BOEM BUREAU OF OCEAN ENERGY MANAGEMENT

BOEM Hawai‘i Intergovernmental Renewable Energy Task Force Meeting

August 22, 2024

9:30 a.m. – 3:00 p.m. HST

For help with technical difficulties, please email bvaldez@kearnswest.com for assistance. The webinar will be recorded.

Opening Remarks

Doug Boren, BOEM Pacific Regional Director

Opening Remarks

Mark Glick, HSEO Chief Energy Officer

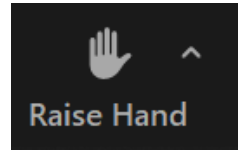
Task Force Meeting Overview

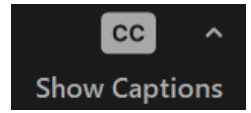
Participation Ground Rules

- Honor the agenda.
- Participate actively and respectfully.
- Respect differences of opinion and perspectives.
- Provide your name and affiliation each time you speak.
- Be mindful of your speaking time.
- Refrain from sidebar conversations.
- Ask to learn, listen to understand.
- Be tough on the issues, soft on the people.

Instructions – Task Force Members

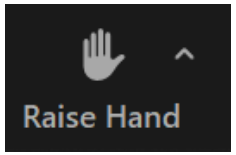
- Mute yourself when not speaking. Refrain from sidebar conversations.
- To enter the discussion queue:
  - **Place your name card on its side.** Please lower your card once you are done speaking.
  - **Use the "Raise your hand" button or press *9 on your phone.** Please lower your hand once you are done speaking.
    - If unable to speak, use the chat for technical assistance.
- The chat is reserved for technical difficulties. You can also contact Bianca at bvaldez@kearnswest.com.
- Task Force members are encouraged to keep their webcam on during introductions and discussions.
- Closed Captioning and ASL Interpretation is available.

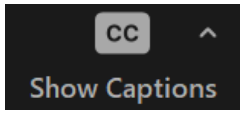




Instructions – Public Attendees

- Public attendees will be muted throughout the webinar and will not be able to unmute themselves until the public input portion of the agenda.
- Public attendees can ask questions during the public input opportunity at 3:00 p.m. HST.
  - To enter the queue:
  - **Sign-up at the Public Attendee Table to receive a number.**
  - **Use the "Raise Hand" button or press *9 on your phone.** Please lower your hand once you are done speaking.
  - The Q&A pod feature will be available to share input.
  - Kūpuna will be invited to speak first.
- Closed Captioning and ASL interpretation is available.
- For technical assistance requests, contact bvaldez@kearnswest.com





Meeting Objectives

- Reintroduce Task Force members to the BOEM's:
  - Task Force purpose and roles
  - Regulatory framework and renewable energy leasing process
  - Studies program and provide an overview of current region-specific studies
- Provide an overview of Hawai'i's renewable energy goals
- Update Task Force members on the status of offshore wind planning areas
- Discuss next steps for offshore wind planning off Hawai'i
- Receive public input on Task Force items

Agenda

Time	Item	Presenter
9:30 – 9:45 a.m.	**Welcome and Opening Remarks**	Jamie Damon, Facilitator Doug Boren, BOEM Dane Wicker, DBEDT Mark Glick, HSEO
9:45 – 10:10 a.m.	**Task Force Meeting Overview**	Jamie Damon, Facilitator
10:10 – 10:25 a.m.	**Hawai‘i’s Renewable Energy Goals**	Mark Glick, HSEO
10:25 – 10:55 a.m.	**BOEM Leasing Process Overview and Status of Offshore Wind Planning Areas**	Natalie Dayal, BOEM
10:55 – 11:05 a.m.	*Break*	
11:05 a.m. – 12:00 p.m.	**Questions and Discussion on BOEM and State Presentations**	All
12:00 p.m. – 1:00 p.m.	*Lunch Break*	
1:00 p.m. – 1:15 p.m.	**Overview of BOEM Studies Program and Region-specific Studies Underway**	Jeremy Potter, BOEM
1:15 p.m. – 2:45 p.m.	**Questions and Discussion on BOEM and State Presentations**	All

Agenda

Time	Item	Presenter
2:45 – 2:50 p.m.	**Next Steps and Closing Remarks**	Doug Boren, BOEM Mark Glick, HSEO
2:50 p.m.	***Task Force Meeting Adjourn***	
2:50 – 3:00 p.m.	*Break*	Mark Glick, HSEO
3:00 – 4:00 p.m.	**Public Input Opportunity**	Jamie Damon, Facilitator

BOEM Staff Present Today

- **Doug Boren,** Pacific Regional Director
- **Necy Sumait,** Office of Strategic Resources Regional Supervisor
- **Emily Hildreth,** Policy Analyst
- **Lissa Eng,** Congressional and Intergovernmental Affairs Officer
- **Sandi Nagy,** Native Hawaiian Pacific Islander Liaison
- **Jeremy Potter**, Pacific Studies Chief
- **Natalie Dayal,** Renewable Energy Specialist
- **John Romero,** Public Affairs Officer

Task Force Member Introductions – Local Elected Officials

- City of Honolulu
- Hawai‘i County
- Kauai County
- Maui County

Task Force Member Introductions – State Representatives

- Department of Business, Economic Development and Tourism (DBEDT)
- Department of Hawaiian Homelands (DHHL)
- Department of Land and Natural Resources (DLNR)
- DLNR, Division of Aquatic Resources
- DLNR, Land Division
- DLNR, Office of Conservation and Coastal Lands (OCCL)
- DLNR, Division of Forestry and Wildlife (DOFAW)
- Hawaii Department of Transportation (HDOT)
- HDOT, Harbors
- Hawai‘i Natural Energy Institute (HNEI)
- Hawai‘i State Energy Office (HSEO)
- Office of Hawaiian Affairs (OHA)
- Office of Sustainability and Planning Development (OSPD)

Task Force Member Introductions – Federal Representatives

- Bureau of Ocean Energy Management (BOEM)
- Bureau of Safety and Environmental Enforcement (BSEE)
- Department of Defense (DOD)
- Department of Energy (DOE)
- Federal Aviation Administration (FAA)
- Federal Communications Commission (FCC)
- Federal Energy Regulatory Commission (FERC)
- National Park Service (NPS)
- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO)
- NOAA NMFS, Pacific Islands Fisheries Science Center (PIFSC)
- NOAA Office of National Marine Sanctuaries (ONMS)
- Small Business Administration (SBA)
- U.S. Army Corps of Engineers (USACE)
- U.S. Coast Guard (USCG)
- U.S. Environmental Protection Agency (EPA), Region 9
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Geological Survey (USGS)

Update on Hawai‘i's Energy Strategy

HAWAIʻI STATE ENERGY OFFICE

Bureau of Ocean Energy Management (BOEM) Hawai’i Intergovernmental Renewable Energy Task Force Meeting

Mark B. Glick
Chief Energy Officer

August 22, 2024

Statutory Commitments to Renewable Energy and Decarbonization

- 2015: Act 97 requires a 100% RPS in the electricity sector by 2045
- HRS §225P-5 passed in 2022 obligates Hawai'i "to sequester more atmospheric carbon and greenhouse gases than emitted within the State as quickly as practicable, but no later than 2045", effectively establishing a net-negative carbon emissions target.

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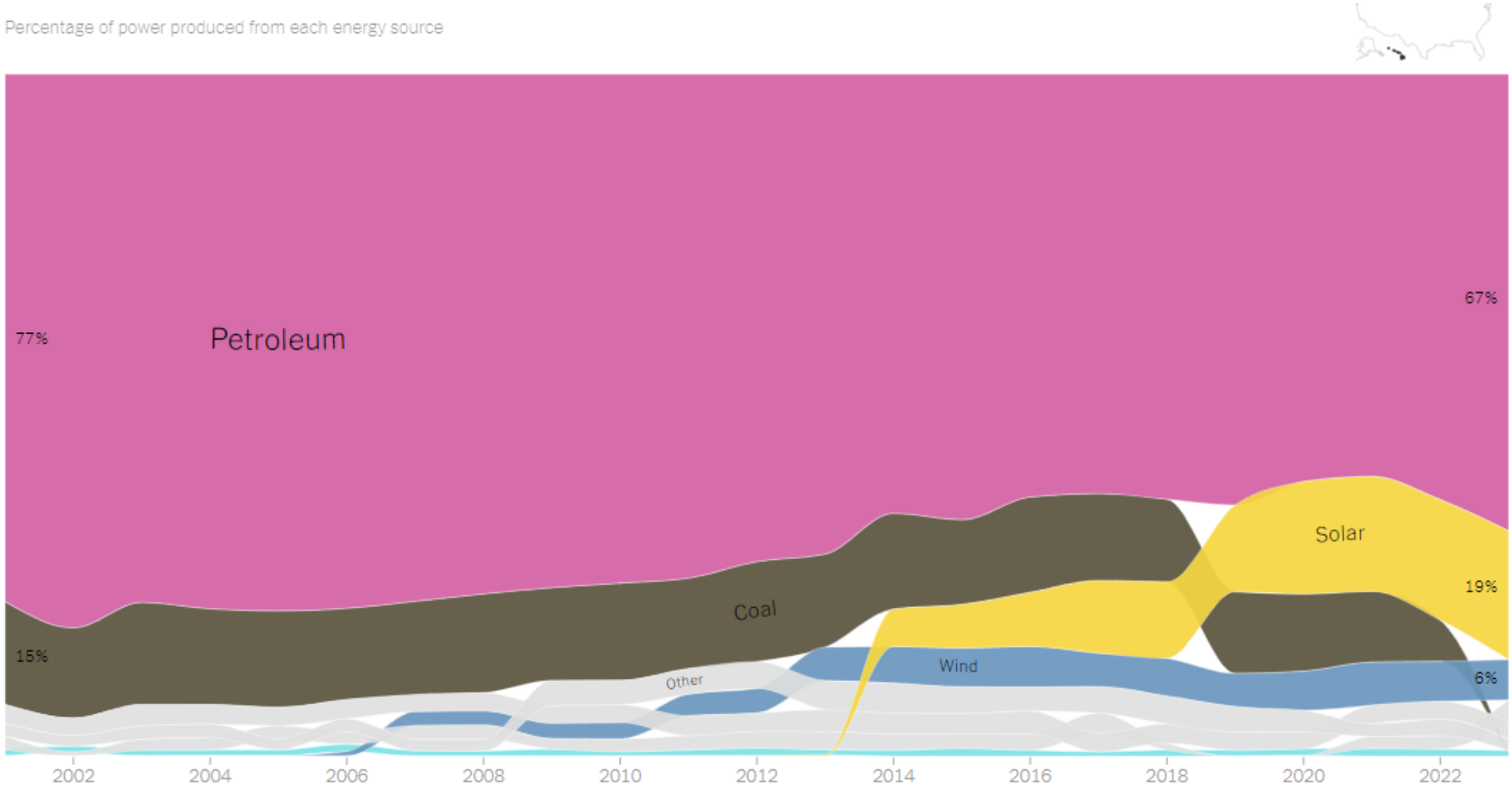
How Hawai'i made electricity 2001 to 2023

Source: The New York Times



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Most Pressing Challenges

Aging, inefficient power plants are costly and unreliable & impede progress on Hawai'i's energy transition. This is exacerbated by lack of low-cost capital for essential power plant and grid investments.

A Lawrence Berkeley National Laboratory survey found about 1/3 of wind and solar projects in past 5 years nationally were cancelled and 50% experienced delays of 6 months or more with local zoning, grid connection problems, and local opposition the main culprits.

Using low sulfur fuel oil & diesel for next 20 years is costly, inefficient, and carbon intensive and leaves Hawai'i highly vulnerable to oil price volatility.

Limited land availability means that imports will be necessary on O'ahu even after 2045.

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About 40 million barrels of oil are delivered by tanker to Hawaii every year and transformed into gasoline, jet fuel, asphalt, diesel and more.

Source: *Hawaii Business Magazine*

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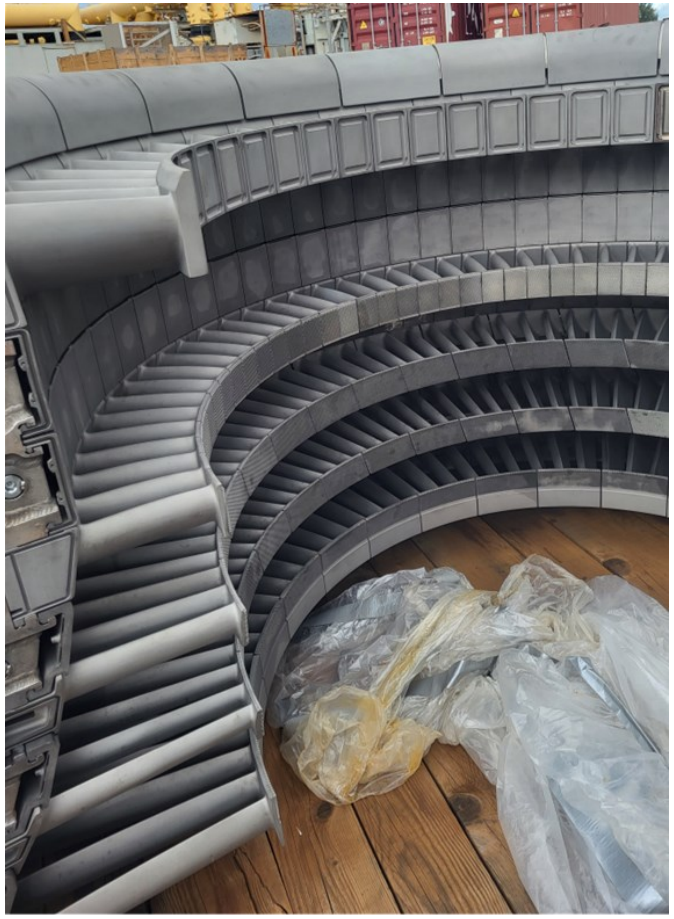
Low Sulfur Fuel Oil (LSFO) is Carbon-Intensive and Inefficient



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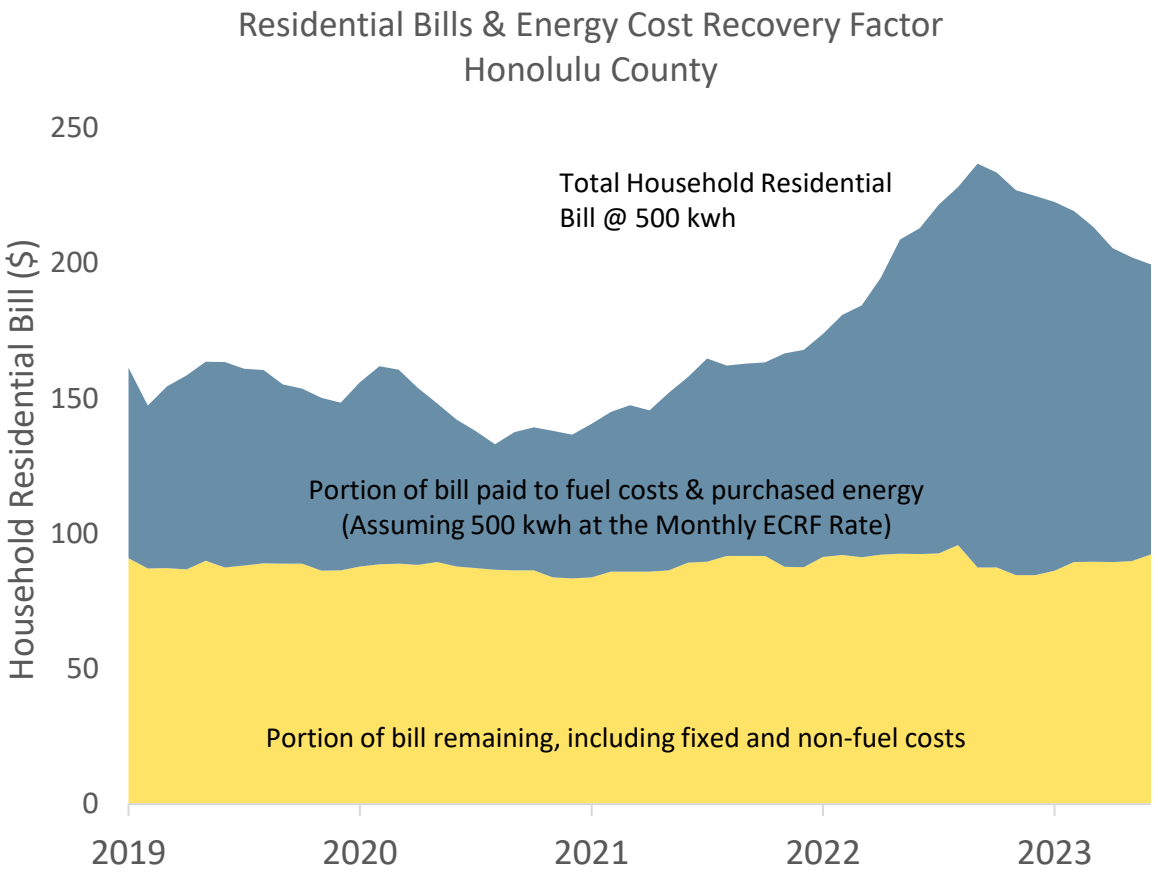
Oil drives bills higher



- Currently, fuel accounts for roughly half of electricity bill
- Oil price volatility, or spikes in energy bills from rapid increases in crude oil prices, are damaging to the economy.
- As the energy transition progresses with renewable fixed contracts, consumers will see less volatile fuel costs.

