

Dr. Kira Lawrence
Senior Scientist



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**Coordinated Transmission in
New Jersey through the
State Agreement Approach**

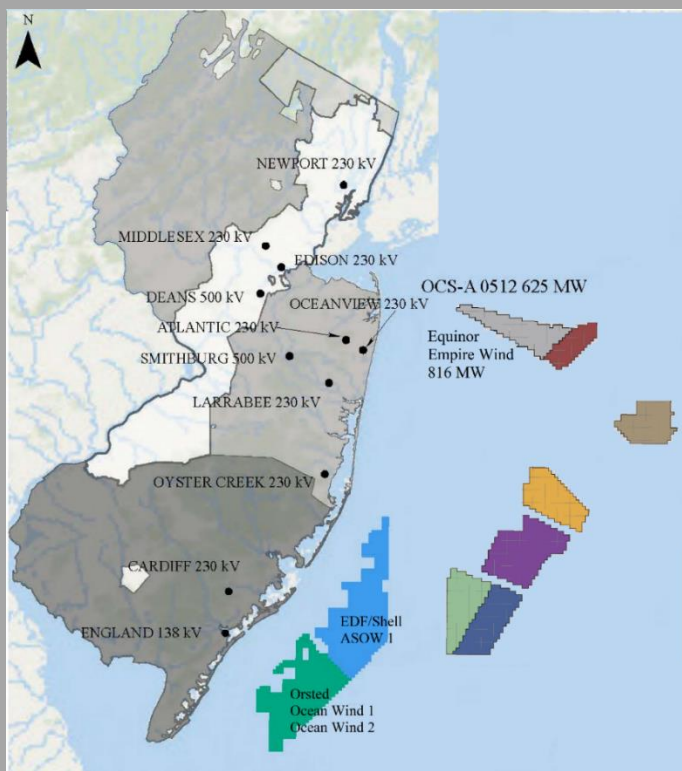
New Jersey's Offshore Wind Program

- 11 GW by 2040
- Solicitations #1 and #2
 - Ocean Wind 1, 1,100 MW
 - Ocean Wind 2, 1,148 MW
 - Atlantic Shores 1, 1510 MW
- “Bundled projects” = each project is responsible for their wind farm and transmission

