New York Bight
Draft Programmatic Environmental Impact Statement
January 2024
OCS EIS
Bureau of Ocean Energy Management (BOEM) 2024-001
Docket Number: BOEM-2024-0001

These comments are submitted by the undersigned for the Draft Programmatic Environmental Impact Statement (PEIS) referenced above, described on page 1-1 of the document as "assessing the potential biological, socioeconomic, physical, and cultural impacts that could result from development activities for six commercial wind energy leases in an area offshore New Jersey and New York known as the New York Bight (NY Bight), as well as the change in those impacts that could result from adopting related programmatic avoidance, minimization, mitigation, and monitoring (AMMM) measures."

On page 1-4 of the PEIS, BOEM restates the Proposed Action for the Draft PEIS as "the adoption of programmatic AMMM measures that BOEM would require as conditions of approval for activities proposed by lessees in COPs submitted for the NY Bight lease areas unless future COP-specific NEPA analysis shows that implementation of such measures is not warranted or effective."

BOEM states the Draft PEIS intends to address the following objectives:

- Analyzing potential impacts if development is authorized in the six NY Bight lease areas.
- Analyzing programmatic AMMM measures for the six NY Bight lease areas.
- Analyzing focused, regional cumulative effects.
- Tiering of project-specific environmental analyses.

These comments describe major failures to comply with the requirements of National Environmental Policy Act (NEPA) in the preparation of this document that appear to be part of an overall campaign of misinformation regarding the cost and ability of off-shore wind to meet the clean energy requirements of New York and New Jersey law and policy absent the destruction of the marine ecosystem comprising the NY Bight.

I. BACKGROUND

- NJ Executive Order No. 28 of May 23, 2018, sets target of total conversion of the state's energy production profile to 100% clean energy sources on or before January 1, 2050; directs the New Jersey Board of Public Utilities (NJBPU) and other state agencies to develop an Energy Master Plan (EMP), published on January 27, 2020. "Clean" energy includes nuclear generation.
- The New York State Climate Leadership and Community Protection Act (CLCPA) was signed into law on July 18, 2019. Among its provisions are requirements to:
    - Double distributed solar deployment to 6,000 megawatts by 2025
    - Deploy 3,000 megawatts of energy storage by 2030
    - Generate 70% of electricity from renewable energy by 2030
    - Reduce GHG emissions by 40% from the 1990 baseline by 2030
    - Quadruple NY's offshore wind to 9,000 megawatts by 2035
    - 100% clean electricity (emission free) by 2040 (including nuclear)
    - Reduce GHG emissions by 85% from the 1990 baseline by 2050
- Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad," was issued on January 27, 2021. In that order, President Biden stated that the policy of his administration is "to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure."
    - To support the goals outlined in Executive Order 14008, the administration announced plans to increase renewable energy production, with a goal of 30 gigawatts (GW) of offshore wind energy capacity by 2030 thought to be capable of producing enough electricity "to power 10 million homes with clean energy…."
    - DOI announced a goal to hold up to seven offshore wind auctions by 2025, including areas in the Gulf of Maine, New York Bight, Central Atlantic, and Gulf of Mexico, as well as offshore of the Carolinas, California, and Oregon.
    - New Jersey Executive Order No. 307 was issued on September 21, 2022, outlining the goal of 11 GW of offshore wind energy generation by 2040, while then NYS Governor Andrew Cuomo set a target of 9 GW of OSW by 2035 in January of 2019, bring the total to 20 GW of installed OSW on the 2035-2040 timeframe.
    - On June 23, 2022, the White House announced the federal government was joining with eleven governors from up and down the East Coast to launch a new Federal-State Offshore Wind Implementation Partnership that will accelerate the growing offshore wind industry, estimated to be a $109 billion revenue opportunity across the offshore wind supply chain this decade. That construction goal was 30 GW along the Atlantic Seaboard by 2030.
- In parallel with these actions, the Oyster Creek Nuclear Generating Station in NJ was prematurely shutdown in September of 2018, before its license expired. The 636 MW plant operated at 100% capacity and generated 5,400 GWh of electricity in 2017, its last full year of operation.
- Two nuclear reactors at Indian Point (IP2 and IP3) were also prematurely shuttered in 2020 and 2022, respectively, prior to license expiration. The 1037 MW IP2 plant ran at 94% capacity in its final full

year of operation and generated 8,400 GWh of electricity. At 1039 MW and 100% capacity, IP3 generated 9,100 GWh of electricity in its last full year of operation (2021).

