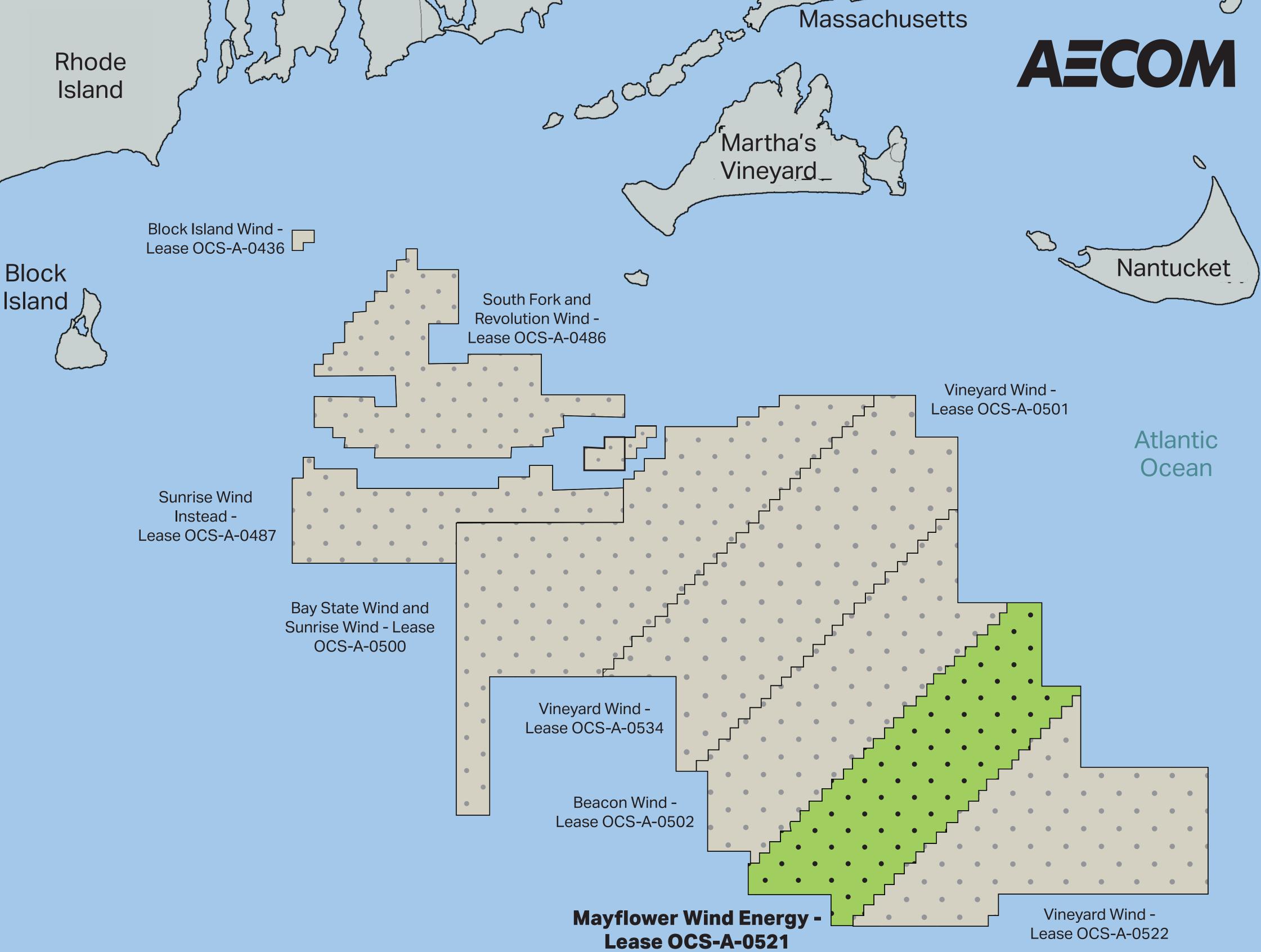