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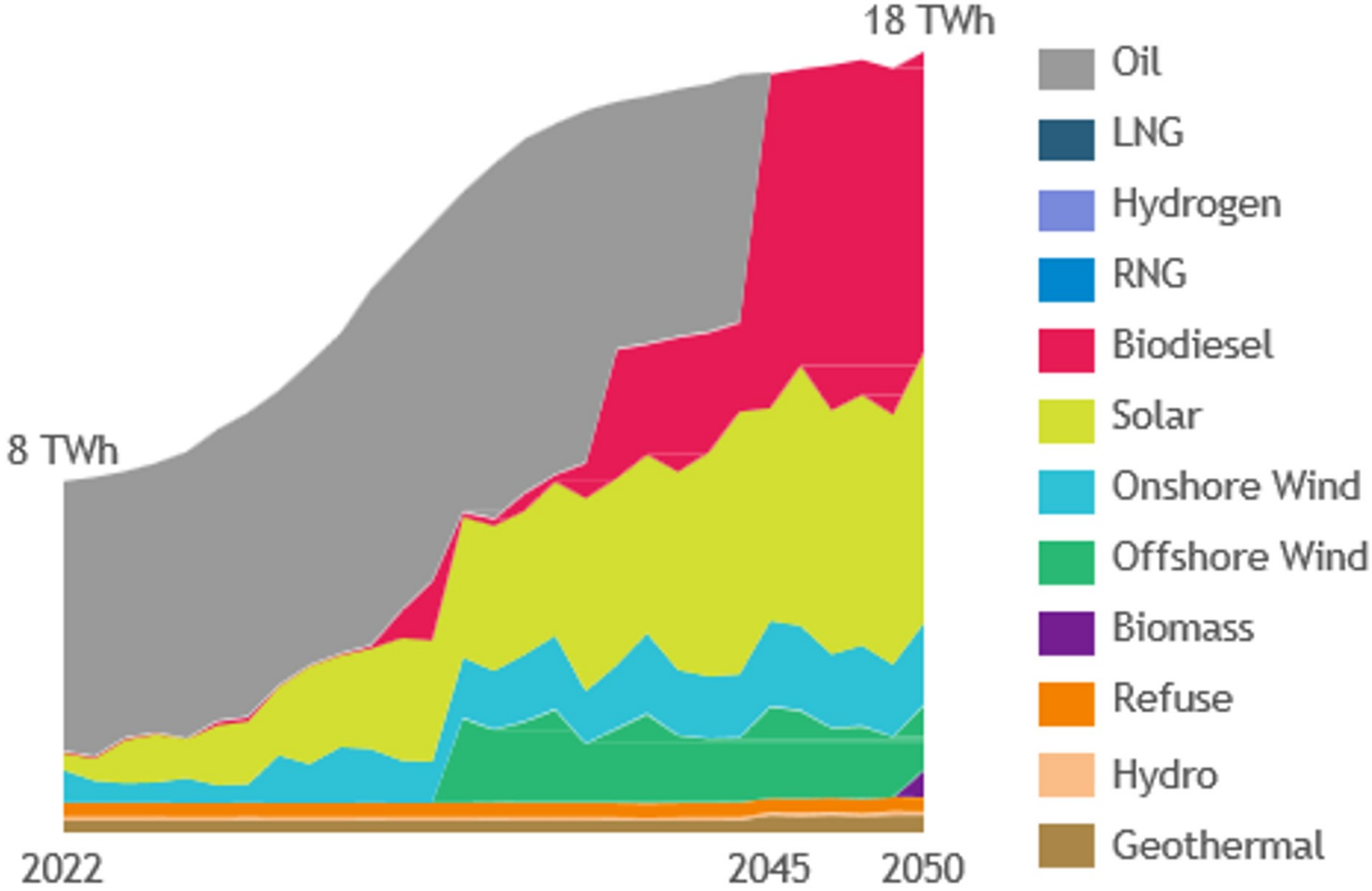
Existing Integrated Grid Plan (HECO)

HECO IGP Preferred Path Fuel Mix



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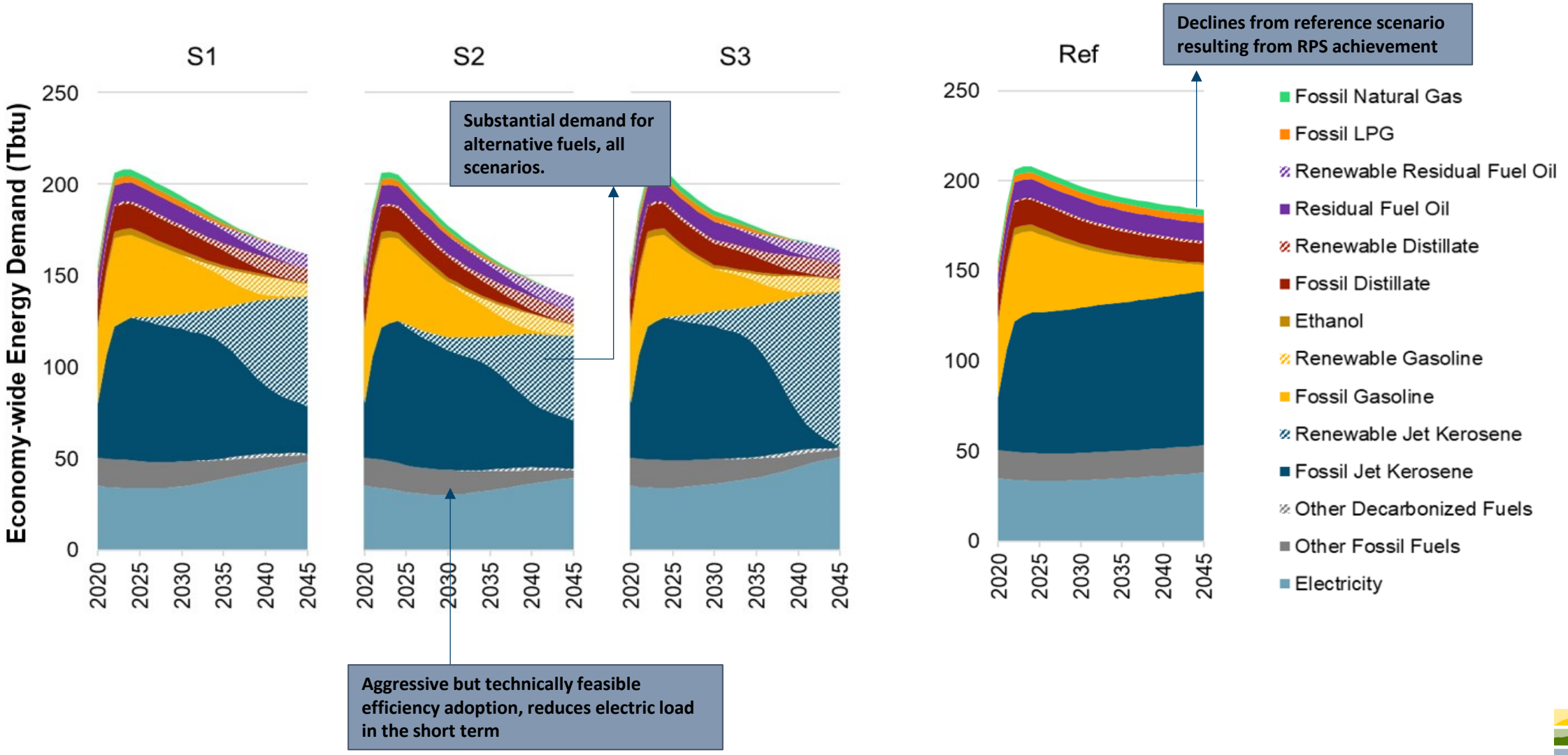
2023 Decarbonization Pathways Report: Energy Demand for Each Scenario



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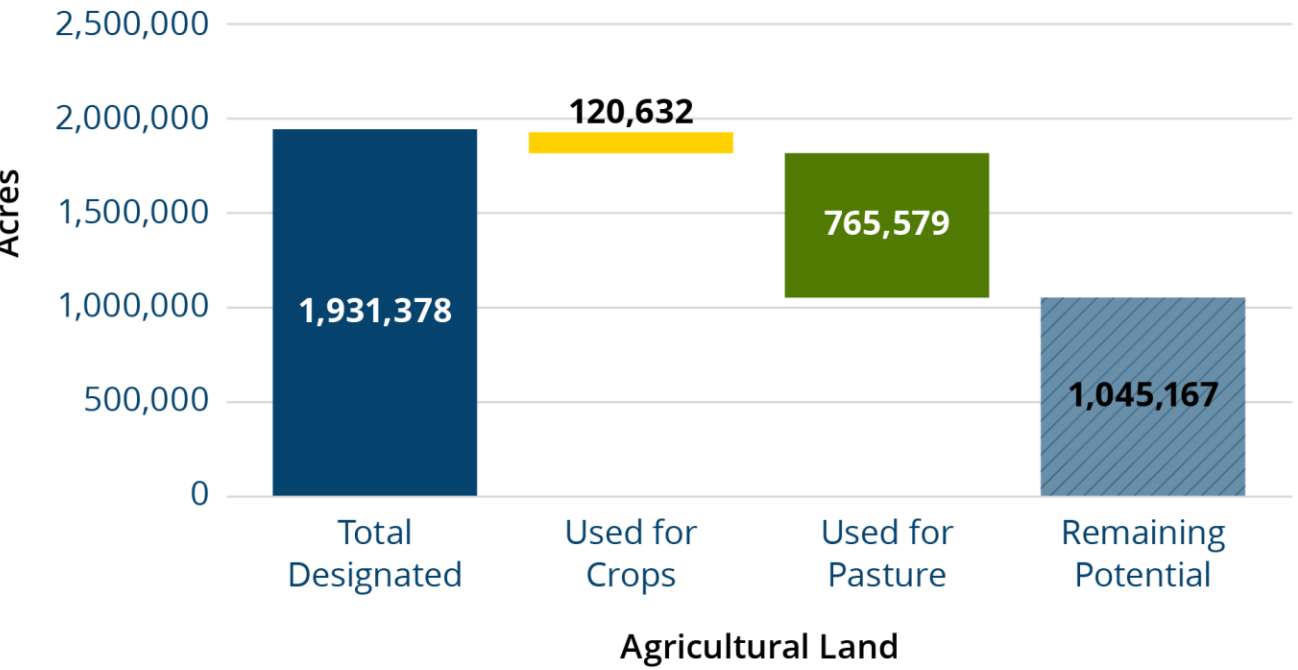
Local energy supply of renewable energy will be insufficient to meet electricity demand on O'ahu. Imports will continue to be necessary, even after 2045.

Land Capacity



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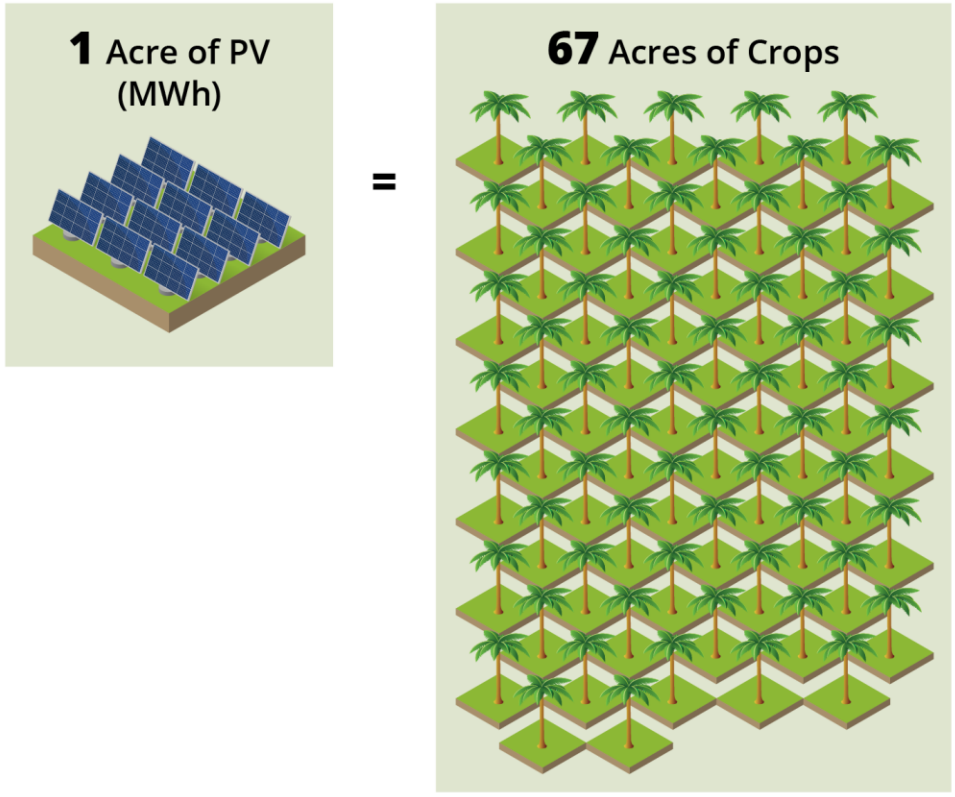
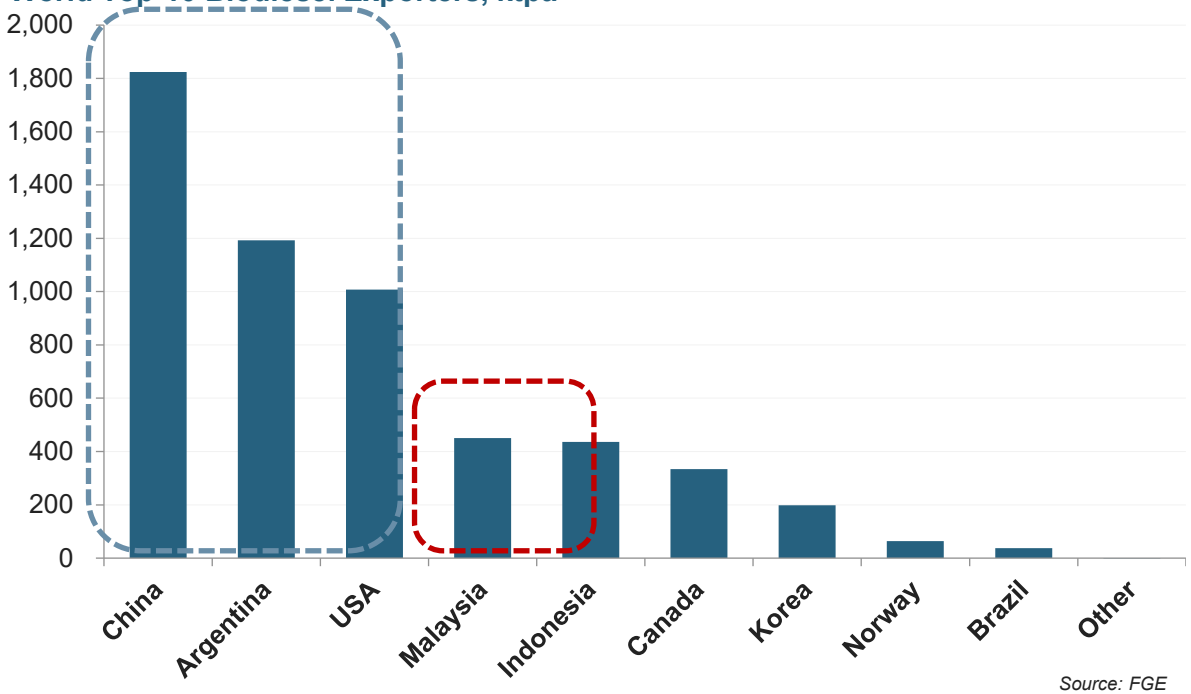


From where will Hawai‘i be able to source its Biodiesel and Renewable Diesel?

