point out that on this slide, you can see the Morro Bay wind energy area. And you can see that to the north, we have the National Marine Sanctuary. To the south, we have the proposed Chumash Heritage National Sanctuary. The line on the -- as you're moving to the right of the picture designates the three nautical mile line of state waters. And then you can also see blue and red boxes. Those indicate the Marine Protected Area Network. And I think I just wanted to give you some grounding spatially about where the department could be involved. And then again, this higher level protection or the state marine protected areas that wouldn't allow things like infrastructure to be put through the existing network.

Okay, next one.

This is a popular one. You've seen it several times so far this morning, but it does provide some really great grounding about where we're at. We're kind of right in the middle left of the slide, moving, as you've heard from colleagues, through the site characterization and site survey phase. And I just want to wrap up today by kind of summarizing the different phases of the development and, again, where the Department will be involved.

Next slide, please.

Okay, so this is a slide that I adjusted from BOEM and it's showing kind of the three phases of development, the site characterization and survey phase, where we're at now, moving into site assessment, and then the construction and operation.

You can see there's different elements in each of those boxes. And the key of each element is that the bolded elements in each one of the box kind of show where the Department of Fish and Wildlife would likely be issuing a permit, and then the underlying elements in the boxes are where the Department of Fish and Wildlife is going to be likely engaging in that element under its consultation.

So if we start on the left-hand side of the slide, we can see that we have geophysical surveys, historical and archaeological surveys that some developers are going to be getting underway this year, others will start next year. We would be in a consultation role most likely in that space, but anything that has to do with habitat and wildlife, the Department could be issuing a permit directly for that.

In site assessment, that's really meteorological focus, has a meteorological focus, but the installation of those buoys and the removal of those buoys, the Department also would be in consultation for that. And just a

reminder that there is an Approved Site Assessment Plan for that particular stage that BOEM requires.

And then again, moving into the construction and operation phase, for port facilities, transmission lines, operation and maintenance, it's likely the department could be issuing a permit in that space. And then for turbines and substations and inter-array cables and moorings, we would be in a consultation mode.

Next slide.

So that's all I have today. Thank you again for your time and attending the workshop. Please do not hesitate to reach out to us at any time. We're happy to answer questions and provide information on the process and the timeline whenever we can.

Thank you.

MR. BARTRIDGE: Thank you, Cyndi. Great presentation.

Next, we have a presentation from Phillip Crader with the State Water Resources Control Board.

Next slide. Okay, great.

And, Phil, go ahead.

MR. CRADER: Hey, good morning. Can you hear me okay, Jim?

MR. BARTRIDGE: We can hear you. Go ahead. Thank you.

MR. CRADER: Hi, everybody. I'm Phil Crader. I'm with the State Water Resources Control Board. I'm an Assistant Deputy Director in our Division of Water Quality. And I really appreciate the opportunity to be here today and talk about our role in permitting these offshore wind projects.

Before I get into my presentation, I'm just going to move through it fairly quickly, there's a couple points today that I'm going to re-emphasize at the end of the presentation, but I just want to start off by saying we understand water quality permitting is not something that everybody does for a living. It can be nuanced and complicated.

And please, anytime you're thinking about getting started the project or if you have questions, the first thing is to reach out to us early, reach out often, let us know what you're proposing to do. We have made it a priority to expedite the processing and the approval of applications for green energy projects, for environmentally friendly projects. We want to provide excellent customer service and so we really do our best to remove obstacles and be prompt in responding.

So the takeaways today, again, reach out. You're going to have my contact information and some resources at the end, and that's what I'm hoping to get out of this.

So with that, let's jump into it, if we can move on to the next slide?

So first of all, the Water Boards, we are an organization of ten different orgs, and we're also kind of one org. So we are the State Water Resources Control Board where I work, and we address statewide issues or issues that cross multiple regions, including policies, permits, and plans. This here today, we're talking about a coastal issue. Obviously, it does span multiple regions, so this is a State Water Board issue.

We are also nine Regional Water Quality Control Boards, each addressing regionally specific permits and plans. And this also affects individual regions. And so in working with us on this, you're going to want to work with the whole Water Board. I'm the liaison to get you in touch with the right folks.

We oversee, as you can see here, you know, millions of acres of water bodies, including lakes, bays, and estuaries, and many, many miles of rivers and streams, and relevant to today, over 1,000 miles of California's beautiful coastline. So if you have an activity that's going to be discharging a waste that can affect the quality of our waters in California, you probably need a permit from the Water Board, and that's I want to get into today.

So if we can move to the next slide?

The regulatory requirements can become more confusing. And that's where I don't really expect anybody to be an expert in permitting. I just want to have these resources on paper for you at the end of the day. But they can vary a lot by activity type and water body.

And one of the first sort of distinctions is whether we're looking at federal permitting regimes or state. The federal ones have been delegated to us and we administer those programs. And so we issue permits if you're working in federal waters or discharging to federal waters, including National Pollutant Discharge Elimination Permits, or NPDES permits, and Clean Water Act Section 401 certifications for dredge and fill work in waters of the United States.

We also issue permits under the state Porter-Cologne Water Quality Control Act for work, again, in water if it's a non-federal waters of the state or discharges to surface waters, groundwater or land. The ocean is going to be considered a water of the United States, but I understand that these projects are going to have infrastructure that crosses waters, moves to land, ultimately to some substation or transmission area. And so we want to make sure that we're thinking about all the permitting.

If we can move to the next slide, please?

So in terms of permit types at the Water Board, we work really in two different types of permits. We issue individual permits for single projects where they're kind of unique. A discharger would file an application with us. The discharger is expected to provide all the environmental documentation to us, so that's going to be CEQA and NEPA documentation. The Board will then consider the application materials, the environmental documentation, we'll go through our process, and we would issue an individual permit for each application that's filed.

In individual permits, applicants and the Board are typically looking at higher costs to develop the permit, longer timeframes. However, the advantage with an Individual Permit is that they can be tailored very specific to a discharge.

Fortunately, we also have the authority to issue what we call General Permits, and we issue these for classes of projects that have a lot of common characteristics, like similar discharge, similar activities types, similar risk. When we issue General Permits, we develop the environmental documentation or we work with groups of applicants to do it. And we develop that before the general permit is adopted.

Once the Board adopts the permit, discharges will file what we call a Notice of Intent to Enroll in the

Permit. And so I think about that in the simplest terms like a fishing license, where Department of Fish and Wildlife will develop the terms of the license, and if you want to enjoy a fishing license, you go pay for one and you agree to comply with the conditions in the permit.

These General Permits that we issue to tend to be lower cost for the applicant. They tend to have a much shorter timeframe. And in fact, in some cases for expedited permits, we can issue permits within like a week or a month for some of our General Permits that have already been adopted. And they apply to a broad category of work. And so once you're working within General Permits, they tend to be familiar to the applicant.

If we could move to the next slide, please?

So we, as I mentioned, have prioritized the expedited application review and issuing of permits for clean energy projects, but we need your help to do that. We don't know where these projects are and there's a lot of moving parts. And so, again, we ask you to reach out early and often if you're in the planning stages.

When we're permitting a project, we consider potential discharges that are associated with the planning of the project, the construction of the project, the operation of the project, and then the ongoing maintenance of the project. And there's a general list of things that

we think about that can affect water quality below. I'm not going to go through them all, but if you take a look, it's a pretty diverse set of things that we need to be thinking about. And we also need to be thinking about them in terms of timing.

And so if we could move to the next slide, please?

So thinking about this specifically in terms of offshore wind projects, here's some types of activities that you should be thinking about that could involve permits from the Water Board.

In terms of pre-construction surveys, I know these are limited term activities, but we may issue permits for sounding activities or for sampling the benthic areas. So if you're going to be looking at sediment, seeing what's down there, before you get in and do that work, reach out to the Water Board and see if you're going to need a permit.

For construction work, again, it's a limited term activity. We do issue permits for work that occurs in water. And if you're working in the water, you almost certainly need a permit, so please reach out. If you're working near waters on activities that have the potential to discharge waste to the water, that's going to require what we call a Report of Waste Discharge, and there's a

link for that later in this presentation. And if you're going to be disturbing an area greater than one acre, there's a federal NPDES Permit called the Construction Stormwater General Permit that's probably going to apply to your construction activity.

In terms of operation and maintenance for the life of the project, we're looking at structure cleaning, repairs, or other in-water activity. So I imagine there's probably anti-fouling coatings on these things. There's probably maintenance that needs to occur in water. Talk to us before you do it. If you're going to be repairing transmission lines or other infrastructure, again, in water or in land, talk to us. And for the ongoing operation of many industrial facilities, we also require enrollment in our Industrial Stormwater General Permit on an ongoing basis.

If you can move to the next slide, please?

Here are some resources that talk more about the Water Boards, what we do, and what areas we issue permits. I encourage you to take a look at these.

And if you can move to the last slide?

The thing I really want you to take away today is my email and my phone number. Again, we are aware of these projects. We want to support them. If you have questions or concerns, please do not hesitate to reach out. And

that's how you get in touch with me. And I really appreciate your time and the opportunity to present today.

MR. BARTRIDGE: Great. Thank you, Phil. Much appreciated.

Next, we're going to move into the public comment period. So with that, I'll turn it over to Jack Bastida, who will facilitate public comments. Go ahead.

MR. BASTIDA: All right. Thank you, Jim.

The California Energy Commission is welcoming you to make comments at this time. That was a lot of information this morning, so I just wanted to let everyone know that there will be additional time for general comments later on in the afternoon at the end of the workshop. With that, though, let's get started on comments.

If you're joining via Zoom online or by phone, please let us know you'd like to make a comment by pressing the raise hand feature. And I already see a couple people raising their hands. If you're joining us by phone, you want to press star nine to raise your hand. I will look here, I see a few already. All right.

All right, Tom, I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We are asking comments to be three minutes or less, and there will

be a timer on the screen. You should be able to begin, Tom.

MS. HAFER: Hi, this is actually Sheri. Yeah, this is the same Zoom link, so sorry about that.

Okay, so starting at the beginning, when they were discussing the benefits of the project, I think they need to include, also, the cost of operation and maintenance. You know, the maintenance is going to be -- the cost is going to be astronomical. And I think the people of California need to realize that it's going to it's going to be a problem. And also the loss of jobs, the loss of fishing opportunity and those type of things.

So also about the, you know, 20 miles offshore not having impacts, I think that fishermen would argue that. There are several fisheries that are 20 miles offshore, especially the highly-migratory fisheries like Albacore, that are going to be devastated by the amount of sea space you're taking in the north part of California.

Also, there are a lot of birds and whales out 20 miles. Ask any fishermen that and you'll hear that too.

