

Optimizing Transmission and Interconnection for Offshore Wind

Kensey Berry | Consolidated Edison | June 26, 2018



Photo credit:
NYSERDA

Offshore wind in NY State

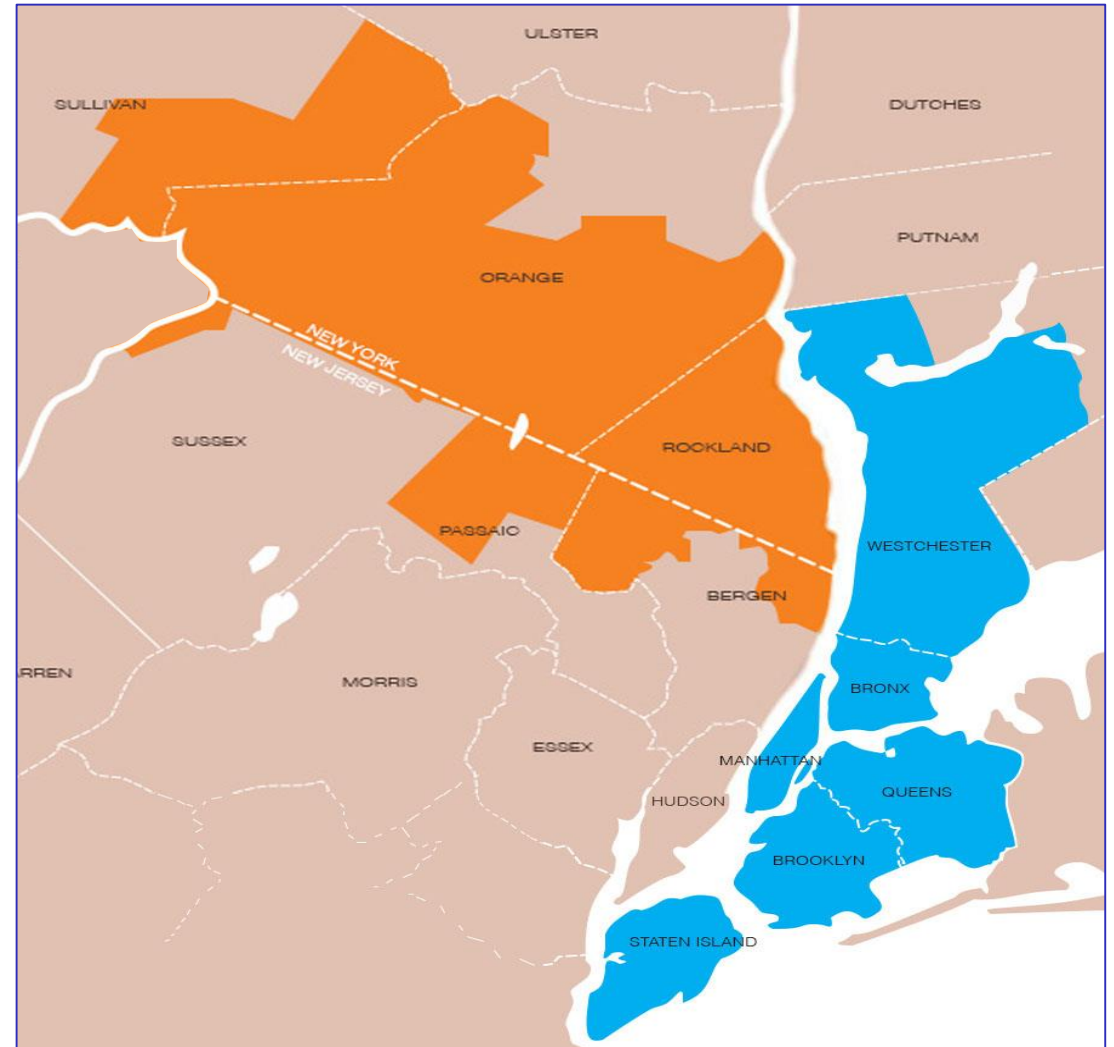
NY State has taken great strides to become a leader in US offshore wind development.