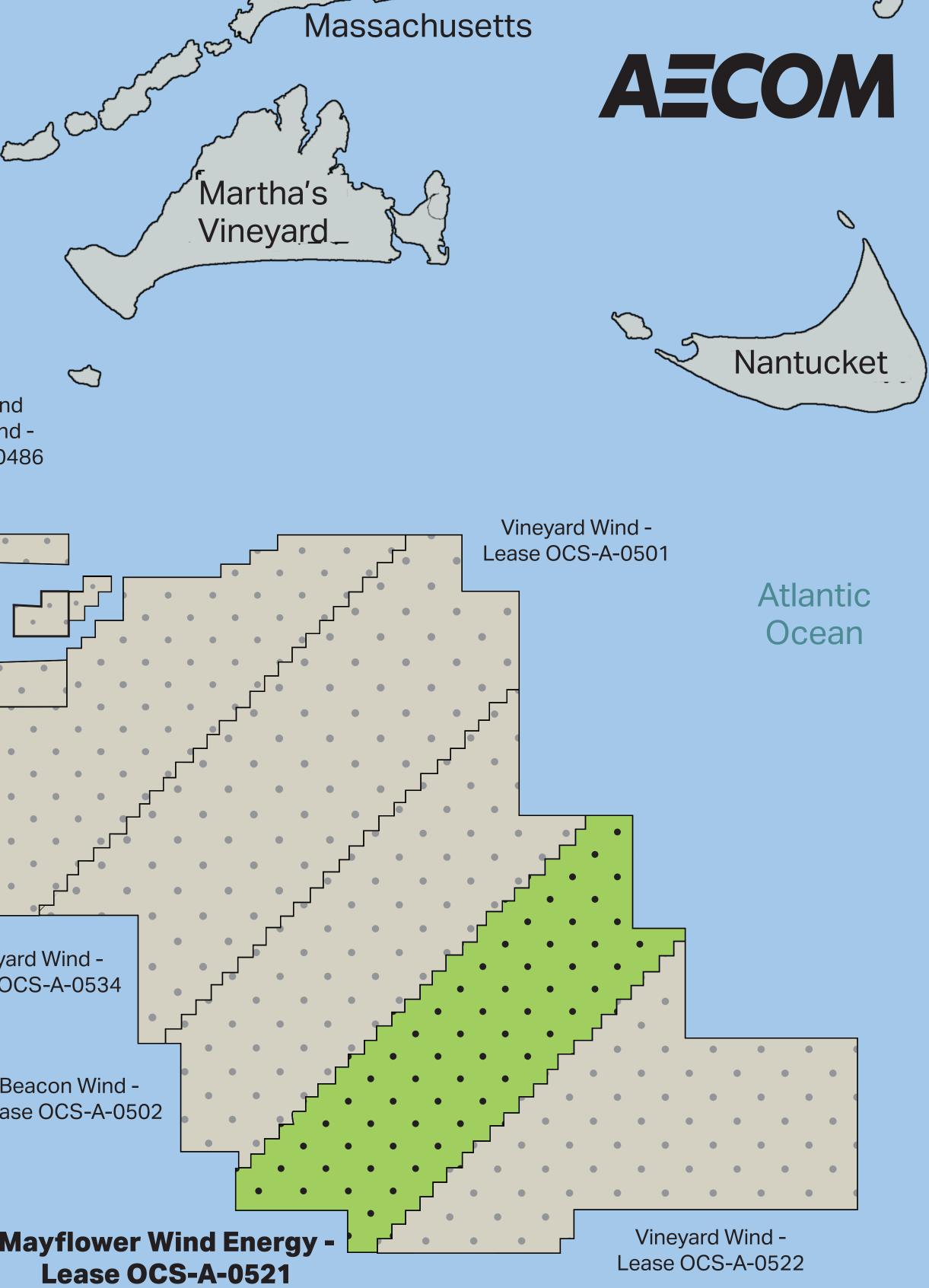
# Mayflower Wind Project