- This mean that as New York and New Jersey were setting new targets for both renewable and "clean" or "emission-free" generation, they consciously eliminated 2719 MW of installed power that annually produced 23,900 GWh of clean power toward which ratepayers had invested millions to build and successfully operate on land assets already dedicated to energy production.
- As elaborated below, the current leases planned for the NY Bight, which will build 8,822 MW (more than three times the shuttered nuclear) and operate at 40% capacity (vice the 100% of the shuttered nuclear plants) will make about 31,000 GWh, at best a net output of a little more than 7,000 GWh.

- The amounts of installed capacity and number of WTGs in the planned projects as described in the PEIS are inconsistent and seriously misleading:
  - On page ES-4, the PEIS states "Based on a conservatively estimated power ratio of 3 megawatts per square kilometer, BOEM estimates that full development of leases in this area has the potential to create up to 5.6 to 7 GW of offshore wind energy."
  - On the same page, the PEIS states an estimated 16–18 GW of offshore wind energy may be necessary to ensure New York State achieves its Climate Act mandates (New York State Climate Action Council 2022).
  - On page ES-7 of the PEIS, BOEM states that "For the analysis of six NY Bight projects, BOEM anticipates development of 1,103 wind turbine generators (WTGs), 22 offshore substations (OSSs), 44 offshore export cables totaling 1,772 miles (2,852 kilometers), and 1,582 miles (2,546 kilometers) of inter-array cables across the six NY Bight lease areas."
    - This assertion that the six NY Bight projects would build "up to 1,103 WTGS" is repeated on PEIS page 2-16.
  - On page 3.4.1-8, the PEIS says the NY Bight Projects evaluated in the PEIS would construct an estimated 9,922 MW of renewable power from the installation of 713 WTGs, citing Table D2-1 in Appendix D.
    - Table D2-1 indicates only 8,822 MW will be installed by the current projects, and require 615 WTGs
    - Table D2-1 further indicates that a further 1,103 WTGs are planned, but fails to disclose the resulting installed MWs. (Using a ratio analysis of the data provided in Table D2-1, if 615 WTGs will produce 8,822 MW of installed capacity, then 1,103 WTGs would be 15,822 MW installed).
  - The Table in Appendix D appears to conflict with text elsewhere in the PEIS, and indicates the total planned buildout of OSW in the NY Bight leases is 26,644 MW.

II. Comments

1. Segmentation: The PEIS violates 38 CFR § 200.4 by improperly segmenting the Proposed Action from the full complement of OSW projects and installed Wind Turbine Generators (WTGs) needed to meet the dual legal requirements of service load obligations and applicable state mandates for renewable energy.

The purpose of the Proposed Actions is to build and operate OSW farms to produce "renewable" electricity from sources approved under NY law and NJ Executive Order to meet what are now—and remain in the future—a long-established "service obligation"[1] to provide electricity to end-use consumers. Switching the existing generation from fossil fuels and nuclear power to renewables such as offshore wind requires full assessment of the ***impacts of building out the full complement of OSW facilities that will be needed so a) the public is fully informed of the magnitude of the federal action, and b) complete and cumulative impacts can be assessed***. This "segmenting" of OSW projects is a blatant violation of NEPA and its regulations.

a) The Installed Capacity Requirements and Planning are Both Segmented and Misleading

The segmentation of projects is clearly indicated by the misleading inconsistencies noted above. The PEIS (p. 1-5) states that based on a conservatively applied power ratio of 3 megawatts per square kilometer, BOEM estimates that full development of leases in this area has the potential to create up to 5.6 to 7 GW of offshore wind energy. Yet, it will also create 8,822 MW, 9,922 MW, and will include an additional 1,103 WTGs to ostensibly satisfy the statutory and policy renewable goals established by New York and New Jersey:

- NJ: 11 GW of offshore wind energy generation by 2040
- NY: 9.0 GW of offshore wind energy generation by 2035
- NY: 33% of downstate electric generation from OSW by 2040

The PEIS indicates that the 20 GW total of OSW for the two state mandates noted above (9 + 11) must be augmented by an additional estimated 16–18 GW of offshore wind energy to ensure New York State achieves its CPCLA mandates. No description, analysis, or impact disclosure regarding the buildout of ***16-18 more GW of OSW*** for just NY requirements is provided in the PEIS, likely because Proponents have failed to inform the public regarding the actual amounts of electricity that are known to be required in future based on implementation of other regulations and policies, as well as identified forecasts and trends (see data and discussion below).

However, buried in **Table D2-1 of the Appendices (labeled Offshore wind development activities on the U.S. East Coast: projects and assumptions" on page D2-3)** is a summary of the full complement of leases to be developed in the NY Bight area, in wishful fulfillment of the OSW buildout required to produce enough electricity to meet the obligation to serve NY ratepayers while also complying with the CLCPA (discussed in further detail below).

[1] Federal law defines the "service obligation" as a requirement applicable to, or the exercise of authority granted to, an electric utility under Federal, State, or local law or under long-term contracts to provide electric service to end-users or to a distribution utility (16 USC § 824q).

