

# Offshore Wind Working Group

November 1, 2017



# Agenda

- 9:00 Welcome and opening remarks
- 9:05 Administrative matters
- 9:15 Discussion of regulatory requirements
- 9:30 Offshore wind economics
- 9:45 Offshore wind supply chain opportunities
- 10:15 Possible procurement opportunities:  
US Wind and Deepwater Wind
- 11:30 Schedule and agenda going forward
- 11:40 Public comment
- 12:00 Adjourn

# Administrative matters

- ▶ Review of meeting minutes
- ▶ Reports, studies referenced in minutes
- ▶ Briefings and reference material posted online

# Regulatory requirements

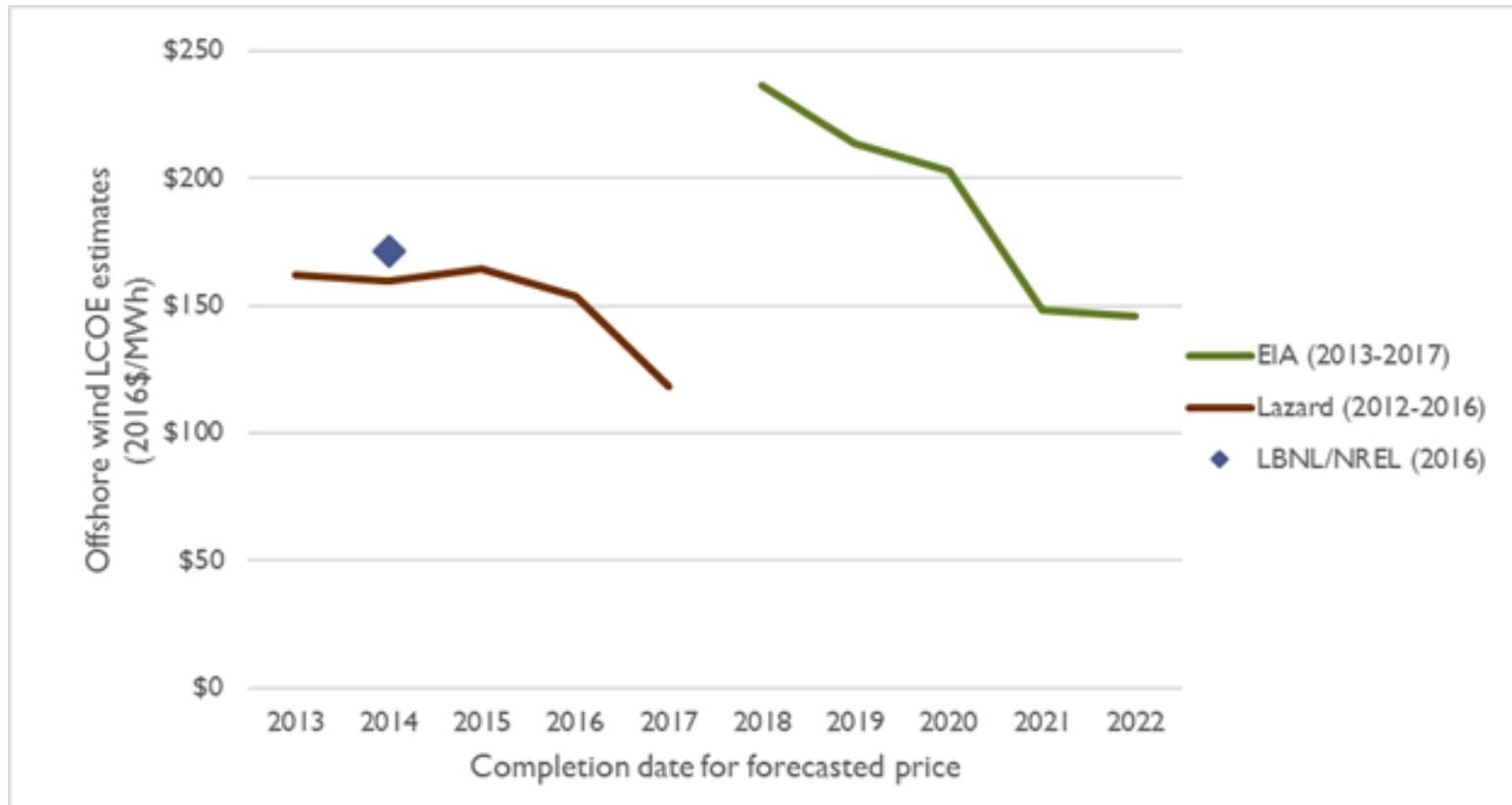
- ▶ Effects on development schedules
- ▶ DE WEA and MD WEA set by BOEM
- ▶ Federal consistency provisions of the (federal) Coastal Zone Management Act governs Delaware's role in regulating the WEAs
- ▶ Delaware regulates cables coming ashore in Delaware