The shipping issues are huge and I'm glad she pointed that out. And, you know, especially with this bridge being taken out by a ship, we see what happens when they lose propulsion. And I think we need to be aware of that when we put all these obstacles in the ocean that that

can happen.

You're increasing travel time for all these ships to go around, or are you having them go around? Are you going to have them go closer inside where there will be more conflicts with fishing? So that we need to know.

So the other thing I noticed with, you know, the guy that talked about the process, there's never a part where you say, okay, this is the part of the process where we incorporate all the input from the stakeholders, you know? Everything I say today, where is that going? You know, is it going anywhere? You know, are we just talking to the wind? I think we need an analysis of stakeholder input.

The REAT approach, I don't see an area where, with coordinating the government agencies, where public input is allowed. There needs to be more of that during the permitting process.

We were told by Fish and Game, they don't even have to go in front of the Commission to get some of these Scientific Collection Permits. You know, we've been trying to figure out, you know, along the way where we can, you know, speak about the permit in the permit process, and it's like a shell game. There's no way to figure it out, how the public can get involved with the permit process, so that needs to be better.

And then the whole thing with the state being $74 billion in debt and really unable to afford the port infrastructure and the grid connections, how can you even start the permit process?

Okay. Thank you.

MR. BASTIDA: Thank you.

All right, moving on here, I see Theral Golden, and I'm going to allow you to talk. Opening up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We are asking comments to be three minutes or less. There will be a timer on the screen. You should be able to unmute yourself now.

MR. GOLDEN: Got you. My name is Theral Golden. I'm a resident of West Long Beach, California. My name is spelled T-H-E-R-A-L G-O-L-D-E-N. I'm a member of the West Long Beach Association. And the proposed manufacturing facility is here and inside the Port of Long Beach.

This community is already disproportionately affected by negative health impacts of pollution itself. The manufacturing facility will increase, not decrease, in this particular area over the long period of time. We are currently being affected at a rate of the loss of life of approximately three people a day, more than three people a day as a matter of fact, and that is more than one mass

shooting in the South Bay communities of the 617 communities that are disproportionately affected by the pollution.

Now is there a state agency or a group of state agencies that come together and see what the cumulative impacts of such a project in this particular area would do to the population and further bring more sickness, health and early death? That is one question should be answered before anything happens. The planning stage is likely if this does not happen and take place.

We are already paying a disproportionate price to the state of California for its economic growth. And we should not be forced to bear anymore. And these things are so outrageously one-sided. Now it is worse than, in my opinion, living in Jim Crow South. This makes no sense.

People's lives, the Public Resource Code allows for stiff regulations to be imposed in urban environments. This is in the center of the largest urban environment in the state of California and perhaps the United States of America. And more scrutiny must be given. Even you mentioned the CEQA and NEPA environmental documents, these documents are incomplete because there is no way to come back and see if the assumptions made at the beginning are holding fast through the complete operation.

We have a lot of work to do here. And we

understand the importance of going -- getting to increase electricity without fossil fuels. We applaud that. But at the same time, you're putting that entire burden on the body of this community, and that should be unacceptable.

Thank you.

MR. BASTIDA: All right. Thank you for the comment.

We're going to move on to Andrea. I see you have your hand up, Andrea. I'm going to open up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking comments to be three minutes or less. There will be a timer on the screen and you may begin.

MS. LUEKER: Great. Good morning. Are you able to hear me?

MR. BASTIDA: Yes.

MS. LUEKER: Perfect, my name is Andrea Luker. It's A-N-D-R-E-A, last name is L-U-E-K-E-R. I am a Board Member of the REACT Alliance. REACT is a nonprofit, nonpartisan grassroots organization based in San Luis Obispo County, California. REACT Alliance opposes offshore wind.

Since the inception of REACT Alliance, we've been amazed at the growing number of folks who share our opposition and the many, many concerns about the proposed

offshore wind projects. Some specific points today.

First, the timing of this draft Strategic Plan is concerning since it appears the offshore wind companies are trying to push ahead with their site surveys. Trying to push ahead even though the impacts of the surveys using high decibel levels, along with the impacts from offshore wind construction in operation, are largely unknown and or have not been studied. The concept of the Central Coast of California residents being guinea pigs for this unknown unproven project really is home.

Admitted by one of your presenters last week during the section regarding environmental impact section, there remains hundreds of questions regarding the project impacts, yet no specific answers regarding the impacts are provided or quite frankly even known, yet full speed ahead on offshore wind.

Secondly, the level of public education regarding these projects is dismal and largely non-existent. The offshore wind companies in the Morro Bay lease area have canceled a number of opportunities for public interaction just over the last few weeks.

About three weeks ago, the REACT Alliance organization and over 175 folks protested the proposed projects during a march on the Morro Bay waterfront. Following the march, hundreds of other folks attended our

Save Our Seas event in Morro Bay. Many of those attending the Save Our Seas event took advantage of the wealth of information available on offshore wind.

The typical response from these people was, and I quote, "I had no idea about this project and what it entails and the potential impacts." Attendees were also shocked at the speed of how the projects were moving forward. It's important to know there is significant public opposition to these proposed projects.

In closing, it is most, most prudent to learn from all the problems and impacts to the environment encountered by our sisters and brothers regarding offshore wind in Europe and now on the East Coast. A halt needs to be put to these projects with a no project alternative.

Thank you.

MR. BASTIDA: Thank you.

All right, Cathie Buchanan, I see you've got your hand raised as well. I'm going to open up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. Asking for comments to be three minutes or less. There will be a timer on the screen. And you should be able to unmute now.

MS. BUCHANAN: I'm Cathie Buchanan, C-A-T-H-I-E, B as in boy, -U-C-H-A-N-A-N. I'm with Bear River Band here in Loleta, California.

And I would just like to, my first comment, I would like to remind people that this is a money grab. There are conferences scheduled that literally advertise, if you are a manufacturer of offshore wind and you want to make a lot of money, this conference is for you to network.

The advertisement is aimed at privately owned companies traded on the stock market. You can look them up on NASDAQ or New York Stock Exchange. They mark up costs to meet their fictional profit margins. A private company marks up the cost by multiplier of at least three, meaning that if I have an hourly rate of $10.00 an hour, then if I work on a client's project, they would charge $30.00 an hour for that project. So that's how they're going to make a lot of money.

So my next comment is the alternatives are basically no alternatives that have that have been presented because they're all -- your alternatives are no offshore wind, offshore with mitigation, and offshore without mitigation. Are you seriously kidding me? This is not an appropriate alternatives analysis because there are no other alternative technologies considered, no other alternative pathways for the transmission. All it is, it's 100 percent offshore wind. There is nothing else that has been considered for electricity generation.

There continues to be no outreach to tribes,

federally recognized and non-federally recognized, and this is proven by the stakeholders list that was mentioned. It did not include tribal communities. So every single time I've been to a meeting, the tribes have always stated that they have been kept out of the process. The tribal communities are stakeholders due to, basically, you're on tribal land no matter where you are.

The comment of decreased land usage by offshore wind is also inaccurate because where is the copper going to come from? Where is the steel going to come from? Where are the other metals going to come from that are going to build these big, huge monstrosities? The mines that are needed are here in the state of California. There is a proposal to increase the mining.

There is the loss of acres through the mountains for the transmission lines. There is loss of coastal shallow systems, when the transmission lines come over from the coast, from the water, and come onto land.

So there is a lot that you guys are stating. I mean, where is the CEQA documentation that supports offshore wind is the absolute best solution to vertical access turbines, to upgrading solar panels, to promoting geothermal and establishing waste-to-energy plants that are clean and can capture CO2? Where is the analysis that offshore wind is the absolute best alternative to the

diversification of energy generation?

MR. BASTIDA: Thank you, Cathie.

I'm going to move on to Molly here. I see Molly's got her hand raised.

Molly, I'm opening up your line. Please unmute on your end. Spell your name for the record. State any affiliation and begin your comment. We're asking comments to be three minutes or less. There will be a time on screen. And you should be able to unmute yourself now here, Molly.

MS. CROLL: Thank you. This is Molly Croll with the American Clean Power Association. We're a clean energy trade association representing diverse technology developers including the first five offshore wind leaseholders in California. I'd like to comment on the Sea space presentation as well as permitting presentations from today.

First, on sea space, ACPA California appreciates the CEC's efforts and approach to identifying new Sea space. But as Ms. Mullaney said, industry is predicting a higher capacity buildout in the lease areas at roughly ten gigawatts in the first five leases. Based on industry analysis and leaseholder plans, we believe that a higher density factor of seven megawatts per square kilometer should be assumed. This adjustment is important as it has

significant impacts on the total sea space required.

Also recognize that the total sea space identified in the Strategic Plan, up to 4,600 square miles, may mislead stakeholders into thinking this quantity of sea space will ultimately be fully developed when, in fact, a much smaller quantity is needed, and this is just the start of a process for an intergovernmental task force with BOEM to review new areas.

Third, industry generally does not believe that sea space with water depths beyond 1,500 meters is technically or economically feasible. The existing leases are in waters of 1,300-meter water depth, which is the deepest water for planned floating offshore wind installations globally at this time. And development in areas twice that water depth would require at least double the quantity of mooring cables to secure platforms to the seafloor, which would significantly increase costs, in addition to the increased costs in transportation and electric cables routed to shore.

We note that the 20 to 25 mile from shore range already has far -- has already substantially reduced the amount of co-occurrence with onshore wind with species, habitats, and other ocean uses, and some shifting new developments even farther from shore may have declining benefits. So we'd recommend focusing on the eastern

sections of the North Coast sea space identified to find about 2,000 to 3,000 square kilometers as an extent.

On permitting, we support the recommended coordinated permitting model in the draft Strategic Plan, as well as the suggestion that the state anchor this plan to BOEM's process, but we would like to see the CEC complete the permitting roadmap requirements of AB 525 with a specific set of timeframe goals and milestones for the myriad of permitting and environmental reviews to be completed for each project. Without it, there will be no benchmark or tool to ensure efficient and on-time permitting. As seen on the East Coast, permitting delays and uncertainty can significantly compromise offshore wind project execution due to changing working conditions over the delayed timeframe.

In addition, the final Strategic Plan, we'd like to see a clear process for interagency coordination, not just an intention or recommendation to coordinate. This should include development of MOUs, schedules, permitting checklists, and plan coordination.

Thank you.

Thank you so much, Molly.

MR. BASTIDA: All right, moving on, I see Dan also has his hand up.

Dan, I'm going to open up your line. Please

unmute on your end. Spell your name for the record, state any affiliation, and you can begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen, and Dan, you should be allowed to unmute yourself now.