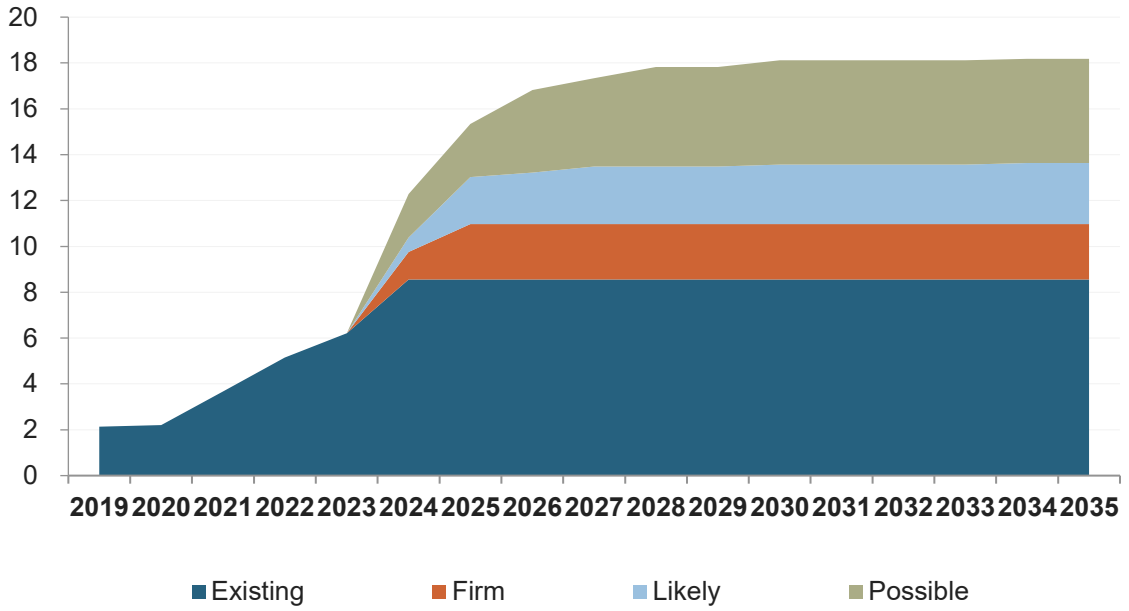
The US and future biofuels from Par will likely provide the bulk of Hawai‘i’s biofuel supply due to regulations restricting palm oil biofuels from S.E. Asia

World Top-10 Biodiesel Exporters, ktpa



Source: FGE

North America Renewable Diesel Production Outlook by Likelihood, mtpa



Source: FGE

- China, Argentina and the US are the world’s largest biodiesel exporters, followed by Malaysia and Indonesia. However, due to regulations restricting palm oil-based biofuels in the US, Malaysia and Indonesia are not viable sources of biofuel imports.
- North America has the largest planned renewable diesel production capacity growth during the coming years, accounting for 44% of global planned production.
- Biodiesel is a renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant grease for use in diesel vehicles or any equipment that operates on diesel fuel. Renewable diesel is a fuel made from fats and oils, such as soybean oil or canola oil, and is processed to be chemically the same as petroleum diesel.

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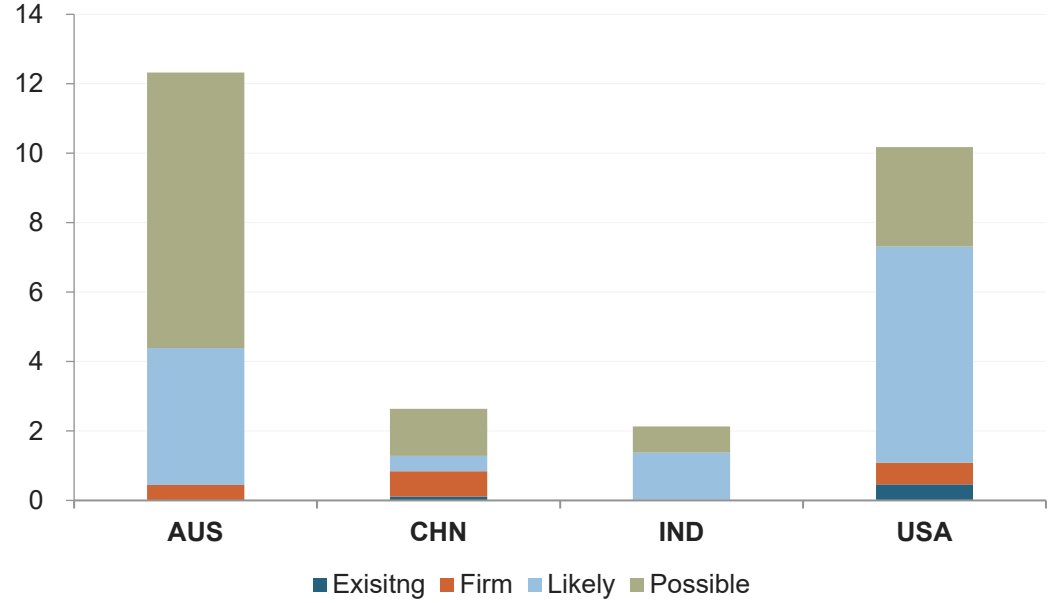
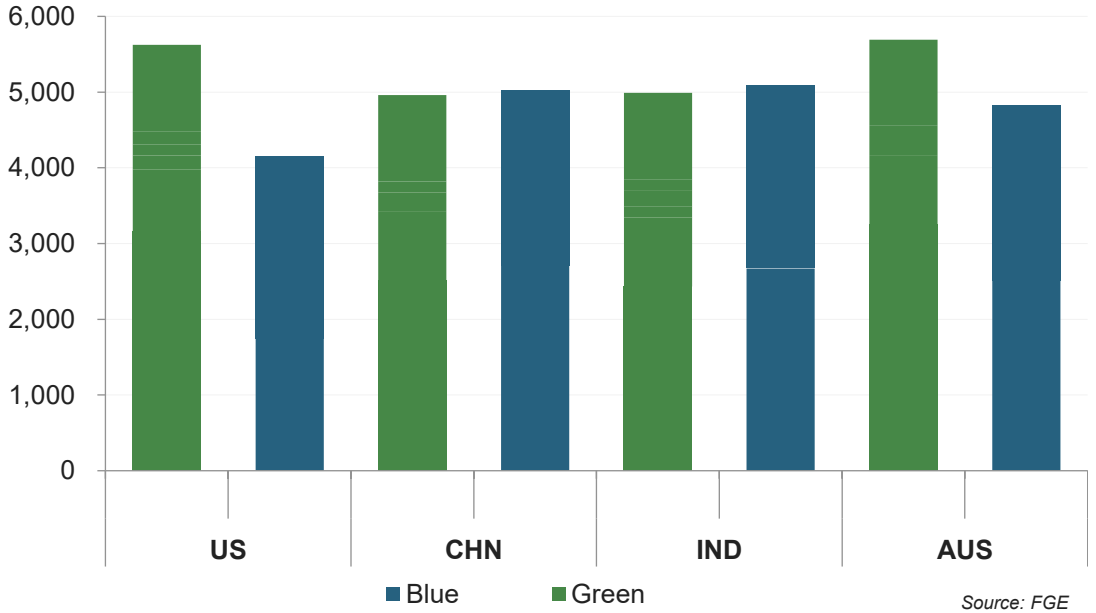
Where will Hawai‘i be able to get its hydrogen from?

Selected Clean Hydrogen Exporters: Production by Likelihood by 2035, mtpa



Source: FGE

Green Vs Blue Hydrogen Levelised Cost of Delivery, 2023, US$/tonne H2



Source: FGE

- Australia and the US are the largest potential sources of clean hydrogen imports, dwarfing India and China in terms of planned production.
- However, due to low renewable energy costs and high natural gas prices in China and India, blue and green hydrogen are competitive with each other in these countries.
- In contrast, blue hydrogen is significantly cheaper in the US due to low natural gas prices.

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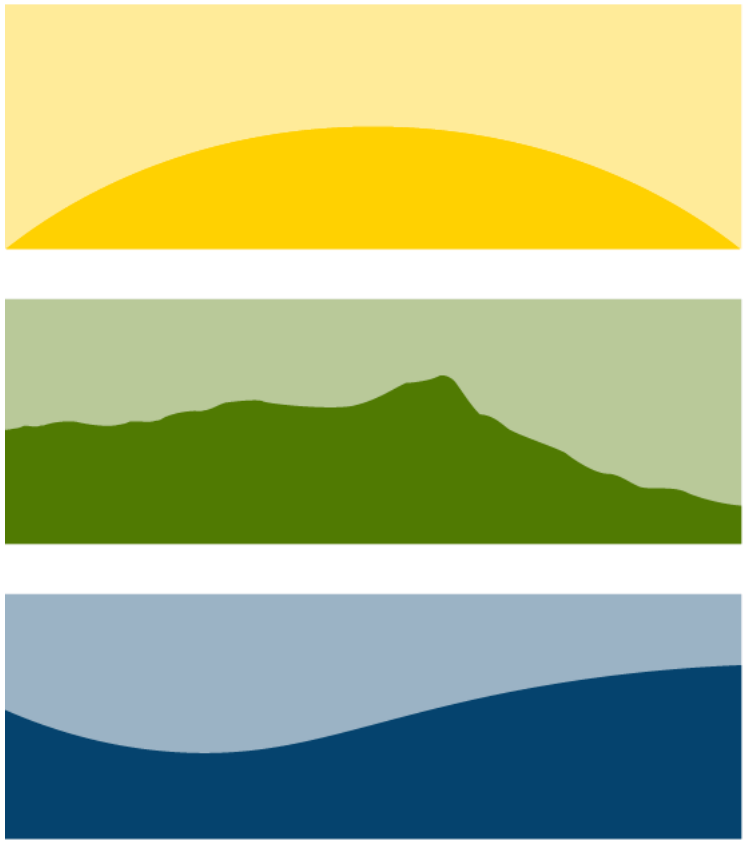
Progress - Notable HSEO Accomplishments since July of 2023

- Received notice of selection of $68.6 million in federal funds supporting renewable energy, energy efficiency and clean transportation programs, selected approved grants include:
  - $30 million for High-Efficiency Electric Home Rebate Program. .
  - $4.5 million for Incentives for clean transportation under the Diesel Emissions Reduction Act (DERA).
  - $1 million for the Hawai‘i Clean Energy Wayfinders Program for community engagement.
  - $0.5 million for Advance Assistance 2.0 - Kauai, Maui, & Hawaii Counties.
- Prepared two complementary and critical state energy and environmental strategies:
  - Low Carbon Fuel and Repowering Analysis - to provide a strategy to lower costs and carbon in a manner to attract capital, improve grid reliability and ensure that Hawai‘i meets its energy transition targets.
  - Hawai’i Pathways to Decarbonization Report to the 2024 Hawai‘i State Legislature, pursuant to Act 238 (2022). Look for report at energy.hawaii.gov.
- Secured $5 million to contract with the Hawai’i Groundwater and Geothermal Resource Center to conduct Slimhole Bore(s) and Geologic Characterization (Geothermal Assessment) to support firm renewable energy objectives.



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BOEM Leasing Process and Status of Hawai‘i Offshore Wind Planning Areas

BOEM Hawai‘i Intergovernmental Renewable Energy Task Force Meeting

Natalie Dayal | August 22, 2024

Agenda

- Bureau of Ocean Energy Management (BOEM) Overview
- Floating Offshore Wind Background
- Planning and Leasing Approach Overview
- History of BOEM Leasing Process in Hawai‘i
- Factors/Ocean Uses for Future Consideration
  - Wind Speeds
  - Water Depth
  - Slope
  - DoD Mission Compatibility
  - Vessel Traffic Routes
  - National Marine Sanctuaries
- Next Steps

Intergovernmental Renewable Energy Task Force

In 2011, former Governor Abercrombie requested the formation of the BOEM-Hawai‘i Intergovernmental Renewable Energy Task Force (Task Force)

Per BOEM’s regulations at 30 CFR 585.102(e):

- BOEM is required to provide for coordination and consultation with the Governor of any State that may be affected by a lease, easement, or right-of-way
- BOEM may jointly, with the State, establish a task force to help fulfill this requirement

Intergovernmental Task Force is a forum for communication and information sharing across:

- Federal agency officials
- State agency officials
- Local government agency officials

Previous Hawai‘i Task Force meetings:

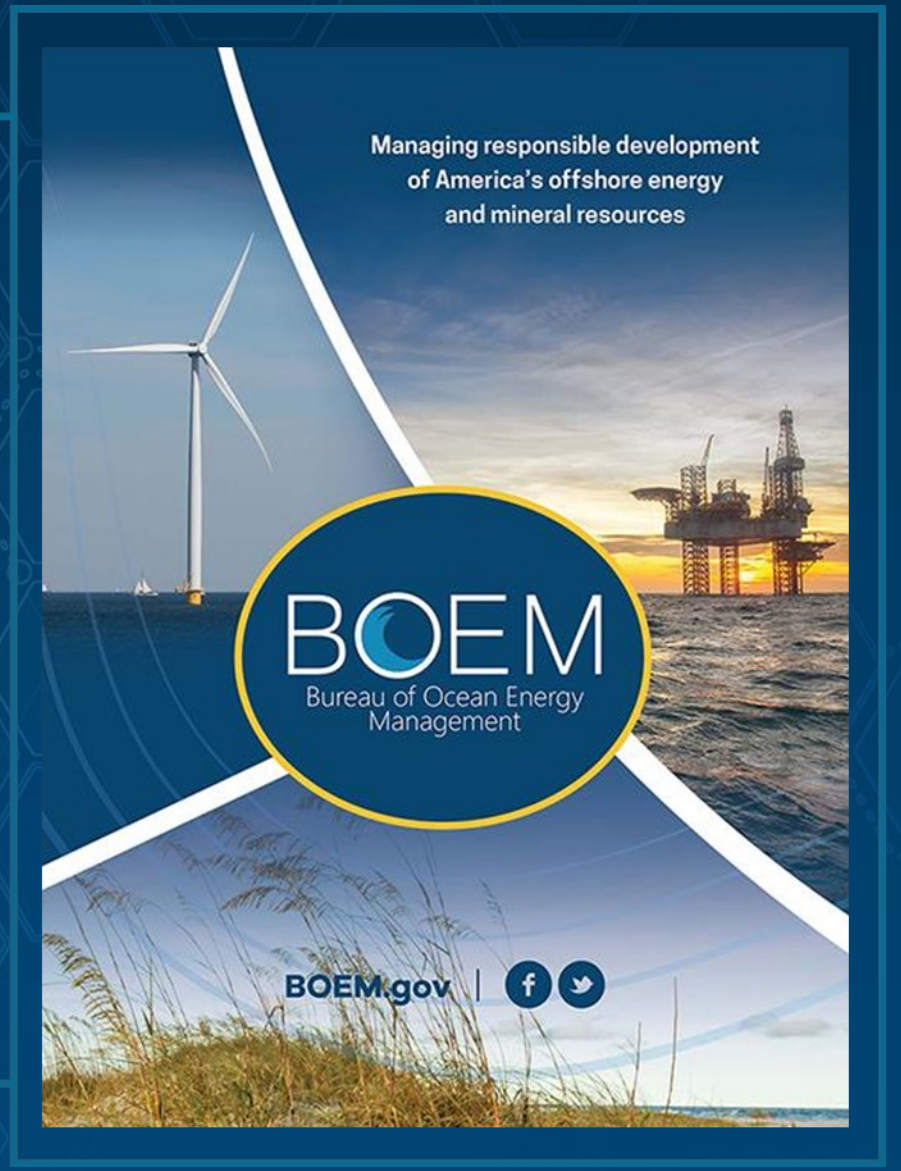
- 4th: May 16, 2016
- 3rd: June 3, 2015
- 2nd: December 5, 2012
- 1st: March 7, 2012

BOEM Mission

To manage the development of U.S. Outer Continental Shelf (OCS) energy, mineral, and geological resources in an environmentally and economically responsible way.