# OSW economics in Europe

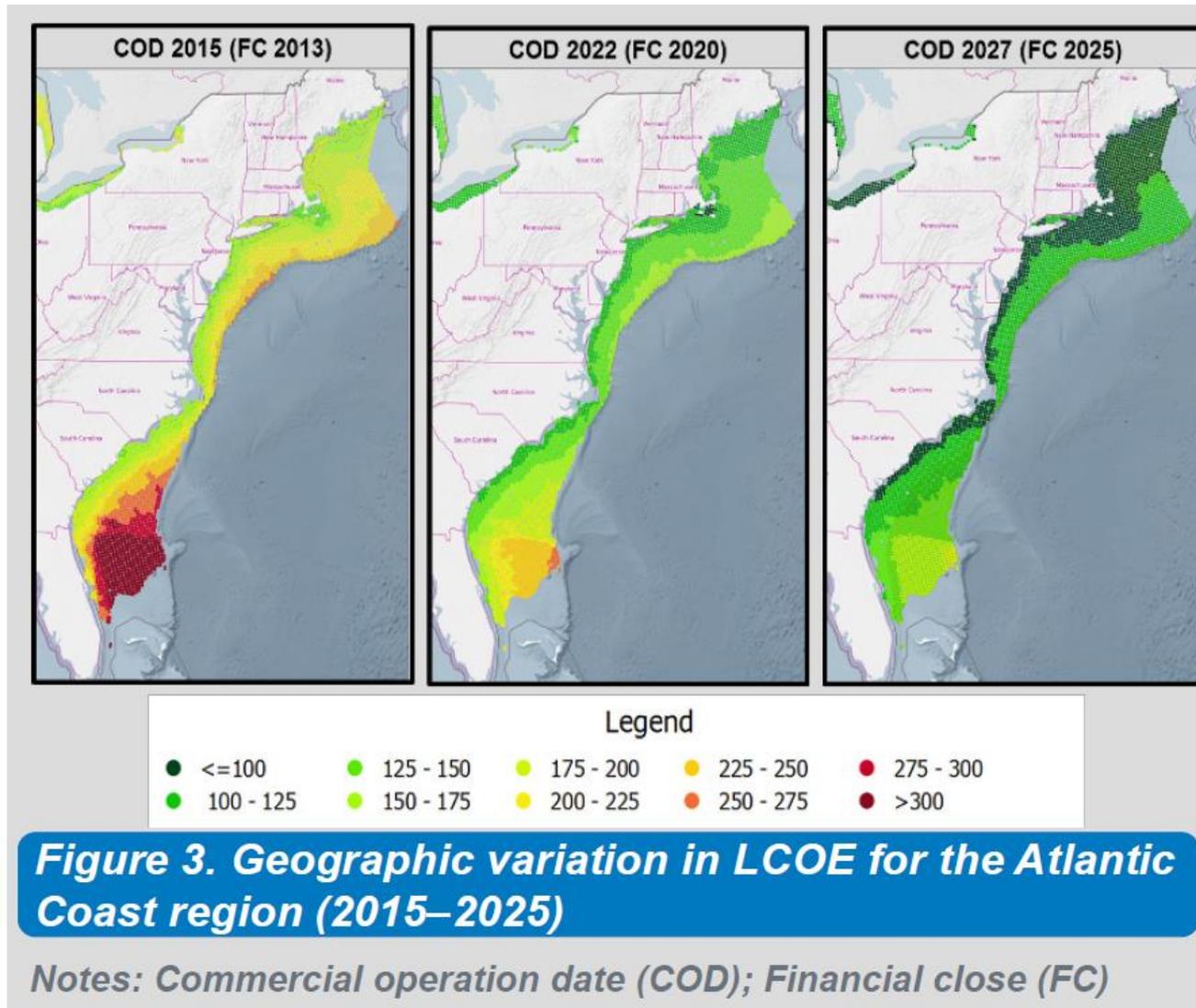
“[W]inning bid prices have declined from approximately \$200/megawatt-hour for projects with a commercial operation date between 2017 and 2019 down to about \$65/megawatt-hour for projects with a 2024/2025 commercial operation date.”