MR. JACOBSON: Jack, I'm going to assume, just because there are many Dans in this world, that you mean Dan Jacobson, so --

MR. BASTIDA: Yes.

MR. JACOBSON: Okay.

MR. BASTIDA: Yes, go ahead.

MR. JACOBSON: Thank you very much. My name is Dan Jacobson. I'm a senior advisor to Environment California.

For the past 25 years, Environment California has been working to expand our use of solar power both on homes and, with the Renewable Portfolio Standard, the use of onshore wind power through the Renewable Portfolio Standard, and countless other programs that by working with many other environmental groups, environmental justice groups, and labor unions have led to the good standing that we have now in California, where we're generating significant amounts of our electricity from clean energy sources. And on any given day, including, I think, 17 of the past 20 days, at some point, we've been generating 100

percent of our electricity from clean energy sources.

We're just now at a point where the next option that we have is to look at offshore wind. And so Environment California was a sponsor of AB 525, the bill by Assemblymember Chiu, that helped the California Energy Commission to set goals. And we've been working for years with the California Energy Commission, and thanks to all the different state agencies for the work that they're doing on that.

Unfortunately, climate change is having an outsized impact on our environment and our health. And offshore wind is not the only answer to climate change, but it's a critical answer to helping to stave off the worst impacts of climate change.

I just want to say a couple of points really quickly.

The first is that I was really happy see all the agencies that we're presenting. And I want to encourage them to be able to work together to ensure that we have the best process going forward, but we also have the speed that's needed. We talked a little bit about permitting here. We support programs that make sure that there's no delays in permitting, and so we need that to work quickly and in coordination with all the state agencies that are out there.

We need to look, also, for ways that prove that offshore wind is going to help us reduce our rates overall in the long run so that we can get out of the program that we're in right now. And that's done through better supply chain work, through better permitting programs, and through more efficiency in the energy generation that we have here in the state, so we strongly support that.

The next thing is that we need to also talk about how we're going to retire fossil fuel power plants as we expand offshore wind. We shouldn't be trying to do both things at the same time. We can't have fossil fuel energy. We need to replace it with clean energy, and that should be a part of this.

And then I also think and thank all the different agencies that were talking about community benefit agreements. That's going to be critical going forward because we have to ensure that all communities are getting benefits as we move toward offshore wind.

Thank you very much.

MR. BASTIDA: Great. Thank you so much, Dan.

All right, I'm going to reset here, and I see Ken and Linda Bates has their hand up. I'm going to unmute your line and I'll open up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking for

comments to be three minutes or less. There will be a timer on the screen. And, oh, they dropped out.

So we're going to move on to Channel Wind.

Channel Wind, you should be able to speak now.

MR. REED: Okay. Can you hear me okay?

MR. BASTIDA: Yes.

MR. REED: Great. That's the name of the company affiliation I'm with? My name is John Reed, J-O-H-N R-E-E-D, and we are a company in North Coast of California, trying to solve the biggest challenges that many of the people on the call today talked about.

And the previous commenter, Dan, talked about efficiency. And so, our plan is to try to work with developers to lower cost of installation by creating a floating port facility that will build the final wind turbine and be a lot closer to the communities, increase workforce, reduce environmental impacts to land, bring the systems online a lot sooner.

And I'm so glad to hear that there's a free list of communities and agencies that we need to go talk to, because we will be operating in the wild, but not as far out as the wind turbines. And looking forward to reaching out to all those groups and satisfying everybody's concerns and looking wholistically.

One of the things that I've always remembered

is, is that if we didn't do something new and just do the status quo, the previous commenter said, we would just continue to be worse. And so finding new solutions, finding new ways to do things will open up the door to more creativity and eventually a better energy system that won't require so much emission, the work on things that will help many communities around the world, so they don't continue to be our emission-type (indiscernible) that we do here in the United States.

People probably don't realize there's over 6,000 oil rigs in the Gulf of Mexico. And we did that, and we're all driving cars and living the good life, building houses with fossil fuels. People on this call probably have a phone that required fossil fuels.

So if we want to look at the future and give everybody a chance to satisfy their creative drives, we should support things like this.

And again, this is John Reed, Channel Wind. Reach out to us if you want to help reduce cost and we have new, more efficient piece of the supply chain.

Thank you so much for your time.

MR. BASTIDA: Thanks, John.

All right, I see Ken and/or Linda Bates is back on. So sorry if I might've clicked off of you. I'm going to click on you to allow you to talk. Please unmute on

your end. Spell your name for the record, state any affiliation, and then begin your comment. We're asking for comments to be three minutes or less and there will be a timer on the screen. And you should be able to talk now.

MR. BATES: Okay, I think we're up.

MR. BASTIDA: Okay. You are.

MR. BATES: Yeah. Good morning -- good afternoon. This is Ken Bates, K-E-N B-A-T-E-S. I'm the Executive Director of the California Fishermen's Resiliency Association, which is a 501(c)(6) nonprofit composed of fishermen's associations up and down the California coast. Recently, we submitted about a 20 page comment letter concerning AB 525, but I'd just like to bring up just a couple of things for general discussion instead of getting too far in the weeds.

First of all, you know, we have to -- everybody should understand that wind energy is extractive, it's not free. And so far we've seen very little mention of the negative impacts to the California current system by decreased upwelling due to wind energy extraction, you know? And that is the system that the entire West Coast relies on for having productive fishing grounds.

The second thing is, is that deep water wind is completely experimental at this point. There's been no discussion, you know, public discussion about making the

five lease areas prototype projects and requiring these projects to produce power to the grid for five years before we discuss additional West Coast leases. And again, you know, this is an experiment.

Included in that is that, that has not yet -- I've not yet seen a discussion that talks about the possibility of these projects ever becoming carbon neutral. You know, when you look at the mining, the transportation costs, the fabrication costs, what it's going to take to maintain and decommission these things, we haven't seen any numbers.

And lastly, and this one concerns me, it seems to be becoming clear that there's no level of cumulative negative impact that would curtail this effort.

So those are my comments. Thank you for your time and we'll go from there. Thank you.

MR. BASTIDA: Thank you, Ken.

All right, again, if anybody has any comments I'm seeing still a couple more hands raised, but just want to remind people, you could press the open-hand feature at the bottom of your screen or you can join us if you're on phone by pressing star.

(Background Zoom conversation)

MR. BASTIDA: Sorry about that. Forgot to mute you.

All right, Pauline, I see you have your hand raised. I'm going to allow you to talk. I'm opening up your line. Press star -- I'm sorry, you can spell your name for the record, state any affiliation, and begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen. And Pauline, you should be able to unmute yourself now.

MS. SEALES: My name is Pauline Seales, that's S-E-A-L-E-S. I'm a leader of Santa Cruz Climate Action Network. I'm also involved with Climate Action California. Both of these are volunteer organizations. I'm a retired science teacher.

I went to the conference last May in Sacramento and learned quite a lot there, and still learning. I am not an expert. Obviously, some of the callers have no understanding of how incredibly serious the climate crisis is and that it is accelerating.

Offshore wind is not the one and only way out of this. It's an important way. And for that reason, because the crisis is so bad, because everything else is also being investigated, we need to support this as much as we reasonably can.

And so I support the plan with mitigation, because we should be, of course, not damaging the marine sanctuaries, the marine protected areas. I'm also a docent

with the marine sanctuaries. But to think that just because possibly a couple of sea creatures might occasionally get hurt compared to the damage that is going to happen to millions and millions of people and uncounted species if we let climate change continue unchecked?

And we aren't all going to turn everything off. I don't suppose the people who called a living by peddling a bike in their living room to run the television. We're all using a lot of electricity and increasing electricity to get off gasoline and natural gas.

So thanks for this. I have learned quite a lot and I'm going to be updating my slide presentation to local people. Thanks for what you are doing. Certainly, we need to be cautious, but we need to proceed with all reasonable speed.

Thank you.

MR. BASTIDA: All right. Thank you, Pauline.

We'll see who else we have here.

Azsha, I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking comments to be three minutes or less. There will be a timer on the screen. And you should be able to talk now. Azsha, let's see if I can unmute you.

MS. HUDSON: Can you hear me?

MR. BASTIDA: Yes, yes.

MS. HUDSON: All right, sorry about that. So I'm Azsha Hudson, A-Z-S-H-A, Hudson, H-U-D-S-O-N. I am with the Environmental Defense Center, a public interest law firm that works to protect and enhance the local environment through education, advocacy, and legal action.

We believe this document fulfills the intent of AB 525 and appreciate all the hard work and effort that went into the draft Strategic Plan. We appreciate the inclusion of many of our previous comments, and I will give a few refining points here.

The identified sea spaces in the North Coast will largely be in the path of proposed shipping lanes identified by the U.S. Coast Guard as stated in the Strategic Plan. As explained in the report, moving the shipping lanes is not a simple solution as it could increase shipping and transportation costs. More specificity and planning are needed on how to mitigate exorbitant costs and impacts to the shipping industry, commercial and recreational fishing, and local coastal counties.

The second phase of the sea space analysis that assess potential impacts on coastal resources and other data utilized existing data that needs to be incorporated when the new data comes in. An example of this is the

whale biologically important areas from 2015 were used in the analyses. However, the 2024 BIAs have been released and so those should be included going forward.

We also want to just state that suitable sea space analysis should consider state biodiversity goals under 30 by 30 as we look to protect more than about just under 15 percent more of California coastal waters.

Thank you again for all the work you guys done on this plan. And that's my comments. Thank you.

MR. BASTIDA: Great. Thank you so much.

All right, restart that. And I see Steve has his hand up and I will let you talk. I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking comments to be three minutes or less. There's a timer on the screen. And Steve, you should be able to unmute yourself now.

MR. SCHEIBLAUER: Yes. Thank you. Can you hear me?

MR. BASTIDA: Yes.

MR. SCHEIBLAUER: Yes. My name is Steve Scheiblauer. Last name is spelled S-C-H-E-I-B-L-A-U-E-R. And I just have two quick comments.

First, going back to the slide quite a while ago that was a map of fisheries distribution, I have to say

that it really wasn't an accurate slide, that there are, in fact, numerous fisheries, important fisheries that exist out in the seascape areas. And they include albacore, swordfish, and black cod just among others.

And I can say that both the Humboldt area fishermen and the Central Coast area fishermen have already produced with the cooperation of the Ocean Protection Council, distribution maps for fishing, and those maps should be referenced for more accurate information.

And then secondly, on the State Lands Commission presentation, which I appreciated, I understand that the Commission does have permit regulations and authority for the site assessment and survey activities. I would also hope that there's going to be accurate -- or I'm sorry, sufficient investment in actively monitoring what these contractors actually produce in terms of sound as they do their survey work. And associated with that, that there's an effective enforcement mechanism to stop that process if it exceeds the boundaries. As many may be aware, there have been issues on the East Coast with contractors greatly exceeding their permitted sound levels.

