

DOCKETED

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Morro Bay Offshore

a 1,000 MW floating offshore wind farm



CA Energy Commission Workshop on Offshore Renewable Energy

March 3, 2017

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Morro Bay Offshore: Project Location - Clean Energy, Clean Views

Site Selection Process

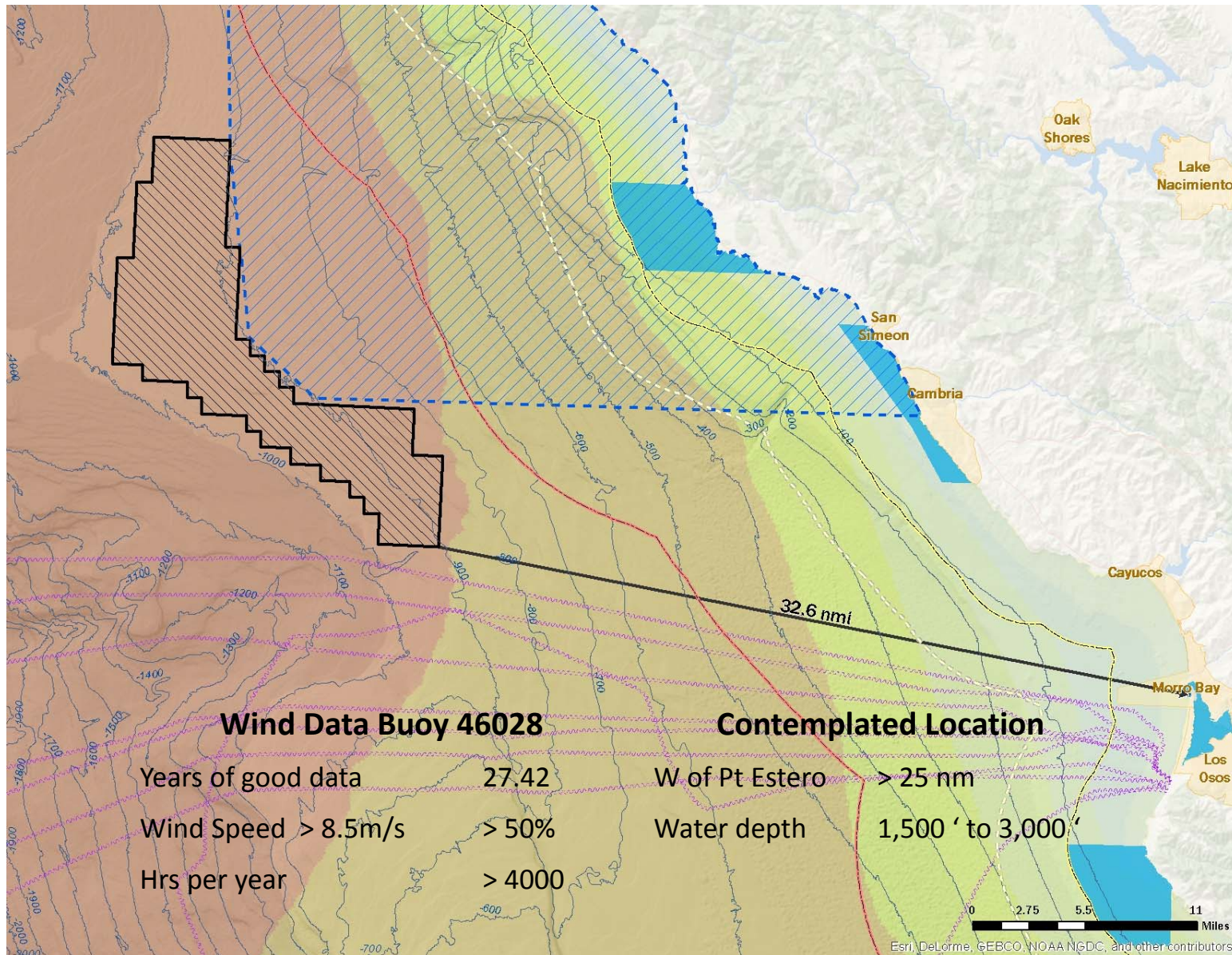
- Followed the Power Act of 2005 that designates BOEM as the agency to lease OCS for the RE projects
- Wind resource > 8.5 m/sec
- Distance to Shore
 - Pt. Estero – 24.5 nmi
 - Cambria – 20.9 nmi
 - San Simeon >30 nmi
 - Los Osos – 33 nmi
 - Morro Bay – 32.1 nmi to the water outflow tunnel entrance