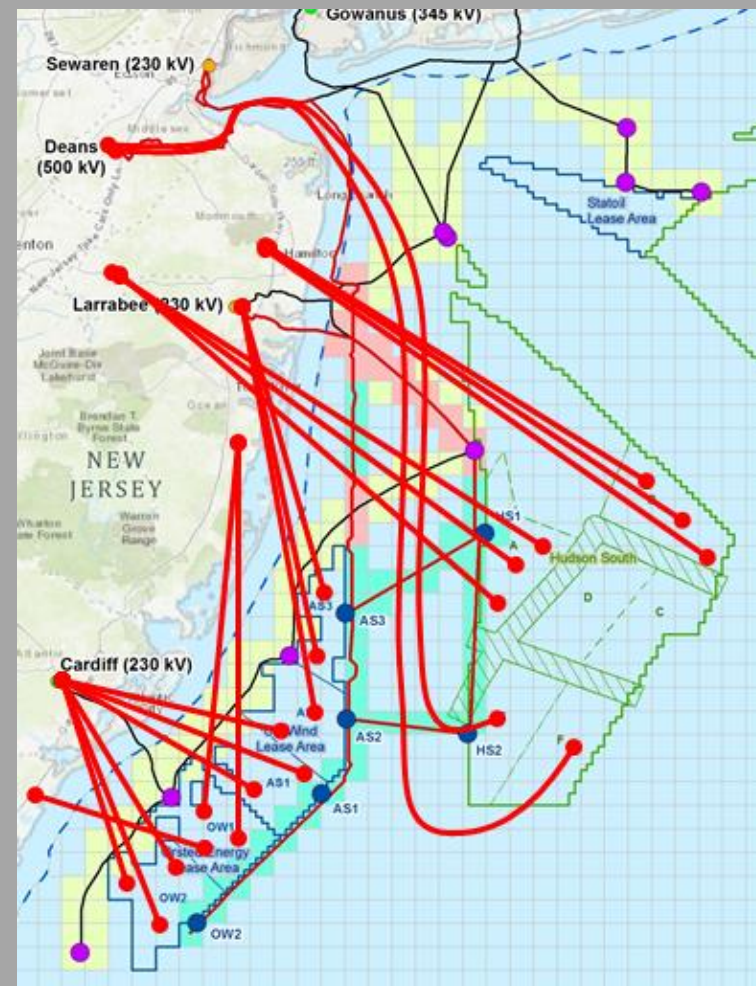


The Status Quo: Bundled Approach

lease areas



potential transmission interconnection routes



State Agreement Approach

A coordinated transmission solution



Typically, PJM identifies transmission upgrades based on:

1. Need
2. Cost

Alternatively, transmission upgrades based on: a state's public policy (State Agreement Approach)

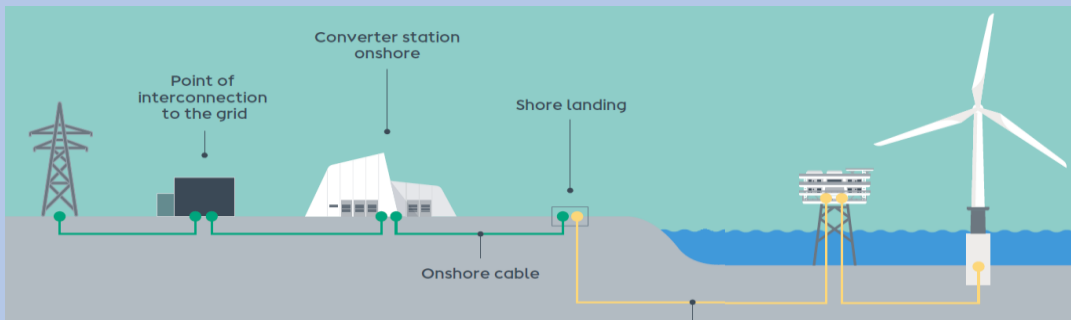
- New Jersey's public policy = offshore wind
- Requesting state is responsible for 100% of the costs

In November of 2020, the BPU requested PJM include its OSW public policy goal (7.5GW) in the PJM RTP.

Transmission Costs

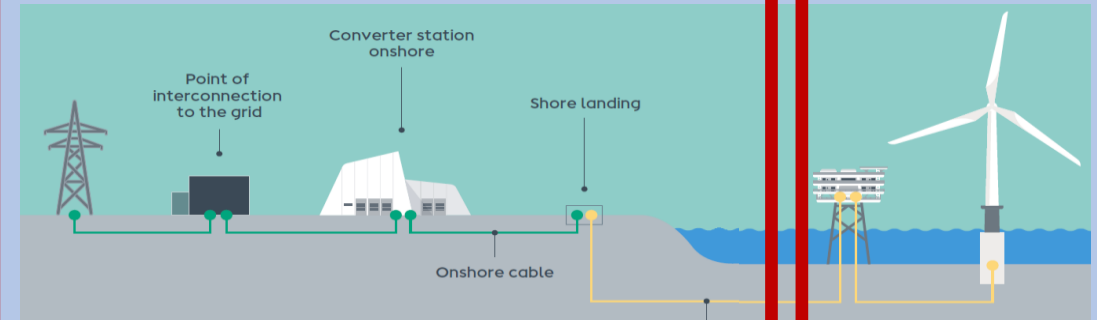
- “Bundled”—transmission costs part of project itself and therefore within OREC
- “Unbundled”—most transmission costs of the OSW project are paid for like a normal transmission project and are therefore not within the OREC