Thank you. That's all.

MR. BASTIDA: Great. Thank you so much for your comments.

All right, going to move on to Nancy. I see

Nancy has her hand raised. I'm going to open up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen. Nancy, you should be able to unmute yourself now. Let me see if I can unmute on my end.

MS. KIRSHNER-RODRIGUEZ: Am I unmuted now?

MR. BASTIDA: Yeah. Go ahead.

MS. KIRSHNER-RODRIGUEZ: Thank you. Nancy Kirshner-Rodriguez with the Oceanic Network. I'm just going to make brief comments today to echo what others have said.

I was extremely pleased to see the broad interagency presentations and engagement on this massive undertaking of offshore wind for California and the West Coast. The Oceanic Network is an organization of members. We represent entities across the supply chain, workforce organizations, and many others. We bring people together for dialogue with government and to focus on building a domestic supply chain and creating an offshore wind industry that is valued and is able to help us to move this industry and this renewable energy forward.

We appreciate the passage and implementation efforts of AB 525 and we look forward to the upcoming years

of work to bring floating offshore wind and the opportunities that we believe it will create for many Californians to see this really amazing industry go forward.

We will be providing full comments before the April 22nd deadline. And we just thank you for the continued efforts.

MR. BASTIDA: Great. Thank you so much, Nancy.

All right, I'm going to restart the timer here.

I see Sarah has her hand up. I'm going to open up your line, Sarah. Please unmute on your end. Spell your name for the record, state any affiliation and begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen. And Sarah, you should be able to unmute yourself now.

MS. XU: Yeah, good afternoon. My name is Sarah Xu. I'm the Senior Policy Associate at Brightline Defense. My name is spelled S-A-R-A-H, last name is spelled X, as in x-ray, -U, as in uniform.

Thank you to all the staff at the California Energy Commission, other state agencies, and the BOEM staff that presented today. We recognize that there's an enormity and complexity with offshore wind with a variety of unknowns at this time.

We look forward to submitting further written

comments, but in response to some of the information presented today, we do think that there's an importance for further clarity on the recommendations and how ocean REAT and the REGP will coordinate clarity on next steps and sequencing, especially opportunities for public comments and public engagement would be very helpful and great to know in the permitting process. As well as a focus in the -- the AB 525 Strategic Plan should include more of a focus on the state powers and discussion of regulatory authority and what other agencies, either federal or local would need to engage to see the offshore wind permitting process continue.

In kind of thoughts around climate change, we are excited to see some discussion at SB 100 in the Strategic Report [sic] and believe a further discussion of opportunities and challenges for offshore wind and other sources of renewable energy should be included in the 525 draft, as well as a discussion of the cost involved, including cost to rate payers, and the cost of -- the high costs of other technologies as well.

Thank you to the staff again for including discussion recommendations, especially with public engagement to underserved communities. And we look forward to the implementation of those recommendations and look forward to submitting further comments to this process.

Thank you.

MR. BASTIDA: Great. Thank you so much.

Seeing one more hand here with Cathie Buchanan from the Bear River Band. I'm going to unmute your line. Please spell your name for the record. State any affiliation and begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen. And Cathie, you should be able to unmute yourself.

MS. BUCHANAN: Cathie Buchanan, C-A-T-H-I-E, B, as in boy, -U-C-H-A-N-A-N with the Bear River Band here in Loleta, California. I am the Environmental and Natural Resources Director.

And I have a comment to make about the people who seem to not like the opposition towards the wind, offshore wind, but please do not insult our intelligence by assuming that those of us who are opposed to offshore wind do not understand the need to find reliable and truly renewable energy sources. We here on the North Coast see the encroaching ocean every single day. We do understand the emergency that climate change has brought us.

Another aspect I would like to mention is, again, there is no discussion of the electromagnetic field that will be generated in the ocean waters from high, high, high voltage lines suspended in salt water. When I was at HSU,

me and my classmates, we designed an electromagnetic field using a small 9-volt battery to deter bat rays from coming into oyster beds, a 9-volt battery. You guys are talking about megavolts going through our ocean in saltwater, which is a great conductor of electricity.

So the aquatic life, all the aquatic life that I know of that swims, not the snails or mollusks or anything like that, but the life that does swim around, they do use the Earth's electromagnetic field to find their way.

There are also numerous species that can feel a nanovolt. That is a 0.00000001 volt. And you're talking about these cables that are going to go up and down the coast of California, including also Southern Oregon and Alaska. And then there's also mention of increasing the number of turbines after you've already built the first nine that are proposed.

So how many of these huge megavolt cables are going to be suspended in the water? How many linear feet, which is going to probably come into how many miles of cables are going to be suspended in saltwater up and down the coast in the migratory pathway of our whales, our dolphins, our salmon, our steelhead, our lampreys, our sturgeon, our crabs, and many more? There is still no talk about the electromagnetic field.

Thank you.

MR. BASTIDA: Thank you for your comments.

All right, I'm not seeing any more comments right now with hands raised. So with that, giving it one more second here just to make sure.

Not seeing anything else, so back to you, Jim. That concludes our public comment period at this time.

MR. BARTRIDGE: Good. Thank you, Jack.

And thank you to everyone for your presentations and input this morning.

We're a little bit ahead of schedule, but I want to stick with the agenda, so let's go ahead and break for lunch. A reminder, we will have additional public comments after our presentations this afternoon. So we'll break from lunch and we'll be back at two o'clock. Enjoy your lunch and we'll see you then. Thank you.

(Off the record at 12:28 p.m.)

(On the record at 2:00 p.m.)

MR. BARTRIDGE: Okay, well, here we go. Good afternoon. I'm Jim Bartridge with the Energy Commission Siting, Transmission, and Environmental Protection Division. Welcome to the afternoon session of today's workshop, which is focused on transmission. Following our afternoon presentations, we'll finish with another comment period, as we had this morning.

Next slide, please.

We'll start this afternoon with a presentation by Lorelei Walker from the Energy Commission on Transmission Technologies and Planning from Chapters 8 and 9 of the Offshore Wind Strategic Plan. That will be followed by presentations from the Schatz Energy Research Center on the Northern California and Southern Oregon Offshore Wind Transmission Study and the California Independent System Operator on Transmission Planning.

So, Lorelei, if you're ready, go ahead, take it away.

Next slide, please.

MS. WALKER: Thanks, Jim. I'm Lorelei Walker, an Offshore Energy Analyst in the Siting, Transmission, and Environmental Protection Division here at the CEC. Today, I'll be presenting on the Draft Strategic Plan Chapters 8 and 9, covering transmission technologies, interconnection, and planning.

Next slide.

Relating to transmission, AB 525 requires the California Energy Commission to consult with California Public Utilities Commission, or CPUC, and the California Independent System Operator, also known as the California ISO or CAISO. We were also required to assess transmission investments and upgrades necessary to support California's 2030 and 2045 offshore wind planning goals, assess the

existing transmission infrastructure and capacity, and assess relevant costs for network upgrades and subsea transmission to support offshore wind energy development.

Next slide.

The CEC utilized numerous analytical inputs for our transmission chapters, including the California Public Utilities Commission Integrated Resource Plan, or IRP, the California Independent System Operators Transmission Planning Process, or TPP, multiple offshore wind studies published in recent years by the Schatz Energy Research Center. Additionally, the CEC contracted the Schatz Energy Research Center's Northern California and Southern Oregon Offshore Wind Transmission Study, which staff members will be presenting on shortly. Also, the CEC contracted with Guidehouse to conduct an offshore wind transmission technologies assessment.

Next slide.

An overview of Chapter 8 topics discussed include transmission technologies for interconnecting offshore wind projects, current and emerging transmission technologies, offshore wind interconnection concepts, existing North Coast and Central Coast transmission systems, and finally, conclusions and recommendations on transmission technologies and alternatives.

Next slide.

At a foundational level, we know that transmission and interconnection infrastructure are needed to transport electricity generated from offshore wind projects and connect them to the larger transmission system. This figure shows a simplified version of an offshore wind transmission infrastructure layout from offshore generation to onshore distribution.

On the far left, there are offshore wind turbines in the water that are connected via inter-array cables to the offshore substation. Export cables run from the offshore substation to the onshore substation. Once onshore, the electricity will flow from the substation to the greater electric grid and local communities.

Just a note that even though the offshore wind turbines shown in this figure are fixed bottom like those off the East Coast and California will utilize floating offshore wind turbines, the transmission infrastructure remains the same.

Next slide.

In the layout that we just saw, the technologies assessed within the Strategic Plan are only within the offshore substation to onshore substation portion as highlighted in the diagram on this slide. The California Energy Commission assessed the status and cost of offshore wind related transmission technologies, including high

voltage alternating current, or HVAC, and high voltage direct current, HVDC, export cables, floating offshore substation platforms, onshore converter or transformer stations, and other related electrical components.

Next slide.

In addition to component technologies, the Strategic Plan also assessed the status and costs of offshore wind-related meshed grid transmission and interconnection layout concepts. Most offshore wind projects to date are connected to shore radially, as shown in the top left box of the figure. They use point-to-point transmission lines that export power directly from offshore to onshore. More networked interconnection concepts, such as shared substations, meshed grids, and offshore backbones, can increase reliability and redundancy.

From the figure on the slide, you can see that different offshore wind layouts require different amounts of inner array and export cables. Fewer cables reduce environmental impacts and costs.

Next slide.

The challenge for transmission in the North Coast is that the existing system is relatively limited consisting of 60 and 115 kilovolt, kV, facilities serving local loads. In addition, upgrades to existing 115 kV lines and new transmission infrastructure will be needed to

connect to the larger transmission system that runs north and south through the state along I-5.

In contrast, the Central Coast has a fairly robust transmission system and the retirement of power plants in the area frees up transmission that can help to serve offshore wind. But additional transmission infrastructure will be needed to accommodate the full buildout of the Central Coast offshore wind resource.

Next slide.

The following conclusions and recommendations support technology development and alternatives assessment to effectively plan for offshore wind transmission. Some key transmission technologies are still emerging and not yet commercially available, including dynamic export cables that float rather than run along the seabed, high-capacity cables, floating substations, and DC breakers. Emerging technologies will need continued investment to bring them to market.

Continued assessment of transmission interconnection concepts and phased approaches to transmission development are needed. Fewer cables and transmission lines can reduce environmental impacts and costs. Large investments in transmission upgrades and new transmission infrastructure are needed to deliver offshore wind generation.