Site has been **OPTIMIZED** to reduce impacts on:

- Fishing grounds and habitats
- Offshore birds and marine mammals
- Shipping lanes
- Minimize visibility



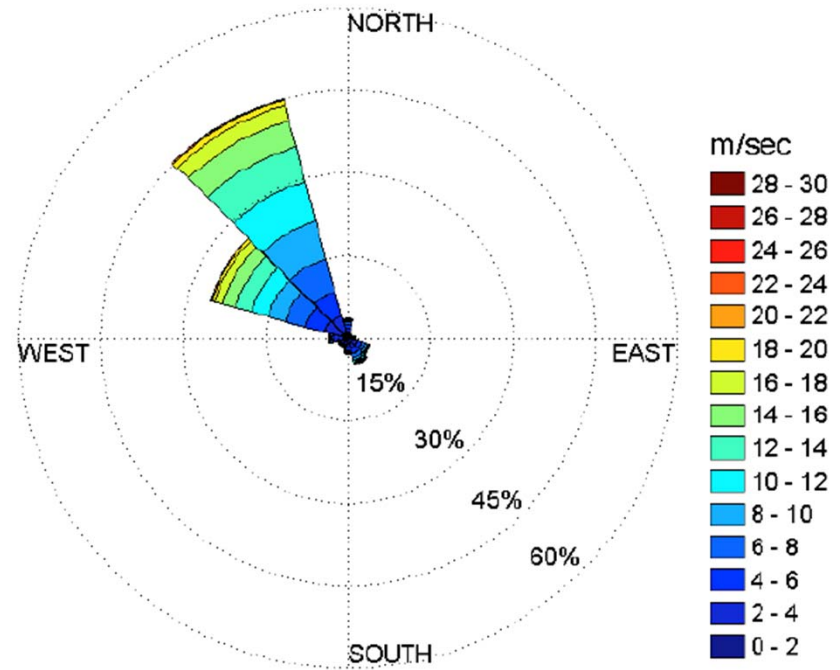
Morro Bay Offshore: Location / Wind Resource





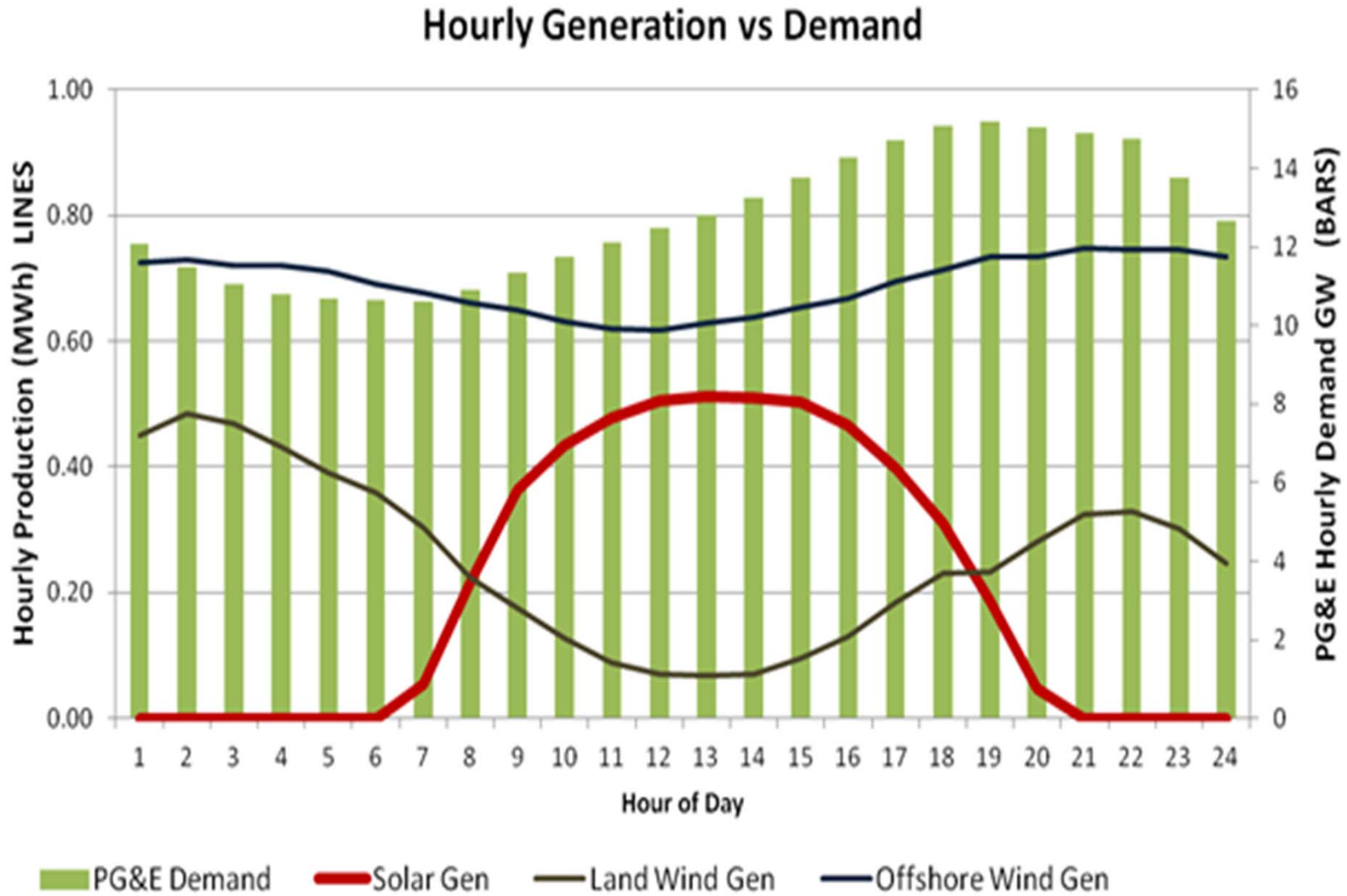
Morro Bay Offshore: NBDC Buoy 46028 Wind Resource Data