Source: 2016 Offshore Wind Technologies Market Report, US DOE, Executive Summary

# OSW economics in the US



# OSW economics in the US



# MD offshore wind jobs

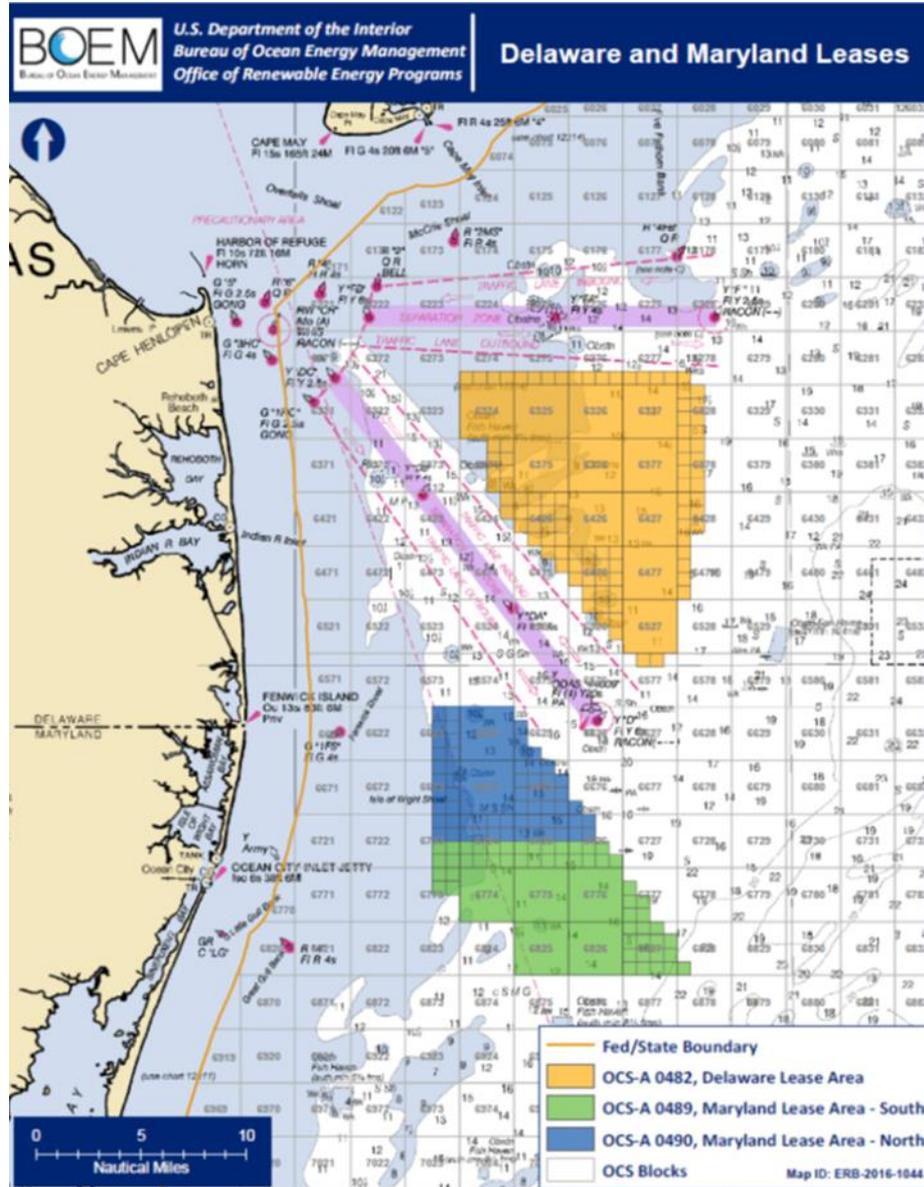
	US Wind		Skipjack	
	Applicant	Levitan	Applicant	Levitan
<i>Development and Construction</i>	(2014-2019)		(2017-2022)	
-Direct	1,039	1,298	706	913
-Indirect and Induced	1,081	1,637	762	901
<b>Total</b>	<b>2,120</b>	<b>2,935</b>	<b>1,468</b>	<b>1,815</b>
<i>Operation</i>	(2020-2039)		(2023-2042)	
-Direct	560	2,282	740	484
-Indirect and Induced	3,980	1,833	320	336
<b>Total</b>	<b>4,540</b>	<b>4,116</b>	<b>1,060</b>	<b>820</b>