Potential transmission pathways for the North Coast will require additional detailed corridor planning. Transmission recommendations include continue assessing transmission alternatives for the North and Central Coasts offshore wind development to meet the offshore wind planning goals. Consider phased approaches to transmission development that examine needs, costs, and benefits in both the short-term and long-term.

Next slide, please.

Chapter 9 discusses transmission planning processes, corridor planning, and interconnection issues.

Next slide.

AB 525 finds that California must initiate proactive long-term transmission now to ensure that transmission is available when the offshore wind generation is ready to come online.

California has a robust transmission planning process under the Joint Agency Memorandum of Understanding, or MOU, that was recently updated to tighten the linkages between the CEC's Integrated Energy Policy Report, or IEPR, and SB 100 activities, the California Public Utility Commission's IRP, and the California ISO's TPP and 20-year outlook. Increasing amounts of offshore wind are being included in the resource portfolios for the TPP. The California ISO will present on the transmission planning

process and interconnection later this afternoon.

Ongoing transmission planning, including targeted analysis of alternative transmission pathways, is necessary to inform infrastructure decisions for offshore wind. The CEC, through the Schatz Study, has initiated regional planning with Southern Oregon and is also participating in the Department of Energy's West Coast Offshore Wind Transmission Study being conducted by PNNL, the Pacific Northwest National Laboratory.

Additional regional planning will be necessary to ensure the benefits of offshore wind can be shared throughout the Western Interconnection. An inter-regional approach to transmission development could provide economic advantages by leveraging existing transmission assets and providing other benefits such as increased resiliency and reliability throughout the west.

Next slide.

Transmission development is challenging with long linear facilities crossing many land use types and jurisdictions. The CEC has engaged in successful landscape level transmission planning efforts through the Renewable Energy Transmission Initiative, RETI, the Desert Renewable Energy Conservation Plan, DRECP, and other corridor planning efforts. Corridor planning efforts guide responsible energy infrastructure development and will

continue to be an important tool to help meet the state's climate and clean energy goals.

This landscape-level approach identifies a wide range of potential constraints and conflicts including environmental sensitivities, tribal and cultural resources, land uses and other considerations. By locating renewable transmission projects in appropriate areas, potential environmental impacts can be reduced. Permitting costs and time frames can be minimized resulting in better and more timely projects.

Next slide.

Corrective planning will be needed to bring transmission projects online to meet California's offshore wind planning goals. Conducting detailed studies for corridors, routes, and rights of way, both overland and subsea, and community engagement can provide valuable input to the planning processes and regulatory decisions for transmission projects.

Landscape-level planning can evaluate potential corridors and associated environmental and land use conflicts not historically addressed in existing transmission planning processes.

Assessing transmission needs for host communities and other rural communities along transmission routes can help address reliability and equity issues.

Recommendations include foster regional bulk transmission planning to support West Coast offshore wind development that can benefit the Western Interconnection and identify and prioritize alternative points of interconnection that limit the number of landfall sites and minimize environmental impacts and long-run costs.

That's the end of our transmission overview presentation.

Back to you, Jim.

MR. BARTRIDGE: Thank you, Lorelei.

Okay, well, next up we have a presentation from Arne Jacobson and Jim Zoellick from the Schatz Energy Research Center on a recent transmission study funded by the Department of Defense Office of Local Defense Community Cooperation.

Go ahead, Arne and Jim.

MR. JACOBSON: Thank you, Jim, and pleasure to have an opportunity to present. My colleague Jim Zoellick will be the primary presenter for our team today. I'll kick things off. So what we'll be presenting today focuses on the analysis that our team has led related to understanding multiple dimensions of transmission as it relates to the potential for offshore wind development in Northern California and Southern Oregon.

Next slide.

And I just wanted to start by first acknowledging sponsors, and also partners associated with this effort. This work was done under a contract with the California Energy Commission and with funding support from the Department of Defense through the Office of Local Defense Community Cooperation. I'm really grateful for that support. It also involves collaboration and support from the Oregon Department of Energy.

And on the analytical side, this was a team effort involving our team at the Schatz Energy Research Center together with Quanta Technology, the National Renewable Energy Lab, Mott McDonnell Engineering, H.T. Harvey and Associates, Conway Geomatics, and really appreciate the contributions from all of the respective partners in that.

We also had a very active advisory group that contributed to the effort as well and really appreciate all of those contributions.

And with that, I will pass things over to my colleague, Jim Zoellick, who will present some of the results associated with this analysis.

Over to you, Jim.

MR. ZOELLICK: Great. Thank you, Arne.

Next slide, please.

So I will begin by describing the offshore wind

scenarios that we studied and the transmission solutions that we considered. And then I will discuss some of the results from our study and point out some key findings and recommendations.

So as you can see here on this slide, we looked at three scales of offshore wind development in Northern California and Southern Oregon, ranging from 7.2 gigawatts up to 25.8 gigawatts. And we did this over three scenarios, which we called low, mid-range, and high. This offshore wind development was assumed to be done offshore of Northern California and Southern Oregon.

Next slide, please.

And across these three development scenarios, we examined ten different transmission alternatives. Two of those transmission alternatives were for the low development scenario, or 7.2 gigawatts, six were for the mid-range, or 12.4 gigawatts, and two of the transmission alternatives were for the high development scenario, 25.8 gigawatts.

Next slide.

This map here shows the offshore wind areas that we considered for development. These areas were based in part on BOEM-designated offshore wind areas, and this included the Humboldt Wind Energy Area, which is currently under lease, and also included what at the time of the

study were BOEM Call Areas offshore of Brookings, Oregon, and Coos Bay, Oregon. And those Oregon Call Areas were finalized just last month as wind energy areas by the Bureau of Ocean Energy Management.

In addition, we examined areas off of Del Norte County and Mendocino County Coast in California that do not currently fall under any particular BOEM designations, but that have drawn interest and have been investigated by others. And we utilized information from the California Energy Commission's sea space analysis for these areas. We also considered potential restrictions from the Department of Defense with regard to military operations and from the U.S. Coast Guard with respect to vessel access routes.

On the map to the right, you can see the offshore wind areas we considered that are outlined with a red dashed line going from Coos Bay at the top, then there's Brookings, Oregon, then Del Norte, Humboldt Wind Energy Area, and finally the Cape Mendocino area that we looked at.

Next slide, please.

With regard to the transmission corridors that we examined, this map shows the complete array of transmission routes that were considered in our analyses, including both offshore and onshore routes. For the onshore routes, we focused on the expansion of the existing transmission

corridors.

Our project partner, H.T. Harvey and Associates, conducted a high-level assessment of these potential transmission routes to evaluate them for potential barriers to development. They ranked barriers from low to very high and assigned these rankings to the routes that they assessed, as can be seen on this map. You can see the low barriers are in green, medium is in yellow, high is in orange, and very high is in red. And barriers included environmental concerns, sensitive habitats, land use conflicts, and other permitting challenges.

Next slide, please.

In terms of the transmission technologies that we considered, they included a broad range of technologies, both technologies that are currently available as well as other technologies that are still in development. This included both onshore and offshore technologies, high-voltage AC and high-voltage DC transmission technologies, dynamic undersea cables, floating substations and floating HVDC conversion stations, an offshore HVDC backbone and a mesh network that would connect offshore wind farms, and phase-shifting transformers that can deliver power to local communities.

And I'll note that some of these technologies, as Lorelei pointed out, are not currently available, but

rather are still under development.

Next slide, please.

This slide lays out the methodology that we followed in our study. So first we defined the offshore wind farm capacities, as explained in the previous slides, and next we determined the necessary transmission infrastructure based on the capacity rating shown in the table to the right. So it shows the assumed capacities for HVAC overhead 500 kV cables, HVAC undersea 400 kilovolt cables, those are mainly just export cables, HVDC overhead 500-plus minus 500 kV, and HV undersea plus minus 525 kV technologies.

Our project partner, Quanta Technology, then ran power flow analyses to determine the need for any network upgrades, you know, with the offshore wind capacities that we had identified, as well as these transmission upgrades that we had determined. And then they determined the cost of the new transmission infrastructure and the cost of the necessary network upgrades. And then finally, they ran a production cost model and we utilized the results of that to assess the overall cost and benefits of the various alternatives.

It's important to note that our goal in the study was to explore a large range of possible transmission solutions and to compare and contrast them with each other

in an effort to learn about a wide range of options. We were not trying to find an optimal solution for a particular offshore wind development scenario.

Next slide, please.

In this slide, you can see a couple of maps, two transmission alternative maps that we looked at, two of the ten, and these are intended to be examples of the extremes of what we explored.

So the map on the left is alternative 7.2a. This was for 7.2 gigawatts of offshore wind development. And this is one of the simplest solutions that we looked at. It features radial configuration of export cables. So from each wind farm there's a radial cable that goes pretty much directly to onshore infrastructure. And then once reaching shore you can see that we 500 kV HVAC transmission lines to move the power to the bulk power grid where it could be transmitted to the load centers in the region.

The red lines on the map represent the new HVAC transmission lines, and we expect this alternative, the one to the left, to be representative of the near-term solution for low-scale development, or relatively low-scale development in terms of the long-term view.

The map on the right shows alternative 25.8a, which is a 25.8 gigawatt scenario. This is a much higher scale of development requiring greater capacity in terms of

transmission upgrades. This solution relies largely on offshore HVDC infrastructure, such as floating HVDC conversion stations and high-capacity dynamic HVDC undersea cables. These technologies are still in development, so this alternative is intended to represent more of a futuristic solution.

And in the map on the right, you can see the HVDC undersea cable shown as green lines on the map. And you can see it interconnects the various offshore wind farms, as well as features some long-distance HVDC cables that can transmit power to distant load centers.

Next slide, please.

This table does a nice job of showing the comparative characteristics of the 10 transmission alternatives we considered. I'm not going to go into all the details here, but moving from the left to the right, you'll notice that the size of the wind farms increases from 7.2 gigawatts to 12.4, and then finally on the far right to 25.8 gigawatts.

In the rows highlighted in the aqua blue color, you can see how we deployed offshore HVDC infrastructure, high voltage direct current infrastructure. The second two rows show that we started out with no offshore HVDC backbone or mesh network, but as we moved to the larger development scenarios to the right, we started to utilize

these technologies to interconnect the Oscar wind farms.

You can also see in the bottom two rows that the number of offshore HVDC conversion stations and dynamic HVDC undersea cables increases as we move to the right.

Most of this offshore HVDC technology is not currently available for purchase and deployment. Therefore, the alternatives to the far right here are expected to be more futuristic in nature and the ones to the far left, more near-term type solutions.

Next slide.