“Bundled”
Solicitations #1 and #2



OREC

“Unbundled”
Future Solicitations + SAA

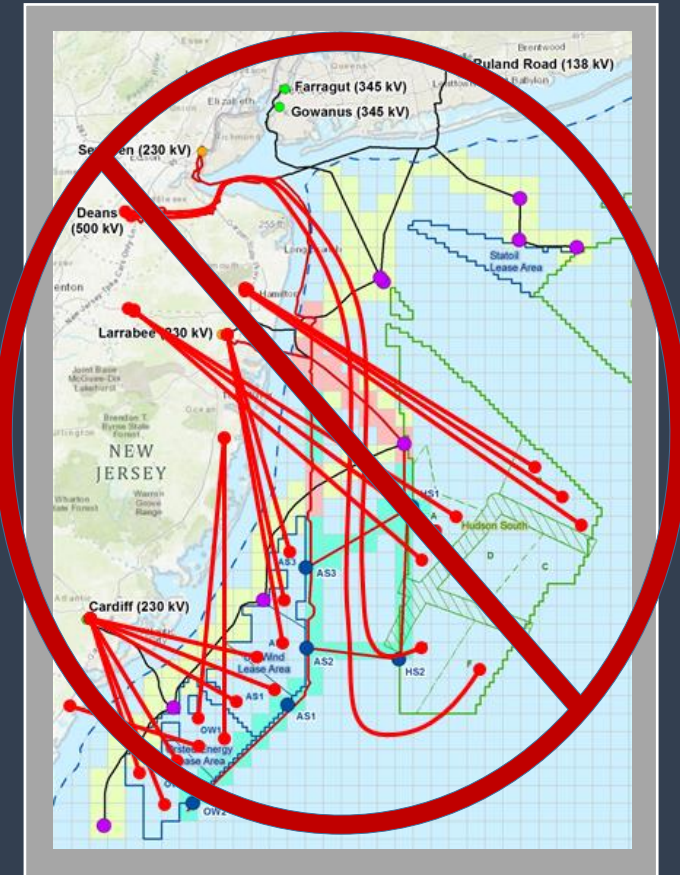


SAA

OREC

New Jersey's SAA Goals

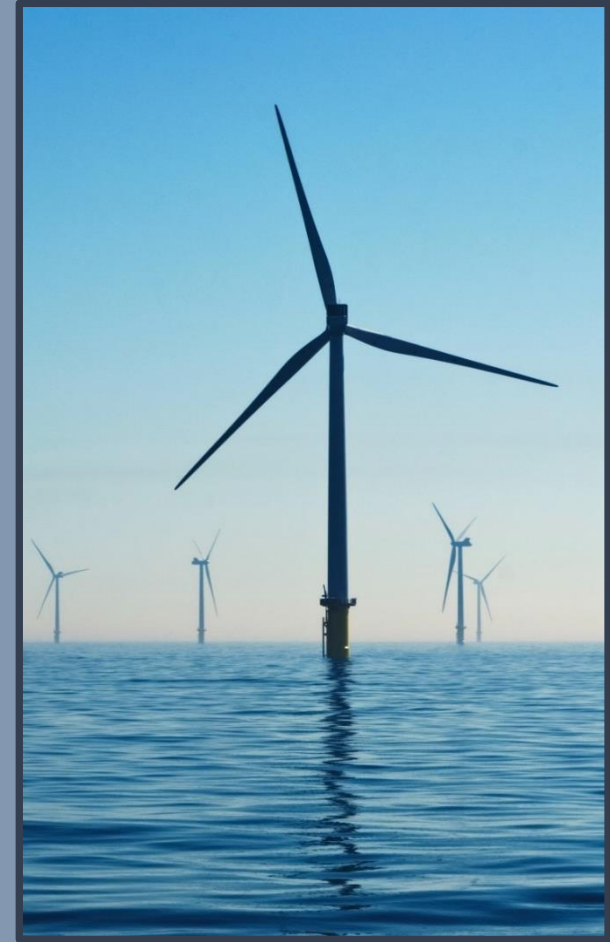
- Encourage competition
- Lower cost and risk of OSW generation and transmission
- Maximize transmission developer expertise
- Lower OREC prices
- Minimize environmental, permitting and fishing impacts
 - Minimize # of cables crossing shore
 - Minimize # of points of interconnection