- NYSERDA Master Plan
 - Released January 2018
 - 20 + studies on environmental, social, economic, and regulatory issues
- Goal to develop 2,400 MW offshore wind by 2030
- Open proceeding to establish procurement mechanism

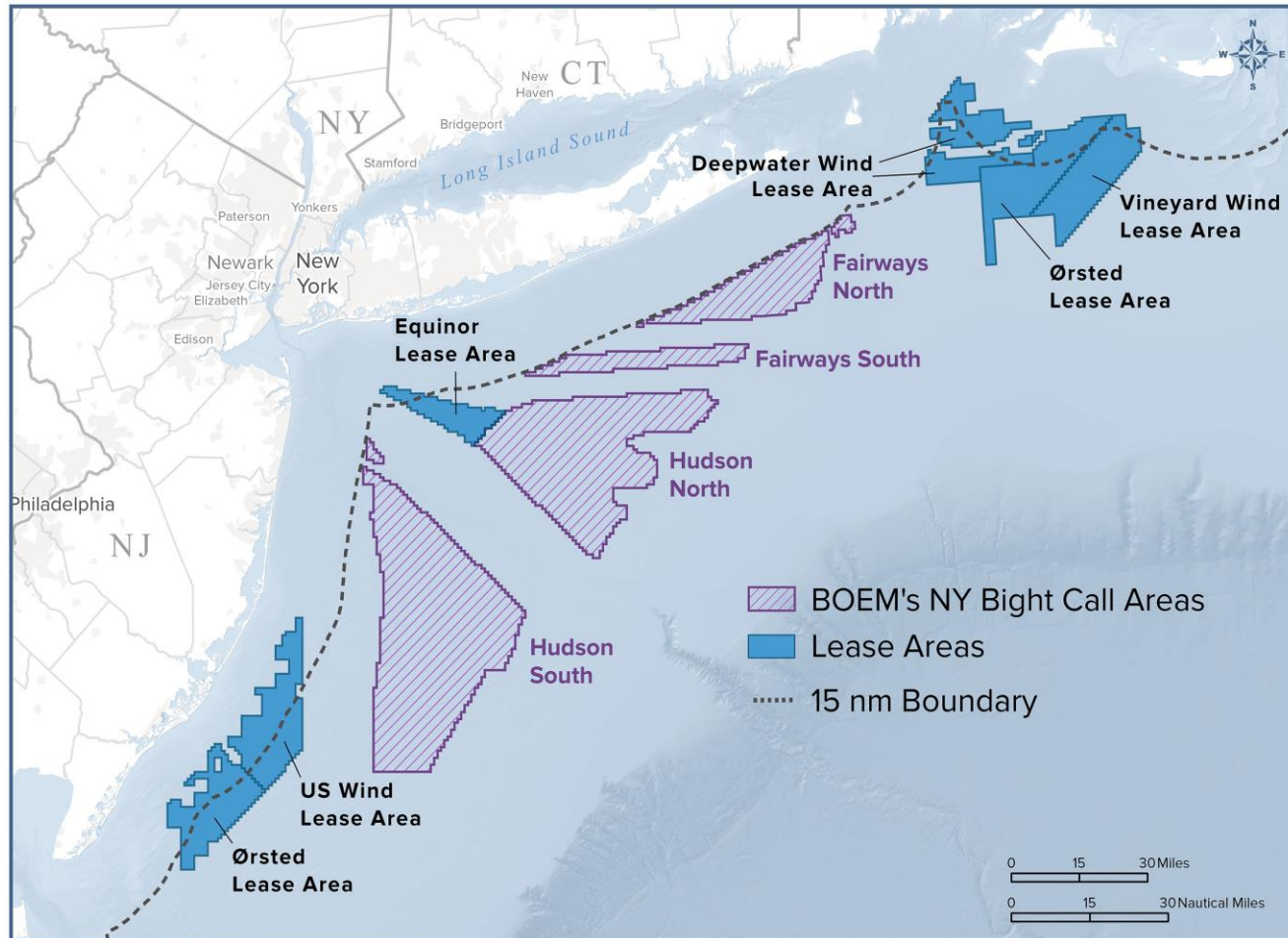
Who is Con Edison and how can we help facilitate offshore wind development?

- Distribution utility serving NYC metro area
- 62 substations
- 38% of statewide energy consumption
- Service territory includes extensive shoreline with potential interconnection sites



Transmission and interconnection are critical components to ensure feasibility & cost management of offshore wind

BOEM NY Bight Call Areas



Credit: NYSERDA

Physical constraints

- *Limited opportunities to interconnect with onshore grid*
- *Development areas located 14-30 miles offshore*
- *Potential issues of cable crossing, particularly for AC*

Potential suboptimal outcomes

- *Uncoordinated T&I could add significant cost to offshore wind program*
- *Feasibility of 2,400 MW goal could be challenged*

Coordination complicated by proposed development timeline

Base deployment profile for NY –
NYSERDA Policy Options Paper

Value / COD	2024	2025	2026	2027	2028	2029	2030
Farm Size (MW)	400	400	n/a	400	400	400	400
Transmission Type	AC	AC	n/a	AC	AC	AC	AC
Transmission configuration	Radial transmission			Radial and/or coordinated transmission to be considered			