In this bar chart, we show the estimated capital costs for each of the transmission solutions that we investigated. And you can see as we move from left to right, once again, and the capacity of the wind farm increases, just as in the previous slide in the table, the cost for new transmission infrastructure also -- the total cost for the new transmission infrastructure also increases and rather significantly. And this is no surprise as the city being installed increases significantly as well.

Looking at the stacked bars on the chart, the dark blue section at the bottom represents the cost of network upgrades. You can see these upgrades that will need to be made to -- or these are upgrades that will need to be made to the existing transmission system, and you can see that the costs here are relatively low compared to the

overall transmission costs.

The yellow hashed sections in the middle of the bars represents the cost of new onshore transmission infrastructure. This is more substantial and is somewhat similar across all ten alternatives.

And then finally, the light blue section at the tops of the bars is the cost for offshore infrastructure. And this cost increases significantly when we move to a greater reliance on offshore HVDC -- excuse me -- HVDC infrastructure, like we do in alternatives further to the right, especially 25.8a and 25.8b.

We'll also note that the cost to connect these wind farms to local communities and serve those communities with offshore wind power is very small compared to the overall cost of the transmission infrastructure.

Next slide, please.

This table shows the levelized cost of energy and transmission in units of dollars per megawatt hour. These costs were calculated by determining the upfront capital costs for the wind farms themselves and for the new transmission infrastructure, as well as the long-term operating costs of the wind farms and the long-term generation potential of the wind farms. This is a standard metric that can be used to compare the cost of various electricity resources.

This shows that the estimated levelized cost of the wind plants ranged from about $64.00 to $66.00 per megawatt hour. And you can see that that's pretty consistent across the different sized wind farms. And when we add the cost of transmission, the levelized cost goes up to about $77.00 to $85.00 per megawatt hour. These costs are higher than typical costs for most onshore renewable resources that we currently have in the mix, but costs are expected to come down over time.

It's also important to note that the production cost modeling analysis that we ran, that Quanta ran, showed that offshore wind development, along with transmission upgrades, will bring substantial benefits to rate payers. And this shows up as production cost savings where the cost to serve the total system, so in order to meet the total system load with the total generating resources available, this cost went down when offshore wind and transmission was added.

In addition, there are substantial cost savings associated with CO2 emissions reductions attributable to the offshore wind resource. These cost savings are shown in the two columns on the right side of the table. And you'll notice that the last two columns for 25.8a and b, it says not applicable for the system-wide production cost savings and system-wide CO2 cost savings. We did not run

the production cost model for that scenario.

Next slide, please.

These last couple of slides, I'll just lay out a few of the key findings and recommendations from the study.

First of all, this offshore wind development, the transmission-related cost will be substantial. Long-distance subsea HVDC cable runs and floating conversion stations are expensive, and we saw that in the results I just showed, but may still be preferred for numerous reasons, and costs may decrease as HVDC technology matures, likely will decrease.

While a simple radial interconnection approach may be the cheapest near-term solution, and this is what I showed in that first example for 7.2a, at scale, when we're getting to many gigawatts of power offshore, this type of configuration may be problematic. And a more robust HVDC mesh network that interconnects the offshore wind farms may be preferable. It can reduce the number of onshore landings, and it can allow a lot more flexibility and a more robust system where there's a lot of offshore infrastructure that can -- a network of offshore infrastructure that can transmit the power.

Proactive transmission planning will be important with a focus on the long-term to minimize long-term costs and benefits or costs and impacts. And this will require a

regional -- coordinated regional planning effort.

Next slide, please.

Offshore wind development will happen over several decades. So a phased transmission planning approach should be used where when you're planning transmission solutions for the near-term, you're also considering long-term opportunities and challenges and possibilities. Many required technologies are still in development, so coordination with industry will be important, including dealing with supply chain issues.

In an offshore HVDC mesh network, if one is developed, the ownership of that network becomes an important policy and regulatory question. And one interesting thing that we found is once you establish an offshore HVDC mesh network, that becomes part of the overall transmission system and power that is currently generated onshore and maybe is flowing to another point onshore may actually flow offshore and back onshore to different locations if that's the actual, you know, cheapest and lowest resistance path of power flow.

Serving offshore wind host communities will be important and this can be done for a small fraction of the overall cost.

And finally, environmental permitting for onshore and offshore transmission will be complicated and arduous

and it should be part of a proactive planning effort that starts very early in the process.

Next slide.

That's all I have for you today. Thanks very much for your attention. This is contact information for myself and Dr. Jacobson. Thanks again and have a great day.

MR. BARTRIDGE: Great. Thank you, Arne and Jim, for your presentations, fantastic. And it was a great pleasure working with both of you guys over the last couple of years as we pulled this all together, so many thanks again.

Okay, and our final presentation today is from Jeff Billinton with the California Independent System Operator.

Jeff, are you on?

MR. BILLINTON: Yeah, I'm on. Can you hear me?

MR. BARTRIDGE: I can hear you and see you. Excellent. Thank you. Take it away.

MR. BILLINTON: Yeah, and so I'll just kind of continue on the conversation here. But first, I'm going to give a bit more of an overview of kind of our process and planning process and then where we are and how we've approached it in this year's transmission planning.

So if you want to go to the next slide?

There has been comments made about, you know, the ISO with the CPUC and CEC and the establishment or reestablishing and then updating Memorandum of Understanding in December of 2022 with the intention to tighten those linkages really from the resource planning to the transmission planning, the interconnection and assortment of resources, and it creates a linkage, as was said, with the SB 100, in particular the load forecast that the CEC develops and using a single forecast for both resource and transmission planning.

And so building from that -- if you want to go to the next slide? -- we've basically gone through and we have two processes now for our transmission planning. We have our tariff base, which is our annual. It was based upon a ten-year. We're looking at a 10 to 15-year with the forecast and portfolio starting next year going out to 15 years. But in responding to the accelerating load growth and escalating renewable needs, our plans is in terms of starting to increase with regards to the transmission that's being identified as being needed. And like I said, it's in lot of ways responding to the load growth and the escalating renewable needs as we move to meet the state's goals.

Back in 2022, we also initiated and developed a 20-year outlook. The study really establishes a longer-

term direction and strategy. It's for informational purposes and provides that kind of context for when we're looking at the near-term in our annual ten-year transmission plan, those needs and how they fit into the longer-term needs of the system and the state.

So that's where we are with those plans.

And if you go to the next, we also, just in December, as an extension or an addendum to the '22-2023 transmission planning process, conditionally approved project in SWIP North for out-of-state wind accessing Idaho, and continuing in terms of looking at some models and we have approved and FERC has approved the tariff for the subscriber PTO model. TransWest Express has gone through with our board to become a PTO under that model. Sunzia has submitted and going through that process right now. So we're looking at offshore, onshore, and internal in the state as we're doing the transmission planning.

So I'll move to the next slide.

And this just gives us a little bit of a highlight of our transmission planning process, our annual transmission planning process. And it's really three phases when we look at it.

First is the development of the study plan. What is the inputs? What's the assumption? So the demand for gas three resource portfolios, the existing topology, and

as we look forward.

And so around the April timeframe, we get that finalized as the study plan, and then move into the detailed analysis, be it of reliability or policy and economic analysis to the development of the draft Transmission Plan that, as Neil indicated earlier in the meeting, we'll be bringing it out on April 1st, on Monday, the draft Transmission Plan for the '23-24 transmission planning process. And then we take that to our board for approval for the plan in the May board meeting.

And then the third phase is really is if there's any projects that are eligible for competitive solicitation and based upon our tariff, it's any lines that are over 200 kV and/or a greenfield, a new -- like a new line, a new substation, any other facilities if they're basically reconducting, putting a transformer into that station, whether it be over 200 or all projects less than 200 kV would be something to the (indiscernible) transmission owner in the area.

But competitive solicitation, we go through solicitation, get bids and select parties or the project sponsor. And then they proceed with the process of the permitting, these detailed building construction and maintenance service, and then become a transmission owner within a regulated transmission owner within the California

ISO system.

If you want to go to the next slide?

This just highlights, again, the process that we do for our transmission planning. We start and it's a sequential where we look at the reliability needs, and those are basically to meet the mandatory reliability standards and performance requirements and planning standards to supply the loads. Then we look in terms of the policy and that looks at with the renewable and to be able to deliver the renewables that are in the portfolio, the loads based on the requirements.

But then what we're also looking at is are there any reliability projects that could be changed and meet both needs? And then to economic analysis, like Jim was talking about, production cost analysis, looking really for is there any market efficiency congestion in projects that would be economic that would be beneficial for the system.

And so what we do every two years is we do a local capacity study that goes longer out to the ten-year horizon, and then we also have an inter-regional planning process that is every two years that we coordinate (indiscernible) with NorthernGrid, which is a lot of the northern and eastern, and WestConnect, which is Arizona and straight out (indiscernible) in the system called WestConnect, and so do those every two years in

coordination.

I'm going to go to the next slide.

When we're looking for this year's '23-24 transmission planning process, as well as the portfolios, these are the portfolios, as I indicated, under the Memorandum of Understanding that the CPUC provides for us through their integrated resource planning through decision for us to use to plan for the policy and the transmission based upon the resource development. And this provides the base portfolio and sensitivity portfolio for this year's, as well as the 20-year outlook.

In the far right is the current, and I've just put the May 2022, which we looked out to the 2040 portfolio that we used. And some of the key is the difference between the base, and the base is what we plan to and we'll approve transmission or recommend approval of transmission to. The sensitivity is for informational. And as we look, and the biggest in here is the out-of-state wind increase from 5 gigawatt to 13, with most of that increase being in the North Coast area. And then, similar for the 20-year outlook, going from 10 years in 2040 to a 20-year scenario in 2045.

Can we go to the next slide?

This also is, as we're doing our transmission

planning, kind of as we were doing the aligning and working with and looking at a zonal approach, the zonal is consistent with how we look at it from the generator and connection, and then also looking at within the portfolios, where is the resources allocated and what transmission is within those areas or to get from those areas to other areas on the system to reliably supply the load with the renewables.

So this is -- and we started with the original in May, 2022 with a zonal approach and we've expanded it into 2022-2023 and we'll keep expanding it to where we're looking at here. And this provides, really, within each of the zones, what is the base portfolio and the sensitivity portfolio for the 2023-2024 transmission planning process.

If you want to go to the next slide?

This is just, also, just kind of depict, as we look at it, in this year's transmission planning process the base portfolio had about 85 gigawatts of resources, and the 2022-2040 process had about 120. And in the portfolio that was provided from the CEC and CPUC for the 20-year outlook that we're looking at developing currently, out to 2045, it's 160. And you can see we're on a trajectory of continual as opposed to where we had lower numbers originally in the near term and everything in the later years. This is now where we're getting to really a

trajectory to get to those goals and to plan the transmission system as well as the resources through the CPUC IRP.