Time Period	Mean Wind Speed (m/s)
Annual	8.29
Jan	6.91
Feb	7.74
Mar	8.69
Apr	9.76
May	10.45
Jun	10.01
Jul	8.06
Aug	8.24
Sep	7.51
Oct	7.37
Nov	7.41
Dec	7.00





Morro Bay Offshore: Energy Production Profiles - Solar, Land, and Offshore wind





Morro Bay Offshore





Morro Bay Offshore: Permits Jack Pot - 33 permits and licenses

Federal Agencies	Jurisdiction	CA State Agencies	Jurisdiction
Bureau of Ocean Energy Management	Leasing, lead agency for NEPA	CA Department of Fish and Wildlife	Listed species, managed species
U.S. Fish and Wildlife Service	ESA, MBTA	CA Lands Commission	CZMA, Territorial Sea Plan,
NOAA Fisheries	ESA, MMPA, MSFCA, CZMA	CA State Historic Preservation Office	Cultural/Archeology
U.S. Army Corp of Engineers	CWA 404; Rivers and Harbors Act	CA Department of Environmental Quality	CWA: WQ & Sediment transport
Federal Energy Regulatory Commission	Interconnect	CA State Parks and Recreation	Parks and Recreation
U.S. Coast Guard	Navigation	CA Lands Commission	Cable route and crossing
Federal Aviation Administration	Aviation, Flight paths	CAISO/PG&E	Substation connection and hookup
DOD	Military operations	CA Ocean Protection Council	
		CEC/CPUC	PPA/RPS



Morro Bay Offshore: City, Tribes and Stakeholders

City/Tribes	Interests	Stakeholder Groups	Interests
NCTC	Sanctuary nomination	MBCFO	Fishing interests
City of Morro Bay	Cooperation Agreement	The Sierra Club	Clean Air Act, Clean Water Act, and Endangered Species Act
City of Morro Bay	Local permits	The Audubon Society	Birds
		Surfrider Foundation	Surfing
		The Nature Conservancy	Wildlife
		The Environmental Defense Fund	Smart economics, practical partnerships & rigorous science
		Natural Resources Defense Council	Wildlife and wild places



Offshore Wind in California: Summary

CA OSW can be a MAJOR contributor of Renewable Energy to meet 50% RPS

CA OSW has a potential to create long-term, sustainable jobs

(NREL <http://www.nrel.gov/docs/fy16osti/65481.pdf>)

- 16 GW Scenario
 - 6,000 long-term jobs
 - GDP impacts
 - \$39.7B during construction
 - \$7.9B during operations, 25 years
- 10 GW Scenario
 - 3,000 long-term jobs
 - GDP impacts
 - \$16.2B – construction
 - \$3.5B during operations, 25 years

CA OSW offers grid stability and a solution to the “Duck Curve” issues



Questions and Answers

“The Future for Offshore Wind is Bright..... and it will also be FLOATING”