As excerpted in Table 1, the PEIS Appendix D data shows that the Planned Projects will total 615 WTGs providing installed capacity of 8,822 MW (numbers different from the 713 WTGs and 9,922 figures provided on p. 2.4.1-8 of the PEIS). The future projects are estimated to require 1,103 WTGs, an increase of almost 200% over the current project total of 615. Table D2-1 claims the installed MW total is not available. Based on the project figures depicted, each WTG is expected to provide approximately 14.3 MW (8,822 divided by 615). Multiplied against the planned 1,103 additive turbines, the installed capacity for

Table 1 : Summary of Current and Planned OSW Projects

Region	Lease/Project	Lease Area	Status	Turbine Number	Generating Capacity (MW)
NY/NJ	Atlantic Shores South	OCS-A 0499	COP, PPA, SAP	200	2,837
NY/NJ	NY/NJ Atlantic Shores North	OCS-A 0549	COP (unpublished), SAP	157	2,355
NY/NJ	NY/NJ Ocean Wind 2	part of OCS- A 0532	PPA	111	1,554
NY/NJ	NY/NJ Empire Wind 1	part of OCS-A 0512	COP, PPA, SAP	57	816
NY/NJ	NY/NJ Empire Wind 2	part of OCS-A 0512	COP, PPA, SAP	90	1,260
NY/NJ	NY Bight lease areas	OCS-A 0537, OCS-A 0538, OCS-A 0539, OCS-A 0541, OCS-A 0542, and OCS-A 0544	Planning	1,103	Not Available

Source: PEIS Table D2-1

the "future planned" additional projects is 15,772 MW (15.7 GW), less than the estimated 16-18 additional GW needed to meet the CLCPA.

b) The Disclosed/Analyzed Buildout Capacity is Completely Insufficient for Known Service Obligations

The New York Independent System Operator, Inc. ("NYISO") presents load and capacity data for 2023 and future years in its annual "Gold Book." The 2023 Gold Book includes demand forecasts through 2053 for statewide electricity demand (the New York Control Area or "NYCA"), with the most recent report and forecast presented in Table 2. As summarized by the NYISO on page 22 of the Gold Book, the current electricity demand in the NYCA is over 150,000 GWh, ***and will grow by 66% to 235,020 GWh between 2023 and 2053***.

Notably, Table 2 indicates that after 2030, the greatest growth in demand for end-use electric energy in NY will be building electrification and electric vehicles (EVs). An additional 56,000 GWh (56 billion KWh) will be needed to power EVs, a factor of ten over the established electric transportation systems operating in the northeast corridor, which currently use more than half of the existing wind production in those same states (Table 3).

Table 2: NYISO Baseline Annual Energy Forecast (In GWh)

Year	(a) Econometric Energy	(b) (-) EE and C&S	(c) = a - b End-Use Energy	(d) (-) Solar PV, BTM	(e) (-) Non-Solar DG, BTM	(f) (+) Storage Net Energy Consumption	(g) (+) EV Energy	(h) (+) Building Electrification	(i) (+) Large Load Projects	(j) = c-d-e+f+g+h+i Baseline Annual Energy Forecast
2023	157,127	2,137	154,990	5,329	1,969	57	737	954	2,340	151,780
2024	158,646	4,732	153,914	6,529	2,130	159	1,112	1,474	4,140	152,140
2025	159,307	7,322	151,985	7,719	2,186	247	1,630	2,253	6,180	152,390
2026	160,028	9,863	150,165	8,834	2,246	374	2,339	3,212	8,240	153,250
2027	160,753	12,168	148,585	9,827	2,309	573	3,291	4,447	9,020	153,780
2028	161,568	14,455	147,113	10,654	2,367	678	4,454	5,856	9,310	154,390
2029	162,213	16,638	145,575	11,337	2,411	781	5,841	7,551	9,530	155,530
2030	163,007	18,881	144,126	11,879	2,446	881	7,463	9,485	10,030	157,660
2031	163,931	20,956	142,975	12,325	2,503	975	9,290	11,658	10,030	160,100
2032	164,871	22,993	141,878	12,727	2,540	1,066	11,344	14,209	10,030	163,260
2033	165,960	24,862	141,098	13,106	2,586	1,159	13,639	16,986	10,030	167,220
2034	167,148	26,643	140,505	13,458	2,622	1,249	16,186	19,950	10,030	171,840
2035	168,230	28,334	139,896	13,775	2,656	1,341	18,992	23,082	10,030	176,910
2036	169,163	29,894	139,269	14,068	2,682	1,430	21,808	26,413	10,030	182,200
2037	170,099	31,328	138,771	14,336	2,714	1,521	24,602	29,706	10,030	187,580
2038	171,090	32,704	138,386	14,582	2,757	1,610	27,338	33,035	10,030	193,060
2039	172,320	34,067	138,253	14,816	2,778	1,699	29,990	36,292	10,030	198,670
2040	173,593	35,533	138,060	15,023	2,816	1,787	32,539	39,453	10,030	204,030
2041	174,812	36,989	137,823	15,218	2,848	1,879	34,955	42,289	10,030	208,910
2042	175,929	38,390	137,539	15,399	2,873	1,967	37,223	44,893	10,030	213,380
2043	176,955	39,606	137,349	15,560	2,889	2,056	39,338	47,176	10,030	217,500
2044	177,818	40,792	137,026	15,707	2,920	2,144	41,288	49,229	10,030	221,090
2045	178,722	41,926	136,796	15,841	2,949	2,231	43,065	50,868	10,030	224,200
2046	179,448	43,019	136,429	15,974	2,963	2,321	44,627	52,280	10,030	226,750
2047	180,493	44,180	136,313	16,089	2,980	2,410	45,971	53,415	10,030	229,070
2048	181,504	45,354	136,150	16,201	3,015	2,496	47,090	54,440	10,030	230,990
2049	182,426	46,455	135,971	16,290	3,026	2,583	47,992	55,110	10,030	232,370
2050	183,267	47,523	135,744	16,384	3,043	2,670	48,679	55,654	10,030	233,350
2051	184,468	48,628	135,840	16,477	3,069	2,758	49,064	56,074	10,030	234,220
2052	185,517	49,711	135,806	16,547	3,097	2,845	49,224	56,479	10,030	234,740
2053	186,625	50,749	135,876	16,620	3,110	2,932	49,260	56,652	10,030	235,020