- 19 Technical Reports and Plans to Support COP Development
  - Benthic survey plans
  - Benthic infauna sample analysis and video analysis for epifauna
  - Visual impact assessment
  - Terrestrial archaeology/historic properties
  - Seagrass
  - Essential Fish Habitat
  - Air quality/emissions
- Permitting
  - To date: Filed MEPA ENF and EFSB petition
  - Upcoming: MA MEPA EIR, Ch 91/ WQC, State/local wetlands, Section 106 consultation, NMFS EFH consultation, OCS Air Permit, Army Corp 404/10





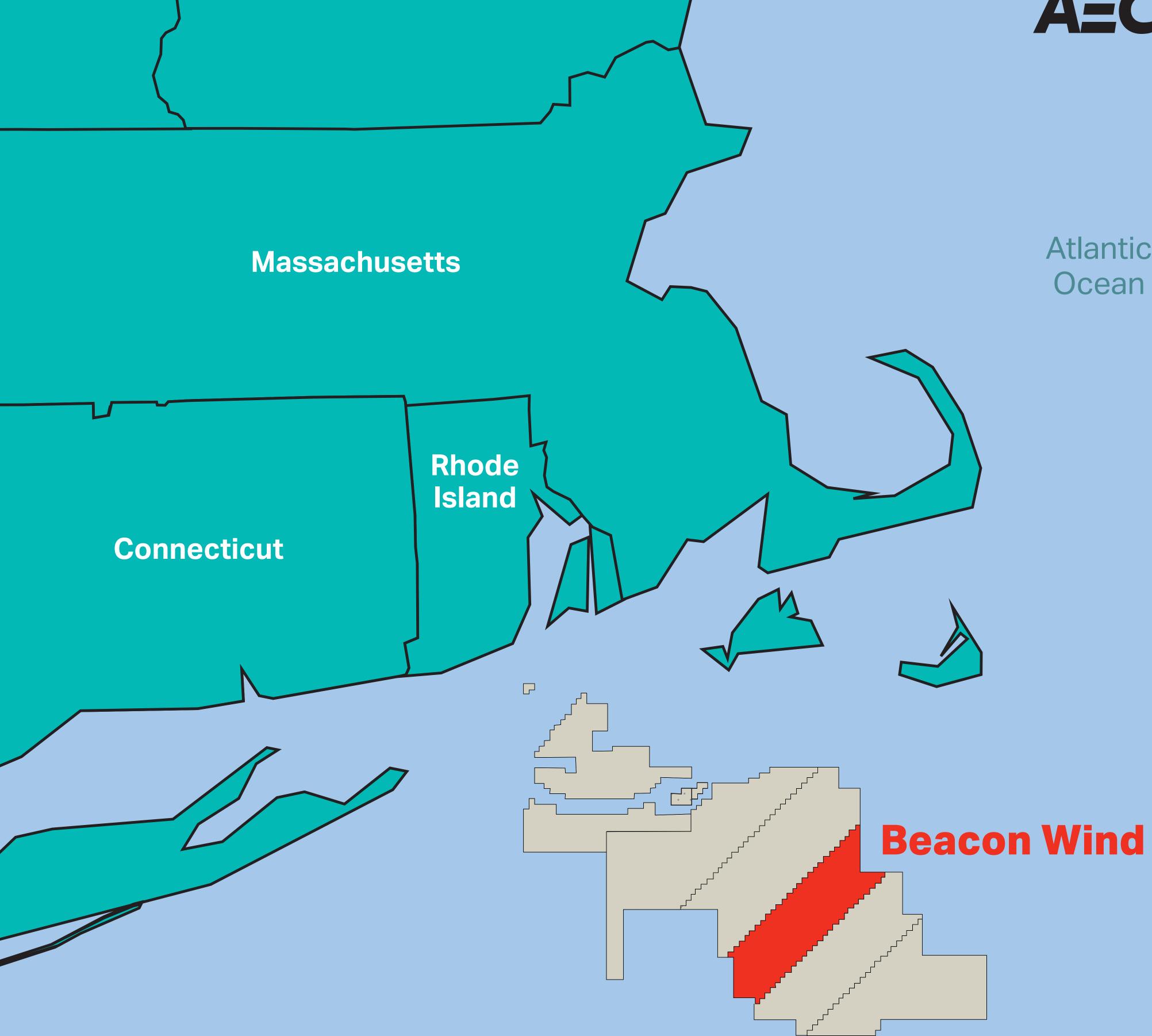




# **Beacon Wind** Project

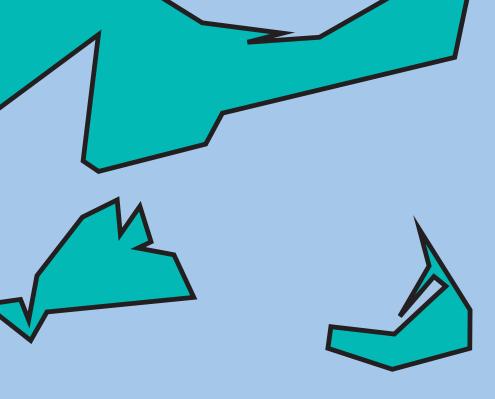
- **Developed Site Assessment Plan** (SAP)
- Prepared Construction and **Operations Plan (COP)**
- Stakeholder Engagement and Planning
- Fisheries Outreach
- > Tribal Liaison, Qualified Marine Archaeologist (QMA), On-board Survey Rep
- **Obtained Incident Harassment** Assessment (IHA), Prepared Survey Plans
- Federal and State Approvals,
- **Developed Benthic and Essential Fish** Habitat Survey Design/Protocols
- New York Article VII Permitting Support
- Innovative geographic information system (GIS) Tools including Portal