New Jersey's SAA 1.0

PJM and BPU Staff developed the SAA solicitation

- Window Opened: April 15, 2021
- Window Closed: September 17, 2021



New Jersey's SAA 1.0

Option 1—onshore upgrades

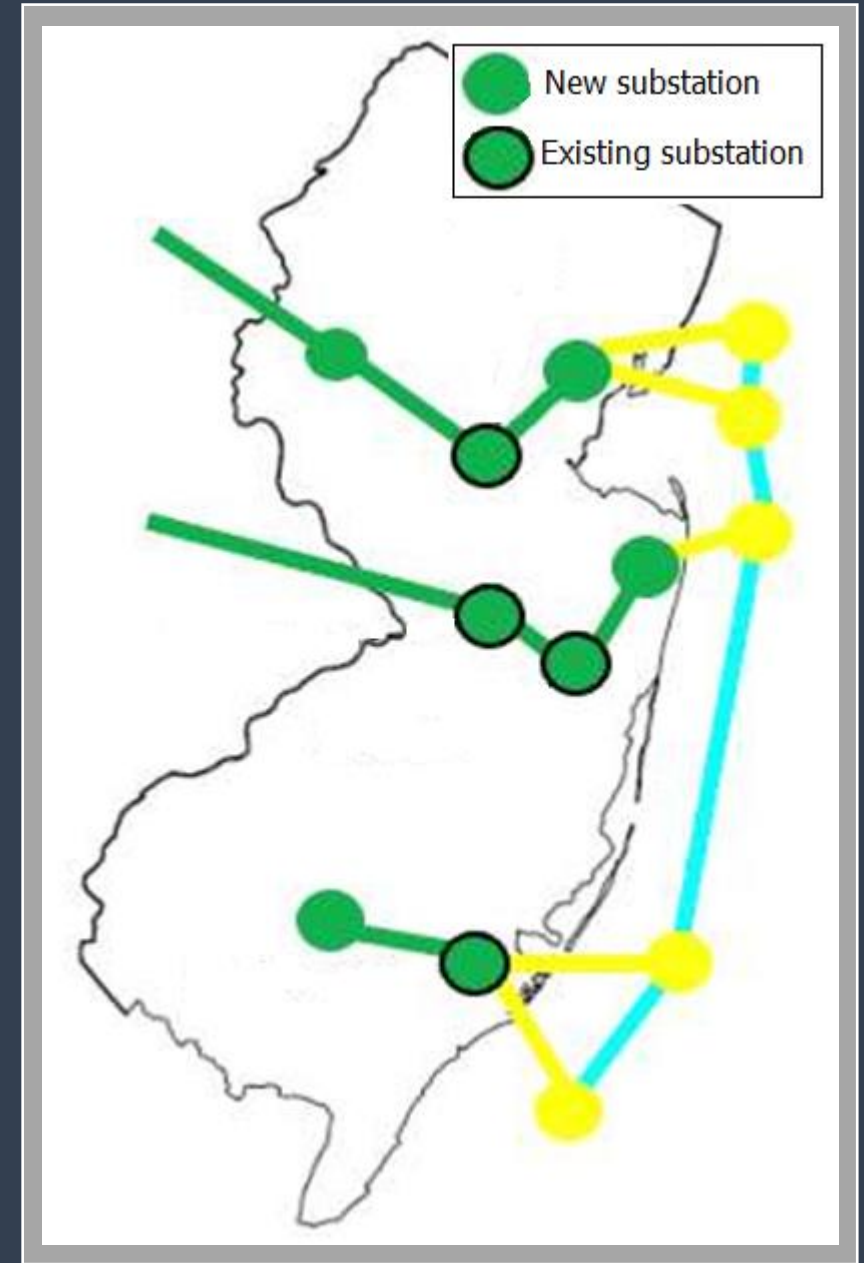
- Upgrades to existing grid
- New substations near shore

Option 2—offshore

- Extends grid out into the water/beach crossings

Option 3—offshore

- grid between multiple projects (“backbone”)