(a) - Econometric Energy Forecast - Reflects impacts of projected weather trends and economic growth (b) - Table I-8a Energy Efficiency and Codes & Standards Energy Impacts, Relative to 2022
(c) - End-Use Energy Consumption - Reflects projected end use energy consumption
(d) - Table I-9b Solar PV Impacts, Behind-the-Meter - Total Reductions in Annual Energy
(e) - Table I-10b Non-Solar Distributed Generation Impacts, Behind-the-Meter - Total Reductions in Annual Energy
(f) - Table I-12b Storage Annual Net Energy Consumption, both wholesale and behind-the-meter (pumped storage is not included - see Table III-2 for current resources) (g) - Table I-11b Electric Vehicle Energy Usage
(h)-TableI-13a Building Electrification Energy Usage-future end-use electrification including heat pumps, water heating, cooking, and other end-uses
(i) - Table I-14 Large Loads Forecast - reflects existing plus future load growth
(j) - Table I-2 Baseline Annual Energy Forecast

Table 3: Wind Output and Mass Transit Electricity Requirements—Northeast Corridor

NE Corridor State	Wind Output (BKwH)	Mass Transit System	Billion KWH Used
MA	0.215	**MBTA**	0.422
RI	0.2093		
CT	0.0128	**CT*rail***	U/A
NY	4.56750	**NYMTA**	2.800
NJ	0.0216	**NJT**	0.300
PA	3.5722	**SEPTA**	0.386
MD	0.4976	**MARC**	U/A
DE	0.00437		
DC	0	**WMATA**	0.500
Interstate		**AMTRAK**	0.636
Total	**9.10037**		**5.044**

b) *The forecast growth in electricity demand by industry regulators cannot be met by the segmented OSW Projects described in the PEIS*

The planned 8,822/9,922 MW construction under the Proposed Action is well below the 20 MW total needed for the initial compliance with NYS CLCPA and the NJ EO, and woefully below what may be needed for full NYS compliance alone.

The PEIS borders on fraudulent in its failure to fully disclose and assess the full effects of building out and operating the total number of WTGs needed to "meet" goals and mandates, not to mention the multiple and cumulative impacts caused by use and impairment of irreplaceable maritime assets from attendant transmission facilitates. Nor does the PEIS disclose and and analyze the amount of non-intermittent electric generation (nuclear, hydro, fossil, etc) that will be needed to ensure reliable electric supplies during the 60% downtime experienced by OSW generation.