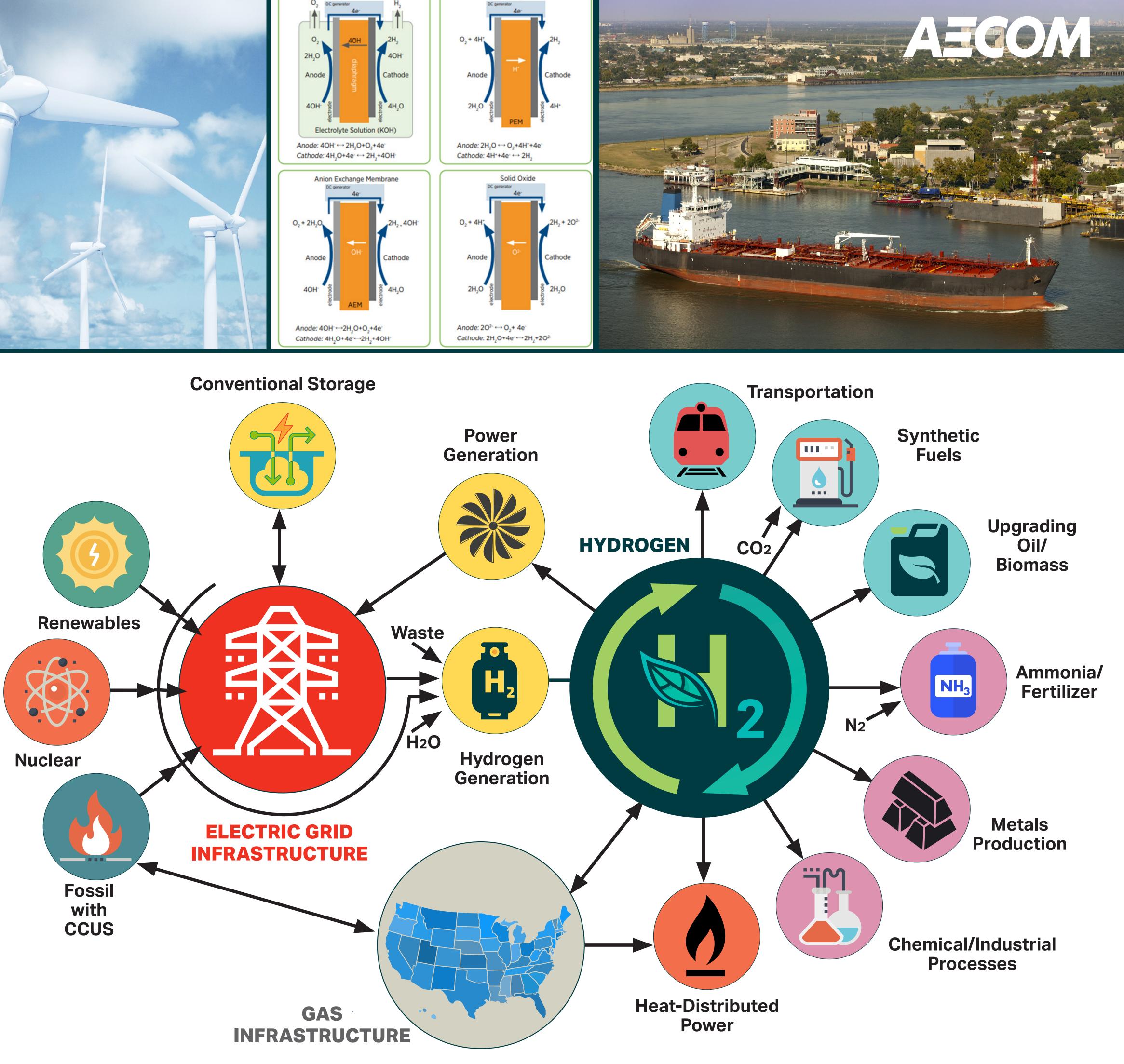
Atlantic



# BOEMH2-OSW Regulation

- Adaptation of existing BOEM / Federal Guidance for green H<sub>2</sub> fuel from OSW energy (H<sub>2</sub>-OSW)
- Extensive BOEM consultation
- Environmental, Socioeconomic, Safety issues
- Business cases
- Approach to rapidly evolving technology and implementations
- Partnering for research and development
- Market-readiness and fit
  - US Federal energy policy effects
  - Strong regional variability





Proton Exchange Membrar



# **Typical 10 Year Development Timeline**

### Track 1 - OSW Farm (Sea-bed Preparation, Foundations, Turbine Installation, Cable & Sub-Stations)

Years 1-2 Lease Parcel Assessment, BOEM Solicitation & Award	Years 3-4 State PPA Solicitation, Application & Award	Years 5-7 OSW Developer – COP Development, Submission, Comment, Revise & Approve	Years 8-10 Component, Cable & Sul Station Fabrication, Delivery, Staging, Assem Installation & Connection
Track 2 – Marine Terminal			
<b>Years 1-2</b> N/A	Years 3-5 Planning, Engineering, Permitting & Procurement	Years 6-7 Construction & Final Acceptance	<b>Years 8-10</b> Component & Cable Delivery, Staging & Load-Out from Terminal
Track 3 - O&M Terminal			
<b>Years 1-2</b> N/A	<b>Years 3-4</b> Planning	Years 5-7 Engineering, Permitting & Procurement	Years 8-10 Construction & Final Acceptance
Track 4 – Vessels (Installation, Cable Laying, SOV & CTV)			
<b>Years 1-2</b> N/A	<b>Years 3-5</b> Planning, Design & Finance	Years 6-8 Fabricate, Sea Trials, USCG Certification	<b>Years 9</b> Sea Trials, USCG Certification & Training
Track 5 – Onshore Works (Substation, Interconnect, Transmis <mark>sion)</mark>			