SAA 1.0 Response—13 bidders with 80 proposals

SAA Bidder	Developer Type	Proposals	Option 1a	Option 1b	Option 2	Option 3
Transource	Non-Incumbent	4	4			
Public Service Electric and Gas (PSEG)	Incumbent	2	2			
PPL Electric Utilities (PPL)	Incumbent	1	1			
Rise Light & Power	Non-Incumbent	5	1	4		
Atlantic City Electric Company (AE)	Incumbent	5	4	1		
Jersey Central Power & Light (JCPL)	Incumbent	2	1	1		
LS Power	Non-Incumbent	9	3	5	1	
NextEra	Non-Incumbent	19	11		7	1
PSEG/Orsted	Combination	7			7	
Atlantic Power Transmission	Non-Incumbent	3			3	
Mid-Atlantic Offshore Development (MAOD)	Non-Incumbent	3			3	
ConEd	Non-Incumbent	1			1	
Anbaric Development Partners	Non-Incumbent	19			12	7
Total Proposals		80	27	11	34	8

Proposals Were Evaluated By:

1. Overarching SAA goals
2. Baseline Scenario
3. Evaluation criteria:
 - Cost
 - Constructability
 - Environmental impact
 - Permitting
 - Reliability
 - Market efficiency



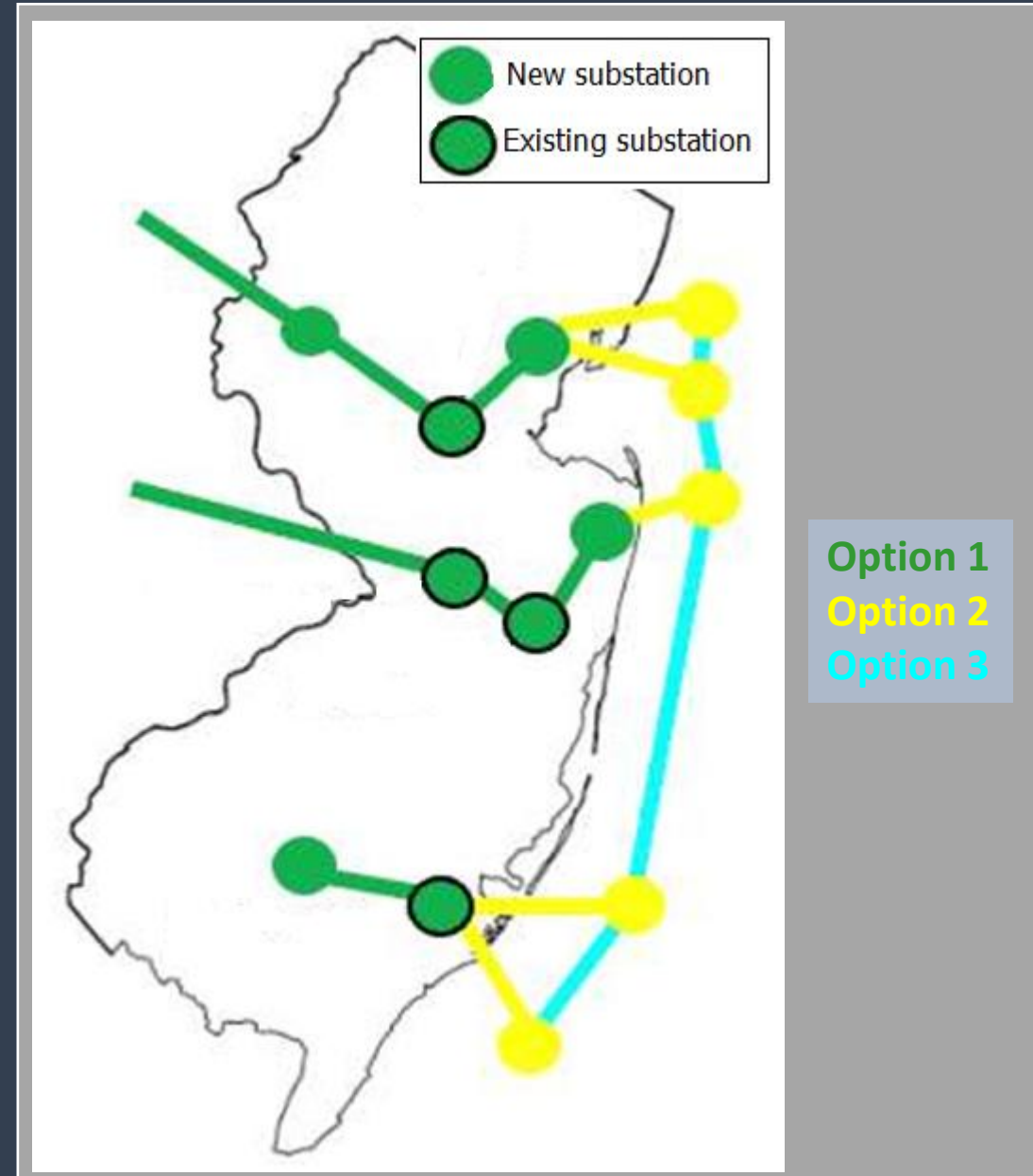
Evaluation Results/ Lessons Learned

Option 2 Proposals, not preferred at this time:

1. Technological limitations
2. Federal investment tax credit
3. Project-on-project risk

Option 3 Proposals:

1. Higher costs
2. Linked to the selection of an Option 2



Evaluation Results/ Lessons Learned

Option 1 Proposals—onshore-only upgrades

1. Significantly less expensive than the status quo
2. Enables POI benefits
3. Increases competition in future OREC solicitations
4. Limits onshore transmission routes

FIGURE ES-1: PROPOSED POINTS OF INTERCONNECTION



New Jersey's Board's Selection (Oct 2022)