- *New York*

Page 3.4.1-6 of the PEIS notes that the New York State Energy Research and Development Agency (NYSERDA) led the development of the New York State Offshore Wind Master Plan, is leading the coordination of offshore wind opportunities in New York State, and is supporting the development of 9,000 MW of offshore wind energy by 2035. On its "Story of Our Grid" page, the (NYSERDA) divides the NYCA into Up- and Downstate regions to illustrate how various fuel types will be used to deliver the load demanded as measured by the NYISO. NYSERDA calculations of future demand levels (using numbers similar but not equal to those of the NYISO) and planned renewable contributions for the NYS Grid are summarized in Table 4.[2] [3]

Table 4: NYSERDA Projected Generation and Fuel Type

NYSERDA Generation Model	Demand Load (Gigawatt Hours/ GWh)	Percentage Renewable	Percentage Offshore Wind
Upstate 2030	51,223	70%	0%
Downstate 2030	100,455	70%	24%
Upstate 2040	74,905	75%	0%
Downstate 2040	132,601	90%	33%

NYSERDA's Upstate/Downstate demand ratios run about one-third to two-thirds of the total load demand in the NYCA. By 2053, two-thirds of the NYISO demand forecast (downstate demand) will approximate 155,113 GWh. The "Story of our Grid" webpage states that "Downstate load is completely met with zero emissions generation in 2040," a claim that is based on 33% of load being met with offshore wind. This requires ***50,000 GWh*** of OSW to meet the CPCLA mandates in 2053. The PEIS completely fails to disclose the actual MW/WTG buildout needed to produce the 50,000 GWh needed for the NYS mandate alone at the expected 40% capacity factor (i.e., turbines only operating at 40% of the time).

[2] The total demand included in the NYSERDA calculations for 2030 and 2040 are both lower than the estimates of the NYISO gold Book provided in Table 2.

[3] Of the Downstate demand for 100,000 GWh, New York City demand is a little over half at about 55,000 GWh.

As noted above, the 9,922 MW from the planned installation of 713 WTG could produce about ***34,767 GWh of electricity (or 34.7 billion KWh),*** but NYS will not have the full output of the proposed actions feeding its grid. Sourcing only the 2040 downstate demand with 33% OSW production (as planned by NYSERDA) would require WTG capacity to make ***43,758 GWh.*** Meeting the 2053 downstate demand of over 155,000 GWh with 33% OSW (***55,000 GWh)*** requires about ***15,700 MW of installed OSW capacity.*** This means NYS alone requires nearly half of all the off-shore wind planned by the Biden Administration.

Table 5: Eastern Seaboard Homes

Eastern Seaboard States	"HOMES" (in millions)
ME	0.57
MA	2.71
RI	0.42
CT	1.39
NY	7.53
NJ	3.39
PA	5.14
DE	0.45
MD	2.29
VA	3.24
NC	4.01
SC	1.97
GA	3.88
FL	8.15
Total	**45.14**

Source: US Census Bureau

For purposes of grid stability and reliability, as well as volume requirements, it is important to note that the Downstate/NYC demand for 55,000 GWh includes vast municipal enterprise systems such as subways, wastewater treatment plants, hospitals, emergency services (police, fire, EMT), street and traffic lights all require 24/7 electricity supply in copious amounts for all residents, but especially underserved and environmental justice populations. Describing actual turbine electricity production in euphemistic, misleading comparisons about powering "X Million Homes" is highly deceptive.

As Table 5 shows, the Eastern Seaboard has over 45 million "homes." Breaking down the popular tagline about powering "10 Million Homes" with the current Atlantic OSW program, if the planned 30 gigawatts can serve 10 million homes, 45 million homes will require 135 GW installed. The US Department of Energy typically cites 412 offshore WTGs as the requirement per gigawatt, meaning that powering ***all*** the East coast homes (and just the homes) with the needed 135 gigawatts of wind at 412 turbines per gigawatt, putting over 55,000 turbines in the irreplaceable maritime system of the Atlantic—a far cry for the 6-700 turbine segment analyzed in the PEIS.

- *New Jersey*

Data on load growth in New Jersey is not as clear due to its inclusion in the multi-state Pennsylvania/Jersey/Maryland ISO (PJM). The 2024 PJM Load Forecast Report states that the total annual energy use throughout the PJM footprint is expected to increase nearly 40% by 2039, from the current 813,328 gigawatt-hours (GWh) to 1,021,955 million GWh. Of that, about 30,000 GWh of additional demand is identified as coming from NJ utility areas.

According to the U.S. Department of Energy's Energy Information Agency (EIA), New Jersey plants of all types produced 65,061 GWh of electricity in 2022, of which 33,394 GWh came from natural gas production. The mandated 11,000 MW of OSW installed capacity (only a fraction of which will come from the Proposed Action being evaluated) could produce about 39,000 GWh.