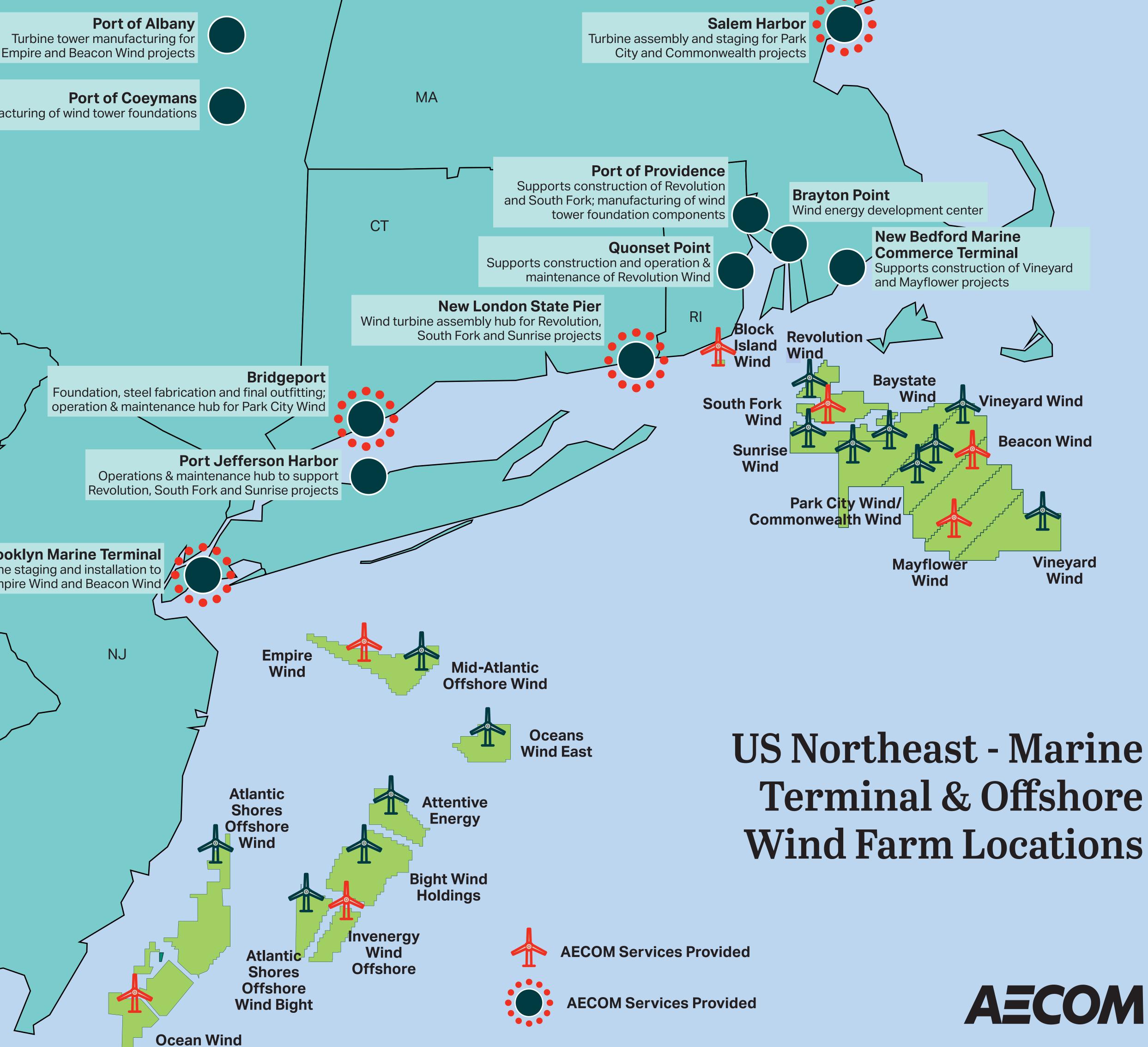
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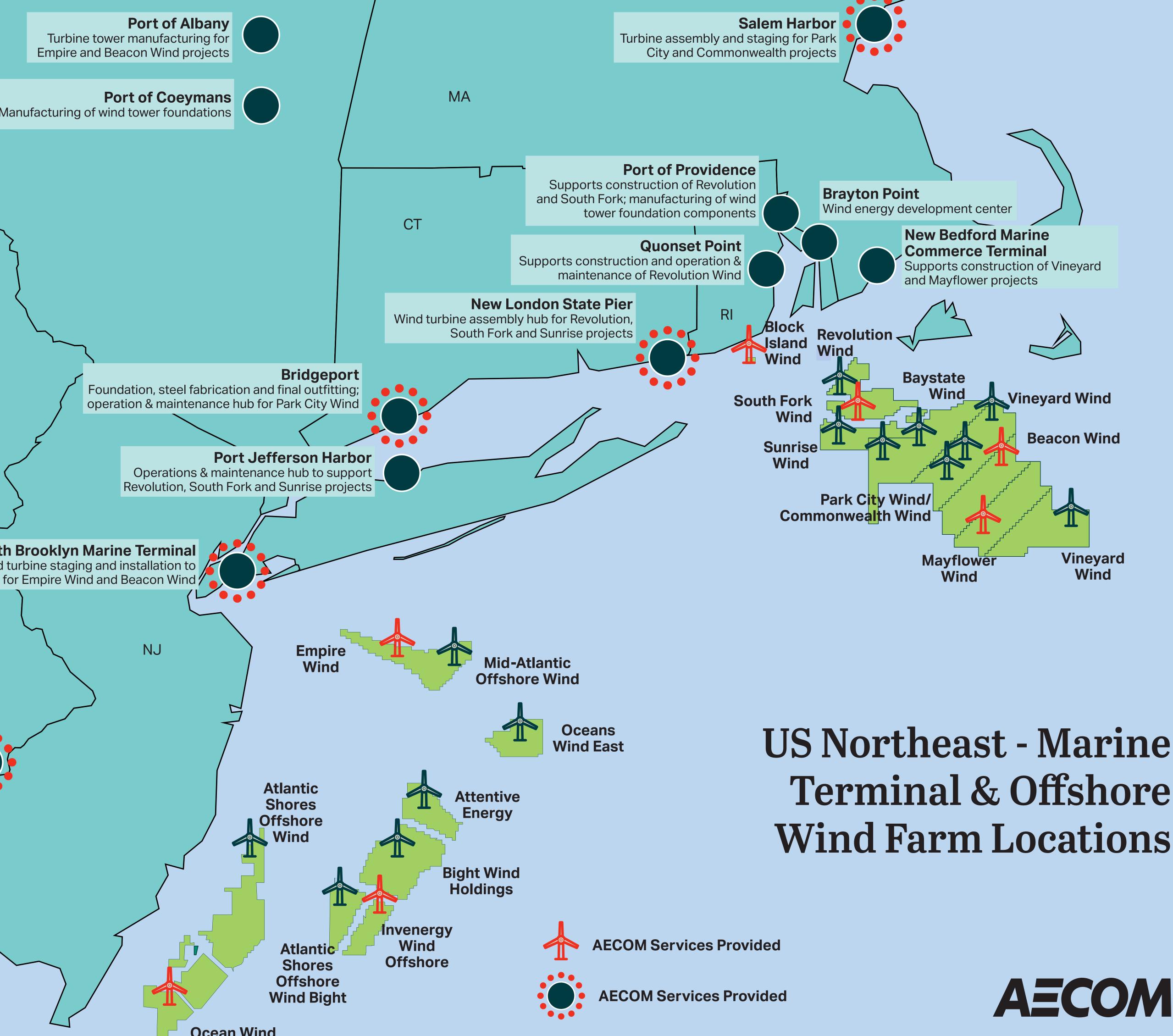