BOEM manages almost 3.2 billion acres of the U.S. Outer Continental Shelf

BOEM is one of the 11 Bureaus of the U.S. Department of the Interior (DOI)



Authorities

OCS Lands Act: "… vital national resource … expeditious and orderly development … environmental safeguards"

Energy Policy Act of 2005: "… energy from sources other than oil and gas …"

The Inflation Reduction Act (IRA) "provides DOI with the authority to issue leases, easements and rights-of-way offshore US territories…"

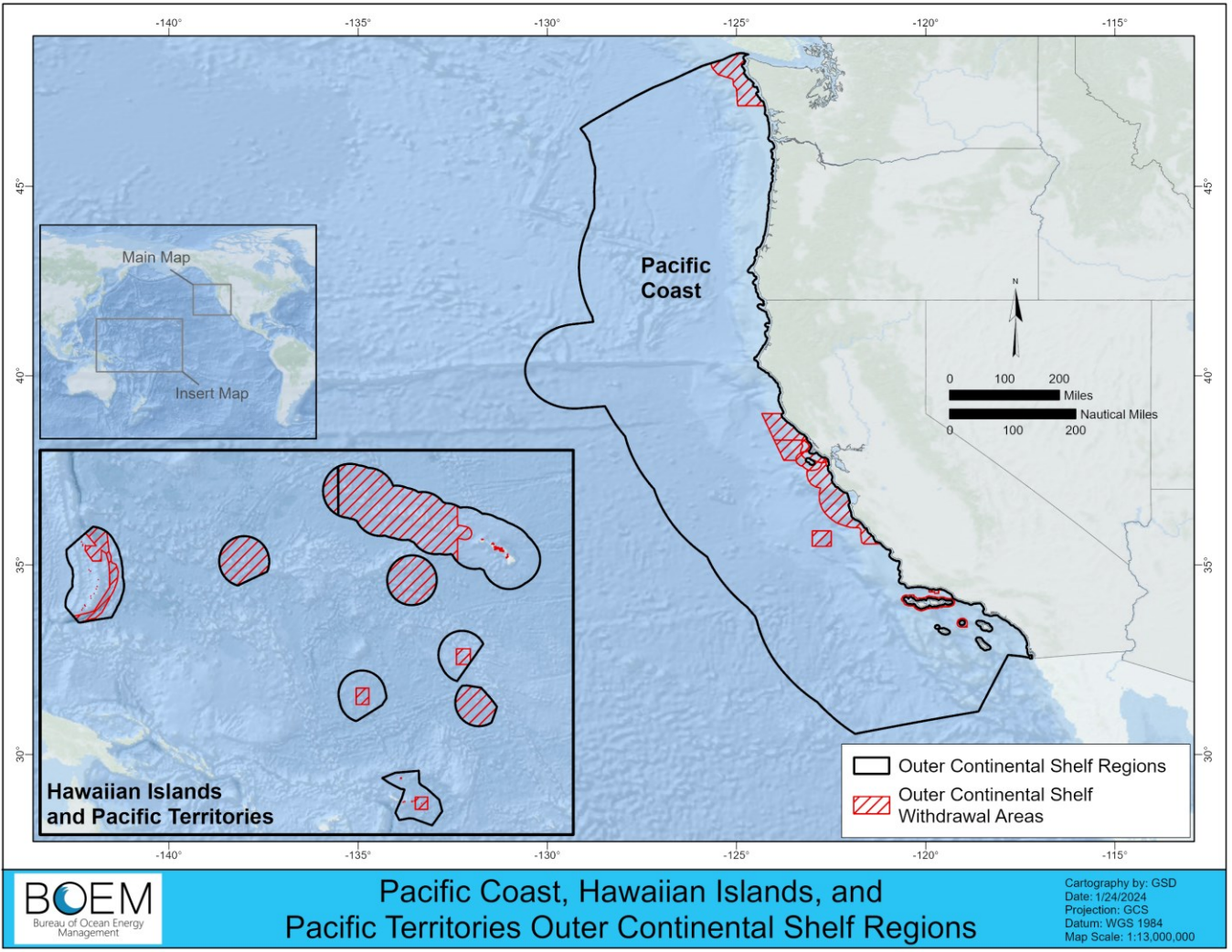
Alaska OCS

Pacific OCS

Gulf of Mexico OCS

Atlantic OCS

Background: Bureau of Ocean Energy Management (BOEM) Mission



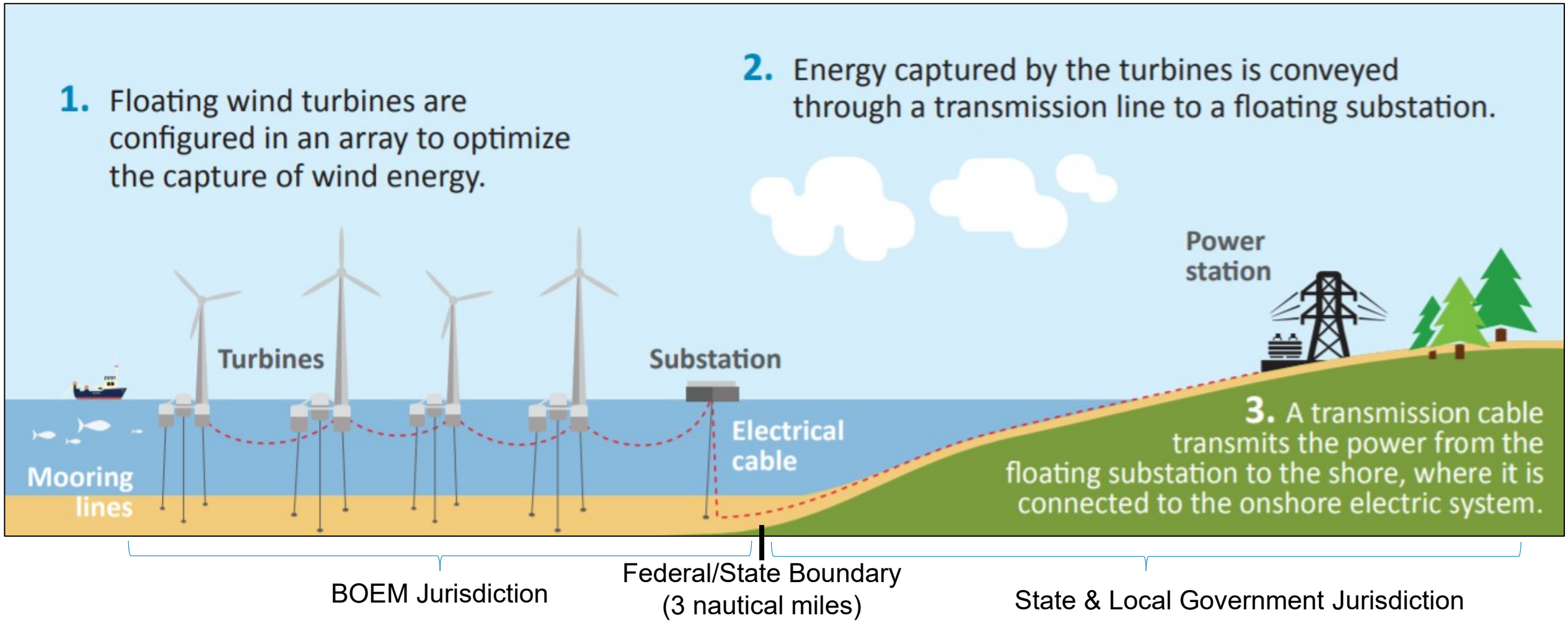
Jurisdiction in the Pacific Region:

- OCS typically extends from 3 to 200 nautical miles off the coast of California, Oregon, Washington, Hawai‘i, and the Pacific Territories
- Excludes National Marine Sanctuaries, National Monuments, and National Wildlife Refuges

Floating Offshore Wind

- Can help us reach areas once thought unattainable
- Can drive U.S. leadership in floating offshore wind design, development, and manufacturing
- **BOEM** is pursuing the Administration's goal to deploy 15 GW of floating offshore wind by 2035 – *enough to power more than 5 million American homes!*
- Collaboration and development efforts are underway in the Pacific Region and the Gulf of Maine

Floating Offshore Wind Energy Farm Basics



Installed Floating Offshore Wind

Source: https://www.principlepower.com/projects/kincardine-offshore-wind-farm

Hywind, Scotland
- Producing electricity since October 2017
- 5 turbines, 6-MW (30 MW total)
- Water depths 95 – 120 meters
- 25 km (15.5 miles) from shore

Windfloat Atlantic, Portugal
- Fully operational in July 2020
- 3, 8.4-MW (25 MW total) semi-submersible wind turbines
- Water depths up to 95 meters
- 18 km (11 miles) from shore

Kincardine, Scotland
- Producing electricity since 2021
- 5, 9.5-MW turbines, (50 MW total)
- Water depths 60 – 80 meters
- 15 km (9 miles) from shore

Hywind Tampen, Norway
- Power for offshore oil and gas installations
- Producing electricity since November 2022, fully operational Summer 2023
- 11, 8 to 8.6-MW turbines (88 MW total)
- Water depths 260 – 300 meters
- 140 km (87 miles) from shore

Opportunities with Offshore Wind

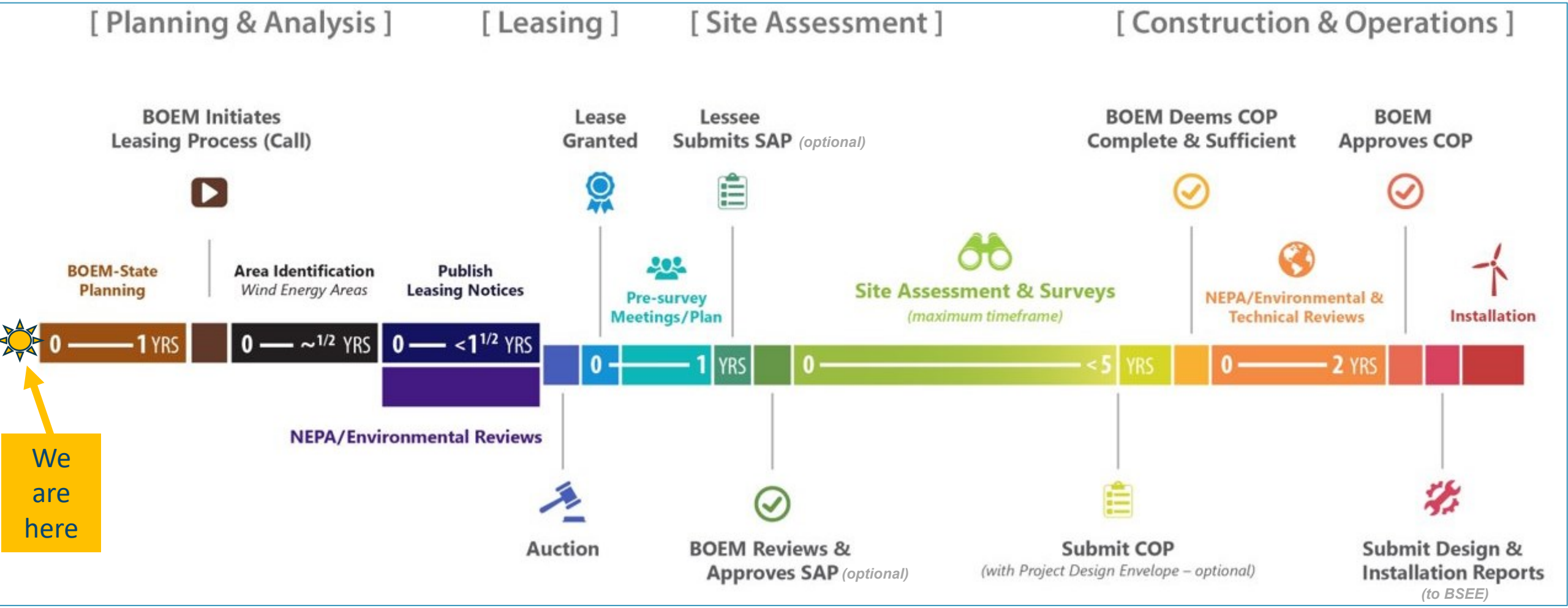
- **High Energy Potential:**
  - More efficient than onshore wind farms because of higher and more consistent wind to produce the same amount of energy
- **Proximity to Coastal Population Centers:**
  - Could produce large volumes of energy near coastal loads
- **Abundant Renewable Energy Source:**
  - Diversifies electricity supplies and may be complementary to solar generation
- **Economic Development:**
  - Offshore wind industry can create jobs, improve infrastructure, and stimulate local economies
- **Energy Independence:**
  - Another tool to understand trade-offs and pathways to achieving 100% renewable energy goals

BOEM 5-Year Leasing Schedule

- BOEM to potentially hold up to twelve new offshore lease sales over the next 5 years
- The leasing schedule includes four potential offshore lease sales in 2024, one each in 2025 and 2026, two in 2027, and four in 2028
- More details on offshore wind leasing path forward are here: https://www.doi.gov/pressreleases/secretary-haaland-announces-new-five-year-offshore-wind-leasing-schedule

Year	U.S. Outer Continental Shelf Region
2024	Central Atlantic, Gulf of Maine, Gulf of Mexico, and Oregon
2025	Gulf of Mexico
2026	Central Atlantic
2027	Gulf of Mexico and New York Bight
2028	California, a U.S. Territory, Gulf of Maine, and Hawai‘i

The Renewable Energy Leasing Process



BOEM welcomes consultation with Native Hawaiian communities and government agencies, and engagement with stakeholders throughout the process.

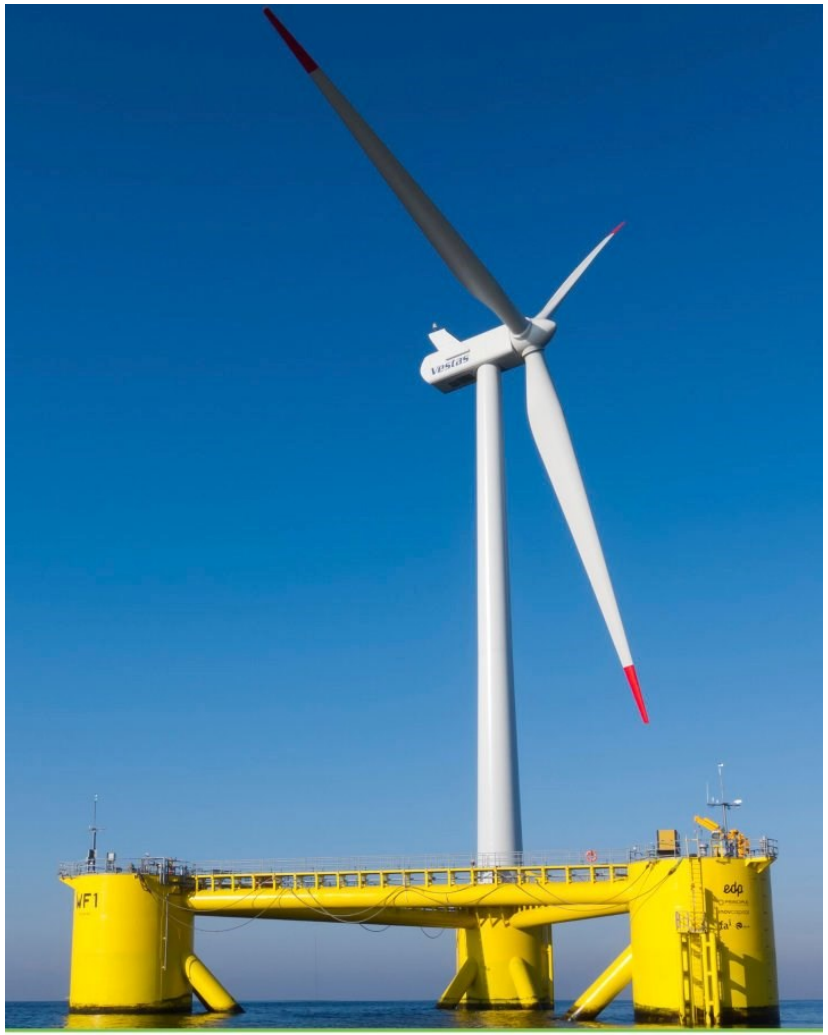
BOEM's Process: Many Opportunities for Deconfliction, Reductions in Impacts, and Public Comments

BOEM's multistep process to deconfliction and potential project development includes the following *formal* opportunities (public comment periods) for input to inform avoidance, minimization, and mitigation of impacts to environmental and cultural resources, as well as other uses of the marine environment and seabed:

- **Prior to leasing:**
  - Call for Information and Nominations
  - Draft Wind Energy Areas
  - Proposed Sale Notice and Environmental Assessment (EA) for leasing
- **After leasing:**
  - Programmatic Environmental Impact Statement (EIS) (case-by-case)
  - Project-level EIS