This means that New Jersey's separate planned 11,000 MW of OSW can displace natural gas use in New Jersey, or cover the additive load demand from data centers and electric vehicles, but not both. It is hard to conceive how the purpose of the action—to make the New Jersey grid emission-free—is satisfied by the disclosed levels of OSW wind construction. Again, the realities of the service obligation and electricity production demonstrate these projects are but a small, segmented portion of the actions needed to meet the renewable energy production goal.

b) *The final EIS analysis must include the full complement of operational generation assets needed to reliably provide the identified electricity demand (including growth) while combatting the climate crisis through deployment of clean energy technologies and infrastructure.*

The PEIS must redefine the Proposed Action as including construction and operation of the full complement of WTGs needed to meet the known load requirements and renewable portfolio standards simultaneously, not piecemeal projects in various lease areas. Must review the cumulative impacts from all the OSW required to meet the 33% stated plan for generating electricity to meet the forecast demand low.

3. Cumulative Impacts: The PEIS fails to identify and assess what are obvious and foreseeable Cumulative Impacts from the deployment of OSW in the NY Bight

All EISs must identify, describe, and analyze the direct, indirect, and cumulative effects of the action alternatives developed to implement the proposed action and the no action alternative. Cumulative effects are defined in 40 CFR § 1508.1 as follows:

> Effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

In addition, 43 CFR § 46.30 defines "reasonably foreseeable future actions" to include "those federal and non-federal activities not yet undertaken, but sufficiently likely to occur, that a responsible official of ordinary prudence would take such activities into account in reaching a decision." THe regulations go on to provide that the federal and non-federal activities that BOEM must take into account in the analysis of cumulative impacts include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified by BOEM. Reasonably foreseeable planned actions do not include those actions that are highly speculative or indefinite.

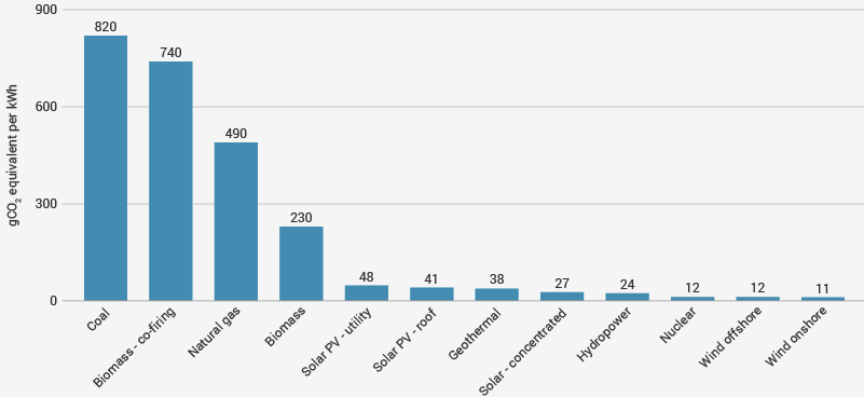
There is nothing speculative about the legal and policy mandates to build OSW in and near the NY Bight and other Atlantic Ocean regions to satisfy both renewable energy portfolio standards and electricity load demand. Therefore the PEIS must fully scope and evaluate all the OSW construction and operation needed and planned to complete the fully-scoped, unsegmented Proposed Action: 33% of Downstate NY electricity produced by OSW in 2040 and beyond, and compliance with NJ EO 307.

4. <u>Inadequate Alternatives</u>: The PEIS fails to identify and assess what are likely necessary alternatives to the proposed six commercial wind energy leases the New York Bight given the current and future actual electricity demand in the target service areas, and limited electrical output possible from the Proposed Action and its segmented companion projects.

The purpose and need for the proposed OSW projects is to produce "renewable" electricity supplies that meet legal mandates while also satisfying the massively increasing load service obligation that sustains vital needs such as medical services, sanitation, transportation, food preservation, communication, public safety, and emergency services. *The Proposed Projects must be able to accomplish BOTH requirements*.

The PEIS never explains whether and how the proposed off-shore wind projects will actually satisfy either the current electricity demand (factoring in displacement), or the prodigious growth in electricity demand

Figure 1: Life-cycle Emissions of Electricity Options



Source: World Nuclear Association from IPCC Data

forecasted by the affected Independent System Operators. However, to avoid segmentation and meet cumulative effects analysis requirements, the PEIS must analyze a complete suite of alternatives that include meeting installed operating capacity requirements for both fuel type (EO and CPCLA) and output (NYISO and PJM ISO forecasts). This may include retaining natural-gas fired generation or building more nuclear capacity.