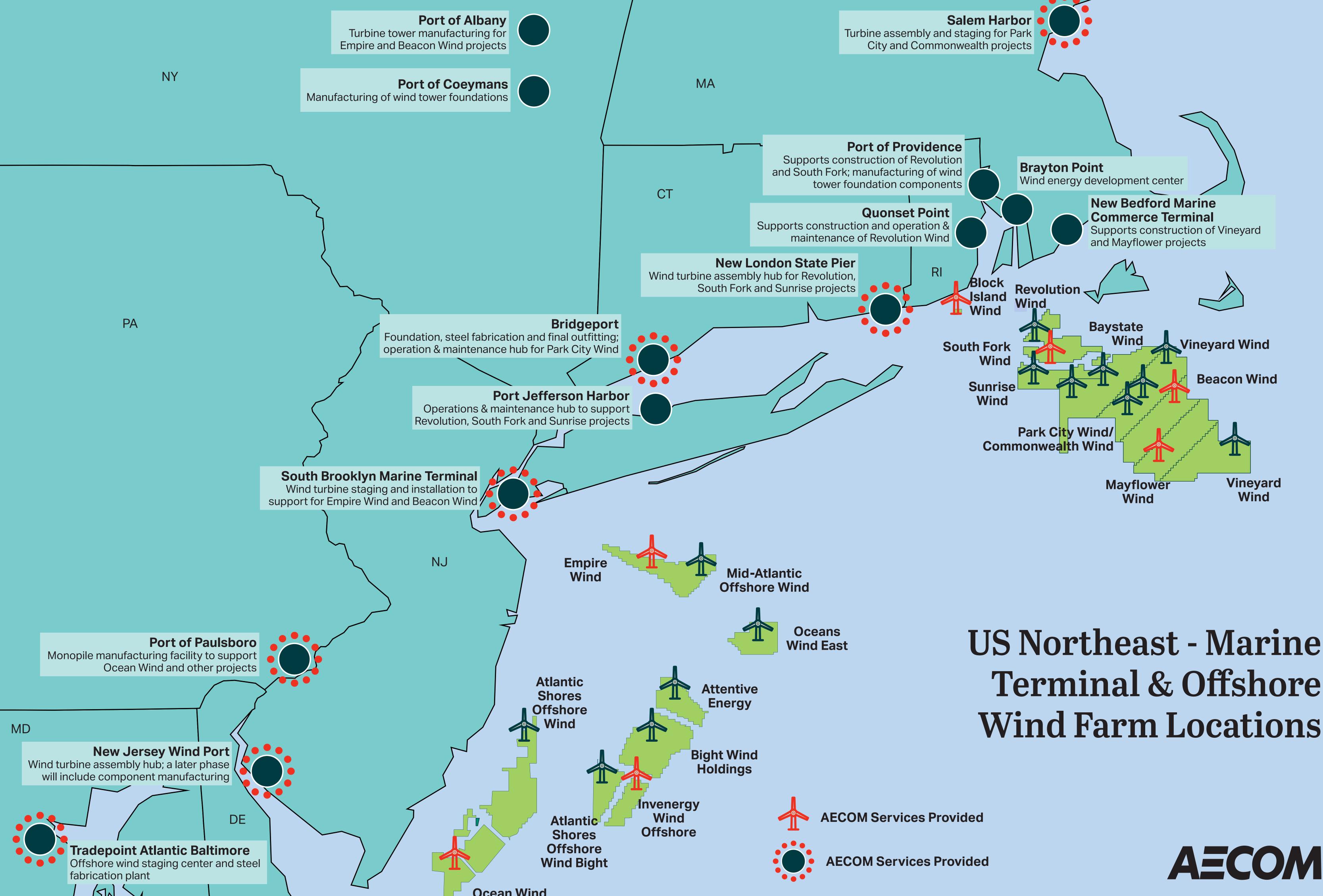
Early Mover Project Status



## Years 10-30+ OSW Farm Sub-Commissioning, **Operation & Maintenance** embly, ions Years 10-30+ N/A Years 10-30+ OSW Operation & Maintenance Years 10-30+ **OSW Operation &** Maintenance







# **Terminal & Offshore** Wind Farm Locations

## **Port of Paulsboro, New Jersey**

- Terminal redevelopment for general cargo (steel plate & coil) and OSW
- Site remediation concurrent with in-water and upland improvements
- EEW monopile fabrication facility

### **AECOM Services** 2004-2017

- Feasibility study and concept design
- Environmental site investigation and assessment
- Permit applications/ State & Federal Approvals
- PM / CM services