Renewable Energy Process: Planning & Analysis

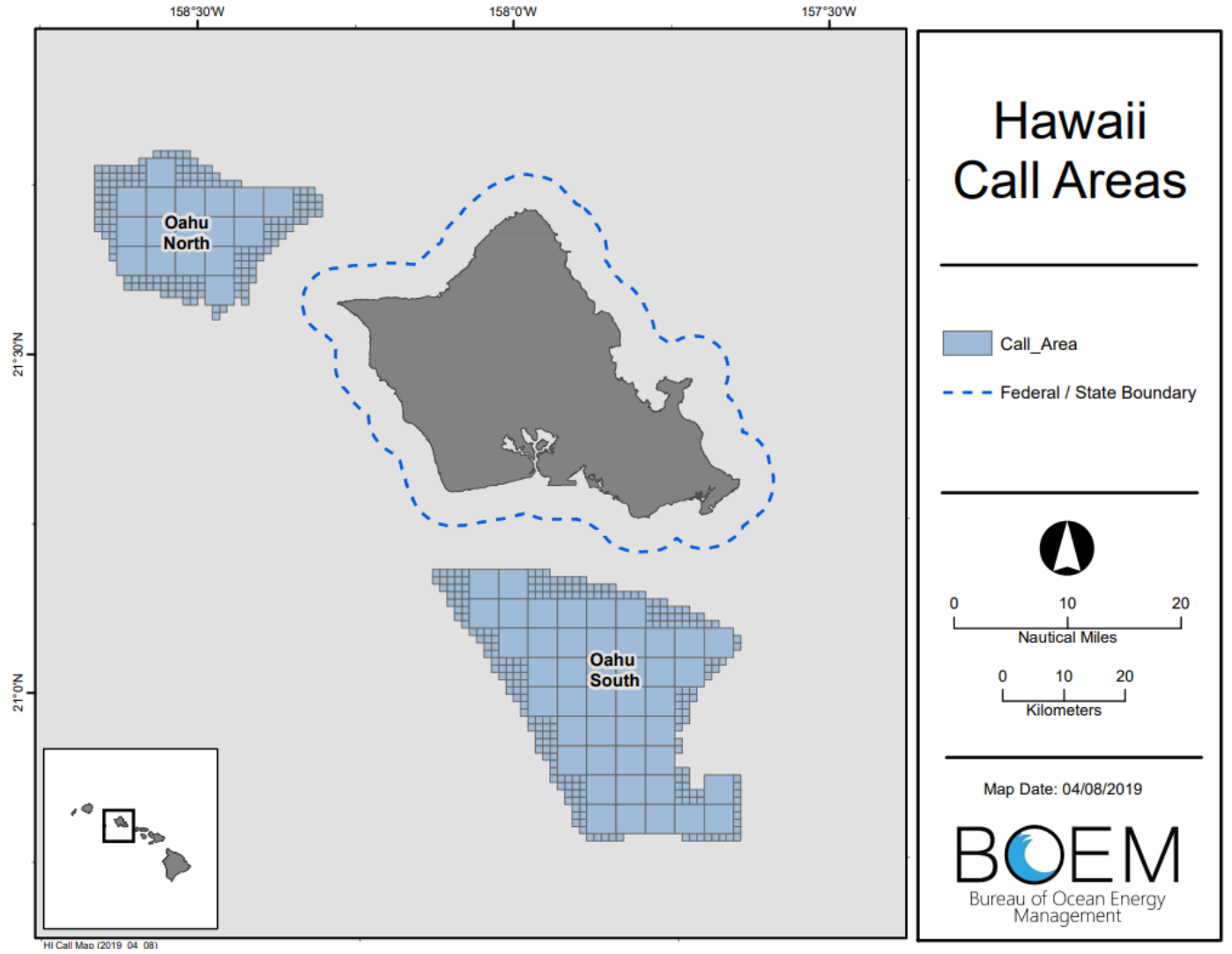
- Call for Information and Nominations (Call)
  - Calls for formal public comment about the area, uses, and concerns
  - Requests nominations of interest for development
- Wind Energy Area (WEA)
  - An area within a Call Area identified by BOEM for further evaluation, including environmental review
  - Basis for a Lease Area(s)
- Lease Area
  - Areas BOEM would offer for lease during a Lease Sale



Aguçadoura WindFloat Prototype
October 2011 - 4KM Offshore of Aguçadoura, Portugal
PRINCIPLE renewable energy delivered

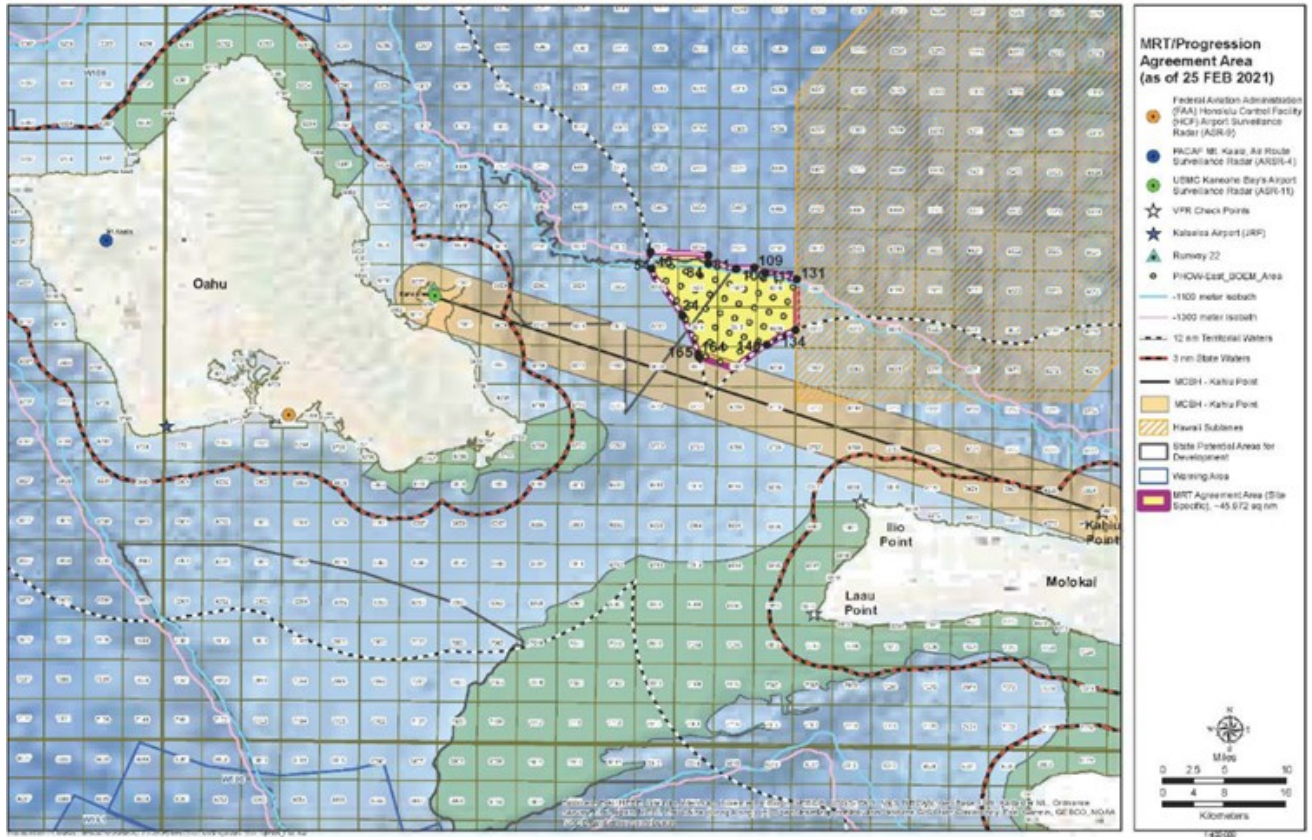
History of BOEM Leasing Area Process in Hawai‘i

- BOEM received three unsolicited lease requests in 2014 – 2015.
- BOEM held four Intergovernmental Task Force meetings between 2012 – 2016.
- BOEM issued a Call in 2016 that included Oahu North and Oahu South. Three companies submitted nominations.
- BOEM issued a Notice of Intent for an Environmental Assessment (EA) in 2016.
- BOEM did not move to Area Identification as further actions would need to address Department of Defense (DoD) mission compatibility concerns.
- BOEM continued coordination with the State and funded several studies to inform potential offshore wind planning.



Other Offshore Wind Activity in Hawai‘i Outside of BOEM's Process

- Aukahi Energy (formerly known as Progression) obtained a final mitigation agreement with DoD in August 2023 for an offshore wind facility.
- DoD Mitigation agreement area is located east of Oahu.
- BOEM is NOT currently reviewing any applications for this mitigation agreement area.
- The proposed area appears to be sufficient space for a commercial scale project (500 – 800 MWs).



Aukahi Energy Mitigation Agreement Area with Department of Defense

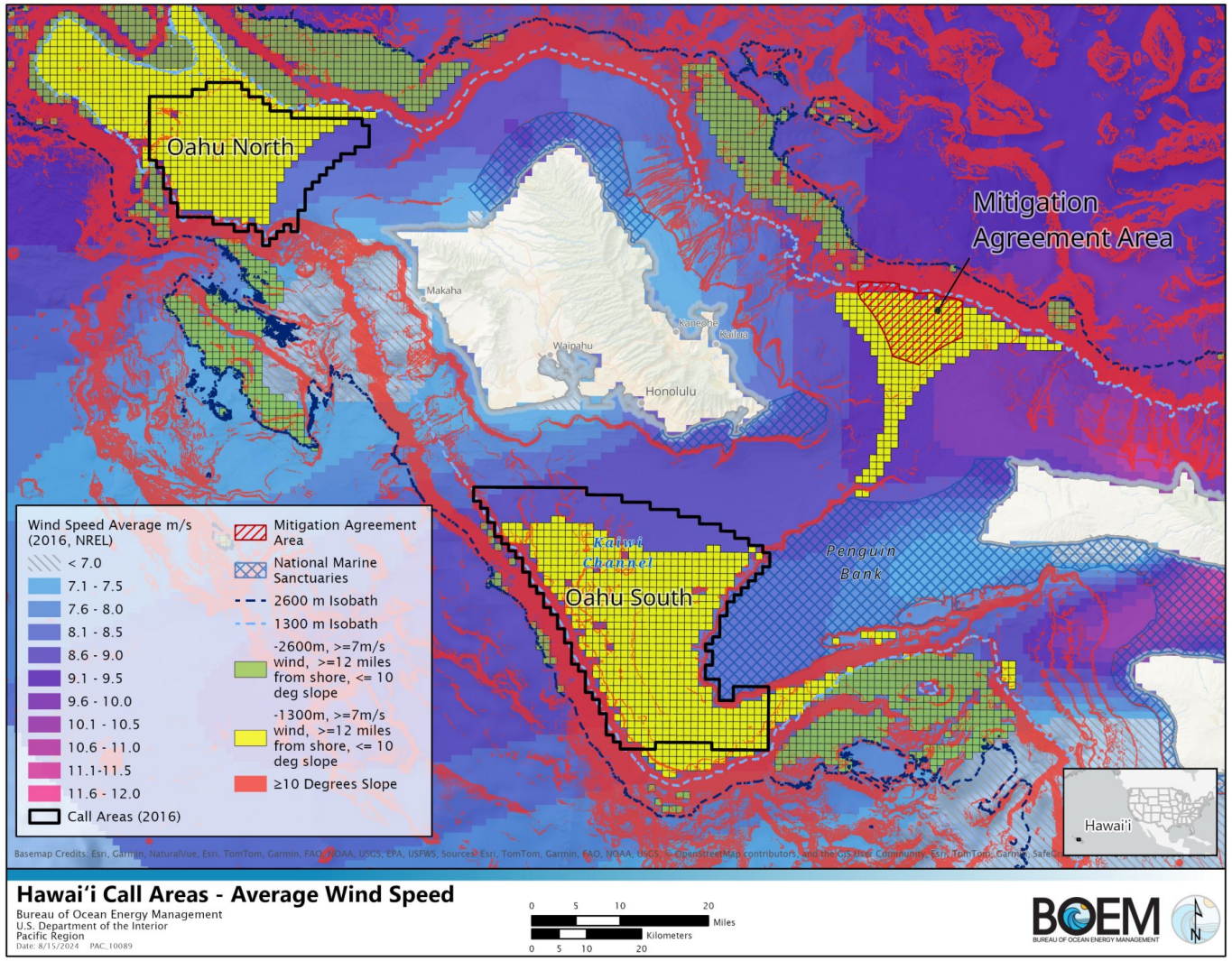
Offshore Wind Suitability: Technical Considerations

Wind Speeds

- Average ≥ 7 meters/second (13.6 knots)

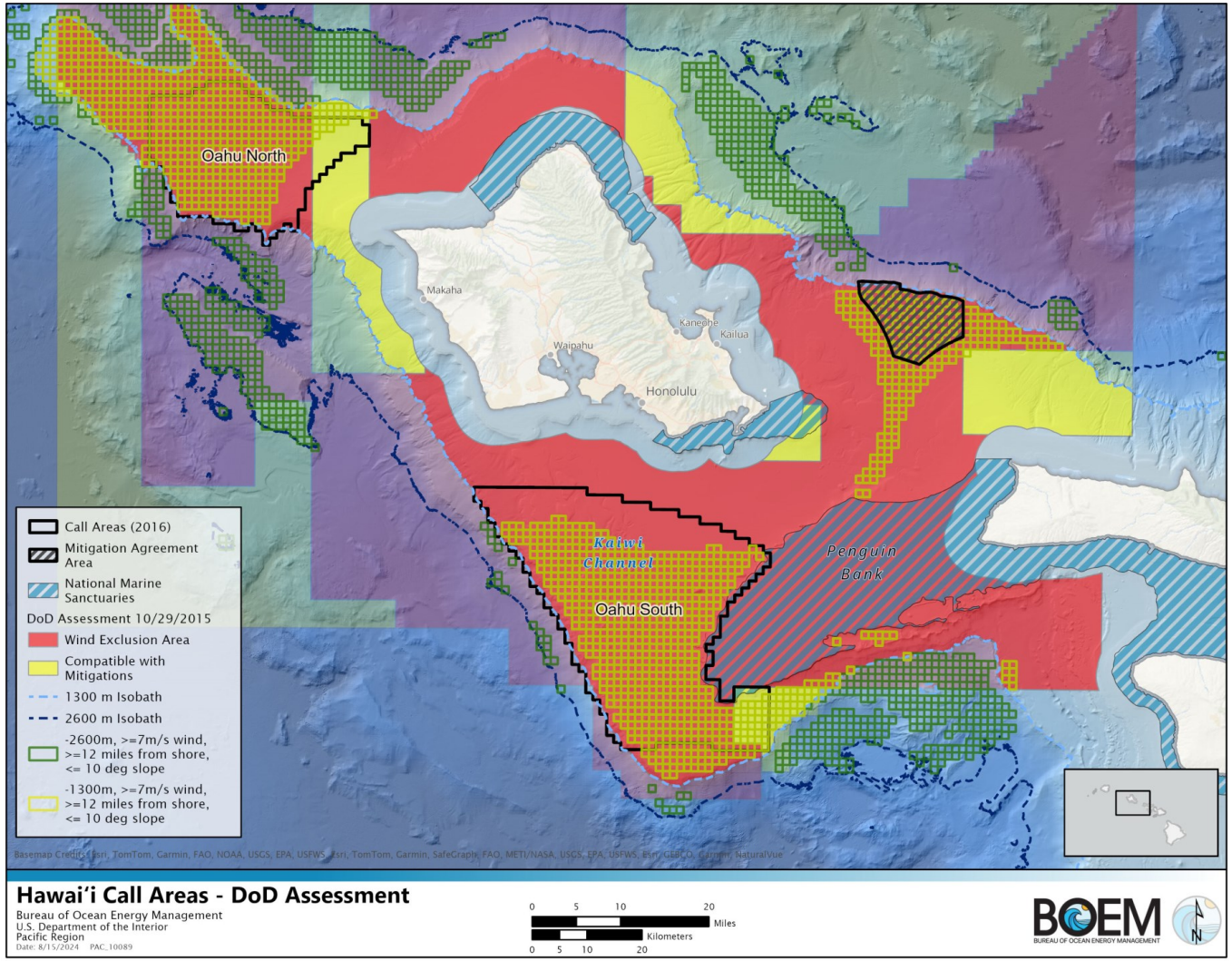
Water Depths and Slope

- Up to 1,300 meters deep for near-term commercialization
  - World's deepest floating offshore wind facilities are currently at 300 meters depth
- Up to 2,600 meters for longer term planning efforts
- Slope of 10 degrees or less
- Distance from shore of 8–12 miles