To the extent the drive for "clean generation" is to reduce the risks of climate change from greenhouse gas emissions (GHGs), then using the label "renewable" does not necessarily secure the environmentally preferable generation alternative, especially if other geocapital assets (air, land, and water components) are taken into account (see Figure 1). The full volume of geocapital supply that must be used or expended to

Table 6: Comparative MegawattHour Production by State and Fuel

State	Fuel Type	Installed MW	MwH Produced	MwH/MW
NJ	Wind	9.0	21,629	2,403
	Natural Gas	12,374	33,394,323	2,699
	Nuclear	3,631	28,318,800	7,800
NY	Wind	2,189.0	4,567,508	2,087
	Natural Gas	24,587	60,312,012	2,453
	Nuclear	3,398	26,812,164	7,890
RI	Wind	78.0	209,338	2,684
	Natural Gas	1,933	6,963,771	3,602
	Nuclear	0	0	0
CT	Wind	5.0	12,833	2,567
	Natural Gas	5,376	24,530,687	4,563
	Nuclear	2,163	16,464,167	7,612
MD	Wind	190.0	497,608	2,619
	Natural Gas	6,347	13,949,642	2,198
	Nuclear	1,850	14,810,684	8,004
KS	Wind	8,261.0	29,687,479	3,594
	Coal	4,886	20,229,360	4,141
	Nuclear	1,268	8,981,959	7,085
TX	Wind	39,334.0	114,786,903	2,918
	Coal	19,315	85,336,953	4,418
	Nuclear	5,139	41,606,955	8,097

Source: US EIA Data

produce a kilowatt-hour is more than just the airshed capacity used for GHG absorption. Provided a legally compliant set of alternatives for PEIS analysis may require updated presumptions regarding the perceived preference for OSW as more benign or less harmful than other generation alternatives. This becomes crucial when the low rates of actual electricity output from different fuel sources and generation processes are considered (see Table 6).

4. Socioeconomic Impacts: The PEIS fails to identify and assess the full complement of Socioeconomic Impacts from building and operating intermittent power sources in the most densely populated areas of the nation.

Table 7: Per Capita Energy-related Carbon Dioxide Emissions* by State (1970–2021)

			Change (1970-2021)		Change (2020-2021)	
State	1970	2021	Percent	Absolute	Percent	Absolute
District of Columbia	18.0	3.8	-79.12%	-14.3	5.31%	0.2
New York	15.6	7.9	-49.61%	-7.7	10.18%	0.7
Massachusetts	17.5	8.0	-53.99%	-9.4	7.44%	0.6
Maryland	18.8	8.5	-54.81%	-10.3	9.29%	0.7
Vermont	12.4	8.6	-30.64%	-3.8	2.12%	0.2
New Jersey	18.0	9.6	-46.61%	-8.4	6.34%	0.6
New Hampshire	17.3	9.6	-44.61%	-7.7	5.98%	0.5
Rhode Island	13.8	9.7	-29.70%	-4.1	8.20%	0.7
Connecticut	15.7	10.1	-35.82%	-5.6	7.53%	0.7
Florida	15.2	10.4	-31.96%	-4.9	7.76%	0.7
Maine	16.9	10.5	-37.93%	-6.4	5.69%	0.6
North Carolina	19.1	10.9	-42.68%	-8.1	7.22%	0.7
Virginia	18.6	11.3	-39.14%	-7.3	-0.47%	-0.1
Georgia	16.0	11.5	-27.91%	-4.5	5.88%	0.6
Delaware	29.2	12.9	-55.77%	-16.3	2.58%	0.3
South Carolina	16.2	13.4	-17.81%	-2.9	7.80%	1.0
Pennsylvania	26.0	16.4	-36.80%	-9.6	10.32%	1.5
Texas	31.9	22.4	-29.73%	-9.5	5.03%	1.1
Indiana	33.1	24.4	-26.12%	-8.6	7.33%	1.7
Louisiana	39.5	40.8	3.29%	1.3	3.43%	1.3
West Virginia	44.0	49.5	12.61%	5.5	15.25%	6.5
North Dakota	23.8	72.7	205.43%	48.9	4.48%	3.1
Wyoming	55.7	94.3	69.38%	38.6	-2.02%	-1.9
Average all states	20.7	14.8	-28.67%	-5.9	6.72%	0.9

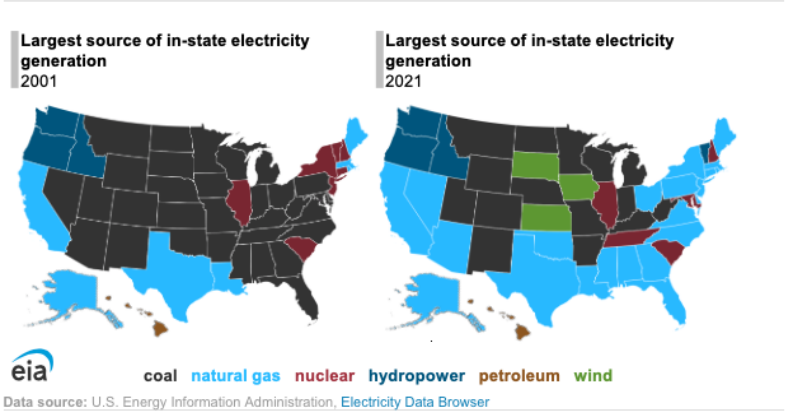
Source: U.S. Energy Information Administration, State Energy Data System and EIA calculations made for this analysis.
***Metric tons of energy-related carbon dioxide per resident**

a) States along the Atlantic Ocean (including neighboring the NY Bight) are already the greenest in the nation