## Coeymans, Albany, New York

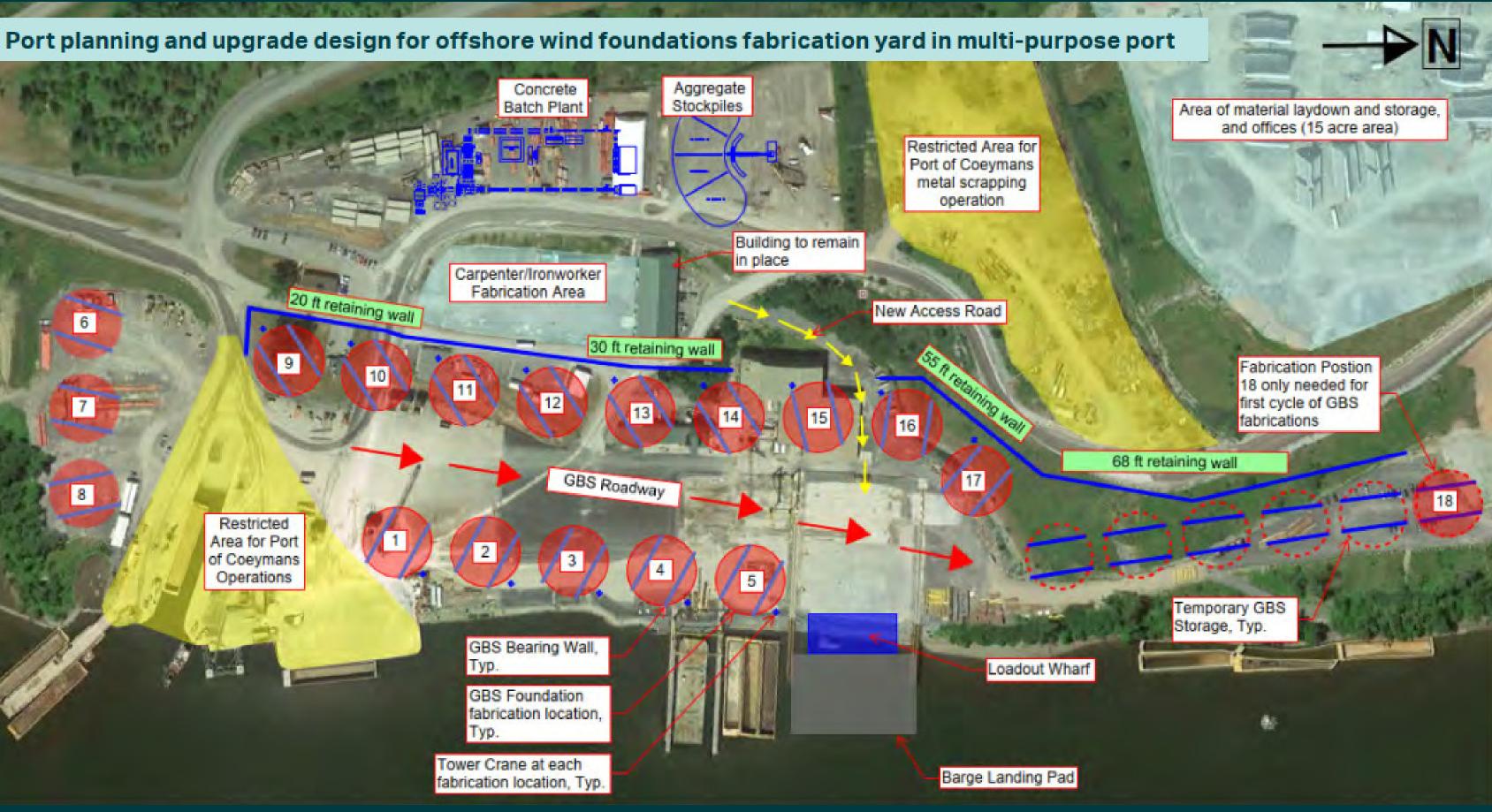
Empire Wind Offshore Foundations Fabrication and Installation Terminal

Carpenter/Ironworke Fabrication Area Restricted Area for Port of Coeymans Operations GBS Bearing Wall, Typ. **GBS** Foundation abrication location Tower Crane at each fabrication location, Typ.

### **AECOM Services** 2019-2020

- Basis of Design (8,500 psf wharf)
- Identify regulatory framework
- Cost estimate for upgrades

# Concept and Pre-FEED Services for Gravity Base Foundations



Develop site production layout with concrete batch plant Terminal modernization and infrastructure upgrades



## South Brooklyn Marine Terminal, NYC, New York

### **AECOM Services** 2019-2022

- Site Investigation & Environmental Assessment
- Sediment Sampling
- Joint Permit Application (NYState & USACE)
- Site Investigation & Surveys
- Basis of Design: Wharf Improvements include Heavy Lift + SOV + CTV
- Preliminary Engr (Civil, Marine, Geo, Elec)
- Program Management
- NYSERDA Funding Assistance Application



Artistic rendering of concept for site development of the South Brooklyn Marine Terminal (not final) Image Equinor Construction Timeline: 2023 - 2025



## **Connecticut Port Authority State Pier,** New London, Connecticut



### **AECOM Services** 2018-2023

- **Environmental Site Investigation and Assessment**
- Permit Applications / State & Federal Approvals
- Extension of Port Authority Staff
- Design Reviews Heavy Lift Platforms
- CMR / Contractor Procurement

**Construction Completion Date: Mar 2023** 

Heavy-lift capable port facility that will accommodate a wide variety of cargoes, including wind turbine generator staging and assembly. Design addresses previously identified facility shortcomings, and enhance the State Pier facility and site conditions to accommodate future cargo needs and capitalize on opportunities for the State of Connecticut.

GMP Development, Contract Administration & Permit Compliance



## **New Jersey Wind Port**

## **AECOM Services**



The New Jersey Wind Port will support up to 1,500 manufacturing, assembly, and operations jobs. Construction, which is targeted to start in 2021, will create hundreds of additional union jobs.



## Tradepoint Atlantic, **Baltimore**, Maryland



### **AECOM Services** 2021-2022

- Site Investigation & Assessments
- Grant Funding Assistance
- **Environmental Permitting & Approvals**
- Project & Construction Management

Terminal redevelopment of over 200 acres and multiple wharfs and piers at an Offshore Wind Port for a component staging and assembly center, including a monopile steel fabrication facility and a subsea array cable manufacturing facility. Elements include uniform heavy lift wharfs, roll-on/rolloff berths, and pavements for staging, loading and crane operations.