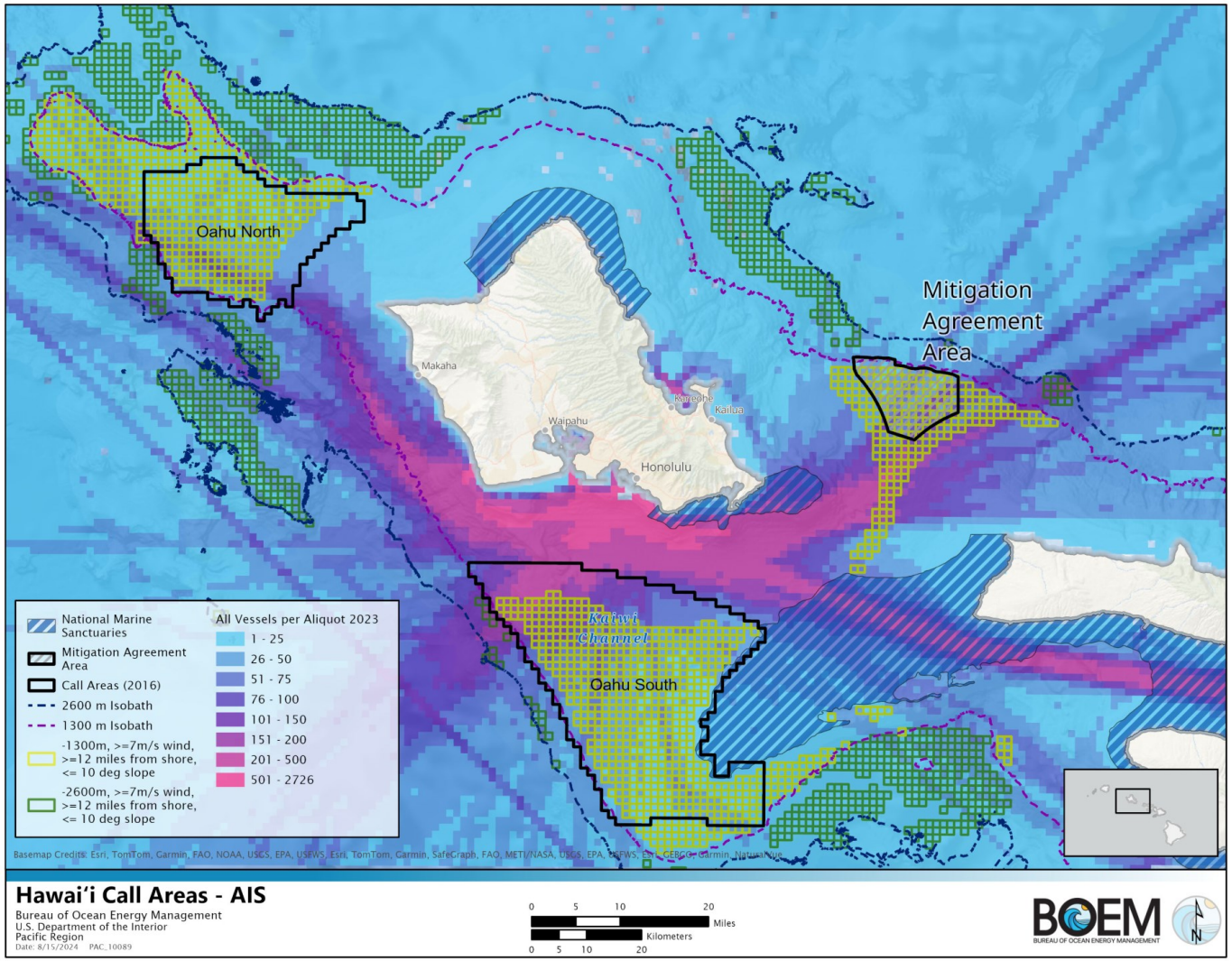
Offshore Wind Suitability: Initial DoD Compatibility Assessment

- In response to the 2016 Call, Department of Defense provided BOEM an offshore wind energy mission compatibility assessment
- Concluded that much of the area within the Call Areas was assessed as not compatible with offshore wind
- Requested no leasing in DoD Wind Exclusion Areas (red areas)



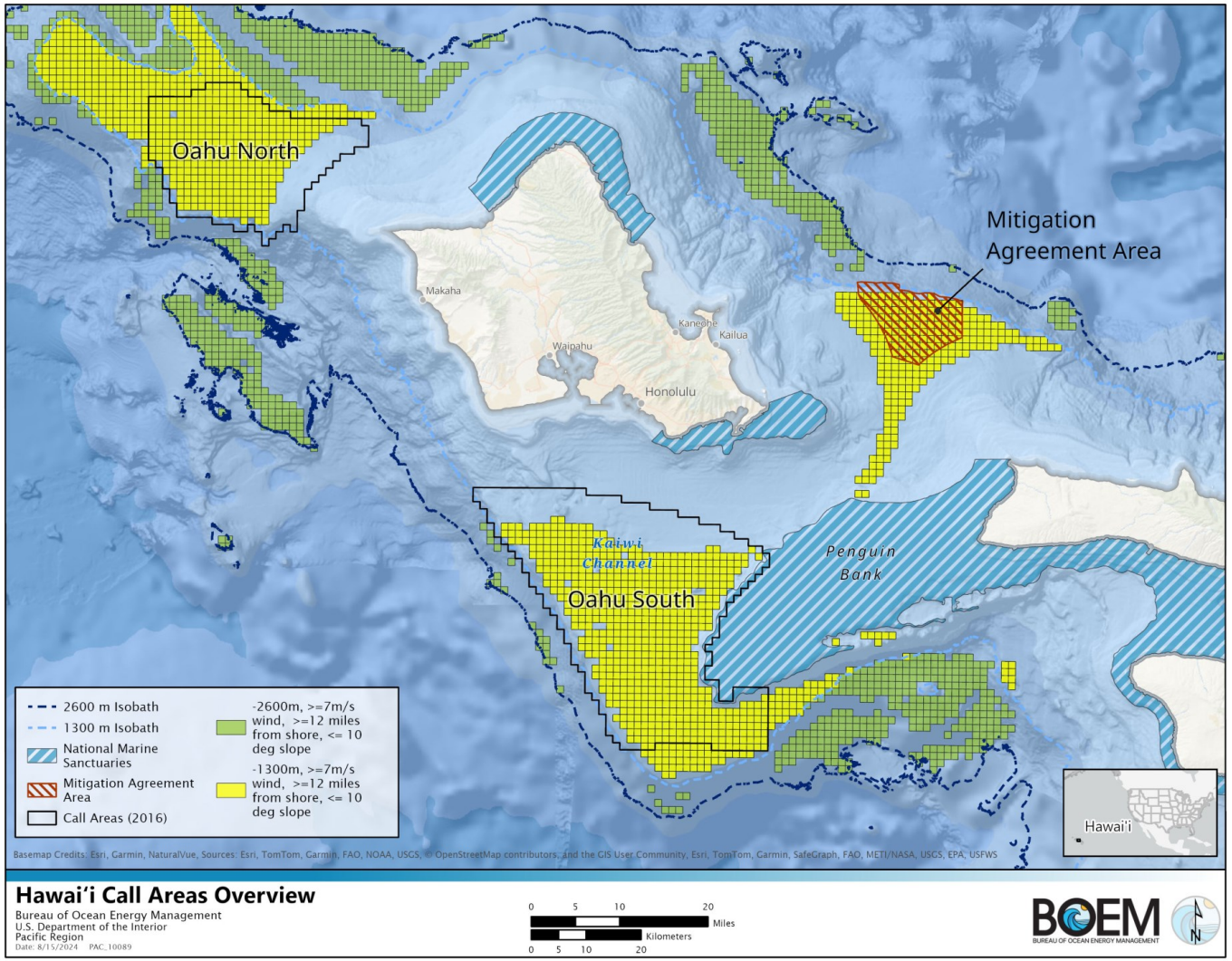
Offshore Wind Suitability: Oahu Vessel Activity

- Viability of any potential Call Areas must consider vessel traffic (AIS All Vessels).



Offshore Wind Suitability: Excludes National Marine Sanctuaries

- Any potential Call Areas must avoid National Marine Sanctuaries under the Outer Continental Shelf Lands Act.



Offshore Wind Status in Hawai‘i and Next Steps

- Hawai‘i State Energy Office (HSEO) is interested in possible offshore wind leasing to help meet the State's Renewable Energy Goals
- BOEM is starting to re-engage in offshore wind planning around Hawai‘i
- Questions for Task Force Discussion:
  - Clarification on BOEM's process
  - Input and discussion on the various OCS areas for engagement and data gathering
  - Best practices for outreach and engagement to solicit community input
  - Suggestions for data sources for future suitability analysis
- Stay engaged in Hawai‘i offshore wind activities: www.boem.gov/Hawaii

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BOEM Hawai‘i State Coordinator | Natalie Dayal | natalie.dayal@boem.gov | 805-384-6264

www.boem.gov/Hawaii

Break

Please return at 11:05 a.m. HST

Questions and Discussion on BOEM and State Presentations

Instructions – Task Force Members

- Mute yourself when not speaking.
- To enter the discussion queue:
  - **Place your name card on its side.** Please lower your card once you are done speaking.
  - **Use the "Raise your hand" button or press *9 on your phone.** Please lower your hand once you are done speaking.
    - If unable to speak, use the chat for technical assistance. Refrain from sidebar conversations.
- Task Force members are encouraged to keep their webcam on during introductions and discussions.

Lunch Break

Please Return at 1:00 p.m. HST

BOEM BUREAU OF OCEAN ENERGY MANAGEMENT

Overview of BOEM-Funded Environmental Research to Inform Renewable Energy Offshore Hawai`i

BOEM Hawai`i Intergovernmental Renewable Energy Task Force Meeting

Jeremy Potter | August 22, 2024

BOEM & Environmental Studies

BOEM's Mission:

Manage development of U.S. Outer Continental Shelf (OCS) energy, mineral, and geological resources in an environmentally and economically responsible way.

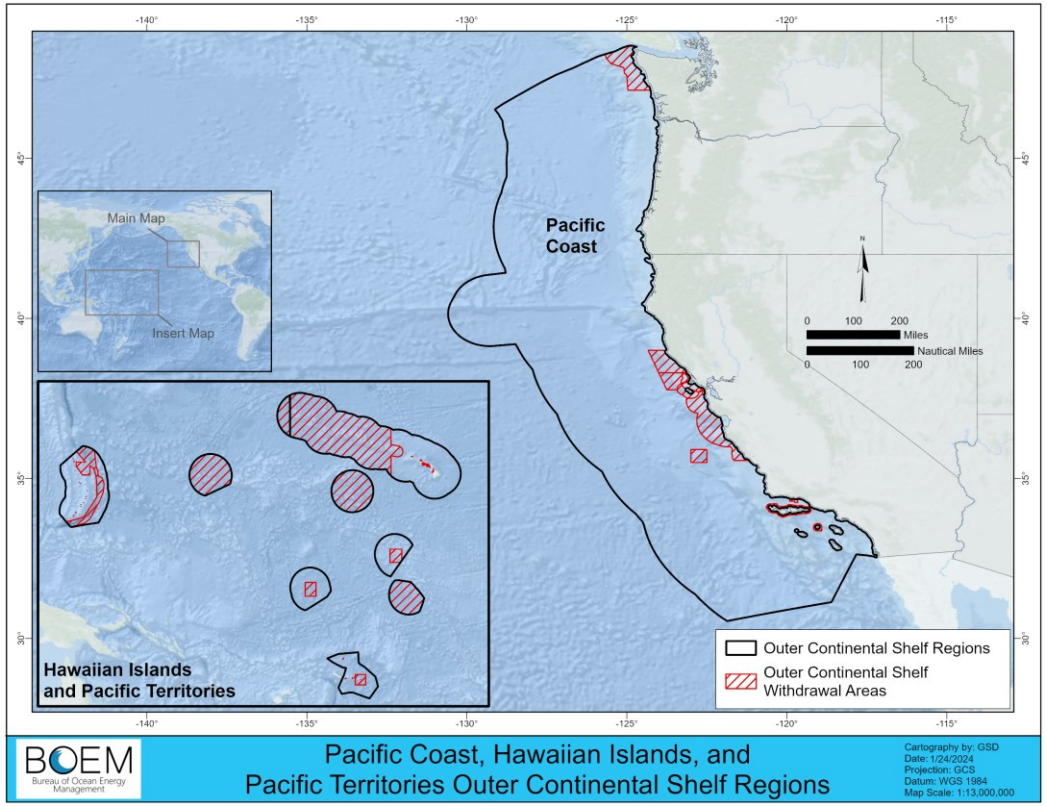
BOEM's Environmental Studies Program:

Conduct studies that will provide the information needed to predict, assess and manage impacts on the human, marine, and coastal environments from offshore energy and marine mineral development.

Research conducted by federal agencies, universities, consultants, and non-profits through interagency agreements, cooperative agreements, and contracts.

Pacific & Hawai`i OCS Environmental Studies:

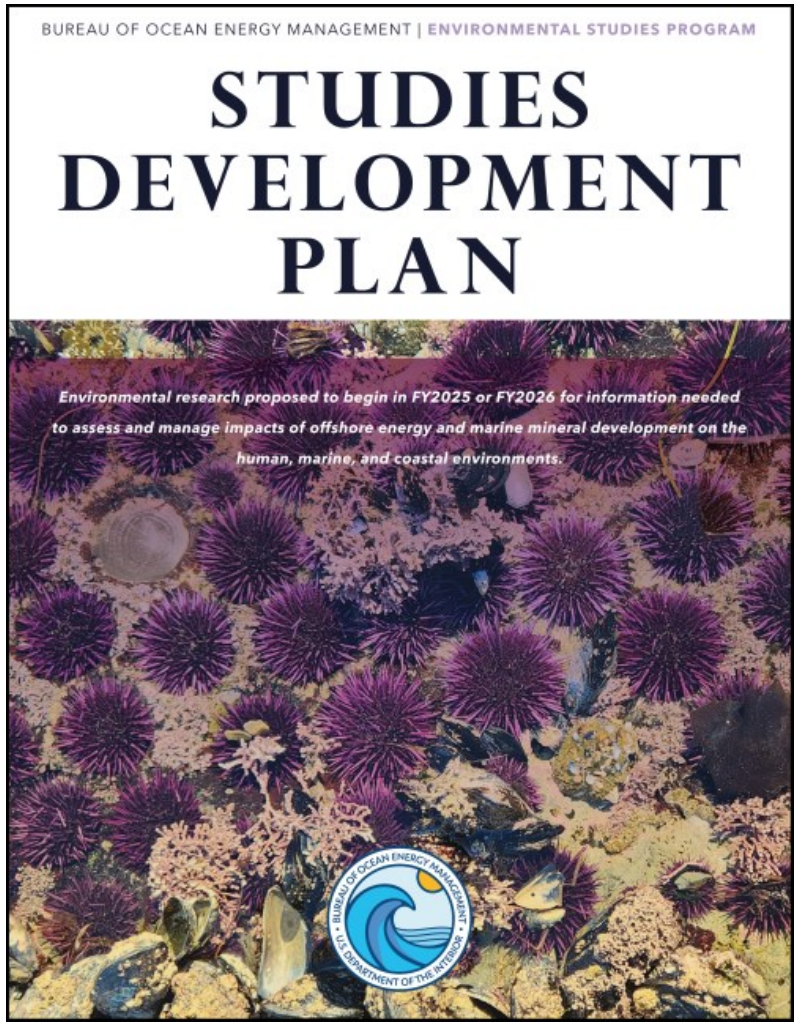
Since 1973: >330 studies conducted (>$150 Million)



BOEM Studies Development Planning

- Annual Studies Development Plan
- Two-year planning period
- Annual request for study ideas
- Brief descriptions of proposed studies in that two-year period

BOEM Environmental Studies Planning Website



BOEM-Funded Environmental Studies Offshore Hawai`i

- **17 Studies** (completed, ongoing, and planned)
- 2013 to present
- Most studies are geographically specific to the Hawai`i OCS; some include Hawai`i and other Pacific OCS areas.
- BOEM funding:

Status	# Studies	Funding
Completed	9	$3.7 M
Ongoing	5	$4.5 M
Planned	3	$1.0 M
Total	17	$9.2 M

- Study types:
  - 12 Biological / Ecological studies (seabirds, cetaceans, turtles, fish, invertebrates)
  - 3 Cultural / Marine Archaeological Resources studies
  - 2 Socioeconomic studies