As Table 4 demonstrates, using carbon dioxide as an indicator, even in 1970 (at the point when the modern CAA was first passed), the eastern seaboard states already had cleaner generation than counterparts in the Midwest and South. Since that time, the eastern states have consistently invested in more clean generation, especially hydro and nuclear, to avoid using their finite and valuable airshed carrying capacity as a dumping ground for conventional pollutants and greenhouse gases. This advanced investment in green technology lead to positive outcomes, but also created much higher electricity prices for businesses and residents. (See Table 8)

An unrecognized economic consequence of this disproportionate "greening" of Eastern Seaboard electricity and other systems such as transportation is the airshed subsidy provided to dirtier states by the clean coastal states. In effect, the freed up eastern airshed assets that are the earned return-on-investment (ROI) to green eastern state from the substantial eastern clean energy investment (with corollary increases in electricity costs). This capacity has been expropriated by states whose continued dirty coal and natural gas plant emissions move into and use the airshed absorption capacity freed up by the multi-decade east coast clean investment. Said another way, more westerly areas that continued burning coal were using the unacknowledged "emission credits" created by the eastern state utilities and ratepayers that transitioned their energy to clean systems to avoid emissions into the airshed.

Figure 2: Coal Remains Largest Source of Electricity Generation in 15 States



The states that still had coal as their leading source of electricity in 2021 illustrates this wealth transfer. Greener coastal states downwind of brown states have effectively subsidized cheaper, dirtier electricity production for decades. This wealth transfer is largely ignored by economists and the Governors of eastern clean states whose hard-earned airshed ROI continues to be given away.

Moreover, the socioeconomic effects of repeated premature retirement of energy facility capital and attendant retail price increases is not analyzed in the PEIS (or by utility commissions and state leaders). Not only are ratepayers in these states routinely paying above national averages for electricity, business and industry are likely to locate in states with cheaper electric, affecting the growth and availability of direct and indirect jobs.[4] It makes no socioeconomic sense for any state with a clean generation portfolio to prematurely retire existing electricity assets wile states with the highest GHG outputs per capita continue using coal generation.

[4] To illustrate this point, the Biden Administration is using federal funds to support a planned $2 billion Intel chip plant in Ohio. This electricity-intensive industry is being sited in a state that gets over 50% or its electricity from natural gas, 37% from coal, and 4% from renewables.

b) *Environmental Justice analyses fail to consider electricity, supply, cost, and reliability as Impact Producing Factors (IPFs), Issues, or Indicators*

The PEIS indicates both New York and New Jersey have identified environmental justice (EJ) communities at the U.S. Census block-level using criteria that exceed the federal environmental justice community definitions. There currently are seven counties that exceed thresholds for environmental justice in New Jersey—Atlantic County, Camden County, Cumberland County, Essex County, Hudson County, Middlesex County, and Union County—and three counties that exceed thresholds for environmental justice in the State of New York—Kings County, New York County, and Queens County based on their minority populations.

Table 3.6.4-3 on page 3.6.4-16 of the PEIS describes "Issues and indicators to assess impacts on environmental justice. While effective describing many of the EJ issues created by major actions, the analysis fails to include the impacts stemming from the most basic Impact Producing Factors (IPF) associated with energy infrastructure recapitalization: supply, reliability and price of electricity.

EJ Communities disproportionately rely on electricity, especially in the urban setting. They use electrified mass transit, walk streets that must be lit, attend school day and night, require sanitation, medical, and safety services, need access to secure (refrigerated) food, use myriad other public and private services, and want warm, lit homes. EJ communities also need jobs in commercial and industrial enterprises that require reliable, affordable electricity and many of the services described.

Although the potential adverse impacts of various forms of electrical generation should be weighed in proper alternatives scenarios, all options for producing electricity to meet the dual goals of demand load and portfolio cleanliness must be balanced against electrical cost.

Table 8: Eastern State Retail Electricity Prices

State	Average retail price (cents/kWh)
Connecticut	21.08
Delaware	11.83
District of Columbia	14.94
Florida	12.51
Georgia	12.00
Maine	17.44
Maryland	13.32
Massachusetts	21.27
New Hampshire	21.07
New Jersey	14.80
New York	18.33
North Carolina	9.60
Pennsylvania	11.86
Rhode Island	19.30
South Carolina	10.74
Vermont	16.99
Virginia	10.75
U.S. Average	**12.36**

Source: DOE Energy Information Agency