Potential issues with T&I development schedule

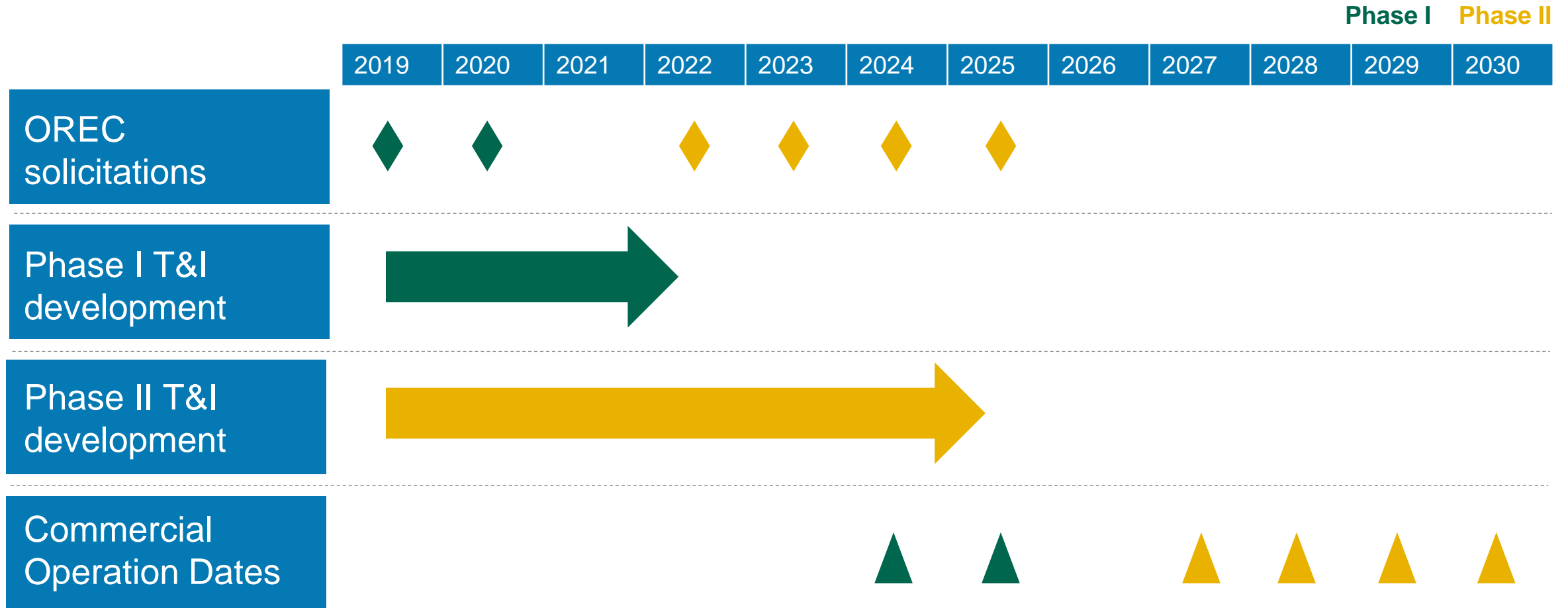
- Multiple 400 MW increments of individual transmission lines and interconnections could increase cost and encounter physical space constraints at onshore substations
- Gen-ties of early wind farms could use up available interconnect sites
- Coordinated transmission requires extensive lead time – lessons from Germany experience

Potential coordination tools for Phase II transmission and interconnection should be evaluated

Potential approach	Likely to yield optimal configuration		Considerations
	Interconnection	Transmission	
Utilities publish Hosting Capacity Map for OSW interconnection sites	✓		<ul style="list-style-type: none"> Open Access would allow any generator (including fossil units) to make use of published information
Utilities include interconnection sites in Local Transmission Plans	✓		<ul style="list-style-type: none"> Because of FERC Open Access rules, interconnection points cannot be reserved
NYISO Public Policy Transmission process	✓	<ul style="list-style-type: none"> HVDC configuration increases feasibility and cost savings 	<ul style="list-style-type: none"> Could obscure seam between utility and non-utility assets
NYPA builds and owns transmission assets	✓		<ul style="list-style-type: none"> Pre-selection of development areas would be required
Separate OREC solicitation for transmission			<ul style="list-style-type: none"> Solicitation must be properly sequenced with OREC generation solicitation

Work should begin now to select transmission and interconnection approach for Phase II

*Regardless of policy approach, T&I development should precede generation
(Lesson from European experience)*



Thank you

Questions?