BOEM-Funded Environmental Studies Offshore Hawai`i

9 COMPLETED STUDIES:

Duration	Study Title	Researcher	Biology / Ecology: Seabirds	Biology / Ecology: Cetaceans	Biology / Ecology: Turtles	Biology / Ecology: Fish	Biology / Ecology: Invertebrates	Cultural / Marine Archaeology	Socio-economics
2013-2017	Maritime Cultural Resources Site Assessment in the Main Hawaiian Islands	NOAA						✓	
2013-2015	Evaluating the Potential for Marine and Hydrokinetic Devices to Act as Artificial Reefs or Fish Aggregating Devices Based on Analysis of Surrogates in Tropical, Subtropical, and Temperate U.S. West Coast and Hawaiian Coastal Waters	H.T. Harvey & Associates				✓			
2013-2015	Current Ability to Assess Impacts of Electromagnetic Fields Associated with Marine and Hydrokinetic Technologies on Marine Fishes in Hawaii	Vantuna Research Group				✓			
2013-2020	Habitat Affinities and At-Sea Ranging Behaviors among Main Hawaiian Island Seabirds	USGS	✓						
2013-2016	Marine Biogeographic Assessment of the Main Hawaiian Islands	NOAA	✓	✓	✓	✓	✓		
2015-2016	Determining the Infrastructure Needs to Support Offshore Floating Wind and MHK Facilities on the Pacific West Coast and Hawaii	ICF International							✓
2016-2018	Environmental Sensitivity and Associated Risk to Habitats and Species Offshore Central California and Hawaii from Offshore Floating Wind Technologies	ICF International	✓	✓	✓	✓	✓		
2014-2019	Synopsis of Research Programs that can Provide Baseline and Monitoring Information for Offshore Energy Activities in the Pacific Region: Seabird and Marine Mammal Surveys in the Pacific Region	USGS	✓	✓					
2017-2021	Pacific Marine Assessment Partnership for Protected Species (PacMAPPS) I: Hawaiian Archipelago	NOAA	✓	✓	✓				

BOEM-Funded Environmental Studies Offshore Hawai`i

5 ONGOING STUDIES:

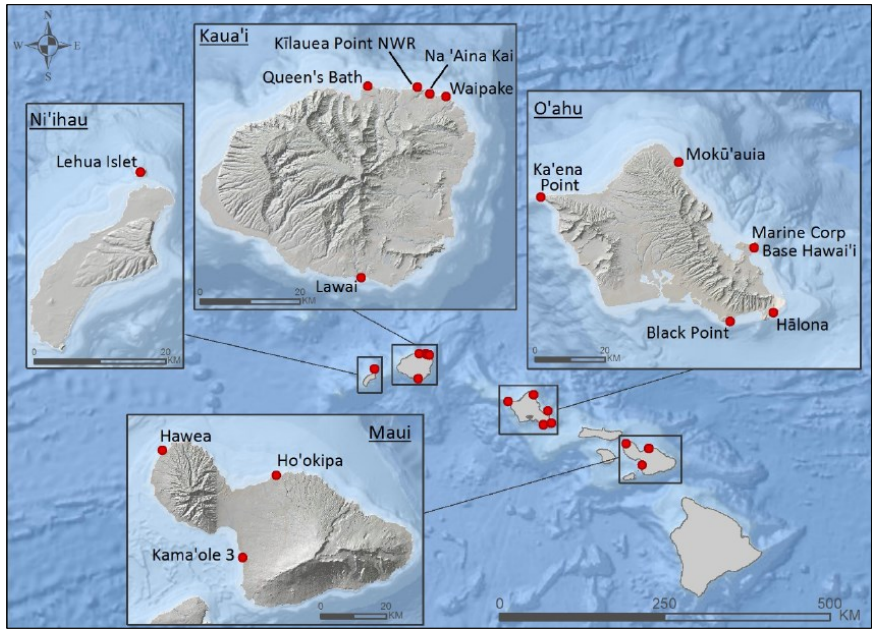
Duration	Study Title	Researcher	Biology / Ecology: Seabirds	Biology / Ecology: Cetaceans	Biology / Ecology: Turtles	Biology / Ecology: Fish	Biology / Ecology: Invertebrates	Cultural / Marine Archaeology	Socio-economics
2017-2024	Atlas of Main Hawaiian Island Seabird Colonies	USGS	✓						
2022-2024	Tag You're it! Habitat Use of Whales of the U.S. West Coast and Hawai'i	OSU & Navy		✓					
2023-2028	Pacific Marine Assessment Partnership for Protected Species (PacMAPPS) II: Hawaiian Archipelago	NOAA	✓	✓	✓				
2023-2025	Evaluating Hawaiian Fisheries and Potential Impacts of Offshore Wind Energy Development	AECOM							✓
2024-2027	Characterization of Water Column Habitats to Understand Potential Impacts from Deepwater Energy and Mineral Development	UAF					✓		

3 PLANNED NEW STUDIES:

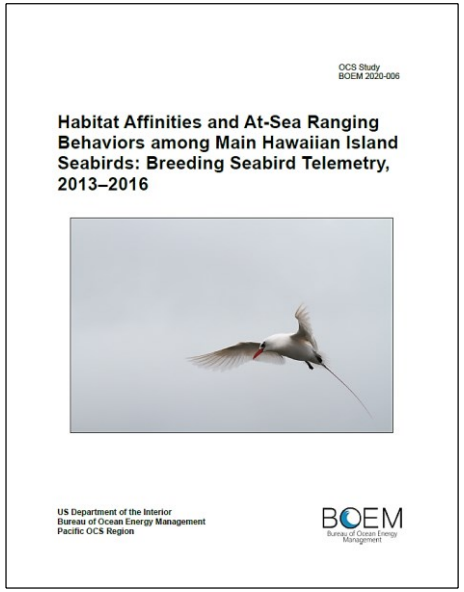
Duration	Study Title	Researcher	Biology / Ecology: Seabirds	Biology / Ecology: Cetaceans	Biology / Ecology: Turtles	Biology / Ecology: Fish	Biology / Ecology: Invertebrates	Cultural / Marine Archaeology	Socio-economics
2024-2027	Ka`iwi Channel, Hawai`i Traditional Cultural Landscapes	TBD						✓	
2025-2027	Traditional Native Hawaiian Voyaging and Cultural Fishing and Boating Practices on the OCS	TBD						✓	
2025-2027	Comprehensive Vulnerability of Marine Birds to Inform Offshore Wind Energy Development Throughout Waters Surrounding Pacific Offshore Continental Shelf of Hawai`i	USGS	✓						

Habitat Affinities and At-Sea Ranging Behaviors among Main Hawaiian Island Seabirds

- 2013-2020 Partnership between BOEM and U.S. Geological Survey
- Used telemetry to track at-sea distributions and ranging behaviors of five seabird species breeding in the Main Hawaiian Islands:
  - Red-tailed Tropicbird, Laysan Albatross, Wedge-tailed Shearwater, Brown Booby, Red-footed Booby
- Tracked individuals from 14 different sites
- Classified behavior as resting, transiting, searching/foraging
- Used GPS altitude data to estimate:
  - Species-specific flight height
  - Time spent flying in rotor-swept zone



Study sites in the Main Hawaiian Islands where marine birds were tracked, 2013-2016.



https://espis.boem.gov/final%20reports/BOEM_2020-006.pdf

- BOEM Cost: $900,000
  BOEM Contact: David.Pereksta@boem.gov

Habitat Affinities and At-Sea Ranging Behaviors among Main Hawaiian Island Seabirds

Results for Red-tailed Tropicbird

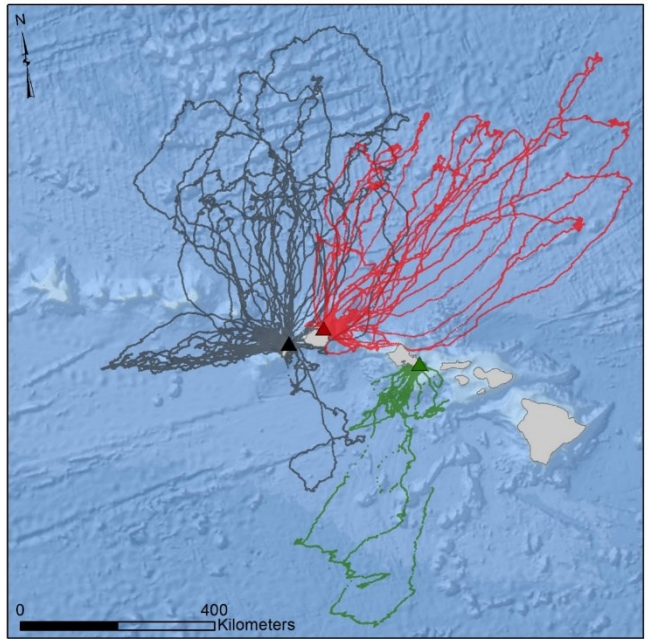


Figure 21. Raw GPS tracking data.

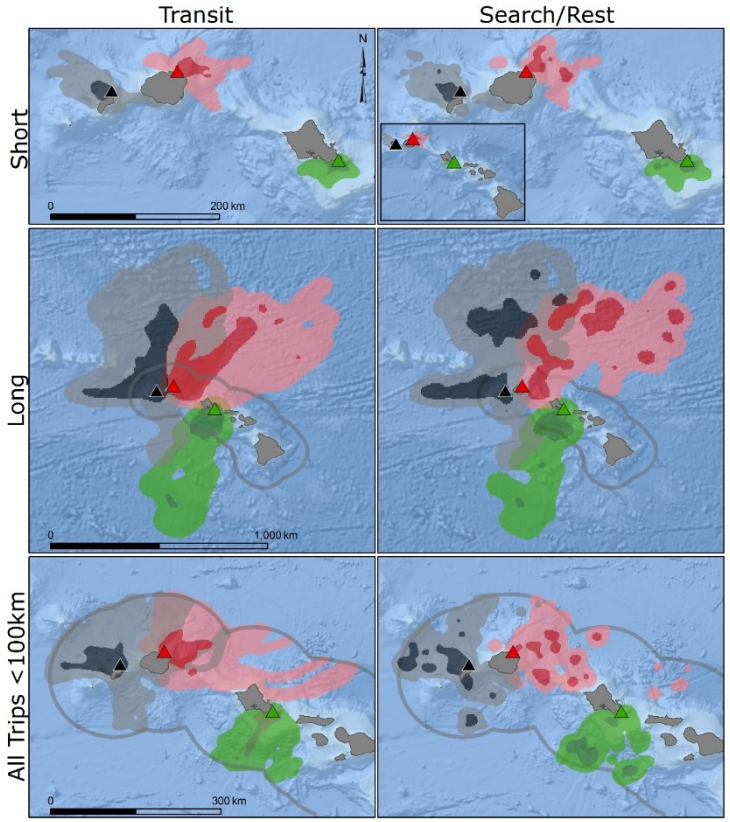


Figure 27. Kernel density distributions for short, long, and all trips.

Trip Type	Site (Year)	Birds	Trips	Duration (h)	Range (km)	Dist. Traveled (km)
Short	Hālona (2015)	8	19	2.3 ± 1.1	22.4 ± 11.0	50.2 ± 24.7
	Kīlauea Point (2016)	6	21	3.1 ± 1.7	33.6 ± 17.7	81.8 ± 48.0
	Lehua (2014)	8	19	2.7 ± 1.6	20.4 ± 12.9	51.5 ± 34.2
	Lehua (2015)	7	23	3.4 ± 2.1	31.3 ± 17.2	79.4 ± 49.7
	Short Total	**29**	**82**	**2.9 ± 1.7**	**27.4 ± 15.9**	**66.5 ± 42.9**
Long	Hālona (2015)	9	13	55.4 ± 38.4	186.4 ± 176.2	460.1 ± 277.7
	Kīlauea Point (2016)	13	18	89.6 ± 55.6	387.4 ± 244.1	1,069.9 ± 642.8
	Lehua (2014)	14	18	52.4 ± 34.2	182.4 ± 135.0	534.6 ± 355.7
	Lehua (2015)	16	21	103.0 ± 59.7	352.5 ± 178.4	1,120.1 ± 555.8
	Long Total	**52**	**70**	**79.9 ± 54.0**	**296.3 ± 206.2**	**888.0 ± 581.7**
All	Hālona (2015)	10	32	18.6 ± 32.2	68.3 ± 116.2	139.3 ± 210.7
	Kīlauea Point (2016)	16	39	43.0 ± 57.4	196.9 ± 242.4	537.9 ± 659.6
	Lehua (2014)	17	37	26.2 ± 34.2	99.2 ± 124.2	279.6 ± 343.9
	Lehua (2015)	16	44	54.4 ± 65.8	184.6 ± 203.2	612.4 ± 658.0
	All Trips Total	**59**	**152**	**37.6 ± 52.7**	**146.1 ± 191.6**	**427.0 ± 561.7**

Table 4. Mean foraging trip duration, maximum range, and distance traveled.

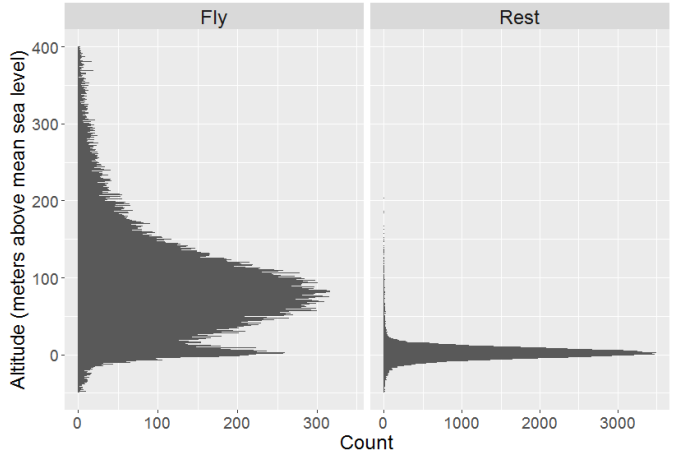
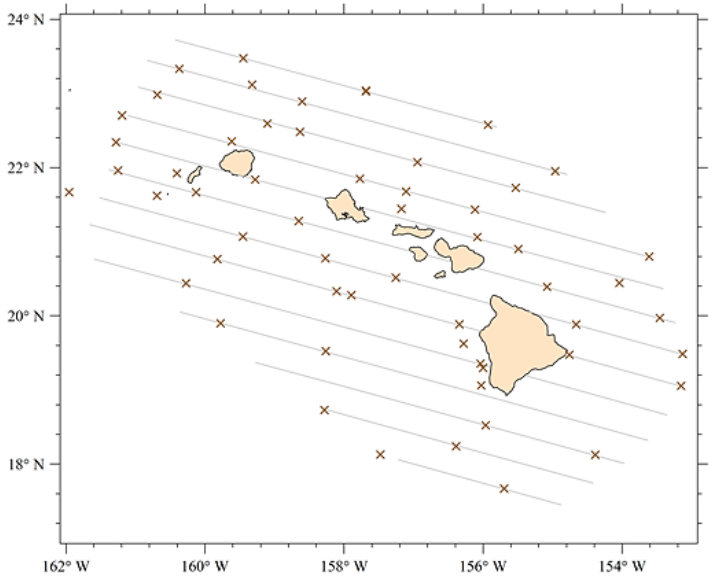
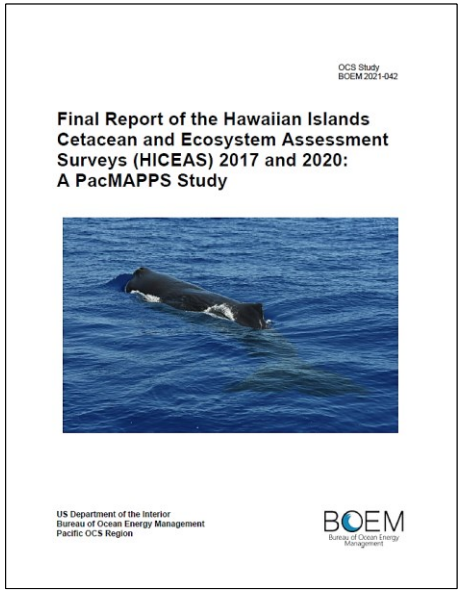


Figure 26. Histograms of altitude measurements for flying (left) and resting (right).