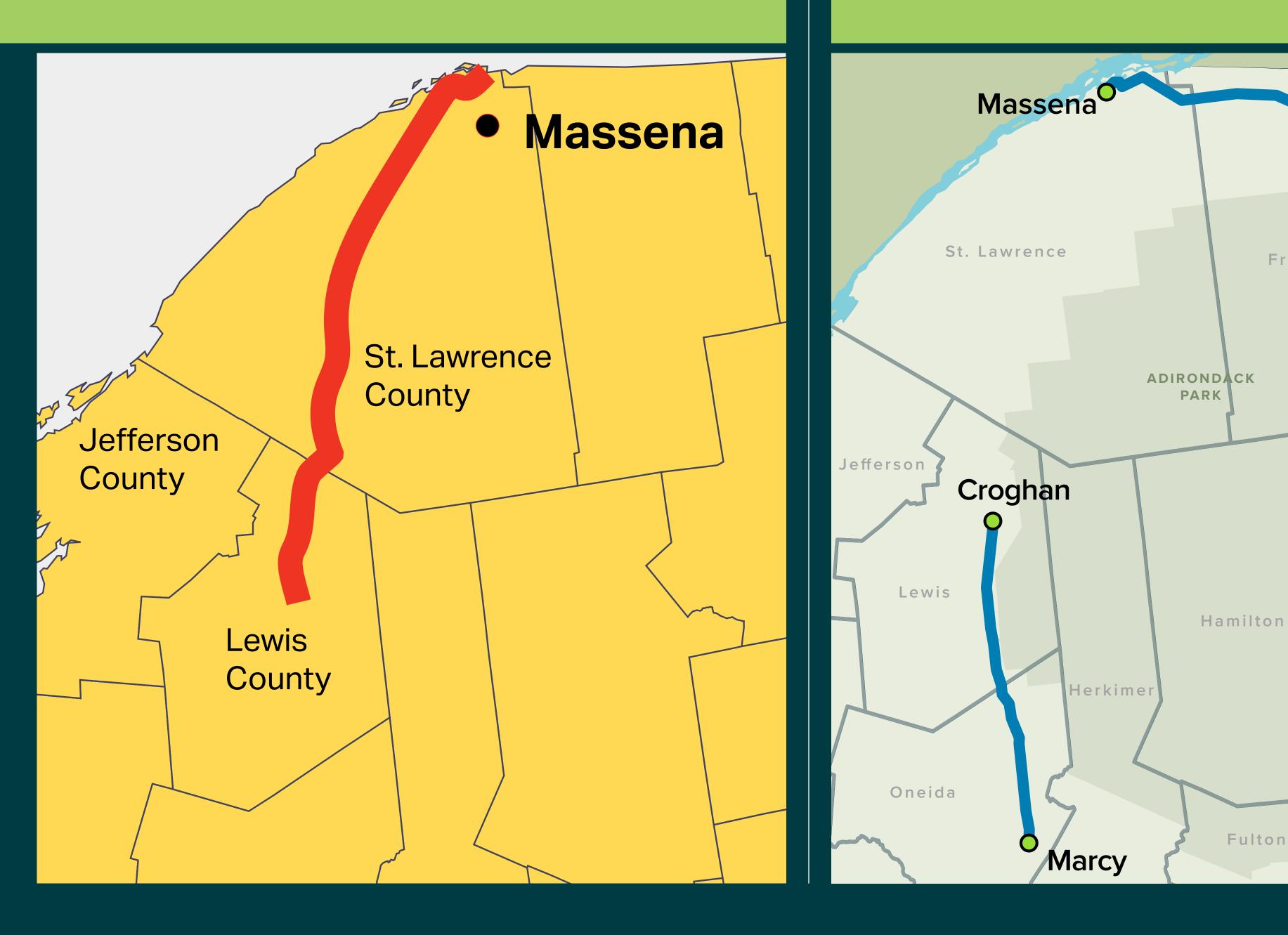
# **Smart Path Reliability Project**

## **AECOM Services**

- Project/Program Management
- Procurement Management
- Preliminary engineering and permitting support
- Contractor onboarding
- On-site Construction Safety Management
- Right of Way Agents

### Rebuilding two 86-mile-long Moses-Adirondack transmission lines

Rebuild at 345kV, Demo 230kV





# Smart Path Connect Project

## **AECOM Services**

- Project/Program Management
- Construction Management
- Cost Estimating
- Risk Assessment and Management
- Value Engineering

### gement ient

- Project Management Information System
- Procurement Management
- Preliminary engineering and permitting support
- Right of Way Agents



- Rebuilding 50-mile-long transmission line
- Replace/Upgrade10 substations
- Voltage up to 345kV



# Salem Wind Port Redevelopment

## **AECOM Services 2022-2025**

- Site Investigation & Surveys
- Upland Improvements to Achieve 3,000-4,000 psf in the Laydown Yards
- Basis of Design 6,000 and 4,000 psf heavy lift platforms
- Sediment Sampling Plan & Dredge Material Management
- Community Engagement and Permitting Support
- Engineering Design
- Grant Funding Assistance (Technical + BCA)

## Re-development

- of existing 42-acre brownfield site into a staging, marshalling and pre-assembly terminal
- This fast-track project is targeted to commence construction in summer 2023 with operations starting January 2025