*Note: May not sum due to rounding. FTEs created occur over different time frames for both projects. For US Wind, Levitan quantified development and construction impacts occur over 2014-2019. For Skipjack, Levitan quantified development and construction impacts over 2017-2022. Operational economic impacts quantified over the twenty-year project term for both projects.*

# Procurement opportunities

- ▶ US Wind
- ▶ Deepwater Wind

# Wind Energy Areas



# Maryland OSW projects

**Table 1. Summary of proposed offshore wind projects per Levitan report**

Component	US Wind	Skipjack
Project size (MW)	248	120
Number of turbines	62	15
Turbine capacity (MW)	4 (or 6)	8
Commercial operation date	Jan-20	Nov-22
Project cost (\$M 2016\$)	\$1,375	\$720
Project cost (\$/kW 2016\$)	\$5,544	\$6,000
Approved OREC price (\$/MWh 2012\$)	\$131.93	\$131.93
Net OREC cost (\$/MWh 2012\$)	\$77.22	\$70.18
Projected annual generation (MWh)	913,845	455,482
Projected capacity factor	42.10%	43.30%
Distance from Maryland shoreline (miles)	17	20-24
Landing point (DPL substation)	Indian River	138th Street or Ocean Bay

*Source: Chang, M. 2017. "Direct testimony on the applications of US Wind and Skipjack Wind for the development of offshore wind projects pursuant to the Maryland Offshore Wind Energy Act of 2013." Maryland Public Service Commission Docket No. 9431. On behalf of Maryland Office of People's Counsel. February 15, 2017. Levitan and Associates Updated Tables, March 27, 2017 ML 214210.*

# Schedule

- ▶ Future Working Group meetings
  - ▶ November 15, 1 to 4 p.m., Leg Hall
  - ▶ November 29, 9 a.m. to noon, PSC
  - ▶ December 11, 1 to 4 p.m., PSC
- ▶ Public comment sessions
  - ▶ November 27 or 28, 6 p.m., Lewes Library
  - ▶ December 5, 6 p.m., Middletown

# Public comments

- ▶ At Working Group meetings
- ▶ In writing in between meetings
- ▶ At public comment sessions
- ▶ Public comments posted at:  
<http://dnrec.alpha.delaware.gov/energy-climate/renewable/offshore-wind-working-group/>



# Offshore Wind Working Group

## Energy and Climate Menu

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The Offshore Wind Working Group was established by Governor Carney to study opportunities for Delaware to participate in developing offshore wind.



On August 28, 2017, Governor John Carney signed [Executive Order 13](#), establishing the Offshore Wind Power Working Group.

The Working Group will:

- Study how Delaware can participate in developing offshore wind
- Identify ways Delaware can benefit economically and environmentally from offshore wind power

### Contact

### Meetings

Meetings of the Offshore Wind Working Group are [posted](#)