Larrabee Tri-Collector Solution

- New substation and land
- Associated Option 1a upgrades

Costs: \$1.2 billion for the full Larrabee Tri-Collector Solution

Savings: ~ \$900 million

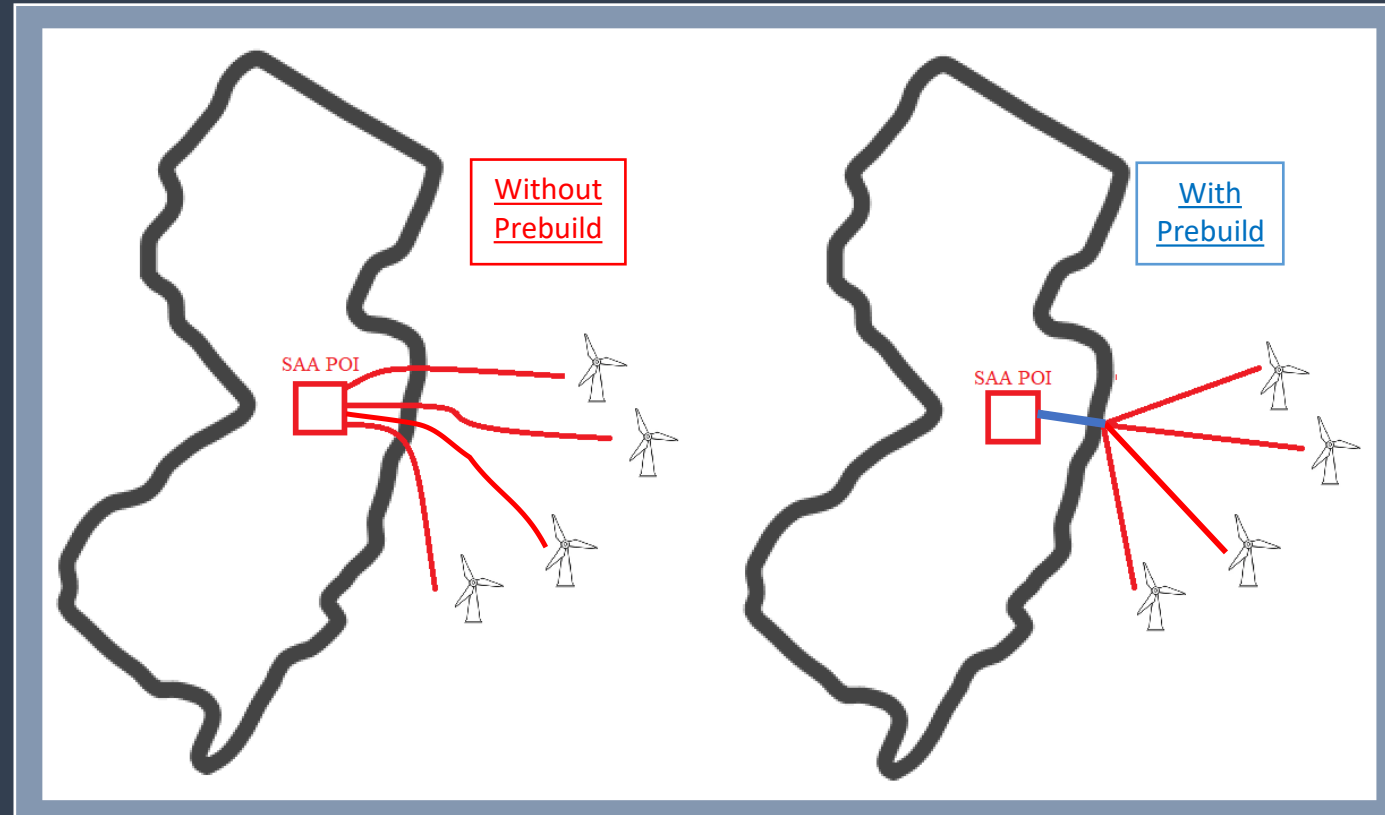


The Prebuild Concept – Solicitation 3

Goal: minimize onshore cable route disruptions

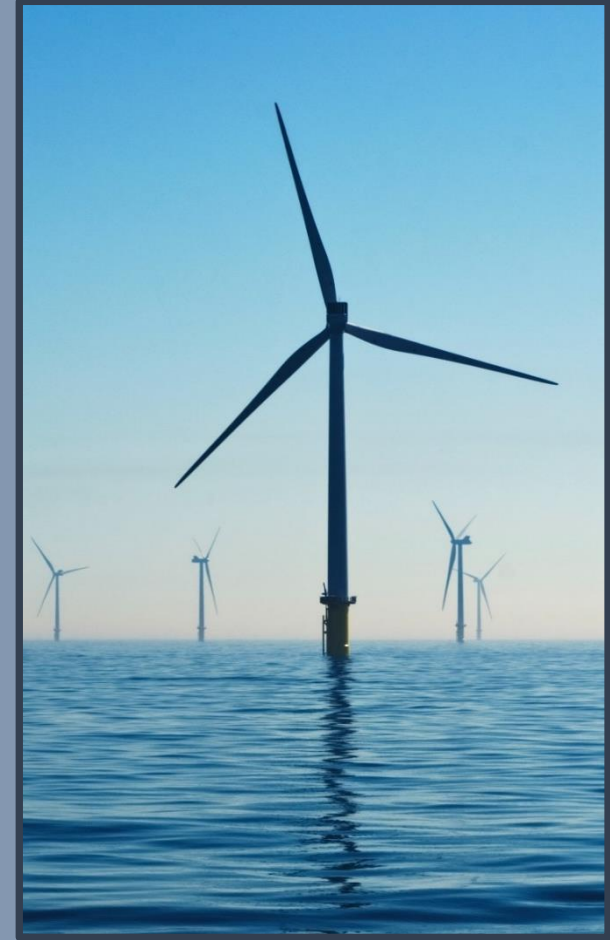
- Environmental impacts
- Community impacts
- Risk of delays

Concept: the selected generator builds all the necessary, un-energized infrastructure for its project *and* the future projects from shore to the POI



New Jersey's SAA 2.0

- On April 26, 2023 BPU's Board approved the initiation of a SAA request with PJM
- Seeks a coordinated transmission solution to interconnecting the additional capacity (3500 MW) required to achieve NJ's 11GW OSW goal.



New Jersey's SAA 2.0 (continued)

- Staff recommends PJM plan injections at Deans 500kV substation, but allows bidders to propose alternative POIs
- Includes same proposal options as SAA 1.0
- Will not impact previously awarded projects or those to be awarded up to 7.5 GW
- Recommends continued discussion with other East Coast states with OSW programs to gauge interest in coordinating a regional transmission solution.

FIGURE ES-1: PROPOSED POINTS OF INTERCONNECTION



Future Coordinated OSW Transmission

- Regional coordination
- Federal funding availability
- Need for standards
- Technological advancements
- Governance