If you go to the next slide, this is just highlighting what's in the portfolio. And you can see last year's portfolio in the base portfolio, there was only in the Humboldt area, 120 gigawatt. And that was largely energy-only resources, and a sensitivity of 1.6. And in the north, in the Central/Morro Bay, and I'll talk about it when the area, it's just -- they've been relatively in the baseline, but in that area there is existing transmission for it to connect in the bulk system in the area.

In the North Coast area, and as Jim highlighted, there's only two 115 kV lines from that central backbone to the coastal area. And so as we look at with 1.6 gigawatt in the base portfolio, that's something that's triggering the need for transmission, and in this year's transmission plan, going through the process to run and recommend transmission to integrate transmission or the resources in the North Coast area.

And then the column on the right is next year's transmission plan, which still indicates and validates the portfolio for the offshore wind in the North Coast area and, similarly, in the Central Coast.

And then far right just provides in terms of the

differences between the 20-year outlook and the May 2022 and 2024.

So I'll go to the next slide.

So this is kind of similar in the approach that we've taken with trying to look at the needs for -- to meet the needs of the current base portfolio of 1.6, but also so that it's flexible enough to meet into the longer term, is the way that we started looking at this was what was the need for the 20-year outlook, which in the North Coast area was around 14.6 gigawatts of offshore wind. And then we had the sensitivity from this year of 8 gigawatt and the 1.6.

And really wanting to make sure that whatever we're going to be looking at for recommending is something that is flexible to adapt into the long-term scenarios, because there's a lot of uncertainty of what, where, and when the further developments beyond the current portfolio go to. And so what we recommend now, needing to have that flexibility to fit into those varying long-term scenarios.

So if you go to the next slide?

This is really just it graphically. And it follows, again, with what Jim was talking about, is we have the Humboldt Call Area, we have the Morro Bay Call Area in the Central Coast. And in the North Coast area, there's areas that are being defined and similar in terms of

specific to the earlier discussions in the Del Norte and the Cape Mendocino, what exactly those look like, how much, by when is the uncertainty as we look out into the longer term. And so as we look at the near term for the Humboldt Call Area, the 1.6 gigawatt currently in the base portfolio, what transmission can expand from that point?

In the south, I'll talk about in just a minute, but as we look, what is the transmission that's in that area in the base portfolio and future, will those fit?

So if you want to go to the next slide?

In the Central Coast, there is the transmission that currently supplies, that's for the Diablo area. There's three, 500 kV lines out in the area. In 2021-2022, when we looked at it, that could accommodate with the retirement of Diablo, about 5.3 gigawatts. If we look at in terms of with Diablo, if it stays a little longer in periods, it would limit it to about 3 gigawatts.

And the diagram on the right just illustrates alternatives to go above the 5.3 of transmission alternatives to increase beyond the in the Central Coast. And as I indicated, the base portfolio is around 3.1 gigawatts, which fits within the existing system needs or system capabilities.

Let's move to the next slide.

This is where we look at the longer term and

looking, like Jim was talking about is, is it on-sea, which is on-sea and which is on-land and needs for -- and it being really a hybrid on-land that you're going to need really in terms of on-land facilities, of AC facilities, of HVDC facilities, fenceless (phonetic) sea cables. And as we look at it, and the sea cables have some of the challenges with, like Jim talked about, the technology being there.

Some of the problems is, is the depth itself and get beyond where cables have been looked at for normal depth burial to be able to get around obstacles out there in the sea. That's one of the reasons when I look at the next slide that talks about the alternatives that we're looking at and we'll be making a recommendation in the in the plan that was posted on April 1st.

The sea cables, we've excluded from the alternatives to look at first and there's a couple of reasons, is they limit the flexibility to be able to expand in future as we look at sea cable if we start with them in sea integration, as well as the technologies are not there for right now to be able to move forward and award and proceed with the development, as well as the costs are considerably higher for the sea cable facilities.

So as you go to the next slide, this is where we've gotten and we will be making a recommendation in the

plan on Monday, looking at the alternatives. And these align similar to a lot of what Jim has talked about, and we did coordinate and collaborate with Jim and Arne and Shatz, and we are with the PNL, as well, as to the analysis study work that they're doing.

But looking at an alternative would just be an AC that would be bringing lines over from Humboldt over to a station that is being developed right now called Fern Road in the backbone of the 500, but that would also require an additional 500 kV line from there down to the peninsula area, which is just northeast of the Bay Area.

Also looking at an HVDC line from the Humboldt area down to Collinsville, which is in the North Bay area, just opposite the Bay in terms of Pittsburgh, and then connecting into the San Francisco Bay area in terms of a DC.

Then a third alternative we're looking at really is an AC line, a single AC line over to the backbone, and an AC line basically that is built for HVDC and designed to be able to be a future converter to AC, but first energized as AC. And with that, you defer the costs of the DC converter stations, which can be half a billion, two to three quarters of a billion at each end. And so you're deferring that until the capacity needs warrant the need and expand and build into that longer term future

development.

So these are the three alternatives that as we're looking at, and like I said, in Monday's Transmission Plan, the recommendation of which alternative we're recommending for approval. And then we'll have a stakeholder meeting scheduled for Tuesday, April 9th, on this but also the whole Transmission Plan before we bring forward to our board recommendation.

So if you go to the next slide?

That's kind of where we are. And one of the things as we were looking at the transmission planning in the 2022-2023, there was significant, that was identified in the base, and also in the alternatives that was provided. So the development in our plan addressed a lot of what is in -- what would be in this year's plan with the exception of the offshore wind being the policy needs in the 2023-2024 Transmission Plan.

I'm just going to have to say, this just provides just kind of where we are. Like I said, we're posting the plan on Monday, having a stakeholder meeting on the 9th, and then taking comments on them, and then bringing it to our board at the May board meeting, which I believe is on May 23rd, 24th.

So that concludes, Jim, for me for the presentation, and then we'll go forward. Thanks.

MR. BARTRIDGE: Great. Thank you, Jeff. And as I mentioned to Arne and Jim, it's been great working with you as well past couple of years on transmission.

So, okay, well, thanks, everyone, for those transmission presentations.

And next we'll move into the public comment period to conclude the day. So let me turn that back over to Jack, who will facilitate comments.

Jack, go ahead.

MR. BASTIDA: Thank you, Jim.

Thank you for everyone for sitting with us at the end of this Friday.

The California Energy Commission welcomes public comment at this time. This is an opportunity for attendees to give their general comments.

If you're joining us via Zoom online or by phone, please let us know you'd like to make a comment by using the raise hand feature on Zoom. If you're online, you will click on the open palm at the bottom of the screen to raise your hand. Already seeing a few hands pop up. If you're calling by phone, please press star nine to raise your hand.

All right, let's see, I see Azsha. I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your

comment. We're asking comments to be three minutes or yet or less. There will be a timer on the screen. And you should be able to open your line now.

MS. HUDSON: Can you hear me?

MR. BASTIDA: Yes.

MS. HUDSON: All right. Well, this is Azsha Hudson again with the Environmental Defense Center, A-Z-S-H-A H-U-D-S-O-N. So I will skip my introduction for who EDC is since I did that this morning.

Once again, thank you to everybody who's worked on the Strategic Plan and on this workshop. All the information has been great and insightful. So I'll just jump into the comments right now.

We appreciate that this draft Strategic Plan acknowledges the need to provide improved access to reliable renewable energy for North Coast tribal and rural communities and the Native American tribes and people. We encourage including this element in the transmission planning section.

We also ask that the agency consider transmission alternatives that utilize more onshore routes to minimize multiple offshore cable routes. Deeper analysis of alternative options and coordinating transmission planning will allow for a significant decrease in impacts from transmission corridor development offshore.

Thank you.

MR. BASTIDA: All right, thank you so much.

Let me reset the clock here. I see Julia here has her hand up, Dowell, Julia Dowell. I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking comments to be three minutes or less. There will be a timer on the screen. And you can unmute yourself now.

MS. DOWELL: Hello. Thank you. Thank you for the opportunity to comment. My name is Julia Dowell, J-U-L-I-A D-O-W-E-L-L. I am a Senior Field Organizer with Sierra Club.

We deeply appreciate the Commission's facilitation of these workshops for public engagement on offshore wind development. Sierra Club is supportive of offshore wind development if it is responsibly cited in consultation with local community and tribes. We strongly support offshore wind development that facilitates the retirement of gas plants. Therefore, we understand the need for transmission upgrades and the buildout of new transmission.

The primary benefit of developing offshore wind energy in California is to decrease the state's reliance on fossil fuel. Accomplishing this will require the

Commission to ensure that the transmission connections between planned offshore wind facilities and population centers lead to decreased reliance on gas plants, especially those in disadvantaged communities. For offshore wind development to facilitate these retirements, the CEC and its sister agencies must plan for transmission development that fully connects offshore wind energy to areas that currently rely on gas plants.

Also, transmission planning needs to optimize for the right characteristics. State law requires the CEC to plan transmission specifically to reduce our reliance on gas plants. SB 887 requires the CEC to plan transmission that will reduce our reliance on gas plants in disadvantaged communities. That means that the CEC's efforts on offshore wind transmission here need to evaluate which transmission options will actually reduce gas plant generation. This is critical to actually improving air quality in disadvantaged communities, reducing emissions.

We want to see the CEC commit to working with PNNL and the CPUC, CAISO and its partners in its evaluations looking at which transmission options will reduce gas plant generation.

Thank you for your time.

MR. BASTIDA: Great. Thank you for the comment.

All right, let me reset here. And I see EPIC.

EPIC has their hand up. I'm going to unmute, open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We are asking for comments to be three minutes or less. There will be a timer on screen. And you should be able to unmute yourself.

MR. SIMMONS: Hi. My name is Matt Simmons, M-A-T-T S-I-M-M-O-N-S. I'm with EPIC, or the Environmental Protection Information Center. We're a non-profit located in Arcata, California on Humboldt Bay that has been defending the North Coast since 1977.

EPIC supports the responsible development of offshore wind. I want to thank you all for this really helpful day. I'm going to keep my comments to being mostly focused on transmission.

First off, I think that the planning to have as few export cables landing on shore as possible is incredibly important. The inter-array cables and the mesh network and the backbone are all really exciting in order to reduce the impacts. And I know that this is a developing technology, but we have a couple of years before this project could even possibly be built. And so spending our time working on that is incredibly important.

I also want to say that I think it's really important for this project to provide renewable energy to

folks living in Humboldt County. You know, right now, my laptop is being powered by burned natural gas at the Humboldt Bay Generating Station. And I think it would be really fantastic if offshore wind could directly benefit the folks that are experiencing this development by helping us retire our natural gas plant.