Pacific Marine Assessment Partnership for Protected Species (PacMAPPS) – Hawaiian Archipelago

- Federal partnership to conduct shipboard surveys of marine mammals, seabirds, sea turtles offshore Hawaiian Islands
- PacMAPPS I (2017-2021): NOAA, BOEM & Navy
  PacMAPPS II (2023-2028): NOAA & BOEM
- PacMAPPS surveys provide consistent time series of data about abundance of taxa across survey years
- Winter 2020 survey provided the first systematic density estimates for baleen whales during winter months in Hawai`i
- 2017 and winter 2020 surveys were the first in Hawai`i to use drifting acoustic buoy technology; provided new insights into deep-diving species, beaked whales, sperm whales
- BOEM Cost: PacMAPPS I: $0.8 M; PacMAPPS II: $2.2 M
  BOEM Contact: Desray.Reeb@boem.gov



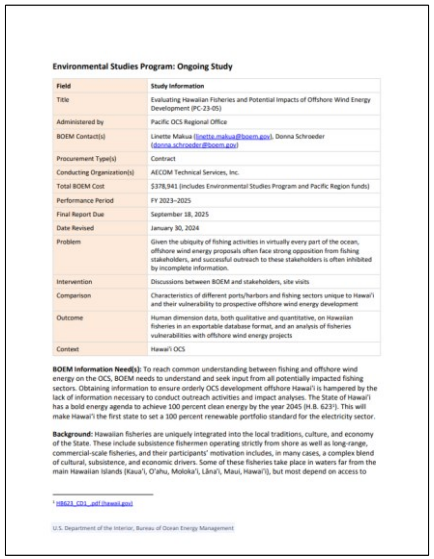


https://espis.boem.gov/final%20reports/BOEM_2021-042.pdf

Photo courtesy of NOAA Fisheries/Andrea Bendlin

Evaluating Hawaiian Fisheries and Potential Impacts of Offshore Wind Energy Development

- 2023-2025 study conducted by AECOM Technical Services (Honolulu)
- Objective: Identify potential effects offshore wind energy development may have on Hawaiian fishing resources and infrastructure
- Engaging individuals knowledgeable about recreational, subsistence, and commercial fisheries (including their integration into local traditions, culture, and the State's economy) in structured discussions to understand issues and areas of importance to Native Hawaiians and local community (e.g., ports, harbors, and coastal areas)
- 9 Interview sessions:
  - O`ahu: 3 sessions in June 2024
  - Moloka`i: 3 sessions in June 2024
  - O`ahu: 3 sessions in December 2024
- BOEM Cost: $379,000
  BOEM Contact: Linette.Makua@boem.gov



Environmental Studies Program: Ongoing Study

Field	Study Information
Title	Evaluating Hawaiian Fisheries and Potential Impacts of Offshore Wind Energy Development (PC-23-05)
Administered by	Pacific OCS Regional Office
BOEM Contact(s)	Linette Makua (linette.makua@boem.gov), Donna Schroeder (donna.schroeder@boem.gov)
Procurement Type(s)	Contract
Conducting Organization(s)	AECOM Technical Services, Inc.
Total BOEM Cost	$378,941 (includes Environmental Studies Program and Pacific Region funds)
Performance Period	FY 2023–2025
Final Report Due	September 18, 2025
Date Revised	January 30, 2024
Problem	Given the ubiquity of fishing activities in virtually every part of the ocean, offshore wind energy proposals often face strong opposition from fishing stakeholders, and successful outreach to these stakeholders is often inhibited by incomplete information.
Intervention	Discussions between BOEM and stakeholders, site visits
Comparison	Characteristics of different ports/harbors and fishing sectors unique to Hawai'i and their vulnerability to prospective offshore wind energy development
Outcome	Human dimension data, both qualitative and quantitative, on Hawaiian fisheries in an exportable database format, and an analysis of fisheries vulnerabilities with offshore wind energy projects
Context	Hawai'i OCS

BOEM Information Need(s): To reach common understanding between fishing and offshore wind energy on the OCS, BOEM needs to understand and seek input from all potentially impacted fishing sectors. Obtaining information to ensure orderly OCS development offshore Hawai'i is hampered by the lack of information necessary to conduct outreach activities and impact analyses. The State of Hawai'i has a bold energy agenda to achieve 100 percent clean energy by the year 2045 (H.B. 623[1]). This will make Hawai'i the first state to set a 100 percent renewable portfolio standard for the electricity sector.

Background: Hawaiian fisheries are uniquely integrated into the local traditions, culture, and economy of the State. These include subsistence fishermen operating strictly from shore as well as long-range, commercial-scale fisheries, and their participants' motivation includes, in many cases, a complex blend of cultural, subsistence, and economic drivers. Some of these fisheries take place in waters far from the main Hawaiian Islands (Kaua'i, O'ahu, Moloka'i, Lāna'i, Maui, Hawai'i), but most depend on access to

[1] HB623_CD1_.pdf (hawaii.gov)

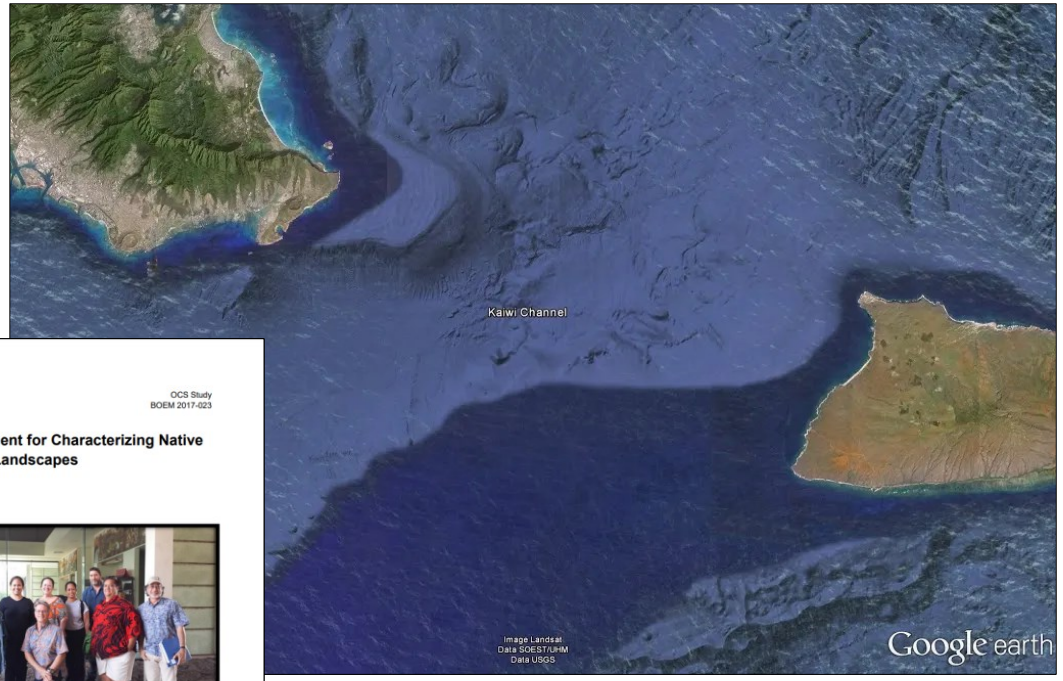
U.S. Department of the Interior, Bureau of Ocean Energy Management

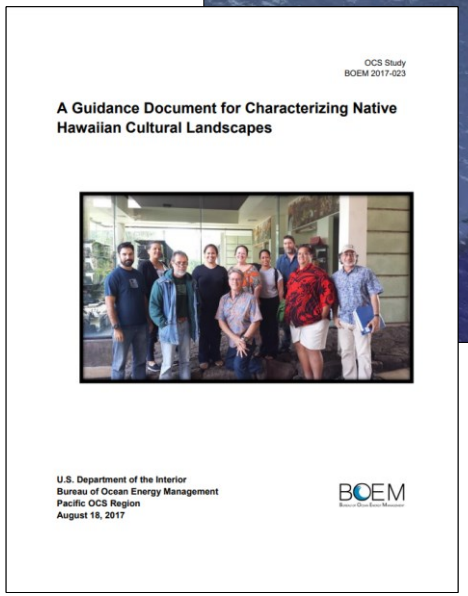
Study Profile

Interview session with fishermen in Moloka`i in June 2024.

Ka`iwi Channel, Hawai`i Traditional Cultural Landscapes

- New study (cooperative agreement) to start in 2024
- Synthesize archival materials, oral histories, and traditional knowledge of the O`ahu viewshed and offshore environment, focusing on the Ka`iwi Channel between O`ahu and Moloka`i
- Develop a holistic assessment of the cultural significance of resources that could be affected by wind energy development
- Build on the 2013-2017 study "Maritime Cultural Resources Site Assessment in the Main Hawaiian Islands"
- BOEM Cost: $450,000
  BOEM Contact: Jeneva.Wright@boem.gov




OCS Study
BOEM 2017-023

A Guidance Document for Characterizing Native Hawaiian Cultural Landscapes

U.S. Department of the Interior
Bureau of Ocean Energy Management
Pacific OCS Region
August 18, 2017

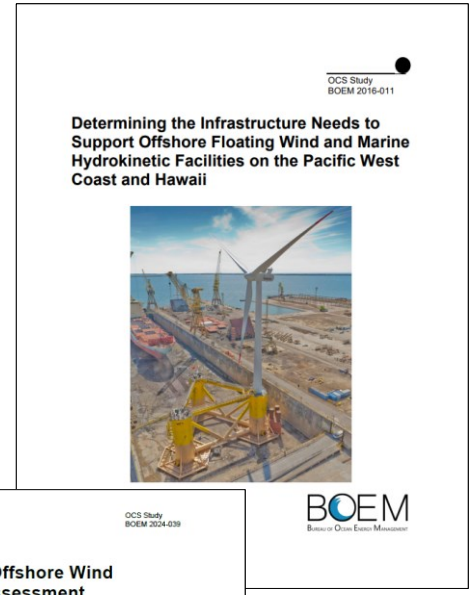
BOEM

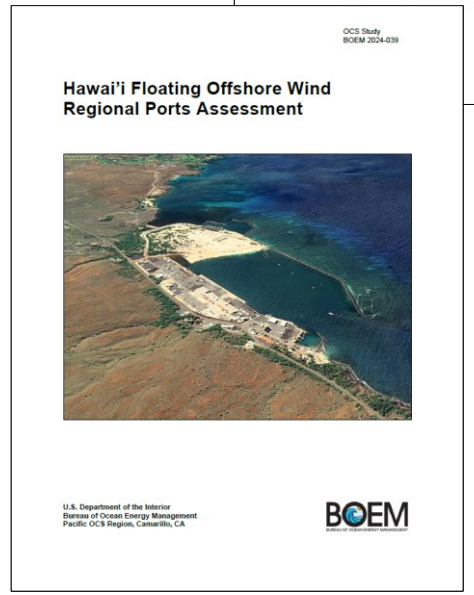
NATIVE HAWAIIAN CULTURAL LANDSCAPE: Any place in which a relationship, past or present, exists between a spatial area, resource, and an associated group of indigenous people whose cultural practices, beliefs, or identity connects them to that place. A Native Hawaiian cultural landscape is determined by and known to a culturally related group of indigenous people with relationships to that place.

https://espis.boem.gov/final%20reports/5621.pdf

Hawaii OCS Technical (non-environmental) Studies

- Ongoing:
  - Collection of Metocean Resource Characterization Data off Hawaii (scheduled for completion in 2024)
- Completed:
  - Determining the Infrastructure Needs to Support Offshore Floating Wind and Marine Hydrokinetic Facilities on the Pacific West Coast and Hawaii
    BOEM 2016-011: https://espis.boem.gov/final%20reports/5503.pdf
  - Floating Offshore Wind in Hawaii: Potential for Jobs and Economic Impacts from Two Future Scenarios
    BOEM 2016-032: https://www.boem.gov/2016-032
  - The Cost and Feasibility of Floating Offshore Wind Energy in the O`ahu Region
    BOEM 2021-070: https://www.boem.gov/BOEM-2021-070
  - Hawai`i Floating Offshore Wind Regional Ports Assessment
    BOEM 2024-039: https://www.boem.gov/BOEM_2024-039





Questions and Discussion on BOEM and State Presentations

Instructions – Task Force Members

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- To enter the discussion queue:
  - **Place your name card on its side.** Please lower your card once you are done speaking.
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    - If unable to speak, use the chat for technical assistance. Refrain from sidebar conversations.
- Task Force members are encouraged to keep their webcam on during introductions and discussions.

Next Steps and Closing Remarks

Closing Remarks

Doug Boren, BOEM Pacific Regional Director

Closing Remarks

Mark Glick, HSEO Chief Energy Officer

Task Force Meeting Adjourn

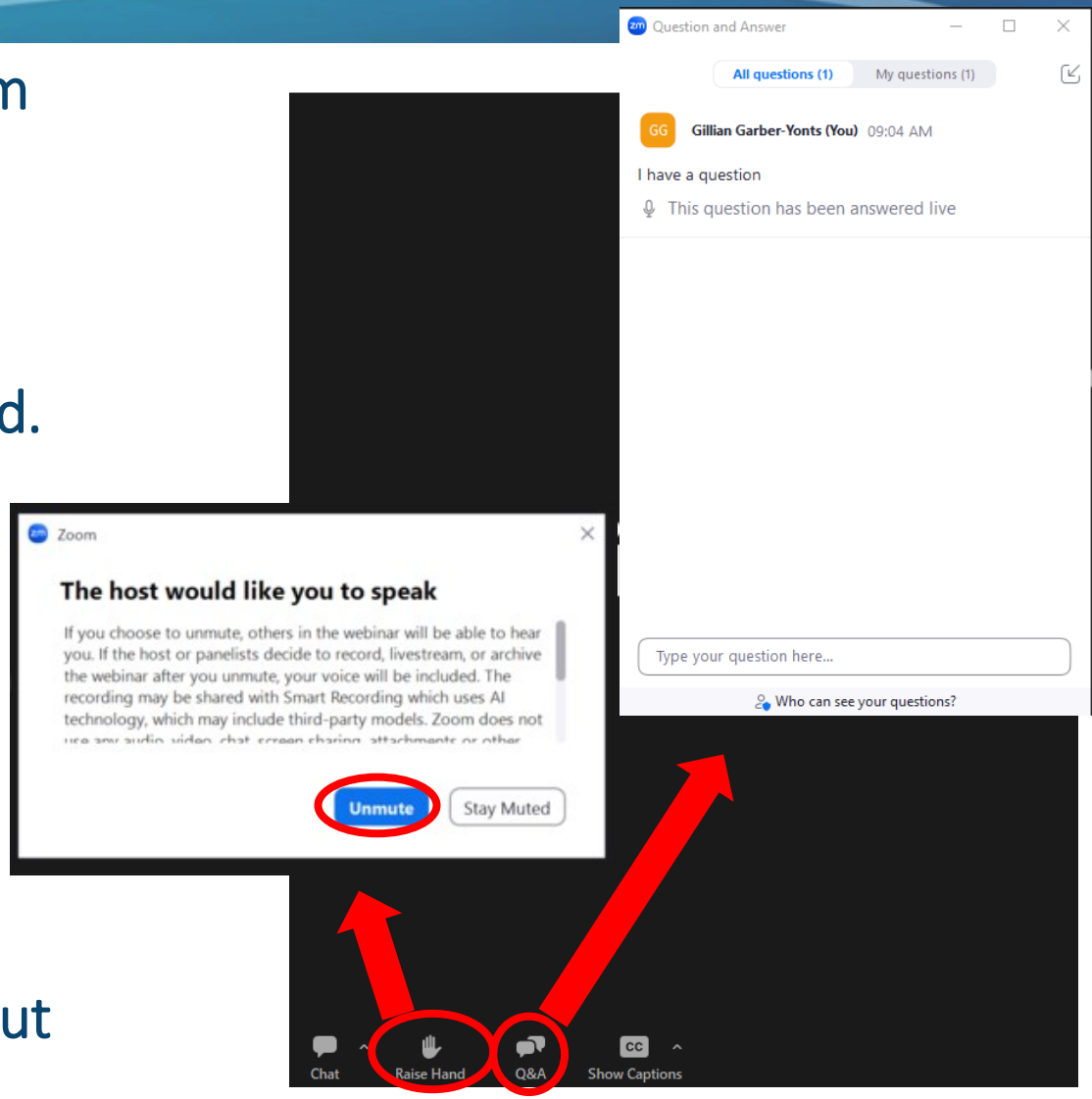
Break

Please return at 3:00 p.m. HST

Public Input Opportunity

Instructions - Public Q&A

- We will go back and forth between those in the room and those online.
- Note that any input during this time is not official public record.
- Input should relate to topics the Task Force discussed.
- To enter the queue:
  - Get a number at the sign-in table.
  - Use the raise hand button or press *9.
  - Kūpuna will be invited to speak first.
- Please be mindful of speaking time.
  - One question per person
- Due to time constraints, you may submit written input via a card at the sign-in table or the Q&A pod.



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Thank you!