In terms of on-land transmission planning, I really want to thank the CEC for working with the Schatz Center. It's so valuable to have a local organization like Schatz being really deeply involved with these issues.

You know, EPIC supports the transmission development needed to facilitate the transmission of offshore electricity, you know, throughout the state. I will say that I think that more community involvement in transmission planning is incredibly important so that people understand where and why this is happening, as much as possible, you know, having these benefits directly accrue to people. I really appreciated that Schatz talked about, you know, rate payer rates being affected positively by this development.

And also, the North Coast is home to many communities that, you know, are in really rural, rugged mountainous areas that might not benefit directly from this development. And I think that's something that the CEC should be thinking about in the AB 525 report is

alternative energy sources for those communities that are impacted by offshore wind but aren't going to receive the electricity directly. So this could look like solar microgrid development or other, you know, small hydro, other alternatives for the communities that, you know, are impacted and should also be getting benefits from this project.

But overall, I want to say thank you very much for this presentation. It's extremely helpful, and have a good afternoon.

MR. BASTIDA: Great. Thank you for the comment.

All right, I see Alison is holding -- has got her hand up. Let me open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking comments to be three minutes or less. There will be a timer on the screen. Allison with NRDC, you should be able to unmute yourself now.

MS. HAHM: Hi, thank you. My name is Alison Hahm, A-L-I-S-O-N H-A-H-M. I'm an attorney with Natural Resources Defense Council's Environment Equity and Justice Center and a proud member of the Impact Project Coalition, which includes community-based organizations, environmental justice groups, academic institutions, and national environmental NGOs.

NRDC supports the development of offshore wind off the coast of California to meet the state's clean energy and climate goals. We welcome the work of CEC to develop this renewable energy infrastructure in close partnership with impacted communities, tribal nations, and labor to ensure an equitable and accelerated transition away from fossil fuels to create more safe jobs and healthy communities.

NRDC also believes that it's crucial to advance offshore wind in a way that minimizes negative ecological consequences and maximizes benefits to port-adjacent communities, communities that are already disproportionately burdened by industrial operations and extreme air pollution. It's our hope and expectation that offshore wind development will improve life expectancy in communities living on the front lines of industrial operations.

For this reason, we urge CEC to first maximize community benefits. Offshore wind projects must require use of 100 percent zero-emission vehicles and equipment and infrastructure during project construction, operation, maintenance, and decommissioning.

Offshore wind projects should also invest in local charging infrastructure to support zero-emission electric equipment and vehicles.

We also urge CEC to promote a rapid phase-down of fossil fuel infrastructure and other polluting sources in conjunction with clean energy infrastructure development to avoid a potential increase in cumulative impacts from offshore wind-related construction, maintenance, and operations.

In conclusion, I'd like to thank CEC for facilitating today's workshop, initiating community listening sessions, and reaching out to tribal nations to discuss the benefits and potential risks associated with offshore wind development. More of this outreach is needed and we thank CEC for taking the time to listen to community concerns. Continuing this open dialogue is vital to ensure the offshore wind industry is a catalyst for improving quality of life in port adjacent communities and advancing environmental justice.

Thank you, and we look forward to continuing this discussion and appreciate your time.

MR. BASTIDA: Great. Thank you so much for your comments.

All right, I see Mike has his hand up from, I'm sorry, it's West Coast something, but I'll let you talk. I'm going to open up your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking for comments to be three

minutes or less. There will be a timer on the screen. And, Mike, you should be able to talk now.

MR. OKONIEWSKI: Thank you. Can you hear me okay?

MR. BASTIDA: Yes.

MR. OKONIEWSKI: My name is Mike Okoniewski, last name is O-K-O-N-I-E-W-S-K-I, and I'm from the West Coast Pelagic Conservation Group. And I thank you today for allowing me to say a few words here and testify.

So BOEM's confidence level and their methodology to accurately assess floating offshore wind impacts to marine environmental and ecological system is remarkable. There is no floating wind energy empirical data to work with. No empirical data studies on the effects offshore wind will have on upwelling, ocean larval transport, sea temperature, natural biodiversity and spawning areas.

Nor is there empirical data on the effects of wind wakes or on regional cumulative impacts when we finish industrializing our U.S. West Coast economic exclusion zone. There is no economic study on what the cost will be to fishermen and communities.

The U.S. fishery supply chain contributes over $100 billion a year to the gross national product and creates over 700,000 jobs. We support renewable energy. We do not support sacrificing the productivity of the

California current ecosystem to achieve renewable energy, especially when there are less complex solutions available.

Thank you.

MR. BASTIDA: Great. Thank you for your comments.

I see we have a hand up for Tom, Tom Hafer. I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We are asking for comments to be three minutes or less. There will be a timer on the screen. And you should be able to unmute yourself.

MS. HAFER: Hi. This is Sheri Hafer. I am representing the Morro Bay Commercial Fishing Organization.

So what I want to bring up is Holly Wyer's comment from the Coastal Commission saying that permitting high voltage current cables is similar to fiber optic cables. They're very different, as we all know. And, you know, there's been a lot of failure of the cables in Europe, over 90 failures in the last seven years for a multitude of reasons, including becoming unburied. It's one of the most expensive costs for the offshore wind companies.

They also emit electromagnetic fields. And it's been shown that eggs, lobster eggs laying next to them cause the lobsters to become deformed. Their tails are

deformed. Their eyes are deformed. And it impacts the migration of species that are sensitive to electromagnetic magnetic fields, like the women spoke of earlier.

They also emit heat, especially the mid-water AC cables that are going to be between these turbines, which are going to be hundreds of miles. They're a mile apart, and you're talking in Central Coast 300 turbines or so, and so that's a lot of miles of cable in the water, which your pictures don't display.

And the other thing is, is that they contain sulfur hexafluoride, which is -- it causes -- it's very -- it causes global warming. It blocks the sun. It's very toxic. I don't know how to explain it but it's a bad chemical that if a cable broke and it got out, it would be bad. So the State Water Boards should know about that.

And that's the other thing, Department of Fish and Wildlife, they talk about trenching not being allowed in marine protected areas, but multiple times you mentioned putting in subsea cables that would have to go through marine protected areas. And so if something's not going to be allowed, then how can you even propose it? So I don't know what your plan is on that.

And even to go into Diablo Canyon on Point Buchon NP is right there. I don't know if they're going to be able to go around that or not. And there's essential fish

habitat, essential fish habitat that the wind farms are in. And also ESHA around Morro Bay that the cables are going to have to go through. So if you know that you're not going to be able to do trenching and cabling in these areas, and why are you even allowing it in the first place?

So I guess that's all I need to comment on right now. Thank you.

MR. BASTIDA: Thank you so much for your comments.

I'm going to see if there's any more hands raised. I don't see any more. I'm going to do a last call here for public comment before.

Oh, there's one more that looks like popped up here. Sarah. Sarah, I see your hand is up. I'm going to open your line. Please unmute on your end. Spell your name for the record, state any affiliation, and begin your comment. We're asking for comments to be three minutes or less. There will be a timer on the screen. And you should be able to unmute yourself.

MS. XU: Yeah. Good afternoon. My name is Sarah Xu, spelled S-A-R-A-H X, as in x-ray, -U, as in uniform. I'm the Senior Policy Associate at Brightline Defense.

Thank you again to all the CEC, CAISO, and other staff that helped put together the transmission planning sections of the AB 125 Strategic Plan.

At Brightline, while we're San Francisco-based, we want to lift the comments previously stated by others about the importance of local reliability and transmission and local distribution, and the areas near to offshore wind development. There's quite a number of important discussions around energy reliability, concerns about eminent domains, siting, impacts on natural and coastal resources that we believe requires a lot more local education and locally-led planning processes and discussions.

At this time, additionally, we recognize there's quite a number of uncertainties in terms of cable landfall, siting, and permitting. But it would be important that the Strategic Plan includes guardrails to not bypass rural and unconnected communities in California, especially Northern California's region, and keeping an eye on repair costs throughout the transmission planning process.

Finally, we appreciate the planning overall and the timelines that were presented today. And I think there is a need for further discussion about regulatory process authority. It would be helpful for advocates and community members in this space.

Thank you so much.

MR. BASTIDA: Thank you for your comments.

I see Alan has his hand up. Let me restart here.

Alan, I'm going to unmute your line. You could unmute on your end. I'm going to spell your name for the record, state ID affiliation, and begin your comments. You'll be able to unmute now.

MR. ALWARD: There you go. Okay. Can you hear me now?

MR. BASTIDA: Yes. Yes.

MR. ALWARD: Okay. I just wanted to make sure that the public utility -- the California Energy Commission was considering risk in their planning process? Because I know that the solar alternative has an average of a 12-hour-a-day downtime, but with this wind renewable energy, you can have much longer periods of downtime. And at this time, that requires gas plants to be held on standby. So that's an extremely costly measure. There's the risk of grid instability because of a loss of power due to the wind not blowing, which increases the need for batteries to back that up.

But there are things that can happen that can make that risk really get extended. Like if you have an earthquake that displaces land, any kind of lateral movement, these buried cables will break. And then the amount of time it takes to replace a cable on the bottom of the ocean is much longer than it takes on land. You know, you first have to locate a boat to do the work. It has to

cross the ocean. I mean, it's just horrifying. What the grid will be at risk of is a very long-term substandard performance. I mean, we're talking practically on its knees if you take this route.

I just urge you to analyze the risk in a really robust way because it's something that's not being talked about and I think people needed to be aware of it.

Thank you.

MR. BASTIDA: Thank you for your comments.

All right, I'm not seeing any more hands right now. I want to do one last call for comments. If anybody has any comments now is the time. All right, I'm not seeing any further hands raised on Zoom.

Thank you everyone for your public comments today. This concludes the public comment period.

Back to you, Jim.

MR. BARTRIDGE: Okay. Great. Thank you, Jack.

Well, thanks everyone. We're right about at the end.

I just want to ask real quick if any leadership had any burning desire for public comments -- or I mean for closing remarks, excuse me?

Okay, and hearing none, again, thanks everyone for your attendance, participation and comments today.

All of the AB 525 reports that influenced and

were used in creation of the Strategic Plan are available at the AB 525 Reports page, which is linked here. The presentations and Zoom recording from today will be posted shortly at the AB 525 event page shown here as well. And the professional transcript should be up later next week.

All comments on the draft Strategic Plan from both workshops that we held last week and today are due by April 22nd.

And with that, thanks again for your participation. Have a great weekend. We're adjourned.

(The workshop adjourned at 3:13 p.m.)